Chapter 4

Channelized DS-3 to DS-0 Interfaces Operational Mode Command

This chapter describes the show interfaces command you use to monitor and troubleshoot channelized DS-3 to DS-0 router interfaces.

show interfaces (for Channelized DS-3 to DS-0 Interfaces)

Syntax show interfaces ds-*fpc/pic/port:T1channel:DS-0 channel* <brief | detail | extensive>
<destination-class *destination-class-name*>
<interval>
<media>
<source-class *source-class-name*>
<statistics>

Description Display status information about channelized DS-3 to DS-0 router interfaces.

Options none—Display information about all interfaces.

ds-*fpc/pic/port:T1channel:DS-0 channel*—Name of a DS-3 to DS-0 interface.

brief—(Optional) Display brief interface information.

detail—(Optional) Display detailed interface information.

extensive—(Optional) Display very detailed interface information.

destination-class *destination-class-name*—(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.

interval—(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.

media—(Optional) Display media-specific information about network interfaces.

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 7 summarizes the information included in the output fields of each show interfaces command option for channelized DS-3 to DS-0 interfaces. In this table, output fields are listed in alphabetical order. Table 8 on page 60 lists the output fields in the order in which they are displayed.

Table 7: Channelized DS-3 to DS-0 Show Interfaces Output Field Summary (Alphabetical Order)

Options	Field Description
Physical Interface	
All	Active alarms and Active defects—T1 media-specific defects that can render the interface unable to pass packets.
All	Active alarms and Active defects—T3 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: *value*, *value*... *xx* seconds.
Detail Extensive	BERT time period—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.
Standard 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. Possible values are described in "Device Flags" on page 7.
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	DS3 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.

Options	Field Description
All	Enabled—State of the interface. Possible values are described in "Enabled" on page 7.
All	Framing—Physical layer framing format used on the link. It can be ESF or SF. The default is ESF.
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.
All	FCS—Frame check sequence on the interface (either 16 or 32). The default is 16 bits.
All	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	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	Interface transmit queues—Transmit queue statistics and configuration for each DS-0 channel on the Channelized DS-3 to DS-0 PIC.
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: *value, value... xx* 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.
Detail Extensive	Keepalive settings—Configure settings for keepalives.
Detail Extensive	Keepalive statistics—Number of keepalive packets sent and received by PPP and how long ago the last keepalive packets were sent and received.
Standard Detail Extensive	Last Flapped—Date, time, and how long ago the interface went from down to up. The format is Last flapped: *year-month-day hour:minute:second timezone* (*hour:minute:second* ago). For example, Last flapped: 2002-04-26 10:52:40 PDT (04:33:20 ago).
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. Possible values are described in "Link Flags" on page 8.
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	Loopback—Whether loopback is enabled and the type of loopback (either local or remote).
All	Mode—Whether C-bit parity mode is enabled.
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.
Detail Extensive	Parent—Displays the name and interface index of the interface from the level above. none indicates the top level.
All	Physical interface—Name of the physical interface.
All	Physical link—State of the physical interface. It can be Up or Down.

Options	Field Description
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.
Extensive	T1 media—Counts of T1 media-specific errors.
Extensive	T3 media—Counts of T3 media-specific errors.
Detail Extensive	Traffic statistics—Number and rate of bytes and packets received and transmitted on the physical interface.
Logical Interface	
All	Addresses—Addresses associated with the logical interface.
Interval	Alarms and defects: *n*—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	Family flags—Information about the protocol family flags. Possible values are described in “Family Flags” on page 9.
Detail Extensive	Filters—Name of the firewall filters to be evaluated when packets are received or transmitted on the interface.
All	Flags—Information about the logical interface.
Interval	*hh:mm*-current—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	*hh:mm-hh:mm*—The time of day (in hours and minutes) at the beginning and end of each 15-minute interval.
Standard	Input packets, Output packets—Number of packets received and transmitted on the logical interface.
Extensive	Interface transmit queues—Transmit queue statistics and configuration for each DS-0 channel on the Channelized DS-3 to DS-0 PIC.
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.
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.
Detail Extensive	Policer—Policers to be evaluated when packets are received or transmitted on the interface.
All	Protocol—Protocol running on the logical interface, such as iso, inet6, mpls.
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.

Options		Field Description
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 8: Channelized DS-3 to DS-0 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).
Mode	Whether C-bit parity mode or M13 mode is enabled.
FCS	Frame check sequence on the interface (either 16 or 32). The default is 16 bits.
Parent	Displays the name and interface index of the interface from the level above. none indicates the top level.
Framing	Physical layer framing format used on the link. It can be ESF or SF. The default is ESF.
Device flags	Information about the physical device. Possible values are described in "Device Flags" on page 7.
Interface flags	Information about the interface. Possible values are described in "Interface Flags" on page 8.
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: *value*, *value*... *xx* seconds, where *value* 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 (*nn*) and how much time has passed since the last packet arrived. The format is Input: *nn* (last seen *hh:mm:ss* ago). Output—Number of packets sent out on the interface (*nn*) and how much time has passed since the last packet was sent. The format is Output: *nn* (last sent *hh:mm:ss* ago).
Hold-times	Current interface hold-time up and hold-time down, in milliseconds.

Output Field	Output Field Description
Keepalive settings	Configured settings for keepalives. interval *seconds*—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 *number*—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 *number*—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.
Keepalive statistics	Information about keepalive packets. Input—Number of keepalive packets received by PPP. (last seen 00:00:00 ago)—Time the last keepalive packet was received in the format *hh:mm:ss*. 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 the last keepalive packet was sent in the format *hh:mm:ss*.
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.
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	Displays the state of the Challenge Handshake Authentication Protocol (CHAP) during its transaction. Not-configured—CHAP was not configured on the interface. Success—CHAP authentication was successful. Fail—CHAP authentication failed. Chap-Resp-received—Received response for the challenge sent, but not yet moved into the Success state. (Most likely with RADIUS authentication.) Chap-Resp-sent—Response sent for the challenge received. Chap-Chal-sent—Challenge sent. Chap-Chal-received—Challenge received but response not yet sent.
Last Flapped	Date, time, and how long ago the interface went from down to up. The format is Last flapped: *year-month-day hour:minute:second timezone* (*hour:minute:second* ago). 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 and packets received and transmitted on the interface.

Output Field	Output Field Description
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. Bucket Drops—Drops due to traffic load exceeding the interface transmit/receive leaky bucket configuration. The default is off. Giants—Frames received that are larger than the giant threshold. Runts—Frames received that are smaller than the runt threshold. 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 errors	(Extensive output only) Output errors on the interface. The following paragraphs explain the counters whose meaning might not be obvious: 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. Errors—Sum of the outgoing 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. 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.

Output Field	Output Field Description
Active alarms and Active defects (T3)	T3 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. AIS—Alarm indication signal EXZ—Excessive zeros FERF—Far-end receive failures IDLE— Idle code detected LCV—Line code violation LOS—Loss of signal LOF—Loss of frame PLL—Phase locked loop YLW—Remote defect indication T3 media—Counts of T3 media-specific errors
Active alarms and Active defects (T1)	T1 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. LOS—Loss of signal. LOF—Loss of frame. AIS—Alarm indication signal. YLW—Yellow alarm. Indicates errors at the remote site receiver.
T1 media	Counts of T1 media-specific errors.
DS3 media	(Extensive output only) Counts of T3 media-specific errors.
HDLC configuration	(Extensive output only) Information about the HDLC configuration. 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 can be B8ZS or AMI. Byte encoding—Byte encoding used. It can be Nx64K or Nx56K. Data inversion—HDLC data inversion setting. It can be Enabled or Disabled.
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. 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.

Output Field	Output Field Description
DS3 BERT, DS1 BERT configuration	BERT (Bit Error Rate Test) 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). 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.
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.
DLCI	If Frame Relay encapsulation is configured, the DLCI number of the logical interface.
Encapsulation	Encapsulation on the logical interface.
Input packets, Output packets	(Standard output only) Number of packets received and transmitted 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.
Protocol	Protocol running on the logical interface.
MTU	MTU size on the logical interface.

Output Field	Output Field Description
Flags	Information about the protocol family flags. Possible values are described in "Family Flags" on page 9.
Filters	Name of the firewall filters to be evaluated when packets are received or transmitted on the interface. The format is Filters: Input: *input-filter-name*, Output: *output-filter-name*.
Policer	Policers to be evaluated when packets are received or transmitted on the interface. The format is Policer: Input: *type-fpc/pic/port*-in-policer, Output: *type-fpc/pic/port*-out-policer.
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.
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.
Interface transmit queues	Transmit queue statistics and configuration for each DS-0 channel on the Channelized DS-3 to DS-0 PIC.
hh:mm-current	(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: *n*	(Interval output only) Count of alarms and defects within each 15-minute interval.
hh:mm-hh:mm	(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 Channelized DS-3 to DS-0 Interfaces)

```
user@host> show interfaces ds-0/0/0:0:0
 Physical interface: ds-0/0/0:0:0, Enabled, Physical link is Up
  Interface index: 174, SNMP ifIndex: 4298
  Link-level type: PPP, MTU: 1504, Clocking: Internal, Speed: 640kbps, FCS: 16,
  Mode: C/Bit parity, Framing: ESF
  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: 278 (00:00:05 ago), Output: 283 (00:00:08 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-23 17:53:29 PDT (00:46:23 ago)
  Input rate     : 16 bps (0 pps)
  Output rate    : 72 bps (0 pps)
  DS1   alarms   : None
  DS3   alarms   : None
  DS1   defects  : None
  DS3   defects  : None

  Logical interface ds-0/0/0:0:0.0 (Index 5) (SNMP ifIndex 4299)
    Flags: Point-To-Point SNMP-Traps Encapsulation: PPP
    Protocol inet, MTU: 1500
      Flags: None
      Addresses, Flags: Is-Preferred Is-Primary
        Destination: 18.18.18.1, Local: 18.18.18.2
```

show interfaces brief (for Channelized DS-3 to DS-0 Interfaces)

```
user@host> show interfaces ds-0/0/0:0:0 brief
Physical interface: ds-0/0/0:0:0, Enabled, Physical link is Up
  Link-level type: PPP, MTU: 1504, Clocking: Internal, Speed: 640kbps, FCS: 16,
  Mode: C/Bit parity, Framing: ESF
  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: 279 (00:00:03 ago), Output: 284 (00:00:05 ago)

  Logical interface ds-0/0/0:0:0.0
    Flags: Point-To-Point SNMP-Traps Encapsulation: PPP
    inet  18.18.18.2       --> 18.18.18.1
```

show interfaces detail (for Channelized DS-3 to DS-0 Interfaces)

```
user@host> show interfaces ds-0/0/0:0:0 detail
Physical interface: ds-0/0/0:0:0, Enabled, Physical link is Up
  Interface index: 174, SNMP ifIndex: 4298, Generation: 177
  Link-level type: PPP, MTU: 1504, Clocking: Internal, Speed: 640kbps, FCS: 16,
  Mode: C/Bit parity, Framing: ESF
  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 : 280 (last seen 00:00:02 ago)
    Output: 285 (last sent 00:00:03 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-23 17:53:29 PDT (00:46:39 ago)
  Statistics last cleared: Never
  Traffic statistics:
   Input  bytes :              6790                16 bps
   Output bytes :             28748                72 bps
   Input  packets:              566                 0 pps
   Output packets:              890                 0 pps
  DS1   alarms   : None
  DS3   alarms   : None
  DS1   defects  : None
  DS3   defects  : None
  DS-3 BERT configuration:
    BERT time period: 10 seconds, Elapsed: 0 seconds
    Algorithm: Unknown (0), Induced error rate: 10e-0
  DS1 BERT configuration:
    BERT time period: 10 seconds, Elapsed: 0 seconds
    Induced Error rate: 10e-0, Algorithm: 2^15 - 1, O.151, Pseudorandom (9)

  Logical interface ds-0/0/0:0:0.0 (Index 5) (SNMP ifIndex 4299)
  (Generation 943)
    Flags: Point-To-Point SNMP-Traps Encapsulation: PPP
    Protocol inet, MTU: 1500, Generation: 949, Route table: 0
      Flags: None
      Addresses, Flags: Is-Preferred Is-Primary
        Destination: 18.18.18.1, Local: 18.18.18.2, Broadcast: Unspecified,
        Generation: 1849
```

show interfaces extensive (for Channelized DS-3 to DS-0 Interfaces)

```
user@host> show interfaces ds-0/0/0:0:0 extensive
Physical interface: ds-0/0/0:0:0, Enabled, Physical link is Up
  Interface index: 174, SNMP ifIndex: 4298, Generation: 177
  Link-level type: PPP, MTU: 1504, Clocking: Internal, Speed: 640kbps, FCS: 16,
  Mode: C/Bit parity, Framing: ESF
  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 : 280 (last seen 00:00:09 ago)
    Output: 286 (last sent 00:00:00 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-23 17:53:29 PDT (00:46:46 ago)
  Statistics last cleared: Never
  Traffic statistics:
   Input  bytes :              6814                16 bps
   Output bytes :             28840                72 bps
   Input  packets:              568                 0 pps
   Output packets:              893                 0 pps
  Input errors:
    Errors: 0, Drops: 0, Framing errors: 39, Policed discards: 0,
    L3 incompletes: 0, L2 channel errors: 2, L2 mismatch timeouts: 0,
    HS link CRC errors: 0
  Output errors:
    Carrier transitions: 3, Errors: 0, Drops: 0, Aged packets: 0
  DS1   alarms   : None
  DS3   alarms   : None
  DS1   defects  : None
  DS3   defects  : None
  T1  media:          Seconds       Count  State
    SEF                    0           0  OK
    BEE                    5           1  OK
    AIS                    0           0  OK
    LOF                    0           0  OK
    LOS                    0           0  OK
    YELLOW                17           1  OK
    BPV                    0           0
    EXZ                    0           0
    LCV                    5       27765
    PCV                    0           0
    CS                     0           0
    LES                    0
    ES                     0
    SES                    5
    SEFS                  10
    BES                    0
    UAS                    0
  DS3 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                 1       65535
  EXZ                 1       65535
  LCV                 2       131070
  PCV                 1       1825
  CCV                 0       0
  LES                 1
  PES                 1
  PSES                1
  CES                 0
  CSES                0
  SEFS                0
  UAS                 0
 Interface transmit queues:
          B/W  WRR      Packets       Bytes       Drops       Errors
  Queue0    95   95          0           0           0            0
  Queue1     5    5        893       28840           0            0
 HDLC configuration:
  Giant threshold: 1514, Runt threshold: 3
  Timeslots     : 1-10
  Byte encoding: Nx64K, Data inversion: Disabled
 DS-3 BERT configuration:
  BERT time period: 10 seconds, Elapsed: 0 seconds
  Algorithm: Unknown (0), Induced error rate: 10e-0
 DS1 BERT configuration:
  BERT time period: 10 seconds, Elapsed: 0 seconds
  Induced Error rate: 10e-0, Algorithm: 2^15 - 1, O.151, Pseudorandom (9)
 Packet Forwarding Engine configuration:
  Destination slot: 0, PLP byte: 2 (0x01)
  CoS transmit queue            Bandwidth          Buffer Priority   Limit
                          %         bps   %        bytes
  0 best-effort           95      608000  95           0     low    none
  3 network-control        5       32000   5           0     low    none

Logical interface ds-0/0/0:0.0 (Index 5) (SNMP ifIndex 4299)
(Generation 943)
  Flags: Point-To-Point SNMP-Traps Encapsulation: PPP
  Protocol inet, MTU: 1500, Generation: 949, Route table: 0
    Flags: None
    Addresses, Flags: Is-Preferred Is-Primary
      Destination: 18.18.18.1, Local: 18.18.18.2, Broadcast: Unspecified,
      Generation: 1849
```

show interfaces interval (for Channelized DS-3 to DS-0 Interfaces)

```
user@host> show interfaces ds-0/0/0:0:0 interval
Physical interface: t1-0/0/0:0:0 , SNMP ifIndex: 19
  20:02-current:
    ES-S: 0, SES-S: 0, SEFS-S: 0, ES-L: 0, SES-L: 0, UAS-L: 0, ES-P: 0, SES-P: 0, UAS-P: 0
  19:47-20:02:
    ES-S: 267, SES-S: 267, SEFS-S: 267, ES-L: 267, SES-L: 267, UAS-L: 267, ES-P: 267, SES-P: 267, UAS-P: 267
  19:32-19:47:
    ES-S: 56, SES-S: 56, SEFS-S: 56, ES-L: 56, SES-L: 56, UAS-L: 46, ES-P: 56, SES-P: 56, UAS-P: 46
  19:17-19:32:
    ES-S: 0, SES-S: 0, SEFS-S: 0, ES-L: 0, SES-L: 0, UAS-L: 0, ES-P: 0, SES-P: 0, UAS-P: 0
  19:02-19:17:
    ES-S: 0, SES-S: 0, SEFS-S: 0, ES-L: 0, SES-L: 0, UAS-L: 0, ES-P: 0, SES-P: 0, UAS-P: 0
  18:47-19:02:
    ES-S: 1, SES-S: 1, SEFS-S: 1, ES-L: 1, SES-L: 1, UAS-L: 0, ES-P: 1, SES-P: 1, UAS-P: 0
  Interval Total:
    ES-S: 324, SES-S: 324, SEFS-S: 324, ES-L: 324, SES-L: 324, UAS-L: 313, ES-P: 324, SES-P: 324, UAS-P: 313
```

show interfaces media (for Channelized DS-3 to DS-0 Interfaces)

```
user@host> show interfaces ds-0/0/0:0:0 media
Physical interface: ds-0/0/0:0:0, Enabled, Physical link is Up
  Interface index: 174, SNMP ifIndex: 4298
  Link-level type: PPP, MTU: 1504, Clocking: Internal, Speed: 640kbps, FCS: 16,
  Mode: C/Bit parity, Framing: ESF
  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: 281 (00:00:10 ago), Output: 287 (00:00:03 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-23 17:53:29 PDT (00:46:58 ago)
  Input rate     : 16 bps (0 pps)
  Output rate    : 72 bps (0 pps)
  DS1   alarms   : None
  DS3   alarms   : None
  DS1   defects  : None
  DS3   defects  : None
  T1 errors:
    BPV: 0, EXZ: 0, LCV: 27765, PCV: 0, CS: 0
  DS3 errors:
    BPV: 65535, EXZ: 65535, LCV: 131070, PCV: 1825, CCV: 0
  Interface transmit queues:
           B/W  WRR       Packets       Bytes       Drops       Errors
    Queue0    95   95             0           0           0            0
    Queue1     5    5           896       28932           0            0
```

show interfaces statistics (for Channelized DS-3 to DS-0 Interfaces)

```
user@host> show interfaces ds-0/0/0:0:0 statistics
Physical interface: ds-0/0/0:0:0, Enabled, Physical link is Up
  Interface index: 174, SNMP ifIndex: 4298
  Link-level type: PPP, MTU: 1504, Clocking: Internal, Speed: 640kbps, FCS: 16,
  Mode: C/Bit parity, Framing: ESF
  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: 282 (00:00:07 ago), Output: 287 (00:00:12 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-23 17:53:29 PDT (00:47:07 ago)
  Statistics last cleared: Never
  Input rate     : 16 bps (0 pps)
  Output rate    : 72 bps (0 pps)
  Input errors: 41, Output errors: 0
  DS1   alarms   : None
  DS3   alarms   : None
  DS1   defects  : None
  DS3   defects  : None

  Logical interface ds-0/0/0:0:0.0 (Index 5) (SNMP ifIndex 4299)
    Flags: Point-To-Point SNMP-Traps Encapsulation: PPP
    Protocol inet, MTU: 1500
```

```
Flags: None
Addresses, Flags: Is-Preferred Is-Primary
  Destination: 18.18.18.1, Local: 18.18.18.2
```