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copy pcmcia <filename1> <filename2> 26-11
copy running-config 26-12
copy running-config startup-config 26-13
copy running-config tftp 26-14
copy startup-config 26-15
copy startup-config running-config 26-16
copy startup-config tftp 26-17
copy tftp 26-18
copy tftp bootflash 26-19
copy tftp flash 26-20
copy tftp pcmcia 26-21
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1 Overview

This chapter describes:

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

Command Mode Summaries

The Cajun P550/P880/P882 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

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
<th>To Access</th>
<th>Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>The mode you are in after login. It includes a limited number of commands to display status and statistic information.</td>
<td>Log in.</td>
<td>Cajun&gt;</td>
</tr>
<tr>
<td>Privileged</td>
<td>Contains the commands from the User mode and the commands to set operating parameters.</td>
<td>From the User mode, enter <code>enable</code>.</td>
<td>Cajun#</td>
</tr>
<tr>
<td>Global</td>
<td>Commands to configure the system as a whole.</td>
<td>From the Privileged mode, enter <code>configure</code>.</td>
<td>Cajun (configure)#</td>
</tr>
</tbody>
</table>
Table 1-1. Main Command Mode Summaries

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
<th>To Access</th>
<th>Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Log in.</td>
<td>Cajun&gt;</td>
<td>Enter exit.</td>
</tr>
<tr>
<td>Privileged</td>
<td>From the User mode, enter <strong>enable</strong>.</td>
<td>Cajun#</td>
<td>Disable or exit</td>
</tr>
<tr>
<td>Global Configuration</td>
<td>From the Privileged mode, enter <strong>configure</strong>.</td>
<td>Cajun (configure)#</td>
<td>returns to the User mode.</td>
</tr>
<tr>
<td>Interface Configuration</td>
<td>From Global the Configuration mode, enter <strong>interface type number</strong>.</td>
<td>Cajun (configure-if)#</td>
<td>Exit returns to the Global Configuration mode.</td>
</tr>
<tr>
<td>Router Configuration</td>
<td>From the Global Configuration mode, enter <strong>router type</strong>.</td>
<td>Cajun (configure-router:dvmrp)#</td>
<td>Exit returns to the Global Configuration mode.</td>
</tr>
</tbody>
</table>

To exit command mode, enter **exit**.

Accessing/Exiting the Command Modes

Refer to Table 1-2 for an explanation of how to access and exit the command modes.

Table 1-2. Accessing/Exiting the Command Modes

<table>
<thead>
<tr>
<th>Main Command Modes</th>
<th>To Access</th>
<th>Prompt</th>
<th>To Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Log in.</td>
<td>Cajun&gt;</td>
<td>Enter exit.</td>
</tr>
<tr>
<td>Privileged</td>
<td>From the User mode, enter <strong>enable</strong>.</td>
<td>Cajun#</td>
<td>Disable or exit</td>
</tr>
<tr>
<td>Global Configuration</td>
<td>From the Privileged mode, enter <strong>configure</strong>.</td>
<td>Cajun (configure)#</td>
<td>returns to the User mode.</td>
</tr>
<tr>
<td>Interface Configuration</td>
<td>From Global the Configuration mode, enter <strong>interface type number</strong>.</td>
<td>Cajun (configure-if)#</td>
<td>Exit returns to the Global Configuration mode.</td>
</tr>
<tr>
<td>Router Configuration</td>
<td>From the Global Configuration mode, enter <strong>router type</strong>.</td>
<td>Cajun (configure-router:dvmrp)#</td>
<td>Exit returns to the Global Configuration mode.</td>
</tr>
</tbody>
</table>

**To exit command mode, enter exit.**
Basic Functions

This section provides information about the following switch functions:

- Help
- Command Syntax Conventions
- No Form Commands
- Command Line History Keys

Help

Enter a question mark (?) at the system prompt to display the all of the commands in a mode. Refer to Table 1-3 for additional help commands.

Table 1-3. Basic Functions

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>partial-command? (First tokens only - not whole syntax)</td>
<td>Lists the commands that begin with the specified character string. There is no space between the command and question mark.</td>
<td>Cajun#m? mrinfo Cajun#</td>
</tr>
<tr>
<td>partial-command &lt;Tab&gt;</td>
<td>Completes a command name.</td>
<td>Cajun#conf&lt;Tab&gt; Cajun#configure</td>
</tr>
<tr>
<td>partial-command +</td>
<td>Lists the remaining syntax of all commands that begin with the character string.</td>
<td>Cajun&gt; leg +</td>
</tr>
<tr>
<td>+</td>
<td>Lists all of the commands for the current mode - complete syntax and help descriptions.</td>
<td>Cajun#+</td>
</tr>
<tr>
<td>?</td>
<td>Lists, if unique, all commands for the current command mode.</td>
<td>Cajun (config-subif)#?</td>
</tr>
<tr>
<td>command ? (Gives the next token (parameter or keyword))</td>
<td>Lists the command parameters (with a brief explanation, if available). There is a space between the command and the question mark.</td>
<td>Cajun#clear ?</td>
</tr>
</tbody>
</table>
Chapter 1

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>command][parameter] ?</td>
<td>Lists the arguments for a parameter. There is a space between the parameter</td>
<td>Cajun# show ip ospf ?</td>
</tr>
<tr>
<td>(Gives the next token</td>
<td>and the question mark.</td>
<td></td>
</tr>
<tr>
<td>(parameter or keyword))</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Command Syntax Conventions**

Refer to Table 1-4 for an explanation of the command syntax conventions.

**Table 1-4. Command Syntax Conventions**

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>keyword</td>
<td>A command keyword. An alphanumeric string with &quot;-&quot; allowed.</td>
</tr>
<tr>
<td>&lt;parameter&gt;</td>
<td>Variables for which you supply values. A command parameter name, where the</td>
</tr>
<tr>
<td></td>
<td>name can be anything.</td>
</tr>
<tr>
<td>[optional]</td>
<td>Optional syntax that can be a keyword, parameter, option or any combination</td>
</tr>
<tr>
<td></td>
<td>thereof.</td>
</tr>
<tr>
<td>{option1</td>
<td>option2}</td>
</tr>
<tr>
<td>[a{optional1</td>
<td>optional2}]</td>
</tr>
<tr>
<td>[... expansion]</td>
<td>Zero or more occurrences of &quot;expansion&quot; are possible. Expansion must be a</td>
</tr>
<tr>
<td></td>
<td>keyword, parameter, options or any combination thereof.</td>
</tr>
<tr>
<td></td>
<td>Complete contents of the bracket [...&lt;uid1&gt;&lt;uid2&gt;] (&quot;user-ids&quot;) implies that</td>
</tr>
<tr>
<td></td>
<td>users must be added to the system two at a time.</td>
</tr>
</tbody>
</table>

**No Form 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.

<table>
<thead>
<tr>
<th>Keys</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ctrl-P</td>
<td>Recalls the most recent command in the history buffer. Repeat the key sequence to recall the other previous commands.</td>
</tr>
<tr>
<td>Ctrl-N</td>
<td>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.</td>
</tr>
<tr>
<td>Ctrl-C</td>
<td>Enables you to exit from help command (+).</td>
</tr>
</tbody>
</table>

Accessing the CLI

There are two ways to access the Cajun P550/P880/P882 CLI:

- Using telnet
- Using a serial interface

Accessing the CLI Using Telnet

To access the CLI using telnet:

1. Obtain the name and password for the user account you will be using.
2. Enter telnet at the system prompt.
3. Enter the IP address or hostname for the switch to which you are telnetting:
   
   ```
   telnet <IP address> or hostname
   ```
Accessing the CLI 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.
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.

Syntax

To Enable: clear aft instance invalid-learned-entries vlan
(<vlan-id> | name <vlan-name>)

Table 2-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mac-address</td>
<td>The MAC address associated with this entry.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Specifies the AFT instance associated with the ID of this VLAN.</td>
</tr>
<tr>
<td>name</td>
<td><strong>vlan-name</strong> - Specifies the AFT instance associated with the name of this VLAN.</td>
</tr>
</tbody>
</table>

Sample Output

The following 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).

Systems

P550/P550R/P880/P882.
clear aft instance learned-entries vlan

Command Mode  Configuration

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

Syntax

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mac-address</td>
<td>The MAC address associated with this entry.</td>
</tr>
<tr>
<td>vlan</td>
<td><strong>vlan-id</strong></td>
</tr>
<tr>
<td>name</td>
<td><strong>vlan-name</strong></td>
</tr>
</tbody>
</table>

Sample Output

The following 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).

Systems  P550/P550R/P880/P882.
set aft agetime

Command Mode  
Configuration

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

Syntax

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

Table 2-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>age-time-value</td>
<td>Enter the amount of time, in seconds, after which aft entries become invalid. The range is <strong>10-10000 seconds</strong>.</td>
</tr>
</tbody>
</table>

Sample Output  
The following example sets the aft age time to 350 seconds.

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

Systems  
P550/P550R/P880/P882.
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%.

Syntax

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

Table 2-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>threshold-value</td>
<td>Enter the desired percentage full that a hash table must be before it auto-increments itself. Valid values range from 5-90 percent.</td>
</tr>
</tbody>
</table>

Sample Output The following 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%
```

Systems P550/P550R/P880/P882.
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.

Syntax

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

Table 2-5. Parameters, Keywords, Arguments
Sample Output

The following 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.

Systems

P550/P550R/P880/P882.
set aft instance vlan (auto-increment)

Command Mode  Configuration

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

Syntax

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

Table 2-6. Parameters, Keywords, Arguments

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

Sample Output  The following 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.

**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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan</td>
<td>The AFT instance associated with the VLAN.</td>
</tr>
<tr>
<td></td>
<td><strong>vlan-id</strong> - The numerical ID of a specific VLAN.</td>
</tr>
<tr>
<td>name</td>
<td>The keyword for the VLAN name.</td>
</tr>
<tr>
<td></td>
<td><strong>vlan-name</strong> - The name of the vlan.</td>
</tr>
<tr>
<td>hash-table-size</td>
<td>Specifies the hash table size. The table size specified must be one of</td>
</tr>
<tr>
<td></td>
<td>the following (all values are power of 2):</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

**Sample Output**
The following 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
```

**Systems**  
P550, P550R, P880, and P882
Chapter 2

set aft super-agetime

Command Mode  Configuration

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

Syntax

Table 2-8. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>super-age-time-value</td>
<td>Enter the amount of time, in days, after which invalid aft entries are removed. The range is 1-30 days.</td>
</tr>
</tbody>
</table>

Sample Output  The following 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.

Syntax

The following example displays the aft manager configuration table.

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

Systems  P550/P550R/P880/P882.
show aft entry

Command Mode  User

Description  Perform a search for all of the AFT entries that match the criteria specified in the command.

Syntax

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

Table 2-9. Parameters, Keywords, Arguments
Syntax

The following example displays the AFT entry table.

Cajun> **show aft entry**

AFT Entries matching search criteria: "All Entries"

<table>
<thead>
<tr>
<th>MAC Address</th>
<th>Port</th>
<th>Valid</th>
<th>Vlan</th>
<th>GID</th>
<th>Priority</th>
<th>Persistence</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>01:80:C2:00:00:00</td>
<td>cpu</td>
<td>valid</td>
<td>2</td>
<td>high</td>
<td>permanent</td>
<td>self</td>
<td></td>
</tr>
<tr>
<td>01:80:C2:00:00:01</td>
<td>cpu</td>
<td>valid</td>
<td>2</td>
<td>high</td>
<td>permanent</td>
<td>self</td>
<td></td>
</tr>
<tr>
<td>01:80:C2:00:00:02</td>
<td>filter</td>
<td>valid</td>
<td>2</td>
<td>normal</td>
<td>permanent</td>
<td>self</td>
<td></td>
</tr>
<tr>
<td>01:80:C2:00:00:03</td>
<td>filter</td>
<td>valid</td>
<td>2</td>
<td>normal</td>
<td>permanent</td>
<td>self</td>
<td></td>
</tr>
<tr>
<td>01:80:C2:00:00:04</td>
<td>filter</td>
<td>valid</td>
<td>2</td>
<td>normal</td>
<td>permanent</td>
<td>self</td>
<td></td>
</tr>
</tbody>
</table>

Sample Output

P550/P550R/P880/P882.
**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.

**Syntax**

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

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-id</td>
<td>Specifies the aft instance associated with the ID of this VLAN.</td>
</tr>
<tr>
<td>name</td>
<td><strong>&lt;vlan-name&gt;</strong> - Specifies the aft instance associated with the name of this VLAN.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example displays the aft instance configuration table.

```
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  
```

**Systems**  
P550/P550R/P880/P882.
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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>appletalk access-group &lt;access-list-number&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>no appletalk access-group &lt;access-list-number&gt;</td>
</tr>
</tbody>
</table>

Table 3-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>access-list-number</td>
<td>A decimal value which specifies the identifier of the access list. This is a number between 600 and 663.</td>
</tr>
</tbody>
</table>

Sample Output  The following example enables access-group 625 to an Appletalk interface.

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

Systems  P550/P550R/P880/P882
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.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>access-list</td>
<td>Number of an access list.</td>
</tr>
<tr>
<td></td>
<td>• access-list-number is the identifier (in decimal) of the access list.</td>
</tr>
<tr>
<td></td>
<td>• access-list-number for nbp must be between 600 and 631. The access-list-</td>
</tr>
<tr>
<td></td>
<td>number for zone must be between 632 and 663.</td>
</tr>
<tr>
<td></td>
<td>• Deny does not permit access when conditions match. Specifying “deny”</td>
</tr>
<tr>
<td></td>
<td>denies access if the conditions are matched; specifying “permit” permits</td>
</tr>
<tr>
<td></td>
<td>access if the conditions are matched.</td>
</tr>
<tr>
<td></td>
<td>• Permit allows access when conditions match.</td>
</tr>
<tr>
<td></td>
<td>• Zone applies the access-list to Appletalk Zone names. Specifying “zone”</td>
</tr>
<tr>
<td></td>
<td>indicates that this access list applies to Appletalk Zone Names. Specifying</td>
</tr>
<tr>
<td></td>
<td>“nbp” indicates that this access list applies to the name field of</td>
</tr>
<tr>
<td></td>
<td>Appletalk Name Binding Protocol (NBP) entities.</td>
</tr>
<tr>
<td></td>
<td>• Nbp applies the access-list to the name field of Appletalk Naming</td>
</tr>
<tr>
<td></td>
<td>Binding Protocol (NBP) entities.</td>
</tr>
</tbody>
</table>
The following example disables appletalk access list 630.

Cajun (configuration)# no appletalk access-list <630>

Systems

P550/P550R/P880/P882
**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.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>appletalk address &lt;network.node&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] appletalk address</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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. |

**Sample Output** The following example enables an appletalk phase 1 address for on the network node labeled foo.

Cajun (configure)# appletalk address foo

**Systems** P550/P550R/P880/P882
appletalk admin-state

Command Mode  Interface

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

Syntax  

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>up</td>
<td>down</td>
</tr>
<tr>
<td></td>
<td>• <strong>up</strong> - The administrative state of the interface is active.</td>
</tr>
<tr>
<td></td>
<td>• <strong>down</strong> - The administrative state of the interface is inactive.</td>
</tr>
</tbody>
</table>
```

Sample Output  The following example sets the appletalk administrative state to down.

Cajun (configure)# appletalk admin-state down

Systems  P550/P550R/P880/P882
appletalk cable-range

Command Mode  Interface

Description  Configure a cable range for an Appletalk Phase II for an interface. The no form of this command disables Appletalk for this interface.

Syntax

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

Table 3-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>cable-range</td>
<td>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.</td>
</tr>
<tr>
<td>network.node</td>
<td>The AppleTalk network address to assign to the interface. When network.node is omitted, the Appletalk address defaults to 0.0.</td>
</tr>
<tr>
<td></td>
<td>• network - A 16-bit network number between 0 and 66279.</td>
</tr>
<tr>
<td></td>
<td>• node - An 8-bit node number between 0 and 254.</td>
</tr>
</tbody>
</table>

Sample Output  The following example configures a cable range of 222-224 for the appletalk interface on serial port 0.

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

Systems  P550/P550R/P880/P882
appletalk echo

Command Mode  Privileged

Description  Send an Appletalk echo request to a specified Appletalk node.

Syntax

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>network.node</td>
<td>• <strong>network</strong> - The DDP network address of the Appletalk device.</td>
</tr>
<tr>
<td></td>
<td>• <strong>node</strong> - The DDP node address of the Appletalk device.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sends an appletalk echo request to network node foo.

Cajun (configure)# appletalk echo foo

Systems  P550/P550R/P880/P882
appletalk mac-format

Command Mode  Interface

Description  Sets which Appletalk Interface MAC format is 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.

Syntax

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

Table 3-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethv2</td>
<td>snap</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• snap - Subnetwork Access Protocol.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the Appletalk Interface MAC format to ethv2.

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

Systems  P550/P550R/P880/P882
appletalk routing

Command Mode Configuration

Description Enables Appletalk routing. The no form of this command disables Appletalk routing. The default for Appletalk routing is disabled.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>appletalk routing</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] appletalk routing</td>
</tr>
</tbody>
</table>

Sample Output The following example enables Appletalk routing.

Cajun(configuration)# appletalk routing

Systems P550/P550R/P880/P882
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.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>cable-range</td>
<td>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.</td>
</tr>
</tbody>
</table>
| 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  The following 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

Systems  P550/P550R/P880/P882
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.

Syntax

| To Enable:       | appletalk vlan \(<vlan-id>|name<vlan-name>\) |
|------------------|---------------------------|
| To Disable:      | [no] appletalk vlan       |

Table 3-9. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-id</td>
<td>The ID of the VLAN Appletalk uses for the interface.</td>
</tr>
<tr>
<td>name</td>
<td>vlanname - The name of the VLAN Appletalk uses for the interface.</td>
</tr>
</tbody>
</table>

Sample Output The following example sets appletalk interface foo2 to VLAN auto50.

Cajun(config if auto50)# appletalk vlan foo2

Systems P550/P550R/P880/P882
appletalk zone

Command Mode  Interface

Description  Adds 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.

Syntax

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>zone</td>
<td>The name of the zone you want to add to the interface.</td>
</tr>
<tr>
<td>zone-name</td>
<td>The first zone added is the default zone.</td>
</tr>
</tbody>
</table>

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

Table 3-10. Parameters, Keywords, Arguments

Sample Output  The following example adds appletalk zone “foo2” to the “auto50” interface.

    Cajun(config if-auto50)# appletalk zone foo2

Systems  P550/P550R/P880/P882
clear appletalk arp

Command Mode    Configuration

Description    Deletes a single or all entries from the Appletalk ARP and Appletalk Routing tables, and clears the Appletalk counters.

Syntax

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

Table 3-11. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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.

Sample Output

The following example deletes the appletalk arp form the foo network node.

Cajun(configure)# clear appletalk arp foo

Systems

P550/P550R/P880/P882
clear appletalk route

Command Mode  Configuration

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

Syntax

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

Table 3-12. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>network</td>
<td>network - The number of the network to which the route provides access.</td>
</tr>
<tr>
<td></td>
<td>To delete all dynamic entries, omit the argument. Local and static route</td>
</tr>
<tr>
<td></td>
<td>entries cannot be deleted.</td>
</tr>
</tbody>
</table>

Sample Output  The following example deletes all entries from the Appletalk Routing table.

    Cajun(config)# clear appletalk route

Systems  P550/P550R/P880/P882
clear appletalk traffic

Command Mode  Configuration

Description  Clear the Appletalk counters.

Syntax

```
clear appletalk traffic
```

Sample Output  The following example deletes Appletalk traffic.

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

Systems  P550/P550R/P880/P882
ping appletalk

Command Mode  Privileged

Description  Sends an Appletalk Echo Request to a specific Appletalk node.

Syntax

```
ping appletalk <network.node>
```

Table 3-13. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>network.node</td>
<td>• <strong>network</strong> - The DDP network address of the Appletalk device.</td>
</tr>
<tr>
<td></td>
<td>• <strong>node</strong> - The DDP node address of the Appletalk device.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sends Appletalk Echo Request to the Foo network node.

```
Cajun# ping appletalk foo
```

Systems  P550/P550R/P880/P882
show appletalk access-lists

Command Mode  User

Description  Display currently defined Appletalk access lists.

Syntax

```
show appletalk access-list
```

The following example displays the appletalk access list.

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
```

Systems  P550/P550R/P880/P882
Chapter 3

show appletalk arp

Command Mode  User

Description  List entries in the Appletalk ARP Table.

Syntax

```
show appletalk arp [all]
```

Table 3-14. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Shows local and broadcast entries, in addition to dynamic entries listed in the Appletalk Arp Table.</td>
</tr>
</tbody>
</table>

Sample Output

The following example displays the appletalk arp table.

```
Cajun> show appletalk arp
AppleTalk AARP Cache Table
Hardware Address  DDP AddressType  TTL  Interface
F0:0D:04:31:00:31  55.55  Remote 60  at_if2
08:00:07:41:C0:8B  8001.1  Dynamic50  at_if3
```

Systems

P550/P550R/P880/P882
show appletalk globals

Command Mode  User

Description  Display information about the routers Appletalk status.

Syntax

```
show appletalk globals
```

Sample Output  The following example displays information about the routers appletalk status.

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

Systems  P550/P550R/P880/P882
show appletalk interface

Command Mode  User

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

Syntax

```
show appletalk interface [<brief>] [interface-name]
```

Table 3-15. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>brief</td>
<td>A keyword indicating that only summary information is to be displayed.</td>
</tr>
<tr>
<td>interface-name</td>
<td>The name of the interface to display.</td>
</tr>
</tbody>
</table>

Sample Output  The following example displays summary information about the appletalk interface labeled “jerry”.

```
Cajun> show appletalk interface brief jerry
jerry is down, and administratively up
  On vlan Internal-Network, is down
  Starting Cable Range is 0
  Ending Cable Range is 0
  DDP Network Number 0
  DDP Node Number 0
```

Systems  P550/P550R/P880/P882
show appletalk nbp

Command Mode  User

Description  Show all Appletalk Name Binding Protocol (NBP) entries.

Sample Output

The following example shows the display for the `show appletalk nbp` command.

```
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
```

Systems  P550/P550R/P880/P882
show appletalk route

Command Mode  User

Description  Display the contents of the Appletalk Routing Table.

Syntax  

```
show appletalk route [<starting-range>]
```

Table 3-16. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>starting-range</td>
<td>If the starting range is supplied, the entry corresponding to this specific AppleTalk network is displayed; otherwise, the entire routing table is displayed.</td>
</tr>
</tbody>
</table>

Sample Output  The following example displays the contents of the appletalk routing table with “8000” as the starting range.

```
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
```

Systems  P550/P550R/P880/P882
show appletalk static cable-range

Command Mode  User

Description  Display the static routes that are configured for Appletalk.

Syntax

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>starting-range</td>
<td>If the starting range is supplied, the entry corresponding to this specific static route is displayed; otherwise, the entire routing table is displayed.</td>
</tr>
</tbody>
</table>

Sample Output  The following example displays all of the appletalk static routes that are configured.

```
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
```

Systems  P/550\P550R/P880/P882
# show appletalk traffic

**Command Mode**: User

**Description**: Displays Appletalk Protocol Counters and Statistics.

**Syntax**

```plaintext
show appletalk traffic
```

**Sample Output**: The following example displays the appletalk protocol counter and statistics.

```
Cajun> show appletalk traffic
AT Traffic Statistics
AppleTalk Traffic Statistics
Echo Req Tx 0  Echo Replies Rcv 0
Echo Req Rcv 0  DDP Output Counter 12
DDP Output Short 0  DDP Output Long 12
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
AARP Replies Rcv 0  AARP Invalid PDU 0
AARP Req Tx 57  AARP Replies Tx 0
RTMP Rq Sent 0  RTMP Rq Rcv 0
RTMP Rsp Sent 0  RTMP Rsp Rcv 0
RTMP RDR Sent 12  RTMP RDR Rcv 0
ZIP Query Sent 0  ZIP Query Rcv 0
ZIP Reply Sent 0  ZIP Reply Rcv 0
ZIP Reply Ext Sent 0  ZIP Reply Ext Rcv 0
ZIP GNI Rq Sent 0  ZIP GNI Rq Rcv 0
ZIP GNI Rsp Sent 0  ZIP GNI Rsp Rcv 0
Config Address Error 0  Config Zone Error 0
```

**Systems**: P550/P550R/P880/P882
show appletalk zone

Command Mode   User

Description   Displays the contents of the Appletalk Zone Information Table (ZIT).

Syntax

```
show appletalk zone [<zone-name>]
```

Table 3-18. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>zone-name</td>
<td>The name of the zone corresponding to the entry. When omitted, all entries in the table are displayed.</td>
</tr>
</tbody>
</table>

Sample Output

The following example displays the contents of the Zone1 Appletalk Zone Information table.

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

Systems

P550/P550R/P880/P882
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**  Sets the input or output buffer age timer range for a fabric port. The default age-timer range is 160-320.

**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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>fabric-port-spec</td>
<td>Enter a particular fabric port or a range of fabric ports on a module.</td>
</tr>
<tr>
<td>routing</td>
<td>Set the routing buffer parameters.</td>
</tr>
<tr>
<td>input</td>
<td>output</td>
</tr>
<tr>
<td>age-timer</td>
<td>The age-timer ranges are:</td>
</tr>
<tr>
<td></td>
<td>• 160-to-320</td>
</tr>
<tr>
<td></td>
<td>• 640-to-1280</td>
</tr>
</tbody>
</table>

**Sample Output**

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

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

**Systems**

P550/P550R/P880/P882
**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.

**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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>fabric-port-spec</td>
<td>Enter a particular fabric port or a range of fabric ports on a module.</td>
</tr>
<tr>
<td>routing</td>
<td>Set the routing buffer parameters.</td>
</tr>
<tr>
<td>input</td>
<td>output</td>
</tr>
<tr>
<td>hipri-alloc</td>
<td>The high priority allocation percentage ranges are: 10, 20, 30, 40, or 50.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following 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  

**Systems**  
P550/P550R/P880/P882
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.

**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>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>fabric-port-spec</td>
<td>Enter a particular fabric port or a range of fabric ports on a module.</td>
</tr>
<tr>
<td>routing</td>
<td>Set the routing buffer parameters.</td>
</tr>
<tr>
<td>input</td>
<td>output</td>
</tr>
<tr>
<td>age-timer</td>
<td>The age-timer ranges are:</td>
</tr>
<tr>
<td></td>
<td>160-to-320</td>
</tr>
<tr>
<td></td>
<td>640-to-1280</td>
</tr>
<tr>
<td>hipri-service-ratio</td>
<td>The priority service ratios are:</td>
</tr>
<tr>
<td></td>
<td>3-to-1, 99-to-1, 999-to-1, 9999-to-1</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following 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.
```

**Systems**  
P550/P550R/P880/P882
set buffering fabric-port (priority threshold)

Command Mode  Configuration

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>set buffering fabric-port &lt;fabric-port-spec&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[routing] (input</td>
</tr>
</tbody>
</table>

Table 4-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>fabric-port-spec</td>
<td>Enter a particular fabric port or a range of fabric ports on a module.</td>
</tr>
<tr>
<td>routing</td>
<td>Set the routing buffer parameters.</td>
</tr>
<tr>
<td>input</td>
<td>output</td>
</tr>
<tr>
<td>pri-threshold</td>
<td>The priority threshold ranges are: 1, 2, 3, 4, 5, 6 or 7 all-frames-normal-priority</td>
</tr>
</tbody>
</table>

Sample Output  The following 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.

Systems  P550P550R/P880/P882
**set buffering port (age-timer)**

**Command Mode**  Configuration

**Description**  Sets the output buffer age timer range for a physical port.

**Syntax**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-spec</td>
<td>Specifies the module and the port.</td>
</tr>
<tr>
<td>output</td>
<td>The output buffer.</td>
</tr>
<tr>
<td>age-timer</td>
<td>The ranges for the age timer are: 21, 42, 84, 168, 336, 672 or 1340</td>
</tr>
</tbody>
</table>

To Enable:  

```
set buffering port <mod-port-spec> output age-timer
21  42  84  168  336  672  1340
```

**Sample Output**  

The following example sets the output age timer range for port 4/1 as 42.

```
Cajun(configure)# set buffering port 4/1 output age-timer 42
Buffers for fabric-port 4/1 set.
```

**Systems**  

P550/P550R/P880/P882
set buffering port (highpri-allocation)

Command Mode  Configuration

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

Syntax

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-spec</td>
<td>Specifies the module and the port.</td>
</tr>
<tr>
<td>output</td>
<td>The output buffer.</td>
</tr>
<tr>
<td>hipri-alloc</td>
<td>The high priority allocation percentage ranges are: 10, 20, 30, 40, or 50.</td>
</tr>
</tbody>
</table>

To Enable:  

```
set buffering port <mod-port-spec> output hipri-alloc (10 | 20 | 30 | 40 | 50)
```

Sample Output  The following example sets the output buffer priority allocation percentage for physical port 4/1 to 50.

```
Cajun(configure)# set buffering port 4/1 output hi pri-alloc 50
Buffers for buffering port 4/1 set.
```

Systems  P550/P550R/P880/P882
set buffering port (hipri-service-ratio)

Command Mode  Configuration

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

Syntax

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-spec</td>
<td>Specifies the module and the port.</td>
</tr>
<tr>
<td>output</td>
<td>The output buffer.</td>
</tr>
<tr>
<td>hipri-service-ratio</td>
<td>The priority service ratios are: 1-to-1, 3-to-1, 7-to-1, 15-to-1, 31-to-1,</td>
</tr>
<tr>
<td></td>
<td>63-to-1, 127-to-1, 255-to-1, 511-to-1, 1023-to-1, 2047-to-1, 4095-to-1, 8191-</td>
</tr>
<tr>
<td></td>
<td>to-1, 16383-to-1, 32767-to-1.</td>
</tr>
</tbody>
</table>

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\}

Sample Output  The following example sets the buffer high priority service ratio for physical port 4/1 to 15-to-1.

Cajun(configure)# set buffering port 4/1 output hipri-service-ratio 15-to-1
Buffers for port 4/1 set.

Systems  P550/P550R/P880/P882
**set buffering port (pri-threshold)**

**Command Mode**  
Configuration

**Description**  
Set the output buffer priority threshold for a physical port.

**Syntax**

```
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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-spec</td>
<td>Specifies the module and the port.</td>
</tr>
<tr>
<td>output</td>
<td>The output buffer.</td>
</tr>
</tbody>
</table>
| pri-threshold | The priority threshold ranges are:  
  1, 2, 3, 4, 5, 6 or 7  
  all-frames-normal-priority |

**Sample Output**  
The following example set the output buffer priority threshold for physical port 4/1 to 5.

```
Cajun (configure)# set buffering port 4/1 output pri-threshold 5
```

**Systems**  
P550/P550R/P880/P882
show buffering fabric-port

Command Mode

User

Description

Displays the buffering configuration and statistics for a fabric port.

Syntax

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

Table 4-9. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>fabric-port-spec</td>
<td>Specifies a fabric port.</td>
</tr>
</tbody>
</table>

Sample Output

The following example displays the buffering configuration and statistics for fabric-port 4/1-4/8

```
Cajun> show buffering fabric-port 4/1-4/10
Fabric Port:4/1-4/8 Routing Input Buffer Routing 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
```

Systems

P550/P550R/P880/P882
show buffering port

Command Mode  User

Description  Displays the buffer configuration and statistics for a physical port.

Syntax

```plaintext
show buffering port [<mod-port-spec> [...,<mod-port-spec>]]
```

Table 4-10. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-spec</td>
<td>Specifies a particular port or a range of ports on a module.</td>
</tr>
</tbody>
</table>

Sample Output  The following example displays the buffer configuration and statistics for physical port 6/19.

```plaintext
 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.

Syntax

Table 5-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>300[..]</td>
<td>A required parameter that sets the serial console port to the indicated baud rate. The value indicates the baud rate of interest.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the console baud rate to 19200.

Cajun(configure)# set console baud 19200

Systems  P550/P550R/P880/P882
set console databits

Command Mode  Configuration

Description  Sets the console serial port’s databit width. The default value is 8.

* Note:  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.

Syntax

To Enable:  set console databits {7|8}

Table 5-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

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

Cajun(configure)#  set console databits 7

Systems  P550/P550R/P800/P882
set console flow control

Command Mode  Configuration

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

Syntax

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

Table 5-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>xon/xoff</td>
</tr>
</tbody>
</table>

Sample Output

This example sets the console flow control to none.

Cajun(configure)# set console flowcontrol none

Systems  P550/P550R/P880/P882
**Console**

### 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 \texttt{AT&D0S0=1}.

* **Note:** 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 Avaya recommended modems that do not require a modem initialization string.

**Syntax**

**To Enable:**  
\texttt{set console initcmd [init\_cmd\_string]}

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>\texttt{[init_cmd_string]}</td>
<td>An optional parameter, however, when the parameter is missing, it means that the modem initialization string is \texttt{&lt;null&gt;}.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example sets the console

\texttt{Cajun(configure)# set console initcmd AT&D0S0=1}

**Systems**  
P550/P550R/P880/P882
set console parity

**Command Mode**: Configuration

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

*Note:* 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.

**Syntax**

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

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>even</td>
</tr>
</tbody>
</table>

**Sample Output**

The following example sets the console parity to even.

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

**Systems**

P550/P550R/P880/P882
set console stopbits

**Command Mode**  
**Configuration**

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 configured as TTY mode and the stopbits parameter set. The serial console port can then be reconfigured 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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

**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.

**Syntax**

```
To Enable: set console transfer ppp
```

**Sample Output**

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

**Systems**

P550/P550R/P880/P882
**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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip dvmrp</td>
</tr>
</tbody>
</table>

**Sample Output**

Cajun(config-if:serial0)# ip dvmrp

**Systems**  
P550/P550R/P880/P882
ip dvmrp graft-retransmit-interval

Command Mode Router-DVMRP

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp graft-retransmit-interval &lt;graft-retransmit-int&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip dvmrp graft-retransmit-interval</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>graft-retransmit-interval</td>
<td>The DVMRP graft message retransmit interval. The range is <strong>5-15</strong> seconds.</td>
</tr>
</tbody>
</table>

Sample Output The following example configures the ip dvmrp graft retransmit interval for six seconds.

```
Cajun(configure router:dvmrp)# ip dvmrp graft-retransmit-interval 6
```

Systems P5550/P550R/P880/P882
**ip dvmrp interface-metric**

**Command Mode** Interface

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

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp interface-metric &lt;intf-metric&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip dvmrp interface-metric</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface-metric</td>
<td>DVMRP interface metric or hop count. The range is 1 to 3 hops.</td>
</tr>
</tbody>
</table>

**Sample Output** The following example

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

**Systems** P550/P550R/P880/P82
**ip dvmrp interface type**

**Command Mode**  
Interface

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

**Syntax**

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

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface type</td>
<td>DVMRP interface type. The case-sensitive keywords are <code>broadcast</code>, <code>nonEncapsulatedTunnel</code>, and <code>IPIPTunnel</code>.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example configures interface serial0 as a DVMRP IPIPTunnel.

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

**Systems**  
P550/P550R/P880/P882
**ip dvmrp min-route-flash-update**

**Command Mode**  
Router-DVMRP

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

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp min-route-flash-update &lt;min-update-value&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip dvmrp min-route-flash-update</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>min-update-value</td>
<td>The DVMRP minimum route flash update period, measured in seconds. The range is 5-20 seconds.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following 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
```

**Systems**  
P550/P550R/P880/P882
**ip dvmrp neighbor-probe-interval**

**Command Mode**  
Router-DVMRP

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

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp neighbor-probe-interval &lt;neighbor-probe&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip dvmrp neighbor-probe-interval</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>neighbor-probe</td>
<td>The DVMRP neighbor probe interval, which is measured in seconds. The range is 5-45 seconds.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example configures the ip dvmrp neighbor probe interval for eleven seconds.

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

Cajun(configure router:dvmrp)# ip dvmrp neighbor-probe-interval 11
```

**Systems**  
P550/P550R/P880/P882
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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp neighbor-timeout &lt;neighbor-timeout&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip dvmrp neighbor-timeout</td>
</tr>
</tbody>
</table>

Table 6-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>neighbor-timeout</td>
<td>The DVMRP neighbor timeout interval, which is measured in seconds. The range is 1-50 seconds.</td>
</tr>
</tbody>
</table>

Sample Output  The following example configures the ip dvmrp neighbor timeout interval for thirty-six seconds.

    Cajun(configure router:dvmrp)# ip dvmrp neighbor-timeout 36

Systems  P550/P550R/P880/P882
**ip dvmrp prune-message-lifetime**

**Command Mode**    Router-DVMRP

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

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp prune-message-lifetime &lt;prune-lifetime&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip dvmrp prune-message-lifetime</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>prune-lifetime</td>
<td>The DVMRP upstream prune message lifetime. The message lifetime is measured in seconds. The range is 100-7200 seconds.</td>
</tr>
</tbody>
</table>

**Sample Output**    The following 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
```

**Systems**    P550/P550R/P880/P882
ip dvmrp prune-retransmit-interval

**Command Mode**  Router-DVMRP

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

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th><code>ip dvmrp prune-retransmit-interval &lt;prune-retransmit-int&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td><code>[no] ip dvmrp prune-retransmit-interval</code></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>prune-retransmit-int</td>
<td>The DVMRP prune message retransmit interval. The interval is measured in seconds. The range is <strong>3-13</strong> seconds.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example configures the `ip dvmrp prune-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
```

**Systems**  P550/P550R/P880/P882
ip dvmrp remote-tunnel-address

Command Mode    Interface

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp remote-tunnel-address &lt;IP-Address&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip dvmrp remote-tunnel-address</td>
</tr>
</tbody>
</table>

Table 6-9. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP-Address</td>
<td>IP address of the DVMRP remote tunnel.</td>
</tr>
</tbody>
</table>

Sample Output    The following example configures the dvmrp remote tunnel address on interface 199.162.99.61.

   Cajun(configure if:1)# ip dvmrp remote-tunnel-address 199.162.99.61

Systems          P550/P550R/P880/P882
**ip dvmrp route-limit**

**Command Mode** Router-DVMRP

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

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp route-limit &lt;route-limit&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no]ip dvmrp route-limit</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>route-limit</td>
<td>The maximum number of routes allowed. The range is between <strong>10-20000</strong> routes.</td>
</tr>
</tbody>
</table>

**Sample Output** The following example configures the ip dvmrp route limit to five thousand, five hundred.

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

**Systems** P550/P550R/P880/P882
### ip dvmrp stats-reset

**Command Mode**  
Router-DVMRP

**Description**  
Resets the DVMRP global statistics.

**Syntax**

| To Enable: | ip dvmrp stats-reset |

**Sample Output**  
The following example shows the command for `ip dvmrp stats-reset`.

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

**Systems**  
P550/P550R/P880/P882
**ip dvmrp timers basic**

**Command Mode** Router-DVMRP

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

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip dvmrp timers basic &lt;rte-update&gt; &lt;rte-expire&gt; &lt;rte-holddown&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip dvmrp timers basic</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>rte-update</td>
<td>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.</td>
</tr>
<tr>
<td>rte-expire</td>
<td>Interval of time, in seconds, after which a DVMRP route expires. The interval range is 70-190 seconds. The default value is 140 seconds.</td>
</tr>
<tr>
<td>rte-holddown</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Sample Output** The following 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 35 75 145
```

**Systems** P550/P550R/P880/P882
**ip multicast prune-source**

**Command Mode**  Interface

**Description**  Configures 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**.

**Syntax**

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

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>host-addr</td>
<td>Enter the host address. The full host address goes into the prune packet for the source address.</td>
</tr>
<tr>
<td>network-addr</td>
<td>Enter the network address. Only the network portion of the address goes into the packet.</td>
</tr>
</tbody>
</table>

**Sample Output**

The following example configures the DVRMP prune packets to the host address for interface 1.

```
Cajun(configure if:1)# ip multicast prune-source host-addr
```

**Systems**  P550/P550R/P880/P882
**ip multicast ttl-threshold**

**Command Mode**  Interface

**Description**  Configures the time-to-live for DVMRP packets forwarded on this interface. The **no** form of this command restores the default (0).

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip multicast ttl-threshold &lt;ttl-thresh&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip multicast ttl-threshold</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttl-thresh</td>
<td>Indicates the time to live threshold. The range is 0,1,2:</td>
</tr>
<tr>
<td></td>
<td>• <strong>0</strong> - None</td>
</tr>
<tr>
<td></td>
<td>• <strong>1-127</strong></td>
</tr>
<tr>
<td></td>
<td>• <strong>2-225</strong> - only outbound broadcasts are accepted.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example configures the time-to-live (ttl) for DVMRP packets forwarded on interface 1 to 50.

```
Cajun(configure if:1)# ip multicast ttl-threshold 50
```

**Systems**  P550/P550R/P880/P882
router dvmrp

Command Mode  Configuration

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>router dvmrp</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] router dvmrp</td>
</tr>
</tbody>
</table>

Sample Output  The following example enables DVMRP routing and assigns a process number of 50.

   Cajun(configure)# router DVMRP 50

Systems  P550/P550R/P880/P882
show ip dvmrp

Command Mode  User

Description  Displays configuration information about the DVMRP protocol.

Syntax

| To View | show ip dvmrp |

Sample Output  The following example displays the DVMRP switch wide configuration information.

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

Systems  P550/P550R/P880/P882
show ip dvmrp designated forwarders

Command Mode User

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

Syntax

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| designated forwarders | Display DVMRP designated forwarder information.  
  • ip-addr - the IP address.  
  • mask - the mask for the associated IP subnet. |

Sample Output The following example displays the DVMRP designated forwarding routers for ip address 44.0.0.0 and mask 255.0.0.0.

```
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
```

Systems P550/P550R/P880/P882
show ip dvmrp downstream dependent routers

Command Mode  User

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

Syntax

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

Table 6-15. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>downstream dependent routers</td>
<td>Display DVMRP downstream dependency information.</td>
</tr>
<tr>
<td></td>
<td>• ip-addr - The IP address.</td>
</tr>
<tr>
<td></td>
<td>• mask - The mask for the associated IP subnet.</td>
</tr>
</tbody>
</table>

Sample Output  The following example displays all DVMRP downstream dependent neighbor routers for ip address 44.0.0.0 and mask 255.0.0.0.

    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

Systems  P550/P550R/P880/P882
show ip dvmrp forwarding cache

Command Mode  User

Description  Displays the DVMRP forwarding cache.

Syntax

To View:  show ip dvmrp forwarding cache

Sample Output  The following example displays the DVMRP Forwarding cache.

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

Systems  P550/P550R/P880/P882
show ip dvmrp interface

Command Mode User

Description Displays the related information about the DVMRP interface.

Syntax

| To View | show ip dvmrp interface |

Sample Output The following example displays the ip DVMRP interface

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

Systems P550/P550R/P880/P882
show ip dvmrp interface neighbors

Command Mode
User

Description
Displays all DVMRP neighbors on all DVMRP configured interfaces.

Syntax
show ip dvmrp interface neighbors

Sample Output
The following example displays all DVMRP neighbors on all of the configure DVMRP interfaces on the switch.

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

Systems
P550/P550R/P880/P882
show ip dvmrp routes

Command Mode  User

Description  Displays all DVMRP routes.

Syntax

| To View: | show ip dvmrp routes |

Sample Output  The following example displays all DVMRP routes.

```
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
```

Systems  P550/P550R/P880/P882
7 Huntgroups

Overview

This chapter describes:

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

Command Mode  Configure

Description  Creates 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.

Syntax

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

Table 7-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>huntgroup-name</td>
<td>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.</td>
</tr>
<tr>
<td>load-sharing</td>
<td>The load sharing capability.</td>
</tr>
<tr>
<td></td>
<td>• enable</td>
</tr>
</tbody>
</table>

Sample Output  The following example creates huntgroup hg1 and disables load-sharing.

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

Systems  P550/P550R/P880/P882
set huntgroup (redistribute)

**Command Mode**  
Configure

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

**Syntax**

```
To Enable: set huntgroup <huntgroup-name> redistribute
```

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>huntgroup-name</td>
<td>The unique identifier of a huntgroup.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example redistributes hg1.

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

**Systems**  
P550/P550R/P880/P882
show huntgroup

Command Mode  User

Description  Displays a single huntgroup or, if no huntgroup name is specified, then all of the configured huntgroups display.

Syntax

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

Table 7-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>huntgroup-name</td>
<td>The name of the huntgroup to be displayed.</td>
</tr>
</tbody>
</table>

Sample Output  The following example shows detailed huntgroup information.

```
Cajun> show huntgroup 1
        Base-  Load-  
        HGID  Port  SharingPorts
           -----  -----  --------  -------  ---
        huntgroup 1  Enable  2
        Switch Ports:  3/1,  3/2
        huntgroup2  2
        33  Enable
        Switch Ports:  3/3,  3/4

Cajun(configure)# show huntgroup huntgroup1

        Base-  Load-  
        HGID  Port  SharingPorts
           -----  -----  --------  -------  -----
        huntgroup1  1
        3/1  Enable  2
        Switch Ports:  3/1,  3/2
        Switch Ports:  3/1

Cajun(configure)# show huntgroup

        Base-  Load-  
        HGID  Port  SharingPorts
           -----  -----  --------  -------  ---
        huntgroup1  1
        3/1  Enable  2
        Switch Ports:  3/1,  3/2
```
Overview

This chapter describes:

- ip igmp
- ip igmp max-groups
- ip igmp process-leaves
- ip igmp querier-timeout
- 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  Enables the Internet Group Management Protocol (IGMP) on an interface. The no form of this command disables IGMP, and restores a default.

Syntax

<table>
<thead>
<tr>
<th>Syntax</th>
<th>To Enable:</th>
<th>To Disable:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ip igmp</td>
<td>[no] ip igmp</td>
</tr>
</tbody>
</table>

The following example enables igmp on the serial0 interface.

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

Systems  P550/P550R/P880/P882
**ip igmp max-groups**

**Command Mode**  Interface

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

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip igmp max-groups &lt;number&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip igmp max-groups</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>number</td>
<td>Maximum number IGMP groups on the interface. The range is 1-2000.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example sets the maximum number of IGMP groups on interface serial0 to 50.

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

**Systems**  P550/P550R/P880/P882
ip igmp process-leaves

Command Mode

Interface

Description
Enables 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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip igmp process-leaves</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip igmp process-leaves</td>
</tr>
</tbody>
</table>

Sample Output
The following example enables the processing of leave requests on interface serial0.

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

Systems
P550/P550R/P880/P882
ip igmp querier-timeout

Command Mode  Interface

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip igmp querier-timeout &lt;nbr-qry&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip igmp querier-timeout</td>
</tr>
</tbody>
</table>

Table 8-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>nbr-qry</td>
<td>The neighbor group querier timeout in seconds. The range is 60-300 seconds.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the igmp group querier timeout on interface serial0 to 250 seconds.

Cajun(config-if:serial0)# ip igmp querier-timeout 250

Systems  P550/P550R/P880/P882
**ip igmp query-interval**

**Command Mode**  Interface

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

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip igmp query-interval &lt;req-intvl&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip igmp query-interval</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>req-intvl</td>
<td>The number of seconds between host-query messages. The range is 1-65535 seconds.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example configures the frequency at which the router sends IGMP host query messages on interface serial0 to 125 seconds.

```
Cajun(config-if:serial0)# ip igmp query-interval 125
```

**Systems**  P550/P550R/P880/P882
ip igmp query-max-response-time

Command Mode  Interface

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

Syntax

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

Table 8-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>max-rsp-intvl</td>
<td>The maximum response time advertised in IGMP queries. The range is 1-25 seconds.</td>
</tr>
</tbody>
</table>

Sample Output  The following example configures the maximum response time advertised in IGMP queries on interface serial0 to 25 seconds.

Cajun(config-if:serial0)# ip igmp query-max-response-time 25

Systems  P550/P550R/P880/P882
**ip igmp query-timeout**

**Command Mode**  
Interface

**Description**  
Configures 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**.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip igmp query-timeout &lt;nbr-qry&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip igmp query-timeout</td>
</tr>
</tbody>
</table>

**Table 8-5. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>nbr-query</td>
<td>The neighbor group querier timeout, in seconds. The range is <strong>60-300</strong> seconds.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example configures the timeout period before the router takes over as the querier on interface serial0 to 100 seconds.

```
Cajun(config-if:serial0)# ip igmp query-timeout 100
```

**Systems**  
P550/P550R/P880/P882
ip igmp robustness

Command Mode  Interface

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip igmp robustness &lt;robustness&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip igmp robustness</td>
</tr>
</tbody>
</table>

Table 8-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>robustness</td>
<td>IGMP robustness variable. The range is 1-65535.</td>
</tr>
</tbody>
</table>

Sample Output  The following example configures the IGMP robustness variable on interface serial0 to 100 seconds.

```
Cajun(config-if:serial0)# ip igmp robustness 100
```

Systems  P550/P550R/P880/P882
**ip igmp version**

**Command Mode**  Interface

**Description**  Configures which IGMP version the router will use. Use the **no** form of this command to restore the default value of **2**.

**Syntax**

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

**Sample Output**  The following example configures the router on interface serial0 to use IGMP version 1.

```
Cajun(config-if:serial0)# ip igmp version 1
```

**Systems**  P550/P550R/P880/P882
mtrace

Command Mode  Privileged

Description  Traces 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.

Syntax

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

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

Sample Output  The following example traces the path from a source (10.0.2.129) to a destination (10.0.4.77) branch for a multicast destination tree (255.0.1.1).

Cajun# mtrace 10.0.2.129 10.0.4.177 255.0.1.1

<table>
<thead>
<tr>
<th>OutIntf</th>
<th>InIntf</th>
<th>Prot</th>
<th>Fwd</th>
<th>TTL</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>10.0.6.96, 10.0.5.96</td>
<td>DVMRP</td>
<td>thresh^32</td>
<td>0 ms</td>
</tr>
<tr>
<td>-2</td>
<td>10.0.5.95, 10.0.1.95</td>
<td>DVMRP</td>
<td>thresh^32</td>
<td>1391000 ms</td>
</tr>
<tr>
<td>-3</td>
<td>10.0.2.63, 10.0.1.63</td>
<td>DVMRP</td>
<td>thresh^32</td>
<td>2054500 ms</td>
</tr>
</tbody>
</table>

Round trip time 0 ms

Systems  P550/P550R/P880/P882
router igmp

Command Mode Configure

Description Globally enables or disables IGMP. The no form of the command disables a IGMP. The default state is: disabled.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>router igmp</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] router igmp</td>
</tr>
</tbody>
</table>

Sample Output The following example globally disables IGMP on the switch.

Cajun(configure)# no router igmp

Systems P550/P550R/P880/P882
show ip igmp groups

Command Mode    User

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

Syntax

To View: show ip igmp groups

Sample Output    The following example displays the multicast groups that are directly connected to the router.

Cajun> show ip igmp groups

Systems    P550/P550R/P880/P882
show ip igmp statistics

**Command Mode**  User

**Description**  Displays IGMP statistics for all interfaces.

**Syntax**

To View: show ip igmp statistics

**Sample Output**  The following example displays IGMP statistics for all of the interfaces configure on the switch.

```
Cajun> show ip 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 interface 7
.
.
```

**Systems**  P550/P550R/P880/P882
Overview

This chapter describes:

- arp
- arp timeout
- clear arp-cache
- clear ip route
- ip address
- ip admin-state
- ip bootp-dhcp relay
- ip bootp-dhcp server
- ip default-gateway
- ip helper-address
- ip mac-format
- ip max-arp-entries
- ip max-route-entries
- ip multicast-routing
- ip netbios-rebroadcast
- ip netmask-format
- ip proxy-arp
- ip proxy-arp-default-route
- ip proxy-arp-limit
- ip redirects
- ip reset-stats
- ip route
Chapter 9

- ip route-preference
- ip routing
- ip routing-mode
- ip source-route
- ip telnet inactivity-period
- ip vlan
- ip irdp
- ip irdp holdtime
- ip irdp maxadvertinterval
- ip irdp minadvertinterval
- ip irdp multicast
- ip irdp preference
- ping
- show ip arp
- show ip interface
- 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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>arp &lt;ip-address&gt; &lt;hardware-address&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] arp &lt;ip-address&gt; &lt;hardware-address&gt;</td>
</tr>
</tbody>
</table>

Table 9-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-address</td>
<td>IP address, in dotted decimal format, of the local data link.</td>
</tr>
<tr>
<td>hardware-addr</td>
<td>48-bit address of the local data link.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>arp timeout &lt;seconds&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] arp timeout</td>
</tr>
</tbody>
</table>

Table 9-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>seconds</td>
<td>The amount of time, in seconds, that an entry remains in the arp cache</td>
</tr>
</tbody>
</table>
clear arp-cache

Command Mode: Configuration

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

Command Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>clear arp-cache</th>
</tr>
</thead>
</table>

clear ip route

Command Mode: Configuration

Description
Delete routes from the IP routing table.

Command Syntax

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

Table 9-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>network</td>
<td>The network or subnet address to remove.</td>
</tr>
<tr>
<td>mask*</td>
<td>The route to clear from the table.</td>
</tr>
<tr>
<td></td>
<td>• * - Clears all routes.</td>
</tr>
<tr>
<td></td>
<td>• <strong>mask</strong> - Subnet address to remove.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip address &lt;ip-address&gt; &lt;mask&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip address &lt;ip-address&gt; &lt;mask&gt;</td>
</tr>
</tbody>
</table>

Table 9-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-address</td>
<td>The IP address assigned to the interface.</td>
</tr>
<tr>
<td>mask</td>
<td>Mask for the associated IP subnet.</td>
</tr>
</tbody>
</table>

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 9-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>up</td>
<td>down</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip bootp-dhcp relay</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip bootp-dhcp relay</td>
</tr>
</tbody>
</table>
**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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip bootp-dhcp server &lt;ip-address&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip bootp-dhcp server &lt;ip-address&gt;</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>relay</td>
<td>Relay bootp and dhcp service to the bootp/dhcp server.</td>
</tr>
<tr>
<td>ip-address</td>
<td>The IP address necessary to add a bootp/dhcp server to the system.</td>
</tr>
</tbody>
</table>

**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 9-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-address</td>
<td>IP address of the router.</td>
</tr>
</tbody>
</table>

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 9-8. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-address</td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td>• tftp</td>
</tr>
<tr>
<td></td>
<td>• dns</td>
</tr>
<tr>
<td></td>
<td>• time</td>
</tr>
<tr>
<td></td>
<td>• netbios-name</td>
</tr>
<tr>
<td></td>
<td>• netbios-data</td>
</tr>
<tr>
<td></td>
<td>• bootp-server</td>
</tr>
<tr>
<td></td>
<td>• bootp-client</td>
</tr>
<tr>
<td></td>
<td>• tacacs</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethv2</td>
<td>snap</td>
</tr>
</tbody>
</table>

**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 9-10. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>value</td>
<td>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.</td>
</tr>
</tbody>
</table>
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 9-11. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>value</td>
<td>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.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip multicast-routing</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip multicast-routing</td>
</tr>
</tbody>
</table>

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 9-12. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>both</td>
<td>inbound</td>
</tr>
<tr>
<td>both - inbound and outbound broadcasts are accepted.</td>
<td></td>
</tr>
<tr>
<td>inbound - only inbound broadcasts are accepted.</td>
<td></td>
</tr>
<tr>
<td>outbound - only outbound broadcasts are accepted.</td>
<td></td>
</tr>
<tr>
<td>disable - no broadcasts are accepted.</td>
<td></td>
</tr>
</tbody>
</table>

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 9-13. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>bitcount</td>
<td>decimal</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip proxy-arp</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip proxy-arp</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip proxy-arp-default-route</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip proxy-arp-default-route</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip proxy-arp-limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip proxy-arp-limit</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip redirects</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip redirects</td>
</tr>
</tbody>
</table>

Sample Output

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

**Command Mode:** Configuration

**Description**
Reset the IP statistics.

**Command Syntax**

<table>
<thead>
<tr>
<th>To Enable</th>
<th>ip reset-stats</th>
</tr>
</thead>
</table>

**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 9-14. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-addr</td>
<td>IP address of the static route.</td>
</tr>
<tr>
<td>mask</td>
<td>Mask of the IP address.</td>
</tr>
<tr>
<td>next-hop</td>
<td>Displays the next hop address in the network.</td>
</tr>
<tr>
<td>cost</td>
<td>The path cost.</td>
</tr>
<tr>
<td></td>
<td>• <strong>high</strong></td>
</tr>
</tbody>
</table>
**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 9-15. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip routing</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip routing</td>
</tr>
</tbody>
</table>

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 9-16. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT_MGMT</td>
<td>RT_ONLY</td>
</tr>
<tr>
<td></td>
<td>• RT_ONLY -- Enables IP forwarding but local packet consumption is disabled.</td>
</tr>
<tr>
<td></td>
<td>• MGMT_ONLY -- Enables Local packet consumption but IP forwarding is disabled.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip source-route</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip source-route</td>
</tr>
</tbody>
</table>

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 9-17. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>timeout</td>
<td>The telnet inactivity timeout period, measured in seconds.</td>
</tr>
</tbody>
</table>

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 9-18. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-id</td>
<td>ID of the VLAN.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Name of the VLAN.</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip irdp</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip irdp</td>
</tr>
</tbody>
</table>
**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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip irdp holdtime <code>&lt;seconds&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td><code>[no] ip irdp holdtime</code></td>
</tr>
</tbody>
</table>

**Table 9-19. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>seconds</td>
<td>The length of time, in seconds, that advertisements are held valid. The holdtime value must be greater than the <em>maxadvertinterval</em> value and cannot be greater than <strong>9000</strong> seconds. The range is <strong>5 - 9000</strong> seconds.</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th><code>ip irdp maxadvertinterval &lt;seconds&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td><code>[no] ip irdp maxadvertinterval</code></td>
</tr>
</tbody>
</table>

**Table 9-20. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>seconds</td>
<td>Maximum interval in seconds between advertisements. The range is <strong>4 - 1800</strong> seconds.</td>
</tr>
</tbody>
</table>
**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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip irdp minadvertinterval &lt;seconds&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip irdp minadvertinterval</td>
</tr>
</tbody>
</table>

**Table 9-21. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>seconds</td>
<td>The minimum interval, in seconds, between advertisements. The range is <strong>3 - 1799</strong> seconds. Changing the maxadvertinterval value defaults to the minadvertinterval value to three-quarters of the new value.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip irdp multicast</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip irdp multicast</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip irdp preference &lt;number&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip irdp preference</td>
</tr>
</tbody>
</table>

Table 9-22. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>number</td>
<td>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.</td>
</tr>
</tbody>
</table>
ping

Command Mode: Privileged

Description

Check host reachability and network connectivity.

Command Syntax

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

Table 9-23. Parameters, Keywords, Arguments

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

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 9-24.  Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>static</td>
<td>Display static ip ARP information.</td>
</tr>
</tbody>
</table>

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 9-25. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface-name</td>
<td>The name of the interface whose information you want to display.</td>
</tr>
</tbody>
</table>

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 9-26. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface-name</td>
<td>Interface-name is an optional argument. If specified, it requests ICMP Router Discovery Protocol information only for the specified interface.</td>
</tr>
</tbody>
</table>

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 9-27. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>static</td>
<td>Display IP Static route information.</td>
</tr>
</tbody>
</table>

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
   unreachable, 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
   unreachable, 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 (milliseconds)
  Retransmit timeout maximum
  : 240000 (milliseconds)
  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

System Supported: P550R
**show udp statistics**

**Command Mode:** User

**Description**
Display UDP connection statistics.

**Command Syntax**

<table>
<thead>
<tr>
<th>To View:</th>
<th>show udp statistics</th>
</tr>
</thead>
</table>

**Sample Output**

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

Syntax

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

Table 10-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>number</td>
<td>The default RIP route metric value. The range is 0 to 15.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the default RIP metric value to 10.

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

Systems  P550/P550R/P880/P882
ip rip authentication key

Command Mode  Interface

Description  Sets the authentication string used on the interface. The no form of this command clears the password.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip rip authentication key &lt;password&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip rip authentication key</td>
</tr>
</tbody>
</table>

Table 10-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>password</td>
<td>The authentication string for the interface. You can use up to 16 characters.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the authentication string used on interface serial0 as abc.

    Cajun (config-if:serial0)# ip rip authentication key abc

Systems  P550/P550R/P880/P882
ip rip authentication mode

Command Mode        Interface

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

Syntax

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

Table 10-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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  The following example specifies the type of authentication mode to use for interface serial0.

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

Systems          P550/P550R/P880/P882
ip rip default-route-mode

Command Mode  Interface

Description  Sets the RIP default route characteristics. The no form of this command disables the default route characteristics.

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 10-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>talk-only</td>
<td>listen-only</td>
</tr>
<tr>
<td></td>
<td>talk-only - The default route is advertised in RIP updates but ignored on incoming neighbor updates.</td>
</tr>
<tr>
<td></td>
<td>listen-only - The default route is suppressed from RIP updates but accepted on incoming neighbor updates.</td>
</tr>
<tr>
<td></td>
<td>talk-listen - The default route is advertised and accepted.</td>
</tr>
<tr>
<td></td>
<td>disable - The default route is not advertised or accepted.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the RIP default route characteristics for interface serial0 to talk-listen mode.

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

Systems  P550/P550R/P880/P882
**ip rip poison-reverse**

**Command Mode**  
Interface

**Description**  
Enables 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.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip rip poison-reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip rip poison-reverse</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example enables split-horizon with poison reverse on interface serial0.

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

**Systems**  
P550/P550R/P880/P882
ip rip receive version

**Command Mode**  Interface

**Description**  Specifies 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**.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip rip receive version [1] [2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip rip receive version</td>
</tr>
</tbody>
</table>

**Table 10-5. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1] [2]</td>
<td>The version of the RIP packets received on an interface.</td>
</tr>
<tr>
<td></td>
<td>• 1 - accept RIP Version 1 packets.</td>
</tr>
<tr>
<td></td>
<td>• 2 - accept RIP Version 2 packets.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example specifies that interface serial0 receive RIP version 2.

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

**Systems**  P550/P550R/P880/P882
ip rip send version

**Command Mode**  Interface

**Description**  Specifies 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.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip rip send version [1] [2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip rip send version</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>send version</td>
<td>The version of the RIP packets sent out the interface.</td>
</tr>
<tr>
<td></td>
<td>• 1 - send RIP Version 1 packets.</td>
</tr>
<tr>
<td></td>
<td>• 2 - send RIP Version 2 packets.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example specifies that interface serial0 send RIP version 2.

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

**Systems**  P550/P550R/P880/P882
**ip rip send-receive-mode**

**Command Mode**  Interface

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

**Syntax**

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

**Table 10-7. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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**  The following example sets that rip send-receive mode on interface serial0 to listen-only.

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

**Systems**  P550/P550R/P880/P882
neighbor

Command Mode  Router-RIP

Description  Defines 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.

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.

Syntax

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-address</td>
<td>IP address of a peer router with which routing information will be exchanged.</td>
</tr>
</tbody>
</table>

Sample Output  The following 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

Systems  P550/P550R/P880/P882
network

Command Mode  Router-RIP

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

Syntax

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

**Table 10-9. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-address</td>
<td>IP address of the network of directly connected networks.</td>
</tr>
<tr>
<td>subnet-mask</td>
<td>- mask of the network(s) on which RIP should run.</td>
</tr>
</tbody>
</table>

Sample Output  The following 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

Systems  P550/P550R/P880/P882
output-delay

Command Mode  IP-RIP

Description  Specifies 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).

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>output-delay &lt;delay&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] output-delay</td>
</tr>
</tbody>
</table>

Table 10-10. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>delay</td>
<td>The delay between packets in a multiple-packet RIP update. The range is 8 to 50 milliseconds.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the interpacket delay for RIP updates to 10 seconds.

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

Systems  P550/P550R/P880/P882
router rip

Command Mode  Configure

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>router rip</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] router rip</td>
</tr>
</tbody>
</table>

Sample Output  The following configures RIP on the switch.

Cajun(configure router:rip)# router rip

Systems  P550/P550R/P880/P882
timers basic

Command Mode Router-RIP

Description Adjusts 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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>timers basic &lt;update&gt; &lt;invalid&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] timers basic</td>
</tr>
</tbody>
</table>

Table 10-11. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>update</td>
<td>Rate, in seconds, updates are sent. This is the fundamental timing parameter of the routing protocol.</td>
</tr>
<tr>
<td>invalid</td>
<td>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.</td>
</tr>
</tbody>
</table>

Sample Output The following example sets the update value to 60 seconds.

Cajun(configure router:rip)# timers basic 60

Systems P550/P550R/P880/P882
triggered updates

Command Mode Router-RIP

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>triggered updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] triggered updates</td>
</tr>
</tbody>
</table>

Sample Output The following example globally enables the triggered updates function.

Cajun(configure router:rip)# triggered updates

Systems P550/P550R/P880/P882
show ip rip statistics

**Command Mode**  User

**Description**  Displays RIP interface statistics.

**Syntax**

| To View:          | show ip rip statistics |

**Sample Output**  IP interface statistics on interface 3.

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

**Systems**  P550/P550R/P880/P882
11  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
Chapter 11

- 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  Deletes 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.

Syntax

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

Table 11-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>{network</td>
<td>default</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td>• default - deletes the default route from the routing table.</td>
</tr>
<tr>
<td></td>
<td>• * - Deletes all routes in the routing table.</td>
</tr>
</tbody>
</table>

Sample Output  The following example clears the entry for network 5 from the IPX routing table.

    Cajun(configure)# clear ip route 5

Systems  P550/P550R/P880/P882
clear ipx service

Command Mode  Configure

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

Syntax

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

Table 11-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>{service-type service-name</td>
<td>Delete services learned via the SAP protocol from the IPX service table.</td>
</tr>
<tr>
<td></td>
<td>• service-type - The type number of the service. The range is 0-FFFF.</td>
</tr>
<tr>
<td></td>
<td>• service-name - The name of the service - the length is 1 to 47 bytes.</td>
</tr>
<tr>
<td></td>
<td>• * - Deletes all services from the routing table.</td>
</tr>
</tbody>
</table>

Sample Output  The following 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  Advertises only the default RIP route. The no form of this command advertises the default of all known routes out the interface.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx advertise-default-route-only</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx advertise-default-route-only</td>
</tr>
</tbody>
</table>

Sample Output  The following example advertises the default RIP

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

Systems  P550/P550R/P880/P882
ipx default-route

Command Mode Configure

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx default-route</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx default-route</td>
</tr>
</tbody>
</table>

Sample Output The following example forwards all packets for the ipx default route.

Cajun(configure)# ipx default-route

Systems P550/P550R/P880/P882
ipx delay

Command Mode: Interface

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

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx delay &lt;ticks&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx delay &lt;ticks&gt;</td>
</tr>
</tbody>
</table>

Table 11-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ticks</td>
<td>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.</td>
</tr>
</tbody>
</table>

Sample Output: The following example sets the ticks for interface serial 0 to 20000.

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

Systems: P550/P550R/P880/P882
Chapter 11

ipx down

Command Mode  Interface

Description  Administratively shuts down an IPX network. The no form restarts the network. The default state is disabled.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx down</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx down</td>
</tr>
</tbody>
</table>

Sample Output  The following example shuts down the IPX network on interface serial 0.

Cajun(config-if:serial0)# ipx down

Systems  P550/P550R/P880/P882
**ipx gns-reply-disable**

**Command Mode** Interface

**Description** Disables the sending of replies to IPX Get Nearest Server (GNS) queries. The **no** form restores the default state of **enabled**.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx gns-reply-disable</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx gns-reply-disable</td>
</tr>
</tbody>
</table>

**Sample Output** The following example disables the sending of replies to the IPX GNS on interface serial 0.

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

**Systems** P550/P550R/P880/P882
**ipx gns-response-delay**

**Command Mode** Interface

**Description** Sets the delay time (milliseconds) when responding to IPX GNS requests. The **no** form of this command restores the default. The default is zero, which indicates no delay.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx gns-response-delay &lt;milliseconds&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx gns-response-delay &lt;milliseconds&gt;</td>
</tr>
</tbody>
</table>

**Table 11-4. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>milliseconds</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Sample Output** The following example sets the delay time for interface serial 0 to respond to IPX GNS requests to 200 milliseconds.

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

**Systems** P550/P550R/P880/P882
ipx network

Command Mode  Interface

Description  Enables 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.

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 11-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>network</td>
<td>The IPX network address. This is an eight-digit hexadecimal number that uniquely identifies a network cable segment. The range is 1 to FFFFFFFF.</td>
</tr>
</tbody>
</table>
| 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  The following example enables IPX routing on network 2 on interface serial 0 and sets encapsulation to SNAP.

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

Systems  P550/P550R/P880/P882
ipx output-rip-delay

Command Mode  Interface

Description  Sets 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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx output-rip-delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx output-rip-delay</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the interpacket delay for IPX output rip updates sent out on interface serial 0.

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

Systems  P550/P550R/P880/P882
ipx output-sap-delay

Command Mode  Interface

Description  Sets 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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx output-sap-delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx output-sap-delay</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the interpacket delay for SAP on interface serial 0.

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

Systems  P550/P550R/P880/P882
ipx rip

Command Mode Interface

Description Enables 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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx rip</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx rip</td>
</tr>
</tbody>
</table>

Sample Output The following example enables IPX RIP on interface serial 0.

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

Systems P550/P550R/P880/P882
ipx rip-filter

Command Mode  Interface

Description  Controls 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.

Syntax

| To Enable: | 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 11-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>precedence</td>
<td>Indicates 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.</td>
</tr>
<tr>
<td>start-network</td>
<td>The first IPX network address this filter should match. The range is 0-FFFFFFFF.</td>
</tr>
<tr>
<td>end-network</td>
<td>The last IPX network address this filter should match. The range is 0-FFFFFFFF.</td>
</tr>
<tr>
<td>outbound</td>
<td>inbound</td>
</tr>
<tr>
<td>filter</td>
<td>allow</td>
</tr>
<tr>
<td>filter-ticks</td>
<td>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.</td>
</tr>
<tr>
<td>filter-hops</td>
<td>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.</td>
</tr>
</tbody>
</table>
Sample Output

The following example:

- sets the IPX RIP filter precedence to 5
- sets the start-network to 2
- sets the end-network to 3
- adds the network to the routing table (allow)
- applies filters to RIP packets in both directions (both)
- sets the filter ticks to 10000
- sets the filter hops to 5

on interface serial 0.

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

Systems

P550/P550R/P880/P882
**ipx rip-max-packetsize**

**Command Mode** Interface

**Description** Configures 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.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx rip-max-packetsize</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx rip-max-packetsize</td>
</tr>
</tbody>
</table>

**Sample Output** The following example enables the maximum packet size of RIP updates on interface serial 0.

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

**Systems** P550/P550R/P880/P882
ipx rip-multiplier

Command Mode Interface

Description
Sets 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.

Syntax

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

Table 11-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>multiplier</td>
<td>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.</td>
</tr>
</tbody>
</table>

Sample Output
The following example sets the IPX RIP age-out interval to 40.

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

Systems P550/P550R/P880/P882
Chapter 11

ipx route

Command Mode Configure

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

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 11-8. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>network</td>
<td>default</td>
</tr>
<tr>
<td></td>
<td>• default - creates a static entry for the default-route.</td>
</tr>
<tr>
<td>network next-hop-node</td>
<td>Network number and node address of the next hop to the server.</td>
</tr>
<tr>
<td></td>
<td>• 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).</td>
</tr>
<tr>
<td>ticks</td>
<td>Number of IBM clock ticks of delay to the network for which you are establishing a static route. The range is 1 to 32000.</td>
</tr>
<tr>
<td>hops</td>
<td>Number of hops to the network for which you are establishing a static route. The range is 1 to 16.</td>
</tr>
</tbody>
</table>

Sample Output The following example adds a static route to the routing table.

Cajun(configure)# ipx route 50
100.02:e0:3b:00:45:63

Systems P550/550R/P880/P882
**ipx router**

**Command Mode**  Configure

**Description**  Enables the IPX RIP and IPX SAP protocols on a global basis. Use the \texttt{no} form of the command to disable the protocols. The default state is \texttt{enabled}.

*\textbf{Note:}* The Cisco command also takes \texttt{eigrp} and \texttt{nlsp} as router types.

**Syntax**

| To Enable: | ipx router \{rip|sap\} |
|------------|------------------------|
| To Disable:| [no] ipx router \{rip|sap\} |

**Table 11-9. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>rip</td>
<td>sap</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example disables IPX RIP on a global basis.

\[\text{Cajun(configure)} \# \text{no ipx router rip}\]

**Systems**  P550/P550R/P880/P882
**ipx routing**

**Command Mode** Configure

**Description** Enables IPX routing. The **no** form of this command disables IPX routing. The default state is **disabled**.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>[no] ipx routing</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>ipx routing</td>
</tr>
</tbody>
</table>

**Sample Output** The following example enables IPX routing.

```
Cajun(configure)# ipx routing
```

**Systems** P550/P550R/P880/P882
ipx sap

Command Mode  Interface

Description  Enables IPX SAP on an interface. The **no** form of this command disables IPX SAP on an interface. Default interface setting is IPX SAP **enabled**.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx sap</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx sap</td>
</tr>
</tbody>
</table>

Sample Output  The following example disables IPX SAP on interface serial 0.

```
Cajun(config-if:serial0)# no ipx sap
```

Systems  P550/P550R/P880/P882
ipx sap-max-packetsize

Command Mode Interface

Description Sets the maximum packet size of 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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx sap-max-packetsize</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx sap-max-packetsize</td>
</tr>
</tbody>
</table>

Sample Output The following example sets the SAP updates received by interface serial 0 to the maximum packet size.

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

Systems P550/P550R/P880/P882
ipx sap-multiplier

Command Mode  Interface

Description  Sets the interval at which a network or server’s SAP entry ages out. The no form of this command restores the default, which is three times the SAP update interval.

Syntax

| To Enable: | ipx sap-multiplier <multiplier> |
| To Disable: | [no] ipx sap-multiplier <multiplier> |

Table 11-10. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>multiplier</td>
<td>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.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the interval at which the SAP entry goes out to 20 on interface serial 0.

Cajun(config-if:serial0)# ipx sap-multiplier 20

Systems  P550/P550R/P880/P882
**ipx sap-name-filter**

**Command Mode** Interface

**Description** Specifies 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.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>precedence</td>
<td>Indicates 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 <strong>0-9999</strong>.</td>
</tr>
<tr>
<td>filter-name</td>
<td>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 <strong>1 to 63</strong> bytes are allowed.</td>
</tr>
<tr>
<td>service-type</td>
<td>The IPX service type (hexadecimal). This is between <strong>0</strong> and <strong>FFFF</strong>, where FFFF matches all service types.</td>
</tr>
<tr>
<td>outbound</td>
<td>inbound</td>
</tr>
<tr>
<td>outbound</td>
<td>- Apply filter to SAP packets sent out the interface.</td>
</tr>
<tr>
<td>inbound</td>
<td>- Apply filter to SAP packets received on the interface.</td>
</tr>
<tr>
<td>both</td>
<td>- Apply filter to SAP packets in both directions.</td>
</tr>
</tbody>
</table>
The following example:

- sets the precedence to 2
- sets the filter-name to netbios
- sets the service type to 1
- applies filters to SAP packets in both directions (both)
- adds the service to the service table (allow)
- sets the filter hops to 4

on interface serial 0.

```
Cajun(config-if:serial0)# ipx sap-name-filter
2 netbios 1 both allow 4
```

**Systems**

P550/P550R/P880/P882
ipx sap-network-filter

Command Mode Interface

Description Specifies 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.

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 11-12. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>precedence</td>
<td>Indicates 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.</td>
</tr>
<tr>
<td>filter-network</td>
<td>The network of the service that this filter matches. The range is 0 - FFFFFFFF where, FFFFFFFF matches all networks.</td>
</tr>
<tr>
<td>service-type</td>
<td>The type of the IPX SAP service, in hexadecimal. The range is 0 - FFFF where, FFFF matches all service types.</td>
</tr>
<tr>
<td>outbound</td>
<td>inbound</td>
</tr>
<tr>
<td>filter</td>
<td>allow</td>
</tr>
<tr>
<td>filter-hops</td>
<td>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.</td>
</tr>
</tbody>
</table>
Sample Output

The following example:

- sets the SAP name filter precedence to 1
- sets the filter-network to 3
- sets the service-type to 2
- applies filters to SAP packets in both directions (both)
- adds the service to the service table (allow)
- sets the filter hops to 4

on interface serial 0.

Cajun(config-if:serial0)# ipx sap-network-filter 1 3 2 both allow 4

Systems
P550/P550R/P880/P882
ipx send-receive-mode

Command Mode

Interface

Description
Sets the RIP/SAP send and receive characteristics of the IPX interface. The no form of this command restores the default, which is talk-listen.

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 11-13. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>rip</td>
<td>sap</td>
</tr>
</tbody>
</table>

- **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

The following example sets the RIP send-receive characteristic for interface serial 0 to talk-listen.

```
Cajun(config-if:serial0)# ipx send-receive-mode rip talk-listen
```

Systems

P550R/P880/P882
**ipx send-triggered-updates**

**Command Mode**  Interface

**Description**  Sends RIP/SAP triggered updates on the IPX interface. Use the *no* form of this command to disable triggered updates. The default state is *enabled*.

**Syntax**

| To Enable:       | ipx send-triggered-updates {rip|sap} |
|------------------|-------------------------------------|
| To Disable:      | [no] ipx send-triggered-updates {rip|sap} |

**Table 11-14. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>rip</td>
<td>sap</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example sends RIP triggered updates to interface serial 0.

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

**Systems**  P550R/P880/P882
**ipx service**

**Command Mode**  Configure

**Description**  Specifies static 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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>Command Syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipx service &lt;service-type&gt; &lt;service-name&gt; &lt;network&gt; &lt;node&gt; &lt;socket&gt; &lt;network.next-hop-node&gt; &lt;hops&gt;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To Disable:</th>
<th>Command Syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>[no] ipx service &lt;service-type&gt; &lt;service-name&gt; &lt;network&gt; &lt;node&gt; &lt;socket&gt; &lt;network.next-hop-node&gt; &lt;hops&gt;</td>
<td></td>
</tr>
</tbody>
</table>

**Table 11-15. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>service-type</td>
<td>The number of the type of the service. The range is <strong>0-FFFF</strong>.</td>
</tr>
<tr>
<td>service-name</td>
<td>Name of the server that provides the service. The range is <strong>1 to 47</strong> bytes long.</td>
</tr>
<tr>
<td>network, node</td>
<td>Network number and node address of the server. <em>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.</em> <em>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).</em></td>
</tr>
<tr>
<td>socket</td>
<td>The socket number for this service. The range is <strong>0 - FFFF</strong></td>
</tr>
<tr>
<td>network.next-hop-node</td>
<td>Network number and node address of the next hop to the server. <em>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).</em></td>
</tr>
<tr>
<td>hops</td>
<td>Number of hops to the server. The range is <strong>1-16</strong>.</td>
</tr>
</tbody>
</table>
Sample Output  
The following 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

Systems  
P550R/P880/P882
ipx type-20-propagation

Command Mode: Interface

Description: Specifies 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**.

Syntax

| To Enable:            | ipx type-20-propagation {both|inbound|outbound|disabled} |
|-----------------------|----------------------------------------------------------|
| To Disable:           | [no] ipx type-20-propagation                            |

**Table 11-16. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>both</td>
<td>inbound</td>
</tr>
<tr>
<td></td>
<td>• <strong>inbound</strong> - The interface only accepts type 20 broadcast packets.</td>
</tr>
<tr>
<td></td>
<td>• <strong>outbound</strong> - The interface only forwards type 20 propagation broadcast packets to other network segments.</td>
</tr>
<tr>
<td></td>
<td>• <strong>disabled</strong> - The interface does not accept or forward type 20 propagation broadcast packets.</td>
</tr>
</tbody>
</table>

Sample Output: The following example forwards type 20 propagation broadcast packets to other network segments on interface serial 0.

```
Cajun(config-if:serial0)# ipx type-20-propagation outbound
```

Systems: P550R/P880/P882
**ipx update interval**

**Command Mode** Interface

**Description** Adjusts the RIP or SAP update interval. The **no** form of this command restores the default, of 60 seconds.

**Syntax**

| To Enable: | ipx update interval {rip|sap} <seconds> |
|------------|-------------------------------------|
| To Disable: | [no] ipx update interval |

**Table 11-17. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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** The following example modifies the RIP update interval to 1000 seconds.

Cajun(config-if:serial0)# ipx update interval rip 1000

**Systems** P550R/P880/P882
ipx vlan

Command Mode  Interface

Description  Specifies the VLAN on which the IPX interface operates. The no form of this command restores the IPX interface to the discard VLAN.

Syntax

| To Enable: | ipx vlan <vlan-id>|name <vlan-name>|
| To Disable: | [no] ipx vlan <vlan-id>|name <vlan-name>|

Table 11-18. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-id</td>
<td>The VLAN ID of the VLAN.</td>
</tr>
<tr>
<td>name</td>
<td>&lt;vlan-name&gt; - The name of the VLAN</td>
</tr>
</tbody>
</table>

Sample Output  The following 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
```

Systems  P550R/P880/P882
show ipx cache

Command Mode  User

Description  Displays the contents of the IPX fast-switching cache.

Syntax

To View:  show ipx cache

Sample Output  The following is an example of the output that displays after you enter the show ipx cache command.

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
.
.
.

Systems  P550R/P880/P882
**Chapter 11**

### show ipx interface

**Command Mode**  
User

**Description**  
Displays the details of IPX interfaces configured in the IOS software and the parameters configured on each interface.

**Syntax**

```
To View: show ipx interface [intf-name]
```

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>intf-name</td>
<td>The name of the interface to show.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following is an example of the output that displays after you enter the `show ipx interface` command.

```
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
```

**Systems**  
P550R/P880/P882
show ipx route

Command Mode   User

Description   Displays the contents of the IPX Routing Table.

Syntax

To View: show ipx route [{<network>|default}]

Table 11-20. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>network</td>
<td>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.</td>
</tr>
<tr>
<td>default</td>
<td>Displays the default route. This is equivalent to specifying a value of FFFFFFFFE for the argument network.</td>
</tr>
</tbody>
</table>

Sample Output   The followis is an example of the output that displays after you enter the show ipx route command.

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 FFFFFFFFvia 100.02:e0:3b:00:45:63, 100

Systems   P550R/P880/P882
show ipx services

Command Mode    User

Description    Lists the IPX services added via static configuration or discovered through Service Advertising Protocol (SAP) advertisements.

Syntax

To View: show ipx services [unsorted][sorted[name|net|type]]

Table 11-21. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>unsorted</td>
<td>Does not sort entries when displaying IPX services.</td>
</tr>
<tr>
<td>sorted</td>
<td>Sorts the display of IPX services according to the keyword that follows.</td>
</tr>
<tr>
<td>name</td>
<td>Displays the IPX services alphabetically by server name.</td>
</tr>
<tr>
<td>net</td>
<td>Displays the IPX services numerically by network number.</td>
</tr>
<tr>
<td>type</td>
<td>Displays the IPX services numerically by SAP service type. This is the default.</td>
</tr>
</tbody>
</table>

Sample Output    The following is an example of the output that displays after you enter the show ipx service command.

Cajun> show ipx service
Codes: S - Static, P - Periodic
4 Total IPX services.
CodeType Name Address      Route   Hops
Ift
S4FileServer2   60.00:00:00:00:00:01.0455   0/0     1
100
P4SQA136112214.00:00:00:00:00:01.0451 2/2     2
10005129
P26b TREE1_________36112214.00:00:00:00:00:01.0005
2/2     2
10005129

Systems    P550R/P880/P882
show ipx traffic

Command Mode  User

Description  Displays the number and type of IPX packets transmitted and received.

Syntax

To View: show ipx traffic

Sample Output  The following is an example of the output that displays after you enter the show ipx traffic command.

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

Systems  P550R/P880/P882
12 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 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
Chapter 12

ip multicast route-cache aging

Command Mode Configure

Description Enables aging of IP routes in the IP forwarding cache. The no form of this command disables aging. The default state is enabled.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip multicast route-cache aging</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip multicast route-cache aging</td>
</tr>
</tbody>
</table>

Sample Output The following example enables aging of IP routes in the IP forwarding cache.

cajun (configure)# ip multicast route-cache aging

Systems P550R/P880/P882
**ip multicast route-cache hash-depth**

**Command Mode**  Configure

**Description**  Configures the ip multicast route cache hashing depth. The no form of this command restores the default, which is hash-12.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>hash-8</td>
<td>hash-10</td>
</tr>
<tr>
<td></td>
<td>• <strong>Hash-8</strong> - An 8-bit memory bucket used to store information about the source or destination protocol address (or both).</td>
</tr>
<tr>
<td></td>
<td>• <strong>Hash-10</strong> - A 10-bit memory bucket used to store information about the source or destination protocol address (or both).</td>
</tr>
<tr>
<td></td>
<td>• <strong>Hash-12</strong> - A 12-bit memory bucket used to store information about the source or destination protocol address (or both).</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example sets the ip multicast route-cache hash depth to 12.

```
Cajun>cache (configure)# ip multicast route-cache hash-depth hash-12
```

**Systems**  P550R/P880/P882
Chapter 12

ip multicast route-cache hash-mode

Command Mode Configure

Description Enable or disables the ip multicast route cache hashing mode. The \texttt{no} form of this command restores the default, which is \texttt{sa-da}.

Syntax

| To Enable:          | \texttt{ip multicast route-cache hash-mode \{da-only|sa-da\}} |
|---------------------|----------------------------------------------------------|
| To Disable:         | [no] \texttt{ip multicast route-cache hash-mode}          |

Table 12-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>da-only</td>
<td>sa-da</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample Output The following example enables IP multicast route cache hash mode for the source address/destination address.

\begin{verbatim}
Cajun(configure)# ip multicast route-cache hash-mode sa-da
\end{verbatim}

Systems P550/P550R/P880/P882
**ip multicast route-cache max-size**

**Command Mode**  Configure

**Description**  Sets 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.

**Syntax**

<table>
<thead>
<tr>
<th><strong>To Enable:</strong></th>
<th>ip multicast route-cache max-size &lt;multicast-max-size&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To Disable:</strong></td>
<td>[no] ip multicast route-cache max-size</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>multicast-max-size</td>
<td>The maximum number of entries allowed in the multicast route cache.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example enables IP multicast route cache max size of 10000 entries.

```
cajun(configure)# ip multicast route-cache max-size 10000
```

**Systems**  P550R/P880/P882
**ip multicast route-cache update-timeout**

**Command Mode**  Configure

**Description**  Sets the period of cache invalidation due to aging. The **no** form of this command disables aging and restores the default of **120** seconds.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip multicast route-cache update-timeout &lt;ip-multicast-period&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip multicast route-cache update-timeout</td>
</tr>
</tbody>
</table>

**Table 12-4. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-multicast-period</td>
<td>The period, in seconds, that route cache entries are invalidated.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example sets the IP multicast route cache aging invalidation period to 200 seconds.

```plaintext
cajun(configure)# ip multicast route-cache update-timeout 200
```

**Systems**  P550/P550R/P880/P882
ip unicast route-cache aging

**Command Mode**  Configure

**Description**  Enables aging of IP unicast route cache entries. The **no** form of this command disables aging. The default state is **enabled**.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip unicast route-cache aging</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip unicast route-cache aging</td>
</tr>
</tbody>
</table>

**Sample Output**  The following 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
```

**Systems**  P550R/P880/P882
**ip unicast route-cache hash-depth**

**Command Mode**  Configure

**Description**  Configures the ip unicast route cache hashing depth. The **no** form of this command restores the default, which is **hash-12**.

**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 12-5. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>hash-8</td>
<td>hash-10</td>
</tr>
<tr>
<td></td>
<td>The hash depth for IP unicast. Choices include:</td>
</tr>
<tr>
<td></td>
<td><strong>Hash-8</strong> - An 8-bit memory bucket used to store information about the source or destination protocol address (or both).</td>
</tr>
<tr>
<td></td>
<td><strong>Hash-10</strong> - A 10-bit memory bucket used to store information about the source or destination protocol address (or both).</td>
</tr>
<tr>
<td></td>
<td><strong>Hash-12</strong> - A 12-bit memory bucket used to store information about the source or destination protocol address (or both).</td>
</tr>
</tbody>
</table>

**Sample Output**  The following 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
```

**Systems**  P550R/P880/P882
**ip unicast route-cache hash-mode**

**Command Mode**  Configure

**Description**  Enable or disables the ip unicast route cache hashing mode. The **no** form of this command restores the default, which is **da-only**.

**Syntax**

| To Enable: | ip unicast route-cache hash-mode {da-only|sa-da} |
|-------------|--------------------------------------------------|
| To Disable: | [no] ip unicast route-cache hash-mode             |

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>da-only</td>
<td>sa-da</td>
</tr>
<tr>
<td></td>
<td>• da-only - Destination address only.</td>
</tr>
<tr>
<td></td>
<td>• sa-da - Source Address-Destination Address.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following 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
```

**Systems**  P550R/P880/P882
ip unicast route-cache max-size

Command Mode  Configure

Description  Sets 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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip unicast route-cache max-size &lt;unicast-max-size&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip unicast route-cache max-size</td>
</tr>
</tbody>
</table>

Table 12-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>unicast-max-size</td>
<td>Maximum number of entries allowed in the unicast route cache.</td>
</tr>
</tbody>
</table>

Sample Output  The following 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

Systems  P550R/P880/P882
ip unicast route-cache update-timeout

**Command Mode**  
Configure

**Description**  
Enable sand disables 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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip unicast route-cache update-timeout &lt;ip-unicast-period&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip unicast route-cache update-timeout</td>
</tr>
</tbody>
</table>

**Table 12-8. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-unicast-period</td>
<td>The period, in seconds, that route cache entries are invalidated. The range is 20-360 seconds. A value of zero disables this feature.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example enables the ip unicast route-cache update-timeout command and sets it to 60 seconds.

```
Cajun(configure)# ip unicast route-cache
update-timeout 60
```

**Systems**  
P550R/P880/P882
**ipx route-cache aging**

**Command Mode**  Configure

**Description**  Enables and disables IPX route cache aging. The **no** form of this command disables aging. The default state is **enabled**.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx route-cache aging</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx route-cache aging</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example disables ipx route cache aging.

```
Cajun(configure)# ipx route-cache aging disabled
```

**Systems**  P550R/P880/P882
ipx route-cache hash-depth

Command Mode Configure

Description Enable sand disables the IPX route cache hashing depth. The no form of this command restores the default, which is hash-12.

Syntax

<table>
<thead>
<tr>
<th>Mode</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Enable</td>
<td>ipx route-cache hash-depth {hash-8</td>
</tr>
<tr>
<td>To Disable</td>
<td>[no] ipx route-cache hash-depth</td>
</tr>
</tbody>
</table>

Table 12-9. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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 The following example sets the route cache hash-depth to hash-10.

Cajun(configure)# ipx route-cache hash-depth hash-10

Systems P550R/P880/P882
ipx route-cache hash-mode

Command Mode  Configure

Description  Enable and disables the ip unicast route cache hashing mode. The no form of this command restores the default, which is da-only.

Syntax

| To Enable:         | ipx route-cache hash-mode {da-only|sa-da} |
|--------------------|-------------------------------------------|
| To Disable:        | [no] ipx route-cache hash-mode            |

Table 12-10. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>da-only</td>
<td>sa-da</td>
</tr>
<tr>
<td></td>
<td>• da-only - destination address only.</td>
</tr>
<tr>
<td></td>
<td>• sa-da - source and destination addresses.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets ipx route cache hash mode to sa-da.

    Cajun(configure)# ipx route-cache hash-mode sa-da

Systems  P550R/P880/P882
**ipx route-cache max-size**

**Command Mode**  
Configure

**Description**  
Allows you to enable and set a maximum limit on the number of entries in the ipx route cache. The **no** form of this command restores the default, which sets IPX route-cache max-size to the default of **15000** entries.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx route-cache max-size &lt;ipx-max-size&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx route-cache max-size</td>
</tr>
</tbody>
</table>

**Table 12-11. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipx-max-size</td>
<td>Maximum number of entries allowed in IPX route cache.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example sets the maximum route cache size to 12000 entries.

```
Cajun(configure)# ipx route-cache max-size 12000
```

**Systems**  
P550R/P880/P882
ipx route-cache update-timeout

Command Mode  Configure

Description  Allows you to enable and set 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**.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ipx route-cache update-timeout &lt;ipx-period&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ipx route-cache update-timeout</td>
</tr>
</tbody>
</table>

Table 12-12. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipx-period</td>
<td>The period, in seconds, that route cache entries are invalidated.</td>
</tr>
</tbody>
</table>

Sample Output  The following example sets the update timeout period to 3 minutes.

Cajun(configure)# ipx route-cache update-timeout 180

Systems  P550R/P880/P882
show ip multicast cache

Command Mode User

Description Displays the IP multicast L3 forwarding cache entries.

Syntax

To View: show ip multicast cache

Sample Output The following examples shows a typical IP multicast cache display:

    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 2
System Supported: P550R

Systems P550R/P880/P882
show ip unicast cache

Command Mode       User

Description       Displays the IP unicast L3 forwarding cache entries.

Syntax

To View: show ip unicast cache

Sample Output       The following example shows a typical IP unicast cache display:

    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
    .
    .
    .

Systems           P550R/P880/P882
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  Configure

Description  Clears IGMP snooping statistics.

Syntax

<table>
<thead>
<tr>
<th>To Clear:</th>
<th>clear igmp-snooping statistics</th>
</tr>
</thead>
</table>

Sample Output  The following example clears igmp snooping statistics.

```
Cajun(configure)# clear igmp snooping statistics
```

Systems  P550R/P880/P882
clear lgmp client statistics

**Command Mode**  Configure

**Description**  Clears the LGMP client global or per VLAN statistics. Excluding parameters clears the global counters that represent all LGMP servers.

**Syntax**

<table>
<thead>
<tr>
<th>To Clear:</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear lgmp client statistics [vlan {all</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan</td>
<td>The keyword for per VLAN commands. \n</td>
</tr>
<tr>
<td>name</td>
<td>The keyword for the VLAN name. \n</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example clears all lgmp client statistics.

```
Cajun(configure)# clear lgmp client statistics
Global statistics cleared
```

**Systems**  P550R/P880/P882
**set igmp-snooping**

**Command Mode**  Configure

**Description**  Enables or disables IGMP snooping. The default state of IGMP snooping is disabled.

**Syntax**

<table>
<thead>
<tr>
<th><strong>To Enable:</strong></th>
<th><strong>set igmp-snooping {enable}</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To Disable:</strong></td>
<td><strong>set igmp-snooping {disable}</strong></td>
</tr>
</tbody>
</table>

**Table 13-2. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example enables IGMP snooping.

```
Cajun(configure)# set igmp-snooping enable
```

**Systems**  P550R/P880/P882
set lgmp server

Command Mode Configure

Description Enables or disables the LGMP server. The LGMP server is disabled by default.

Syntax

<table>
<thead>
<tr>
<th><strong>To Enable:</strong></th>
<th>set lgmp server enable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To Disable:</strong></td>
<td>set lgmp server disable</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

Sample Output

The following example disables lgmp server

```
Cajun(configure)# set lgmp server disable
```

Systems

P550R/P880/P882
**set lgmp server priority**

**Command Mode**  Configure

**Description**  Sets the LGMP server ID priority. Excluding the parameter sets the priority to its default of 128.

**Syntax**

```
To Set:  set lgmp server priority [<server-priority>]
```

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>server-priority</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example sets the LGMP server priority to 140.

```
Cajun(configure)# set lgmp server priority to 140
LGMP Server ID Priority successfully set to 140
```

**Systems**  P550R/P880/P882
set lgmp server proxy

Command Mode Configure

Description Enables or disables 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.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>set lgmp server proxy enable</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>set lgmp server proxy disable</td>
</tr>
</tbody>
</table>

Table 13-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Enable the LGMP server proxy mode.</td>
</tr>
<tr>
<td>disable</td>
<td>Disable the LGMP server proxy mode (default)</td>
</tr>
</tbody>
</table>

Sample Output The following example enables lgmp server proxy.

Cajun(configure)# set lgmp server proxy enable

LGMP Server Proxy Mode successfully set to enable

Systems P550R/P880/P882
### set lgmp server robust-variable

**Command Mode**  
Configure

**Description**  
Sets the LGMP server robustness variable. Omitting the parameter sets the robustness variable to its default value of 2.

**Syntax**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>rv-val</td>
<td>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.</td>
</tr>
</tbody>
</table>

*To Enable:*  

`set lgmp server robust-variable [rv-val]`

**Sample Output**  
The following example sets the robust variable to 4.

Cajun(configure)# set lgmp server robust-variable 4

LGMP Server Robustness Variable successfully set to 4

**Systems**  
P550R/P880/P882
**set lgmp server router-report-time**

**Command Mode**  Configure

**Description**  Sets the LGMP server router report time. Omitting the parameter sets the router report time to its default time of 125 seconds.

**Syntax**

```plaintext
To Enable:  set lgmp server router-report-time [<rrt-seconds>]
```

**Table 13-7. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>rrt-seconds</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example sets the router report time to 150 seconds.

```plaintext
Cajun(configure)# set lgmp server router-report-time 150
LGMP Server Router Report Time successfully set to 150
```

**Systems**  P550R/P880/P882
show igmp-snooping statistics

Command Mode User

Description Displays IGMP snooping configuration and statistics. The default state is disabled.

Syntax

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>detailed</td>
<td>Display detailed igmp-snooping statistics.</td>
</tr>
</tbody>
</table>

To Enable: show igmp-snooping statistics [detailed]

Table 13-8. Parameters, Keywords, Arguments

Sample Output The following example shows the igmp-snooping statistics:

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

Systems P550R/P880/P882
show lgmp server

Command Mode User

Description Displays current LGMP client and server configuration information or statistics. Omitting parameters after the statistics keyword displays global LGMP server statistics

Syntax

```
To Enable: show lgmp client {config|statistics [vlan {all|<vlan-id>|name <vlan-name>}]}}
```

Table 13-9. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>config</td>
<td>statistics</td>
</tr>
<tr>
<td>vlan</td>
<td>The VLAN(s) associated with the LGMP server.</td>
</tr>
<tr>
<td>all</td>
<td>all</td>
</tr>
<tr>
<td>name</td>
<td>name vlan-name - the VLAN name.</td>
</tr>
<tr>
<td>server</td>
<td>LGMP server configuration or statistics.</td>
</tr>
</tbody>
</table>
Sample Output

The following example shows the LGMP client statistics:

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
- Existing Router Ports Removed ---- 0

**Systems:** P550R/P880/P882
Overview

This chapter describes:

- LDAP debug
- LDAP producer-signal
- LDAP search-base
- LDAP server-primary
- LDAP server secondary
- show LDAP
Chapter 14

**Idap debug**

**Command Mode**  Diag-Mode

**Description**  Sets the debug level of the LDAP software.

**Syntax**

```
To Enable:  Idap debug <debug-level>
```

**Sample Output**  The following example set the debug level of the LDAP software to

**Systems**  P550R/P880/P882
Idap producer-signal

Command Mode   Diag-Mode

Description   Sets the producer signal. The producer signal default is 0 and can either be set directly, or by preceding this command with no.

Syntax

| To Enable: | ldap producer-signal <producer-signal> |
| To Disable: | [no] ldap producer-signal <producer-signal> |

Table 14-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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. |

Sample Output   The following example sets the producer signal to 5.

    cajun> ldap producer-signal 5

Systems   P550R/P880/P882
**Idap search-base**

**Command Mode**  Configure

**Description**  Defines 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 = Avaya.**

**Command Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ldap search-base &lt;search-base-dn&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ldap search-base &lt;search-base-dn&gt;</td>
</tr>
</tbody>
</table>

**Table 14-2. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>search-base-dn</td>
<td>The Distinguished Name (DN) that defines the start point of the search.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example set a the ldap search base to avaya.com.

```
Cajun(configure)# ldap search-base o
```

**Systems**  P550R/P880/P882
**ldap server-primary**

**Command Mode**  
Configure

**Description**  
Changes 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**.

**Syntax**

| To Enable: | ldap server primary <ip-addr>[<port-num>]|  
| To Disable: | [no] ldap server primary <ip-addr>[<port-num>] |

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-addr</td>
<td>The IP address of the primary LDAP server.</td>
</tr>
<tr>
<td>port-num</td>
<td>The port number of the primary LDAP server.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example sets the LDAP server’s primary IP address to 199.93.238.93.

```
Cajun(configure)# ldap server primary 199.93.238.93
```

**Systems**  
P550R/P880/P882
Idap server secondary

Command Mode Configure

Description Changes 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.

Syntax

| To Enable: | ldap server secondary <ip-addr> [<port-num>] |
| To Disable: | [no] ldap server secondary <ip-addr> [<port-num>] |

Table 14-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-addr</td>
<td>The IP address of the secondary LDAP server.</td>
</tr>
<tr>
<td>port-num</td>
<td>The port number of the secondary LDAP server.</td>
</tr>
</tbody>
</table>

Sample Output The following example changes the secondary ldap server’s IP address to 199.93.238.384.

Cajun(configure)# ldap server secondary
199.93.238.94 384

Systems P550R/P880/P882
show ldap

Command Mode  User

Description  Displays the current LDAP configuration information.

Syntax

To View: show ldap

Sample Output  The following example displays the LDAP configuration information.

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

Systems  P550R/P880/P882
15 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 15-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>start</td>
<td>system...</td>
</tr>
<tr>
<td></td>
<td>switch_fabric</td>
</tr>
</tbody>
</table>

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 15-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>start</td>
<td>system</td>
</tr>
</tbody>
</table>

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 15-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>128</td>
<td>512</td>
</tr>
</tbody>
</table>

Sample Output

This example specifies that 1024 messages can be stored in the router's history table.

Cajun(configure)# logging history-size 1024
Chapter 15

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 15-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>rip</td>
<td>ospf</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>32</td>
</tr>
</tbody>
</table>

Sample Output

This example sets the number of syslog messages 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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>To Disable:</th>
</tr>
</thead>
<tbody>
<tr>
<td>logging traps [ {start</td>
<td>system</td>
</tr>
</tbody>
</table>

Table 15-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>start</td>
<td>system...</td>
</tr>
<tr>
<td>switch_fabric</td>
<td>protocol</td>
</tr>
</tbody>
</table>

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 15-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>shutdown</td>
<td>Displays the contents of the shutdown log.</td>
</tr>
<tr>
<td>count</td>
<td>The number of log messages to display.</td>
</tr>
</tbody>
</table>

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
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0
110        3  00-Sep-15 12:15:22 Informative(20) 0
109        3  00-Sep-15 12:12:04 Informative(20) 0
99         3  00-Sep-11 08:45:53 Informative(20) 0
98         3  00-Sep-11 08:44:34 Informative(20) 0
97         3  00-Sep-11 08:44:03 Informative(20) 0

85 3 00-Sep-10 07:21:39
Informative(20) 0
.
.
.
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
Chapter 16

- 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 igmp 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 16-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>session-id</td>
<td>The number assigned to the Intelligent Multicast Session at creation. This number can be found using the &quot;show intelligent-multicast session&quot; command</td>
</tr>
<tr>
<td>mod-port-spec</td>
<td>The port specifier of the Intelligent Multicast Client port to be removed from configuration.</td>
</tr>
</tbody>
</table>

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 16-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>session-id</td>
<td>The number assigned to the Intelligent Multicast Session at creation. This number can be found using the &quot;show intelligent-multicast session&quot; command</td>
</tr>
<tr>
<td>p220-port-spec</td>
<td>The port specifier (for the Cajun P220 and P550) of the Intelligent Multicast Client port to be removed from configuration.</td>
</tr>
</tbody>
</table>

Sample Output

This example removes learned client ports from intelligent multicast.

        Cajun(configure)# clear intelligent-multipcast 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 16-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>session-id</td>
<td>A number assigned to the Multicast Session when it is created. This number can be found in the &quot;show intelligent-multicast session&quot; display.</td>
</tr>
</tbody>
</table>

Table 16-4. Parameters, Keywords, Arguments

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>group-address</td>
<td>The IP address of the multicast group.</td>
</tr>
<tr>
<td>mac-address</td>
<td>The MAC address associated with this entry:</td>
</tr>
<tr>
<td>vlan</td>
<td>The keyword for per VLAN commands.</td>
</tr>
<tr>
<td></td>
<td>• all</td>
</tr>
<tr>
<td></td>
<td>• vlan-name - The ID of the vlan. The keyword for the VLAN name.</td>
</tr>
<tr>
<td>port</td>
<td>The port in the multicast session. &lt;p220-port-spec&gt; specifies a particular port or a range of ports on a module.</td>
</tr>
</tbody>
</table>

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

```plaintext
Table 16-6.  Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>group-address</td>
<td>The IP address of the multicast group.</td>
</tr>
<tr>
<td>mac-address</td>
<td>The MAC address associated with this entry:</td>
</tr>
<tr>
<td>vlan</td>
<td>The keyword for per VLAN commands.</td>
</tr>
<tr>
<td>all</td>
<td>Remove all management router ports.  &lt;vlan-id&gt; is the</td>
</tr>
<tr>
<td></td>
<td>numerical ID of a specific VLAN.</td>
</tr>
<tr>
<td>name</td>
<td>The keyword for the VLAN name.  &lt;vlan-name&gt; is the ID</td>
</tr>
<tr>
<td></td>
<td>of the vlan.</td>
</tr>
</tbody>
</table>
```

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 16-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
</table>
| 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 16-8. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

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 16-10. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

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 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>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>minutes</td>
<td>The number of minutes that a dynamic intelligent multicast client port must be inactive before it is pruned by the intelligent multicast functionality.</td>
</tr>
</tbody>
</table>

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 16-12. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Configure all router ports for intelligent multicasting. The &lt;vlan-id&gt; of the VLAN on which the Multicast Router should be created or removed.</td>
</tr>
<tr>
<td>name</td>
<td>The keyword for the VLAN name. The &lt;vlan-name&gt; is the name of the VLAN on which the Multicast Router should be created or removed.</td>
</tr>
<tr>
<td>port</td>
<td>The port in the multicast session. &lt;mod-port-spec&gt; is the port specifier of the Multicast Router.</td>
</tr>
</tbody>
</table>

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 16-13. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Configure all router ports for intelligent multicasting. &lt;vlan-id&gt; is the VLAN ID of the VLAN on which the Multicast Router should be created or removed.</td>
</tr>
<tr>
<td>name</td>
<td>The keyword for the VLAN name. &lt;vlan-name&gt; is the name of the VLAN on which the Multicast Router should be created or removed.</td>
</tr>
<tr>
<td>port</td>
<td>The port in the multicast session. &lt;p220-port-spec&gt; is the port specifier of the Multicast Router.</td>
</tr>
</tbody>
</table>

**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>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
</tr>
</thead>
<tbody>
<tr>
<td>set intelligent-multicast router-port-pruning time &lt;seconds&gt;</td>
</tr>
</tbody>
</table>

Table 16-15. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>seconds</td>
<td>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.</td>
</tr>
</tbody>
</table>

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 16-16. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>seconds</td>
<td>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.</td>
</tr>
</tbody>
</table>

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> \}
| vlan \{all|<vlan-id>|name <vlan-name>\} port <mod-port-spec> |

Table 16-18. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>group-address</td>
<td>The multicast IP address of a static multicast session</td>
</tr>
<tr>
<td>mac-address</td>
<td>The multicast MAC Address of a static non-IP multicast session.</td>
</tr>
<tr>
<td>vlan</td>
<td>The keyword for per VLAN commands.</td>
</tr>
<tr>
<td></td>
<td>- all</td>
</tr>
<tr>
<td></td>
<td>- name</td>
</tr>
<tr>
<td>port</td>
<td>The client port in the multicast session. &lt;mod-port-spec&gt; is the port specifier for the static multicast client.</td>
</tr>
</tbody>
</table>

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 16-19. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>group-address</td>
<td>The multicast IP address of a static multicast session</td>
</tr>
<tr>
<td>mac-address</td>
<td>The multicast MAC Address of a static non-IP multicast session.</td>
</tr>
<tr>
<td>vlan</td>
<td>The keyword for per VLAN commands.</td>
</tr>
<tr>
<td></td>
<td>• all</td>
</tr>
<tr>
<td></td>
<td>• name</td>
</tr>
<tr>
<td>port</td>
<td>The client port in the multicast session. &lt;p220-port-spec&gt; is the port specifier for the static multicast client.</td>
</tr>
</tbody>
</table>

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
Chapter 16

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 16-20. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>group-address</td>
<td>The multicast IP address of the multicast session.</td>
</tr>
<tr>
<td>mac-address</td>
<td>The multicast MAC address of the non-IP multicast session.</td>
</tr>
<tr>
<td>vlan</td>
<td>The keyword for per VLAN commands.</td>
</tr>
<tr>
<td></td>
<td>• all</td>
</tr>
<tr>
<td></td>
<td>• name</td>
</tr>
<tr>
<td>port</td>
<td>The port in the multicast session. &lt;mod-port-spec&gt; specifies a particular port or a range of ports on a module.</td>
</tr>
</tbody>
</table>

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

Table 16-21. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

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 16-22. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>detailed</td>
<td>Displays detailed cgmp statistics.</td>
</tr>
</tbody>
</table>

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 16-23. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>session-id</td>
<td>The number assigned to the multicast session when it is created. This ID is displayed in the show intelligent-multicast session command.</td>
</tr>
</tbody>
</table>

Sample Output

Cajun> show intelligent-multicast client-port
4
IM Client

<table>
<thead>
<tr>
<th>Port</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>----</td>
<td>----------------------------</td>
</tr>
<tr>
<td>3.4</td>
<td>Router</td>
</tr>
<tr>
<td>6.1</td>
<td>Mgmt: 226.0.0.9</td>
</tr>
</tbody>
</table>
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 multicausing.

Command Syntax

<table>
<thead>
<tr>
<th>To View:</th>
<th>show intelligent-multicast router-port</th>
</tr>
</thead>
</table>

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 16-24. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan</td>
<td>&lt;vlan-id&gt; is the VLAN ID of the session(s) to display.</td>
</tr>
<tr>
<td>name</td>
<td>&lt;vlan-name&gt; is the name of the VLAN of the session(s) to display.</td>
</tr>
<tr>
<td>ip-address</td>
<td>The IP address associated with the multicast session.</td>
</tr>
<tr>
<td></td>
<td>• group-address - The multicast IP address of the multicast group.</td>
</tr>
<tr>
<td></td>
<td>• ip-mask - The subnet mask used to determine which portions of &lt;group-address&gt; should be matched</td>
</tr>
<tr>
<td>mac-address</td>
<td>The MAC address associated with this entry:</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td>client-port</td>
<td>The number of client ports in the multicast session.</td>
</tr>
<tr>
<td></td>
<td>• &lt;mod-port-spec&gt; - A client port of a multicast session.</td>
</tr>
</tbody>
</table>
### Sample Output

Cajun> `show intelligent-multicast session`

<table>
<thead>
<tr>
<th>Session ID</th>
<th>MAC Address</th>
<th>VLAN</th>
<th>Clients</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01:00:5E:01:01:02</td>
<td>1</td>
<td>Default</td>
<td>255.1.1.2</td>
</tr>
<tr>
<td>Mgmt</td>
<td>: 255.1.1.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>01:00:5E:01:01:02</td>
<td>1</td>
<td>Adams</td>
<td>255.1.1.2</td>
</tr>
<tr>
<td>Mgmt</td>
<td>: 255.1.1.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>01:00:5E:01:01:02</td>
<td>0</td>
<td>Alcott</td>
<td>256.0.0.9</td>
</tr>
<tr>
<td>Mgmt</td>
<td>: 256.0.0.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 16-25. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan</td>
<td>&lt;vlan-id&gt; is the VLAN ID of the session(s) to display.</td>
</tr>
<tr>
<td>name</td>
<td>&lt;vlan-name&gt; - The name of the VLAN of the session(s) to display.</td>
</tr>
<tr>
<td>ip-address</td>
<td>The IP address associated with the multicast session.</td>
</tr>
<tr>
<td>mac-address</td>
<td>The MAC address associated with this entry:</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td>client-port</td>
<td>The number of client ports in the multicast session.</td>
</tr>
<tr>
<td></td>
<td>• &lt;p220-port-spec&gt; - A client port of a multicast session.</td>
</tr>
</tbody>
</table>
Sample Output

Cajun> `show intelligent-multicast session`

<table>
<thead>
<tr>
<th>Session ID</th>
<th>MAC Address</th>
<th>VLAN</th>
<th>Clients</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01:00:5E:01:01:02</td>
<td>Default 1</td>
<td>255.1.1.2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>01:00:5E:01:01:02</td>
<td>Adams 1</td>
<td>255.1.1.2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>01:00:5E:01:01:02</td>
<td>Alcott 0</td>
<td>256.0.0.9</td>
<td></td>
</tr>
</tbody>
</table>

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 16-26. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>group-address</td>
<td>The IP address of the multicast group.</td>
</tr>
<tr>
<td>mac-address</td>
<td>The MAC address associated with this entry:</td>
</tr>
<tr>
<td>vlan</td>
<td>The choices are:</td>
</tr>
<tr>
<td></td>
<td>• all - The static session or client is created for all VLANs.</td>
</tr>
<tr>
<td></td>
<td>• vlan-id - A session or client is created for a specific VLAN only.</td>
</tr>
<tr>
<td></td>
<td>• name - A session or client is created for a specific VLAN only.</td>
</tr>
</tbody>
</table>

**Sample Output**

```
Cajun> show intelligent-multicast static-client 225.1.1.2 vlan all
IM Client
Port          Application
---          ---------------
```
Chapter 16

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

<table>
<thead>
<tr>
<th>VLAN</th>
<th>MAC Address</th>
<th>IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>01:00:5E:01:01:02</td>
<td>225.1.1.2</td>
</tr>
<tr>
<td>1</td>
<td>01:00:5E:01:04:05</td>
<td>225.1.4.5</td>
</tr>
<tr>
<td>All</td>
<td>01:00:5E:00:00:09</td>
<td>226.0.0.9</td>
</tr>
</tbody>
</table>
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 16-27. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>config</td>
<td>statistics</td>
</tr>
<tr>
<td>vlan</td>
<td>The VLAN(s) associated with the LGMP server.</td>
</tr>
<tr>
<td></td>
<td>• all - All VLANs.</td>
</tr>
<tr>
<td></td>
<td>• vlan-id - The numerical ID of a specific VLAN.</td>
</tr>
<tr>
<td>name</td>
<td>The keyword for VLAN name. &lt;vlan-name&gt; -</td>
</tr>
<tr>
<td></td>
<td>The string ID of VLAN</td>
</tr>
</tbody>
</table>

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
17 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 17-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module whose name is to be cleared or set.</td>
</tr>
<tr>
<td>mod-name</td>
<td>Specifies the name of the module. If the module name is not specified, any previous name for the module is cleared.</td>
</tr>
</tbody>
</table>

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 17-2. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module whose notes are to be cleared or set.</td>
</tr>
<tr>
<td>mod-notes</td>
<td>Specifies the notes to be assigned to the module. If the module notes are not specified, any previous notes for the module are cleared.</td>
</tr>
</tbody>
</table>

**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 17-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module whose information is to be displayed.</td>
</tr>
</tbody>
</table>

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

To Enable:
```
show module [<mod-num>]
```
<table>
<thead>
<tr>
<th>Name</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5502-1000LX-F Gigabit 2</td>
<td></td>
</tr>
</tbody>
</table>

Systems Supported: P550, P550R
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
Chapter 18

- 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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>area &lt;area-id&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] area &lt;area-id&gt;</td>
</tr>
</tbody>
</table>

Table 18-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>area-id</td>
<td>IP address that represents the area-id for the system.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>area &lt;area-id&gt; ase-filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] area &lt;area-id&gt; ase-filter</td>
</tr>
</tbody>
</table>

Table 18-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>area-id</td>
<td>IP address that represents the area-id for the system.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>area &lt;area-id&gt; default-cost &lt;cost&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] area &lt;area-id&gt; default-cost</td>
</tr>
</tbody>
</table>

Table 18-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>area-id</td>
<td>A decimal value or IP address that identifies an OSPF area. Use no area &lt;area-id&gt; to remove an area from the software configuration.</td>
</tr>
<tr>
<td>cost</td>
<td>A cost value of the area.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>area-id</td>
<td>A decimal value or IP address that identifies an OSPF area. Use no area &lt;area-id&gt; to remove an area from the software configuration.</td>
</tr>
</tbody>
</table>

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 18-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>area-id</td>
<td>IP address that represents the area-id for the system.</td>
</tr>
<tr>
<td>ip-address</td>
<td>IP address of the area range.</td>
</tr>
<tr>
<td>mask</td>
<td>IP address of the mask for the area range.</td>
</tr>
</tbody>
</table>
**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**

<table>
<thead>
<tr>
<th><strong>To Enable:</strong></th>
<th>area &lt;area-id&gt; stub</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To Disable:</strong></td>
<td>[no] area &lt;area-id&gt; stub</td>
</tr>
</tbody>
</table>

**Table 18-6. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>area-id</td>
<td>IP address that represents the area-id for the system.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>area &lt;area-id&gt; translate-nssa-to-external</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no]area &lt;area-id&gt; translate-nssa-to-external</td>
</tr>
</tbody>
</table>

Table 18-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>area-id</td>
<td>IP address that represents the area-id for the system.</td>
</tr>
</tbody>
</table>
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

Table 18-8. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>area-id</td>
<td>IP address that represents the area-id for the system.</td>
</tr>
<tr>
<td>router-id</td>
<td>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.</td>
</tr>
<tr>
<td>hello-interval</td>
<td>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.</td>
</tr>
<tr>
<td>retransmit-interval</td>
<td>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.</td>
</tr>
</tbody>
</table>
**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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>interface &lt;interface-name&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] interface &lt;interface-name&gt;</td>
</tr>
</tbody>
</table>

**Table 18-9. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface-name</td>
<td>A name for the interface you are attempting to configure or create. This name can be series of characters from 1 - 32 characters long.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf as-boundary router</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf as-boundary router</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf authentication-key &lt;password&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf authentication-key</td>
</tr>
</tbody>
</table>

Table 18-10. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>password</td>
<td>Any continuous string of characters that can be entered from the keyboard up to 8 bytes in length.</td>
</tr>
</tbody>
</table>

Sample Output

```bash
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf auto-vlink-create</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf auto-vlink-create</td>
</tr>
</tbody>
</table>
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 18-11. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>cost</td>
<td>Unsigned integer value expressed as the link state metric. It can be a value in the range 1 to 65535.</td>
</tr>
</tbody>
</table>
**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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf dead-interval <code>&lt;seconds&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td><code>[no] ip ospf dead-interval</code></td>
</tr>
</tbody>
</table>

**Table 18-12. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>seconds</td>
<td>Time in seconds of how long hello packets must be unseen before the neighbor declares the router down.</td>
</tr>
</tbody>
</table>
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 18-13. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>local</td>
<td>Metric type.</td>
</tr>
<tr>
<td>rip</td>
<td>Metric type.</td>
</tr>
<tr>
<td>static-hp</td>
<td>Metric type.</td>
</tr>
<tr>
<td>static-lp</td>
<td>Metric type.</td>
</tr>
</tbody>
</table>
ip ospf hello-interval

Command Mode: Interface

Description

Specify the interval between hello packets that the router sends on the interface.

Command Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf hello-interval &lt;seconds&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf hello-interval</td>
</tr>
</tbody>
</table>

Table 18-14. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>seconds</td>
<td>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.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf max-paths &lt;paths&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf max-paths &lt;paths&gt;</td>
</tr>
</tbody>
</table>

Table 18-15. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>paths</td>
<td>The SPF paths OSPF can use.</td>
</tr>
</tbody>
</table>
ip ospf message-digest-key md5

Command Mode: Interface

Description
Enable OSPF MD5 authentication.

Command Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf message-digest-key &lt;keyid&gt; md5 &lt;key&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf message-digest-key &lt;keyid&gt; md5 &lt;key&gt;</td>
</tr>
</tbody>
</table>

Table 18-16. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>keyid</td>
<td>An identifier in the range 1 to 255.</td>
</tr>
</tbody>
</table>
| 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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf packet tracing</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf packet tracing</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf priority &lt;number&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf priority &lt;number&gt;</td>
</tr>
</tbody>
</table>

Table 18-17. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>number</td>
<td>8-bit unsigned integer that specifies the priority. The range is from 0 to 255.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf retransmit-interval &lt;seconds&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf retransmit-interval &lt;seconds&gt;</td>
</tr>
</tbody>
</table>

Table 18-18. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>seconds</td>
<td>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.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf router-id &lt;router-id&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf router-id &lt;router-id&gt;</td>
</tr>
</tbody>
</table>

Table 18-19. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>router-id</td>
<td>IP address that represents the router-id for the system.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip ospf transmit-delay &lt;seconds&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip ospf transmit-delay</td>
</tr>
</tbody>
</table>

Table 18-20. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>seconds</td>
<td>Time in seconds that it takes to transmit a link state update. The range is 1 to 65535 seconds. The default is 1 second.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>network &lt;ip-address&gt; &lt;wildcard-mask&gt; area &lt;area-id&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] network &lt;ip-address&gt; &lt;wildcard-mask&gt; area &lt;area-id&gt;</td>
</tr>
</tbody>
</table>

Table 18-21. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip address</td>
<td>IP address of the interface on which OSPF runs.</td>
</tr>
<tr>
<td>wildcard-mask</td>
<td>Wild-card mask of the interface.</td>
</tr>
<tr>
<td>area-id</td>
<td>Area ID for the interface.</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>To Enable</th>
<th>router ospf</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable</td>
<td>[no] router ospf</td>
</tr>
</tbody>
</table>

**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 18-22. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>asbr-summary</td>
<td>Displays information only about the autonomous system boundary router summary LSAs. Optional.</td>
</tr>
<tr>
<td>external</td>
<td>Displays information only about the external LSAs. Optional.</td>
</tr>
<tr>
<td>network</td>
<td>Displays information only about the network LSAs. Optional.</td>
</tr>
<tr>
<td>nssa-external</td>
<td>Displays information only about the NSSA external LSAs. Optional.</td>
</tr>
<tr>
<td>router</td>
<td>Displays information only about the router LSAs. Optional.</td>
</tr>
</tbody>
</table>

Sample Output

```
Cajun> show ip ospf database
OSPF Router with ID 10.0.1.45
Area IDType LSA IDRouter IDSquenceage Cksm
-------- ------ ------- ----------- ------ ------
0.0.0.0 1 10.0.1.4510.0.1.45
8000000e 296 5375
0.0.0.0 3 10.0.2.010.0.1.45
8000000e 335 52b8
0.0.0.0 1 10.0.1.4510.0.1.45
8000000b 297 6268
```
### Chapter 18

<table>
<thead>
<tr>
<th>IP Address</th>
<th>Mask Length</th>
<th>Subnet Address</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0.0.0</td>
<td>3</td>
<td>10.0.1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80000000e</td>
<td>336</td>
<td>5dae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.0.0.0</td>
<td>3</td>
<td>0.0.0.0</td>
<td>10.0.1.45</td>
<td></td>
</tr>
<tr>
<td>80000002</td>
<td>331</td>
<td>2bf8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**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 18-23. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface-name</td>
<td>The OSPF interface name.</td>
</tr>
</tbody>
</table>

**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 18-24. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface-name</td>
<td>The OSPF interface name.</td>
</tr>
<tr>
<td>neighbor-id</td>
<td>Neighbor ID.</td>
</tr>
<tr>
<td>detail</td>
<td>Displays all neighbors given in detail (list all neighbors).</td>
</tr>
</tbody>
</table>

Sample Output

Cajun45(configure)# show ip ospf neighbor

<table>
<thead>
<tr>
<th>Nbr-Id</th>
<th>Priority</th>
<th>State</th>
<th>Router</th>
</tr>
</thead>
<tbody>
<tr>
<td>43.0.0.0</td>
<td>1</td>
<td>FULL</td>
<td>10.0.5.43</td>
</tr>
<tr>
<td>BROADCAST</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43.0.0.0</td>
<td>1</td>
<td>FULL</td>
<td>10.0.3.43</td>
</tr>
<tr>
<td>BROADCAST</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43.0.0.0</td>
<td>1</td>
<td>FULL</td>
<td>10.0.6.43</td>
</tr>
<tr>
<td>BROADCAST</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th><strong>To Enable:</strong></th>
<th>timers lsa-group-pacing &lt;lsa-group-size&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To Disable:</strong></td>
<td>[no] timers lsa-group-pacing &lt;lsa-group-size&gt;</td>
</tr>
</tbody>
</table>

**Table 18-25. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>lsa-group-size</td>
<td>The link state advertisement group size.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>timers spf &lt;spf-holdtime&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] timers spf</td>
</tr>
</tbody>
</table>

Table 18-26. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>spf-holdtime</td>
<td>The time in seconds of the delay between runs of OSPF’s SPF calculation.</td>
</tr>
</tbody>
</table>
Chapter 18
19 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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip access-group &lt;access-list-name&gt;[default-action-deny]</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip access-group</td>
</tr>
</tbody>
</table>

Table 19-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>access-list-name</td>
<td>The name of the access list for forwarding control.</td>
</tr>
<tr>
<td>default-action-deny</td>
<td>Specifies the default action of &quot;deny&quot; if no access rule in the active access list matches the packet.</td>
</tr>
</tbody>
</table>

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 19-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>access-list name</td>
<td>The access list name.</td>
</tr>
<tr>
<td></td>
<td>Decimal numbers from 1 to 99 inclusive indicate an access list type of standard.</td>
</tr>
<tr>
<td>access-list index</td>
<td>The index of a specific access list rule entry.</td>
</tr>
<tr>
<td>permit</td>
<td>deny</td>
</tr>
<tr>
<td></td>
<td>• deny - Does not permit access when conditions match.</td>
</tr>
<tr>
<td></td>
<td>• fwd1-8 - Forwards traffic with the specified priority level [1-8].</td>
</tr>
<tr>
<td>source-ip-addr</td>
<td>Network number or host from which the packet is sent.</td>
</tr>
<tr>
<td></td>
<td>The two ways to specify source are:</td>
</tr>
<tr>
<td></td>
<td>1. Use a 32-bit quantity in four-part, dotted-decimal format.</td>
</tr>
<tr>
<td></td>
<td>2. Use host source as an abbreviation for source and a source-wildcard of source 0.0.0.0.</td>
</tr>
</tbody>
</table>
### 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 19-3. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>access-list-name</td>
<td>The name of a specific access list to be displayed.</td>
</tr>
</tbody>
</table>

**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 19-4. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>access-list-name</td>
<td>The name of a specific IP access list to be displayed.</td>
</tr>
</tbody>
</table>

**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**
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`
Chapter 20

- 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 20-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module whose port counters are to be cleared. (Valid on P550 and P550R.)</td>
</tr>
<tr>
<td>mod-port-spec</td>
<td>Specifies a particular port whose counters are to be cleared.</td>
</tr>
</tbody>
</table>

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 20-2. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>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.</td>
</tr>
<tr>
<td>mod-swport-range</td>
<td>Specifies a switch port or a range of switch ports whose huntgroup assignments are set or cleared.</td>
</tr>
<tr>
<td>huntgroup-name</td>
<td>Specifies the name of a defined huntgroup.</td>
</tr>
</tbody>
</table>
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 20-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-range</td>
<td>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.</td>
</tr>
<tr>
<td>mod-port-spec</td>
<td>Specifies a particular port.</td>
</tr>
<tr>
<td>mirror-port</td>
<td>Port from which you want to send the traffic. This port can be on another module in the switch.</td>
</tr>
<tr>
<td>piggyback-port</td>
<td>The port that is used for bi-directional port mirroring. The specified port is unavailable for other uses.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>sampling</th>
<th>Specifies how source port traffic is to be sampled (always, disabled or periodic based on max-packets-sec).</th>
</tr>
</thead>
<tbody>
<tr>
<td>max-packets-sec</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> To mirror inbound traffic only, select a source port and a mirror port, not a piggyback port.</td>
</tr>
</tbody>
</table>

Note:
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 20-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the 3Com Mapping Table assignment of each switch is to be set.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of switch ports whose 3Com Mapping Table assignment is to be set.</td>
</tr>
<tr>
<td>table-name</td>
<td>Specifies the name of the 3Com mapping table.</td>
</tr>
</tbody>
</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

```
Table 20-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the ability of every switch port on that module to learn new VLANs is enabled or disabled.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of switch ports whose ability to learn new VLANs is enabled or disabled.</td>
</tr>
<tr>
<td>disable</td>
<td>enable</td>
</tr>
</tbody>
</table>
```

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 20-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies a module number where auto negotiation for every fast ethernet port on that module is enabled or disabled.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of fast ethernet ports whose ability for auto negotiation is enabled or disabled.</td>
</tr>
<tr>
<td>disable</td>
<td>enable</td>
</tr>
</tbody>
</table>

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 autonegotiation 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>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>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.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>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.</td>
</tr>
<tr>
<td>full/half-duplex</td>
<td>Configure the duplex type of a port or range of ports.</td>
</tr>
<tr>
<td>half-duplex</td>
<td>Configure the duplex type of a port or range of ports.</td>
</tr>
<tr>
<td>full/half-duplex</td>
<td>Configure the duplex type of a port or range of ports.</td>
</tr>
<tr>
<td>half-duplex</td>
<td>Configure the duplex type of a port or range of ports.</td>
</tr>
</tbody>
</table>

- **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 20-8. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>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.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>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.</td>
</tr>
<tr>
<td>10Mbps</td>
<td>100Mbps</td>
</tr>
</tbody>
</table>
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 100Mps
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

Table 20-9. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies a module number. If a module number is specified, auto-vlan-creation is set on all ports on the module</td>
</tr>
<tr>
<td>mod-swport-range</td>
<td>Specifies a switch port or a range of switch ports on which to set the auto-vlan-create-parameter.</td>
</tr>
<tr>
<td>disable</td>
<td>enable</td>
</tr>
</tbody>
</table>

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**

```plaintext
To Enable: set port category {<mod-num>|<mod-port-range>}
[...,{<mod-num>|<mod-port-range>}] {service-port | user-port}
```

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the port category type of every module is set.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of ports whose category is to be set.</td>
</tr>
<tr>
<td>service-port</td>
<td>Indicates that the specified ports are set as service ports and intended for connections to servers or other switches.</td>
</tr>
<tr>
<td>user-port</td>
<td>Indicates that the specified ports are set as user ports and intended for connections to end user nodes.</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where every port on that module is disabled.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of ports to be disabled.</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the duplexity of every fast ethernet port is set.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of fast ethernet ports whose duplexity is to be set.</td>
</tr>
<tr>
<td>full-duplex</td>
<td>half-duplex</td>
</tr>
<tr>
<td></td>
<td>• <strong>full duplex</strong> - The duplexity of the port is set to full duplex.</td>
</tr>
<tr>
<td></td>
<td>• <strong>half duplex</strong> - The duplexity of the port is set to half duplex.</td>
</tr>
</tbody>
</table>
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 20-13. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where every port is enabled.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of ports to be enabled.</td>
</tr>
</tbody>
</table>

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**

```
Table 20-14. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where every switch port has the ability to fast start enabled or disabled.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of switch ports whose ability to fast start is enabled or disabled.</td>
</tr>
<tr>
<td>disable</td>
<td>enable</td>
</tr>
</tbody>
</table>
```

**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 M 5548-100TX port (Tamale) sets all physical ports on the module to the same value.

Command Syntax

To Enable:  

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the flow control for each port on the module is to be set.</td>
</tr>
</tbody>
</table>
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-backoff.

```
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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where every switch port on that module has the ability to use or ignore frame tag.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of switch ports that are able to use or ignore frame tags.</td>
</tr>
<tr>
<td>ignore</td>
<td>use</td>
</tr>
</tbody>
</table>

**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 {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}]} {ignore|use}
```
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 20-17. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the known mode of every switch port is enabled or disabled.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of switch ports whose known mode is to be enabled or disabled.</td>
</tr>
<tr>
<td>disable</td>
<td>enable</td>
</tr>
</tbody>
</table>

**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 5/5/7-11 disable
```

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-spec</td>
<td>Specifies a particular port by its module and port numbers.</td>
</tr>
<tr>
<td>port-name</td>
<td>Specifies the name to be assigned to the port. If a port name is not specified, the name of the port is cleared.</td>
</tr>
</tbody>
</table>

To Enable: `set port name <mod-port-spec> [<port-name>]`

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 20-19. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies a module number where pace priority mode is enabled or disabled for every port on the module.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of ports where pace priority mode is enabled or disabled.</td>
</tr>
<tr>
<td>disable</td>
<td>enable</td>
</tr>
</tbody>
</table>

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 20-20. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the rate limit burst size for each fast ethernet port on the module is to be set.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies the range of fast ethernet where the rate limit burst size is to be set.</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
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, 6/8, 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the rate limit mode for fast ethernet ports are to be set.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of fast ethernet ports whose rate limit mode is to be set.</td>
</tr>
<tr>
<td>disable</td>
<td>enable</td>
</tr>
</tbody>
</table>

To Enable: set port rate-limit-mode {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]{disable|enable|enable-include-known-multicasts}

Table 20-21. Parameters, Keywords, Arguments

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 20-22. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the rate limit rate for each fast ethernet port on the module is to be set.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a port or a range of fast ethernet ports whose rate limit rate is to be set.</td>
</tr>
<tr>
<td>1%</td>
<td>2%</td>
</tr>
</tbody>
</table>

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 20-23. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>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.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a port or a range of gigabit ports whose ability to detect remote link errors are enabled or disabled.</td>
</tr>
<tr>
<td>disable</td>
<td>enable</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the spanning tree mode is to be enabled or disabled for every switch port on the module.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of switch ports whose spanning tree mode is to be enabled or disabled.</td>
</tr>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

**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

Table 20-25. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the speed of every port on the module is to be set.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of ports whose speed is to be set.</td>
</tr>
<tr>
<td>100Mbps</td>
<td>The speed options for fast ethernet ports.</td>
</tr>
<tr>
<td>1Gbps</td>
<td>The speed option for gigabit ports.</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the</td>
</tr>
<tr>
<td></td>
<td>trunking mode is to be set for each switch port</td>
</tr>
<tr>
<td></td>
<td>on the module.</td>
</tr>
<tr>
<td>mod-swport-range</td>
<td>Specifies a range of switch ports whose trunking</td>
</tr>
<tr>
<td></td>
<td>mode is to be set.</td>
</tr>
<tr>
<td>clear</td>
<td>Specifies the trunking option, which does no VLAN</td>
</tr>
<tr>
<td></td>
<td>tagging.</td>
</tr>
<tr>
<td>ieee-802.1Q</td>
<td>Specifies the IEEE 802.1Q ethernet VLAN tagging</td>
</tr>
<tr>
<td></td>
<td>trunking option.</td>
</tr>
<tr>
<td>multi-layer</td>
<td>Specifies a widely available proprietary VLAN</td>
</tr>
<tr>
<td></td>
<td>tagging trunking option.</td>
</tr>
<tr>
<td>3com</td>
<td>Specifies the 3Com VLAN tagging trunking option.</td>
</tr>
</tbody>
</table>

Table 20-26. Parameters, Keywords, Arguments
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.

```bash
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 sets 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.

```bash
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 20-27. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies a module number. If a module number is specified, the VLAN is set for all ports on the module.</td>
</tr>
<tr>
<td>mod-swport-range</td>
<td>Specifies a switch port or a range of switch ports where a VLAN is to be set.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>The ID of the VLAN.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies a module number. If a module number is specified, the VLAN binding method is set for all ports on the module.</td>
</tr>
<tr>
<td>mod-swport-range</td>
<td>Specifies a switch port or a range of switch ports on which to set the VLAN binding method.</td>
</tr>
<tr>
<td>bind-to-all</td>
<td>Binds the port to all VLANs known to the switch.</td>
</tr>
<tr>
<td>bind-to-received</td>
<td>Binds this port to any VLAN it receives traffic from.</td>
</tr>
<tr>
<td>static</td>
<td>Assigns VLAN membership manually, using the VLAN switch ports.</td>
</tr>
</tbody>
</table>

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 20-29. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module. (Valid only on P550 and P550R switches).</td>
</tr>
<tr>
<td>mod-swport-range</td>
<td>Specifies a particular port or a range of ports on a module whose vtp-snooping is to be enabled or disabled.</td>
</tr>
<tr>
<td>disable</td>
<td>enable</td>
</tr>
</tbody>
</table>

**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
```

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 P220 expansion/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.
Chapter 20

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 20-30. 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

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<table>
<thead>
<tr>
<th>Port</th>
<th>Huntgroup</th>
<th>Huntgroup</th>
<th>Huntgroup</th>
<th>(ID:Name)</th>
<th>Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port</td>
<td>Subport</td>
<td>Port</td>
<td>Subport</td>
<td>Port</td>
<td>Base</td>
</tr>
<tr>
<td>-----</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>------</td>
</tr>
<tr>
<td>3/1</td>
<td>2:1</td>
<td>1</td>
<td>60</td>
<td>4/</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod_num</td>
<td>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.)</td>
</tr>
<tr>
<td>mod-swport-spec</td>
<td>Specifies a particular switch port whose specific port statistics are to be displayed.</td>
</tr>
</tbody>
</table>
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 20-32. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies a module number. If a module number is specified, all port mirroring rules on the module are displayed.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a particular port or a range of ports on a module.</td>
</tr>
</tbody>
</table>

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

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<table>
<thead>
<tr>
<th>Port</th>
</tr>
</thead>
</table>
show port status

Command Mode: User

Description

Display port status information. The status information of all ports is displayed by default.

Command Syntax

<table>
<thead>
<tr>
<th>To View:</th>
</tr>
</thead>
</table>
| show port status [<mod-num>|<mod-port-range>]
| [...,<mod-num>|<mod-port-range>]] |

Table 20-33. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-num</td>
<td>Specifies the number of the module where the status of every port on that module is displayed.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a range of ports whose status information is to be displayed.</td>
</tr>
</tbody>
</table>

Sample Output

Cajun> show port status
<table>
<thead>
<tr>
<th>Port</th>
<th>Type</th>
<th>Mode</th>
<th>Status</th>
<th>Auto-Neg</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/1</td>
<td>Gigabit</td>
<td>Enabled</td>
<td>No Link</td>
<td>Disabled</td>
</tr>
<tr>
<td></td>
<td>1 Gb/s</td>
<td>Full Duplex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/1</td>
<td>Gigabit</td>
<td>Enabled</td>
<td>No Link</td>
<td>Disabled</td>
</tr>
<tr>
<td></td>
<td>1 Gb/s</td>
<td>Full Duplex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/2</td>
<td>Gigabit</td>
<td>Enabled</td>
<td>No Link</td>
<td>Disabled</td>
</tr>
<tr>
<td></td>
<td>1 Gb/s</td>
<td>Full Duplex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/1</td>
<td>10/100</td>
<td>Enabled</td>
<td>No Link</td>
<td>Enabled</td>
</tr>
<tr>
<td></td>
<td>Auto-Neg</td>
<td>Auto-Neg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/8</td>
<td>10/100</td>
<td>Enabled</td>
<td>No Link</td>
<td>Enabled</td>
</tr>
<tr>
<td></td>
<td>Auto-Neg</td>
<td>Auto-Neg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/17</td>
<td>10/100</td>
<td>Enabled</td>
<td>No Link</td>
<td>Enabled</td>
</tr>
<tr>
<td></td>
<td>Auto-Neg</td>
<td>Auto-Neg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

.
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 20-34. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>Transmit the interface type to be linked with the (current) receive-only interface.</td>
</tr>
<tr>
<td>number</td>
<td>Transmit the interface number to be linked with the (current) receive-only interface.</td>
</tr>
</tbody>
</table>
21 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
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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>time</td>
<td>The time in the format hh:mm:ss.</td>
</tr>
<tr>
<td>date</td>
<td>Current day in the month by date.</td>
</tr>
<tr>
<td>month</td>
<td>Current month by name.</td>
</tr>
<tr>
<td>year</td>
<td>Current year in four digits.</td>
</tr>
</tbody>
</table>

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 22-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>time</td>
<td>The time in the format hh:mm:ss.</td>
</tr>
<tr>
<td>day</td>
<td>Current day in the month by name.</td>
</tr>
<tr>
<td>month</td>
<td>Current month by name.</td>
</tr>
<tr>
<td>year</td>
<td>Current year in four digits.</td>
</tr>
<tr>
<td>zone-name</td>
<td>The timezone in a three letter abbreviation.</td>
</tr>
</tbody>
</table>

Sample Output

Cajun(configure)# clock set 14:08:00 05
          October 1999
clock timezone

Command Mode: Privileged

Description

Set the time zone.

Command Syntax

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>zone-name</td>
<td>The timezone in a three letter abbreviation.</td>
</tr>
<tr>
<td>hours</td>
<td>Hours offset from UTC (+/-). You must enclose the hour value in &quot; &quot;.</td>
</tr>
<tr>
<td>month</td>
<td>Minutes offset from UTC.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>clock summer-time recurring [ &lt;week&gt; &lt;day&gt; &lt;month&gt; <a href="">hh:mm</a> ]&lt;br/&gt;clock summer-time recurring [ &lt;week&gt; &lt;day&gt; &lt;month&gt; <a href="">hh:mm</a> [&lt;offset&gt;]]</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] clock summer-time</td>
</tr>
</tbody>
</table>

Table 22-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>week</td>
<td>Week of the month ( 1 to 5 (where 5=last) ).</td>
</tr>
<tr>
<td>day</td>
<td>Day of the week (for example: Sunday, Monday).</td>
</tr>
<tr>
<td>month</td>
<td>Month (for example: January, February).</td>
</tr>
<tr>
<td>date</td>
<td>Date of the month ( 1 to 31 ).</td>
</tr>
<tr>
<td>hh:mm</td>
<td>Time (military format) in hours and minutes.</td>
</tr>
<tr>
<td>offset</td>
<td>The number of minutes to add during summer time (default 60). (Optional)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>hostname &lt;host-name&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] hostname</td>
</tr>
</tbody>
</table>

Table 22-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>host-name</td>
<td>Name of the host.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>show calendar</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>To Enable</th>
<th>show clock details</th>
</tr>
</thead>
</table>

Table 22-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>details</td>
<td>Display detailed clock information.</td>
</tr>
</tbody>
</table>

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 22-7. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>string</td>
<td>The SNMP Community</td>
</tr>
<tr>
<td>IP address</td>
<td>The IP Address of the trap receiver associated with this SNMP Community string. If is not configured asteriks are displayed (<em><strong>.</strong></em>.<em><strong>.</strong></em>).</td>
</tr>
<tr>
<td>access</td>
<td>The access level for the SNMP community string. (none -- access level is disabled, ro - read-only access, rw - read-write access)</td>
</tr>
<tr>
<td>security</td>
<td>The security level associated with this community string.</td>
</tr>
<tr>
<td>traps</td>
<td>Indicates if this SNMP community is associated with a trap receiver.</td>
</tr>
</tbody>
</table>

**Sample Output**

```
+------------------------------+-----------------+-------+
<table>
<thead>
<tr>
<th>String</th>
<th>IP Address</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security Traps</td>
<td>----------------</td>
<td>-------</td>
</tr>
<tr>
<td><em><strong>.</strong></em>.<em><strong>.</strong></em></td>
<td>ro</td>
<td>Normal</td>
</tr>
<tr>
<td>rwcomm</td>
<td>10.1.1.0</td>
<td>rw</td>
</tr>
<tr>
<td>Normal</td>
<td>enable</td>
<td></td>
</tr>
<tr>
<td>admincomm</td>
<td><em><strong>.</strong></em>.<em><strong>.</strong></em></td>
<td>rw</td>
</tr>
<tr>
<td>Admin</td>
<td>disable</td>
<td></td>
</tr>
</tbody>
</table>
```
**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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>show time zone</th>
</tr>
</thead>
</table>

Sample Output

Cajun> show time zone
eni    Eniwotok (GMT-12)
kwa    Kwaialien (GMT-12)
mid    Midland Island (GMT-11)
haw    Hawaii (GMT-10)
al a l a k a    (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 22-8. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>OID</td>
<td>IB Object Identifier (for example: 1.3.6.x.x...).</td>
</tr>
<tr>
<td>mib-object-name</td>
<td>The name of a MIB object defined within a MIB file (for example: sysName, sysContact)</td>
</tr>
</tbody>
</table>

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.22.192.168.60.47 (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**

```plaintext
To Enable:  snmp next {<OID>|<mib-object-name>}
```

**Table 22-9. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>OID</td>
<td>IB Object Identifier (for example: 1.3.6.x.x...).</td>
</tr>
<tr>
<td>mib-object-name</td>
<td>The name of a MIB object defined within a MIB file (for example: sysName, sysContact)</td>
</tr>
</tbody>
</table>

**Sample Output**

```
Cajun# snmp next ifTable
ifIndex (1.3.6.1.2.1.2.1.1.1) 1

Cajun# snmp next ifDescr.1
ifDescr (1.3.6.1.2.1.2.1.2.1.2.2) 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 22-10. Parameters, Keywords, and Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>OID</td>
<td>IB Object Identifier (for example: 1.3.6.x.x...).</td>
</tr>
<tr>
<td>mib-object-name</td>
<td>The name of a MIB object defined within a MIB file (for example: sysName, sysContact).</td>
</tr>
<tr>
<td>set-value</td>
<td>The value you to which you want to set this snmp object.</td>
</tr>
</tbody>
</table>

**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 22-11. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>string</td>
<td>Community string that acts like a password and permits access to the SNMP protocol.</td>
</tr>
<tr>
<td></td>
<td>• ro: Specifies read-only access. Authorized management stations are only able to retrieve MIB objects.</td>
</tr>
<tr>
<td></td>
<td>• rw: Specifies read-write access. Authorized management stations are able to both retrieve and modify MIB objects.</td>
</tr>
<tr>
<td></td>
<td>• none: Specifies no access. Management stations are unable to retrieve or modify MIB objects.</td>
</tr>
<tr>
<td></td>
<td>• normal: Specifies that this community string has normal level of access within the chassis. (Optional)</td>
</tr>
<tr>
<td></td>
<td>• admin: Specifies that this community string has admin level of access within the chassis. (Optional)</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th><code>snmp-server contact &lt;string&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td><code>[no] snmp-server contact &lt;string&gt;</code></td>
</tr>
</tbody>
</table>

**Table 22-12. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>string</td>
<td>A string that describes the system contact information.</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>sntp server &lt;ip-addr&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] sntp server</td>
</tr>
</tbody>
</table>

Table 22-13. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-addr</td>
<td>IP address of the time server.</td>
</tr>
</tbody>
</table>

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 22-14.  Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>OID</td>
<td>IB Object Identifier (for example: 1.3.6.x.x...).</td>
</tr>
<tr>
<td>mib-object-name</td>
<td>The name of a MIB object defined within a MIB file (for example: sysName, sysContact)</td>
</tr>
</tbody>
</table>

**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
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 (1.3.6.1.2.1.2.1.0.1) 22
ifIndex  (1.3.6.1.2.1.2.2.1.1.1) 1
.
.
```
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 23-1. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>table-name</td>
<td>The name of the mapping table to be deleted.</td>
</tr>
<tr>
<td>entry-num</td>
<td>The entry number in the table.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Specifies a VLAN by its VLAN ID.</td>
</tr>
<tr>
<td>name</td>
<td><strong>vlan-name</strong> - Specifies a VLAN by its name.</td>
</tr>
</tbody>
</table>

**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 23-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Enable the bridge.</td>
</tr>
<tr>
<td>disable</td>
<td>Disable the bridge.</td>
</tr>
<tr>
<td>802.1D</td>
<td>Configure the IEEE 802.1D Legacy Bridge.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The 802.1D bridge can only be modified in</td>
</tr>
<tr>
<td></td>
<td>the IEEE config mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Configure a per-vlan or dual-layer bridge by using</td>
</tr>
<tr>
<td></td>
<td>the VLAN’s vlan ID.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> VLAN bridges can only be modified when in</td>
</tr>
<tr>
<td></td>
<td>per-vlan or dual-layer mode.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Configure a per-vlan or dual-layer bridge by using</td>
</tr>
<tr>
<td></td>
<td>the VLAN’s name.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> VLAN bridges can only be modified when in</td>
</tr>
<tr>
<td></td>
<td>per-vlan or dual-layer mode.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ieee</td>
<td>The entire switch is a single IEEE 802.1D-compliant bridge.</td>
</tr>
<tr>
<td>per-vlan</td>
<td>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.</td>
</tr>
<tr>
<td>dual-layer</td>
<td>A proprietary version of per-VLAN, where the vlan id is embedded as a tag within the bridge PDUs.</td>
</tr>
<tr>
<td>disable</td>
<td>Disables spanning tree on the switch.</td>
</tr>
</tbody>
</table>

Table 23-3. Parameters, Keywords, Arguments

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 23-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>fwddelay-value</td>
<td>The forward delay value for the bridge, in seconds.</td>
</tr>
<tr>
<td>802.1D</td>
<td>Configure the IEEE 802.1D Legacy Bridge.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The 802.1D bridge can only be modified when in ieee config mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s vlan ID.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> VLAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s name.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> VLAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
</tbody>
</table>

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 23-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>hellotime-value</td>
<td>The hello time value for the bridge, in seconds.</td>
</tr>
<tr>
<td>802.1D</td>
<td>Configure the IEEE 802.1D Legacy Bridge.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The 802.1D bridge can only be modified when in the IEEE config mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s vlan ID.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> VLAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s name.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> VLAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
</tbody>
</table>

Sample Output

```bash
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 23-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>maxage-value</td>
<td>The maximum age value for the bridge, in seconds.</td>
</tr>
<tr>
<td>802.1D</td>
<td>Configure the IEEE 802.1D Legacy Bridge.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The 802.1D bridge can only be modified when in ieee config mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s vlan ID.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> LAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s name.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> VLAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
</tbody>
</table>

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 23-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-range</td>
<td>Specifies a particular port or a range of ports on a module.</td>
</tr>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>802.1D</td>
<td>Configure the IEEE 802.1D Legacy Bridge.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The 802.1D bridge can only be modified when in the IEEE config mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s vlan ID.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> LAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s name.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> VLAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-range</td>
<td>Specifies the module and the port range.</td>
</tr>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>802.1D</td>
<td>Configure the IEEE 802.1D Legacy Bridge. Note: The 802.1D bridge can only be modified when in the IEEE config mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>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.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>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.</td>
</tr>
</tbody>
</table>
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 23-9. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-range</td>
<td>Specifies the module and the port range.</td>
</tr>
<tr>
<td>cost-value</td>
<td>The path cost for the bridge port.</td>
</tr>
<tr>
<td>802.1D</td>
<td>Configure the IEEE 802.1D Legacy Bridge.</td>
</tr>
<tr>
<td>Note:</td>
<td>The 802.1D bridge can only be modified when in the IEEE config mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s vlan ID.</td>
</tr>
<tr>
<td>Note:</td>
<td>LAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s name.</td>
</tr>
<tr>
<td>Note:</td>
<td>VLAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
</tbody>
</table>
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 23-10. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>mod-port-range</td>
<td>Specifies the module and the port range.</td>
</tr>
<tr>
<td>priority-value</td>
<td>The priority of the port, in hexadecimal. A two digit hexadecimal value indicates the priority of the bridge port. The higher the number, the lower the priority. The default is 0x80 (in hexadecimal).</td>
</tr>
<tr>
<td>802.1D</td>
<td>Configure the IEEE 802.1D Legacy Bridge.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The 802.1D bridge can only be modified when in the IEEE config mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s vlan ID.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> LAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s name.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> VLAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
</tbody>
</table>
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
Chapter 23

set spantree priority

Command Mode: Configuration

Description

Sets the bridge priority for a particular bridge. The default priority is \textbf{0 x 8000} (in hexadecimal).

Command Syntax

\begin{table}[h]
\centering
\begin{tabularx}{\textwidth}{|l|X|}
\hline
\textbf{To Enable:} & set spantree priority \texttt{<priority-value> 802.1D\{vlan \{<vlan-id>|name <vlan-name}\}}} \\
\hline
\end{tabularx}
\end{table}

Table 23-11. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>priority-value</td>
<td>The bridge priority, specified as a two byte value in hexadecimal (0x8000).</td>
</tr>
<tr>
<td>802.1D</td>
<td>Configure the IEEE 802.1D Legacy Bridge.</td>
</tr>
<tr>
<td></td>
<td>\textbf{Note:} The 802.1D bridge can only be modified when in the IEEE config mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s vlan ID.</td>
</tr>
<tr>
<td></td>
<td>\textbf{Note:} LAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Configure a per-vlan or dual-layer bridge by using the VLAN’s name.</td>
</tr>
<tr>
<td></td>
<td>\textbf{Note:} VLAN bridges can only be modified when in per-vlan or dual-layer mode.</td>
</tr>
</tbody>
</table>

Sample Output

This example sets the spanning tree priority for the 802.1D Legacy Bridge.

\begin{verbatim}
Cajun(configure)# set spantree priority
0xAAAA vlan 1
\end{verbatim}
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 23-12. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>table-name</td>
<td>The name of the 3Com mapping table. If not included, this command will display all of the tables configured on the switch.</td>
</tr>
</tbody>
</table>

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 23-13. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Display all the bridges in configuration mode.</td>
</tr>
<tr>
<td></td>
<td>• <strong>IEEE mode</strong> - Shows only the 802.1D bridge.</td>
</tr>
<tr>
<td></td>
<td>• <strong>per-vlan or dual-layer mode</strong> - Shows all of the VLAN bridges.</td>
</tr>
<tr>
<td>802.1D</td>
<td>Indicates an 802.1D bridge which can only be displayed in 802.1D Config Mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>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.</td>
</tr>
<tr>
<td>name</td>
<td><strong>vlan-name</strong> - 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.</td>
</tr>
</tbody>
</table>

Sample Output

```
Cajun> show spantree all
Name/Vlan  Status  RootPrt  RootCst  MaxAge  HelloTime  FwdDly  TopChngs
Default    Enabled  0       0       20       15         0
            BridgeId = 0x800002E03BDDF400
            DesignatedRoot = 0x800002E03BDDF400
```
<table>
<thead>
<tr>
<th>VLAN</th>
<th>Enabled</th>
<th>BID</th>
<th>Priority</th>
<th>RootPathCost</th>
<th>DesignatedRoot</th>
<th>BridgeID</th>
<th>Time Since Topology Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLAN100</td>
<td>Yes</td>
<td>0</td>
<td>2</td>
<td>15</td>
<td>0x800002E03BDDF400</td>
<td>0x800002E03BDDF400</td>
<td>00:25:36</td>
</tr>
<tr>
<td>VLAN200</td>
<td>Yes</td>
<td>0</td>
<td>2</td>
<td>15</td>
<td>0x800002E03BDDF400</td>
<td>0x800002E03BDDF400</td>
<td>00:24:39</td>
</tr>
</tbody>
</table>
show spantree config

Command Mode: User

Description
Display the current global spanning tree configuration.

Command Syntax

<table>
<thead>
<tr>
<th>To View:</th>
</tr>
</thead>
<tbody>
<tr>
<td>show spantree config</td>
</tr>
</tbody>
</table>

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 23-14. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>802.1D</td>
<td>Indicates an 802.1D bridge which can only be displayed in 802.1D Config Mode.</td>
</tr>
<tr>
<td>vlan-id</td>
<td>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.</td>
</tr>
<tr>
<td>name</td>
<td>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.</td>
</tr>
</tbody>
</table>

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
<table>
<thead>
<tr>
<th>Port</th>
<th>Status</th>
<th>Enabled</th>
<th>DesignatedBridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>58</td>
<td>Down</td>
<td>0x0000</td>
<td>0x800202E03BD458000</td>
</tr>
<tr>
<td>77</td>
<td>Down</td>
<td>0x0000</td>
<td>0x800202E03BD458000</td>
</tr>
</tbody>
</table>
Overview

This chapter describes:

- set fabric configure-redundant-hardware
- 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

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 24-2. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>normal</td>
<td>1</td>
</tr>
<tr>
<td>• Normal means that the normally enabled redundant element is turned on.</td>
<td></td>
</tr>
<tr>
<td>• 1-6 means that element associated with the number is turned on.</td>
<td></td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>show fabric status</th>
</tr>
</thead>
</table>

Sample Output

Cajun> show fabric status
Component                State
Switch Controller:     # 0 Active
Redundant Controller:  Not Configured
Switch Elements:       Normal # 0
Redundant Element:     Not Configured
25 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 25-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-address</td>
<td>The IP address to be removed.</td>
</tr>
<tr>
<td>all</td>
<td>Clears all of the configured static routes.</td>
</tr>
<tr>
<td>dest-ip-addr</td>
<td>Clears the static route associated with the interface indicated by the destination IP address and mask.</td>
</tr>
<tr>
<td></td>
<td>• mask - Subnet address to remove.</td>
</tr>
</tbody>
</table>

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 25-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethernet-console</td>
<td>inband</td>
</tr>
<tr>
<td>ip-address</td>
<td>A required parameter indicating the IP address of the interface.</td>
</tr>
<tr>
<td>mask</td>
<td>A required parameter indicating the mask associated with IP address of the interface.</td>
</tr>
</tbody>
</table>

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 25-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>Searches for the matching interface as indicated by the gateway IP address</td>
</tr>
<tr>
<td></td>
<td>and installs the default gateway on that interface.</td>
</tr>
<tr>
<td>dest-ip-addr</td>
<td>Searches for an interface with this assigned destination IP address and</td>
</tr>
<tr>
<td></td>
<td>mask, and to install the default gateway on that interface.</td>
</tr>
<tr>
<td>mask</td>
<td>A required parameter indicating the mask associated with IP address of the</td>
</tr>
<tr>
<td></td>
<td>interface.</td>
</tr>
<tr>
<td>gateway-ip-addr</td>
<td>A required parameter, indicating the default gateway IP address.</td>
</tr>
</tbody>
</table>

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 25-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>dest-ip-addresses</td>
<td>The IP addresses of the ARP cache.</td>
</tr>
<tr>
<td>if-name</td>
<td>The name of the interface for the ARP cache.</td>
</tr>
</tbody>
</table>

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
192.168.0.115
Local Not Aged
192.168.0.255 ff:ff:ff:ff:ff:ff
192.168.0.115 Local 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**

```plaintext
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
0    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
     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 25-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>static</td>
<td>default-gateway</td>
</tr>
<tr>
<td>static</td>
<td>static - When run on the M5500/M2200, show ip route static is equivalent to the Cajun CLI command: net ip display static_routes.</td>
</tr>
<tr>
<td>default-gateway</td>
<td>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.</td>
</tr>
<tr>
<td>local</td>
<td>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.</td>
</tr>
<tr>
<td>dest-ip-addresses</td>
<td>The IP addresses of the ARP cache.</td>
</tr>
<tr>
<td>if-name</td>
<td>The name of the interface for the ARP cache.</td>
</tr>
</tbody>
</table>

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
26 System

Overview

This chapter describes:

- boot system flash
- copy
- copy (running-config)
- copy (startup-config)
- copy (tftp)
- copy card-image bootflash
- copy card-image flash
- copy <filename1> pcmcia <filename2>
- copy pcmcia <filename1> <filename2>
- 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 pcmcia
- copy tftp startup-config
- cpu_redundancy console
- cpu_redundancy default-gateway
■ delete pcmcia
■ dir
■ cpu-redundancy synchronize
■ erase int-configs
■ erase legacy-configs
■ erase scripts
■ erase startup-config
■ ip http help server
■ NVRAM initialize
■ pcmcia initialize
■ reload
■ reset
■ setup
■ show boot
■ show cpu-redundancy
■ show cpu_redundancy
■ show flash
■ show running-config
■ show startup-config
■ show version
boot system flash

**Command Mode**
Configuration

**Description**
Specifies which system image the router loads at startup. Configures
the image to boot from the eprom.
The “no” form of this command restores the default system flash setting (app1).

**Syntax**

```
To Enable: boot system flash {app1|app2|cardapp1|cardapp2}
```

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>app1</td>
<td>app2</td>
</tr>
<tr>
<td>cardapp1</td>
<td>cardapp2</td>
</tr>
</tbody>
</table>

**Sample Output**
The following example specifies the system image that the router
loads at startup to FLASH cardapp2 on the pcmcia.

```
Cajun(configure)# boot system flash cardapp2
Boot flag set to 'cardapp2'.
```

**Systems**
P550/P550R/P880/P882

(80-Series Supervisor only)
copy

Command Mode Privileged

Description Copy a specified file in NVRAM to another specified file in NVRAM.

Syntax

```
To Enable:  copy <source filename> <dest filename>
```

Table 26-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>source filename</td>
<td>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 &quot;.txt&quot;</td>
</tr>
<tr>
<td>dest filename</td>
<td>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 &quot;.txt&quot;</td>
</tr>
</tbody>
</table>

Sample Output The following 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'
```

Systems P550/P550R/P880/P882
**copy (running-config)**

**Command Mode**  Configure

**Description**  Executes the specified file in NVRAM. The running (current) configuration displays as a merge of the executed file and the existing configuration, with the executed file taking precedence.

**Syntax**

| To Enable: | copy <filename> running-config |

**Table 26-3. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>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 &quot;.txt&quot;</td>
</tr>
</tbody>
</table>

**Sample Output**  The following 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'.
```

**Systems**  P550/P550R/P880/P882
copy (startup-config)

Command Mode  Privileged

Description  Copies the specified file located in NVRAM to the startup (bootup) configuration.

Syntax  

To Enable:  

```
Table 26-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>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 &quot;.txt&quot;</td>
</tr>
</tbody>
</table>

Sample Output  The following example shows the copy <filename> startup-config command.

    Cajun# copy ripcfg.txt startup-config
    Copied file '/NVRAM/ripcfg.txt' to file '/NVRAM/startup.txt'

Systems  P550/P550R/P880/P882
copy (tftp)

Command Mode  Privileged

Description  Uploads a specified file in NVRAM to a specified TFTP server.

Syntax

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename_opt_path</td>
<td>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 &quot;txt&quot;</td>
</tr>
<tr>
<td>ip-addr</td>
<td>The IP address of the TFTP server</td>
</tr>
</tbody>
</table>

Sample Output  The following 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

Systems  P550/P550R/P880/P882
copy card-image flash

Command Mode  Privileged

Description  Copies card FLASH images to and from the PCMCIA flash card.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
</tr>
</thead>
</table>
| copy card-image flash <app1|app2|cardapp1|cardapp2>  
| <app1|app2|cardapp1|cardapp2>  

Table 26-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;app1</td>
<td>app2</td>
</tr>
</tbody>
</table>

Sample Output  The following example copies the flash image from app1 to cardapp2.

```
Cajun# copy card-image flash app1 cardapp2  
Copied file 'jadams/test.txt' from TFTP  
server 205.181.0.205 to 'test.txt'
```

Systems  P550/P550R/P880/P882

(80-series Supervisor only)
copy card-image bootflash

Command Mode  Privileged

Description Copies card FLASH images to and from the PCMCIA flash card.

Syntax

| To Enable: | copy card-image bootflash <boot|cardboot><boot|cardbboot> |

Table 26-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;app1</td>
<td>app2</td>
</tr>
</tbody>
</table>

Sample Output The following example copies the bootflash image from boot to cardboot.

Cajun# copy card-image flash app1 cardapp2
Copied file 'jadams/test.txt' from TFTP server 205.181.0.205 to 'test.txt'

Systems P550/P550R/P880/P882

(80-series Supervisor only)
copy <filename1> pcmcia <filename2>

**Command Mode** Privileged

**Description** Copies a file `<filename1>` from the /NVRAM file system to the /pcmcia file system `<filename2>`.

**Syntax**

| To Enable: | copy <filename1> pcmcia <filename2> |

**Table 26-8. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;filename1&gt;</code></td>
<td>File from /NVRAM files system.</td>
</tr>
<tr>
<td><code>&lt;filename2&gt;</code></td>
<td>File to /pcmcia file system.</td>
</tr>
</tbody>
</table>

**Sample Output**

The following example copies the flash image from app1 to cardapp2.

```
Cajun# copy jerry.txt pcmcia jerry2.txt
Copied file 'jerry.txt' from /NVRAM system to /pcmcia system.
```

**Systems** P550/P550R/P880/P882

(80-series Supervisor only)
copy pcmcia <filename1> <filename2>

Command Mode Privileged

Description Copies a file <filename1> from the /pcmcia file system to the /NVRAM file system <filename2>.

Syntax

| To Enable: | copy pcmcia <filename1> <filename2> |

Table 26-9. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;filename1&gt;</td>
<td>File from /pcmcia files system.</td>
</tr>
<tr>
<td>&lt;filename2&gt;</td>
<td>File to /NVRAM file system.</td>
</tr>
</tbody>
</table>

Sample Output The following example copies the flash image from app1 to cardapp2.

Cajun# copy pcmcia jerry.txt jerry2.txt
Copied file 'jerry.txt' from /pcmcia system to /NVRAM system.

Systems P550/P550R/P880/P882

(80-series Supervisor only)
copy running-config

Command Mode Privileged

Description Saves the running configuration to a file in NVRAM.

Syntax

```
To Enable:  copy running-config <filename>
```

**Table 26-10. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>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 &quot;.txt&quot;</td>
</tr>
</tbody>
</table>

Sample Output  The following example shows the `copy running-config` command.

```
Cajun# copy running-config text.txt
Wrote running-config to '/NVRAM/test.txt'
```

Systems  P550/P550R/P880/P882

(80-Series Supervisor module only)
copy running-config startup-config

Command Mode Privileged

Description Saves the running (current) configuration as the startup (bootup) configuration in NVRAM.

Syntax

| To Enable: | copy running-config startup-config |

Sample Output The following example shows the copy running-config startup-config command.

Cajun# copy running-config startup-config
Wrote running-config to '/NVRAM/startup.txt'

Systems P550/P550R/P880/P882
copy running-config tftp

Command Mode       Privileged

Description        Uploads the running (current) configuration to the specified filename on the specified TFTP server.

Syntax

| To Enable: | copy running-config tftp <filename_opt_path> <ip-addr>

Table 26-11. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename_opt_path</td>
<td>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 &quot;.txt&quot;.</td>
</tr>
<tr>
<td>ip-addr</td>
<td>The IP address of the TFTP server</td>
</tr>
</tbody>
</table>

Sample Output    The following 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

Systems          P550/P550R/P880/P882
copy startup-config

Command Mode  Privileged

Description  Copy the startup (bootup) configuration to the specified file in NVRAM.

Syntax

```
To Enable: copy startup-config <filename>
```

Table 26-12. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>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 &quot;.txt&quot;.</td>
</tr>
</tbody>
</table>

Sample Output  The following example shows the copy startup-config command.

```
Cajun# copy startup-config text.txt
Copied file '/NVRAM/startup.txt' to file '/NVRAM/test.txt'
```

Systems  P550/P550R/P880/P882
copy startup-config running-config

**Command Mode** Privileged

**Description** Executes the startup (bootup) configuration. The running (current) configuration displays as a merge of the executed file and the existing configuration, with the executed file taking precedence.

**Syntax**

```
To Enable: copy startup-config running-config
```

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>The name of the destination file in NVRAM. It must be an ASCII script file,</td>
</tr>
<tr>
<td></td>
<td>with a 1-8 letter base filename, and file extension of &quot;.txt&quot;.</td>
</tr>
</tbody>
</table>

**Sample Output** The following 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'.
```

**Systems** P550/P550R/P880/P882
copy startup-config tftp

Command Mode Privileged

Description Uploads the startup (bootup) configuration to the specified file on the specified TFTP server.

Syntax

| To Enable: | copy startup-config tftp <filename_opt_path> <ip-addr> |

Table 26-14. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename_opt_path</td>
<td>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 &quot;txt&quot;.</td>
</tr>
<tr>
<td>ip-addr</td>
<td>The IP address of the TFTP server.</td>
</tr>
</tbody>
</table>

Sample Output

The following 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

Systems P550/P550R/P880/P882
Chapter 26

**copy tftp**

**Command Mode** Privileged

**Description** Downloads the specified file from the specified TFTP server to NVRAM.

**Syntax**

```
To Enable:  copy tftp <filename_opt_path> <ip-addr>
```

**Sample Output** The following 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'
```

**Systems** P550/P550R/P880/P882

---

**Table 26-15. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename_opt_path</td>
<td>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.</td>
</tr>
<tr>
<td>ip-addr</td>
<td>The IP address of the TFTP server.</td>
</tr>
</tbody>
</table>
copy tftp bootflash

Description
Privileged

Description
Downloads a specified binary boot image from a specified TFTP server to bootflash.

Syntax

```
To Enable: copy tftp bootflash <image_opt_path> <tftp-server>
```

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;image_opt_path&gt;</td>
<td>The name of the binary image on the TFTP server; which may include a relative sub-directory name.</td>
</tr>
<tr>
<td>&lt;tftp-server&gt;</td>
<td>The IP address of the TFTP server.</td>
</tr>
</tbody>
</table>

Sample Output
The following 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
```
Chapter 26

copy tftp flash

**Command Mode**
Configure

**Description**
Download a specified binary image from a specified TFTP server to the flash location APP1 or APP2.

**Syntax**

```
To Enable: copy tftp flash {app1|app2} <image_opt_path> <ip-addr>
```

**Table 26-17. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>app1</td>
<td>app2</td>
</tr>
<tr>
<td>image_opt_path</td>
<td>The name of the binary image on the TFTP server; which may include a relative sub-directory name.</td>
</tr>
<tr>
<td>ip-addr</td>
<td>The IP address of the TFTP server.</td>
</tr>
</tbody>
</table>

**Sample Output**
The following 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 pcmcia

Command Mode Configure

Description Downloads a specified binary image from a specified TFTP server to the pcmcia flash card.

Syntax

```
To Enable: copy tftp pcmcia <cardapp1|cardapp2> <image_opt_path> <ip-addr>
```

Table 26-18. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>app1</td>
<td>app2</td>
</tr>
<tr>
<td>image_opt_path</td>
<td>The name of the binary image on the TFTP server. This field name may include a relative sub-directory name.</td>
</tr>
<tr>
<td>ip-addr</td>
<td>The IP address of the TFTP server.</td>
</tr>
</tbody>
</table>

Sample Output The following example copies the bootflash image from boot to cardboot.

```
Cajun# copy tftp pcmcia cardapp2
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_a5.0.12.bin
    Transferred 219136 bytes of m5500r_a5.0.12.bin
    Transferred 295936 bytes of m5500r_a5.0.12.bin
    Transferred 372736 bytes of ...
```

Systems P550/P550R/P880/P882

(80-series Supervisor only)
Chapter 26

**delete pcmcia**

**Command Mode**  Configure

**Description**  Delete a file from the /pcmcia flash card file system.

**Syntax**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>File to delete from the /pcmcia card file system.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example deletes the jerry2.txt from to /pcmcia card file system.

```
Cajun# delete pcmcia jerry2.txt
Jerry2.txt deleted
```

**Systems**

P550/P550R/P880/P882

(80-series Supervisor only)
pcmcia initialize

Description
Configure

Description
Initializes the PCMCIA card located in the P880 Supervisor Module.

Syntax

| To Enable: | pcmcia initialize |

Sample Output
The following example initializes the pcmcia card installed in the pcmcia carrier on the Supervisor module.

Cajun(configure)# pcmcia initialize

Systems
PP550/P550R880/P882

(80-Series Supervisor module only)
copy tftp flash

Command Mode Configure

Description Downloads a specified binary image from a specified TFTP server to the flash location APP1 or APP2.

Syntax

To Enable: copy tftp flash {app1|app2} <image_opt_path> <ip-addr>

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>app1</td>
<td>app2</td>
</tr>
<tr>
<td>image_opt_path</td>
<td>The name of the binary image on the TFTP server; which may include a relative sub-directory name.</td>
</tr>
<tr>
<td>ip-addr</td>
<td>The IP address of the TFTP server.</td>
</tr>
</tbody>
</table>

Sample Output

The following 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**  
Downloads a specified filename from a specified TFTP server, and executes a script. The running configuration displays as merge of the executed file and the existing configuration, with the executed file taking precedence.

**Syntax**

```
| To Enable: | copy tftp running-config <filename_opt_path> <ip-addr>
```

**Table 26-21. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename_opt_path</td>
<td>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 &quot;.txt&quot;.</td>
</tr>
<tr>
<td>ip-addr</td>
<td>The IP address of the TFTP server.</td>
</tr>
</tbody>
</table>

**Sample Output**  
The following example downloads the indicated file to the running-config file.

```
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
```

**Systems**  
P550/P550R/P880/P882
copy tftp startup-config

Command Mode  Privileged

Description  Downloads a specified file from a specified TFTP server, and saves it as the startup (bootup) configuration in NVRAM.

Syntax

Table 26-22. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename_opt_path</td>
<td>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 &quot;.txt&quot;.</td>
</tr>
<tr>
<td>ip-addr</td>
<td>The IP address of the TFTP server.</td>
</tr>
</tbody>
</table>

Sample Output  The following example downloads the indicated file to the startup-config file.

```
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
```

Systems  P550/P550R/P880/P882
dir

Command Mode  User

Description  Displays a directory listing of a single file or all files located in NVRAM.

Syntax

| To Enable: | dir [<filename>] |

Table 26-23. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>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.</td>
</tr>
</tbody>
</table>

Sample Output  The following example displays all of the files currently in NVRAM.

Cajun> dir
**cpu-redundancy console**

**Command Mode**  Configure

**Description**  Changes the ethernet console IP address for the indicated slot.

**Syntax**

```plaintext
To Enable:  cpu_redundancy console <slot1|slot2><ip-addr>
```

**Table 26-24. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-addr</td>
<td>The ip address of the Ethernet console.</td>
</tr>
</tbody>
</table>

**Sample Output**  The following example changes the ethernet console IP address of slot 2.

```plaintext
Cajun(configure)# cpu_redundancy console slot2 <ip-addr>
```

**Systems**  P550/P550R/P880/P882
cpu-redundancy Hello-Interval

**Command Mode**  Configure

**Description**  Sets the Hello time (secs) for the secondary (standby) supervisor.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>cpu_redundancy hello-interval &lt;seconds&gt;</th>
</tr>
</thead>
</table>

**Table 26-25. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;seconds&gt;</td>
<td>Hello-time in seconds.</td>
</tr>
</tbody>
</table>

The following example sets the cpu redundancy time for the secondary supervisor to 2 seconds.

Cajun(configure)# cpu_redundancy hello-interval 2

**Systems**  P550/P550R/P880/P882

Changes the IP address of the default gateway for the secondary (standby) supervisor.
cpu-redundancy mac-prefix

**Command Mode**  Configure

**Description**  Resets the mac-prefix for the secondary (standby) supervisor.

**Syntax**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>cpu_redundancy mac-prefix reset</th>
</tr>
</thead>
</table>

The following example resets the mac prefix for the secondary supervisor.

```
Cajun(configure)# cpu_redundancy hello-interval 2
```

**Systems**  P550/P550R/P880/P882
cpu-redundancy synchronize

**Command Mode**  Configure

**Description**  Synchronizes the Primary and secondary (standby) supervisors.

**Syntax**

```
To Enable:  cpu_redundancy synchronize
```

The following example synchronizes the Primary and secondary Supervisor.

```
Cajun(configure)# cpu_redundancy synchronize
```

**Systems**  P550/P550R/P880/P882
erase

Command Mode  Privileged

Description  Erases the specified file from NVRAM.

Syntax  

To Enable:  `erase <filename>`

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>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.</td>
</tr>
</tbody>
</table>

Syntax  The following example erases the test.txt file from NVRAM.

```
Cajun# erase test.txt
File '/NVRAM/test.txt' deleted.
```

Systems  P550/P550R/P880/P882
**erase int-configs**

**Command Mode**  Privileged

**Description**  Erases all of the internal (v4.x and later) configurations (".int" files) from NVRAM. This enables you to go back to 3.x code.

**Syntax**

| To Enable:     | erase int-configs |

**Sample Output**  The following example erases all internal configurations from NVRAM.

```
Cajun# erase int-configs
Successfully deleted all Internal
Configuration files from the system.
```

**Systems**  P550/P550R/P880/P882
erase legacy-configs

Command Mode  
Privileged

Description  
Erases 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.

Syntax

| To Enable: | erase legacy-configs |

Sample Output

The following example erases all legacy configurations from NVRAM.

```
Cajun# erase legacy-configs
Successfully deleted all Configuration files from the system.
```

Systems

P550/P550R/P880/P882
erase scripts

Command Mode  Privileged

Description  Erases 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.

Syntax  

| To Enable: | erase scripts |

Sample Output  The following example erases all ASCII script files from NVRAM.

Cajun# erase scripts
Successfully deleted all Text files from the system.

Systems  P550/P550R/P880/P882
**erase startup-config**

**Command Mode** Privileged

**Description** Erases the startup (bootup) configuration from NVRAM.

**Syntax**

```
To Enable:  erase startup-config
```

**Sample Output** The following example erases the startup configuration from NVRAM.

```
Cajun# erase startup-config
File '/nvram/startup.txt' deleted.
```

**Systems** P550/P550R/P880/P882
ip http help server

Command Mode  Configure

Description  Configures the HTTP server for on-line help. The no form of this command clears the server location.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip http help server &lt;url&gt; &lt;directory&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip http help server</td>
</tr>
</tbody>
</table>

Table 26-27. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>url</td>
<td>The universal resource locator (url) for the help server.</td>
</tr>
<tr>
<td>directory</td>
<td>The name of the directory containing the help file.</td>
</tr>
</tbody>
</table>

Sample Output  The following example configure the HTTP server for on-line Help.

Cajun (Configure) # ip http help server www.avaya.com cli.txt

Systems  P550/P550R/P880/P882
NVRAM initialize

Command Mode       Configure

Description        Clears the contents of the NVRAM file system.

Syntax

To Enable: nvram initialize

Sample Output       The following example initializes NVRAM.

Cajun(configure)# 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.

Systems             P550/P550R/P880/P882
reload

Command Mode  Configure

Description  Reloads the switch software.

Syntax

| To Enable: | reload |

Sample Output  The following example reloads the switch software.

```
Cajun(configure)# 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
  ...
  .
```

Systems  P550/P550R/P880/P882
**reset**

**Command Mode**  Configure

**Description**  Resets the switch and reloads the software.

**Syntax**

<table>
<thead>
<tr>
<th><strong>To Enable:</strong></th>
<th>reset</th>
</tr>
</thead>
</table>

**Sample Output**  The following example resets the switch and reloads the software.

```
Cajun(configure)# reset
```

**Systems**  P550/P550R/P880/P882
### setup

**Command Mode**   Configure

**Description**   Sets up the console IP address, mask or gateway.

**Syntax**

| To Enable: | setup |

**Sample Output**   The following 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 question. To accept the default, press ENTER.

Would you like to change the super user password [Yes]?
```

**Systems**   P550/P550R/P880/P882
**show boot**

**Command Mode**  User

**Description**  Displays BOOT environment information.

**Syntax**

```
To Enable:  show boot
```

**Sample Output**  The following example displays the boot environment information.

```
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.
```

**Systems**  P550/P550R/P880/P882
show cpu_redundancy

Command Mode User

Description Displays configuration and status information about the redundant supervisor.

Syntax

To Enable: show cpu_redundancy <config|status>

Table 26-28. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>config</td>
<td>Displays Configuration information for the redundant supervisor slots 1 and 2.</td>
</tr>
<tr>
<td>status</td>
<td>Displays Status information for the redundant supervisor slots 1 and 2.</td>
</tr>
</tbody>
</table>

Sample Output

The following example displays the status information for the redundant supervisor slots 1 and 2.

Cajun> show cpu_redundancy status
Status Information          Slot1 CPU          Slot2 CPU
------------------------------- --------- ---------
Status                       Active  N/A
BOOT Version                 v5.00.1  N/A
Power-Up/Reset Image         N/A      N/A
APP1 Version                 b5.00.14 N/A
APP1 Checksum                0x4be7   N/A
APP2 Version                 x5.00.95 N/A
APP2 Checksum                0x8cc2   N/A
Startup Config Date/Time Modified 00-Dec-06 09:35:25 N/A
Startup Config Checksum      0x41dc   N/A

Statistic Information
------------------------------- ----
Health Reports Sent           0
Health Reports Received       0
Health Reports Timeouts       0
Health Reports Missed         0

Synchronization Status
-------------------------------
No status available.
139(configure)#
show file_name

**Command Mode** Privileged

**Description** Displays the contents of a specified file in NVRAM.

**Syntax**

```plaintext
To View: show file_name <filename>
```

**Table 26-29. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>The name of a script file in NVRAM. This command only works with filenames that have a &quot;.txt&quot; extension. The filename parameters must be in an &quot;8.3&quot; format - one to eight (1-8) character base file name and a required three (3) letter extension.</td>
</tr>
</tbody>
</table>

**Sample Output**

The following example displays the contents of the startup.txt file located in NVRAM.

```plaintext
Cajun# show file_name startup.txt
P550R Documentation# show file_name
startup.txt
Contents of file '/NVRAM/startup.txt':
!
! Avaya Switch Agent v5.0.x
!
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.
```

**Systems**
P550/P550R/P880/P882
show flash

Command Mode        User

Description          Displays the layout and contents of flash memory.

Syntax

To View: show flash

Sample Output        The following example displays the layout and content of the switch’s flash memory.

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.
.
Systems              P550/P550R/P880/P882
show running-config

Command Mode  Privileged

Description  Displays the current running configuration.

Syntax

To View:  show running-config

Sample Output  The following example displays the current running configuration.

Cajun# show running-config
Current configuration:
!
! Avaya Switch Agent v5.0.x
!
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 "$tSfIcnbTP.pxFrf7BrrhGW31" access-type admin
username "diag" password encrypted-type1 "$PQO.vGxkDHkEDCJ2YsoD1" access-type read-write
username "manuf" password encrypted-type1 "$seHFLP9b16m2v/534Wck90" access-type read-write
snmp-server community "public" ro normal.

Systems  P550/P550R/P880/P882
show startup-config

**Command Mode**  Privileged

**Description**  Displays any existing startup configurations (STARTUP.TXT file)

**Syntax**

| To View: | show startup-config |

**Sample Output**  The following example displays the startup-config.

```
Cajun# show startup-config

P550R Documentation# show startup-config
Contents of file '/nvram/startup.txt':
!
! Avaya Inc. Cajun Switch Agent v5.0
! 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.pxFr7BrhGW31"
  .
  .
  .
```

**Systems**  P550/P550R/P880/P882
show version

Command Mode  User

Description  Displays the software version and software boot code version currently running on the switch.

Syntax

```
To View: show version
```

Sample Output  The following example displays the software version and boot code currently running on the switch.

```
Cajun> show version
Avaya Switch Agent v5.0.x
```

Systems  P550/P550R/P880/P882
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 27-1. Default Shutdown and Warning Temperatures

<table>
<thead>
<tr>
<th>Default Shutdown &amp; Warning Temperatures</th>
<th>Shutdown</th>
<th>Upper</th>
<th>Lower Warning</th>
<th>Low Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Sensor</td>
<td>100°</td>
<td>85°</td>
<td>5°</td>
<td>0°</td>
</tr>
<tr>
<td>All others</td>
<td>50°</td>
<td>45°</td>
<td>5°</td>
<td>0°</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Shutdown &amp; Warning Temperatures</th>
<th>Shutdown</th>
<th>Upper</th>
<th>Lower Warning</th>
<th>Low Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Sensor</td>
<td>100°</td>
<td>85°</td>
<td>5°</td>
<td>0°</td>
</tr>
<tr>
<td>All others</td>
<td>50°</td>
<td>45°</td>
<td>5°</td>
<td>0°</td>
</tr>
</tbody>
</table>

Command Syntax

To Enable: 
```
set temperature {supervisor-slot|backplane-sensor |cpu-sensor|probe} 
shutdown <temperature>
```

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>supervisor-slot</td>
<td>backplane-sensor</td>
</tr>
<tr>
<td>shutdown</td>
<td>Shutdown is a required parameter and indicates that the shutdown limit temperature is being set.</td>
</tr>
<tr>
<td>temperature</td>
<td>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.</td>
</tr>
</tbody>
</table>
Sample

This example sets the CPU sensor shutdown temperature to 95° (Celsius).

Cajun(configure)# set temperature
shut down 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 27-4.

Table 27-4. Default Shutdown and Warning Temperatures

<table>
<thead>
<tr>
<th>Shutdown &amp; Warning Temperatures</th>
<th>Shutdown</th>
<th>Upper</th>
<th>Lower Warning</th>
<th>Low Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Sensor</td>
<td>100°</td>
<td>85°</td>
<td>5°</td>
<td>0°</td>
</tr>
<tr>
<td>All others</td>
<td>50°</td>
<td>45°</td>
<td>5°</td>
<td>0°</td>
</tr>
</tbody>
</table>

Command Syntax

To Enable:

```
set temperature {supervisor-slot|backplane-sensor|cpu-sensor|probe}
warning {upper|lower|low-limit} <temperature>
```

Table 27-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>supervisor-slot</td>
<td>backplane-sensor</td>
</tr>
<tr>
<td>warning</td>
<td>Warning is a required parameter indicating that a warning limit is being modified.</td>
</tr>
<tr>
<td>upper</td>
<td>lower</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>temperature</td>
<td>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.</td>
</tr>
</tbody>
</table>

**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 27-6. Default Shutdown and Warning Temperatures

<table>
<thead>
<tr>
<th>Shutdown &amp; Warning Temperatures</th>
<th>Shutdown</th>
<th>Upper</th>
<th>Lower Warning</th>
<th>Low Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Sensor</td>
<td>100°</td>
<td>85°</td>
<td>5°</td>
<td>0°</td>
</tr>
<tr>
<td>All others</td>
<td>50°</td>
<td>45°</td>
<td>5°</td>
<td>0°</td>
</tr>
</tbody>
</table>

Command Syntax

To View: show temperatures

Sample Output

Cajun> show temperatures

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Shutdown Temperature</th>
<th>Upper Warning Temperature</th>
<th>Current Temperature</th>
<th>Lower Warning Temperature</th>
<th>Low Limit Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Sensor</td>
<td>50</td>
<td>45</td>
<td>29</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>All others</td>
<td>50</td>
<td>45</td>
<td>68</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

Slot 1 Sensor

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Shutdown Temperature</th>
<th>Upper Warning Temperature</th>
<th>Current Temperature</th>
<th>Lower Warning Temperature</th>
<th>Low Limit Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slot 1 Sensor</td>
<td>50</td>
<td>45</td>
<td>68</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>connect &lt;ip-addr&gt;</th>
</tr>
</thead>
</table>

**Table 28-1. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-addr</td>
<td>The IP address of the host in 4-part, dotted-decimal notation.</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>To Enable</th>
<th>end</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>length &lt;length&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>no length</td>
</tr>
</tbody>
</table>

Table 28-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>length</td>
<td>The number of lines to print before displaying the --more- prompt (5+Lines).</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>To View</th>
<th>show history</th>
</tr>
</thead>
</table>

**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
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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-addr</td>
<td>The IP address of the host.</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>To Enable:</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal databits {7</td>
</tr>
</tbody>
</table>

**Table 28-4. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>{7</td>
<td>8}</td>
</tr>
</tbody>
</table>

**Sample Output**

Cajun(configure)# **terminal databits 8**
terminal flow control

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 28-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>xon/xoff</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>terminal history</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] terminal history</td>
</tr>
</tbody>
</table>
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 28-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>length</td>
<td>The number of lines to print before displaying the --more- prompt (5+ Lines).</td>
</tr>
</tbody>
</table>

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 \textit{--more--} prompt. The \texttt{no} form of this command disables this function, returning it to its default, which is \textit{disabled}.

In addition, you can terminate a current print job by pressing either \texttt{Q} or \texttt{\langle Ctrl-C \rangle} at the \textit{--more--} prompt. Continue printing by pressing any other key.

Command Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>terminal output pause</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] terminal output pause</td>
</tr>
</tbody>
</table>

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 28-7. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>even</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>1200</td>
</tr>
</tbody>
</table>

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 28-9. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>terminal width &lt;characters&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] terminal width</td>
</tr>
</tbody>
</table>

Table 28-10. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>characters</td>
<td>The screen width (40+ characters).</td>
</tr>
</tbody>
</table>

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 28-11. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The user’s name.</td>
</tr>
<tr>
<td>password</td>
<td>The user’s password.</td>
</tr>
</tbody>
</table>
| 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**

```plaintext
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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>width &lt;characters&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] width</td>
</tr>
</tbody>
</table>

Table 28-12. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>characters</td>
<td>The screen width (40+) characters.</td>
</tr>
</tbody>
</table>

Sample Output

Cajun> width 50
VLAN

Overview

This chapter describes:

- set vlan
- set vlan (frame format)
- set vlan <vlan-id><port>
- 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.

Syntax

| To Enable: | set vlan <vlan-id> [name <vlan-name>] [autoincrement-\nHT-size {true|false}] [init-HT-size <size>] |
| To Disable: | clear vlan {<vlan-id>|name <vlan-name>} |

Table 29-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-id</td>
<td>• If creating a VLAN, this command specifies the VLAN’s vlanID.</td>
</tr>
<tr>
<td></td>
<td>• If modifying the name, this command specifies the VLAN to modify by its vlanID.</td>
</tr>
<tr>
<td></td>
<td>• In the negative form, it specifies the VLAN to delete by its vlanID.</td>
</tr>
<tr>
<td>vlan-name (Optional in create)</td>
<td>• If creating a VLAN, this command specifies the name of the VLAN to create.</td>
</tr>
<tr>
<td></td>
<td>• If left blank, the system will attempt to create a default name of the form VLANxxxx, where xxxx is the &lt;vlan-id&gt; padded to four spaces. For example the command &quot;set vlan 10&quot; would attempt to create a VLAN with an ID of 10 and a name of VLAN0010.</td>
</tr>
<tr>
<td></td>
<td>• In the negative syntax, this command specifies the VLAN to delete by its name.</td>
</tr>
</tbody>
</table>
### Sample Output

The following example sets the AFT hash table associated with vlan 30 to false.

```plaintext
%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 deleted
```

### Systems

P550/P550R/P880/P882
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).

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 29-2. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-id</td>
<td>Specifies the VLAN to add or remove ports to or from by its VLAN ID.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Specifies the VLAN to add or remove ports to or from by its name.</td>
</tr>
<tr>
<td>mod-port-range</td>
<td>Specifies a single switch port or range of switch ports on a module to add or remove to or from the VLAN.</td>
</tr>
</tbody>
</table>
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

Systems

P550/P550R/P880/P882
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.

- set vlan <vlan-id> ...: Modifies the frame format for the specified switch port(s) on the VLAN specified by <vlan-id>.

- 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> |

Syntax

| To Enable: | set vlan {<vlan-id> | name <vlan-name>} <mod-swport-range>[,...,<mod-swport-range>] frame-format {clear | from-port} |

Table 29-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-id</td>
<td>Specifies the VLAN the switch port is bound to by its VLAN ID.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Specifies the VLAN the switch port is bound to by its name.</td>
</tr>
</tbody>
</table>
Sample Output

The following example sets the frame format for vlan 1 4/1 to clear:

```
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
```

Systems

P550/P550R/P880/P882

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.
**set vlan<vlan-id><port>**

**Command Mode**  
Configure

**Description**  
Binds additional ports to a VLAN if trunking is enabled on the indicated port.

**Syntax**

| To Enable:    | set vlan <vlan-id> <port> |

**Sample Output**  
The following example binds additional ports to vlan 10 on module 4, port 2.

```
Cajun(configure)# set vlan 10 4/2
```

**Systems**  
P550/P550R/P880/P882
set vtp-snooping domain

Command Mode  Configure

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 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."

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>set vtp-snooping domain &lt;name&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>clear vtp-snooping domain</td>
</tr>
</tbody>
</table>

Table 29-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The Cisco VTP domain name to which this switch is to listen for VTP messages.</td>
</tr>
</tbody>
</table>

Sample Output  The following example set the VTP snooping domain name to Corporate.

```plaintext
Cajun(configure)# set vtp-snooping domain Corporate
vtp-snooping parameter modified.
Cajun(configure)#
```

Systems  P550/P550R/P880/P882
show vlan detailed

Command Mode  User

Description  Displays detailed information about all of the VLANs that currently exist in the system. There are two different forms of this command.

Syntax

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>show vlan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>show vlan [detailed]</td>
</tr>
</tbody>
</table>

Table 29-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>detailed</td>
<td>Shows a detailed output of the VLANs that currently exist on the system including switch ports that are bound to that VLAN.</td>
</tr>
</tbody>
</table>

Sample Output  The following example displays detailed information about the VLANs currently configured on the switch.

Cajun(configure)# show vlan detailed

<table>
<thead>
<tr>
<th>ID</th>
<th>VLAN Name</th>
<th>Group ID</th>
<th>AFT Index</th>
<th>Learned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Default</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>*autoVlan2</td>
<td>4</td>
<td>9</td>
<td>Aut</td>
</tr>
<tr>
<td>10</td>
<td>jerry2</td>
<td>10</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>20</td>
<td>jerry3</td>
<td>20</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>25</td>
<td>*autoVlan25</td>
<td>25</td>
<td>12</td>
<td>Aut</td>
</tr>
<tr>
<td>30</td>
<td>*autoVlan30</td>
<td>30</td>
<td>13</td>
<td>Aut</td>
</tr>
<tr>
<td>50</td>
<td>*autoVlan50</td>
<td>50</td>
<td>14</td>
<td>Aut</td>
</tr>
<tr>
<td>4097</td>
<td>Discard</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

Systems  P550/P550R/P880/P882
show vlan name

Command Mode   User

Description  Displays information about all of the VLANs that currently exist in the system. There are two different forms of the command.

Syntax

| To Enable:                  | show vlan \{{<vlan-id>|name <vlan-name>}\} |
|-----------------------------|------------------------------------------|

Table 29-6. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-id</td>
<td>Specifies a VLAN by its VLAN ID.</td>
</tr>
<tr>
<td>vlan-name</td>
<td>Specifies a VLAN by its name.</td>
</tr>
</tbody>
</table>

Sample Output  The following example show detailed information about vlan 1.

Cajun(configure)# show vlan 1

<table>
<thead>
<tr>
<th>ID</th>
<th>VLAN Name</th>
<th>ID</th>
<th>Index</th>
<th>Learned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Default</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

Systems  P550/P550R/P880/P882
**show vtp-snooping configuration**

**Command Mode**  
User

**Description**  
Displays the configured and learned VTP snooping configuration. The default is None.

**Syntax**

| To Enable:                  | show vtp-snooping configuration |

**Sample Output**  
The following example displays vtp-snooping configuration information.

```
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
```

**Systems**  
P550/P550R/P880/P882
Summary

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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip vrrp</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip vrrp</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip vrrp &lt;vr-id&gt; address &lt;ip-address&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip vrrp &lt;vr-id&gt; address &lt;ip-address&gt;</td>
</tr>
</tbody>
</table>

Table 30-1. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vr-id</td>
<td>The ID of the virtual router.</td>
</tr>
<tr>
<td>ip-address</td>
<td>The IP address of the virtual router.</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip vrrp &lt;vr-id&gt; auth-key &lt;key-string&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip vrrp &lt;vr-id&gt; auth-key</td>
</tr>
</tbody>
</table>

**Table 30-2. Parameters, Keywords, Arguments**

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vr-id</td>
<td>Virtual router ID.</td>
</tr>
<tr>
<td>key-string</td>
<td>Simple password string.</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>ip vrrp &lt;vr-id&gt; priority &lt;pri-value&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] ip vrrp &lt;vr-id&gt; priority</td>
</tr>
</tbody>
</table>

Table 30-3. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vr-id</td>
<td>Virtual router ID.</td>
</tr>
<tr>
<td>pri-value</td>
<td>The priority value. The range is 1 - 254.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip vrrp &lt;vr-id&gt; timer &lt;value&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To Disable:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[no] ip vrrp &lt;vr-id&gt; timer</td>
</tr>
</tbody>
</table>

Table 30-4. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>vr-id</td>
<td>Virtual router ID.</td>
</tr>
<tr>
<td>value</td>
<td>The advertisement transmit time. The range is 1 - 255.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To Enable:</th>
<th>router vrrp</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Disable:</td>
<td>[no] router vrrp</td>
</tr>
</tbody>
</table>

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 30-5. Parameters, Keywords, Arguments

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>if-name</td>
<td>Filter by interface name.</td>
</tr>
<tr>
<td>router-id</td>
<td>Filter by virtual router ID.</td>
</tr>
<tr>
<td>vr-id</td>
<td>The virtual router ID.</td>
</tr>
<tr>
<td>details</td>
<td>Provide detailed information.</td>
</tr>
</tbody>
</table>

Sample Output

Cajun> show ip vrrp
Interface VRID  IP Address  Pri  Timer
State     Since     
----------  ---------     ------
-----------  12345678   ------
vlans9      1         9.0.0.100 255 1
MASTER 09:42:13

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