

## Chapter 23

# Adaptive Services Interfaces Operational Mode Commands

This chapter describes the `show interfaces` command you use to monitor and troubleshoot adaptive services interfaces.

### show interfaces (for Adaptive Services Interfaces)

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<b>Syntax</b>	<code>show interfaces sp-fpc/pic/port&lt;brief   detail   extensive&gt; &lt;destination-class destination-class-name&gt; &lt;media&gt; &lt;source-class source-class-name&gt; &lt;statistics&gt;</code>
<b>Description</b>	Display status information about adaptive services router interfaces.
<b>Options</b>	<p>none—Display information about all interfaces.</p> <p><code>sp-fpc/pic/port</code>—Name of an interface.</p> <p><code>brief</code>—(Optional) Display brief interface information.</p> <p><code>detail</code>—(Optional) Display detailed interface information.</p> <p><code>extensive</code>—(Optional) Display very detailed interface information.</p> <p><code>destination-class destination-class-name</code>—(Optional) Name of a logical grouping of prefixes that count packets having the destination address matching those prefixes. Whenever a destination class is specified, you must also specify a particular logical interface, not all interfaces.</p> <p><code>media</code>—(Optional) Display media-specific information about network interfaces.</p> <p><code>source-class source-class-name</code>—(Optional) Name of a logical grouping of prefixes that count packets having the source address matching those prefixes. Whenever a source class is specified, you must also specify a particular logical interface, not all interfaces.</p> <p><code>statistics</code>—(Optional) Display static interface statistics.</p>
<b>Required Privilege Level</b>	view

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**Output Fields at a Glance** Table 46 summarizes the information included in the output fields of each show interfaces command option for adaptive services interfaces. In this table, output fields are listed in alphabetical order. Table 47 on page 344 lists the output fields in more detail in the order in which they are displayed.

**Table 46: Adaptive Services Show Interfaces Output Field Summary (Alphabetical Order)**

Options	Field Description
<b>Physical Interface</b>	
All	Clocking—Reference clock source: Internal or External.
Standard Detail Extensive	Current address—Configured MAC address.
All	Enabled—State of the interface. Possible values are described in “Enabled” on page 7.
All	Flags—Information about the physical device and interface.
Detail	Generation—A unique number for use by Juniper Networks Customer Support only.
Detail	Hold-times—Current interface hold-time up and hold-time down, in milliseconds.
Extensive	Input errors—Input errors on the interface.
Standard	Input rate, Output rate—Rate of bits and packets received and transmitted on the interface.
All	Interface index—Physical interface’s index number, which reflects its initialization sequence.
All	Last flapped—Date, time, and how long ago the interface went from down to up.
All	Link flags—Information about the link. Possible values are described in “Link Flags” on page 8.
All	Link-level type—Describes the link layer type.
All	MTU—MTU size on the physical interface.
Extensive	Output errors—Output errors on the interface.
Extensive	Physical info—Information about the physical interface.
All	Physical interface—Name of the physical interface.
Standard Detail	SNMP ifIndex—SNMP index number for the physical interface.
All	Speed—Speed at which the interface is running.
Detail	Statistics last cleared—Time when the statistics for the interface were last zeroed.
Detail	Traffic statistics—Number and rate of bytes and packets received and transmitted on the physical interface.
All	Type—Encapsulation being used on the interface.

Options	Field Description
<b>Logical Interface</b>	
Detail	Broadcast—Broadcast address on the logical interface.
Standard Detail	Destination—For a point-to-point link, the address of the remote side of the link. For multicast links, the network address.
All	Encapsulation—Encapsulation on the logical interface.
Detail Extensive	Filters—Name of the firewall filters to be evaluated when packets are received or transmitted on the interface.
All	Logical interface flags—Information about the logical interface. Possible values are described in “Logical Interface Flags” on page 9.
Detail	Local—IP address of the logical interface.
Detail	Generation—A unique number for use by Juniper Networks Customer Support only.
All	Logical interface, Index, SNMP ifIndex—Name of the logical interface, the logical interface’s index number (which reflects its initialization sequence), and the logical interface’s SNMP interface index number.
Standard Detail	Protocol—Protocol running on the logical interface.
Detail	Route table—Name of route table.
Detail	Traffic statistics—Total number of bytes and packets received and transmitted on the logical interface. These statistics are the sum of the local and transit statistics. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize.
Detail	Transit statistics—Statistics for traffic transiting the router. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize.

**Table 47: Show Adaptive Services Interfaces Output Field Summary (Order of Appearance)**

Output Field	Output Field Description
<b>Physical Interface</b>	
Physical interface	Name of the physical interface.
Enabled	State of the interface. Possible values are described in “Enabled” on page 7.
Interface index	Physical interface’s index number, which reflects its initialization sequence.
SNMP ifIndex	SNMP index number for the physical interface.
Generation	A unique number for use by Juniper Networks Customer Support only.
Type	Encapsulation being used on the interface.
Link-level type	Encapsulation being used on the physical interface.
MTU	MTU size on the physical interface.
Clocking	Reference clock source. It can be Internal or External.
Speed	Speed at which the interface is running.
Device flags	Information about the physical device. Possible values are described in “Device Flags” on page 7.
Interface flags	Information about the interface.
Link flags	Information about the link. Possible values are described in “Link Flags” on page 8.
Hold-times	Current interface hold-time up and hold-time down, in milliseconds.
Current address	Configured MAC address.
Last Flapped	Date, time, and how long ago the interface went from down to up. The format is Last flapped: <i>year-month-day hour:minute:second timezone (hour:minute:second ago)</i> . For example, Last flapped: 2002-04-26 10:52:40 PDT (04:33:20 ago).
Statistics last cleared	Time when the statistics for the interface were last zeroed.
Traffic statistics	Number and rate of bytes and packets received and transmitted on the physical interface. Input bytes, Output bytes—Number of bytes received and transmitted on the interface. Input packets, Output packets—Number of packets received and transmitted on the interface.
Input errors	(Extensive output only) Input errors on the interface. The following paragraphs explain the counters whose meaning might not be obvious:  Errors—Sum of the incoming frame aborts and FCS errors.  Drops—Number of packets dropped by the output queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet that is dropped by the ASIC’s RED mechanism.  Invalid VCs—Number of cells that arrived for a nonexistent VC.  Framing errors—Sum of AAL5 packets that have FCS errors, AAL5 packets that have reassembly timeout errors, and AAL5 packets that have length errors.  Policed discards—Frames that the incoming packet match code discarded because they were not recognized or of interest. Usually, this field reports protocols that the JUNOS software does not handle, such as CDP.  L3 incompletes—Increments when the incoming packet fails Layer 3 (usually IPv4) sanity checks of the header. For example, a frame with less than 20 bytes of available IP header would be discarded and this counter would increment.  L2 channel errors—This counter increments when the software could not find a valid logical interface for an incoming frame.  L2 mismatch timeouts—Count of malformed or short packets that cause the incoming packet handler to discard the frame as unreadable.

Output Field	Output Field Description
Output errors	<p>(Extensive output only) Output errors on the interface. The following paragraphs explain the counters whose meaning might not be obvious:</p> <p>Carrier transitions—Number of times the interface has gone from down to up. This number should not increment quickly, increasing only when the cable is unplugged, the far-end system is powered down and up, or a similar problem occurs. If it increments quickly (perhaps once every 10 seconds), then either the cable, the far-end system, or the PIC is broken.</p> <p>Errors—Sum of the outgoing frame aborts and FCS errors.</p> <p>Drops—Number of packets dropped by the output queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet that is dropped by the ASIC's RED mechanism.</p> <p>Aged packets—Number of packets that remained in shared packet SDRAM for so long that the system automatically purged them. The value in this field should never increment. If it does, it is most likely a software bug or possibly broken hardware.</p> <p>HS link FCS errors—Number of errors on the high-speed links between the ASICs responsible for handling the router interfaces.</p> <p>FIFO errors—Number of FIFO errors in the receive direction as reported by the ASIC on the PIC. If this value is ever nonzero, the PIC is probably broken.</p>
Input rate, Output rate	(Standard output only) Rate of bits (in bps) and packets (in pps) received and transmitted on the interface.
<b>Logical Interface</b>	
Logical interface, Index, SNMP ifIndex	Name of the logical interface, the logical interface's index number (which reflects its initialization sequence), and the logical interface's SNMP interface index number.
Generation	A unique number for use by Juniper Networks Customer Support only.
Flags	Information about the logical interface. Possible values are described in "Logical Interface Flags" on page 9.
Encapsulation	Encapsulation on the logical interface.
Traffic statistics	<p>Total number of bytes and packets received and transmitted on the logical interface. These statistics are the sum of the local and transit statistics. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize.</p> <p>Input rate—Rate of bits and packets received on the interface.</p> <p>Output rate—Rate of bits and packets transmitted on the interface.</p> <p>Anti-replay failures—Total number of anti-replay failures seen on all tunnels configured on the ES PIC.</p> <p>Authentication—Total number of authentication failures seen on all tunnels configured on the ES PIC.</p>
Local statistics	Statistics for traffic received from and transmitted to the Routing Engine. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize.
Transit statistics	Statistics for traffic transiting the router. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize.
Protocol	Protocol running on the logical interface, such as iso, inet6, mpls.
Route table	The address is located in this route table. For example, Route table:0 refers to inet.0.
Addresses	Addresses associated with the logical interface.
Flags	Information about the address flags. Possible values are described in "Address Flags" on page 10.

Output Field	Output Field Description
Destination	IP address of the remote side of the connection.
Local	IP address of the logical interface.
Broadcast	Broadcast address.

### show interfaces terse

```

user@host> show interfaces sp-6/0/0 terse
Interface      Admin Link Proto Local      Remote
sp-6/0/0       up   up
sp-6/0/0.16383 up   up   inet 10.0.0.1  --> 10.0.0.112
    
```

### show interfaces (standard) (for Adaptive Services Interfaces)

```

user@host> show interfaces sp-6/0/0
Physical interface: sp-6/0/0, Enabled, Physical link is Up
Interface index: 155, SNMP ifIndex: 43
Type: 21, Link-level type: 45, MTU: Unlimited, Speed: 800mbps
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link type : Full-Duplex
Link flags : None
Last flapped : 2003-05-06 10:59:28 PDT (07:05:59 ago)
Input rate : 0 bps (0 pps)
Output rate : 0 bps (0 pps)

Logical interface sp-6/0/0.16383 (Index 75) (SNMP ifIndex 44)
Flags: Point-To-Point SNMP-Traps Encapsulation: Adaptive-Services
Protocol inet, MTU: Unlimited
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: 10.0.0.112, Local: 10.0.0.1
    
```

### show interfaces detail (for Adaptive Services Interfaces)

```

user@host> show interfaces sp-6/0/0 detail
Physical interface: sp-6/0/0, Enabled, Physical link is Up
Interface index: 155, SNMP ifIndex: 43, Generation: 39
Type: 21, Link-level type: 45, MTU: Unlimited, Clocking: Unspecified, Speed: 800mbps
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link type : Full-Duplex
Link flags : None
Physical info : Unspecified
Hold-times : Up 0 ms, Down 0 ms
Current address: Unspecified, Hardware address: Unspecified
Alternate link address: Unspecified
Last flapped : 2003-05-06 10:59:28 PDT (07:07:24 ago)
Statistics last cleared: Never
Traffic statistics:
Input bytes :          78091          0 bps
Output bytes :       1177684          0 bps
Input packets:         2372          0 pps
Output packets:        2215          0 pps
    
```

```

Logical interface sp-6/0/0.16383 (Index 75) (SNMP ifIndex 44) (Generation 14)
Flags: Point-To-Point SNMP-Traps Encapsulation: Adaptive-Services
Protocol inet, MTU: Unlimited, Generation: 18, Route table: 1
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: 10.0.0.112, Local: 10.0.0.1, Broadcast: Unspecified,      Generation: 13

```

## show interfaces extensive (for Adaptive Services Interfaces)

---

```

user@host> show interfaces sp-6/0/0 extensive
Physical interface: sp-6/0/0, Enabled, Physical link is Up
Interface index: 155, SNMP ifIndex: 43, Generation: 39
Type: 21, Link-level type: 45, MTU: Unlimited, Clocking: Unspecified, Speed: 800mbps
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link type    : Full-Duplex
Link flags   : None
Physical info : Unspecified
Hold-times   : Up 0 ms, Down 0 ms
Current address: Unspecified, Hardware address: Unspecified
Alternate link address: Unspecified
Last flapped : 2003-05-06 10:59:28 PDT (07:07:37 ago)
Statistics last cleared: Never
Traffic statistics:
Input bytes :      78091      0 bps
Output bytes :    1177684      0 bps
Input packets:    2372      0 pps
Output packets:   2215      0 pps
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Policed discards: 0
Output errors:
Carrier transitions: 4, Errors: 0, Drops: 0

Logical interface sp-6/0/0.16383 (Index 75) (SNMP ifIndex 44) (Generation 14)
Flags: Point-To-Point SNMP-Traps Encapsulation: Adaptive-Services
Protocol inet, MTU: Unlimited, Generation: 18, Route table: 1
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: 10.0.0.112, Local: 10.0.0.1, Broadcast: Unspecified,      Generation: 13

```

## show interfaces media (for Adaptive Services Interfaces)

---

```

user@host> show interfaces sp-6/0/0 media
Physical interface: sp-6/0/0, Enabled, Physical link is Up
Interface index: 155, SNMP ifIndex: 43
Type: 21, Link-level type: 45, MTU: Unlimited, Speed: 800mbps
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link type    : Full-Duplex
Link flags   : None
Last flapped : 2003-05-06 10:59:28 PDT (07:08:50 ago)
Input rate   : 0 bps (0 pps)
Output rate  : 0 bps (0 pps)

```

## show interfaces statistics (for Adaptive Services Interfaces)

---

```
user@host> show interfaces sp-6/0/0 statistics
Physical interface: sp-6/0/0, Enabled, Physical link is Up
Interface index: 155, SNMP ifIndex: 43
Type: 21, Link-level type: 45, MTU: Unlimited, Speed: 800mbps
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link type    : Full-Duplex
Link flags   : None
Last flapped : 2003-05-06 10:59:28 PDT (07:09:05 ago)
Statistics last cleared: Never
Input rate   : 0 bps (0 pps)
Output rate  : 0 bps (0 pps)
Input errors: 0, Output errors: 0

Logical interface sp-6/0/0.16383 (Index 75) (SNMP ifIndex 44)
Flags: Point-To-Point SNMP-Traps Encapsulation: Adaptive-Services
Protocol inet, MTU: Unlimited
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: 10.0.0.112, Local: 10.0.0.1
```