Understanding the show controllers e1 Command

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Introduction

The **show controllers e1** command displays the controller state that is specific to controller hardware. The information it displays is generally useful for diagnostic tasks.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Sample Output

In order to explain the information generated when we use the **show controllers e1 command**, let's look at some sample output:

```
Bru#show controllers e1
E1 0 is up.
  Applique type is Channelized E1 - balanced
  No alarms detected.
  Version info of Slot 0:  HW: 2, Firmware: 4, PLD Rev: 2
Manufacture Cookie is not programmed.
Framing is CRC4, Line Code is HDB3, Clock Source is Line Primary.
Data in current interval (251 seconds elapsed):
  0 Line Code Violations, 0 Path Code Violations
  0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
  0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
Total Data (last 24 hours)
  0 Line Code Violations, 0 Path Code Violations,
  0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins,
  0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
```

```
        E1 1 is down.
          Applique type is Channelized E1 - balanced
          Transmitter is sending remote alarm.
          Receiver has loss of signal.
          Version info of Slot 0:  HW: 2, Firmware: 4, PLD Rev: 2
    Manufacture Cookie is not programmed.
    Framing is CRC4, Line Code is HDB3, Clock Source is Line Secondary.
     Data in current interval (200 seconds elapsed):
       0 Line Code Violations, 0 Path Code Violations
       0 Slip Secs, 200 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
       0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 200 Unavail Secs
    Total Data (last 24 hours)
       0 Line Code Violations, 0 Path Code Violations,
       0 Slip Secs, 86400 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins,
       0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 86400 Unavail Secs

        E1 2 is administratively down.
        Applique type is Channelized E1 - balanced
        Transmitter is sending remote alarm.
        Receiver has loss of signal.
        Version info of Slot 0:  HW: 2, Firmware: 4, PLD Rev: 2

        Manufacture Cookie is not programmed.

        Framing is CRC4, Line Code is HDB3, Clock Source is Internal.
        Data in current interval (249 seconds elapsed):
          0 Line Code Violations, 0 Path Code Violations
          0 Slip Secs, 249 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
          0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 249 Unavail Secs
        Total Data (last 24 hours)
          0 Line Code Violations, 0 Path Code Violations,
          0 Slip Secs, 86400 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins,
          0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 86400 Unavail Secs
```

Field Definitions

Let's look at what the data shown in this output means. Each field and its definition is explained in the table below:

Field	Description
E1 0 is up	Shows that the E1 controller 0 is operating. The controller's state can be up, down, or administratively down. Loopback conditions are shown as locally looped or remotely looped.
Applique Type	Shows the hardware applique type and indicates whether it is balanced or unbalanced.
Framing	Shows the current framing type. The default framing for E1 is cyclic redundancy check 4 (CRC4).
Line Code	Shows the current line code. The default line coding for E1 is HDB3.
No alarms detected	Any alarms detected by the controller are displayed here. The possible alarms are: • Transmitter is sending remote alarm.

	• Transmitter is sending alarm indication signal (AIS). • Receiver has loss of signal. • Receiver is getting AIS. • Receiver has loss of frame. • Receiver has remote alarm. • Receiver has no alarms.
Data in current interval (251 seconds elapsed)	Shows the current accumulation period, which rolls into a 24 hour accumulation every 15 minutes. The accumulation period is from one to 900 seconds. The oldest 15–minute period falls off the back of the 24–hour accumulation buffer.
Line Code Violations	Indicates the occurrence of either a Bipolar Violation (BPV) or Excessive Zeros (EXZ) error event.
Path Code Violations	Indicates a frame synchronization bit error in the D4 and E1–no CRC formats, or a CRC error in the Extended Superframe (ESF) and E1–CRC formats.
Slip secs	Indicates the replication or deletion of the payload bits of a domestic trunk interface (DS1) frame. A slip might happen when there is a difference between the timing of a synchronous receiving terminal and the received signal.
Fr loss secs	Indicates the number of seconds an Out of Frame (OOF) error is detected.
Line Err secs	Line Errored Seconds (LES) is a second in which one or more Line Code Violation errors are detected.
Degraded mins	A degraded minute is one in which the estimated error rate exceeds 1E–6 but does not exceed 1E–3.
Errored secs	In ESF and E1 CRC links, an errored second is a second in which one of the following defects is detected: • One or more Path Code Violations. • One or more Controlled Slip events. For SF and E1 no–CRC links, the presence of Bipolar Violations also triggers an errored second.
Bursty Err secs	A second with more than one but fewer than 320 Path Coding Violation errors, no Severely Errored Frame defects and no detected incoming AIS defects. Controlled slips are not included in this parameter.

Severly Err secs	For ESF signals, this is a second in which one of the following defects is detected: • 320 or more Path Code Violation errors. • One or more Out of Frame defects. • An AIS defect. For E1−CRC signals, a second with one of the following errors: • 832 or more Path Code Violation errors. • One or more Out of Frame defects. For E1−nonCRC signals, this is a second with 2048 Line Code Violations or more. For D4 signals, this means a count of 1−second intervals with Framing Errors, or an Out of Frame defect, or 1544 Line Code Violations
Unavail Secs	A count of the total number of seconds on the interface. This field is calculated by counting the number of seconds that the interface is unavailable.

Related Information

- **E1 Troubleshooting**
- **Technical Support − Cisco Systems**