

# Commands: show p through show q

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## COMMAND DESCRIPTION

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# 1 Command Descriptions

Commands starting with “show p” through commands starting with “show q” are included.

This document applies to both the Ericsson SmartEdge® and SM family routers. However, the software that applies to the SM family of systems is a subset of the SmartEdge OS; some of the functionality described in this document may not apply to SM family routers.

For information specific to the SM family chassis, including line cards, refer to the SM family chassis documentation.

For specific information about the differences between the SmartEdge and SM family routers, refer to the Technical Product Description *SM Family of Systems* (part number 5/221 02-CRA 119 1170/1) in the **Product Overview** folder of this Customer Product Information library.

## 1.1 show pim bsr-router

```
show pim bsr-router
```

### 1.1.1 Purpose

Displays bootstrap router (BSR) and candidate rendezvous point (C-RP) information.

### 1.1.2 Command Mode

All modes

### 1.1.3 Syntax Description

This command has no keywords or arguments.

### 1.1.4 Default

None

### 1.1.5 Usage Guidelines

Use the `show pim bsr-router` command to display BSR and C-RP information.



**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

## 1.1.6 Examples

The following example displays information for all BSRs and C-RPs:

```
[local]Redback>show pim bsr-router
```

```
PIM Bootstrap Information
BSR address:      11.1.1.1
Uptime:          3d06h, BSR Priority: 0, Hash mask length: 0
Next Bootstrap:  00:00:37

Next Candidate RP advertisement in 00:00:42
RP: 11.1.1.1(fxp1), Group Acl:
```

## 1.2 show pim circuit

```
show pim circuit
```

### 1.2.1 Purpose

Displays circuit-specific information for Protocol Independent Multicast (PIM).

### 1.2.2 Command Mode

All modes

### 1.2.3 Syntax Description

This command has no keywords or arguments.



## 1.2.4 Default

None

## 1.2.5 Usage Guidelines

Use the `show pim circuit` command to display circuit-specific information for PIM.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

## 1.2.6 Examples

The following example displays circuit-specific information for PIM:

```
[local]Redback>show pim circuit
```

```
Number of circuits: 4
 1/9:1023:63/1/1/5, fxp1, Up, rcv permit/send permit/unsol permit
 1/11:1023:63/1/1/13, fxp2, Up, rcv permit/send permit/unsol permit
 12/1:1:63/1/2/18, fxp3, Up, rcv permit/send permit/unsol permit
 12/1:1:63/1/2/19, fxp3, Up, rcv permit/send permit/unsol permit
```

The following example displays output from the `show pim circuit` command when a port pseudowire is configured:

```
[local]Redback>show pim circuit
```

```
Flags: Q - Circuit stored, "-" - Delete pending, P - CLIPs Enabled, C - CLIPs Su
Number of circuits: 2
Context circuits: 2
 255/2:1:1/1/1/22, RP, Up, rcv permit/send permit/unsol permit flags: Q
 255/25:1:2/1/1/41, PPW1, Up, rcv permit/send permit/unsol permit flags: Q
```



## 1.3 show pim interface

```
show pim interface [if-name]
```

### 1.3.1 Purpose

Displays Protocol Independent Multicast (PIM)-enabled interface information.

### 1.3.2 Command Mode

All modes

### 1.3.3 Syntax Description

*if-name* Optional. Name of the PIM interface.

### 1.3.4 Default

None

### 1.3.5 Usage Guidelines

Use the `show pim interface` command to display PIM-enabled interface information.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

### 1.3.6 Examples

The following example displays information for all PIM-enabled interfaces:

```
[local]Redback>show pim interface
```



Address	Interface	Mode	Cct Count	Up Dn	Nbr Count	Hello Intvl	DR	BFD
10.2.1.17	E1	sparse	0	Dn	0	30	10.2.1.17	Enabled
11.1.1.1	E2	sparse	0	Dn	0	30	11.1.1.1	Enabled

## 1.4 show pim mdt

```
show pim mdt [bgp]
```

### 1.4.1 Purpose

Displays multicast distribution tree (MDT) information.

### 1.4.2 Command Mode

All modes

### 1.4.3 Syntax Description

**bgp** Optional. Displays MDT Border Gateway Protocol (BGP) advertisements.

### 1.4.4 Default

None

### 1.4.5 Usage Guidelines

Use the `show pim mdt` command to display MDT information.

The output from this command is context-specific.

The output in a Virtual Private Network (VPN) context shows the MDT group, the source for the VPN, and the context ID only for that VPN context. The output in local context lists MDT information for all VPNs.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.



**Note:** By appending a space followed by the pipe ( | ) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

## 1.4.6 Examples

The following example displays MDT information for a VPN-enabled context, **VPN1**:

```
[VPN1]Redback>show pim mdt
Multicast Domain Tree information
MDT Group      Interface      Source          Context
239.1.1.1      ic-local      101             0x40080002
```

The following example displays MDT information for all VPNs:

```
[local]Redback>show pim mdt
Multicast Domain Tree information
MDT Group      Interface      Source          Context
239.1.1.1      ic-vpn1       101             0x40080002
196.1.1.1      ic-vpn2       102             0x40080003
10.10.1.1      ic-vpn3       103             0x40080004
```

The following example displays MDT BGP advertisements:

```
[local]Redback>show pim mdt bgp
MDT BGP Advertisements
Flags: N - No Local Match, S - Stale
MDT Group      Source          Next-Hop        Context         Flags
232.100.100.100 1.1.1.1        1.1.1.1        0x40080001     N
232.100.100.190 1.1.1.1        1.1.1.1        0x40080001     N
232.15.15.15   1.1.1.1        1.1.1.1        0x40080002
232.18.18.18   1.1.1.1        1.1.1.1        0x40080004
232.19.19.19   1.1.1.1        1.1.1.1        0x40080005
232.20.20.20   1.1.1.1        1.1.1.1        0x40080006
```

## 1.5 show pim neighbor

**show pim neighbor**

### 1.5.1 Purpose

Displays Protocol Independent Multicast (PIM) neighbor information.



## 1.5.2 Command Mode

All modes

## 1.5.3 Syntax Description

This command has no keywords or arguments.

## 1.5.4 Default

None

## 1.5.5 Usage Guidelines

Use the `show pim neighbor` command to display PIM neighbor information.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

## 1.5.6 Examples

The following example displays information about all PIM neighbors:

```
[local]Redback>show pim neighbor
```

```
PIM Neighbor Table
```

Neighbor Address	Interface	Uptime	Expire	DR hex	Prio hex	GenID	DR	SR intvl	Bfd Status
10.4.1.2	fxp1	00:04:10	00:01:34	0x1	0x17ac7e7a		Y	60	Up
10.5.1.4	fxp2	00:25:22	00:01:22	0x1	0x18ab6e6a		Y	60	Up

## 1.6 show pim ppa

```
show pim ppa
```



### 1.6.1 Purpose

Displays the Packet Processing ASIC (PPA) state from the Protocol Independent Multicast (PIM) perspective.

### 1.6.2 Command Mode

All modes

### 1.6.3 Syntax Description

This command has no keywords or arguments.

### 1.6.4 Default

None

### 1.6.5 Usage Guidelines

Use the `show pim ppa` command to display the PPA state from the PIM perspective.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

### 1.6.6 Examples

The following example displays output from the `show pim ppa` command:

```
[local]Redback>show pim ppa
```



```

Slot 2  IPCs sent   :1          Circuit enable/disable:8/0
ePPA    IPCs rcvd   :1          IPC failures:0
        IPC blocked:NO        Num of IPCs blocked:1
        Status      :UP        Restarts: 1
        Up/Dn time  :17:05:19   Multicast Interfaces:4
        Version     :54         Goal Version:54

Slot 2  IPCs sent   :1          Circuit enable/disable:8/0
iPPA    IPCs rcvd   :1          IPC failures:0
        IPC blocked:NO        Num of IPCs blocked:1
        Status      :UP        Restarts: 1
        Up/Dn time  :17:05:19   Multicast Interfaces:4
        Version     :54         Goal Version:54

Slot 11 IPCs sent   :1          Circuit enable/disable:14/0
ePPA    IPCs rcvd   :1          IPC failures:0
        IPC blocked:NO        Num of IPCs blocked:1
        Status      :UP        Restarts: 1
        Up/Dn time  :17:05:19   Multicast Interfaces:7
        Version     :54         Goal Version:54

```

## 1.7 show pim rpf

```
show pim rpf {src-addr | src-name}
```

### 1.7.1 Purpose

Displays reverse path forwarding (RPF) statistics for a specified multicast source.

### 1.7.2 Command Mode

All modes

### 1.7.3 Syntax Description

*src-addr* IP address of a multicast source.  
*src-name* Name of a multicast source.



## 1.7.4 Default

None

## 1.7.5 Usage Guidelines

Use the `show pim rpf` command to display RPF statistics for a specified multicast source.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

## 1.7.6 Examples

The following example displays output from the `show pim rpf` command:

```
[local]Redback>show pim rpf 11.1.1.1

RPF information for 11.1.1.1
  RPF interface:    fxp1
  RPF neighbor:    102.1.1.1
  RPF route/mask:  11.1.1.0/255.255.255.0
  RPF type:        mbgp
```

## 1.8 show pim rp-hash

```
show pim rp-hash group-addr
```

### 1.8.1 Purpose

Displays information about the rendezvous point (RP) to which the specified Internet Group Management Protocol (IGMP) group hashes.



## 1.8.2 Command Mode

All modes

## 1.8.3 Syntax Description

*group-addr* IP address of the IGMP group.

## 1.8.4 Default

None

## 1.8.5 Usage Guidelines

Use the `show pim rp-hash` command to display information about the RP to which the specified group hashes (maps).

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

## 1.8.6 Examples

The following example displays information about the RP to which the group, 224.121.121.1, hashes:

```
[local]Redback>show pim rp-hash 224.121.121.1

RP 10.6.1.2
  Info source: 10.4.1.2, via Bootstrap
  Uptime: 00:05:00, expires: 00:02:58
```

## 1.9 show pim rp mapping

```
show pim rp mapping [group-addr]
```



### 1.9.1 Purpose

Displays a group-to-rendezvous point (RP) mapping cache.

### 1.9.2 Command Mode

All modes

### 1.9.3 Syntax Description

*group-addr* Optional. IP address of the Internet Group Management Protocol (IGMP) group.

### 1.9.4 Default

None

### 1.9.5 Usage Guidelines

Use the `show pim rp mapping` command to display a group-to-RP mapping cache.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.9.6 Examples

The following example displays the group-to-RP mapping cache:

```
[local]Redback>show pim rp mapping
```



```
PIM Group-to-RP Mappings
Group(s) 224.24.0.0/16
  RP 10.6.1.2
    Info source: 10.4.1.2, via Bootstrap
    Uptime: 00:04:41, expires: 00:02:17
Group(s) 224.121.0.0/16
  RP 10.6.1.2
    Info source: 10.4.1.2, via Bootstrap
    Uptime: 00:04:41, expires: 00:02:17
```

## 1.10 show pim ssm

`show pim ssm`

### 1.10.1 Purpose

Displays the Source-Specific Multicast (SSM) setting in Protocol Independent Multicast (PIM).

### 1.10.2 Command Mode

All modes

### 1.10.3 Syntax Description

This command has no keywords or arguments.

### 1.10.4 Default

None

### 1.10.5 Usage Guidelines

Use the `show pim ssm` command to display the SSM setting in PIM.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.



**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

## 1.10.6 Examples

The following example displays output from the `show pim ssm` command:

```
[local]Redback>show pim ssm  
  
Source Specific Multicast (SSM) setting  
SSM address range: default (232.0.0.0/8)
```

## 1.11 show pim traffic

```
show pim traffic
```

### 1.11.1 Purpose

Displays Protocol Independent Multicast (PIM) traffic statistics.

### 1.11.2 Command Mode

All modes

### 1.11.3 Syntax Description

This command has no keywords or arguments.

### 1.11.4 Default

None

### 1.11.5 Usage Guidelines

Use the `show pim traffic` command to display PIM traffic statistics.



**Note:** By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context** *ctx-name* construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context** *ctx-name* construct, see the **context** command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

## 1.11.6 Examples

The following example displays PIM traffic statistics:

```
[local]Redback>show pim traffic

PIM statistics:
Sent:
    Total 0, Hello 217, Register 0, Register-Stop 0, Join/Prune 5,
    BSR 21, Assert 0, Graft 0, Graft-ack 0, Candidate-RP-advertisement 0
    PIMv1: Register 0, Register-Stop 0
Received:
    Total 0, Hello 66, Register 0, Register-Stop 0, Join/Prune 0,
    BSR 12, Assert 0, Graft 0, Graft-ack 0, Candidate-RP-advertisement 0
    PIMv1: Register 0, Register-Stop 0, Punts 21
Error:
    Hello 0, Register 0, Register-Stop 0, Join/Prune 0,
    BSR 0, Assert 0, Graft 0, Graft-ack 0, Candidate-RP-advertisement 0
    PIMv1: Register 0, Register-Stop 0
    I/O errors 0, Short packets 0, Checksum 0
    Unknown type: 0
Queue:
    Input queue size 0, Input queue overflows 0
```

## 1.12 show policy access-list

```
show policy access-list [[summary] [acl-name] | first-match
acl-name [protocol] {src-addr [port port]} [dest-addr [port port]]
[dscp dscp-value] [length length] [precedence prec-value] [tos
tos-value]
```



### 1.12.1 Purpose

Displays the status of configured policy access control lists (ACLs).

### 1.12.2 Command Mode

All modes

### 1.12.3 Syntax Description

<code>summary</code>	Optional. Excludes the ACL statements from the display. Optionally, you can follow this keyword with the <code>acl-name</code> argument, naming a particular ACL for which you want summary information displayed.
<code>acl-name</code>	Optional. Name of the ACL for which you want information displayed. To display summary information about a specific list, you must enter the <code>summary</code> keyword first, followed by the <code>acl-name</code> argument.
<code>first-match acl-name</code>	Optional. Name of the ACL for which you want to find the first statement matched by the criteria that follows the <code>first-match acl-name</code> construct.
<code>protocol</code>	Optional. Number indicating a protocol as specified in RFC 1700, <i>Assigned Numbers</i> . The range of values is 0 to 255. In place of the <code>protocol</code> argument, you can use any of the following keywords: <ul style="list-style-type: none"><li>• <code>ahp</code>—Specifies the Authentication Header Protocol.</li><li>• <code>esp</code>—Specifies encapsulation security payload.</li><li>• <code>gre</code>—Specifies Generic Routing Encapsulation.</li><li>• <code>host</code>—Specifies a host source address.</li><li>• <code>icmp</code>—Specifies the Internet Control Message Protocol.</li><li>• <code>igmp</code>—Specifies the Internet Group Management Protocol.</li><li>• <code>ip</code>—Uses any IP protocol.</li><li>• <code>ipinip</code>—Specifies IP-in-IP tunneling.</li><li>• <code>ospf</code>—Specifies Open Shortest Path First.</li><li>• <code>pcp</code>—Specifies the Payload Compression Protocol.</li><li>• <code>pim</code>—Specifies Protocol Independent Multicast.</li><li>• <code>tcp</code>—Specifies the Transmission Control Protocol.</li><li>• <code>udp</code>—Specifies the User Datagram Protocol.</li></ul>



<b><i>src-addr</i></b>	Source address to be included in the criteria for a match. An IP address in the form <b><i>A.B.C.D</i></b> .
<b><i>port port</i></b>	Optional. TCP or UDP port to be considered a match for either the source or destination IP address. This construct is only available if you specified TCP or UDP as the protocol. The range of values is 1 to 65,535. You can also substitute a keyword for the <b><i>port</i></b> argument as listed in Table 1 and Table 2 in the <i>Usage Guidelines</i> section for this command.
<b><i>dest-addr</i></b>	Optional. Destination address to be included in the criteria for a match. An IP address in the form <b><i>A.B.C.D</i></b> .
<b><i>dscp dscp-value</i></b>	Optional. Differentiated Services Code Point (DSCP) to be included in the criteria for a match. The range of values is 0 to 63. You can also substitute a keyword for the <b><i>dscp-value</i></b> argument as listed in Table 3 in the <i>Usage Guidelines</i> section for this command.
<b><i>length length</i></b>	Optional. Packet length. The length of the network-layer packet, beginning with the IP header. The range of values is 20 to 65,535.



**precedence**  
*prec-value*

Optional. Precedence value of packets to be included in the criteria for a match. The range of precedence values is 0 to 7. In place of the *prec-value* argument, you can enter any of the following keywords:

- **routine**—Specifies routine precedence (value = 0).
- **priority**—Specifies priority precedence (value = 1).
- **immediate**—Specifies immediate precedence (value = 2).
- **flash**—Specifies flash precedence (value = 3).
- **flash-override**—Specifies flash override precedence (value = 4).
- **critical**—Specifies critical precedence (value = 5).
- **internet**—Specifies internetwork control precedence (value = 6).
- **network**—Specifies network control precedence (value = 7).

**tos** *tos-value*

Optional. Type of service (ToS) to be included in the criteria for a match. The range of values is 0 to 15. In place of the *tos-value* argument, you can enter any of the following keywords:

- **max-reliability**—Maximum reliable ToS (value = 2).
- **max-throughput**—Maximum throughput ToS (value = 4).
- **min-delay**—Minimum delay ToS (value = 8).
- **min-monetary-cost**—Minimum monetary cost ToS (value = 1).
- **normal**—Normal ToS (value = 0).

To specify both a precedence and a ToS, you must enter the **precedence** *prec-value* construct first, followed by the **tos** *tos-value* construct.

#### 1.12.4 Default

When entered without any optional syntax, the **show policy access-list** command displays information for all policy ACLs in the context, including the statements in each list.

#### 1.12.5 Usage Guidelines

Use the **show policy access-list** command to display the status of configured policy ACLs.



Use the `first-match acl-name` construct to display the first statement in the policy ACL that is matched by the criteria that follows the `first-match acl-name` construct.

Table 1 lists the valid keyword substitutions for the `port` argument when the argument is used to specify a TCP port.

*Table 1 Valid Keyword Substitutions for the port Argument (TCP Port)*

<b>Keyword</b>	<b>Definition</b>	<b>Corresponding Port Number</b>
<code>bgp</code>	Border Gateway Protocol	179
<code>chargen</code>	Character generator	19
<code>cmd</code>	Remote commands (rcmd)	514
<code>daytime</code>	Daytime	13
<code>discard</code>	Discard	9
<code>domain</code>	Domain Name System	53
<code>echo</code>	Echo	7
<code>exec</code>	Exec (rsh)	512
<code>finger</code>	Finger	79
<code>ftp</code>	File Transfer Protocol	21
<code>ftp-data</code>	FTP data connections (used infrequently)	20
<code>gopher</code>	Gopher	70
<code>hostname</code>	Network interface card (NIC) hostname server	101
<code>ident</code>	Identification protocol	113
<code>irc</code>	Internet Relay Chat	194
<code>klogin</code>	Kerberos login	543
<code>kshell</code>	Kerberos Shell	544
<code>login</code>	Login (rlogin)	513
<code>lpd</code>	Printer service	515
<code>nntp</code>	Network News Transport Protocol	119
<code>pim-auto-rp</code>	Protocol Independent Multicast Auto-RP	496
<code>pop2</code>	Post Office Protocol Version 2	109
<code>pop3</code>	Post Office Protocol Version 3	110
<code>shell</code>	Remote Command Shell	514
<code>smtp</code>	Simple Mail Transport Protocol	25

*Table 1 Valid Keyword Substitutions for the port Argument (TCP Port)*

<b>Keyword</b>	<b>Definition</b>	<b>Corresponding Port Number</b>
<b>ssh</b>	Secure Shell	22
<b>sunrpc</b>	Sun Remote Procedure Call	111
<b>syslog</b>	Syslog	514
<b>tacacs</b>	Terminal Access Controller Access Control System	49
<b>talk</b>	Talk	517
<b>telnet</b>	Telnet	23
<b>time</b>	Time	37
<b>uucp</b>	Unix-to-Unix Copy Program	540
<b>whois</b>	Nickname	43
<b>www</b>	World Wide Web (HTTP)	80

Table 2 lists the valid keyword substitutions for the *port* argument when the argument is used to specify a UDP port.

*Table 2 Valid port Argument Keyword Substitution Values for UDP Ports*

<b>Keyword</b>	<b>Definition</b>	<b>Corresponding Port Number</b>
<b>biff</b>	Biff (Mail Notification, Comsat)	512
<b>bootpc</b>	Bootstrap Protocol client	68
<b>bootps</b>	Bootstrap Protocol server	67
<b>discard</b>	Discard	9
<b>dnsix</b>	DNSIX Security Protocol Auditing	195
<b>domain</b>	Domain Name System	53
<b>echo</b>	Echo	7
<b>isakmp</b>	Internet Security Association and Key Management Protocol (ISAKMP)	500
<b>mobile-ip</b>	Mobile IP registration	434
<b>nameserver</b>	IEN116 Name Service (obsolete)	42
<b>netbios-dgm</b>	NetBIOS Datagram Service	138
<b>netbios-ns</b>	NetBIOS Name Service	137
<b>netbios-ss</b>	NetBIOS Session Service	139
<b>ntp</b>	Network Time Protocol	123



*Table 2 Valid port Argument Keyword Substitution Values for UDP Ports*

<b>Keyword</b>	<b>Definition</b>	<b>Corresponding Port Number</b>
<code>pim-auto-rp</code>	Protocol Independent Multicast Auto-RP	496
<code>rip</code>	Router Information Protocol	520
<code>snmp</code>	Simple Network Management Protocol	161
<code>snmptrap</code>	SNMP traps	162
<code>sunrpc</code>	Sun Remote Procedure Call	111
<code>syslog</code>	System logger	514
<code>tacacs</code>	Terminal Access Controller Access Control System	49
<code>talk</code>	Talk	517
<code>tftp</code>	Trivial File Transfer Protocol	69
<code>time</code>	Time	37
<code>who</code>	Who Service (rwho)	513
<code>xdmcp</code>	X Display Manager Control Protocol	177

Table 3 lists the valid keyword substitutions for the `dscp-value` argument.

*Table 3 Valid Keyword Substitutions for the dscp-value Argument*

<b>Keyword</b>	<b>Definition</b>
<code>af11</code>	Assured Forwarding—Class 1/Drop Precedence 1
<code>af12</code>	Assured Forwarding—Class 1/Drop Precedence 2
<code>af13</code>	Assured Forwarding—Class 1/Drop Precedence 3
<code>af21</code>	Assured Forwarding—Class 2/Drop Precedence 1
<code>af22</code>	Assured Forwarding—Class 2/Drop Precedence 2
<code>af23</code>	Assured Forwarding—Class 2/Drop Precedence 3
<code>af31</code>	Assured Forwarding—Class 3/Drop Precedence 1
<code>af32</code>	Assured Forwarding—Class 3/Drop Precedence 2
<code>af33</code>	Assured Forwarding—Class 3/Drop Precedence 3
<code>af41</code>	Assured Forwarding—Class 4/Drop Precedence 1
<code>af42</code>	Assured Forwarding—Class 4/Drop Precedence 2
<code>af43</code>	Assured Forwarding—Class 4/Drop Precedence 3
<code>cs0</code>	Class Selector 0



Table 3 Valid Keyword Substitutions for the dscp-value Argument

Keyword	Definition
cs1	Class Selector 1
cs2	Class Selector 2
cs3	Class Selector 3
cs4	Class Selector 4
cs5	Class Selector 5
cs6	Class Selector 6
cs7	Class Selector 7
df	Default Forwarding (same as cs0)
ef	Expedited Forwarding

**Note:** By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.12.6 Examples

The following example displays information about the policy ACL, `diff-serve`:

```
[local]Redback>show policy access-list diff-serve

policy access-list diff-serve:
  count 4, sequences: 10 - 40 client count: 0
  modified: 00:03:08 (hh:mm:ss) ago
  seq 10 permit tcp any eq telnet class Expedited_Flow
  seq 20 permit ip any dscp eq ef class Expedited_Flow
  seq 30 permit tcp any eq ftp class Bulk_Data
  seq 40 permit udp any eq tftp class Bulk_Data
```

The following example displays information about the policy ACL, `redirect_acl`:



```
[local]Redback>show policy access-list redirect_acl
```

```
policy access-list redirect_acl:
  count: 3, sequences: 10 - 30, client count: 1
  modified: 00:21:34 (hh:mm:ss) ago, version: 8
  condition 101 time-range
    periodic weekdays 00:00 to 23:59 class redir2
  seq 10 permit tcp any any eq www class redir0 condition 101
  seq 20 permit tcp any any eq 81 class redir1
  seq 30 permit tcp any any eq 82 class redir2
```

The following example displays information about the policy ACL, qos1:

```
[local]Redback>show policy access-list qos1
```

```
policy access-list qos1:
  count: 1, sequences: 10 - 10, client count: 1
  modified: 00:08:35 (hh:mm:ss) ago, version: 4
  condition 100 time-range
    periodic weekdays 00:00 to 23:59 class redir2
  seq 10 permit ip host 10.3.29.3 any class CLASS1 condition 100
```

## 1.13 show port

```
show port [all]
```

### 1.13.1 Purpose

Displays a list of ports that are present or configured in the system.

### 1.13.2 Command Mode

All modes



### 1.13.3 Syntax Description

- all** Optional. For any SmartEdge router except the SmartEdge 100 router, includes ports that are configured but are not present on the system. For SmartEdge 100 routers, displays all ports on the carrier card, regardless of whether the associated media interface cards (MICs) are available.
- all** Optional. Includes ports that are configured but are not present on the system.

### 1.13.4 Default

Displays only ports that are present on the system.

### 1.13.5 Usage Guidelines

Use the `show port` command to display a list of ports that are present or configured in the system.

Table 4 describes the values for the State field that can be displayed for a given port on a SmartEdge 400 or SmartEdge 800 router.

*Table 4 Port States for SmartEdge 400 and SmartEdge 800 Routers*

State	Description
Up	Port is configured to be up, and it is up.
Down	Port is configured, and it is down.
Down—not entitled	Port is on the low-density version of the line card and is not available.
Unconfigured	Port is unconfigured and down.

Table 5 describes the values for the State field that can be displayed for a given port on a SmartEdge 100 router.

*Table 5 Port States for SmartEdge 100 Routers*

State	Description
Up	The carrier card and associated MIC are configured and physically present. The port is configured and successfully passing traffic.
Down	The carrier card and associated MIC are configured and physically present. The port is configured but is not successfully passing traffic.
No card	The carrier card and associated MIC are configured but not physically present, and the specified port has been configured.



Table 5 Port States for SmartEdge 100 Routers

State	Description
No MIC	The carrier card and associated MIC have been configured and the specified port has been configured, but the MIC is not physically present.
Unavailable	The carrier card is configured and may or may not be physically present, but either the associated MIC has not been configured or the configured MIC does not support the specified port.
Unconfigured	The carrier card and associated MIC are configured and may or may not be physically present, but the specified port has not been configured.

**Note:** By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context** *ctx-name* construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context** *ctx-name* construct, see the **context** command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

Table 6 Output Fields for the show port Command

Field Name	Value/Description
Slot/Port	slot/port—Slot and port numbers for this port.
Ch:SubCh:SubSubCh	Channel numbers, if appropriate for this port:
Type	port-type or channel-type.
State	Port status (combination of the Admin state and Line state fields): <ul style="list-style-type: none"> <li>• Down—Port has been configured to be Up, but is not working.</li> <li>• Down - not entitled—Port is on the low-density version of the line card and is not available.</li> <li>• No card—Port has been configured, but the card is not installed.</li> <li>• Unconfigured—Port is not configured and down.</li> <li>• Up—Port is working (active).</li> </ul>



Table 7 Port Types

Port Type	Description
atm	ATM port
pos	POS port
ethernet	Ethernet or GE port (any version)
transceiver	SFP or XFP transceivers port
channelized-oc3	Channelized OC-3 port
channelized-oc12	Channelized OC-12 port
channelized-stm1	Channelized STM-1 port
channelized-stm4	Channelized STM-4 port

Table 8 Port/Channel Types

Port/Channel Type	Description
Port types	Type of ports: <ul style="list-style-type: none"><li>• atm</li><li>• pos</li><li>• ethernet</li><li>• transceiver</li><li>• channelized-oc3</li><li>• channelized-oc12</li><li>• channelized-stm1</li><li>• channelized-stm4</li></ul>
Channel types	Type of channels: <ul style="list-style-type: none"><li>• channelized-ds1</li><li>• channelized-ds3</li><li>• channelized-e1</li><li>• ds0s</li><li>• ds1</li><li>• ds3</li><li>• e1</li></ul>



## 1.13.6 Examples

The following example displays the list of all ports that are present in a SmartEdge 800 router.

In this example, the 4-port Gigabit Ethernet line card is a low-density, 2-port version; ports 2 and 4 are unavailable:

```
[local]Redback>show port all
Slot/Port:Ch.SubCh  Type           State
2/1                 oc12            Unconfigured
2/2                 oc12            Unconfigured
2/3                 oc12            Unconfigured
2/4                 oc12            Unconfigured
4/1                 ethernet        Up
4/2                 ethernet        Up
4/3                 ethernet        Up
4/4                 ethernet        Up
7/1                 ethernet        Up
9/1                 ethernet        Up
9/2                 ethernet        Down - not entitled
9/3                 ethernet        Up
9/4                 ethernet        Down - not entitled
```

## 1.14 show port counters

For all other line cards and all media interface cards (MICs), the syntax is:

```
show port counters [persistent] [slot/port] [detail | live | queue]
```

### 1.14.1 Purpose

Displays the counters associated with system ports and channels.

### 1.14.2 Command Mode

All modes

### 1.14.3 Syntax Description

<b><i>persistent</i></b>	Optional. If omitted, displays values since the counters were last cleared or the card was last reloaded. If specified, displays values since the system was last reloaded.
<b><i>slot</i></b>	Optional. Chassis slot number of the line card for which counters are displayed.
<b><i>port</i></b>	Required if you enter the slot argument. Port number for which counters are displayed. The range of values depends on the type of card or MIC.
<b><i>chan-num</i></b>	Optional. Channel number or which counters are displayed. If omitted, displays counters for all channels on the specified port. The range of values depends on the type of port.



<i>sub-chan-num</i>	Optional. Subchannel number channel for which counters are displayed. If omitted, displays counters for all subchannels in the specified channel. The range of values depends on the type of port.
<b>detail</b>	Optional. Displays more detailed counter information.
<b>live</b>	Optional. Forces the retrieval of live data for summary counters.
<b>queue</b>	Optional. Displays per-queue information kept by Packet Processing ASIC (PPA) counters; the values reflect the count since the last policy change.

#### 1.14.4 Default

Displays last known values of summary counters for all ports.

#### 1.14.5 Usage Guidelines

Use the `show port counters` command to display counters associated with system ports with values that have been accumulated since the counters were last cleared with the `clear port counters` command (in exec mode) or the line card was last reloaded.

Use the `persistent` keyword to display the counters with values accumulated since the system was last reloaded.

If you specify the optional `slot`, or `port`, or `chan-num` arguments, the display shows counter information for the specified line card, or port, or channel; if you specify the optional `sub-chan-num` argument, the output displays counter information for just that subchannel.

By default, this command displays only summary counter information for all ports with their last known values, which have been cached; cached values are updated every 60 seconds. Use the `live` keyword to force the system to read and display the current values for the summary counters.

Table 9 describes the summary counter information that is displayed for all port types if the `detail` keyword is not specified.

Table 9 Summary Counters

Field	Description
packets sent	Number of packets sent
packets recvd	Number of packets received
send packet rate	Number of packets per second sent
recv packet rate	Number of packets per second received
rate refresh interval	Applies only to rate counters; interval (seconds) over which rates have been calculated



*Table 9 Summary Counters*

Field	Description
bytes sent	Number of bytes sent
bytes recvd	Number of bytes received
send bit rate	Number of bits per second sent
recv bit rate	Number of bits per second received

Table 10 describes the PPA and packet drop counters, which are displayed for all types of ports when you specify the `detail` keyword; the data displayed for these counters, with the exception of the rate counters, is live, not cached data.

*Table 10 PPA and Packet Drop Counters*

Field	Description
PPA Port Counters	
packets sent	Number of packets sent
packets recvd	Number of packets received
send packet rate	Number of packets per second sent
recv packet rate	Number of packets per second received
IP mcast pks rcv	Number of multicast packets received
IP mcast pks snt	Number of multicast packets sent
rate refresh interval	Applies only to rate counters; interval (seconds) over which rates have been calculated
bytes sent	Number of bytes sent
bytes recvd	Number of bytes received
send bit rate	Number of bits per second sent
recv bit rate	Number of bits per second received
IP mcast bytes rcv	Number of multicast bytes received
IP mcast bytes snt	Number of multicast bytes sent
PPA Input Error Counters	
idc other errors	Number of packets received with other errors, as reported by the FPGA
idc overrun errors	Number of packets received that overran the input descriptor cache
no cct packets	Number of packets received that do not belong to any circuit
cct down pkts	Number of packets dropped because the circuit is down
unknown encap pkts	Number of packets received for which the packet encapsulation is incorrect for the circuit



Table 10 PPA and Packet Drop Counters

Field	Description
unreach pkts	Number of packets dropped because no destination route entry exists for the destination IP address
media filter pkts	Number of packets with an unsupported media protocol
crc port errors	Number of packets received with CRC errors
idc abort errors	Number of packets received with a line-sigaled abort
no cct bytes	Number of bytes received that do not belong to any circuit
cct down bytes	Number of bytes dropped because the circuit is down
unknown encap byte	Number of bytes received for which the byte encapsulation is incorrect for the circuit
unreach bytes	Number of bytes dropped because no destination route entry exists for the destination IP address
media filter bytes	Number of bytes with an unsupported media protocol
PPA Output Error Counters	
WRED drop packets	Number of packets dropped by the WRED feature
adj drop packets	Number of packets dropped due to adjacency errors or missing adjacency
tail drop packets	Number of packets dropped because the egress queue is full
adj drop packets	Number of bytes dropped due to adjacency errors or missing adjacency
Packet Drop Counters	
not IPv4 drop pkts	Number of packets dropped that are marked with an unsupported IP version
unhandled IP optns	Number of packets dropped due to unsupported IP options
bad IP checksum	Number of packets dropped due to an invalid checksum on the packet
link layer bcast	Number of link layer broadcast packets dropped
bad IP length	Number of packets dropped due to an invalid checksum on the packet

Table 11 describes the policing counters that are displayed for all types of ports, except for Ethernet ports, when you specify the `detail` keyword.

Table 11 Policing Counters

Field	Description
conform pkts	Number of packets that conform to the rate-limiting policy on incoming traffic



Table 11 Policing Counters

Field	Description
conform drop pkts	Number of packets that conform to the rate-limiting policy but were dropped
exceed pkts	Number of packets that exceed the rate defined by the rate-limiting policy
exceed drop pkts	Number of packets that exceed the rate defined by the rate-limiting policy and were dropped
conform bytes	Number of bytes that conform to the rate-limiting policy on incoming traffic
conform drop bytes	Number of bytes that conform to the rate-limiting policy but were dropped
exceed bytes	Number of bytes that exceed the rate defined by the rate-limiting policy
exceed drop bytes	Number of bytes that exceed the rate defined by the rate-limiting policy and were dropped

**Note:** For counters for ATM ports:

- Per-queue information kept by PPA counters reflects the count since the last policy change.
- If a queuing algorithm is managed by the segmentation and reassembly controller (SARC) on an ATM line card, the counts reported by the PPA counters are zeros.

Table 12 describes the optical data that is displayed for POS optical ports when you specify the `detail` keyword.

Table 12 POS Physical Layer Counters and Status

Field	Description
Active Alarms	Lists the active alarms, if any: <ul style="list-style-type: none"> <li>• N/A—Not applicable to this type of port</li> <li>• NONE—No alarms are present</li> </ul>
SONET Section	
LOS	Number of loss of signal occurrences detected by the section
LOF	Number of loss of frame occurrences detected by the section
BIP-B1	Number of Bit Interleaved Parity error conditions (value of the B1 byte) detected by the section
SONET Line	



Table 12 POS Physical Layer Counters and Status

Field	Description
AIS	Number of alarm indication signal occurrences detected by the line
RDI	Number of remote defect indication signal occurrences detected by the line
BIP-B2	Number of Bit Interleaved Parity error conditions (value of the B2 byte) detected by the line
FEBE	Number of far end block error conditions detected by the line
SONET Path	
AIS	Number of alarm indication signal occurrences detected by the path
RDI	Number of remote defect indication signal occurrences detected by the path
BIP-B3	Number of Bit Interleaved Parity error conditions (value of the B3 byte) detected by the path
FEBE	Number of far end block error conditions detected by the path
LOP	Number of loss of pointer conditions detected by the path
Received SONET Overhead	
F1	Value of the F1 byte
K1	Value of the K1 byte
K2	Value of the K2 byte
S1	Value of the S1 byte
C2	Value of the C2 byte
Transmitted SONET Overhead	
F1	Value of the F1 byte
K1	Value of the K1 byte
K2	Value of the K2 byte
S1	Value of the S1 byte
C2	Value of the C2 byte

Table 13 lists the general, transmit, and receive counters that are displayed for Ethernet ports when the `detail` keyword is specified. These counters are displayed in addition to the PPA and packet drop counters.

Table 13 Ethernet Port Counters

Field	Description
General Counters	



Table 13 Ethernet Port Counters

Field	Description
packets sent	Total number of multicast and broadcast packets transmitted without any errors
bytes sent	Number of bytes transmitted in good packets plus the number of bytes transmitted in packets with errors
mcast packets sent	Number of multicast packets that are transmitted without any errors
bcast packets sent	Number of broadcast packets transmitted without any errors
dropped pkts out	Number of packets dropped during transmission
pending pkts out	Number of packets queued during transmission
port drops out	Number of packets dropped on the egress port due to exceeding the rate limit as defined by the metering policy applied on that port
packets recvd	Total number of multicast and broadcast packets with lengths between 64 bytes and the maximum packet size received without any errors
bytes recvd	Number of bytes received in good packets plus the number of bytes received in packets with errors
mcast packets recvd	Number of multicast packets with lengths between 64 bytes and the maximum packet size received without any errors
bcast packets recvd	Number of broadcast packets with lengths between 64 bytes and the maximum packet size received without any errors
dropped pkts in	Number of packets dropped during reception
pending pkts in	Number of packets queued during reception
port drops in	Number of packets dropped on the ingress port due to exceeding the rate limit as defined by the metering policy applied on that port
<b>Transmit Counters</b>	
late collision	Number of transmission abortions due to a collision occurring after transmission of packets that are 64 bytes in length
underflow	Number of packets transmitted with an error due to transmit FIFO underflow or txerr signal assertion
regular collision	Total number of regular collision events occurring during transmission
single collision	Number of packets transmitted without any error following a single collision
multiple colls	Number of packets transmitted without any error following multiple collisions



Table 13 Ethernet Port Counters

Field	Description
excessive colls	Number of packets that have experienced 16 consecutive collisions or more
deferred	Number of packets deferred upon the first transmit attempt due to a busy line
flow control	Number of correct transmitted flow-control packets
error pkts sent	Number of packets transmitted with an error due to transmit FIFO underflow or txerr signal assertion plus number of regular collision events occurring during transmission
error bytes sent	Number of bytes transmitted in packets with errors
eth 64 octets	Number of transmitted packets, 64 bytes in length, including bad packets
eth 65-127 octs	Number of transmitted packets, 65 to 127 bytes in length, including bad packets
eth 128-255 octs	Number of transmitted packets, 128 to 255 bytes in length, including bad packets
eth 256-511 octs	Number of transmitted packets, 256 to 511 bytes in length, including bad packets
eth 512-1023 octs	Number of transmitted packets, 512 to 1,023 bytes in length, including bad packets
eth 1024-1518 octs	Number of transmitted packets, 1,024 to 1,518 bytes in length, including bad packets
eth > 1518 octs	Number of transmitted packets with length larger than 1,519 bytes, including bad packets
Receive Counters	
jabber	Number of packets, larger than the maximum packet size, received with a CRC error
false carrier	Number of false carriers
runt frames	Number of frames received without SFD detection but with carrier assertion
undersized frames	Number of packets, less than 64 bytes in length, received without any error
oversized frames	Number of packets, larger than the maximum packet size, received without any error
crc errors	Number of packets with lengths between 64 bytes and the maximum packet size, received with an integral number of bytes and a CRC error



Table 13 Ethernet Port Counters

Field	Description
alignment errors	Number of packets with lengths between 64 bytes and the maximum packet size, received with a non-integral number of bytes and a CRC error
symbol errors	Number of received packets during which PHY symbol errors were detected
error pkts rcvd	Total of the following counters: <ul style="list-style-type: none"> <li>• Runt Frames</li> <li>• Number of packets less than 64 bytes in length, received with a CRC error</li> <li>• Undersized Frames</li> <li>• Alignment Errors</li> <li>• CRC Errors</li> <li>• Oversized Errors</li> <li>• Number of packets, larger than the maximum packet size, received with a CRC error</li> <li>• Symbol Errors</li> </ul>
error bytes rcvd	Number of bytes received in packets with errors
flow control	Number of correct received flow-control packets
overflows	Number of receive packets not fully accepted due to receive FIFO overflow or ingress queue overflow
overflow bytes	Number of bytes not reported for all card types <sup>(1)</sup>
eth 64 octets	Number of received packets, 64 bytes in length, including bad packets
eth 65-127 octs	Number of received packets, 65 to 127 bytes in length, including bad packets
eth 128-255 octs	Number of received packets, 128 to 255 bytes in length, including bad packets
eth 256-511 octs	Number of received packets, 256 to 511 bytes in length, including bad packets
eth 512-1023 octs	Number of received packets, 512 to 1,023 bytes in length, including bad packets



Table 13 Ethernet Port Counters

Field	Description
eth 1024-1518 octs	Number of received packets, 1,024 to 1,518 bytes in length, including bad packets
eth > 1518 octs	Number of received packets with length larger than 1,519 bytes, including bad packets

(1) This field is only available for oversubscribable line cards that support propagation of QoS at the port level.

Table 14 describes the Point-to-Point Protocol (PPP) over Ethernet (PPPoE) counters that are displayed for Ethernet ports.

Table 14 PPP and PPPoE Counters for Ethernet Ports

Field	Description
control pkts	Number of control packets received
bad session pkts	Number of session packets received with an invalid session ID
padt sent pkts	Number of PADT packets sent
padr drop pkts	Number of PADR packets dropped
padi drop pkts	Number of PADI packets dropped
padt drop pkts	Number of PADT packets dropped
bad code pkts	Number of unsupported PPPoE discovery packets received

Table 15 describes the counters that are displayed for each queue for the ports specified by the input parameters when you specify the `queue` keyword. If no queue policy is attached to a port, no per-queue information is displayed.

Table 15 Queue Counters

Field	Description
Queue	Queue number: 0 to 7
Depth	Maximum number of packets allowed for this queue (configured)
Pkts/Bytes Sent	Packets and bytes sent on this queue
WRED Drops	Number of packets dropped by the WRED feature on this queue
Tail Drops	Number of packets dropped because this queue is full

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.



**Note:** By appending a space followed by the pipe ( | ) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

For information about troubleshooting PPPoE, see the *BRAS Troubleshooting Guide*.

## 1.14.6 Examples

The following example displays summary counter information for POS port 1 in slot 1; the detailed counters are shown after this example:

```
[local]Redback>show port counters 1/1
```

```
Port           Type
1/1            pos
packets sent   : 49621           bytes sent       : 1091662
packets recvd  : 49620           bytes recvd      : 1091640
send packet rate : 0                 send bit rate    : 16
recv packet rate : 0                 recv bit rate    : 16
rate refresh interval : 60 seconds
```

The following example displays detailed counters for port 1 on the POS line card in slot 1:

```
[local]Redback>show port counters 1/1 detail
```

```
Counters for port pos 1/1 - Interval: 5d 17:58:07
```

### PPA Port Counters

```
packets sent   : 49628           bytes sent       : 1091816
packets recvd  : 49627           bytes recvd      : 1091794
send packet rate : 0                 send bit rate    : 16
recv packet rate : 0                 recv bit rate    : 16
IP mcast pkts rcv : 0                 IP mcast bytes rcv : 0
IP mcast pkts sent : 0                 IP mcast bytes snt : 0
rate refresh interval : 60 seconds
```

### PPA Input Counters

```
idc other errors : 0                 crc port errors  : 0
idc overrun errors : 0                 idc abort errors : 0
no cct packets   : 0                 no cct bytes     : 0
```



```
cct down pkts      : 0          cct down bytes      : 0
unknown encap pkts : 0          unknown encap byte  : 0
unreach pkts       : 0          unreach bytes       : 0
media filter pkts  : 0          media filter bytes   : 0
```

PPA Output Counters

```
WRED drop pkts    : 0          tail drop pkts      : 0
adj drop pkts     : 0          adj drop bytes      : 0
```

Packet Drop Counters

```
not IPv4 drop pkts : 0          bad IP checksum     : 0
unhandled IP optns : 0          link layer bcst     : 0
bad IP length      : 0
```

Policing Counters

```
conform pkts      : 0          conform bytes       : 0
conform drop pkts : 0          conform drop bytes  : 0
exceed pkts       : 0          exceed bytes        : 0
exceed drop pkts  : 0          exceed drop bytes   : 0
```

Packet-Over-Sonet physical layer statistics

```
Active Alarms      : NONE
```

Sonet Section

```
LOS : 0          LOF : 0          BIP-B1 : 0
```

Sonet Line

```
AIS : 0          RDI : 0          BIP-B2 : 158
FEBE : 111
```

Sonet Path

```
AIS : 0          RDI : 0          BIP-B3 : 0
FEBE : 0          LOP : 0
```

Received Sonet Overhead

```
F1 : 0x0          K1 : 0x0          K2 : 0x0
S1 : 0x0          C2 : 0x16
```

Transmitted Sonet Overhead



```

F1 : 0x0          K1 : 0x0          K2 : 0x0
S1 : 0x0          C2 : 0x16

```

The following example displays detailed counters for port 1 on the Ethernet line card in slot 5 :

```
[local]Redback>show port counters 5/1 detail
```

```
Counters for port ethernet 5/1 - Interval: 5d 15:05:38
```

#### PPA Port Counters

```

packets sent      : 3          bytes sent      : 126
packets recvd    : 0          bytes recvd    : 0
send packet rate : 0          send bit rate  : 0
recv packet rate : 0          recv bit rate  : 0
IP mcast pkts rcv : 0        IP mcast bytes rcv : 0
IP mcast pkts sent : 0        IP mcast bytes snt : 0
rate refresh interval : 60 seconds

```

#### PPA Input Error Counters

```

idc other errors : 0          crc port errors : 0
idc overrun errors : 0        idc abort errors : 0
no cct packets   : 0          no cct bytes     : 0
cct down pkts    : 0          cct down bytes   : 0
unknown encap pkts : 0        unknown encap byte : 0
unreach pkts     : 0          unreach bytes    : 0
media filter pkts : 0          media filter bytes : 0

```

#### PPA Output Error Counters

```

WRED drop pkts   : 0          tail drop pkts   : 0
adj drop pkts    : 0          adj drop bytes    : 0

```

#### Packet Drop Counters

```

not IPv4 drop pkts : 0          bad IP checksum  : 0
unhandled IP optns : 0          link layer bcst  : 0
bad IP length      : 0

```

#### General Counters

```

packets sent      : 3          packets recvd    : 0

```



```
bytes sent      : 192          bytes recvd     : 0
mcast pkts sent : 0           mcast pkts recvd : 0
bcast pkts sent : 3           bcast pkts recvd : 0
dropped pkts out : 0         dropped pkts in  : 0
pending pkts out : 0         pending pkts in  : 0
port drops out   : 0         port drops in    : 0
```

Transmit Counters

```
jabber          : 0           error pkts sent : 0
false carrier   : 0           error bytes sent : 0
late collision   : 0           eth 64 octets    : 3
underflow       : 0           eth 65-127 octs : 0
regular collision : 0         eth 128-255 octs : 0
single collision : 0           eth 256-511 octs : 0
multiple colls  : 0           eth 512-1023 octs : 0
excessive colls : 0           eth 1024-1518 octs : 0
deferred        : 0           eth > 1518 octs : 0
flow control    : 0
```

Receive Counters

```
runt frames     : 0           overflows       : 0
undersized frames : 0         eth 64 octets    : 0
oversized frames : 0           eth 65-127 octs : 0
crc errors      : 0           eth 128-255 octs : 0
alignment errors : 0           eth 256-511 octs : 0
symbol errors   : 0           eth 512-1023 octs : 0
error pkts rcvd : 0           eth 1024-1518 octs : 0
error bytes rcvd : 0           eth > 1518 octs : 0
flow control    : 0
```

The following example displays detailed counters for port 1 on the ATM line card in slot 5:

```
[local]Redback>show port counters 5/1 detail
```



Counters for port atm 3/1 - Interval: 5d 15:03:28

```
PPA Port Counters
packets sent      : 0          bytes sent      : 0
packets recvd    : 0          bytes recvd     : 0
send packet rate : 0          send bit rate   : 0
rcv packet rate  : 0          rcv bit rate    : 0
IP mcast pkts rcv : 0        IP mcast bytes rcv : 0
IP mcast pkts sent : 0       IP mcast bytes snt : 0
rate refresh interval : 60 seconds

PPA Input Counters
idc other errors : 0          crc port errors : 0
idc overrun errors : 0       idc abort errors : 0
no cct packets   : 0          no cct bytes    : 0
cct down pkts    : 0          cct down bytes  : 0
unknown encap pkts : 0       unknown encap byte : 0
unreach pkts     : 0          unreach bytes   : 0
media filter pkts : 0       media filter bytes : 0

PPA Output Counters
WRED drop pkts   : 0          tail drop pkts  : 0
adj drop pkts    : 0          adj drop bytes   : 0

Packet Drop Counters
not IPv4 drop pkts : 0       bad IP checksum : 0
unhandled IP optns : 0       link layer bcast : 0
bad IP length      : 0

Policing Counters
conform pkts      : 0          conform bytes    : 0
conform drop pkts : 0       conform drop bytes : 0
exceed pkts       : 0          exceed bytes     : 0
exceed drop pkts  : 0       exceed drop bytes : 0
```

## 1.15 show port counters (ces)

```
show port counters [slot/port:ds3-channel:ds1-channel:ds0-channel-group] [detail | ces]
```

```
show port counters [slot/port:ds3-channel:e1/ds1-channel] [detail | ces]
```

### 1.15.1 Purpose

Show command to display output for CES counters on CESoPSN and SAToP circuits.

### 1.15.2 Command Mode

All modes.

### 1.15.3 Syntax Description

*slot:port* Slot and port of the circuit.  
*ds3-channel* Channel of the circuit.



<code>ds1-channel</code>	Sub-channel of a CESoPSN circuit.
<code>e1/ds1-channel</code>	Sub-channel of a SAToP circuit.
<code>ds0-channel-group</code>	Sub-sub-channel group ID of a CESoPSN circuit.

### 1.15.4 Default

Displays results for all circuits.

### 1.15.5 Usage Guidelines

In the following examples, “Packet Size” = ( 8 × “number of DS0 timeslots” × “Packet Latency”) + “Control word Size” (4 bytes) ..

This command clears CES data traffic counters (PPA) as well the error counters. All CES counters hold the value since the last “Clear Counters” command was received. Power-on value is zero.

Table 16 describes the port counter information that is displayed for ports at Egress.

Table 16 Egress Port Counters

Counter	Description
Out of Buffer Drops	Number of packets dropped due to buffer starvation in the PSN2TDM direction (egress)
Missing Packets	Unsigned 64-bit modulo counter. Number of missing packets (as detected via control word sequence number gaps).
Malformed Packet	Unsigned 64-bit modulo counter. Malformed packet counter is incremented (as described in the <i>Egress and Ingress IWF Behavior</i> tables in <i>Configuring CESoPSN Pseudowires</i> and <i>Configuring SAToP Pseudowires</i> .) and also incremented when packets are detected with unexpected size.
Jitter Buffer Over Run Dropped Packets	Unsigned 64-bit modulo counter. Number Of packets dropped due to jitter buffer overrun.
Jitter Buffer Under Run Events	Unsigned 64-bit modulo counter. Number of times the jitter buffer underrun has been detected.
Misorder Packets	Unsigned 64-bit modulo counter. Incremented when the received packets are out of order with sequence number, but are not dropped.
Remote Loss of Packet packets	Unsigned 64-bit modulo counter. Number of packets received with the R bit set as described in the <i>Egress and Ingress IWF Behavior</i> tables in <i>Configuring CESoPSN Pseudowires</i> and <i>Configuring SAToP Pseudowires</i> ..



Table 16 Egress Port Counters

Counter	Description
Window switchovers	Unsigned 64-bit modulo counter. Number of times Serial Number lost synch and was forced to move to a new window.
Remote AC Down Packets	Unsigned 64-bit modulo counter. Number of packets received with L bit set to 1, indicating that the far end's attachment circuit is down (in LOF or LOS or AIS). Either AIS or idle pattern was played out on the local AC.
Duplicate Packet Drops	Number of packets dropped due to being duplicated, as determined by the PW codeword sequence number.
Denied Packet Drops	Number of packets dropped because they are denied.
Error Event	An "error event" is when you have to replace one data packet with a dummy packet because you're in the underrun mode or a packet was lost (you receive packets a, b, d, e, - miss packet b and play a dummy packet for b).
Errored Data Block	Block of data played out to the TDM attachment circuit and of a size defined in accordance with the [G.826] rules for the corresponding TDM service that has experienced at least one CESoPSN error event.  For example, on a T1/E1 attachment circuit: <ul style="list-style-type: none"> <li>• Errored Data Block for T1 = Error Event * (192 * "Packet Latency")</li> <li>• Errored Data Block for E1 = Error Event * (256 * "Packet Latency")</li> </ul>

Table 17 describes the port counter information that is displayed for ports at Inress.

Table 17 Ingress Port Counters

Counters	Description
Out of Buffer Drops	Number of packets that could not be sent due to buffer starvation in the PSN2TDM direction (egress)
Packet Size Violation Drops	The number of packets not transmitted because its size was greater than the largest supported.
Transmit Queue Drops	The number of packets not transmitted due to congestion in the transmit queue.

### 1.15.6 Examples

The following example displays port counters for a specific SAToP circuit.



```
[local]Redback#show port counters 6/1:1:1
```

```
Port                Type
 6/1:1:1            ds1

packets sent        : 1061          bytes sent          : 27586
packets recvd      : 1061          bytes recvd        : 23342
send packet rate   : 0.10          send bit rate      : 20.80
recv packet rate   : 0.10          recv bit rate      : 17.60
rate refresh interval : 60 seconds
```

The following example displays detailed port counter information for a specific CESoPSN circuit.



```
[local]Redback#show port counters 6/1:1:1:1 detail
```

```
Counters for port ds0s 6/1:1:1:1 - Interval: 1d 00:49:27
```

PPA Port Counters

```
packets sent      : 1061          bytes sent      : 27586
packets recvd    : 1061          bytes recvd    : 23342
send packet rate : 0.10          send bit rate  : 20.80
recv packet rate : 0.10          recv bit rate  : 17.60
IP mcast pkts rcv : 0          IP mcast bytes rcv : 0
IP mcast pkts sent : 0          IP mcast bytes snt : 0
rate refresh interval : 60 seconds
```

PPA Input Counters

```
idc other errors : 0          crc port errors : 0
idc overrun errors : 0        idc abort errors : 0
no cct packets   : 0          no cct bytes     : 0
cct down pkts    : 0          cct down bytes   : 0
unknown encap pkts : 0        unknown encap byte : 0
unreach pkts     : 0          unreach bytes    : 0
media filter pkts : 0          media filter bytes : 0
```

PPA Output Counters

```
WRED drop pkts   : 0          tail drop pkts   : 0
adj drop pkts    : 0          adj drop bytes    : 0
```

Packet Drop Counters

```
not IPv4 drop pkts : 0          bad IP checksum  : 0
unhandled IP optns : 0          link layer bcast : 0
bad IP length       : 0
```

Policing Counters

```
conform pkts     : 0          conform bytes    : 0
conform drop pkts : 0        conform drop bytes : 0
exceed pkts      : 0          exceed bytes     : 0
exceed drop pkts : 0          exceed drop bytes : 0
violate pkts     : 0          violate bytes    : 0
violate drop pkts : 0        violate drop bytes : 0
```

The following example displays CES port counter information for a specific SAToP circuit.



```
[local]Redback#show port counters 6/1:1:1 ces
```

```
Circuit: 6/1:1:1, Time Slot: N/A, Service Type: SAToP
```

```
Jitter Buffer      : 16 ms      Channel Size      : N/A
Packet Latency    : 2 ms       Packet Size       : 388 Bytes
Trunk State control: N/A       Idle Pattern      : N/A
Clock Recovery    : adaptive   IWF State        : Normal
Loss of packet state criteria: 5, 10
```

```
CES Egress Errors:
```

```
-----
```

```
Out of Buffer Drops           : 0
Missing Packets               : 0
Malformed Packet              : 0
Jitter Buffer Over Run Dropped Packets : 0
Jitter Buffer Under Run Events : 0
Misorder Packets              : 0
Remote Loss of Packet packets : 0
Window switchovers           : 0
Remote AC Down Packets        : 0
Duplicate Packet Drops        : 0
Denied Packet Drops           : 0
Error Event                   : 0
    Errored Data Block                : 0
```

```
CES Ingress Errors:
```

```
-----
```

```
Out of Buffer Drops           : 0
Packet Size Violation drops    : 0
Transmit Queue Drops           : 0
```

The following example displays all CES port counters on a CESoPSN circuit.

```
[local]Redback(config)#show port counters ces
```

```
Circuit: 6/1:1:1:1, Time Slot: 1 - 4, Service Type: CESoPSN
```

```
Jitter Buffer      : 16 ms      Channel Size      : 4
Packet Latency    : 2 ms       Packet Size       : 68 Bytes
Trunk State control: true       Idle Pattern      : ff
Clock Recovery    : adaptive   IWF State        : Normal
Loss of packet state criteria: 5, 10
```

```
CES Egress Errors:
```

```
-----
```



```

Out of Buffer Drops           : 0
Missing Packets               : 0
Malformed Packet             : 0
Jitter Buffer Over Run Dropped Packets : 0
Jitter Buffer Under Run Events : 0
Misorder Packets             : 0
Remote Loss of Packet packets : 0
Window switchovers           : 0
Remote AC Down Packets       : 0
Duplicate Packet Drops       : 0
Denied Packet Drops          : 0
Error Event                   : 0
Errored Data Block           : 0

```

CES Ingress Errors:

-----

```

Out of Buffer Drops           : 0
Packet Size Violation drops   : 0
Transmit Queue Drops         : 0

```

Circuit: 6/1:1:1:11, Time Slot: 11 - 11, Service Type: CESoPSN

```

Jitter Buffer      : 16 ms      Channel Size      : 1
Packet Latency    : 2 ms      Packet Size       : 20 Bytes
Trunk State control: true      Idle Pattern      : ff
Clock Recovery    : adaptive   IWF State           : Loss of Packet/under-run
Loss of packet state criteria: 5, 10

```

CES Egress Errors:

-----

```

Out of Buffer Drops           : 0
Missing Packets               : 6
Malformed Packet             : 0
Jitter Buffer Over Run Dropped Packets : 0
Jitter Buffer Under Run Events : 0
Misorder Packets             : 0
Remote Loss of Packet packets : 0
Window switchovers           : 0
Remote AC Down Packets       : 0
Duplicate Packet Drops       : 0
Denied Packet Drops          : 0
Error Event                   : 0
Errored Data Block           : 0

```

CES Ingress Errors:

-----



```
Out of Buffer Drops           : 0
Packet Size Violation drops   : 0
Transmit Queue Drops          : 0
```

## 1.16 show port detail

For all other line cards and all media interface cards (MICs), the syntax is:

```
show port [slot/port] [all] detail
```

### 1.16.1 Purpose

Displays the medium access control (MAC) address and other lower-layer settings of a single port, all ports on a card, or all ports in the system.

### 1.16.2 Command Mode

All modes

### 1.16.3 Syntax Description

<i>slot</i>	Optional. Chassis slot number of the line card or MIC for which information is displayed.
<i>port</i>	Required if you enter the slot argument. Port number for which counters are displayed. The range of values depends on the type of card or MIC.
<i>chan-num</i>	Optional. Channel number for which port information is displayed. If omitted, displays port information for all channels on the specified port. The range of values depends on the type of port.
<i>sub-chan-num</i>	Optional. Subchannel number on the channel for which port information is displayed. If omitted, displays port information for all subchannels in the specified channel. The range of values depends on the type of port.
<i>all</i>	Includes unconfigured ports in the display.

### 1.16.4 Default

Displays information for configured ports in the system.



## 1.16.5 Usage Guidelines

Use the `show port detail` command to display the medium access control (MAC) address and other lower-layer settings of a single port, all ports on a card, or all ports in the system.

**Note:** If a port is not configured, the `show port detail` command does not work and the system reports the error log: `Port <s>/<p> is not configured.`

If you do not include any arguments, the output includes all ports present or configured in the system.

Table 18 lists the output fields for the `show port` command (in any mode) with the `detail` keyword. Not all fields apply to all types of ports; the “Type” and “Slot/Port” field names are not displayed in the output.

Table 18 Output Fields for the `show port detail` Command

Field	Description
<b>Header</b> (first line of output)	
Type	<i>port-type</i> or <i>channel-type</i> .
Slot/Port	<i>slot/port</i> —Slot and port numbers for this port.
State	Port status (combination of the and fields) for a line card: <ul style="list-style-type: none"> <li>Down—Port has been configured to be up, but is not working.</li> <li>Down—not entitled—Port is on the low-density version of the line card and is not available.</li> <li>No card—Port has been configured, but the card is not installed.</li> <li>Unconfigured—Port is not configured and down.</li> <li>Up—Port is working (active).</li> </ul>
<b>Port Parameters (in alphabetical order)</b>	
Active Alarms	<ul style="list-style-type: none"> <li>getting LOS—Alarm is present.</li> <li>getting ATM LCD—Alarm is present.</li> <li>N/A—Not applicable to this type of port.</li> <li>NONE—No alarms are present.</li> </ul>
Admin state	State of the port as a result of an operator command: <ul style="list-style-type: none"> <li>Down—Port is not working.</li> <li>Up—Port is working (active).</li> </ul>



Table 18 Output Fields for the show port detail Command

Field	Description
APS Group Name	Automatic Protection Switching group name. If the port is bound to an APS group, the details are displayed as follows: <ul style="list-style-type: none"><li>• APS Group Name: atm1</li><li>• Group ID: 1</li><li>• Port Type: Working or Protect</li><li>• Tx Traffic: Active or Standby</li><li>• Rx Traffic: Active or Standby</li></ul>
ATM MTU size	<i>nnnnn</i> bytes—Size of the hardware maximum transmission unit (MTU) (not configurable).
ATM Payload Scramble	Condition of scrambling for ATM port (on or off).



Table 18 Output Fields for the show port detail Command

Field	Description
Auto negotiation	<p>Two-part string for the <i>setting</i> and <i>state</i> fields. Possible values for the <i>setting</i> field are:</p> <ul style="list-style-type: none"> <li>• enabled</li> <li>• disabled</li> </ul> <p>Possible values for the <i>state</i> field are:</p> <ul style="list-style-type: none"> <li>• negotiating—Ethernet drivers are in the process of auto-negotiating with the remote peer</li> <li>• success—Auto-negotiation was successful</li> <li>• fail—Auto-negotiation failed</li> <li>• force—Auto-negotiation failed and the port is in forced mode</li> <li>• unknown—This is an error state</li> </ul> <p>The possible combinations of the <i>setting</i> and <i>state</i> fields are:</p> <ul style="list-style-type: none"> <li>• disabled-unknown</li> <li>• disabled-negotiating</li> <li>• disabled-success</li> <li>• disabled-force</li> <li>• enabled-unknown</li> <li>• enabled-negotiating</li> <li>• enabled-success</li> <li>• enabled-fail</li> </ul>
Bandwidth	<p><i>nnnnnn</i> kbps—Speed of SONET/SDH port.</p> <p><i>nnn.nn</i> Mbps—Effective speed of ATM port.</p>
Cable Length	<i>nnn</i> —Configured length and type (short or long, depending on configured length).
CCOD Mode	<p><i>State of CCOD mode port listening:</i></p> <p><i>on</i>—Port listening mode is enabled.</p> <p><i>off</i>—Port listening mode is disabled.</p>



Table 18 Output Fields for the show port detail Command

Field	Description
CES service state	<p>State of the CES pseudowire circuit:</p> <ul style="list-style-type: none"> <li>• Down—CES pseudowire is not working, as the result of an operator command.</li> <li>• Up—CES pseudowire is working (active).</li> </ul> <p>The CES pseudowire may remain Up, even when the Port Link Status is Down.</p>
Clock Source <sup>(1)</sup>	<p><i>State of source of the transmit clock:</i></p> <p><i>global-reference-system clock on the active controller card.</i><sup>(2)</sup></p> <p>local—local clock located on the line card (onboard clock).<sup>(3)</sup></p> <p>loop—receive clock derived from the incoming signal on the port.</p> <p>card-reference—clock source that has been specified for the line cards.</p>
Crc	Configured value of the cyclic redundancy check for a SONET/SDH port (16 or 32).
Dampening Count	<i>n</i> —Number of instances this link-dampened port went down and came up within the limits set by the <b>link-dampening</b> command. This count is reset only when the port is removed from the configuration with the <b>no</b> form of the <b>port</b> command (in ATM OC, ATM DS-3, or port configuration mode).
Description	Configured description.
Diag Monitor	<ul style="list-style-type: none"> <li>• No—SFP cannot monitor its faults nor report power readings</li> <li>• Yes—SFP can monitor its faults and report power readings</li> </ul>
Distant Alarm Detection	Distant alarm (RAI) detection condition (on or off) on E1 channel.
Distant Alarm Generation	Distant alarm (RAI) generation condition (on or off) on E1 channel.
DSU Bandwidth <sup>(4)</sup>	<i>nn.nn</i> Mbps—Bandwidth of configured data service unit (DSU).
DSU Mode <sup>(4)</sup>	<i>digital-link</i> —Configured vendor of DSU.
DSU Scramble <sup>(4)</sup>	DSU scramble condition (on or off).
Duplex Mode	<ul style="list-style-type: none"> <li>• full—Port condition, Ethernet or Gigabit Ethernet (any version).</li> <li>• half—Port condition, 10/100 Ethernet only.</li> </ul>



*Table 18 Output Fields for the show port detail Command*

Field	Description
Encapsulation	The encapsulation for this port: <ul style="list-style-type: none"> <li>• 802.1q</li> <li>• atm</li> <li>• cisco-hdlc</li> <li>• ethernet</li> <li>• ppp</li> </ul>
Equipment Loopback	Configured equipment loopback: <ul style="list-style-type: none"> <li>• customer—DS-3 or DS-1 channel responds to remote loopback requests.</li> <li>• network—DS-3 or DS-1 channel ignores remote loopback requests.</li> <li>• NONE—DS-3 or DS-1 channel ignores remote loopback requests.</li> </ul>
FEAC code received	Far end alarm condition (of the remote system): <ul style="list-style-type: none"> <li>• DS3 LOS.</li> <li>• DS3 out of frame (OOF).</li> <li>• DS3 alarm indication signal (AIS) received.</li> <li>• DS3 Idle Received—The far end box is sending the idle pattern and no other data.</li> <li>• Service affecting (SA) equipment failed.</li> <li>• Nonservice affecting (NSA) equipment failed.</li> <li>• Common equipment failed.</li> <li>• N/A or NONE—No alarm condition received.</li> </ul>
Flow control	Condition of flow control for Gigabit Ethernet port, any version, (on or off).



Table 18 Output Fields for the show port detail Command

Field	Description
Framing	Configured framing for the port: <ul style="list-style-type: none"><li>• c-bit</li><li>• crc4</li><li>• esf</li><li>• g751</li><li>• m23</li><li>• no-crc4</li><li>• sf</li><li>• sdh (an option of ATM OC, POS, and WAN-PHY ports)</li><li>• sonet (an option of ATM OC, POS, and WAN-PHY ports)</li><li>• unframed</li></ul>
Idle Character	Configured idle character (flags or marks).
Keepalive	State of keepalive timer: <ul style="list-style-type: none"><li>• Not Set—Keepalive timer is not configured.</li><li>• Set (<i>n</i> sec)—Keepalive timer is set for <i>n</i> seconds.</li></ul>
Line SD BER	10E-5 to 10E-9—Signal degrade bit error rate for SONET/SDH port.
Line SF BER	10E-3 to 10E-5—Signal fail bit error rate for SONET/SDH port.
Line state	Physical state of the line: <ul style="list-style-type: none"><li>• Down—Port has been configured to be up, but is not working.</li><li>• Down— not entitled—Port is on the low-density version of the line card and is not available.</li><li>• No card—Port has been configured, but the card is not installed.</li><li>• Unconfigured—Port is not configured and down.</li><li>• Unconfigured - not licensed—Port is configured without the “all-port” license. <sup>(5)</sup></li><li>• Up—Port is working (active).</li></ul>



Table 18 Output Fields for the show port detail Command

Field	Description
Link Dampening	For Ethernet ports. Status of link dampening: <ul style="list-style-type: none"> <li>• enabled—Link dampening is enabled.</li> <li>• disabled—Link dampening is disabled.</li> </ul>
Link up delay	<i>nnnnn</i> msec—Configured or default value (in milliseconds) for the delay time for down-to-up transitions.
Link down delay	<i>nnnnn</i> msec—Configured or default value (in milliseconds) for the delay time for up-to-down transitions.
Link Distance	For Gigabit Ethernet ports with single-mode fiber (SMF) transceivers (LX or LX10) only. Distance supported by the installed transceiver: <ul style="list-style-type: none"> <li>• n—Distance supported by the transceiver.</li> <li>• N/A—No transceiver installed or transceiver does not report the distance supported.</li> </ul>
Loopback	Type of loopback: <ul style="list-style-type: none"> <li>• internal—Loops the transmit line to receive line.</li> <li>• line—Loops the receive line to the transmit line.</li> <li>• local—Loops the transmit line to the receive line to test internal functions.</li> <li>• network line—Full loopback from the receive line to the transmit line; channels with all timeslots configured (1 to 24).</li> <li>• network payload—Payload loopback from the receive line to the transmit line: channels with all timeslots configured (1 to 24).</li> <li>• remote—Verifies remote link connectivity and quality: channels with C-bit framing; the admin state must be Up.</li> <li>• remote line fdl ansi—Facility data link (FDL) ANSI loopback: channels with Extended Superframe Format (ESF) framing.</li> <li>• remote line fdl bellcore—FDL Telcordia loopback: channels with ESF framing.</li> <li>• remote line inband—Inband loopback: channels with either ESF or Superframe Format (SF) framing; the Admin state must be Up.</li> <li>• remote payload—Payload loopback: channels with ESF framing.</li> </ul>



*Table 18 Output Fields for the show port detail Command*

<b>Field</b>	<b>Description</b>
MAC address	<i>nn:nn:nn:nn:nn:nn</i> —Medium access control address for this port.



Table 18 Output Fields for the show port detail Command

Field	Description
Media type	<p>Physical interface:</p> <ul style="list-style-type: none"> <li>• 100Base-TX—10/100 Ethernet or Ethernet management port (at either 10 or 100 Mbps).</li> <li>• 1000Base-LX—Long reach SFP or Gigabit interface converter (GBIC) transceiver.</li> <li>• 1000Base-LX10—Extended reach GBIC transceiver.</li> <li>• 1000Base-SX—Short reach SFP or GBIC transceiver.</li> <li>• 1000Base-T—Copper-based SFP, or GBIC transceiver or GE port on an FE-GE line card.</li> <li>• 1000Base-SR—Short reach SFP transceiver.</li> <li>• 1000Base-IR—Intermediate reach SFP transceiver.</li> <li>• 1000Base-LR—Long reach SFP transceiver.</li> <li>• 1000Base-CWDM—Coarse wavelength-division multiplexing (CWDM) SFP transceiver.</li> <li>• 1000Base-DWDM—Dense wavelength-division multiplexing (DWDM) SFP transceiver.</li> <li>• 10GE-SR (Displays 10000Base-SR)—Short reach XFP transceiver (10GE or OC-192c/STM-64c port).</li> <li>• 10GE-SW (Displays 10000Base-SW).</li> <li>• 10GE-SR+10GE-SW (Displays 10000Base-SR for LAN-PHY) or 10000Base-SW for WAN-PHY.)</li> <li>• 10GE-IR—Intermediate reach XFP transceiver (OC-192c/STM-64c port).</li> <li>• 10GE-LR (Displays 10000Base-LR.)—Long reach XFP transceiver (10GE or OC-192c/STM-64c port).</li> <li>• 10GE-LW (Displays 10000Base-LW).*</li> <li>• 10GE-LR+10GE-LW (Displays 10000Base-LR for LAN-PHY) or 10000Base-LW for WAN-PHY.)</li> <li>• 10GE-ER (Displays 10000Base-ER.)—Extended reach XFP transceiver (10GE port).</li> <li>• 10GE-EW (Displays 10000Base-EW).</li> <li>• 10GE-ER+10GE-EW (Displays 10000Base-ER for LAN-PHY) or 10000Base-EW for WAN-PHY.)</li> <li>• 10GE-ZR (Displays 10000Base-ZR for LAN-PHY) or 10000Base-ZW for WAN-PHY.)—Extreme reach XFP transceiver (10GE or OC-192c/STM-64c port).</li> <li>• 10GE-DWDM (Displays 10000Base-DWDM)—Dense-wavelength-division-multiplexing (DWDM) XFP transceiver.</li> <li>• No GBIC—GBIC transceiver is not installed in this GE port.</li> </ul>



Table 18 Output Fields for the show port detail Command

Field	Description
Mini-RJ21 Connector	Ports n1-n2—Range of port numbers for this connector on an FE-GE line card.
MTU size	<i>nnnn</i> Bytes—Configured size of the MTU for the port.
NAS Port Type	<ul style="list-style-type: none"> <li>Configured network access server (NAS) port type for an ATM DS-3, ATM OC, Ethernet, Gigabit Ethernet, or POS port only. For a list of NAS port types, see <i>Configuring ATM, Ethernet, and POS Ports</i>.</li> <li>blank—Not configured or not applicable to this port.</li> </ul>
Optical Transport <sup>(6)</sup>	<ul style="list-style-type: none"> <li>otu2e—An OTN XFP is inserted.</li> <li>NONE—No optical transport</li> </ul>
Over Subscription Rate	Configured value for over subscription: <ul style="list-style-type: none"> <li><i>nnnn</i>%</li> <li>Unlimited</li> </ul>
QoS Rate Maximum <sup>(7)</sup>	QoS port-rate limiting value: <sup>(8)</sup> <ul style="list-style-type: none"> <li><i>50 to 149 Mbps</i>.</li> <li>Payload line-rate (150 Mbps).</li> </ul>
Path Alarms	<ul style="list-style-type: none"> <li>N/A—Not applicable to this type of port.</li> <li>NONE—No alarms are present.</li> </ul> <p>CH-OC3/CH-OC12:</p> <ul style="list-style-type: none"> <li>STS Path</li> <li>VT Path</li> </ul> <p>CH-STM1/CH-STM4:</p> <ul style="list-style-type: none"> <li>AU Path— based on SDH aug-mapping and port type as follows: <ul style="list-style-type: none"> <li>* au3-xxx: stm1 = x3; stm4 = x12</li> <li>* au4-xxx: stm1 = x1; stm4 = x4</li> </ul> </li> <li>VT Path</li> </ul>
Path Trace Length	The maximum size that the TX path trace message can be set to.
Physical Layer <sup>(9)</sup>	<ul style="list-style-type: none"> <li>lan-phy</li> <li>wan-phy</li> </ul>



Table 18 Output Fields for the show port detail Command

Field	Description
PPPoE PADO Delay	State of PADO delay: <ul style="list-style-type: none"> <li>• Not set—PADO delay is not configured.</li> <li>• Set (<i>n</i> sec)—PADO delay is configured for <i>n</i> seconds.</li> </ul>
Restart link up delay	The configured delay before declaring a port is up after a restart of the system.
Rx path-trace	Received path trace data.
Report Only Alarms	State of alarm reporting for an ATM or POS OC port: <ul style="list-style-type: none"> <li>• Path alarms (report only): Payload label mismatch (PLM)</li> <li>• Path alarms (report only): Path unequipped (UNEQ)</li> <li>• Path Alarm Indication Signal (AIS-P)</li> <li>• Path Loss Of Pointer (LOP-P)</li> <li>• Path Payload Label Mismatch (PLM-P)</li> <li>• Path Remote Defect Indication (RDI-P)</li> <li>• Path Unequipped (UNEQ-P)</li> </ul> Alarm is reported, but the port is not shut down.
Scramble	Status of X <sup>43</sup> + 1 payload scrambling for a POS port (on or off).
Speed	<ul style="list-style-type: none"> <li>• <i>nnn</i> Mbps—Speed of the 10/100 Ethernet port.</li> <li>• <i>nn</i> Gbps—Speed of the Gigabit Ethernet port (any version).</li> <li>• auto—Speed of the 10/100 Ethernet port has been determined by sensing the line.</li> </ul>
Support Lossless Large MTU	Status of this FE port on an FE-GE line card with regard to guaranteed lossless flow control for jumbo frames: <ul style="list-style-type: none"> <li>• Disabled—Port supports this feature but is not enabled for it.</li> <li>• Enabled—Port is enabled for this feature.</li> <li>• Not Configurable—Port does not support this feature.</li> <li>• Shutdown—Port is a member of a port group that is enabled for this feature and has been shut down because it does not support it.</li> </ul>
Temperature	SFP Transceiver temperature
Timeslot	Time slots configured for DS-0 channels.



Table 18 Output Fields for the show port detail Command

Field	Description
Tx C2 byte Rx C2 byte	Value of the C2 byte: <ul style="list-style-type: none"> <li>• ATM OC ports—0x13</li> <li>• POS OC ports—0x16</li> <li>• WANPHY port—0x1a</li> <li>• Ch-OC3/CH-OC12 (depends channel-mapping): <ul style="list-style-type: none"> <li>* VT1.5—0x16</li> <li>* STS-1—0x04</li> </ul> </li> <li>• CH-STM1/CH-STM4 (depends aug-mapping): <ul style="list-style-type: none"> <li>* AU3-NO-TUG/AU4-TU3—0x04</li> <li>* AU3-TU12/AU3-TU11/AU4-TU12/AU4-TU11—0x02</li> </ul> </li> </ul>
Tx Fault Rx Fault	<i>Fault status for the transmit or receive side of the SFP transceiver installed in this port:</i> <ul style="list-style-type: none"> <li>• <i>LowPwrWarning</i>—Measured power has dropped below the level needed by the transceiver to maintain connectivity without errors.</li> <li>• <i>NoFault</i>—No power fault has occurred.</li> <li>• <i>PwrFault</i>—Measured power is outside the range displayed in the PwrMin and PwrMax fields by the <code>show hardware</code> command (in any mode) with the <code>detail</code> keyword.</li> </ul>
Tx National bit Rx National bit	Value of the national bit (bit 12 of set 1) in the E3 frame: <ul style="list-style-type: none"> <li>• Enabled</li> <li>• Disabled</li> </ul>
Tx path-trace	Transmitted path trace data.
Tx Pwr measured [dbm] <sup>(10)</sup> Rx Pwr measured [dbm]	Current receiver sensitivity and transmitter output power for the SFP transceiver installed in this port.
Undampened line state	<ul style="list-style-type: none"> <li>• Up—Port is working (active).</li> <li>• Down—Port has been configured to be up, but is not working.</li> </ul>
Vcc Measured	SFP Transceiver Vcc



Table 18 Output Fields for the show port detail Command

Field	Description
Wavelength <sup>(10)</sup>	Center wavelength for the version of the SFP optical transceiver installed in this port: <ul style="list-style-type: none"> <li>• <i>0.00</i> [nm]—Wavelength is not reported by this transceiver.</li> <li>• <i>nnnn.nn</i> [nm], ITU ch <i>nn</i>—Wavelength and International Telecommunications Union (ITU) channel number (if applicable) for this transceiver version.</li> </ul> For wavelength data for each type of transceiver and its versions, see <i>Transceivers for SmartEdge and SM Family Line Cards</i> .
Yellow Alarm Detection	Yellow alarm (RAI) detection condition (on or off) on T1(Ds-1) channel.
Yellow Alarm Generation	Yellow alarm (RAI) generation condition (on or off) on T1(DS-1) channel.

(1) Changes to the clock source setting will not cause LOF on the 8-port ATM OC-3c/STM-1c.

(2) This is the default card clock source on the 8-port ATM OC-3c/STM-1c card.

(3) This is the default card clock source on previous ATM cards, except for the 8-port OC-3c/STM-1c card.

(4) This field is not supported on the Channelized OC-3/STM-1 (8/4-port) / OC-12/STM-4 (2/1-port) card.

(5) At the **show port all** command output on the Channelized OC-3/STM-1 (8/4-port) / OC-12/STM-4 line card.

(6) This field is only applicable for the 10G LAN-PHY port type.

(7) Only supported in *hsvc-fair* mode on the 8-port ATM OC-3c/STM-1c (*atm-oc3e-8-port*) line card. When executed in *vc-fair* mode, an error message occurs if executed with any value other than 150 Mbps.

(8) When *Payload line-rate (150 Mbps)* is selected, the actual line-rate received is 149.76 Mbps.

(9) This field is only applicable for the line cards that support *WAN-PHY* mode.

(10) Measured or reported values meet or exceed the transceiver specifications that are documented in *Transceivers for SmartEdge and SM Family Line Cards*.

Table 19 XFP Auxiliary Measurement Displayed by the show port Command with the detail Keyword

Field Name	Description
Auxiliary monitoring not implemented	0000b
APD bias voltage (16-bit value is Voltage in units of 10 mV)	0001b
Reserved	0010b
TEC current (mA) (16-bit value is Current in units of 100 uA)	0011b
Laser temperature (same encoding as module temperature)	0100b
Laser wavelength	0101b
+5V Supply voltage	0110b
+3.3V Supply voltage	0111b



Table 19 XFP Auxiliary Measurement Displayed by the show port Command with the detail Keyword

Field Name	Description
+1.8V Supply voltage	1000b
-5.2V Supply voltage (absolute value encoded as primary voltage monitor)	1001b
+5V Supply current (16-bit Value is Current in 100 uA)	1010b
+3.3V Supply current (16-bit Value is Current in 100 uA)	1101b
+1.8V Supply current (16-bit Value is Current in 100 uA)	1110b
-5.2V Supply current (16-bit Value is Current in 100 uA)	1111b

Not all fields apply to all types of ports; in most cases this command displays only the fields that are applicable to the type of port. The **Type** and **Slot/Port** field names are not displayed in the output.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.16.6 Examples

The following example displays detailed configuration information for port 1 on the POS line card in slot 1:



```
[local]Redback>show port 1/1 detail
pos 1/1 state is Down
Description          :
Line state           : Down
Admin state          : Down
Media type           : Sonet OC12 (SM)
Encapsulation        : cisco-hdlc
MTU size             : 4470 Bytes
Loopback             : none
Framing              : sonet
Speed                : 622080 kbps
Scramble              : ON
Crc                  : 32
Tx C2 byte           : 0x16
Rx C2 byte           : 0x16
Line SF BER          : 10E-4
Line SD BER          : 10E-7
Keepalive            : Set (10 sec)
Active Alarms        : N/A
Path Alarms          : N/A
SFP / Media Type     : CWDM / MM
Tx path-trace       :
  73757065 72636f6d 6d370000 00000000 supercomm7.....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000d0a .....
Rx path-trace       :
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
```

The following example displays detailed configuration information for port 1 on an ATM OC line card in slot 10; the port has been configured for **alarm-report-only** (in ATM OC configuration mode):



```
[local]Redback(config-atm-oc)#show port 10/1 detail
```

```
atm 10/1 state is Down
Description :
Line state      : Down
Admin state     : Down
Link Dampening  : enabled
Link up delay   : 11000
Link down delay : 2200
Restart link up delay : 400
Undampened line state : Down
Dampening Count : 0
Media type      : Sonet OC12 (SM)
Encapsulation   : atm
NAS Port Type   :
Loopback        : none
Framing         : sonet
Speed           : 622.08 Mbps
Bandwidth       : 599.04 Mbps
Tx C2 byte      : 0x13
Rx C2 byte      : 0x13
Line SF BER     : 10E-4
Line SD BER     : 10E-7
ATM MTU size    : 65527 Bytes
MTU size        : 4470 Bytes
ATM Payload Scramble : ON
Over Subscription Rate : Unlimited
MAC address     : 00:30:88:01:08:18
Clock Source    : card-reference
CCOD Mode       : default
Report Only Alarms
  Path Alarms (report only): Payload label mismatch (PLM)
                           Path un-equipped (UNEQ-P)
Active Alarms    : N/A
Path Alarms     : N/A
Path Trace Length : 64 (62 + 2 framing)
Tx Path Trace   :
  52656462 61636b00 00000000 00000000 Redback.....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000d0a .....
Rx Path Trace   :
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
```

The following example displays detailed configuration information for port 1 on the ATM line card in slot 3:

```
[local]Redback>show port 3/1 detail
```

```
atm 3/1 state is Up
Description      : ATM port for Multiprotocol circuits
Line state       : Up
Admin state      : Up
Media type       : ds3
Encapsulation    : atm
ATM MTU size     : 65527 Bytes
MTU size         : 5000 Bytes
Loopback         : none
Framing          : c-bit
Framing Mode     : ADM
Speed            : 44.736 Mbps
Bandwidth        : 44.21 Mbps
Clock Source     : global-reference
Equipment Loopback : network
Cable Length     : 349 feet (short)
ATM Payload Scramble : ON
Over Subscription Rate : Unlimited
MAC address      : 00:00:00:00:00:00
Active Alarms    : NONE
FEAC code received : NONE
```



The following example displays detailed configuration information for port 2 on the low-density Gigabit Ethernet line card in slot 9 with a copper GBIC installed; ports 2 and 4 are unavailable with the current entitlement:

```
[local]Redback>show port 9/2 detail
ethernet 9/2 state is Down
Description                :
Line state                  :Down not entitled
Admin state                 :Up
Encapsulation              :ethernet
MTU size                    :1500 Bytes
Speed                       :1000 Mbits/sec
Duplex mode                 :full
MAC address                 :00:30:88:00:13:1b
Media type                  :1000Base-TX
Flow control                :on
Loopback                    :off
```

The following example displays detailed configuration information for port 1 on the ATM OC-3c/STM-1c line card in slot 6 :

```
[local]Redback>show port 6/1 detail

atm 6/1 state is Up
Description                : ATM port for Multiprotocol circuits
Line state                  : Up
Admin state                 : Up
Media type                  : Sonet OC3 (SM)
Encapsulation              : atm
Loopback                    : none
Framing                     : sonet
Speed                       : 155.52 Mbps
Bandwidth                   : 149.76 Mbps
Qos Rate Maximum           : 50 Mbps
Tx C2 byte                  : 0x13
Rx C2 byte                  : 0x1
Line SF BER                 : 10E-5
Line SD BER                 : 10E-8
ATM MTU size                : 65519 Bytes
MTU size                    : 5000 Bytes
ATM Payload Scramble       : ON
Over Subscription Rate      : Unlimited
MAC address                 : 00:00:00:00:00:00
Active Alarms               : NONE
```

The bandwidth for an ATM OC port is the port speed minus the framing overhead. It represents the effective speed for user traffic.

The following example displays detailed configuration information, including the auto-negotiation setting being disabled and the state for Ethernet port 1 in slot 5:



```
ethernet 5/1 state is Down
Description :
Line state : Down
Admin state : Down
Link Dampening          : enabled
Link up delay           : 11000
Link down delay         : 2200
Restart link up delay   : 400
Undampened line state : Down
Dampening Count : 0
Encapsulation : ethernet
MTU size : 1500 Bytes
NAS Port Type :
PPPoE pado delay : Set(2 sec)
Speed : 1 Gbps
Duplex mode : full
MAC address : 00:30:88:01:64:b5
Media type : 1000Base-LX
Flow control :rx state: real time state
Auto-negotiation : off state: n/a
Link Distance : N/A
Loopback : off
Wavelength : 1310.00 nm
Diag Monitor : Yes
TX Fault : LOW-PWR-ALARM
RX Fault : LOS-Fault
TX Pwr measured[dbm] : -40.00
RX Pwr measured[dbm] : -40.00
```

The following example displays detailed configuration information for port 1 on the ATM line card in slot 3 when auto-negotiation is enabled:

```
[local]Redback>show port 3/1 detail
atm 3/1 state is Up
Description          : ATM port for Multiprotocol circuits
Line state           : Up
Admin state          : Up
Media type           : Sonet OC3 (SM)
Encapsulation        : atm
Auto-negotiation    : on state: unknown
Flc negotiated set   : tx-rx-or-rx-only state: real time state
force                : disabled state: inactive
Flow-control         : tx&rx state: n/a
```

The following example displays detailed port information for port 1 on a atm-oc3e-8-port line card in slot 14:



```
[local]Redback>show port 1/1 detail

atm 14/1 state is Up
Description                :
Line state                  : Up
Admin state                 : Up
Link Dampening              : enabled
Link up delay               : 11000
Link down delay             : 2200
Restart link up delay      : 400
Undampened line state      : Up
Dampening Count            : 0
Media type                  : Sonet OC3
Encapsulation               : atm
NAS Port Type               :
Loopback                   : none
Framing                     : sonet
Speed                       : 155.52 Mbps
Bandwidth                   : 149.76 Mbps
Qos Rate Maximum           : Line-Rate
Tx C2 byte                  : 0x13
Rx C2 byte                  : 0x13
Line SF BER                 : 10E-4
Line SD BER                 : 10E-7
ATM MTU size                : 65527 Bytes
MTU size                    : 4470 Bytes
ATM Payload Scramble       : ON
Over Subscription Rate     : Unlimited
MAC address                 : 00:d0:b6:ff:5b:5d
Clock Source                : card-reference
CCOD Mode                   : default
SFP Transceiver Status
Wavelength                  : 1310.00 nm
Diag Monitor                : Yes
Tx Fault                    : No Fault
Rx Fault                    : No Fault
Tx Pwr measured[dbm]       : -11.51
Rx Pwr measured[dbm]       : -10.77
Temperature                 : 39 C
Vcc Measured                : 3.23 V
APS Group Name              : N/A
Report Only Alarms
  Path Alarms (report only): NONE
Active Alarms               : NONE
Path Alarms                 : NONE
Path Trace Length           : 64 (62 + 2 framing)
Tx Path Trace
  6c616479 62756700 00000000 00000000 ladybug.....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
  00000000 00000000 00000000 00000000 .....
Rx Path Trace
  00000000 00000000 00000000 00000000 .....
  00000d0a 526f7574 65725465 73746572 ...RouterTester
  2e20506f 72742031 30332f31 2e000000 . Port 103/1....
  00000000 00000000 00000000 00000000 .....
```

The following example displays detailed port information for port 2 on a ge4-20-port line card in slot 2:



```
[local]Redback>show port 2/2 detail
ethernet 2/2 state is Up
Description                :
Line state                  : Up
Admin state                 : Up
Link Dampening              : enabled
Link up delay               : 11000
Link down delay             : 2200
Restart link up delay       : 400
Undampened line state      : Up
Dampening Count             : 0
Encapsulation               : ethernet
MTU size                    : 1500 Bytes
NAS Port Type               :
MAC address                 : 00:30:88:03:ae:6f
Media type                  : 1000Base-SX
Auto-negotiation            : on                state: success
Duplex negotiated set       : full              state: full
Flc negotiated set         : tx&rx-or-rx-only  state: rx
force                       : disabled             state: inactive
Speed negotiated set        : 1 Gbps           state: 1 Gbps
Flow control                : rx                state: n/a
Speed                       : 1 Gbps              state: n/a
Duplex mode                 : full              state: n/a
Link Distance               : N/A
Loopback                    : off
SFP Transceiver Status
Wavelength                  : 850.00 nm
Diag Monitor                : Yes
Tx Fault                    : No Fault
Rx Fault                    : No Fault
Tx Pwr measured[dbm]        : -4.58
Rx Pwr measured[dbm]        : -3.76
Temperature                 : 30 C
Vcc Measured                : 3.15 V
Active Alarms                : NONE
```

The following example shows Ethernet LAN-PHY:

```
[local]Redback#show port 11/1 detail
ethernet 11/1 state is No card
Description                :
Line state                  : No card
Admin state                 : Up
Link Dampening              : disabled
Undampened line state      : No card
Dampening Count             : 0
Encapsulation               : ethernet
MTU size                    : 1500 Bytes
NAS Port Type               :
NAS-Port-Id                 :
Optical Transport           : None
Physical layer               : lan-phy
Media type                  : Unknown
Flow control                : on
Clock-Source                : local
Link Distance               : N/A
Loopback                    : off
Active Alarms                : NONE
```



The following example shows Ethernet WAN-PHY:

```
[local]Redback#show port 11/1 detail
ethernet 11/1 state is No card
Description          :
Line state           : No card
Admin state          : Up
Link Dampening       : disabled
Undampened line state : No card
Dampening Count      : 0
Encapsulation        : ethernet
MTU size             : 1500 Bytes
NAS Port Type        :
NAS-Port-Id         :
Physical layer       : wan-phy
Media type           : Unknown
Flow control         : on
Clock-Source         : local
Link Distance        : N/A
Loopback             : none
Framing              : sonet
Line SF BER          : 10E-4
Line SD BER          : 10E-7
Active Alarms        : NONE
Path Alarms          : NONE
Tx path-trace        :
  52656462 61636b00 00000000 00000000 Redback.....
Rx path-trace        :
  00000000 00000000 00000000 00000000 .....
```

The following example displays detailed information about port 13/1 on a CESoPSN circuit when it has been administratively shut down:

```
[local]Redback#show port 13/1:1:1 detail
channelized-stml 13/1 state is Down
Description          :
Service             : CES
Line state           : Down
Admin state          : Down
CES service state    : Down
Link Dampening       : disabled
Undampened line state : Down
Dampening Count      : 0
Loopback            : none
AUG Mapping          : au4
Channel Mapping      : redback
Active Alarms        : N/A
AU-4 1 Path Alarms  : N/A
AU-4 1              :
Tx C2 Byte           : 2
Rx C2 Byte           : 255
Path Trace Length    : 16
Tx Path Trace        :
  52656462 61636b00 00000000 00000000 Redback.....
  00000000 00000000 00000000 00000000 .....
```

## 1.17 show port perf-monitor

For WAN-PHY ports, the syntax is:



```
show port perf-monitor slot/port [detail] [far | near]
```

For all other line cards and all media interface cards (MICs), the syntax is:

```
show port perf-monitor slot/port
```

### 1.17.1 Purpose

Displays configuration information and performance-monitoring (PM) statistics for the specified port and optionally specified channel:subchannel.

### 1.17.2 Command Mode

All modes

### 1.17.3 Syntax Description

<i>slot</i>	Chassis slot number of the line card for which configuration information and PM statistics are displayed.
<i>port</i>	Port number for which configuration information and PM statistics are displayed.
<i>chan-num</i>	Channel number for which configuration information and PM statistics are displayed. If omitted, displays configuration information and PM statistics for all channels on the specified port. The range of values depends on the type of port.  If <i>sub-chan-num</i> is not specified, the PM statistics are displayed for the channel specified by <i>chan-num</i> , and not for the individual subchannels; if <i>sub-chan-num</i> is specified, then the PM statistics are displayed for that channel only.
<i>sub-chan-num</i>	Subchannel number on the channel for which configuration information and PM statistics are displayed. If omitted, displays PM statistics for all subchannels in the specified channel. The range of values depends on the type of port.
<i>detail</i>	Displays detailed PM information.
<i>far</i>	Displays far end PM information.
<i>near</i>	Displays near end PM information; this setting is the default if neither the <i>near</i> nor <i>far</i> keyword is specified.

### 1.17.4 Default

If no optional arguments or keywords are specified, data is for the near end.



## 1.17.5 Usage Guidelines

Table 20 lists the statistical data fields that are displayed with this command.

- Not all output fields described in the table are displayed for all types of ports. If you specify the `detail` keyword, the same statistical data fields are displayed, but with the description instead of the abbreviation.
- For definitions of the output status fields, see the `show port detail` command.
- It is not necessary to enter the `sonet eu` command for a second-generation ATM OC line card line card. To determine if a card has SONET path trace and monitoring features enabled, enter the `show chassis` command (in any mode), and check for the N flag in the Flags column.
- Some test equipment can generate time-division multiplexing (TDM) code errors such that an E3 port interprets them as a mix of excessive zeros (EXZ) and bipolar violation (BPV) errors, which usually occur in pairs; however, the E3 port considers them a single LCV error as does most legacy equipment.
- Data is displayed in 15-minute intervals; data for the current interval reflects the elapsed time in the interval. The same data is displayed in both the standard and detailed formats. If you do not specify the `detail` keyword, the data is shown in tabular format with the abbreviated field names; with the `detail` keyword, it is present in text format with the field descriptions.
- The SmartEdge 100 router limits the value of the `slot` argument to 2.

The value for the `port` argument on the SmartEdge 100 router depends on the MIC slot in which the ATM OC MIC is installed.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

Table 20 `show port perf-monitor` Field Descriptions

Field	Description
BES	Burst errored seconds
CCV	C-bit coding violations
CES	C-bit errored seconds
CSES	C-bit severely errored seconds
CSS	Controlled slip seconds
DM	Degraded minutes
ES	Errored seconds

Table 20 *show port perf-monitor Field Descriptions*

Field	Description
LCDS	Loss of cell delineation seconds
LCV	Line code violations
LES	Line errored seconds
LSES	Line severely errored seconds
LUAS	Line unavailable seconds
PCV	P-bit coding violations Path code violations
PES	P-bit errored seconds Path errored seconds
PLCP SEFS	Physical layer convergence protocol (PLCP) severely errored framing seconds
PLCP UAS	PLCP unavailable seconds
PSES	P-bit severely errored seconds Path severely errored seconds
PUAS	Path unavailable seconds
SCV	Section code violations
SES	Section errored seconds
SEFS	Severely errored framing seconds
SES	Severely errored seconds
SSES	Section severely errored seconds
SSEFS	Section severely errored framing seconds
UAS	Unavailable seconds

## 1.17.6 Examples

### 1.17.6.1 WAN-PHY Port Example

The performance monitoring of a WAN-PHY port is shown:



```
[local]callisto#show port perf-monitor 14/1
ethernet 14/1 state is Up
Description                :
Line state                  : Up
Admin state                 : Up
Link Dampening             : disabled
Undampened line state     : Up
Dampening Count           : 0
Encapsulation              : ethernet
MTU size                   : 1500 Bytes
NAS Port Type              :
NAS-Port-Id               :
MAC address                : 00:30:88:15:b3:89
Physical layer             : wan-phy
Media type                 : 10000Base-LW
Flow control               : on
Speed                      : 10 Gbps
Duplex mode                : full
Clock-Source               : local
Link Distance              : 10000 meters
Loopback                   : none
Framing                    : sonet
Line SF BER                : 10E-4
Line SD BER                : 10E-7
XFP Transceiver Status
  Wavelength               : 1310.00 nm
  Diag Monitor             : Yes
  Tx Fault                 : No Fault
  Rx Fault                 : No Fault
  Tx Pwr measured[dbm]    : -2.03
  Rx Pwr measured[dbm]    : -4.13
  Temperature              : 30 C
Active Alarms              : NONE
Path Alarms                : NONE
Tx path-trace              :
  63616c6c 6973746f 00000000 00000000 callisto.....
Rx path-trace              :
  506f7274 20746572 54657374 65722e00 Port terTester..
Path and Line Data
INTERVAL      PCV      PSES      PES      LCV      LSES      LES
759           0        0         0        0        0         0
14:45-15:00  0        0         0        0        0         0
14:30-14:45  0        0         0        0        0         0
14:15-14:30  33       0         1        2307    0         1
Total        33       0         1        2307    0         1
24 Hours     33       0         1        2307    0         1

Section Data
INTERVAL      SCV      SSES      SSEFS      SES
759           0        0         0         0
14:45-15:00  0        0         0         0
14:30-14:45  0        0         0         0
14:15-14:30  21       0         0         1
Total        21       0         0         1
24 Hours     21       0         0         1
```

### 1.17.6.2 ATM Port Example

The following example displays the configuration information and PM statistics for port 1 on the ATM line card in slot 3:



```
[local]Redback>show port perf-monitor 3/1

atm 3/1 state is Up
Description           :
Line state            : Up
Admin state           : Up
Media type            : ds3
Encapsulation         : atm
ATM MTU size          : 65527 Bytes
MTU size              : 4470 Bytes
Loopback              : none
Framing               : c-bit
Framing Mode          : ADM
Speed                 : 44.736 Mbps
Bandwidth             : 44.21 Mbps
Clock Source          : global-reference
Equipment Loopback    : customer
Cable Length          : 349 feet (short)
ATM Payload Scramble  : ON
Over Subscription Rate : Unlimited
MAC address           : 00:30:88:12:05:01
Active Alarms         : NONE
FEAC code received   : NONE
```

ATMDS3 PM DATA DISPLAY

INTERVAL	LCV	PCV	CCV	PES	PSES	SEFS	UAS	LES	CES	CSES
348	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
24 Hours	0	0	0	0	0	0	0	0	0	0

INTERVAL	PLCP SEFS	PLCP UAS	PLCP LCDS
348	0	0	0
Total	0	0	0
24 Hours	0	0	0

### 1.17.6.3 ATM OC-3 Port Example

The following example displays the configuration information and PM statistics for port 1 on the 4-port ATM OC-3/STM-1c line card in slot 11 :



```
[local]Redback>show port perf-monitor 11/1

atm 11/1 state is Up
Description                :
Line state                  : Up
Admin state                 : Up
Media type                 : Sonet OC3 (SM)
Encapsulation              : atm
Loopback                   : none
Framing                    : sonet
Speed                      : 155.52 Mbps
Bandwidth                   : 149.76 Mbps
Qos Rate Maximum          : 50 Mbps
Tx C2 byte                 : 0x13
Rx C2 byte                 : 0x13
Line SF BER                : 10E-4
Line SD BER                : 10E-7
ATM MTU size               : 65527 Bytes
MTU size                   : 4470 Bytes
ATM Payload Scramble       : ON
Over Subscription Rate     : Unlimited
MAC address                : 00:30:88:00:3f:08
Clock Source               : global-reference
Active Alarms              : NONE
Path Alarms                : NONE
Path Trace Length         : 64 (62 + 2 framing)
Tx Path Trace              :
    6b696d62 65726c79 00000000 00000000 kimberly.....
    00000000 00000000 00000000 00000000 .....
    00000000 00000000 00000000 00000000 .....
    00000000 00000000 00000000 00000d0a .....
Rx Path Trace              :
    6b696d62 65726c79 00000000 00000000 kimberly.....
    00000000 00000000 00000000 00000000 .....
    00000000 00000000 00000000 00000000 .....
    00000000 00000000 00000000 00000d0a .....

Path and Line Data
INTERVAL  PCV  PSES  PUAS  PES  LCDS  LCV  LSES  LUAS  LES
147      0    1    0    1    1    0    1    0    1
Total    0    1    0    1    1    0    1    0    1
24 Hours 0    1    0    1    1    0    1    0    1

Section Data
INTERVAL  SCV  SSES  SSEFS  SES
147      0    1    1    1
Total    0    1    1    1
24 Hours 0    1    1    1
```

## 1.18 show port pseudowire

```
show port pseudowire [pw-name [counters | detail]]
```

### 1.18.1 Command Mode

All



## 1.18.2 Syntax Description

<b><i>pw-name</i></b>	Optional. Port pseudowire (PW) name. Limits the output to a specified port PW.
<b>counters</b>	Optional. Output includes port PW traffic counters.
<b>detail</b>	Optional. Detailed port PW information is displayed, such as the circuit handle, operational status, line state, administrative state, encapsulation type, MTU size, and MAC address.

## 1.18.3 Default

None

## 1.18.4 Usage Guidelines

Use the `show port pseudowire` command to display the circuit handle and status for the port PWs on the router. Add the `pw-name` argument to display information about a specified port PW. You can add the `counters` keyword or the `detail` keyword with or without the `pw-name` argument to display port PW traffic counters or detailed information about the port PW.

## 1.18.5 Examples

The following example displays the circuit handle and state of the port PWs configured on a router:

```
[local]Redback#show port pseudowire
Name                CCT                State
cp1_cs1001          255/25:1:1/1/0/18  Up
l2-net              255/25:1:2/1/0/22  Up
```

The following example displays traffic counters for the `cp1_cs1001` port PW:

```
[local]Redback#show port pseudowire cp1_cs1001 counters
Name                Packets/Bytes Sent  Packets/Bytes Received
cp1_cs1001          0                    0
                    0                    0
```

The following example displays detailed information about the `cp1_cs1001` port PW:



```
[local]Redback#show port pseudowire cp1_cs1001 detail
cp1_cs1001 255/25:1:1/1/0/18 state is Up
Description                : This PW port connects through VPN 1001

Line state                  : Up
Admin state                 : Up
Encapsulation              : ethernet
MTU size                   : 1500 Bytes
MAC address                 : 00:30:88:04:17:29
```

## 1.19 show port transceiver

```
show port slot/port[:ch[:sub]] transceiver
```

### 1.19.1 Purpose

Displays detailed information about the transceivers installed in the SmartEdge router, including their current status.

### 1.19.2 Command Mode

All modes

### 1.19.3 Syntax Description

<i>slot</i>	Chassis slot number of the line card for which transceiver status is displayed.
<i>port</i>	Port number for which counters are displayed. The range of values depends on the type of card or MIC.
<i>ch</i>	Not Applicable. The channel number argument does not apply to this command.
<i>sub</i>	Not Applicable. The subchannel number argument does not apply to this command.
<i>transceiver</i>	Displays transceiver information.

### 1.19.4 Default

Displays a list of transceivers ports that are present or configured in the system.



## 1.19.5 Usage Guidelines

Use the `show port transceiver` command to display detailed information about the transceivers installed in the router, including their current status.

Table 21 describes the values for the State field that can be displayed for a given SFP or XFP transceiver port on a SmartEdge 400, 600, 800, 1200, 1200H router.

*Table 21 SFP and XFP Transceiver Port Data Displayed by the show port transceiver Command*

State	Description
SFP / Media type	SFP Transceivers—Ethernet line cards: <ul style="list-style-type: none"> <li>• FX / MM—Short reach transceiver, multimode fiber.</li> <li>• LX10 / SM—Long reach transceiver, single-mode fiber.</li> <li>• SX / MM—Short reach transceiver, multimode fiber.</li> <li>• LX / SM—Long reach transceiver, single-mode fiber.</li> <li>• ZX / SM—Extended long reach transceiver, single-mode fiber.</li> <li>• T / Cat5—Copper-based transceiver.</li> <li>• CWDM / SM—Coarse wavelength-division multiplexing (CWDM) transceiver, single-mode fiber.</li> <li>• DWDM / SM—Dense wavelength-division multiplexing (DWDM) transceiver, single-mode fiber.</li> </ul>
	SFP transceivers—SONET OC-n (OC-3c/STM-1c, OC-12c/STM-4c, and OC-48c/STM-16c) cards: <ul style="list-style-type: none"> <li>• SR / SM—Short reach transceiver, single-mode fiber.</li> <li>• SR / MM—Short reach transceiver, multimode fiber.</li> <li>• IR / SM—Intermediate reach transceiver, single-mode fiber.</li> <li>• LR / SM—Long reach transceiver, single-mode fiber.</li> </ul>



*Table 21 SFP and XFP Transceiver Port Data Displayed by the show port transceiver Command*

<b>State</b>	<b>Description</b>
XFP / Media type	<p>10-Gbps SFP (XFP) transceivers—OC-192 and 10-Gig Ethernet line cards:</p> <ul style="list-style-type: none"> <li>• SR or SW / SM—Short reach transceiver, single-mode fiber.</li> <li>• SR / MM—Short reach transceiver, multimode fiber.</li> <li>• IR / SM—Intermediate reach transceiver, single-mode fiber.</li> <li>• LR or LW / SM—Long reach transceiver, single-mode fiber.</li> <li>• ER or EW / SM—Extended long reach transceiver, single-mode fiber.</li> <li>• ZR or ZW / SM—Extreme reach transceiver, single-mode fiber.<sup>(1)</sup></li> <li>• DWDM / SM—Dense wavelength-division multiplexing (DWDM) transceiver, single-mode fiber.<sup>(2)</sup></li> </ul>
Ericsson Approved	<p>State of transceiver testing for transceiver in SmartEdge routers:</p> <ul style="list-style-type: none"> <li>• No—Not tested.</li> <li>• Yes—Tested.</li> </ul>
Diagnostic monitoring	Whether the installed transceiver supports diagnostic monitoring compliant to SFF-8472 for SFPs or INF-8077i for XFPs.
CLEI code	Common Language Equipment Identifier (CLEI) code for this transceiver; blank if not applicable for this transceiver.
Serial number	nnnnnnnnnnnnnn—Unique identifier for this transceiver.
Wavelength	<p>Center wavelength for the version of the optical transceiver installed in this port:</p> <ul style="list-style-type: none"> <li>• 0.00 [nm]—Wavelength is not reported by this transceiver.</li> <li>• nnnn.nn [nm]—Wavelength for this transceiver version.</li> </ul>
Additional Features	<ul style="list-style-type: none"> <li>• OTN—An OTN XFP is inserted in the port.</li> <li>• None—No additional feature.</li> </ul>
Power Level	<ul style="list-style-type: none"> <li>• Normal—Powered on.</li> <li>• Low—Standby or when the XFP is inserted into a non-OTN support port.</li> </ul>
Tx Pwr [dbm]	Transmitter optical output power (measured, minimum, and maximum limits) for the version of the transceiver installed in this port.



**Table 21 SFP and XFP Transceiver Port Data Displayed by the show port transceiver Command**

State	Description
Rx Pwr [dbm]	Receiver sensitivity (measured, minimum, and maximum limits) for the version of the transceiver installed in this port.
Temperature [C]	Temperature (measured, minimum, and maximum limits) in degrees Centigrade.
Laser bias current	Magnitude of the laser bias power setting current (measured, minimum and maximum limits), in milliamperes (mA).  The laser bias provides direct modulation of laser diodes and allows the user to monitor the “health” of the laser.
Vcc [V]	Magnitude of the supply voltage to the transceiver (measured, minimum, and maximum limits), in Volts (V).
AUX1 <sup>(3)</sup> (for XFP transceivers only)	Auxiliary measurement 1 for XFP transceivers—defined in Byte 222 Page 01h in INF-8077i.
AUX2 <sup>(3)</sup> (for XFP transceivers only)	Auxiliary measurement 2 for XFP transceivers—defined in Byte 222 Page 01h in INF-8077i.
Active alarms <sup>(4)</sup>	Transceiver alarm conditions for specified <i>port/slot</i> : <ul style="list-style-type: none"> <li>• NONE—No alarm conditions exist</li> <li>• Condition—Alarm condition is in effect.</li> </ul>

(1) Use part number XFP-OC192-LR2 when ordering the XFP transceivers with 10GE ZR functionality.

(2) In Releases 6.1.4 and 6.1.5, DWDM XFP transceivers support only ITU channels 35,36,37,53, and 55.

(3) See Table 19 for a list of auxiliary input types monitored by each auxiliary A/D channel of the XFP transceivers.

(4) The Transceiver alarms will only be indicated here if “[no] system alarm transceiver suppress” has been configured.

Table 22 lists describes which quantities are monitored by each auxiliary A/D channel.

**Table 22 XFP Transceivers Measurements and Threshold Values**

Description of Physical Device	Value
Auxiliary monitoring not implemented	0000b
APD bias voltage (16-bit value is Voltage in units of 10 mV)	0001b
Reserved	0010b
TEC current (mA) (16-bit value is Current in units of 100 uA)	0011b
Laser temperature (same encoding as module temperature)	0100b
Laser wavelength	0101b
+5V Supply voltage	0110b
+3.3V Supply voltage	0111b
+1.8V Supply voltage	1000b



Table 22 XFP Transceivers Measurements and Threshold Values

Description of Physical Device	Value
-5.2V Supply voltage (absolute value encoded as primary voltage monitor)	1001b
+5V Supply current (16-bit Value is Current in 100 uA)	1010b
+3.3V Supply current (16-bit Value is Current in 100 uA)	1101b
+1.8V Supply current (16-bit Value is Current in 100 uA)	1110b
-5.2V Supply current (16-bit Value is Current in 100 uA)	1111b

### 1.19.6 Examples

#### Example 1:

The following example displays the data and status for an SFP transceiver. The asterisk beside `-13.01*` in the `Rx Pwr` row indicates that the measured value is out of bounds of the Receive Power threshold and has caused a Transceiver Receive Power Low Alarm.:

```
[local]Redback#show port 11/3 transceiver
```

```
SFP / Media Type      : SX / MM
Redback Approved     : YES
Diagnostic Monitoring : YES
CLEI code            : VAUIAAWEAA
Serial Number        : F72247020031
Wavelength           : 850.00 [nm]

                High           High           Low           Low
                Measured      Alarm       Warning      Alarm       Warning
-----
Tx Pwr [dbm]        -3.55      -1.00       -2.00       -9.50       -9.00
Rx Pwr [dbm]        -40.00     0.00       -1.00       -13.01*    -12.00
Temperature [C]     33         95         90          -5          0
Laser Bias Current [mA] 7.61      16.00     15.00       2.00       3.00
Vcc [V]             3.26      3.63       3.58       2.97       3.02

Active Alarms       : Link down
                    Transceiver Receive Power Low Alarm
```

#### Example 2:

The following example displays the data and status for an XFP transceiver:



[local]Redback#show port 11/3 transceiver

```

XFP / Media Type      : LR / SM
Redback Approved     : NO
Diagnostic Monitoring : YES
CLEI code            : IPUIANWCAA
Serial Number        : UDE03CT
Wavelength           : 1307.00 [nm]

```

	Measured	High Alarm	High Warning	Low Alarm	Low Warning
Tx Pwr [dbm]	-1.98	1.50	1.00	-7.00	-6.00
Rx Pwr [dbm]	-40.00	2.50	2.00	-20.00	-18.01
Temperature [C]	19	83	80	-13	-10
Laser Bias Current [mA]	35.00	80.00	75.00	15.00	20.00
AUX1 +3.3V Supply Voltage	3.31	3.63	3.50	3.00	3.10
AUX2 N/A	N/A	N/A	N/A	N/A	N/A

Active Alarms : Link down

## 1.20 show ppp

For ports on Packet over SONET/SDH (POS) line cards, the syntax is:

```

show ppp [slot/port] [starting | up | down] [summary |
detail] [all]

```

### 1.20.1 Purpose

Displays the states of one or more Point-to-Point Protocol (PPP) sessions.

### 1.20.2 Command Mode

All modes



### 1.20.3 Syntax Description

<i>slot</i>	Optional. Chassis slot number of the line card for which PPP session information displays.  Use the <i>slot</i> , <i>port</i> , <i>chan-num</i> , and <i>sub-chan-num</i> arguments to display information only for the PPP sessions on that slot, port, channel, or subchannel.
<i>port</i>	Required if you enter the slot argument. Port number for which PPP sessions are displayed. If not specified, sessions are displayed for all ports in the specified slot.
<i>chan-num</i>	Optional. Channel number for which PPP session information displays. If omitted, displays PPP session information for all channels on the specified port. The range of values depends on the type of port.
<i>sub-chan-num</i>	Optional. Subchannel number for which PPP session information displays. If omitted, displays PPP session information for all subchannels in the specified channel. The range of values depends on the type of port.
<i>starting</i>	Optional. Specifies that only starting PPP sessions are to be displayed.
<i>up</i>	Optional. Specifies that only PPP sessions for which the Link Control Protocol (LCP) and IP Control Protocol (IPCP) are in the OPENED state are to be displayed.
<i>down</i>	Optional. Specifies that only PPP sessions for which the LCP is in the INITIAL, CLOSED, or STOPPED state are to be displayed.
<i>summary</i>	Optional. Displays summary information for all PPP sessions.
<i>detail</i>	Optional. Specifies that context and Multilink PPP (MLPPP) bundle information is to be displayed.
<i>all</i>	Optional. Specifies that PPP session information in all contexts is shown. This option is available only in the local context.  Use the <i>all</i> keyword in the local context to display information for all PPP sessions in all contexts. In all other contexts, only PPP sessions bound to the current context are shown.

### 1.20.4 Default

Displays information for all PPP sessions in the current context.

### 1.20.5 Usage Guidelines

Use the `show ppp` command to display the states of one or more PPP sessions. For information about troubleshooting PPP, see the *BRAS Troubleshooting Guide*.

**Note:** The SmartEdge 100 router limits the value of the *slot* argument to 2.

**Note:**

The value for the `port` argument on the SmartEdge 100 router is one of the following:

- For a native port, it is 1 or 2.
- For a MIC port, it depends on the MIC and MIC slot in which it is installed.

**Note:** The value for the `port` argument on the SmartEdge 100 router depends on the MIC slot in which the ATM OC MIC is installed.

Table 23 lists the output fields for the `show ppp` command with the `detail` keyword.

Table 23 Field Descriptions for the show ppp Command with detail Keyword

Field	Description
Port/Circuit	Slot, port, channel, subchannel, and circuit identifiers
Unit	Internal identifier
LCP State	Protocol state on this circuit, as defined in RFC 1661, <i>The Point-to-Point Protocol (PPP)</i>
IPCP State	Protocol state on this circuit, as defined in RFC 1661
NLCP State	Protocol state on this circuit, as defined in RFC 1661
MPLSCP State	Protocol state on this circuit, as defined in RFC 1661
Initial Context	Context in which the interface exists for this PPP encapsulated circuit

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

## 1.20.6 Examples

### 1.20.6.1 Summary

The following example shows how to display summary output for PPP sessions in the current context:



```
[local]Redback>show ppp summary
Wed Jun 30 21:54:29 2005
Circuit Type      Number  LCP   IPCP   NLCP   MPLSCP
-----
mp circuits      2       2     2     0     0
ppp circuits     2       2     2     0     0

Total circuits: 4  up: 4  down: 0
```

### 1.20.6.2 <Sessio-ID> Up Detail

The following example shows how to display detailed information for PPP sessions that are up for all ports on the line card in slot 11 :

```
[local]Redback>show ppp 11 up detail
Wed Jun 30 16:59:38 2005
Port/Circuit      Unit  LCP   IPCP   NLCP   MPLSCP
-----
11/1:1           2  Opened  Opened  Initial
  Initial Context: local
11/2:1           3  Opened  Opened  Initial
  Initial Context: remote
```

### 1.20.6.3 All

The following example displays output for all PPP sessions in all contexts:

```
[local]Redback>show ppp all
Sat Aug 22 20:14:06 2009
Port/Circuit      Unit  LCP   IPCP   IPV6CP  NLCP   MPLSCP
-----
5/7:1:2:1        0  Opened  -ML-  -ML-  -ML-
5/7:1:2:2        4  Opened  -ML-  -ML-  -ML-
5/8:1:2:1        5  Opened  -ML-  -ML-  -ML-
5/8:1:2:2        1  Opened  -ML-  -ML-  -ML-
bundle_1         2  N/A     Opened  Initial  Initial
bundle_2         3  N/A     Opened  Initial  Initial

Total circuits: 4  up: 4  down: 0
```

## 1.21 show ppp counters

`show ppp counters [all-contexts | context | detail | summary]`

### 1.21.1 Purpose

Displays statistics for Point-to-Point Protocol (PPP) packets and session counters on the system.



## 1.21.2 Command Mode

All modes

## 1.21.3 Syntax Description

<code>all-contexts</code>	Optional. Displays context-specific PPP counters for all contexts. This keyword is available only for administrators authenticated to the local context.
<code>context</code>	Optional. Displays context-specific PPP counters for the current context.
<code>detail</code>	Optional. Displays detailed information for global PPP counters.
<code>summary</code>	Optional. Displays totals for context-specific PPP counters across all contexts. This keyword is available only for administrators authenticated to the local context. The <code>summary</code> keyword adds together the context-specific PPP counters from all contexts.

## 1.21.4 Default

If no keyword is specified, the global PPP counters are displayed.

## 1.21.5 Usage Guidelines

Use the `show ppp counters` command to display statistics for PPP packets and session counters on the system.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*. For information about troubleshooting PPP, see the *BRAS Troubleshooting Guide*.

## 1.21.6 Examples

### 1.21.6.1 Current Context

The following example shows how to display the context-specific PPP counters for the current context:



```
[local]Redback>show ppp counters context
Last cleared: Never
    received: bytes 260, packets 26,
              unsupported packets 0
    sent: bytes 260, packets 26
LCP echo request      : received 26, sent 0, dropped 0
LCP echo response    : received 0, sent 26, dropped 0
LCP protocol reject  : received 0, sent 0, dropped 0
```

### 1.21.6.2 Global Counters

The following example shows how to display global PPP counters:

```
[local]Redback>show ppp counters

Wed Jun 30 21:56:07 2005
Packet-----
In              285      Out              287
Session-----
LCP Up          72      LCP Down         68
IPCP Up         12      IPCP Down         6
Authen Success  0       Authen Failure   0
Session Up      0       Session Down     0
SessionControl-----
Starting        0       Authenticating   0
Pended (current) 0       Pended (total)  0
Packet Drop
  Session pended 0       At Limit         0
Timeout-----
ConfReq         85      TermReq          19
CHAP Challenge  0       UPAP Listen      0
PacketDropIn-----
Session is Down 17      Bad FSM State    32
```

### 1.21.6.3 Counters Detail

The following example shows how to display detailed information for global PPP counters:



```
[local]Redback>show ppp counters detail
Packet-----
In                40      Out                40
  ConfReq         24      ConfReq           10
  ConfAck         10      ConfAck           10
  ConfNak         0       ConfNak           4
  ConfRej         0       ConfRej           10
  TermReq         4       TermReq           2
  TermAck         2       TermAck           4
  Authen Proto   6       Authen Proto      6
  other           0       other             0
Session-----
LCP Up            6      LCP Down          6
IPCP Up           4      IPCP Down          4
Authen Success    4      Authen Failure     2
Session Up        4      Session Down       6
SessionControl-----
Starting          0      Authenticating     0
Pended (current) 0      Pended (total)    0
Packet Drop
Session pended    0      At Limit           0
Timeout-----
ConfReq           0      TermReq            4
CHAP Challenge    0      UPAP Listen        0
PacketDropIn-----
Session is Down   1      Bad FSM State      0
DownCause-----
Rcvd TermReq     4      Rcvd PPPoE PADT   0
No ConfReq Resp  0      No Echo Resp       0
Authen Failed     2      Session Down       0
LCP Down          0      Circuit Down       0
Port Down         0      Port Delete        0
```

## 1.22 show ppp multilink

```
show ppp multilink [{all | bundle {bundle-name | mp
sess-id}] [detail] | detail | summary]
```

### 1.22.1 Purpose

Displays information for Multilink Point-to-Point Protocol (MLPPP) bundles.

### 1.22.2 Command Mode

All modes

### 1.22.3 Syntax Description

<b>all</b>	Optional. Displays information for all MLPPP bundles in all contexts.
<b>bundle</b>	Optional. Displays information for a specific MLPPP bundle.
<b>bundle-name</b>	Name of the MLPPP bundle of DS-1 channels, E1 channels, or E1 ports to be displayed.
<b>mp sess-id</b>	Session ID of the circuit in the MLPPP bundle; the range of values is 1 to 65534.



<code>detail</code>	Optional. Displays additional multilink information.
<code>summary</code>	Optional. Displays a summary of all Point-to-Point Protocol (PPP) and MLPPP sessions for all contexts.

#### 1.22.4 Default

When used without any optional constructs, displays information about all MLPPP bundles in the current context.

#### 1.22.5 Usage Guidelines

Use the `show ppp multilink` command to display information for MLPPP bundles.

Use the `bundle-name` argument to specify an MLPPP bundle configured with DS-1 channels, E1 channels, or E1 ports; use the `mp sess-id` construct to specify an MLPPP bundle created by the system on a PPP-encapsulated or PPP over Ethernet (PPPoE)-encapsulated circuit.

To determine the session ID for an MLPPP bundle, use the `show ppp all` or `show circuit` command (in any mode).

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*. For information about troubleshooting PPP, see the *BRAS Troubleshooting Guide*.

#### 1.22.6 Examples

##### 1.22.6.1 No Keywords

The following example shows how to display information for any MLPPP bundle:



```
[local]Redback>show ppp multilink
```

```
Bundle Name: bar
Link Count: 2 Username: (null)
Our MRRU: 1524 Peer MRRU: 1524
Our Endpoint-Discriminator: class-1 Redback
Peer Endpoint-Discriminator: class-1 Redback
Member Links      Status
5/3                active
5/1                active
```

### 1.22.6.2 All

The Link Count field displays the number of links that are up.

The following example shows how to display information for all link groups in all contexts:

```
[local]Redback>show ppp multilink all
```

```
Bundle Name: bundle_1
Link Count: 2 Username:
Our MRRU: 3002 Peer MRRU: 2002
Our Endpoint-Discriminator: class-2 70.100.100.1
Peer Endpoint-Discriminator: class-2 70.100.100.2

Member Links      Status
5/7:1:2:2        active (master)
5/7:1:2:1        active

Bundle Name: bundle_2
Link Count: 2 Username:
Our MRRU: 2002 Peer MRRU: 3002
Our Endpoint-Discriminator: class-2 70.100.100.2
Peer Endpoint-Discriminator: class-2 70.100.100.1

Member Links      Status
5/8:1:2:2        active (master)
5/8:1:2:1        active
```



### 1.22.6.3 All Detail

```
[local]driver# show ppp multilink all det

Bundle Name: bundle_1          MP-ID: 297
Link Count: 2 Username:
Our MRRU: 3002 Peer MRRU: 2002
Our Endpoint-Discriminator: class-2 70.100.100.1
Peer Endpoint-Discriminator: class-2 70.100.100.2
Acct handle: 255/7:5:42/1/1/2

Member Links                    Status
5/7:1:2:2                       active (master)
cct handle : 5/7:1:2:2/1/1/59
5/7:1:2:1                       active
cct handle : 5/7:1:2:1/1/1/62

Bundle Name: bundle_2          MP-ID: 298
Link Count: 2 Username:
Our MRRU: 2002 Peer MRRU: 3002
Our Endpoint-Discriminator: class-2 70.100.100.2
Peer Endpoint-Discriminator: class-2 70.100.100.1
Acct handle: 255/7:5:43/1/1/3

Member Links                    Status
5/8:1:2:2                       active (master)
cct handle : 5/8:1:2:2/1/1/52
5/8:1:2:1                       active
cct handle : 5/8:1:2:1/1/1/65
```

### 1.22.6.4 Summary

The following example shows how to display summary information only:

```
[local]Redback>show ppp multilink summary

Wed Jun 30 06:38:05 2005
CIRCUIT TYPE  NUMBER  LCP   IPCP  NLCP
-----
mp circuits   24      24    3     0
ppp circuits  0        0     0     0

Total circuits: 24 up: 24 down: 0
```

### 1.22.6.5 Bundle <bundle-name>

The following example shows how to display information for the bundle\_2 MLPPP bundle:

```
[local]Redback>show ppp multilink bundle bundle_2

Bundle Name: bundle_2
Link Count: 2 Username:
Our MRRU: 2002 Peer MRRU: 3002
Our Endpoint-Discriminator: class-2 70.100.100.2
Peer Endpoint-Discriminator: class-2 70.100.100.1

Member Links                    Status
5/8:1:2:2                       active (master)
5/8:1:2:1                       active
```



### 1.22.6.6 Bundle MLPPP Session-ID

The following example shows how to display information for an MLPPP bundle using its session ID:

```
[local]Redback>show ppp multilink bundle mp 297

Bundle Name: bundle_1
Link Count: 2 Username:
Our MRRU: 3002 Peer MRRU: 2002
Our Endpoint-Discriminator: class-2 70.100.100.1
Peer Endpoint-Discriminator: class-2 70.100.100.2

Member Links                               Status
5/7:1:2:2                                   active (master)
5/7:1:2:1                                   active
```

### 1.22.6.7 Bundle <bundle-name> Detail

The following example shows how to display information about the MLPPP bundle named abc. Because the command includes the `detail` keyword, the output provides both the bundle handle (`Acct handle`) and circuit handle (`cct handle`) information. Note also that `6/1:1:1` under Member Links provides the port/slot:channel:subchannel of the master link:

```
[local]Redback>show ppp multilink bundle abc detail
Bundle Name: abc
Link Count: 1 Username:
Our MRRU: 1500 Peer MRRU: 1500
Our Endpoint-Discriminator: class-1 dino
Peer Endpoint-Discriminator: class-1 dino
Acct handle: 255/7:1023:63/1/1/2

Member Links                               Status
6/1:1:1                                     active (master)
cct handle : 6/1:1:1/1/1/19
```

## 1.23 show pppoe

```
show pppoe [down | mac | services | session sess-id | starting |
subscribers slot[/port] circuit-id | summary | up] [all]
```

### 1.23.1 Purpose

Displays Point-to-Point Protocol over Ethernet (PPPoE) information for one or more subscriber circuits.

### 1.23.2 Command Mode

All modes



### 1.23.3 Syntax Description

<code>down</code>	Optional. Displays PPPoE information for subscriber sessions that are down.
<code>mac</code>	Optional. Displays PPPoE information for a particular Medium Access Control (MAC) address.
<code>services</code>	Optional. Displays PPPoE services currently being advertised.
<code>session <i>sess-id</i></code>	Optional. Session ID for the subscriber circuit for which PPPoE information is to be displayed; the range of values is 1 to 65535.
<code>starting</code>	Optional. Displays PPPoE information for subscriber sessions that are starting.
<code>subscribers</code>	Optional. Displays a list of subscribers according to the following arguments.
<code>slot</code>	Chassis slot number of a line card with the PPPoE-encapsulated circuit for which subscriber sessions are displayed. Available only if you enter the <code>subscribers</code> keyword.
<code>port</code>	Optional. Port number of the PPPoE-encapsulated circuit for which subscriber sessions are displayed. If not specified, sessions are displayed for all PPPoE-encapsulated circuits on the card in the specified slot.
<code>circuit-id</code>	Optional. Circuit identifier, according to one of the constructs listed in Table 24.
<code>summary</code>	Optional. Displays summary information for current context.
<code>up</code>	Optional. Displays PPPoE information for subscriber sessions that are up.
<code>all</code>	Optional. Displays PPPoE information for PPPoE-encapsulated subscriber circuits in all contexts. This option is only available in the local context.

### 1.23.4 Default

None

### 1.23.5 Usage Guidelines

Use the `show pppoe` command to display PPPoE-related information for one or more circuits.

**Note:** The SmartEdge 100 router limits the value of the `slot` argument to 2.



**Note:** The value for the `port` argument on the SmartEdge 100 router is one of the following:

- For a native port, it is 1 or 2.
- For a MIC port, it depends on the MIC and MIC slot in which it is installed.

Table 24 lists the values for the `circuit-id` argument.

Table 24 Values for the `circuit-id` Argument

Construct	Description
<code>vlan-id vlan-id</code>	<p>Virtual LAN (VLAN) tag value for an 802.1Q tunnel or PVC. The <code>vlan-id</code> argument is one of the following constructs:</p> <ul style="list-style-type: none"> <li>• <code>pvc-vlan-id</code>—VLAN tag value of a PVC that is not within an 802.1Q tunnel.</li> <li>• <code>tunl-vlan-id</code>—VLAN tag value of a tunnel.</li> <li>• <code>tunl-vlan-id:pvc-vlan-id</code>—VLAN tag value for the tunnel followed by the VLAN tag value for the PVC within the tunnel.</li> </ul> <p>The range of values for any VLAN tag value is 1 to 4095.</p>
<code>vpi-vci vpi vci</code>	<p>Virtual path identifier (VPI) and virtual circuit identifier (VCI) for an Asynchronous Transfer Mode (ATM) permanent virtual circuit (PVC). The range of values is 0 to 255 and 1 to 65535, respectively.</p>

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*. For information about troubleshooting PPPoE, see the *BRAS Troubleshooting Guide*.

## 1.23.6 Examples

### 1.23.6.1 Summary

The following example shows how to display summary information:



```
[local]Redback>show pppoe summary
```

CIRCUIT TYPE	NUMBER		
	CIRCUIT	UP	DOWN
ATM	3	3	0
ETHERNET	0	0	0
DOT1Q	0	0	0
Total circuits: 3 up: 3 down: 0			

### 1.23.6.2 Services

The following example shows how to display services information:

```
[local]Redback>show pppoe services
```

```
Context: local
Number of domains: 2
  Domain: adsl (not advertise)
  Domain: redback (not advertise)
Context: one
Number of domains: 1
  Domain: pppoe (not advertise)
```

### 1.23.6.3 Local Context

The following example shows how to display information for all PPPoE circuits in the local context:

```
[local]Redback>show pppoe
```

```
Wed Jun 30 01:38:42 2005
Circuit ----- MAC address      Subscriber -----
3/1 vpi-vci 0 32 pppoe 2001    00:10:67:00:2a:01 a-32@local
3/1 vpi-vci 0 33 pppoe 2002    00:10:67:00:2a:02 a-33@local
3/1 vpi-vci 0 34 pppoe 2003    00:10:67:00:2a:03 a-34@local
```

## 1.24 show pppoe counters

```
show pppoe counters [detail]
```

### 1.24.1 Purpose

Displays summary or detailed statistics for all Point-to-Point Protocol (PPP) over Ethernet (PPPoE)-encapsulated circuits.

### 1.24.2 Command Mode

All modes



### 1.24.3 Syntax Description

`detail` Optional. Displays detailed statistics.

### 1.24.4 Default

None

### 1.24.5 Usage Guidelines

Use the `show pppoe counters` command to display summary or detailed statistics for all PPPoE-encapsulated circuits.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*. For information about troubleshooting PPPoE, see the *BRAS Troubleshooting Guide*.

### 1.24.6 Examples

The following example shows how to display summary statistics:

```
[local]Redback>show pppoe counters

Wed Jun 30 01:37:25 2005
PPPoE PAD counters:
-----
sent packets           : 4000           recv packets : 4000
dropped packets       : 0
PADI packets          : 2000           PADO packets : 2000
PADR packets          : 2000           PADS packets : 2000
PADT packets          : 0             PADM packets : 0
PADN packets          : 0
```

The following example shows how to display detailed statistics:



```
[local]Redback>show pppoe counters detail
```

```
Wed Jun 30 08:30:40 2005
```

```
PPPoE PAD counters:
```

```
-----
```

```
sent packets           : 4000      rcv packets           : 4000
dropped packets        : 0
PADI packets           : 2000      PADO packets          : 2000
PADR packets           : 2000      PADS packets          : 2000
PADT packets           : 0          PADM packets          : 0
PADN packets           : 0
```

```
PPPoE invalid discovery packet counters:
```

```
-----
```

```
invalid version/type   : 0          invalid length        : 0
invalid tag length     : 0          unknown code          : 0
PADIs non-zero sess-id : 0          PADRs non-zero sess-id : 0
PADT, bad MAC addr    : 0          bad encaps            : 0
PADR, max sess reached : 0          PADR, same MAC        : 0
tags not added, large pkt : 0        rcv on down circuit   : 0
invalid tag name       : 0          invalid tag name accepted: 0
circuit not created    : 0          circuit not init      : 0
packet on virtual circuit : 0        non subscriber circuit : 0
unknown circuit        : 0          proc restart drops    : 0
```

```
PPPoE virtual circuit counters:
```

```
-----
```

```
created virtual circuits : 0          deleted virtual circuits : 0
combined circuits used   : 4000      combined circuits reset  : 2000
create failed            : 0          delete failed            : 0
create fail, rcct used   : 0          create fail, no cct      : 0
create fail, cct init    : 0          create fail, vcct exists : 0
circuit lookup failures  : 0
```

```
PPPoE PADM error counters:
```

```
-----
```

```
malformed URLs         : 0          too long expanded URLs  : 0
```



```
too long MOTMs          : 0          bad expansion char      : 0
PADX on bad circuit     : 0

PPPoE session counters:
-----
session down cplt recv   : 2000       session down cplt proc   : 2000
stale entry cleanup     : 0          bad state entry cleanup  : 0
session down sent       : 0
```

## 1.25 show privilege

**show privilege**

### 1.25.1 Purpose

Displays the current privilege level for the current exec session.

### 1.25.2 Command Mode

All modes

### 1.25.3 Syntax Description

This command has no keywords or arguments.

### 1.25.4 Default

None

### 1.25.5 Usage Guidelines

Use the **show privilege** command to display the current (administrator) privilege level for the current exec session.

If you are an administrator at privilege level 10 or higher, you can determine the privilege level of any given command at your level or lower by recursively entering the **enable** and **show ?** commands.

For example, if an administrator at privilege level 15 enters the **show privilege** command, all commands at privilege level 15 and lower are listed. If the administrator then enters the **enable** command for privilege level 14 and the **show privilege** command again, all commands at privilege level 14 and



lower are listed. The administrator can repeat these steps at levels 13, 12, and so on until all privilege levels are listed.

Be aware that this method lists the current privilege levels, which could be different from the default privilege levels. See the `privilege` command in the *Command List* for more information.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

## 1.25.6 Examples

The following example displays output from the `show privilege` command:

```
[local]Redback>show privilege

Current privilege level is 6
```

## 1.26 show process

```
show process [proc-name] [{crash-info | detail}]
```

### 1.26.1 Purpose

Displays current status of one or all processes running on the system.

### 1.26.2 Command Mode

All configuration modes



### 1.26.3 Syntax Description

<code>proc-name</code>	Optional. Process for which you want to display information. The value of the <code>proc-name</code> argument can be any one of the keywords listed in Table 25.
<code>crash-info</code>	Optional. Specifies that process crash information is to be monitored.
<code>detail</code>	Optional. Specifies that detailed process information is to be displayed.

### 1.26.4 Default

When used without any optional constructs, this command displays summary status of all tasks running.

### 1.26.5 Usage Guidelines

Use the `show process` command to display current information on a specific category of processes, or on all running processes.

Table 25 lists the keywords for the processes supported by this command.

Table 25 Keywords for Processes

Keyword	Process
<code>aaad</code>	authentication, authorization, and accounting (AAA) process
<code>arp</code>	Address Resolution Protocol (ARP) process
<code>atm</code>	Asynchronous Transfer Mode (ATM) process
<code>bgp</code>	Border Gateway Protocol (BGP) process
<code>bridge</code>	bridge process
<code>cfm</code>	Ethernet 802.1ag CFM process
<code>clips</code>	clientless IP service selection process
<code>cls</code>	Classifier Manager process
<code>cpustats</code>	Display CPU statistics
<code>csm</code>	Controller State Manager (CSM) process
<code>cspf</code>	Constrained Shortest-Path First (CSPF) process
<code>dhcp</code>	Dynamic Host Configuration Protocol (DHCP) relay/proxy process
<code>dhcpv6</code>	DHCPv6 daemon
<code>dhelperd</code>	DHCP helper daemon
<code>dhelper6</code>	DHCPv6 helper daemon
<code>d1m</code>	Download Manager (DLM) process



Table 25 Keywords for Processes

<b>Keyword</b>	<b>Process</b>
<code>dns</code>	Domain Name System (DNS) process
<code>dot1q</code>	802.1Q encapsulation process <sup>(1)</sup>
<code>flowd</code>	flow process <sup>(2)</sup>
<code>fr</code>	Frame Relay process <sup>(3)</sup>
<code>fsd</code>	File server process
<code>fssbcsim</code>	FSSB Client Simulator process
<code>gsmp</code>	General Switch Management Protocol (GSMP) process
<code>hr</code>	HTTP redirect process
<code>igmp</code>	Internet Group Management Protocol (IGMP) process
<code>isis</code>	Intermediate System-to-Intermediate System (IS-IS) process
<code>ism</code>	Interface and Circuit State Manager (ISM) process
<code>l2tp</code>	Layer 2 Tunneling Protocol (L2TP) process
<code>lv17d</code>	L4L7 process
<code>ldp</code>	Label Distribution Protocol (LDP) process
<code>lg</code>	link group (LG) process
<code>lm</code>	Label Manager (LM) process
<code>mcastmgr</code>	Multicast manager process
<code>metad</code>	Meta process
<code>mgd</code>	Media Gateway process
<code>mgmd</code>	Media Gateway Manager process
<code>mip</code>	Mobile IP process
<code>mipsim</code>	Mobile IP Simulator process
<code>mpls_static</code>	Multiprotocol Label Switching (MPLS) static process
<code>msdp</code>	Multicast Source Discovery Protocol (MSDP) process
<code>nat</code>	IP Network Address Translation (NAT) process
<code>nd</code>	neighbor discovery (ND) process
<code>netopd</code>	NetOp process daemon
<code>ntp</code>	Network Time Protocol (NTP) process
<code>odd</code>	on-demand diagnostics (ODD) process
<code>ospf</code>	Open Shortest Path First (OSPF) protocol process
<code>ospf3</code>	OSPF Version 3 (OSPF3) protocol process
<code>ped_parse</code>	process execution descriptor (PED) parse process



Table 25 Keywords for Processes

Keyword	Process
<code>pem</code>	Port encapsulation module (PEM) process
<code>pim</code>	Protocol Independent Multicast (PIM) process
<code>ppaslog</code>	Packet Processing ASIC (PPA) syslog process
<code>ppp</code>	Point-to-Point Protocol (PPP) process
<code>pppoe</code>	PPP over Ethernet (PPPoE) process
<code>qos</code>	quality of service (QoS) process
<code>rcm</code>	Router Configuration Manager (RCM) process
<code>rib</code>	Routing Information Base (RIB) process
<code>rip</code>	Routing Information Protocol (RIP) process
<code>rpm</code>	Routing Policy Manager (RPM) process
<code>rsvp</code>	Resource Reservation Protocol Traffic Engineering (RSVP-TE) process
<code>shm_ribd</code>	Shared Memory RIB daemon
<code>snmp</code>	Simple Network Management Protocol (SNMP) process
<code>static</code>	static routing process
<code>stats</code>	statistics process
<code>sysmon</code>	system monitor process
<code>tunnel</code>	tunnel management process
<code>vrrp</code>	Virtual Router Redundancy Protocol (VRRP) process
<code>xcd</code>	cross-connect process daemon

(1) The SmartEdge 100 router does not support 802.1Q.

(2) Not all controller cards support flow.

(3) The SmartEdge 100 router does not support Frame Relay.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands in Using the CLI*.



## 1.26.6 Examples

The following example displays output from the `show process` command. The column heading `PID` stands for process ID:

```
[local]Redback>show process
```

```
Load Average : 1.37 1.39 1.40
```

NAME	PID	SPAWN	MEMORY	TIME	%CPU	STATE	UP/DOWN
csm	10989	1	544K	00:02:45.10	0.00%	run	02:54:18
rcm	10990	1	2008K	00:00:56.44	0.00%	run	02:54:16
ism	10991	1	504K	00:01:50.71	0.00%	run	02:54:15
rpm	10992	1	404K	00:00:24.31	0.00%	run	02:54:15
rib	10993	1	992K	00:00:45.41	0.00%	run	02:54:15
ntp	10995	1	496K	00:00:40.43	0.00%	run	02:59:29
static	13035	4	444K	00:00:04.34	0.00%	run	02:59:29
isis	0	0	0K	Not Avail	0.00%	demand	02:54:13
rip	12652	1	576K	00:00:11.01	0.00%	run	02:59:29
bgp	0	0	0K	Not Avail	0.00%	demand	02:54:13
igmp	0	0	0K	Not Avail	0.00%	demand	02:54:13
ospf	11089	1	704K	00:34:31.05	0.00%	run	02:59:29
sysmon	10997	1	396K	00:00:32.27	0.00%	run	02:35:08
dns	10998	1	404K	00:00:24.98	0.00%	run	02:35:08

The following example displays output from the `show process` command with the `crash-info` keyword:

```
[local]Redback>show process crash-info
```

```
ME TIME STATUS
```

```
ospf Mon Jan 27 14:05:43 2001 Kill (9)
```

```
ism Mon Jan 27 14:28:26 2001 Kill (9)
```

```
ism Mon Jan 27 14:28:50 2001 Kill (9)
```

The following example displays output from the `show process` command with the `ism detail` keywords:

```
[local]Redback>show process ism detail
```



```
Process (PID)      : ism (20536)
Spawn count       : 1
Memory            : 708K
Time              : 00:00:00.16
%CPU              : 0.00%
State             : run
Up time          : 02:37:15
Heart beat       : Enabled
Spawn time       : 2 seconds
Max crashes allowed : 5
Crash thresh time : 86400 seconds
Total crashes    : 0
Images: (Spawns, Max spawns, Version, Path)
        (*) 1, 3, v1, /usr/redback/bin/ism

Client IPC Endpoints:

EP 0100007f 060058fe - RIB-IPC-MSG-EP-NAME:00000000
EP 0100007f 060058fe - NTP-ISM-MSG-EP-NAME:00000000

Server IPC Endpoints:

EP 0100007f 080058fe - ISM2-CLIENT-NETBYTE-EP-NAME:00000000
EP 0100007f 070058fe - ISM2-CLIENT-EP-NAME:00000000
EP 0100007f 060058fe - ISM-CLIENT-EP-NAME:00000000
EP 0100007f 050058fe - ISM-CONF-EP-NAME:00000000
```

The following example displays output from the `show process` command with the `cpustats` keyword:



```
[local]Redback#show process cpustats
```

```
Total system CPU % usage (5s, 1m, 5m): 0.00, 0.00, 0.00
```

```
Proc/thread name: 5sec 1min 5min      Proc/thread name: 5sec 1min 5min
-----
-----
exec_cli: 0.00 0.00 0.00 staticd: 0.00 0.00 0.00
  ndd: 0.00 0.00 0.00      clipsd: 0.00 0.00 0.00
l2tpd: 0.00 0.00 0.00      pppoed: 0.00 0.00 0.00
  aaad: 0.00 0.00 0.00      pppd: 0.00 0.00 0.00
statd: 0.00 0.00 0.00      dhelperd: 0.00 0.00 0.00
  oddd: 0.00 0.00 0.00      lm: 0.00 0.00 0.00
dhcpd: 0.00 0.00 0.00      pemd: 0.00 0.00 0.00
  dlmd: 0.00 0.00 0.00      clsd: 0.00 0.00 0.00
ppaslogd: 0.00 0.00 0.00    sysmond: 0.00 0.00 0.00
  arpd: 0.00 0.00 0.00      ribd: 0.00 0.00 0.00
  rpmd: 0.00 0.00 0.00      ped_parse: 0.00 0.00 0.00
  ism2: 0.00 0.00 0.00      rcm: 0.00 0.00 0.00
  csm: 0.00 0.00 0.00      exec_cli: 0.00 0.00 0.00
  pm: 0.00 0.00 0.00      syslogd: 0.00 0.00 0.00
  inetd: 0.00 0.00 0.00     mount_udrv: 0.00 0.00 0.00
  loggd: 0.00 0.00 0.00     mount_mfs: 0.00 0.00 0.00
  mount_mfs: 0.00 0.00 0.00  ptdstat_thread: 0.00 0.00 0.00
  reboot_thread: 0.00 0.00 0.00  evnt_th: 0.00 0.00 0.00
  sccmem_cleanup: 0.00 0.00 0.00  ioflush: 0.00 0.00 0.00
  reaper: 0.00 0.00 0.00      pagedaemon: 0.00 0.00 0.00
  nfsio: 0.00 0.00 0.00      nfsio: 0.00 0.00 0.00
  nfsio: 0.00 0.00 0.00      nfsio: 0.00 0.00 0.00
  init: 0.00 0.00 0.00
```

The following example displays output from the **show process** command with the **detail** keyword:

```
[local]Redback#show process detail
```

```
Load Average : 1.30 1.30 1.25
```

```
=====
```



```
Process (PID)      : csm (131)

Spawn count       : 1
Memory            : 5584K
Time              : 00:00:41.29
%CPU              : 0.00%
State             : run
Up time           : 15:01:27
Heart beat        : Enabled
Spawn time        : 2 seconds
Max crashes allowed : 5
Crash thresh time : 86400 seconds
Total crashes     : 0
```

Images: (Spawns, Max spawns, Version, Path)

```
(*) 1, 3, v1, /usr/siara/bin/csm -se800
```

Client IPC Endpoints:

```
EP 7f000205 c6340001 - MO-RCM-NON-SESS-EP-NAME:00000000
EP 7f000205 c6340001 - IF_CONF-EP-NAME:00000000
EP 7f000205 c6340001 - MO-MGR-BSD-PKT-EP-NAME:00000000
```

Server IPC Endpoints:

```
EP 7f000205 c634000a - Active-CSM:00000000
EP 7f000205 c6340001 - CSM-CONF-EP-NAME:00000000
  Dependent process aaad (149) EP 7f000205 dab3000e
  Dependent process rcm (132) EP 7f000205 caa10001
EP 7f000205 c6340005 - CSM-PPA-EP-NAME:00000000
EP 7f000205 c6340003 - CSM-CLIENT-EP-NAME:00000000
  Dependent process ism (133) EP 7f000205 d5860009
  Dependent process VX_IPC (-2066809872) EP 7f000203 04000004
```

=====

```
Process (PID)      : rcm (132)

Spawn count       : 1
```



```
Memory           : 11704K
Time             : 00:00:10.94
%CPU            : 0.00%
State           : run
```

```
--- (more) ---
```

```
.....
```

## 1.27 show process flowd

```
show process flowd
```

### 1.27.1 Purpose

Displays details of the flow process on the current SmartEdge router.

### 1.27.2 Command Mode

All modes

### 1.27.3 Syntax Description

This command has no keywords or arguments.

### 1.27.4 Default

None

### 1.27.5 Usage Guidelines

Use the `show process flowd` command to display flow processes on the current SmartEdge router.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.



**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

## 1.27.6 Examples

The following example shows how to display the flow processes on the current SmartEdge router:

```
[local]Redback(config)#show process flowd
NAME      PID    SPAWN  MEMORY  TIME          %CPU  STATE
flowd     921    21     5920K   00 L:00:14.75  0.00%  run
```

## 1.28 show process lm

```
show process lm[crash-info | detail | dmalloc-statistics]
```

### 1.28.1 Purpose

Displays label manager (LM) process information.

### 1.28.2 Command Mode

All modes

### 1.28.3 Syntax Description

<code>crash-info</code>	Optional. Displays LM process crash information.
<code>detail</code>	Optional. Displays detailed information.
<code>dmalloc-statistics</code>	Optional. Displays LM process debug memory allocation statistics.

### 1.28.4 Default

None

### 1.28.5 Usage Guidelines

Use the `show process lm` command to display LM process information.



**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Command* in *Using the CLI*.

## 1.28.6 Examples

The following example displays LM process information:

```
[local]Redback>show process lm
```

NAME	PID	SPAWN	MEMORY	TIME	%CPU	STATE	UP/DOWN
lm	41	1	2816K	00:00:01.32	0.00%	run	01:10:40

The following example displays LM process crash information:

```
[local]Redback>show process lm crash-info
```

NAME	TIME	STATUS
lm	Mon Mar 29 13:26:47 2005	Trap (133)

The following example displays detailed LM process information:

```
[local]Redback>show process lm detail
```

```
Process (PID)      : lm (112)

Spawn count       : 2
Memory            : 3016K
Time              : 00:00:00.31
%CPU              : 0.00%
State             : run
Up time           : 00:11:09
Heart beat        : Enabled
Spawn time        : 2 seconds
```



```
Max crashes allowed : 5
Crash thresh time   : 86400 seconds
Total crashes       : 0
Last exit status    : Trap (133)
```

Images: (Spawns, Max spawns, Version, Path)

```
(* ) 2, 4, v1, /usr/siara/bin/lm
```

Client IPC Endpoints:

```
EP 7f000205 ffd0007 - LFIB SLOT 03/0:00000000
EP 7f000205 ffd0007 - LFIB SLOT 03/1:00000000
EP 7f000205 ffd0007 - RSVP-LM_EP-NAME:00000000
EP 7f000205 ffd0007 - MPLS-STATIC-LM-EP-NAME:00000000
EP 7f000205 ffd0006 - ISM2-MBE-EVIN-EP-NAME:00000000
EP 7f000205 ffd0004 - RIB-IPC-MSG-EP-NAME:00000000
EP 7f000205 ffd0008 - RSVP-IPC-EP-NAME:00000000
EP 7f000205 ffd0006 - ISM2-CLIENT-EP-NAME:00000000
EP 7f000205 ffd0004 - RIB-IPC-RT-EP-NAME:00000000
```

Server IPC Endpoints:

```
EP 7f000205 ffd0009 - LBLMGR-CONF-EP-NAME:00000000
  Dependent process rcm (28) EP 7f000205 fff70001
EP 7f000205 ffd0007 - LM-IPC-MSG-EP-NAME:00000000
  Dependent process mpls_static (79) EP 7f000205 ffe00001
  Dependent process rsvp (65) EP 7f000205 ffe10001
  Dependent process ism (29) EP 7f000205 fff90008
  Dependent process rib (32) EP 7f000205 fff80015
  Dependent process EPPA IPC SLOT 3 (-2130509823) EP 7f000a43 0001000f
  Dependent process IPPA IPC SLOT 3 (-2147287039) EP 7f000a03 00010010
  Dependent process ism (29) EP 7f000205 fff90007
```

The following example displays LM process debug memory allocation statistics:

```
[local]Redback>show process lm dmalloc-statistics
```

```
process: lm, pid: 38
dmalloc_logfile: /flash/dmalloc_log38
open file /flash/dmalloc_log38 failed
```



## 1.29 show pseudowire

```
show pseudowire
```

### 1.29.1 Purpose

Displays whether enhanced pseudowire load balancing is enabled or disabled on a router.

### 1.29.2 Command Mode

All modes

### 1.29.3 Syntax Description

This command has no keywords or arguments.

### 1.29.4 Default

None

### 1.29.5 Usage Guidelines

Use the `show pseudowire` command to display whether enhanced pseudowire load balancing is enabled or disabled on a router.

Use the `pseudowire load balancing` command in global configuration mode to enable enhanced pseudowire load balancing on a router. To disable enhanced pseudowire load balancing and return the router to the default setting, in which traffic from all channels of a pseudowire traverse the same path, use the `no pseudowire load balancing` command.

### 1.29.6 Examples

The following example shows how to display whether pseudowire load balancing is enabled or disabled on the router. In this example, pseudowire load balancing is enabled:

```
[local]Redback>show pseudowire
multi-path enabled
```

The following example shows how to display whether pseudowire load balancing is enabled or disabled on the router. In this example, pseudowire load balancing is disabled:



```
[local]Redback>show pseudowire
multi-path disabled
```

The following example displays the pseudowire global configuration on CESoPSN or SAToP. circuit:

```
[local]Redback#show pseudowire
multi-path disabled
PW MTU matching enabled
PW Router id enabled
=====
Router id           : 4.4.4.4
Router id Context   : 0x40080001
Router id if Grid   : 0x10000004
Router id Nexthop Grid : 0x31d00003
Router id State     : UP
```

## 1.30 show public- key

`show public-key admin-name`

### 1.30.1 Purpose

Displays an administrator's public keys.

### 1.30.2 Command Mode

All modes

### 1.30.3 Syntax Description

*admin-name* Name of the administrator for which public key information is to be displayed.

### 1.30.4 Default

None

### 1.30.5 Usage Guidelines

Use the `show public-key` command to display an administrator's public keys.



**Note:** By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context** *ctx-name* construct before the **show** command to view output for the specified context without entering that context. For more information about the **context** *ctx-name* construct, see the *context* command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands in Using the CLI*.

### 1.30.6 Examples

The following example displays the public keys configured for the `jewel` administrator:

```
[local]Redback>show public-key jewel
DSA public key(s) for user jewel
RSA public key(s) for user jewel

1024 35 138778925487550112496264060257494473953
477802145777234711904931356017804 2535638422909
30011054450485363243280246400199717731319844418831089264593
49685280 91708337898398915273858795 006452667325324989385497
793626010262714937340759030252 164573952317278584144748905148
616886524 97950829684053136276382193869961246761 jewel@pepper
```

## 1.31 show qos agent-circuit-id

```
show qos agent-circuit-id name [detail]
```

### 1.31.1 Purpose

Displays the quality of service (QoS) information for the circuit that matches the specified circuit agent ID.

### 1.31.2 Command Mode

All modes (10)

### 1.31.3 Syntax Description

<b>name</b>	Name of the specific circuit agent ID. Alphanumeric string of up to 63 characters.
<b>detail</b>	Optional. Displays details for each circuit agent ID.



### 1.31.4 Default

When entered without any optional syntax, displays brief QoS information about the circuit.

### 1.31.5 Usage Guidelines

Use the `show qos agent-circuit-id` command to display the QoS information for the circuit that matches the specified circuit agent ID.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands in Using the CLI*.

### 1.31.6 Examples

The following example shows the circuit shaping information for the circuit that matches the circuit agent ID `dslam2`:

```
[local]Redback>show qos agent-circuit-id dslams
```

Circuit	Policy Name	Type	Rate	Source
5/2 vlan-id 2 pppoe 1021	gold	pwfq	20000	local
	meter3	metering	10000	local

The following example shows details for the circuit agent ID:

```
[local]Redback>show qos agent-circuit-id dslam2 detail
```

Circuit: 5/2 vlan-id 2 pppoe 1021

-----

```
Policy Name      : gold
Policy Type      : pwfq
Queue position   : 25           Num Queues      : 4
Rate             : 20000        Rate Source     : local

Policy Name      : meter3
Policy Type      : metering
Rate             : 10000        Rate Source     : local
Burst            : 20000        Excess Burst    : 30000
```



## 1.32 show qos circuit

```
show qos circuit [ circuit-group name] {[slot/port [:chan-num
[:sub-chan-num]] {dlci-id | vpi-vci vpi vci | vlan vlan-id} [detail]]}
```

### 1.32.1 Purpose

Displays the quality of service (QoS) information for all circuits or a particular circuit in the system.

### 1.32.2 Command Mode

All modes

### 1.32.3 Syntax Description

<i>circuit-group name</i>	Optional. Displays the QoS options configured for the specified circuit group.
<i>slot</i>	Optional. Chassis slot number of a line card for which circuit information is displayed. If omitted, displays circuit information for all circuits in the system.
<i>port</i>	Optional. Port number for which circuit information is displayed. Required if you enter the <i>slot</i> argument.
<i>chan-num</i>	Optional. Channel number for which circuit information is displayed. If omitted, displays circuit information for all channels on the specified port. The range of values depends on the type of port.
<i>sub-chan-num</i>	Optional. Subchannel number for which circuit information is displayed. If omitted, displays circuit information for all subchannels in the specified channel. The range of values depends on the type of port.
<i>lg lg-id</i>	Optional. Displays all the circuits associated with the specified link or APS group.
<i>dlci-id</i>	Optional. Data-link collection identifier (DLCI) for the Frame Relay permanent virtual circuit (PVC). The range of values is 16 to 991.
<i>vpi-vci vpi vci</i>	Optional. Virtual path identifier (VPI) and virtual channel identifier (VCI) for an Asynchronous Transfer Mode (ATM) PVC. The range of values is 0 to 255 and 1 to 65,535, respectively.



**vlan *vlan-id*** Optional. Virtual LAN (VLAN) tag value for an 802.1Q tunnel or a PVC. The *vlan-id* argument is one of the following constructs:

- *pvc-vlan-id*—VLAN tag value of a PVC that is not within an 802.1Q tunnel.
- *tunl-vlan-id*—VLAN tag value of a tunnel.
- *tunl-vlan-id:pvc-vlan-id*—VLAN tag value for the tunnel followed by the VLAN tag value for the PVC within the tunnel.

The range of values for any VLAN tag value is 1 to 4,095.

**detail** Optional. Displays details for each PVC.

### 1.32.4 Default

None

### 1.32.5 Usage Guidelines

Use the `show qos circuit` command to display the QoS information for all circuits, a particular circuit, or a circuit group in the system.

Use the `circuit-group name` construct to display the QoS options configured for the specified circuit group.

If you enter the optional *slot*, or *port*, and *chan-num* arguments, the command displays circuit information for all circuits configured on the specified card, or port, or channel; if you enter the optional *sub-chan-num* argument, the command displays circuit information for all circuits configured on the DS-1 channel or DS-0 channel group.

Use the the `vpi-vcv vpi vci` construct to display the VPI and VCI for an ATM PVC and VLAN tag value to display the value of an 802.1Q tunnel or PVC.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands in Using the CLI*.

### 1.32.6 Examples

The following example shows how to display circuit shaping information:

```
[local]Redback>show qos circuit
```



Circuit	Policy Name	Type	Rate	Source
5/2 vlan-id 2 pppoe 1017	gold	pwfq	20000	local
	meter3	metering	10000	local
5/2 vlan-id 2 pppoe 1018	gold	pwfq	20000	local
	meter3	metering	10000	local
5/2 vlan-id 2 pppoe 1019	gold	pwfq	20000	local
	meter3	metering	10000	local
5/2 vlan-id 2 pppoe 1020	gold	pwfq	20000	local
	meter3	metering	10000	local
5/2 vlan-id 2 pppoe 1021	gold	pwfq	20000	local
	meter3	metering	10000	local

The following example displays detail information about a QoS circuit when an incremental rate adjustment is applied using the `rate-adjust dhcp pwfq` command. The field, Rate Offset, indicates the incremental rate applied to the circuit (for information about the `rate-adjust dhcp pwfq` command, see the *Command List*):

```
[local]Redback>show qos circuit detail
Circuit: 2/2 vlan-id 2
Policy Name: SAVEMART
Policy Type: pwfq
Rate: 20000 Rate Source: local
Dynamic Parameters
Priority Group 1:
Rate: 4000
Rate Offset: -1000
```

The following example shows how to display QoS options configured for the `cg1` circuit group:

```
[local]Redback>show qos circuit circuit-group cg1
Circuit          Policy Name      Type      Rate      Source
circuit-group cg1  meter7          metering  H -       local
```

The following example shows how to display detailed information about the QoS options configured for the `cg1` circuit group:



```
[local]Redback>show qos circuit circuit-group cg1 detail
circuit-group cg1
-----
Policy Name      : policing2
Policy Type      : policing
Hierarchical Type : Hierarchical Parent
Rate             : 80000          Rate Source      : local
Burst            : 100000         Excess Burst     : 265000

Policy Name      : metering2
Policy Type      : metering
Hierarchical Type : Hierarchical Parent
Rate             : 80000          Rate Source      : local
Burst            : 100000         Excess Burst     : 265000
```

## 1.33 show qos class-definition

```
show qos class-definition [class-definition-name]
```

### 1.33.1 Purpose

Displays the contents of quality of service (QoS) class definitions.

### 1.33.2 Command Mode

Exec

### 1.33.3 Syntax Description

*class-definition-name* Optional. An alphanumeric string up to 39 characters that specifies the class definition name.

### 1.33.4 Default

If you do not specify the *class-definition-name* argument, a list of all QoS class definitions is displayed. If you specify the *class-definition-name* argument, detailed information about the specified QoS class definition is displayed.



### 1.33.5 Usage Guidelines

Use the `show qos class-definition` command to display the contents of QoS class definitions.

The command output displays a class definition table. This includes all possible packet descriptor (PD) classification values sorted by the priority value (from 0 to 7) and then sorted by the drop precedence value (from 0 to 7). Use the following formula to convert these values to the 6-bit values (0 to 63) used to configure PD class definition map entries:

$$\text{six-bit-value} = (8 * \text{priority-value}) + \text{drop-value}.$$

Each entry in the table contains either a numerical class ID value from 0 to 7 or a hyphen (-) to indicate that a PD value has not been assigned to the class. After the class definition table is another table that maps class ID values assigned by the system to the class names configured by the administrator.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands in Using the CLI*.

### 1.33.6 Examples

The following example displays a list of all QoS class definitions:

```
[local]Redback#show qos class-definition
Class Definition                               Id
-----
auo                                           1
rar                                           2
my_classes                                    3
Total QoS class definitions: 3
```

The following example displays detailed information about the `my_classes` QoS class definition:



```
[local]Redback#show qos class-definition my_classes
```

Class Definition									Id								
my_classes									3								
drop value	-	0	-	1	-	2	-	3	-	4	-	5	-	6	-	7	-
priority 0	-	1	2	3	4	5	6	7									
priority 1	1	1	2	1	1	1	1	1									
priority 2	1	1	1	1	1	1	1	1									
priority 3	1	1	1	1	1	1	1	1									
priority 4	1	1	1	1	1	1	1	1									
priority 5	1	1	1	1	1	1	1	1									
priority 6	1	1	1	1	1	1	1	1									
priority 7	1	1	1	1	1	1	1	1									

Class	Name	Entry Count
1	default	55
2	two	2
3	three	1
4	four	1
5	five	1
6	six	1
7	seven	1

Total QoS class definitions: 1

## 1.34 show qos class-map

```
show qos class-map [map-name]
```

### 1.34.1 Purpose

Displays quality of service (QoS) classification map information.

### 1.34.2 Command Mode

All modes



### 1.34.3 Syntax Description

*map-name* Optional. Name of the classification map.

### 1.34.4 Default

If you do not specify the *map-name* argument, a list of all classification maps is displayed. If you specify the *map-name* argument, detailed information about the specified classification map is displayed.

### 1.34.5 Usage Guidelines

Use the `show qos class-map` command to display QoS classification map information. Use the optional syntax to narrow the command output.

In command output, a default secondary mapping for inbound QoS packets to Differentiated Services Code Point (DSCP) packets is represented in the table by the string `dscp`. A custom secondary mapping is indicated by the string `cnnnn`, where `nnnn` is the ID number of the secondary class map.

PD and DSCP values are displayed in the format `p:d`, where `p` is a priority value from 0 to 7 and `d` is a drop-precedence value from 0 to 7. To convert these values to the 6-bit (0 to 63) values used to configure PD and DSCP classification map entries, use the following formula:

$$value = (8 * priority-value) + drop-value$$

**Note:** By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.34.6 Examples

The following example displays QoS mapping information without specifying a classification map:

```
[local]Redback#show qos class-map
Classification Map          Type      Direction  Id
dscp-to-pd                 ip        in         67
exp-to-pd                   mpls     in         68
pd-to-exp                   mpls     out        69
dscp-to-exp                 mpls     out        70

Total QoS classification maps: 4
```



The following examples display output from the **show qos class-map** command when a classification map is specified:

```
[local]Redback#show qos class-map dscp-to-pd
Classification Map                Type      Direction  Id
dscp-to-pd                       ip        in         66

    drop value  - 0 - 1 - 2 - 3 - 4 - 5 - 6 - 7 -
priority 0      1:6  0:0  1:6  1:6  1:6  1:6  1:6  1:6
priority 1      1:6  1:6  1:6  1:6  1:6  1:6  1:6  1:6
priority 2      1:6  1:6  3:1  1:6  1:6  1:6  1:6  1:6
priority 3      1:6  1:6  1:6  1:6  1:6  1:6  1:6  1:6
priority 4      1:6  1:6  1:6  1:6  1:6  1:6  1:6  1:6
priority 5      1:6  1:6  1:6  1:6  1:6  1:6  1:6  1:6
priority 6      1:6  1:6  1:6  1:6  1:6  1:6  1:6  1:6
priority 7      1:6  1:6  1:6  1:6  1:6  1:6  1:6  1:6

Total QoS classification maps: 1
```

```
[local]Redback#show qos class-map exp-to-pd
Classification Map                Type      Direction  Id
exp-to-pd                       mpls     in         67

    priority:drop
priority 0      0:0
priority 1      4:4
priority 2      dscp
priority 3      c0066
priority 4      4:6
priority 5      4:2
priority 6      6:0
priority 7      5:6

Total QoS classification maps: 1
```

```
[local]Redback#show qos class-map pd-to-exp
Classification Map                Type      Direction  Id
pd-to-exp                       mpls     out         68
```



```

drop value - 0 - 1 - 2 - 3 - 4 - 5 - 6 - 7 -
priority 0   1   0   0   0   0   0   0   0
priority 1   1   1   1   1   1   1   1   1
priority 2   2   2   2   2   2   2   2   2
priority 3   3   3   3   3   3   3   3   3
priority 4   4   4   4   4   4   4   4   4
priority 5   5   5   5   5   5   5   7   5
priority 6   6   6   6   6   6   6   6   6
priority 7   7   7   7   7   7   7   7   7

```

Total QoS classification maps: 1

```
[local]Redback#show qos class-map dscp-to-exp
```

Classification Map	Type	Direction	Id
dscp-to-exp	mpls	out	69

```

drop value - 0 - 1 - 2 - 3 - 4 - 5 - 6 - 7 -
priority 0   c0068 c0068 c0068 c0068 c0068 c0068 c0068 c0068
priority 1   c0068 c0068 c0068 c0068 c0068 dscp c0068 c0068
priority 2   c0068 c0068 c0068 c0068 c0068 c0068 c0068 c0068
priority 3   c0068 c0068 c0068 c0068 c0068 c0068 4 c0068
priority 4   c0068 c0068 c0068 c0068 c0068 c0068 c0068 c0068
priority 5   c0068 c0068 c0068 c0068 c0068 c0068 c0068 c0068
priority 6   c0068 c0068 c0068 c0068 c0068 c0068 c0068 c0068
priority 7   c0068 c0068 c0068 c0068 c0068 c0068 c0068 c0068

```

Total QoS classification maps: 1

## 1.35 show qos client

```
show qos client [{slot slot [{eppa | ippa}]]
```

### 1.35.1 Purpose

Displays quality of service (QoS) Packet Processing ASIC (PPA) client information.



### 1.35.2 Command Mode

All modes

### 1.35.3 Syntax Description

<code>slot slot</code>	Optional. Slot number for the ingress or egress PPA.
<code>eppa</code>	Optional. Displays client information for the slot's egress PPA.
<code>ippa</code>	Optional. Displays client information for the slot's ingress PPA.

### 1.35.4 Default

If you enter this command without any optional syntax, client information for all slots, both egress and ingress, is displayed.

### 1.35.5 Usage Guidelines

Use the `show qos client` command to display QoS PPA client information. Use the optional syntax to narrow the command output.

**Note:** The SmartEdge 100 router limits the value of the `slot` argument to 2.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands in Using the CLI*.

### 1.35.6 Examples

The following example displays PPA client information without specifying a slot:



```
[local]Redback>show qos client
```

```
Slot#: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```

```
iPPA:
```

```
Dnld: * * * * * * * * * * * * * * * *
```

```
Reborn:
```

```
Register: * *
```

```
ePPA:
```

```
Dnld:
```

```
Reborn:
```

```
Register: * *
```

The following example displays output from the `show qos client` command when a slot is specified:

```
[local]Redback>show qos client slot 13
```

```
QoS Client on Slot-13 iPPA:
```

```
Wait for Dnld: n, Wait for reborn n, Registered: y
```

```
QoS Client on Slot-13 ePPA:
```

```
Wait for Dnld: n, Wait for reborn n, Registered: y
```

## 1.36 show qos congestion-map

```
show qos congestion-map map-name
```

### 1.36.1 Purpose

Displays the queue assignments for the specified quality of service (QoS) congestion avoidance map.

### 1.36.2 Command Mode

All modes

### 1.36.3 Syntax Description

*map-name* Name of the QoS congestion avoidance map.



### 1.36.4 Default

None

### 1.36.5 Usage Guidelines

Use the `show qos congestion-map` command to display the queue assignments for the specified QoS congestion avoidance map.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.36.6 Examples

The following example displays the queue assignments for the `red-pwfq` QoS congestion avoidance map:

```
[local]Redback>show qos congestion-map red-pwfq
```

Congestion-Avoidance Map	Type	Mode	Grid	Q-0	1	2	3	4	5	6	7
red-pwfq	pwfq	RED	1	y							

```
Total QoS congestion-avoidance maps: 1
```

The following example displays queue parameters for the congestion avoidance map:



```
[local]Redback#show qos congestion-map test-cmap

Congestion-Avoidance Map: test-cmap, Type: pwfq, Grid: 1
Queue: 0 , Mode: Random Early Drop
Exp. Weight: 12, Queue Depth (Pkts): 10000
Drop profile: default
Prob. Min. Threshold Max. Threshold
10 1000 5000
Drop profile: profile-1
Dscp list:
0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Prob. Min. Threshold Max. Threshold 2000 100 1000
Drop profile: profile-2
Dscp list:
33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43
Prob. Min. Threshold Max. Threshold
2000 100 1000
Queue: 1 , Mode: Random Early Drop
Queue Depth (Pkts): 65535
Drop profile: default
Prob. Min. Threshold Max. Threshold
32767 1 10000
Drop profile: profile-1
Dscp list:
39, 44, 45, 49, 50, 51, 52, 54
Prob. Min. Threshold Max. Threshold
32767 1 10000

Total QoS congestion-avoidance maps: 1
[local]Redback#
```

## 1.37 show qos h-node

```
show qos h-node [slot slot]
```

### 1.37.1 Purpose

Displays quality of service (QoS) hierarchical node information.



### 1.37.2 Command Mode

All modes

### 1.37.3 Syntax Description

`slot slot` Optional. Slot number for the Gigabit Ethernet (GE) line card.

### 1.37.4 Default

When entered without any optional syntax, the `show qos h-node` command displays hierarchical node information for all slots.

### 1.37.5 Usage Guidelines

Use the `show qos h-node` command to display QoS hierarchical node information. Use the optional `slot slot` construct to display output for a single Gigabit Ethernet line card.

**Note:** The SmartEdge 100 router limits the value of the `slot` argument to 2.

**Note:** Hierarchical nodes are supported only on traffic-managed ports and circuits.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.37.6 Examples

The following example displays hierarchical node information for the ports on the GE3 line card in slot 13:

```
[local]Redback>show qos h-node slot 13
```



Sl/Po	L	Name & index/Cct-handle	Id	PrId	Ccts	M	Min-rat/bst	Max-rat/bst	D
13/1	L4	13/1:1023:63/9/0/161	1	0	0	s	0 /0	0 /0	

Total QoS hierarchical nodes: 1

## 1.38 show qos memory

```
show qos memory
```

### 1.38.1 Purpose

Displays quality of service (QoS) daemon memory usage information.

### 1.38.2 Command Mode

All modes

### 1.38.3 Syntax Description

This command has no keywords or arguments.

### 1.38.4 Default

None

### 1.38.5 Usage Guidelines

Use the `show qos memory` command to display QoS daemon memory usage information.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.



## 1.38.6 Examples

The following example displays output from the `show qos memory` command:

```
[local]Redback>show qos memory
```

Chunk_Size	Curr_InUse	Max_In_Use	TotalAlloc	Total_Free	Name
24	0	0	0	0	task_block
84	3	3	3	0	task_size_block
196	4	4	4	0	QOS_CKT
356	0	4	6	6	QOS_CONFQ
812	2	2	2	0	QOS_POLMAP

## 1.39 show qos policy

```
show qos policy
```

### 1.39.1 Purpose

Displays information for all configured quality of service (QoS) policies.

### 1.39.2 Command Mode

All modes

### 1.39.3 Syntax Description

This command has no keywords or arguments.

### 1.39.4 Default

None

### 1.39.5 Usage Guidelines

Use the `show qos policy` command to display information for all configured QoS policies.

Table 26 describes the output fields for the `show qos policy` command.



Table 26 *show qos policy Field Descriptions*

Field Name	Description
Policy-Name	Policy name.
Type	Type of policy.
Grid	Unique policy identifier.
Qs	Number of queues that each circuit consumes when it is bound to this policy. This field applies only to Asynchronous Transfer Mode weighted fair queuing (ATMWFQ) policies.
Slot	Number of slots where the policy has been downloaded.
Port	Number of circuits currently bound to this policy.
Bound	Indicates the direction of the bound policy: in or out. If there are no bindings, this field is blank.
Dnld	Download in progress. A “Y” entry in this field indicates the policy is being downloaded to a line card; otherwise, this field is blank.
Status	Download status. If this field is blank, the policy has been downloaded to the line card. An “updt” entry indicates a policy update is pending download. A “del” entry indicates a policy deletion is pending download.

**Note:** By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context** *ctx-name* construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context** *ctx-name* construct, see the **context** command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.39.6 Examples

The following example displays information for all configured QoS policies:

```
[local]Redback>show qos policy

Policy-Name  Type      Grid  Qs Slots  Ports Bound DnLd  Status
prl-special  prl       1     0  0      0      updt
mtr-special  metering  2     0  0      0      updt
plc-special  police    3     0  0      0      updt
pq-special   pwfq      4     8  0      0      updt

Total policy map: 4
```



## 1.40 show qos policy atmwfq

```
show qos policy atmwfq [{pol-name | default-value}]
```

### 1.40.1 Purpose

Displays information about one or more configured quality of service (QoS) Asynchronous Transfer Mode weighted fair queuing (ATMWFQ) policies.

### 1.40.2 Command Mode

All modes

### 1.40.3 Syntax Description

<i>pol-name</i>	Optional. Name of an ATMWFQ policy.
<i>default-value</i>	Optional. Displays information about ATMWFQ policy default values.

### 1.40.4 Default

When entered without any optional syntax, displays brief information about all configured ATMWFQ policies.

### 1.40.5 Usage Guidelines

Use the `show qos policy atmwfq` command to display information about one or more configured QoS ATMWFQ policies.

Use the *pol-name* argument to display detailed information about a single QoS ATMWFQ policy.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.



## 1.40.6 Examples

The following example displays brief information about all configured QoS ATMWFQ policies:

```
[local]Redback>show qos policy atmwfq
```

Policy-Name	Type	Grid	Qs
atmwfq1	atmwfq	1	4

Total QoS policy map: 1

The following example displays detailed information about the ATMWFQ policy, atmwfq1:

```
[local]Redback>show qos policy atmwfq atmwfq1
```

Policy-Name	Type	Grid	Qs
atmwfq1	atmwfq	1	4

  

Qnum	Red	Prob	Weight	Min	Max	Traffic-weight
0	0xf	9	9	5	15	10
1	0xf	9	9	5	15	10
2	0xf	9	9	5	15	10
3	0xf	9	9	5	15	10

The following example displays detailed information for the ATMWFQ policy, ds3\_cosq.22001.119.3:

```
[local]Redback>show qos policy atm ds3_cosq.22001.119.3
```

Policy-Name	Type	Grid	Qs
ds3_cosq.22001.119.3	atmwfq	1	2

Queue-map: default

Qnum	Red	Prob	Weight	Min	Max	Traffic-Weight	Mode
0	0xf	22515	7	10359	10417	361	alternate
1	0xf	20880	8	638	6176	493	

Total policy map: 1



## 1.41 show qos policy edrr

```
show qos policy edrr [{pol-name | default-value}]
```

### 1.41.1 Purpose

This command is no longer supported.

## 1.42 show qos policy metering

```
show qos policy metering [{pol-name | default-value}]
```

### 1.42.1 Purpose

Displays information about one or more configured quality of service (QoS) metering policies.

### 1.42.2 Command Mode

All modes

### 1.42.3 Syntax Description

<i>pol-name</i>	Optional. Name of a metering policy.
<i>default-value</i>	Optional. Displays information about metering policy default values.

### 1.42.4 Default

When entered without any optional syntax, displays brief information about all configured QoS metering policies.

### 1.42.5 Usage Guidelines

Use the `show qos policy metering` command to display information about one or more configured QoS metering policies.

Use the *pol-name* argument to display detailed information about a single QoS metering policy.





## 1.43 show qos policy policing

`show qos policy policing [{pol-name | default-value}]`

### 1.43.1 Purpose

Displays information about one or more configured quality of service (QoS) policing policies.

### 1.43.2 Command Mode

All modes

### 1.43.3 Syntax Description

<code>pol-name</code>	Optional. Name of a policing policy.
<code>default-value</code>	Optional. Displays information about policing policy default values.

### 1.43.4 Default

When entered without any optional syntax, displays brief information about all configured QoS policing policies.

### 1.43.5 Usage Guidelines

Use the `show qos policy policing` command to display information about one or more configured QoS policing policies.

Use the `pol-name` argument to display detailed information about a single QoS policing policy.

Table 27 describes the output fields for the `show qos policy policing` command.

Table 27 Field Description for the show qos policy policing Command

Field Name	Description
Policy-Name	Policy name.
Type	Type of policy.
Grid	Unique policy identifier.
Qs	Number of queues that each circuit consumes when it is bound to this policy. This field applies only to Asynchronous Transfer Mode weighted fair queuing (ATMWFQ) policies.



Table 27 Field Description for the `show qos policy policing` Command

Field Name	Description
Slot	Number of slots where the policy has been downloaded.
Port	Number of circuits currently bound to this policy.
Bound	Indicates the direction of the bound policy: “in” or “out”. If there are no bindings, this field is blank.
Dnld	Download in progress. A “Y” entry indicates the policy is being downloaded to a line card. Otherwise, this field is blank.
Status	Download status. If this field is blank, the policy has been downloaded to the line card. An “updt” entry indicates a policy update is pending download. A “del” entry indicates a policy deletion is pending download.

When a policy name is specified, in addition to the information described in Table 27, the distribution of QoS bindings across line card slots is displayed.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.43.6 Examples

The following example displays brief information for all QoS policing policies:

```
[local]Redback>show qos policy policing

Policy-Name      Type  Grid  Qs Slot  Port  Bound  DnLd  Status
police           police 1      0 1      5      in

Total QoS policy map: 1
```

The following example displays detailed information about the QoS policing policy, `police`, which is bound to 15 circuits on the line card in slot 9 and to 15 circuits on the line card in slot 11 :



```
[local]Redback>show qos policy policing police
```

Policy-Name	Type	Grid	Qs	Slot	Port	Bound	DnLd	Status
police	police	6	0	1	30	in		updt

Slot#:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
iPPA dnld:														
ePPA dnld:														
iPPA ports:									15		15			
ePPA ports:														

Rate(kbps): 2000 Bursts(bytes): 15000

Conf-mark-dscp Conf-drop Exceed-mark-dscp exceed-drop

0x2e 0x0

## 1.44 show qos policy pq

```
show qos policy pq [pol-name | default-value]
```

### 1.44.1 Purpose

This command is no longer supported.

## 1.45 show qos policy protocol-rate-limit

```
show qos policy protocol-rate-limit [pol-name]
```

### 1.45.1 Purpose

Displays information about one or more configured quality of service (QoS) protocol-specific rate-limiting policies.

### 1.45.2 Command Mode

All modes



### 1.45.3 Syntax Description

*pol-name* Optional. Name of the protocol-specific rate-limiting policy.

### 1.45.4 Default

When entered without any optional syntax, this command displays information about all configured protocol-specific rate-limiting policies in the current context.

### 1.45.5 Usage Guidelines

Use the `show qos policy protocol-rate-limit` command to display information about all protocol-specific rate-limiting policies configured in the current context, or to display information about a specific protocol-specific rate-limiting policy. When issued for a specific policy, this command shows the configured values for the relevant protocol.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.45.6 Examples

The following example displays the values for the `special` protocol-specific rate-limiting policy:

```
[local]Redback>show qos policy protocol-rate-limit special
```

```
Policy-Name      Type      Grid  Qs Slots  Ports  Bound  DnLd  Status
special          prl       1     0  0     0      0      0      updt

Slot#:           1  2  3  4  5  6  7  8  9  10 11 12 13 14
iPPA dnld:
ePPA dnld:
iPPA ports:
ePPA ports:

Protocol: ARP
  Rate(pkts/sec): 1000  Burst(pkts): 15000
Total policy map: 1
```



## 1.46 show qos policy pwfq

```
show qos policy pwfq [pol-name | default-value]
```

### 1.46.1 Purpose

Displays information about one or more configured quality of service (QoS) priority weighted fair queuing (PWFQ) policies.

### 1.46.2 Command Mode

All modes

### 1.46.3 Syntax Description

<i>pol-name</i>	Optional. Name of the PWFQ policy.
<i>default-value</i>	Optional. Displays information about PWFQ policy default values.

### 1.46.4 Default

When entered without any optional syntax, this command displays information about all configured PWFQ policies in the current context.

### 1.46.5 Usage Guidelines

Use the `show qos policy pwfq` command to display information about all PWFQ policies configured in the current context, or to display information about a specific PWFQ policy.

**Note:** PWFQ policies are supported only on traffic-managed ports and circuits.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.



## 1.46.6 Examples

The following example displays the values for the `pwfq-port` PWFQ policy:

```
[local]Redback>show qos policy pwfq pwfq-port

Policy-Name      Type      Grid   Qs Slots  Ports  Bound  DnLd  Status
pwfq-port        pwfq      12     8  0       0           updt

Slot#:           1  2  3  4  5  6  7  8  9  10  11  12  13  14
iPPA dnld:
ePPA dnld:
iPPA ports:
ePPA ports:

Max-Q-Depth: 0, Queues updated: none
Queue-map: default
Total policy map: 1
```

## 1.47 show qos port

```
show qos port [slot slot]
```

### 1.47.1 Purpose

Displays active quality of service (QoS) binding information for ports on one or more line cards.

### 1.47.2 Command Mode

All modes

### 1.47.3 Syntax Description

`slot slot` Optional. Slot number of line card for which QoS binding information is displayed.

### 1.47.4 Default

When entered without any optional syntax, displays active QoS binding information for ports on all line cards.



## 1.47.5 Usage Guidelines

Use the `show qos port` command to active display QoS binding information for ports on one or more line cards.

**Note:** The SmartEdge 100 router limits the value of the `slot` argument to 2.

Table 28 describes the output fields for this command.

Table 28 Field Description for the `show qos port` Command

Field	Description
Slot/Port	Slot and port to which the QoS policy is bound.
(vlan-id)	For QoS policies that are bound to PVCs or subscribers, the PVC number is displayed. Otherwise, this field is blank.
PVC	A “y” entry indicates that the binding is applied to a PVC or to a subscriber. Otherwise, this field is blank.
Policy-Name	Name of bound QoS policy.
Port	Active port to which the QoS policy is bound.
Qpos	This field is no longer supported.
L	This field is no longer supported.
Bound	Indicates the direction of the bound policy: “in” or “out”.
L4/L3	Refers to the h-node ID with which the queuing policy is associated.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

## 1.47.6 Examples

The following example shows how to display active binding information for ports on all line cards:



```
[local]Redback>show qos port
```

Slot/Port (vlan-id)	PVC	Policy-Name	Bound	L4/L3
lg id 25 foo	y	Policy7	out	
lg id 25 vlan-id 1	y	Policy7	in	
		Policy7	out	
lg id 25 vlan-id 2	y	Policy7	out	
		POLICY2	out	
lg id 25 vlan-id 4	y	Policy7	out	
lg id 25 vlan-id 5	y	Policy7	out	
lg id 25 vlan-id 3	y	Policy7	out	
lg id 25 vlan-id 3:1	y	Policy8	out	
lg id 25 vlan-id 3:2	y	Policy8	out	
lg id 25 vlan-id 3:5	y	Policy7	out	
lg id 25 vlan-id 3:6	y	Policy7	out	
lg id 25 vlan-id 3:7	y	Policy7	out	
lg id 25 vlan-id 3:8	y	Policy7	out	
lg id 25 vlan-id 3:9	y	Policy8	out	

Total QoS port policy binding: 15

The following example displays active binding information for ports on a line card in slot 5:



```
[local]Redback>show qos port slot 5
```

Slot/Port (vlan-id)	PVC	Policy-Name	Port	Qpos	L	Bound	L4/L3
lg id 25 foo	y	Policy7	1	4	0	out	1
lg id 25 foo	y	Policy7	2	5	0	out	2
lg id 25 vlan-id 1	y	POLICY1	1			in	1
		Policy7	1	4	0	out	1
lg id 25 vlan-id 2	y	Policy7	1	4	0	out	1
		POLICY2	1			out	1
lg id 25 vlan-id 4	y	Policy7	1	36	0	out	1
lg id 25 vlan-id 5	y	Policy7	1	40	0	out	1
lg id 25 vlan-id 3	y	Policy7	1	4	0	out	1
lg id 25 vlan-id 3	y	Policy7	2	5	0	out	2
lg id 25 vlan-id 3:1	y	Policy8	1	44	0	out	5
lg id 25 vlan-id 3:2	y	Policy8	1	48	0	out	6
lg id 25 vlan-id 3:5	y	Policy7	1	56	0	out	5
lg id 25 vlan-id 3:6	y	Policy7	1	60	0	out	7
lg id 25 vlan-id 3:7	y	Policy7	1	64	0	out	8
lg id 25 vlan-id 3:8	y	Policy7	1	68	0	out	9
lg id 25 vlan-id 3:9	y	Policy8	1	80	0	out	10

## 1.48 show qos port-map

```
show qos port-map port-map-name [card-type card-type-name]
[detail]
```

### 1.48.1 Purpose

Displays information about the configured quality of service (QoS) port group maps for all supported card types.

### 1.48.2 Command Mode

All modes



### 1.48.3 Syntax Description

<i>port-map-name</i>	Optional. Name of a QoS port group map for which to display information. If not specified, the information displayed is for all port group maps (of a specified card type, if any).
<i>card-type card-type-name</i>	Optional. Name of a line card for which QoS port group map information is displayed. If not specified, the information is displayed for all card types. The following are the supported values: <ul style="list-style-type: none"> <li>• <i>carrier</i>—Specifies the Fast Ethernet (FE) or Gigabit Ethernet (GE) media interface cards (MICs) for the SmartEdge 100 router</li> <li>• <i>fege-60-2-port</i>—Specifies the Fast Ethernet–Gigabit Ethernet card (60-port FE, 2-port GE)</li> <li>• <i>ge3-4-port</i>—Specifies the Gigabit Ethernet 3 (GE3) card (4-port)</li> <li>• <i>ge-10-port</i>—Specifies the Gigabit Ethernet 1020 (GE1020) card (10-port).</li> <li>• <i>ge-20-port</i>—Specifies the Gigabit Ethernet 1020 (GE1020) card (20-port).</li> <li>• <i>ge-5-port</i>—Specifies the Gigabit Ethernet (5-port).</li> <li>• <i>ge4-20-port</i>—Specifies the Gigabit Ethernet (GE) card (20-port)</li> <li>• <i>ge2-10-port</i>—Specifies the Gigabit Ethernet (GE) DDR card (10-port)</li> <li>• <i>10ge-1-port</i>—Specifies the 10 Gigabit Ethernet card (1-port)</li> <li>• <i>10ge-4-port</i>—Specifies the 10 Gigabit Ethernet card (4-port)</li> <li>• <i>10ge-oc192-1-port</i>—Specifies the 10 Gigabit Ethernet (10GE) / OC-192c/STM-64c DDR card (1-port)</li> </ul>
<i>detail</i>	Optional. Displays detailed information about the QoS port group maps.

### 1.48.4 Default

When entered without any optional syntax, displays brief information about all the configured QoS port group maps.

### 1.48.5 Usage Guidelines

Use the `show qos port-map` command to display information about the configured QoS port group maps.



## 1.48.6 Examples

The following example shows how to display information about all configured QoS port group maps:

```
[local]Redback>show qos port-map
Card Type           Map Type  Map Name
ge3-4-port          default   tm_max_perf
ge3-4-port          predef    fwd_max_perf
ge-10-port          default   tm_max_perf
ge-10-port          predef    fwd_max_perf
ge-20-port          default   tm_max_perf
ge-20-port          predef    fwd_max_perf
fege-60-2-port      default   tm_fe_perf
fege-60-2-port      predef    tm_max_perf
ge4-20-port         default   tm_max_perf
ge4-20-port         predef    fwd_max_perf
ge-5-port           default   tm_max_perf
ge-10-port          user-def  ge-10-myportmap1
ge-10-port          user-def  ge-10-myportmap2
fege-60-2-port      user-def  fe-60-myportmap1
fege-60-2-port      user-def  fe-60-myportmap2
ge4-20-port         user-def  ge4-20-myportmap1
ge4-20-port         user-def  ge4-20-myportmap2
```

## 1.49 show qos port-map bind

```
show qos port-map bind [slot slot-number] [detail]
```

### 1.49.1 Purpose

Displays information about the quality of service (QoS) port group map bindings to line cards on the SmartEdge router.

### 1.49.2 Command Mode

All modes



### 1.49.3 Syntax Description

<code>slot slot-number</code>	Optional. Chassis slot number of the card for which information about QoS port group map bindings are displayed. The range of values depends on the chassis in which the card is installed. For the SmartEdge 800 1200, and 1200H router, the range of values of the <code>slot-number</code> argument for all supported card types are from 1 to 6 and 9 to 14. For the SmartEdge 600, the range of values are from 1 to 6. For the SmartEdge 400 router, the range of values are from 1 to 4.
<code>slot slot-number</code>	Optional. Chassis slot number of the card for which information about QoS port group map bindings are displayed. The range of values is from 1 to 6 and 9 to 14. For the SmartEdge 400 router, the range of values are from 1 to 4.
<code>detail</code>	Optional. Displays detailed information about the QoS port group map binding.

### 1.49.4 Default

When entered without any optional syntax, displays brief information about the QoS port group map binding for all cards.

### 1.49.5 Usage Guidelines

Use the `show qos port-map binding` command to display information about the QoS port group map binding for all the supported cards that are installed on the SmartEdge router. To display information about the QoS port group map binding for a specific card, use the `show qos port-map binding slot` command.

### 1.49.6 Examples

The following example shows how to display information about the QoS port group map bindings for all the cards:

```
[local]Redback>show qos port-map binding
```

Slot	Card Type	Status	Map Type	Map Name
4	Current ge4-20-port	locked	default	tm_max_perf
6	Current ge-10-port	unlocked	predef	fwd_max_perf
10	Current fege-60-2-port	unlocked	predef	tm_max_perf

The following example shows how to display information about the QoS port group map bindings for the card in slot 6 :



```
[local]Redback>show qos port-map binding slot 6
Slot          Card Type      Status   Map Type  Map Name
  6 Current  ge-10-port    unlocked  predef    fwd_max_perf
```

The following example shows how to display detailed information about the QoS port group map bindings for the card in slot 6:

```
[local]Redback>show qos port-map binding 6 detail
Slot          : 6
Current Card Type : ge-10-port (0x7b)
Name          : fwd_max_perf
Type         : predef
Description  : Predefined map optimized for forwarding performance
Locked      : No

Port : 0123456789
Group: 1122334455
Pending Card Type : ge-10-port (0x7b)
Name          : fwd_max_perf
Type         : predef
Description  : Predefined map optimized for forwarding performance
```

## 1.50 show qos queue-map

```
show qos queue-map [map-name]
```

### 1.50.1 Purpose

Displays information about one or more configured quality of service (QoS) queue maps.

### 1.50.2 Command Mode

All modes

### 1.50.3 Syntax Description

**map-name** Optional. Name of a specific QoS queue map.



### 1.50.4 Default

When entered without any optional syntax, the `show qos queue-map` command displays information about all QoS queue maps.

### 1.50.5 Usage Guidelines

Use the `show qos queue-map` command to display information about one or more configured QoS queue maps.

Use the `map-name` argument to display information about a single QoS queue map.

**Note:** By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.50.6 Examples

The following example indicates that the QoS queue map default has 2-queue, 4-queue, and 8-queue mappings:

```
[local]Redback>show qos queue-map

Queue Map-Name      Grid  Q-2  Q-4  Q-8
default             1     y   y   y

Total QoS queue map: 1
```

The following example indicates that:

If a QoS policy with 2 queues is configured with the QoS queue map, `default`, the highest priority traffic (priority 0) is mapped to queue 0, while all other priorities (1 to 7) are mapped to queue 1.

If a QoS policy with 4 queues is configured with the QoS queue map, `default`, priority 0 traffic is mapped to queue 0, priority 1 and 2 traffic is mapped to queue 1, priorities 2 to 6 are mapped to queue 2, and the lowest priority traffic (priority 7) is mapped to queue 3.



If a QoS policy with 8 queues is configured with the QoS queue map, `default`, priority 0 traffic is mapped to queue 0, priority 1 traffic is mapped to queue 1, priority 2 traffic is mapped to queue 2, priority 3 traffic is mapped to queue 3, priority 4 traffic is mapped to queue 4, priority 5 traffic is mapped to queue 5, priority 6 traffic is mapped to queue 6, and priority 7 traffic is mapped to queue 7.

```
[local]Redback>show qos queue-map default
```

Queue Map-Name	Grid	Q-2	Q-4	Q-8
default	1	y	y	y

Queuing Priority	Q-2	Q-4	Q-8
0	0	0	0
1	1	1	1
2	1	1	2
3	1	2	3
4	1	2	4
5	1	2	5
6	1	2	6
7	1	3	7

Total QoS queue map: 1

## 1.51 show qos username

```
show qos username subscriber [detail]
```

### 1.51.1 Purpose

Displays the quality of service (QoS) circuit information for a given subscriber on the system.

### 1.51.2 Command Mode

All modes



### 1.51.3 Syntax Description

<i>subscriber</i>	Fully qualified subscriber name, in the format <i>sub-name@ctx-name</i> , for which circuit information is displayed.
<i>detail</i>	Optional. Displays details for each subscriber.

### 1.51.4 Default

When entered without any optional syntax, displays brief QoS information about the subscriber.

### 1.51.5 Usage Guidelines

Use the `show qos username` command to display the QoS circuit information for a given subscriber on the system.

**Note:** By appending a space followed by the pipe ( | ) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

### 1.51.6 Examples

The following example shows username and subscriber information:

```
[local]Redback>show qos username dot-v2.2@local
Circuit          Policy Name      Type      Rate      Source
5/2 vlan-id 2 pppoe 1018 gold           pwfq      20000     local
                  meter3          metering  10000     local
```

The following example shows details about a specific user:

```
[local]Redback#show qos username dot-v2.2@local detail
Circuit: 5/2 vlan-id 2 pppoe 1018
-----
Policy Name      : gold
Policy Type     : pwfq
Queue position  : 13                Num Queues      : 4
Rate            : 20000        Rate Source     : local
Policy Name     : meter3
Policy Type     : metering
Rate            : 10000        Rate Source     : local
Burst           : 20000        Excess Burst    : 30000
```



Commands: show p through show q



## Glossary

**MLPPP bundle**

The bundle of constituent links that are members of an MLPPP link group.

**MLPPP**

Multilink PPP. An extension to PPP that allows a router to use more than one physical link for communication.

**MP**

Multilink PPP.

**PWFQ**

Priority weighted fair queuing.