

Chapter 39

Virtual Loopback Tunnel Interfaces Operational Mode Command

This chapter describes the `show interfaces` command you use to monitor and troubleshoot virtual loopback tunnel (VT) router interfaces.

show interfaces (for VT Interfaces)

| | |
|---------------------------------|--|
| Syntax | <code>show interfaces vt-<i>fpc/pic/port</i> <brief detail extensive> <destination-class <i>destination-class-name</i>> <media> <source-class <i>source-class-name</i>> <statistics></code> |
| Description | Display status information about virtual loopback tunnel router interfaces. |
| Options | <p><code>none</code>—Display information about all interfaces.</p> <p><code>vt-<i>fpc/pic/port</i></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 <i>destination-class-name</i></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 <i>source-class-name</i></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> |
| Required Privilege Level | view |

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Output Fields at a Glance Figure 82 summarizes the information included in the output fields of each show interfaces command option for virtual loopback tunnel (VT) interfaces. In this table, output fields are listed in alphabetical order. Table 83 on page 538 lists the output fields in more detail in the order in which they are displayed.

Table 82: VT Show Interfaces Output Field Summary (Alphabetical Order)

| Options | Field Description |
|------------------------------|---|
| Physical Interface | |
| Extensive | Bucket Drops—Drops due to traffic load exceeding the interface transmit/receive leaky bucket configuration. The default is off. |
| Standard Detail Extensive | CHAP state—Displays the state of the challenge-handshake protocol during its transaction. |
| Extensive | Clocking—Reference clock source. It can be Internal or External. |
| Extensive | 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. |
| All | Enabled—State of the interface. Possible values are described in "Enabled" on page 7. |
| All | Flags—Information about the physical device and interface. |
| Extensive | Framing errors—Sum of AAL5 packets that have FCS errors, AAL5 packets that have reassembly timeout errors, and AAL5 packets that have length errors. |
| Detail Extensive | Generation—A unique number for use by Juniper Networks Customer Support only. |
| Extensive | Giants—Frames received that are larger than the giant threshold. |
| 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 | LCP state—Specific PPP bits. Opened indicates that they have been initialized and opened, which means that the link is healthy. |
| Extensive | Link flags—Information about the link. |
| All | Link-level type—Describes the link layer type. |
| All | MTU—MTU size on the physical interface. |
| All | NCP state—Specific PPP bits. Opened indicates that they have been initialized and opened, which means that the link is healthy. |
| Extensive | Output errors—Output errors on the interface. |
| Extensive | Physical info—Information about the physical interface. |
| All | Physical interface—Name of the physical interface. |
| Extensive | Runts—Frames received that are smaller than the runt threshold. |
| Standard Detail Extensive | SNMP ifIndex—SNMP index number for the physical interface. |

| Options | | Field Description |
|--------------------------|-----------|---|
| All | | Speed—Speed at which the interface is running. |
| Detail | Extensive | Statistics last cleared—Time when the statistics for the interface were last zeroed. |
| Detail | Extensive | Traffic statistics—Number and rate of bytes and packets received and transmitted on the physical interface. |
| All | | Type—Type of interface. Software-Pseudo indicates a standard software interface with no associated hardware device. |
| Logical Interface | | |
| All | | Addresses—Addresses associated with the logical interface. |
| All | | Destination—IP address of the remote side of the connection. |
| Detail | Extensive | Destination class—List of the names of destination class usage (DCU) counters per family and per class for this interface. The counters display Packets and Bytes going to designated user-selected prefixes. |
| 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. |
| All | | Generation—A unique number for use by Juniper Networks Customer Support only. |
| All | | IP Header—IP header of the logical interface. |
| Interval | | Interval Total—The sum of all the alarm and defect counters for the last 24-hour period or the total time if the PIC was installed less than 24 hours ago. |
| All | | Local—IP address of the logical interface. |
| Detail | | 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. |
| 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. |
| All | | MTU—MTU size on the logical interface. |
| Detail | Extensive | Policer—Policers to be evaluated when packets are received or transmitted on the interface. |
| All | | Protocol—Protocol running on the logical interface. |
| Detail | Extensive | RPF Failures: Packets: <i>xx</i> , Bytes: <i>yy</i> —The amount of incoming traffic (in packets and bytes) that failed a unicast Reverse Path Forwarding (RPF) check on this interface. |
| Detail | Extensive | Route table—The address is located in this route table. For example, Route table:0 refers to inet.0. |
| 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. |
| Detail | Extensive | Source class—List of the names of source class usage (SCU) counters per family and per class for this interface. The counters display Packets and Bytes arriving from designated user-selected prefixes. |

Table 83: VT Show Interfaces Output Field Summary (Order of Appearance)

| Output Field | Output Field Description |
|---------------------------|--|
| Physical Interface | |
| 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 | Type of interface. Software-Pseudo indicates a standard software interface with no associated hardware device. |
| 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. |
| Loopback | Whether loopback is enabled and the type of loopback (local or remote). |
| Physical info | Information about the physical interface. |
| Device flags | Information about the physical device. Possible values are described in “Device Flags” on page 7. |
| Interface flags | Information about the interface. |
| LCP state | Specific PPP bits. Opened indicates that they have been initialized and opened, which means that the link is healthy. |
| NCP state | Specific PPP bits. Opened indicates that they have been initialized and opened, which means that the link is healthy. |
| Statistics last cleared | Time when the statistics for the interface were last zeroed. |
| 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). |
| 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 rate, Output rate | (Standard output only) Rate of bits (in bps) and packets (in pps) received and transmitted on the interface. |

| Output Field | Output Field Description |
|---------------|--|
| Input errors | <p>(Extensive output only) Input errors on the interface. The following paragraphs explain the counters whose meaning might not be obvious:</p> <p>Errors—Sum of the incoming 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>Invalid VCs—Number of cells that arrived for a nonexistent VC.</p> <p>Framing errors—Sum of AAL5 packets that have FCS errors, AAL5 packets that have reassembly timeout errors, and AAL5 packets that have length errors.</p> <p>Bucket Drops—Drops due to traffic load exceeding the interface transmit/receive leaky bucket configuration. The default is off.</p> <p>Giants—Frames received that are larger than the giant threshold.</p> <p>Runts—Frames received that are smaller than the runt threshold.</p> <p>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.</p> <p>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.</p> <p>L2 channel errors—This counter increments when the software could not find a valid logical interface for an incoming frame.</p> <p>L2 mismatch timeouts—Count of malformed or short packets that cause the incoming packet handler to discard the frame as unreadable.</p> <p>SRAM errors—This counter increments when a hardware error has occurred in the SRAM on the PIC. The value in this field should always be 0. If it increments, the PIC is broken.</p> <p>HS link FCS errors—Number of errors on the high-speed links between the ASICs responsible for handling the router interfaces.</p> |
| 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> |

| Output Field | Output Field Description |
|--|--|
| Logical Interface | |
| 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. |
| Flags | Logical interface flags—Information about the logical interface. Possible values are described in “Logical Interface Flags” on page 9. |
| Protocol | Protocol running on the logical interface, such as iso, inet6, mpls. |
| Encapsulation | Encapsulation on the logical interface. |
| 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. Input rate—Rate of bits and packets received on the interface. Output rate—Rate of bits and packets transmitted on the interface. |
| 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. |
| MTU | MTU size on the logical interface. |
| Flags | Information about the protocol family flags. Possible values are described in “Family Flags” on page 9. |
| Generation | A unique number for use by Juniper Networks Customer Support only. |
| Route table | The address is located in this route table. For example, Route table:0 refers to inet.0. |
| Filters | Name of the firewall filters to be evaluated when packets are received or transmitted on the interface. The format is Filters: Input: <i>input-filter-name</i> , Output: <i>output-filter-name</i> . |
| Destination class | List of the names of destination class usage (DCU) counters per family and per class for this interface. The counters display Packets and Bytes going to designated user-selected prefixes. |
| Source class | List of the names of source class usage (SCU) counters per family and per class for this interface. The counters display Packets and Bytes arriving from designated user-selected prefixes. |
| Policer | Policers to be evaluated when packets are received or transmitted on the interface. The format is Policer: Input: <i>type-fpc/pic/port-in-policer</i> , Output: <i>type-fpc/pic/port-out-policer</i> . |
| Addresses | Addresses associated with the logical interface. |
| Flags | Information about the address flags. Possible values are described in “Address Flags” on page 10. |
| Destination | IP address of the remote side of the connection. |
| Local | IP address of the logical interface. |
| Broadcast | Broadcast address. |

show interfaces (standard) (for VT Interfaces)

```

user@host> show interfaces vt-1/3/0
Physical interface: vt-1/3/0, Enabled, Physical link is Up
Interface index: 36, SNMP ifIndex: 50
Type: Software-Pseudo, Link-level type: VPN-loopback-tunnel, MTU: Unlimited, Speed: 800mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link flags : None
    
```

```
Last flapped : 2002-04-18 10:40:21 PDT (04:45:03 ago)
Input rate   : 0 bps (0 pps)
Output rate  : 0 bps (0 pps)
```

```
Logical interface vt-1/3/0.0 (Index 7) (SNMP ifIndex 23)
Flags: Point-To-Point SNMP-Traps Encapsulation: VPN-loopback-tunnel
Protocol inet, MTU: Unlimited, Flags: None
Protocol mpls, MTU: Unlimited, Flags: None
```

show interfaces brief (for VT Interfaces)

```
user@host> show interfaces vt-1/3/0 brief
Physical interface: vt-1/3/0, Enabled, Physical link is Up
  Type: Software-Pseudo, Link-level type: VPN-loopback-tunnel, MTU: Unlimited, Clocking: Unspecified, Speed:
800mbps
Device flags   : Present Running
Interface flags: SNMP-Traps

Logical interface vt-1/3/0.0
  Flags: Point-To-Point SNMP-Traps Encapsulation: VPN-loopback-tunnel
  inet
  mpls
```

show interfaces detail (for VT Interfaces)

```
user@host> show interfaces vt-1/3/0 detail
Physical interface: vt-1/3/0, Enabled, Physical link is Up
  Interface index: 36, SNMP ifIndex: 50, Generation: 35
  Type: Software-Pseudo, Link-level type: VPN-loopback-tunnel, MTU: Unlimited, Clocking: Unspecified, Speed:
800mbps
Device flags   : Present Running
Interface flags: SNMP-Traps
Link type      : Unspecified
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   : 2002-04-18 10:40:21 PDT (04:45:07 ago)
Statistics last cleared: Never
Traffic statistics:
Input bytes :          0          0 bps
Output bytes :          0          0 bps
Input packets:          0          0 pps
Output packets:          0          0 pps

Logical interface vt-1/3/0.0 (Index 7) (SNMP ifIndex 23) (Generation 8)
Flags: Point-To-Point SNMP-Traps Encapsulation: VPN-loopback-tunnel
Protocol inet, MTU: Unlimited, Flags: None, Generation: 16 Route table: 1
Protocol mpls, MTU: Unlimited, Flags: None, Generation: 17 Route table: 1
```

show interfaces extensive (for VT Interfaces)

```

user@host> show interfaces vt-1/3/0 extensive
Physical interface: vt-1/3/0, Enabled, Physical link is Up
Interface index: 36, SNMP ifIndex: 50, Generation: 35
Type: Software-Pseudo, Link-level type: VPN-loopback-tunnel, MTU: Unlimited, Clocking: Unspecified, Speed:
800mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type    : Unspecified
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 : 2002-04-18 10:40:21 PDT (04:45:09 ago)
Statistics last cleared: Never
Traffic statistics:
Input bytes :          0          0 bps
Output bytes :          0          0 bps
Input packets:          0          0 pps
Output packets:          0          0 pps
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Policed discards: 0
Output errors:
Carrier transitions: 1, Errors: 0, Drops: 0

Logical interface vt-1/3/0.0 (Index 7) (SNMP ifIndex 23) (Generation 8)
Flags: Point-To-Point SNMP-Traps Encapsulation: VPN-loopback-tunnel
Protocol inet, MTU: Unlimited, Flags: None, Generation: 16 Route table: 1
Protocol mpls, MTU: Unlimited, Flags: None, Generation: 17 Route table: 1

```

show interfaces media (for VT Interfaces)

```

user@host> show interfaces vt-1/3/0 media
Physical interface: vt-1/3/0, Enabled, Physical link is Up
Interface index: 36, SNMP ifIndex: 50
Type: Software-Pseudo, Link-level type: VPN-loopback-tunnel, MTU: Unlimited, Speed: 800mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link flags   : None
Last flapped : 2002-04-18 10:40:21 PDT (04:45:24 ago)
Input rate   : 0 bps (0 pps)
Output rate  : 0 bps (0 pps)

```

show interfaces statistics (for VT Interfaces)

```

user@host> show interfaces vt-1/3/0 statistics
Physical interface: vt-1/3/0, Enabled, Physical link is Up
Interface index: 36, SNMP ifIndex: 50
Type: Software-Pseudo, Link-level type: VPN-loopback-tunnel, MTU: Unlimited, Speed: 800mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link flags   : None
Last flapped : 2002-04-18 10:40:21 PDT (04:45:27 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 vt-1/3/0.0 (Index 7) (SNMP ifIndex 23)
Flags: Point-To-Point SNMP-Traps Encapsulation: VPN-loopback-tunnel
Protocol inet, MTU: Unlimited, Flags: None
Protocol mpls, MTU: Unlimited, Flags: None

