Environmental Monitoring and PoE Management

The Cisco 1100 Terminal Gateway have hardware and software features that periodically monitor the router's environment. This chapter provides information on the environmental monitoring features on your router that allow you to monitor critical events and generate statistical reports on the status of various router components. This chapter includes the following sections:

Environmental Monitoring

The Cisco 1100 Terminal Gateway provides a robust environment-monitoring system with several sensors that monitor the system temperatures. Microprocessors generate interrupts to the HOST CPU for critical events and generate a periodic status and statistics report. The following are some of the key functions of the environmental monitoring system:

- Monitoring temperature of CPUs, motherboard, and midplane
- Monitoring fan speed
- Recording abnormal events and generating notifications
- Monitoring Simple Network Management Protocol (SNMP) traps
- Generating and collecting Onboard Failure Logging (OBFL) data
- Sending call home event notifications
- Logging system error messages
- Displaying present settings and status

Environmental Monitoring and Reporting Functions

Monitoring and reporting functions allow you to maintain normal system operation by identifying and resolving adverse conditions prior to loss of operation.

Environmental Monitoring Functions

Environmental monitoring functions use sensors to monitor the temperature of the cooling air as it moves through the chassis.

The local power supplies provide the ability to monitor:

- Input and output current
- Output voltage
- Input and output power
- Temperature
- Fan speed

The router is expected to meet the following environmental operating conditions:

- Operating Temperature Nominal—32°F to 104°F (0°C to 40°C)
- Operating Humidity Nominal—10% to 85% RH noncondensing
- Operating Humidity Short Term—10% to 85% RH noncondensing
- Operating Altitude—Sea level 0 ft to 10,000 ft (0 to 3000 m)
- AC Input Range—85 to 264 VAC

In addition, each power supply monitors its internal temperature and voltage. A power supply is either within tolerance (normal) or out of tolerance (critical). If an internal power supply's temperature or voltage reaches a critical level, the power supply shuts down without any interaction with the system processor.

The following table displays the levels of status conditions used by the environmental monitoring system.

Table 1: Levels of Status Conditions Used by the Environmental Monitoring System

Status Level	Description
Normal	All monitored parameters are within normal tolerance.
Warning	The system has exceeded a specified threshold. The system continues to operate, but operator action is recommended to bring the system back to a normal state.
Critical	An out-of-tolerance temperature or voltage condition exists. Although the system continues to operate, it is approaching shutdown. Immediate operator action is required.

The environmental monitoring system sends system messages to the console, for example, when the conditions described here are met:

Fan Failure

When the system power is on, all the fans should be operational. Although the system continues to operate if a fan fails, the system displays the following message:

```
%IOSXE_PEM-3-FANFAIL: The fan in slot 2/0 is encountering a failure condition
```

Sensors Out of Range

When sensors are out of range, the system displays the following message:

```
%ENVIRONMENTAL-1-ALERT: V: 1.0v PCH, Location: R0, State: Warning, Reading: 1102 mV

%ENVIRONMENTAL-1-ALERT: V: PEM Out, Location: P1, State: Warning, Reading: 0 mV

%ENVIRONMENTAL-1-ALERT: Temp: Temp 3, Location R0, State : Warning, Reading : 90C
```

Fan Tray (Slot P2) Removed

When the fan tray for slot P2 is removed, the system displays the following message:

```
%IOSXE_PEM-6-REMPEM_FM: PEM/FM slot P2 removed
```

Fan Tray (Slot P2) Reinserted

When the fan tray for slot P2 is reinserted, the system displays the following message:

```
%IOSXE_PEM-6-INSPEM_FM: PEM/FM slot P2 inserted
```

Fan Tray (Slot 2) is Working Properly

When the fan tray for slot 2 is functioning properly, the system displays the following message:

```
%IOSXE_PEM-6-PEMOK: The PEM in slot P2 is functioning properly
```

Fan 0 in Slot 2 (Fan Tray) is Not Working

When Fan 0 in the fan tray of slot 2 is not functioning properly, the system displays the following message:

```
%IOSXE_PEM-3-FANFAIL: The fan in slot 2/0 is encountering a failure condition
```

Fan 0 in Slot 2 (Fan Tray) is Working Properly

When Fan 0 in the fan tray of slot 2 is functioning properly, the system displays the following message:

```
%IOSXE_PEM-6-FANOK: The fan in slot 2/0 is functioning properly
```

Main Power Supply in Slot 1 is Powered Off

When the main power supply in slot 1 is powered off, the system displays the following message:

```
%IOSXE_PEM-3-PEMFAIL: The PEM in slot 1 is switched off or encountering a
failure condition.
```

Main Power Supply is Inserted in Slot 1

When the main power supply is inserted in slot 1, the system displays the following messages:

```
%IOSXE_PEM-6-INSPEM_FM: PEM/FM slot P1 inserted
%IOSXE_PEM-6-PEMOK: The PEM in slot 1 is functioning properly
```

Temperature and Voltage Exceed Max/Min Thresholds

The following example shows the warning messages indicating the maximum and minimum thresholds of the temperature or voltage:

```
Warnings :
--------
For all the temperature sensors (name starting with “Temp:”) above,
```

```
the critical warning threshold is 100C (100C and higher)
the warning threshold is 80C (range from 80C to 99C)
the low warning threshold is 1C (range from -inf to 1C).

For all voltage sensors (names starting with "V:"),
the high warning threshold starts at that voltage +10%. (voltage + 10% is warning)
the low warning threshold starts at the voltage -10%. (voltage - 10% is warning)
```

Environmental Reporting Functions

You can retrieve and display environmental status reports using the following commands:

- **debug environment**
- **debug platform software cman env monitor polling**
- **debug ilpower**
- **debug power** [**inline** | **main**]
- **show diag all eeprom**
- **show diag slot R0 eeprom detail**
- **show environment**
- **show environment all**
- **show inventory**
- **show platform all**
- **show platform diag**
- **show platform software status control-processor**
- **show version**
- **show power**
- **show power inline**

These commands show the current values of parameters such as temperature and voltage.

The environmental monitoring system updates the values of these parameters every 60 seconds. Brief examples of these commands are shown below:

debug environment: Example

```
Router# debug environment location P0
Environmental sensor Temp: Temp 1 P0 debugging is on
Environmental sensor Temp: Temp 2 P0 debugging is on
Environmental sensor Temp: Temp 3 P0 debugging is on
Environmental sensor V: PEM Out P0 debugging is on
Environmental sensor I: PEM In P0 debugging is on
Environmental sensor I: PEM Out P0 debugging is on
Environmental sensor W: In pwr P0 debugging is on
Environmental sensor W: Out pwr P0 debugging is on
Environmental sensor RPM: fan0 P0 debugging is on
```

```
*Sep 12 00:45:13.956: Sensor: Temp: Temp 1 P0, In queue 1
*Sep 12 00:45:13.956: State=Normal Reading=29
*Sep 12 00:45:13.956: Rotation count=0 Poll period=60000
*Sep 12 00:45:13.956: Sensor: Temp: Temp 1 P0 State=Normal Reading=29
*Sep 12 00:45:13.956: Inserting into queue 1 on spoke 173.
*Sep 12 00:45:13.956: Rotation count=60 Displacement=0
*Sep 12 00:45:13.956: Sensor: Temp: Temp 2 P0, In queue 1
*Sep 12 00:45:13.956: State=Normal Reading=33
*Sep 12 00:45:13.956: Rotation count=0 Poll period=60000
*Sep 12 00:45:13.956: Sensor: Temp: Temp 2 P0 State=Normal Reading=34
*Sep 12 00:45:13.956: Inserting into queue 1 on spoke 173.
*Sep 12 00:45:13.956: Rotation count=60 Displacement=0
*Sep 12 00:45:13.956: Sensor: Temp: Temp 3 P0, In queue 1
*Sep 12 00:45:13.956: State=Normal Reading=34
*Sep 12 00:45:13.956: Rotation count=0 Poll period=60000
*Sep 12 00:45:13.956: Sensor: Temp: Temp 3 P0 State=Normal Reading=35
*Sep 12 00:45:13.956: Inserting into queue 1 on spoke 173.
*Sep 12 00:45:13.956: Rotation count=60 Displacement=0
*Sep 12 00:45:13.956: Sensor: V: PEM Out P0, In queue 1
*Sep 12 00:45:13.956: State=Normal Reading=12709
*Sep 12 00:45:13.956: Rotation count=0 Poll period=60000
*Sep 12 00:45:13.956: Sensor: V: PEM Out P0 State=Normal Reading=12724
*Sep 12 00:45:13.956: Inserting into queue 1 on spoke 173.
*Sep 12 00:45:13.956: Rotation count=60 Displacement=0
*Sep 12 00:45:13.956: Sensor: I: PEM In P0, In queue 1
*Sep 12 00:45:13.956: State=Normal Reading=1
*Sep 12 00:45:13.956: Rotation count=0 Poll period=60000
*Sep 12 00:45:13.956: Sensor: I: PEM In P0 State=Normal Reading=1
*Sep 12 00:45:13.956: Inserting into queue 1 on spoke 173.
*Sep 12 00:45:13.956: Rotation count=60 Displacement=0
*Sep 12 00:45:13.956: Sensor: I: PEM Out P0, In queue 1
*Sep 12 00:45:13.956: State=Normal Reading=4
*Sep 12 00:45:13.956: Rotation count=0 Poll period=60000
*Sep 12 00:45:13.956: Sensor: I: PEM Out P0 State=Normal Reading=4
*Sep 12 00:45:13.956: Inserting into queue 1 on spoke 173.
*Sep 12 00:45:13.956: Rotation count=60 Displacement=0
*Sep 12 00:45:13.956: Sensor: W: In pwr P0, In queue 1
*Sep 12 00:45:13.956: State=Normal Reading=92
*Sep 12 00:45:13.956: Rotation count=0 Poll period=60000
*Sep 12 00:45:13.956: Sensor: W: In pwr P0 State=Normal Reading=92
*Sep 12 00:45:13.956: Inserting into queue 1 on spoke 173.
*Sep 12 00:45:13.956: Rotation count=60 Displacement=0
*Sep 12 00:45:13.956: Sensor: W: Out pwr P0, In queue 1
*Sep 12 00:45:13.956: State=Normal Reading=46
*Sep 12 00:45:13.956: Rotation count=0 Poll period=60000
*Sep 12 00:45:13.956: Sensor: W: Out pwr P0 State=Normal Reading=46
*Sep 12 00:45:13.956: Inserting into queue 1 on spoke 173.
*Sep 12 00:45:13.956: Rotation count=60 Displacement=0
*Sep 12 00:45:13.956: Sensor: RPM: fan0 P0, In queue 1
*Sep 12 00:45:13.956: State=Normal Reading=3192
*Sep 12 00:45:13.956: Rotation count=0 Poll period=60000
*Sep 12 00:45:13.956: Sensor: RPM: fan0 P0 State=Normal Reading=3180
*Sep 12 00:45:13.956: Inserting into queue 1 on spoke 173.
*Sep 12 00:45:13.956: Rotation count=60 Displacement=0
```

debug platform software cman env monitor polling: Example

```
Router# debug platform software cman env monitor polling
platform software cman env monitor polling debugging is on
Router#
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback Temp: Temp 1, P0, 29
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback Temp: Temp 2, P0, 34
```

```
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback Temp: Temp 3, P0, 35
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback V: PEM Out, P0, 12709
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback I: PEM In, P0, 1
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback I: PEM Out, P0, 4
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback W: In pwr, P0, 93
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback W: Out pwr, P0, 48
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback RPM: fan0, P0, 3192
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback Temp: Temp 1, P1, 33
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback Temp: Temp 2, P1, 32
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback Temp: Temp 3, P1, 36
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback V: PEM Out, P1, 12666
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback I: PEM In, P1, 1
*Sep 12 00:46:13.962: IOS-RP-ENVMON: sensor READ callback I: PEM Out, P1, 4
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback W: In pwr, P1, 55
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback W: Out pwr, P1, 46
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback RPM: fan0, P1, 2892
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback RPM: fan0, P2, 4894
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback RPM: fan1, P2, 4790
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback RPM: fan2, P2, 5025
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback RPM: fan3, P2, 5001
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback W: fan pwr, P2, 8
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback Temp: Inlet 1, R0, 25
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback Temp: Inlet 2, R0, 28
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback Temp: Outlet 1, R0, 30
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback Temp: Outlet 2, R0, 35
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 12v, R0, 12735
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 5v, R0, 5125
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 3.3v, R0, 3352
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.05v, R0, 1052
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 2.5v, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.8v, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.2v, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.15v, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.1v, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.0v, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.8v PCH, R0, 1787
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.5v PCH, R0, 1516
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.5v CPUC, R0, 1526
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.5v CPUI, R0, 1529
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.0v PCH, R0, 1009
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 1.5v QLM, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: VCore, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: VTT, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 0.75v CPUI, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback V: 0.75v CPUC, R0, 0
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback I: 12v, R0, 7
*Sep 12 00:46:13.963: IOS-RP-ENVMON: sensor READ callback W: pwr, R0, 81
```

debug ilpower: Example

```
Router# debug ilpower ?
  cdp         ILPOWER CDP messages
  controller  ILPOWER controller
  event       ILPOWER event
  ha          ILPOWER High-Availability
  port        ILPOWER port management
  powerman    ILPOWER powerman
  registries  ILPOWER registries
  scp         ILPOWER SCP messages
  upoe        ILPOWER upoe
```

debug power [inline|main]: Example

In this example, there is one 1000W power supply and one 450W power supply. Inline and main power output is shown.

```
Router# debug power ?
  inline  ILPM inline power related
  main    Main power related
  <cr>    <cr>
Router# debug power
POWER all debug debugging is on

Router# show debugging | include POWER
POWER:
POWER main debugging is on
POWER inline debugging is on
Router#
..
*Jan 21 01:29:40.786: %ENVIRONMENTAL-6-NOTICE: V: PEM Out, Location: P1, State: Warning,
Reading: 0 mV
*Jan 21 01:29:43.968: %IOSXE_PEM-6-PEMOK: The PEM in slot P1 is functioning properly
*Jan 21 01:29:43.968: %PLATFORM_POWER-6-MODEMATCH: Main power is in Boost mode
*Jan 21 01:29:43.968: Power M: Received Msg for 12V/Main, total power 1450, Run same as cfg
 Yes
*Jan 21 01:29:43.968: Power M: Received Msg for POE/ILPM, total power 500, Run same as cfg
 No
*Jan 21 01:29:43.968: Power I: Updating pool power is 500 watts
*Jan 21 01:29:43.968: Power I: Intimating modules of total power 500 watts
*Jan 21 01:29:46.488: Power M: Received Msg for 12V/Main, total power 1450, Run same as cfg
 Yes
*Jan 21 01:29:46.488: Power M: Received Msg for POE/ILPM, total power 500, Run same as cfg
 No
*Jan 21 01:29:46.488: Power I: Updating pool power is 500 watts
*Jan 21 01:29:46.488: Power I: Intimating modules of total power 500 watts
Router#
```

show diag all eeprom: Example

```
Router# show diag all eepromMIDPLANE EEPROM data:

        Product Identifier (PID) : C1100TG-1N24P32A
        Version Identifier (VID) : V01
        PCB Serial Number        : PSZ23461DXT
        Hardware Revision        : 1.0
        CLEI Code                : TBD
Slot R0 EEPROM data:

        Product Identifier (PID) : C1100TG-1N24P32A
        Version Identifier (VID) : V01
        PCB Serial Number        : PSZ23461DXT
        Hardware Revision        : 1.0
        CLEI Code                : TBD
Slot F0 EEPROM data:

        Product Identifier (PID) : C1100TG-1N24P32A
        Version Identifier (VID) : V01
        PCB Serial Number        : PSZ23461DXT
        Hardware Revision        : 1.0
        CLEI Code                : TBD
Slot 0 EEPROM data:
```

```
        Product Identifier (PID) : C1100TG-1N24P32A
        Version Identifier (VID) : V01
        PCB Serial Number        : PSZ23461DXT
        Hardware Revision        : 1.0
        CLEI Code                : TBD
SPA EEPROM data for subslot 0/0:

        Product Identifier (PID) : C1100TG-2x1GE
        Version Identifier (VID) : V01
        PCB Serial Number        :
        Top Assy. Part Number    : 68-2236-01
        Top Assy. Revision       : A0
        Hardware Revision        : 2.2
        CLEI Code                : CNUIAHSAAA
SPA EEPROM data for subslot 0/1:

        Product Identifier (PID) : C1100TG-A-48
        Version Identifier (VID) : V01
        PCB Serial Number        :
        Top Assy. Part Number    : 68-2236-01
        Top Assy. Revision       : A0
        Hardware Revision        : 2.2
        CLEI Code                : CNUIAHSAAA
SPA EEPROM data for subslot 0/2:

        Product Identifier (PID) : C1100TG-ES-24
        Version Identifier (VID) : V01
        PCB Serial Number        :
        Top Assy. Part Number    : 68-2236-01
        Top Assy. Revision       : A0
        Hardware Revision        : 2.2
        CLEI Code                : CNUIAHSAAA
SPA EEPROM data for subslot 0/3:

        Product Identifier (PID) : NIM-16A
        Version Identifier (VID) : V02
        PCB Serial Number        : DNI230206GP
        Hardware Revision        : 1.0
        CLEI Code                : IPUCBNSBAB
SPA EEPROM data for subslot 0/4 is not available

SPA EEPROM data for subslot 0/5 is not available
```

show environment: Example

In this example, note the output for the slots POE0 and POE1.

```
Router# show environment

Number of Critical alarms: 0
Number of Major alarms: 0
Number of Minor alarms: 0

Slot Sensor Current State Reading
---- ------ ------------- -------
P0 Temp: Temp 1 Normal 28 Celsius
P0 Temp: Temp 2 Normal 43 Celsius
P0 Temp: Temp 3 Normal 44 Celsius
P0 V: PEM Out Normal 12404 mV
P0 I: PEM In Normal 1 A
P0 I: PEM Out Normal 7 A
P0 P: In pwr Normal 106 Watts
```

```
P0 P: Out pwr Normal 87 Watts
P0 RPM: fan0 Normal 2952 RPM
P2 RPM: fan0 Normal 4421 RPM
P2 RPM: fan1 Normal 4394 RPM
P2 RPM: fan2 Normal 4433 RPM
P2 RPM: fan3 Normal 4410 RPM
P2 P: pwr Normal 6 Watts
POE0 Temp: Temp 1 Normal 44 Celsius
POE0 I: 12v In Normal 2 A
POE0 V: 12v In Normal 12473 mV
POE0 P: In pwr Normal 25 Watts
POE1 Temp: Temp 1 Normal 40 Celsius
POE1 I: 12v In Normal 2 mA
POE1 V: 12v In Normal 12473 mV
POE1 P: In pwr Normal 20 Watts
R0 Temp: Inlet 1 Normal 24 Celsius
R0 Temp: Inlet 2 Normal 26 Celsius
R0 Temp: Outlet 1 Normal 33 Celsius
R0 Temp: Outlet 2 Normal 32 Celsius
R0 Temp: core-B Normal 43 Celsius
R0 Temp: core-C Normal 38 Celsius
R0 V: 12v Normal 12355 mV
R0 V: 5v Normal 5090 mV
R0 V: 3.3v Normal 3331 mV
R0 V: 3.0v Normal 2998 mV
R0 V: 2.5v Normal 2436 mV
R0 V: 1.05v Normal 1049 mV
R0 V: 1.8v Normal 1798 mV
R0 V: 1.2v Normal 1234 mV
R0 V: Vcore-C Normal 1155 mV
R0 V: 1.1v Normal 1104 mV
R0 V: 1.0v Normal 1012 mV
R0 V: 1.8v-A Normal 1782 mV
R0 V: 1.5v-A Normal 1505 mV
R0 V: 1.5v-C1 Normal 1516 mV
R0 V: 1.5v-B Normal 1511 mV
R0 V: Vcore-A Normal 1099 mV
R0 V: 1.5v-C2 Normal 1492 mV
R0 V: Vcore-B1 Normal 891 mV
R0 V: Vcore-B2 Normal 904 mV
R0 V: 0.75v-B Normal 754 mV
R0 V: 0.75v-C Normal 759 mV
R0 I: 12v Normal 8 A
R0 P: pwr Normal 86 Watts
0/1 P: pwr Normal 5 Watts
P1 Temp: Temp 1 Normal 30 Celsius
P1 Temp: Temp 2 Normal 38 Celsius
P1 Temp: Temp 3 Normal 39 Celsius
P1 V: PEM Out Normal 12404 mV
P1 I: PEM In Normal 1 A
P1 I: PEM Out Normal 6 A
P1 P: In pwr Normal 86 Watts
P1 P: Out pwr Normal 68 Watts
P1 RPM: fan0 Normal 2940 RPM
```

show environment all: Example

```
Router# show environment all
Sensor List:  Environmental Monitoring
 Sensor           Location          State             Reading
 RPM: fan1        P2                Normal            6660 RPM
```

```
RPM: fan2         P2                Normal            6600 RPM
RPM: fan3         P2                Normal            6600 RPM
Temp: Inlet 1     R0                Normal            26 Celsius
Temp: Outlet 1    R0                Normal            32 Celsius
Temp: CPU         R0                Normal            35 Celsius
V: 12v            R0                Normal            11763 mV
V: 5v             R0                Normal            5058 mV
V: 3.3v_MCU       R0                Normal            3356 mV
V: 3.3v_STBY      R0                Normal            3303 mV
V: 2.5v           R0                Normal            2493 mV
V: 1.8v_STBY      R0                Normal            1808 mV
V: 1.8v_FPGA      R0                Normal            1795 mV
V: 1.24v          R0                Normal            1246 mV
V: 1.2v_VDDQ      R0                Normal            1211 mV
V: 1.2v_MGT       R0                Normal            1196 mV
V: 1.2v_DB        R0                Normal            1208 mV
V: 1.05v          R0                Normal            1046 mV
V: 1.02v_ETH      R0                Normal            1026 mV
V: 1.0v_PVNN      R0                Normal            831 mV
V: 1.0v_PVCC      R0                Normal            994 mV
V: 1.0v_PVCCP     R0                Normal            998 mV
V: 1.0v_FPGA      R0                Normal            997 mV
V: 1.0v_MGT       R0                Normal            1010 mV
V: 1.0v_DB        R0                Normal            1007 mV
V: 0.6v           R0                Normal            605 mV
```

show inventory: Example

```
Router# show inventory

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
INFO: Please use "show license UDI" to get serial number for licensing.
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

NAME: "Chassis", DESCR: "Cisco C1100TG-1N24P32A terminal server"
PID: C1100TG-1N24P32A  , VID: V01  , SN: PSZ23461E0E

NAME: "Fan Tray", DESCR: "Cisco C1100TG-1N24P32A, C1100TGX-1N24P32A Fan Assembly"
PID: C1100TG-FANASSY2  , VID:      , SN:

NAME: "module 0", DESCR: "Cisco C1100TG-1N24P32A Built-In NIM controller"
PID: C1100TG-1N24P32A  , VID:      , SN:

NAME: "NIM subslot 0/1", DESCR: "48 ports Async Lite Serial"
PID: C1100TG-A-48      , VID: V01  , SN:

NAME: "NIM subslot 0/2", DESCR: "C1100TG-ES-24"
PID: C1100TG-ES-24     , VID: V01  , SN:

NAME: "NIM subslot 0/3", DESCR: "16 ports Async Serial NIM"
PID: NIM-16A           , VID: V02  , SN: DNI230206GP

NAME: "NIM subslot 0/0", DESCR: "Front Panel 2 ports Gigabitethernet Module"
PID: C1100TG-2x1GE     , VID: V01  , SN:

NAME: "module R0", DESCR: "Cisco C1100TG-1N24P32A Route Processor"
PID: C1100TG-1N24P32A  , VID: V01  , SN: PSZ23461DXT

NAME: "module F0", DESCR: "Cisco C1100TG-1N24P32A Forwarding Processor"
PID: C1100TG-1N24P32A  , VID:      , SN:
```

show platform: Example

```
Router# show platform
Chassis type: C1100TG-1N24P32A

Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
0         C1100TG-1N24P32A    ok                    1w0d
 0/0      C1100TG-2x1GE       ok                    1w0d
 0/1      C1100TG-A-48        ok                    1w0d
 0/2      C1100TG-ES-24       ok                    1w0d
 0/3      NIM-16A             ok                    1w0d
R0        C1100TG-1N24P32A    ok, active            1w0d
F0        C1100TG-1N24P32A    ok, active            1w0d
P0        PWR-12V             empty                 never
P2        C1100TG-FANASSY     ok                    1w0d

Slot      CPLD Version        Firmware Version
--------- ------------------- ---------------------------------------
0         2004172A            17.2.1, 1913f73a
R0        2004172A            17.2.1, 1913f73a
F0        2004172A            17.2.1, 1913f73a
```

show platform diag: Example

```
Router# show platform diag
Chassis type: C1100TG-1N24P32A

Slot: 0, C1100TG-1N24P32A
  Running state               : ok
  Internal state              : online
  Internal operational state  : ok
  Physical insert detect time : 00:00:45 (1w0d ago)
  Software declared up time   : 00:01:28 (1w0d ago)
  CPLD version                : 2004172A
  Firmware version            : 17.2.1, 1913f73a

Sub-slot: 0/0, C1100TG-2x1GE
  Operational status          : ok
  Internal state              : inserted
  Physical insert detect time : 00:02:09 (1w0d ago)
  Logical insert detect time  : 00:02:09 (1w0d ago)

Sub-slot: 0/1, C1100TG-A-48
  Operational status          : ok
  Internal state              : inserted
  Physical insert detect time : 00:02:09 (1w0d ago)
  Logical insert detect time  : 00:02:09 (1w0d ago)

Sub-slot: 0/2, C1100TG-ES-24
  Operational status          : ok
  Internal state              : inserted
  Physical insert detect time : 00:02:09 (1w0d ago)
  Logical insert detect time  : 00:02:09 (1w0d ago)

Sub-slot: 0/3, NIM-16A
  Operational status          : ok
  Internal state              : inserted
  Physical insert detect time : 00:04:12 (1w0d ago)
```

```
  Logical insert detect time  : 00:04:12 (1w0d ago)

Slot: R0, C1100TG-1N24P32A
  Running state               : ok, active
  Internal state              : online
  Internal operational state  : ok
  Physical insert detect time : 00:00:45 (1w0d ago)
  Software declared up time   : 00:00:45 (1w0d ago)
  CPLD version                : 2004172A
  Firmware version            : 17.2.1, 1913f73a

Slot: F0, C1100TG-1N24P32A
  Running state               : ok, active
  Internal state              : online
  Internal operational state  : ok
  Physical insert detect time : 00:00:45 (1w0d ago)
  Software declared up time   : 00:01:24 (1w0d ago)
  Hardware ready signal time  : 00:01:17 (1w0d ago)
  Packet ready signal time    : 00:01:32 (1w0d ago)
  CPLD version                : 2004172A
  Firmware version            : 17.2.1, 1913f73a

Slot: P0, PWR-12V
  State                       : empty
  Physical insert detect time : 00:00:00 (never ago)

Slot: P2, C1100TG-FANASSY
  State                       : ok
  Physical insert detect time : 00:01:15 (1w0d ago)
```

show platform software status control-processor: Example

```
Router# show platform software status control-processor
RP0: online, statistics updated 10 seconds ago
Load Average: healthy
  1-Min: 0.53, status: healthy, under 5.00
  5-Min: 0.90, status: healthy, under 5.00
  15-Min: 0.87, status: healthy, under 5.00
Memory (kb): healthy
  Total: 3884836
  Used: 1976928 (51%), status: healthy
  Free: 1907908 (49%)
  Committed: 3165956 (81%), under 90%
Per-core Statistics
CPU0: CPU Utilization (percentage of time spent)
  User:  2.10, System:  2.20, Nice:  0.00, Idle: 95.69
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU1: CPU Utilization (percentage of time spent)
  User:  2.80, System:  2.60, Nice:  0.00, Idle: 94.50
  IRQ:  0.00, SIRQ:  0.10, IOwait:  0.00
CPU2: CPU Utilization (percentage of time spent)
  User:  1.90, System:  2.10, Nice:  0.00, Idle: 96.00
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU3: CPU Utilization (percentage of time spent)
  User: 10.12, System:  0.60, Nice:  0.00, Idle: 89.27
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
```

show diag slot R0 eeprom detail: Example

```
Router# show diag slot R0 eeprom detail
Slot R0 EEPROM data:
```

```
EEPROM version           : 4
Compatible Type          : 0xFF
PCB Serial Number        : PSZ23461DXT
Controller Type          : 3500
Hardware Revision        : 1.0
Top Assy. Part Number    : 74-122798-03
Board Revision           : 02
Deviation Number         : 0
Fab Version              : 03
Product Identifier (PID) : C1100TG-1N24P32A
Version Identifier (VID) : V01
CLEI Code                : TBD
Processor type           : D0
Chassis Serial Number    : PSZ23461E0E
Chassis MAC Address      : 70c9.c686.2f00
MAC Address block size   : 64
Manufacturing Test Data  : 00 00 00 00 00 00 00 00
Asset ID                 :
```

show version: Example

```
Router# show version

Cisco IOS XE Software, Version BLD_POLARIS_DEV_LATEST_20200506_055739
Cisco IOS Software [Amsterdam], ISR Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Experimental
 Version 17.4.20200506:061234
[S2C-build-polaris_dev-112576-/nobackup/mcpre/BLD-BLD_POLARIS_DEV_LATEST_20200506_055739
121]
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Compiled Wed 06-May-20 06:31 by mcpre


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documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.


ROM: (c)

RSBL uptime is 1 week, 23 hours, 48 minutes
Uptime for this control processor is 1 week, 23 hours, 50 minutes
System returned to ROM by Reload Command
System image file is
"bootflash:c1100tg-universalk9.BLD_POLARIS_DEV_LATEST_20200506_055739.SSA.bin"
Last reload reason: Reload Command



This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
```

```
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.


Suite License Information for Module:'esg'

------------------------------------------------------------------------------
Suite                 Suite Current         Type           Suite Next reboot
------------------------------------------------------------------------------

Technology Package License Information:

------------------------------------------------------------------
Technology    Technology-package           Technology-package
              Current       Type           Next reboot
------------------------------------------------------------------
appxk9           None             Smart License    None
securityk9       None             Smart License    None
ipbase           ipbasek9         Smart License    ipbasek9

The current throughput level is 500000 kbps


Smart Licensing Status: UNREGISTERED/No Licenses in Use

cisco C1100TG-1N24P32A (1RU) processor with 1383987K/6147K bytes of memory.
Processor board ID PSZ23461E0E
Router operating mode: Autonomous
1 Virtual Ethernet interface
26 Gigabit Ethernet interfaces
64 terminal lines
8192K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
6565887K bytes of flash memory at bootflash:.

Configuration register is 0x2102
```