

Chapter 11

E3 Interfaces Operational Mode Command

This chapter describes the `show interfaces` command you use to monitor and troubleshoot E3 interfaces.

show interfaces (for E3 Interfaces)

Syntax	<code>show interfaces e3-<i>fpc/pic/port</i> <brief detail extensive> <destination-class <i>destination-class-name</i>> <interval> <media> <source-class <i>source-class-name</i>> <statistics></code>
Description	Display status information about E3 router interfaces.
Options	<p><code>none</code>—Display information about all interfaces.</p> <p><code>e3-<i>fpc/pic/port</i></code>—Name of an interface.</p> <p><code>brief</code>—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>interval</code>—(Optional) Display Channel Service Unit (CSU) interface alarm and error count in 15-minute intervals for the past 24 hours. If the system has been up for less than 24 hours, the maximum number of intervals available is displayed.</p> <p><code>media</code>—(Optional) Display media-specific information about network interfaces.</p>

source-class *source-class-name*—(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.

statistics—(Optional) Display static interface statistics.

Required Privilege Level view

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Output Fields at a Glance Table 21 summarizes the information included in the output fields of each show interfaces command option for E3 interfaces. In this table, output fields are listed in alphabetical order. Table 22 on page 171 lists the output fields in more detail in the order in which they are displayed.

Table 21: E3 Show Interfaces Output Field Summary (Alphabetical Order)

Options	Field Description
Physical Interface	
All	Active alarms and Active defects—E3 media-specific defects that can render the interface unable to pass packets.
Extensive	ANSI LMI settings—Settings for link management can be either ANSI LMI settings or ITU LMI settings. ANSI LMI settings is the default. The format is ANSI LMI settings: <i>value, value... xx</i> seconds.
Detail Extensive	BERT time period—The configured total time period that the BERT test is to run.
Extensive	Bucket Drops—Drops due to traffic load exceeding the interface transmit/receive leaky bucket configuration. The default is off.
All	Buildout—Buildout setting.
Detail Extensive	CHAP state—Displays the state of the challenge-handshake protocol during its transaction.
All	Clocking—Reference clock source. It can be Internal or External.
All	Device Flags—Information about the physical device.
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.
Detail Extensive	DS1 BERT Algorithm—Type of algorithm selected for Bit Error Rate Testing.
Detail Extensive	DS-3 BERT configuration—Configured and actual DS-3 Bit Error Rate Testing (BERT) information.
Detail Extensive	DS1 BERT configuration—Configured and actual DS-1 Bit Error Rate Testing (BERT) information.
Extensive	DS3 media—Counts of T3 media-specific errors.
Extensive	DSU configuration—Information about the DSU configuration. The last three lines (Bit count, Error bit count, and LOS information) are displayed only if a BERT test has ever been run on the interface.
Detail Extensive	Elapsed—Actual time elapsed since the start of the BERT.
All	Enabled—State of the interface. Possible values are described in “Enabled” on page 7.
All	FCS—Frame check sequence on the interface (either 16 or 32). The default is 16 bits.

Options	Field Description
All	Framing—Physical layer framing format used on the link.
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	HDLC configuration—Information about the HDLC configuration.
Detail Extensive	Hold-times—Current interface hold-time up and hold-time down, in milliseconds.
Detail Extensive	Induced error rate—Configured rate at which the bit errors are induced in the BERT pattern.
Extensive	Interface transmit queues—Name of the transmit queues and their associated statistics.
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 Flags—Information about the interface.
All	Interface index—Physical interface's index number, which reflects its initialization sequence.
Extensive	ITU LMI settings—Settings for link management can be either ANSI LMI settings or ITU LMI settings. ANSI LMI settings is the default. The format is ITU LMI settings: <i>value, value.. xx</i> seconds
Standard	Keepalive Input, Output—Number of keepalive packets sent and received by PPP and how long ago the last keepalive packets were sent and received.
All	Keepalive settings—Configured settings for keepalives.
Detail Extensive	Keepalive statistics—Information about keepalive packets received and transmitted.
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.
All	Link Flags—Information about the link.
All	Link-level type—Encapsulation being used on the physical interface.
Extensive	LMI Statistics—Statistics about Link Management, including a count of packets sent and received, and the time of the last activity.
All	Logical interface flags—Information about the logical interface. Possible values are described in “Logical Interface Flags” on page 9.
All	Loopback—Whether loopback is enabled and the type of loopback (either local or remote).
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	Packet Forwarding Engine configuration—Information about how the Packet Forwarding Engine is configured.
All	Physical interface—Name of the physical interface.
Extensive	Runts—Frames received that are smaller than the runt threshold.
All	SNMP ifIndex—SNMP index number for the physical interface.
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.

Options	Field Description
Logical Interface	
All	Addresses flags—Information about the address.
All	Addresses—Addresses associated with the logical interface.
Interval	Alarms and defects: <i>n</i> —Count of alarms and defects within each 15-minute interval.
Detail Extensive	Broadcast—Broadcast address.
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	DLCI—If Frame Relay encapsulation is configured, the DLCI number of the logical interface.
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. The format is Filters: Input: <i>input-filter-name</i> , Output: <i>output-filter-name</i> .
Detail Extensive	Generation—A unique number for use by Juniper Networks Customer Support only.
Interval	<i>hh:mm-current</i> —The time of day (in hours and minutes) at the beginning of the latest counter interval. The value of the latest counter interval is always less than 15 minutes.
Interval	<i>hh:mm-hh:mm</i> —The time of day (in hours and minutes) at the beginning and end of each 15-minute interval.
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 Extensive	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 flags—Information about the logical interface. Possible values are described in “Logical Interface Flags” on page 9.
All	Logical interface, Index, SNMP ifIndex—Name of the logical interface, the logical interface’s index number, and the logical interface’s SNMP interface index number.
All	MTU—MTU size on the logical interface. The default MTU size is 4474.
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	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.
Detail Extensive	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 Extensive	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 22: E3 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.
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).
FCS	Frame check sequence on the interface (either 16 or 32). The default is 16 bits.
Framing	Physical layer framing format used on the link. It can be G704, G704-NO-CRC4, or Unframed. The default is G704.
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.
LMI settings	(Extensive output only) Settings for Link Management can be either ANSI LMI settings or ITU LMI settings. ANSI LMI settings is the default. The format is (ANSI or ITU) LMI settings: <i>value, value... xx</i> seconds, where <i>value</i> can be: n391dte—DTE full status polling interval (1..255) n392dce—DCE error threshold (1..10) n392dte—DTE error threshold (1..10) n393dce—DCE monitored event count (1..10) n393dte—DTE monitored event count (1..10) t391dte—DTE polling timer (5..30 seconds) t392dce—DCE polling verification timer (5..30 seconds)
LMI Statistics	(Extensive output only) Statistics about the Link Management. Input—Number of packets coming in on the interface (<i>nn</i>) and how much time has passed since the last packet arrived. The format is Input: <i>nn</i> (last seen <i>hh:mm:ss</i> ago). Output—Number of packets sent out on the interface (<i>nn</i>) and how much time has passed since the last packet was sent. The format is Output: <i>nn</i> (last sent <i>hh:mm:ss</i> ago).
Hold-times	Current interface hold-time up and hold-time down, in milliseconds.
Keepalive Input, Output	(Standard output only) Number of keepalive packets sent and received by PPP and how long ago the last keepalive packets were sent and received.
Keepalive settings	Configured settings for keepalives. interval <i>seconds</i> —The time in seconds between successive keepalive requests. The range is 10 seconds through 32,767 seconds, with a default of 10 seconds. down-count <i>number</i> —The number of keepalive packets a destination must fail to receive before the network takes a link down. The range is 1 through 255, with a default of 3. up-count <i>number</i> —The number of keepalive packets a destination must receive to change a link’s status from down to up. The range is 1 through 255, with a default of 1.

Output Field	Output Field Description
Keepalive statistics	<p>Information about keepalive packets.</p> <p>Input—Number of keepalive packets received by PPP. (last seen 00:00:00 ago)—Time since the last keepalive packet was received in the format <i>hh:mm:ss</i>.</p> <p>Output—Number of keepalive packets sent by PPP and how long ago the last keepalive packets were sent and received. (last seen 00:00:00 ago)—Time since the last keepalive packet was sent in the format <i>hh:mm:ss</i>.</p>
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.
CHAP state	<p>Displays the state of the Challenge Handshake Authentication Protocol (CHAP) during its transaction.</p> <p>Not-configured—CHAP was not configured on the interface.</p> <p>Success—CHAP authentication was successful.</p> <p>Fail—CHAP authentication failed.</p> <p>Chap-Resp-received—Received response for the challenge sent, but not yet moved into the Success state. (Most likely with RADIUS authentication.)</p> <p>Chap-Resp-sent—Response sent for the challenge received.</p> <p>Chap-Chal-sent—Challenge sent.</p> <p>Chap-Chal-received—Challenge received but response not yet sent.</p>
Last Flapped	<p>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).</p>
Traffic statistics	<p>Number and rate of bytes and packets received and transmitted on the physical interface.</p> <p>Input bytes, Output bytes—Number of bytes received and transmitted on the interface.</p> <p>Input packets, Output packets—Number of packets received and transmitted on the interface.</p>
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>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—Count 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
Active alarms and Active defects	<p>E3 media-specific defects that can render the interface unable to pass packets. When a defect persists for a certain amount of time, it is promoted to an alarm. Based on the router configuration, an alarm can ring the red or yellow alarm bell on the router, or turn on the red or yellow alarm LED on the craft interface.</p> <p>AIS—Alarm indication signal EXZ—Excessive zeros FERF—Far-end receive failures IDLE— Idle code detected LCD—Loss of cell delineation LCV—Line code violation LOF—Loss of frame LOS—Loss of signal PLL—Phase locked loop YLW—Remote defect indication</p>
E3 media	(Extensive output only) Counts of E3 media-specific errors.
HDLC configuration	<p>(Extensive output only) Information about the HDLC configuration.</p> <p>Policing bucket—Configured state of the Rx policer. Shaping bucket—Configured state of the Tx shaper. Giant threshold—Giant threshold programmed into the hardware. Runt threshold—Runt threshold programmed into the hardware. Timeslots—Configured time slots for the interface. Line encoding—Line encoding used. It is always HDB3.</p>
Interface transmit queues	<p>Name of the transmit queues and their associated statistics.</p> <p>B/W—Queue bandwidth as a percentage of the total interface bandwidth. WRR—Weighted round robin (in percent). Packets—Number of packets transmitted. Drops—Number of packets dropped. Errors—Number of packet errors.</p>
DSU configuration	<p>Information about the DSU configuration. The last three lines (Bit count, Error bit count, and LOS information) are displayed only if a BERT test has ever been run on the interface.</p> <p>Compatibility mode—CSU/DSU compatibility mode. It can be None, Larscom, Kentrox, or Digital-Link. Scrambling—Payload scrambling. It can be Enabled or Disabled. Subrate—Configured subrate setting. Applies only when Digital-Link compatibility mode is used. It can be Disabled or display units in kbps.</p>
Buildout	Buildout setting.
DS3 BERT configuration	<p>BERT (Bit Error Rate Testing) checks the quality of the line. This output only appears when BERT is run on the interface (see “test interface bert-start” on page 310).</p> <p>BERT time period—Configured total time period that the BERT test is to run. Elapsed—Actual time elapsed since the start of the BERT (in seconds). Induced error rate—Configured rate at which the bit errors are induced in the BERT pattern. Algorithm—Type of algorithm selected for the BERT. It can be Pseudorandom, Repetitive, or All ones.</p>

Output Field	Output Field Description
Packet Forwarding Engine configuration	(Extensive output only) Information about the configuration of the Packet Forwarding Engine: Destination slot—FPC slot number. PLP byte—Packet Level Protocol byte. Stream number—Stream used by the ASIC on the FPC. CoS transmit queue—The queue number and its associated user-configured forwarding class name. Bandwidth %—Percentage of bandwidth allocated to the queue. Bandwidth bps—Bandwidth allocated to the queue (in bps). Buffer %—Percentage of buffer space allocated to the queue. Buffer Bytes—Number of bytes allocated to the queue. This value is only non-zero if the buffer size is configured in terms of time. Priority—Queue priority. Possible values are low and high. Limit—Displayed if rate limiting is configured for the queue. Possible values are none and exact. If exact is configured, the queue will only transmit up to the configured bandwidth, even if there is excess bandwidth available. If none is configured, the queue will transmit beyond the configured bandwidth if there is bandwidth available.
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	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.
DLCI	If Frame Relay encapsulation is configured, the DLCI number of the logical interface.
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.
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> .
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.
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.

Output Field	Output Field Description
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.
<i>hh:mm-current</i>	(Interval output only) The time of day (in hours and minutes) at the beginning of the latest counter interval. The value of the latest counter interval is always less than 15 minutes.
Alarms and defects: <i>n</i>	(Interval output only) Count of alarms and defects within each 15-minute interval.
<i>hh:mm-hh:mm</i>	(Interval output only) The time of day (in hours and minutes) at the beginning and end of each 15-minute interval.
Interval Total	(Interval output only) 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.

show interfaces (standard) (for E3 Interfaces)

```

user@host> show interfaces e3-0/3/0
Physical interface: e3-0/3/0, Enabled, Physical link is Up
  Interface index: 77, SNMP ifIndex: 840
  Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: E3,
  Loopback: None, FCS: 16, Framing: G751
  Device flags   : Present Running
  Interface flags: Point-To-Point SNMP-Traps
  Link flags     : Keepalives
  Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
  Keepalive: Input: 49 (00:00:04 ago), Output: 47 (00:00:10 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-16 15:34:29 PDT (00:09:36 ago)
  Input rate     : 264 bps (0 pps)
  Output rate    : 0 bps (0 pps)
  Active alarms  : None
  Active defects : None

Logical interface e3-0/3/0.0 (Index 8) (SNMP ifIndex 856)
  Flags: Point-To-Point SNMP-Traps Encapsulation: PPP
  Protocol inet, MTU: 4470, Flags: None
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: 10.20.115.0/30, Local: 10.20.115.2
    
```

show interfaces brief (for E3 Interfaces)

```

user@host> show interfaces brief e3-0/3/0
Physical interface: e3-0/3/0, Enabled, Physical link is Up
Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: E3,
Loopback: None, FCS: 16, Framing: G751
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link flags   : Keepalives
Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
Keepalive: Input: 49 (00:00:04 ago), Output: 47 (00:00:10 ago)

Logical interface e3-0/3/0.0
Flags: Point-To-Point SNMP-Traps Encapsulation: PPP
inet 10.20.115.2/30

```

show interfaces detail (for E3 Interfaces)

```

user@host> show interfaces detail e3-0/3/0
Physical interface: e3-0/3/0, Enabled, Physical link is Up
Interface index: 77, SNMP ifIndex: 840, Generation: 76
Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: E3,
Loopback: None, FCS: 16, Framing: G751
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link flags   : Keepalives
Hold-times   : Up 0 ms, Down 0 ms
Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
Keepalive statistics:
  Input : 49 (last seen 00:00:04 ago)
  Output: 47 (last sent 00:00:10 ago)
LCP state: Opened
NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
Not-configured
CHAP state: Not-configured
Last flapped : 2002-05-16 15:34:29 PDT (00:09:36 ago)
Statistics last cleared: 2002-05-16 15:35:57 PDT (00:08:08 ago)
Traffic statistics:
Input bytes :      8800      264 bps
Output bytes :     9568       0 bps
Input packets:      192       0 pps
Output packets:    192       0 pps
Active alarms : None
Active defects : None

Logical interface e3-0/3/0.0 (Index 8) (SNMP ifIndex 856) (Generation 8)
Flags: Point-To-Point SNMP-Traps Encapsulation: PPP
Protocol inet, MTU: 4470, Flags: None, Generation: 16 Route table: 0
Addresses, Flags: Is-Preferred Is-Primary
  Destination: 10.20.115.0/30, Local: 10.20.115.2, Broadcast: Unspecified,
  Generation: 18

```

show interfaces extensive (for E3 Interfaces)

```

user@host> show interfaces extensive e3-0/3/0
Physical interface: e3-0/3/0, Enabled, Physical link is Up
Interface index: 77, SNMP ifIndex: 840, Generation: 76
Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: E3,
Loopback: None, FCS: 16, Framing: G751
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link flags   : Keepalives
Hold-times   : Up 0 ms, Down 0 ms
Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
Keepalive statistics:
  Input : 49 (last seen 00:00:04 ago)
  Output: 47 (last sent 00:00:10 ago)
LCP state: Opened
NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
Not-configured
CHAP state: Not-configured
Last flapped : 2002-05-16 15:34:29 PDT (00:09:36 ago)
Statistics last cleared: 2002-05-16 15:35:57 PDT (00:08:08 ago)
Traffic statistics:
Input bytes :           8800           264 bps
Output bytes :           9568             0 bps
Input packets:           192             0 pps
Output packets:          192             0 pps
Input errors:
  Errors: 0, Drops: 0, Framing errors: 1, Bucket drops: 0,
  Policed discards: 0, L3 incompletes: 0, L2 channel errors: 0,
  L2 mismatch timeouts: 0, HS link CRC errors: 0, SRAM errors: 0
Output errors:
  Carrier transitions: 0, Errors: 0, Drops: 0, Aged packets: 0
Active alarms : None
Active defects : None
E3 media:      Seconds      Count State
PLL Lock       0          0 OK
Reframing      0          0 OK
AIS            0          0 OK
LOF            0          0 OK
LOS            0          0 OK
IDLE           0          0 OK
YELLOW         0          0 OK
BPV            0          0
EXZ            0          0
LCV            0          0
LES            0
SEFS           0
UAS            0
HDLC configuration:
  Policing bucket: Disabled
  Shaping bucket : Disabled
  Giant threshold: 4484, Runt threshold: 3
DSU configuration:
  Compatibility mode: Kentrox, Scrambling: Disabled
E3 BERT configuration:
  BERT time period: 10 seconds, Elapsed: 0 seconds
  Algorithm: 2^3 - 1, Pseudorandom (1), Induced Error rate: 10e-0

```

Packet Forwarding Engine configuration:

Destination slot: 0, PLP byte: 1 (0x00)

CoS	transmit queue	Bandwidth		Buffer	Priority	Limit
	%	bps	%	bytes		
0	best-effort	0	0	0	low	none
1	expedited-forwarding	0	0	0	low	none
2	assured-forwarding	0	0	0	low	none
3	network-control	0	0	0	low	none

Logical interface e3-0/3/0.0 (Index 8) (SNMP ifIndex 856) (Generation 8)

Flags: Point-To-Point SNMP-Traps Encapsulation: PPP

Protocol inet, MTU: 4470, Flags: None, Generation: 16 Route table: 0

Addresses, Flags: Is-Preferred Is-Primary

Destination: 10.20.115.0/30, Local: 10.20.115.2, Broadcast: Unspecified,

Generation: 18

 show interfaces interval (for E3 Interfaces)

```

user@host> show interfaces interval e3-0/3/0
Physical interface: e3-0/3/0, SNMP ifIndex: 23
17:43-current:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
17:28-17:43:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
17:13-17:28:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
16:58-17:13:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
16:43-16:58:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
16:28-16:43:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
16:13-16:28:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
15:58-16:13:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
15:43-15:58:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
15:28-15:43:
  LCV: 0, PCV: 0, CCV: 0, LES: 0, PES: 0, PSES: 0, CES: 0, CSES: 0,
SEFS: 0, UAS: 0
15:13-15:28:
  LCV: 195, PCV: 982465, CCV: 400985, LES: 0, PES: 195, PSES: 195,
CES: 195, CSES: 195, SEFS: 195, UAS: 206
14:58-15:13:
  LCV: 35, PCV: 163394, CCV: 54485, LES: 0, PES: 35, PSES: 35, CES:
35, CSES: 35, SEFS: 35, UAS: 32
Interval Total:
  LCV: 230, PCV: 1145859, CCV: 455470, LES: 0, PES: 230, PSES: 230,
CES: 230, CSES: 230, SEFS: 230, UAS: 238

```

show interfaces media (for E3 Interfaces)

```

user@host> show interfaces media e3-0/3/0
Physical interface: e3-0/3/0, Enabled, Physical link is Up
Interface index: 77, SNMP ifIndex: 840
Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: E3,
Loopback: None, FCS: 16, Framing: G751
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link flags   : Keepalives
Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
Keepalive: Input: 49 (00:00:05 ago), Output: 47 (00:00:11 ago)
LCP state: Opened
NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
Not-configured
CHAP state: Not-configured
Last flapped : 2002-05-16 15:34:29 PDT (00:09:37 ago)
Input rate   : 264 bps (0 pps)
Output rate  : 0 bps (0 pps)
Active alarms : None
Active defects : None
E3 errors:
  BPV: 0, EXZ: 0, LCV: 0
  PCV: 0

```

show interfaces statistics (for E3 Interfaces)

```

user@host> show interfaces statistics e3-0/3/0
Physical interface: e3-0/3/0, Enabled, Physical link is Up
Interface index: 77, SNMP ifIndex: 840
Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: E3,
Loopback: None, FCS: 16, Framing: G751
Device flags : Present Running
Interface flags: Point-To-Point SNMP-Traps
Link flags   : Keepalives
Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
Keepalive: Input: 49 (00:00:05 ago), Output: 47 (00:00:11 ago)
LCP state: Opened
NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
Not-configured
CHAP state: Not-configured
Last flapped : 2002-05-16 15:34:29 PDT (00:09:37 ago)
Statistics last cleared: 2002-05-16 15:35:57 PDT (00:08:09 ago)
Input rate   : 264 bps (0 pps)
Output rate  : 0 bps (0 pps)
Input errors: 1, Output errors: 0
Active alarms : None
Active defects : None

Logical interface e3-0/3/0.0 (Index 8) (SNMP ifIndex 856)
Flags: Point-To-Point SNMP-Traps Encapsulation: PPP
Protocol inet, MTU: 4470, Flags: None
Addresses, Flags: Is-Preferred Is-Primary
  Destination: 10.20.115.0/30, Local: 10.20.115.2

```