

Environmental Monitoring and PoE Management

The Cisco 8300 Series Secure Routers 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 these sections:

- Environmental monitoring, on page 1
- Environmental monitor and report functions, on page 1
- Configure power supply mode, on page 28

Environmental monitoring

The router 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. 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 monitor and report 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, on page 2
- Environmental reporting functions, on page 4

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 device 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 this 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 this 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 this 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 this 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 this 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 this 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 this 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 this 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 these 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 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 these 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:

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
```

```
*Jul  8 21:49:23.292 PDT:     Sensor: Temp: Temp 1 P0, In queue 1
*Jul  8 21:49:23.292 PDT:     State=Normal  Reading=35
*Jul  8 21:49:23.292 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.292 PDT:     Sensor: Temp: Temp 1 P0  State=Normal Reading=35
*Jul  8 21:49:23.292 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.292 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:23.292 PDT:     Sensor: Temp: Temp 2 P0, In queue 1
*Jul  8 21:49:23.292 PDT:     State=Normal  Reading=40
*Jul  8 21:49:23.292 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.292 PDT:     Sensor: Temp: Temp 2 P0  State=Normal Reading=40
*Jul  8 21:49:23.292 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.292 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:23.292 PDT:     Sensor: Temp: Temp 3 P0, In queue 1
*Jul  8 21:49:23.292 PDT:     State=Normal  Reading=44
*Jul  8 21:49:23.292 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.292 PDT:     Sensor: Temp: Temp 3 P0  State=Normal Reading=44
*Jul  8 21:49:23.292 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.292 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:23.292 PDT:     Sensor: V: PEM In P0, In queue 1
*Jul  8 21:49:23.292 PDT:     State=Normal  Reading=118501
*Jul  8 21:49:23.292 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.293 PDT:     Sensor: V: PEM In P0  State=Normal Reading=118501
*Jul  8 21:49:23.293 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.293 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:23.293 PDT:     Sensor: V: PEM Out P0, In queue 1
*Jul  8 21:49:23.293 PDT:     State=Normal  Reading=12000
*Jul  8 21:49:23.293 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.293 PDT:     Sensor: V: PEM Out P0  State=Normal Reading=12000
*Jul  8 21:49:23.293 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.293 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:23.293 PDT:     Sensor: I: PEM In P0, In queue 1
*Jul  8 21:49:23.293 PDT:     State=Normal  Reading=820
*Jul  8 21:49:23.293 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.293 PDT:     Sensor: I: PEM In P0  State=Normal Reading=828
*Jul  8 21:49:23.293 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.293 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:23.293 PDT:     Sensor: I: PEM Out P0, In queue 1
*Jul  8 21:49:23.293 PDT:     State=Normal  Reading=7200
*Jul  8 21:49:23.293 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.293 PDT:     Sensor: I: PEM Out P0  State=Normal Reading=7100
*Jul  8 21:49:23.293 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.293 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:23.293 PDT:     Sensor: P: In pwr P0, In queue 1
*Jul  8 21:49:23.293 PDT:     State=Normal  Reading=97
*Jul  8 21:49:23.293 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.293 PDT:     Sensor: P: In pwr P0  State=Normal Reading=98
*Jul  8 21:49:23.293 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.293 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:23.293 PDT:     Sensor: P: Out pwr P0, In queue 1
*Jul  8 21:49:23.293 PDT:     State=Normal  Reading=87
*Jul  8 21:49:23.293 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.293 PDT:     Sensor: P: Out pwr P0  State=Normal Reading=89
*Jul  8 21:49:23.293 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.293 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:23.293 PDT:     Sensor: RPM: fan0 P0, In queue 1
*Jul  8 21:49:23.293 PDT:     State=Normal  Reading=5824
*Jul  8 21:49:23.293 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:23.293 PDT:     Sensor: RPM: fan0 P0  State=Normal Reading=5824
*Jul  8 21:49:23.293 PDT:     Inserting into queue 1 on spoke 189.
*Jul  8 21:49:23.293 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:43.296 PDT:     Sensor: Temp: Temp 1 P0, In queue 1
*Jul  8 21:49:43.296 PDT:     State=Normal  Reading=35
*Jul  8 21:49:43.296 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:43.296 PDT:     Sensor: Temp: Temp 1 P0  State=Normal Reading=35
```

```
*Jul  8 21:49:43.296 PDT:     Inserting into queue 1 on spoke 209.
*Jul  8 21:49:43.296 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:43.296 PDT:     Sensor: Temp: Temp 2 P0, In queue 1
*Jul  8 21:49:43.296 PDT:     State=Normal  Reading=40
*Jul  8 21:49:43.296 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:49:43.296 PDT:     Sensor: Temp: Temp 2 P0  State=Normal Reading=40
*Jul  8 21:49:43.296 PDT:     Inserting into queue 1 on spoke 209.
*Jul  8 21:49:43.296 PDT:     Rotation count=20 Displacement=0
*Jul  8 21:49:43.296 PDT:     Sensor: Temp: Temp 3 P0, In queue 1
*Jul  8 21:49:43.296 PDT:     State=Normal  Reading=44
*Jul  8 21:49:43.296 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:53:43.329 PDT:     State=Normal  Reading=5824
*Jul  8 21:53:43.329 PDT:     Rotation count=0  Poll period=20000
*Jul  8 21:53:43.329 PDT:     Sensor: RPM: fan0 P0  State=Normal Reading=5824
*Jul  8 21:53:43.329 PDT:     Inserting into queue 1 on spoke 149.
*Jul  8 21:53:43.329 PDT:     Rotation count=20 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#
*Jul  8 21:56:23.351 PDT: Sensor: Temp: Temp 1 P0, In queue 1
*Jul  8 21:56:23.351 PDT: State=Normal  Reading=35
*Jul  8 21:56:23.351 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.351 PDT: IOS-RP-ENVMON: sensor READ callback Temp: Temp 1, P0, 35
*Jul  8 21:56:23.351 PDT: Sensor: Temp: Temp 1 P0  State=Normal Reading=35
*Jul  8 21:56:23.351 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.351 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.351 PDT: Sensor: Temp: Temp 2 P0, In queue 1
*Jul  8 21:56:23.351 PDT: State=Normal  Reading=40
*Jul  8 21:56:23.351 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.351 PDT: IOS-RP-ENVMON: sensor READ callback Temp: Temp 2, P0, 40
*Jul  8 21:56:23.351 PDT: Sensor: Temp: Temp 2 P0  State=Normal Reading=40
*Jul  8 21:56:23.351 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.351 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.351 PDT: Sensor: Temp: Temp 3 P0, In queue 1
*Jul  8 21:56:23.351 PDT: State=Normal  Reading=44
*Jul  8 21:56:23.351 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.351 PDT: IOS-RP-ENVMON: sensor READ callback Temp: Temp 3, P0, 44
*Jul  8 21:56:23.351 PDT: Sensor: Temp: Temp 3 P0  State=Normal Reading=44
*Jul  8 21:56:23.351 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.351 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.351 PDT: Sensor: V: PEM In P0, In queue 1
*Jul  8 21:56:23.351 PDT: State=Normal  Reading=118501
*Jul  8 21:56:23.351 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.351 PDT: IOS-RP-ENVMON: sensor READ callback V: PEM In, P0, 118501
*Jul  8 21:56:23.351 PDT: Sensor: V: PEM In P0  State=Normal Reading=118501
*Jul  8 21:56:23.351 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.351 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.351 PDT: Sensor: V: PEM Out P0, In queue 1
*Jul  8 21:56:23.351 PDT: State=Normal  Reading=12100
*Jul  8 21:56:23.351 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.351 PDT: IOS-RP-ENVMON: sensor READ callback V: PEM Out, P0, 12000
*Jul  8 21:56:23.351 PDT: Sensor: V: PEM Out P0  State=Normal Reading=12000
*Jul  8 21:56:23.351 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.351 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.351 PDT: Sensor: I: PEM In P0, In queue 1
*Jul  8 21:56:23.351 PDT: State=Normal  Reading=820
*Jul  8 21:56:23.351 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.351 PDT: IOS-RP-ENVMON: sensor READ callback I: PEM In, P0, 828
*Jul  8 21:56:23.351 PDT: Sensor: I: PEM In P0  State=Normal Reading=828
```

```
*Jul  8 21:56:23.351 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.351 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.351 PDT: Sensor: I: PEM Out P0, In queue 1
*Jul  8 21:56:23.351 PDT: State=Normal  Reading=7200
*Jul  8 21:56:23.351 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.351 PDT: IOS-RP-ENVMON: sensor READ callback I: PEM Out, P0, 7100
*Jul  8 21:56:23.352 PDT: Sensor: I: PEM Out P0  State=Normal Reading=7100
*Jul  8 21:56:23.352 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.352 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.352 PDT: Sensor: P: In pwr P0, In queue 1
*Jul  8 21:56:23.352 PDT: State=Normal  Reading=97
*Jul  8 21:56:23.352 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback P: In pwr, P0, 98
*Jul  8 21:56:23.352 PDT: Sensor: P: In pwr P0  State=Normal Reading=98
*Jul  8 21:56:23.352 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.352 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.352 PDT: Sensor: P: Out pwr P0, In queue 1
*Jul  8 21:56:23.352 PDT: State=Normal  Reading=88
*Jul  8 21:56:23.352 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback P: Out pwr, P0, 88
*Jul  8 21:56:23.352 PDT: Sensor: P: Out pwr P0  State=Normal Reading=88
*Jul  8 21:56:23.352 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.352 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.352 PDT: Sensor: RPM: fan0 P0, In queue 1
*Jul  8 21:56:23.352 PDT: State=Normal  Reading=5888
*Jul  8 21:56:23.352 PDT: Rotation count=0  Poll period=20000
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback RPM: fan0, P0, 5888
*Jul  8 21:56:23.352 PDT: Sensor: RPM: fan0 P0  State=Normal Reading=5888
*Jul  8 21:56:23.352 PDT: Inserting into queue 1 on spoke 9.
*Jul  8 21:56:23.352 PDT: Rotation count=20 Displacement=0
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback RPM: fan0, P2, 12600
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback RPM: fan1, P2, 12840
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback RPM: fan2, P2, 12900
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback P: pwr, P2, 8
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback Temp: Inlet 1, R0, 29
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback Temp: Inlet 2, R0, 30
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback Temp: Outlet 1, R0, 35
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback Temp: Outlet 2, R0, 36
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback Temp: CP-CPU, R0, 42
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 12v, R0, 12127
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 5v, R0, 5022
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 3.3v, R0, 3308
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 3.0v, R0, 3023
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 2.5v, R0, 2490
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 1.8v, R0, 1798
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 1.2v, R0, 1203
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 1.2v_CPU, R0, 1201
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 1.05v_CPU, R0, 1052
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 1.05v, R0, 1062
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 1.0v, R0, 1002
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback V: 0.6v, R0, 593
*Jul  8 21:56:23.352 PDT: IOS-RP-ENVMON: sensor READ callback P: pwr, R0, 86
*Jul  8 21:56:25.352 PDT: IOS-RP-ENVMON: sensor READ callback P: pwr: Pwr, 0/1, 5
*Jul  8 21:56:32.354 PDT: IOS-RP-ENVMON: sensor READ callback P: pwr: Pwr, 1/0, 27
```

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#
..

*Jul  8 21:56:23.351: %ENVIRONMENTAL-6-NOTICE: V: PEM Out, Location: P1, State: Warning,
Reading: 0 mV
*Jul  8 21:56:23.351: %IOSXE_PEM-6-PEMOK: The PEM in slot P1 is functioning properly
*Jul  8 21:56:23.351: %PLATFORM_POWER-6-MODEMATCH: Main power is in Boost mode
*Jul  8 21:56:23.351: Power M: Received Msg for 12V/Main, total power 1450, Run same as cfg
 Yes
*Jul  8 21:56:23.351: Power M: Received Msg for POE/ILPM, total power 500, Run same as cfg
 No
*Jul  8 21:56:23.351: Power I: Updating pool power is 500 watts
*Jul  8 21:56:23.351: Power I: Intimating modules of total power 500 watts
*Jul  8 21:56:23.351: Power M: Received Msg for 12V/Main, total power 1450, Run same as cfg
 Yes
*Jul  8 21:56:23.351: Power M: Received Msg for POE/ILPM, total power 500, Run same as cfg
 No
*Jul  8 21:56:23.351: Power I: Updating pool power is 500 watts
*Jul  8 21:56:23.351: Power I: Intimating modules of total power 500 watts
Router#
```

show diag all eeprom: Example for C8375-E-G2

```
Router# show diag all eeprom
MIDPLANE EEPROM data:

        Product Identifier (PID) : C8375-E-G2
        Version Identifier (VID) : V01
        PCB Serial Number        : FDO28310870
        Top Assy. Part Number    : 68-7625-01
        Hardware Revision        : 1.0
        CLEI Code                : CMM8K00ARA
Power/Fan Module P0 EEPROM data:

        Product Identifier (PID) : PWR-CC1-760WAC
        Version Identifier (VID) : V01
        PCB Serial Number        : LIT2748A9MU
        CLEI Code                : CMUPAKBCAA
```

```
Power/Fan Module P1 EEPROM data:

        Product Identifier (PID) : PWR-CC1-400WAC
        Version Identifier (VID) : V01
        PCB Serial Number        : LIT2650C53E
        CLEI Code                : CMUPAG4CAA
External PoE Module POE0 EEPROM data:

        Product Identifier (PID) : PWR-CC1-760WAC
        Version Identifier (VID) : V01
        PCB Serial Number        : LIT2748A9MU
        CLEI Code                : CMUPAKBCAA
External PoE Module POE1 EEPROM data is not initialized

Slot R0 EEPROM data:

        Product Identifier (PID) : C8375-E-G2
        Version Identifier (VID) : V01
        PCB Serial Number        : FDO28310870
        Top Assy. Part Number    : 68-7625-01
        Hardware Revision        : 1.0
        CLEI Code                : CMM8K00ARA
Slot F0 EEPROM data:

        Product Identifier (PID) : C8375-E-G2
        Version Identifier (VID) : V01
        PCB Serial Number        : FDO28310870
        Top Assy. Part Number    : 68-7625-01
Hardware Revision        : 1.0
        CLEI Code                : CMM8K00ARA
Slot 0 EEPROM data:

        Product Identifier (PID) : C8375-E-G2
        Version Identifier (VID) : V01
        PCB Serial Number        : FDO28310870
        Top Assy. Part Number    : 68-7625-01
        Hardware Revision        : 1.0
        CLEI Code                : CMM8K00ARA
Slot 1 EEPROM data:

        Product Identifier (PID) : C8375-E-G2
        Version Identifier (VID) : V01
        PCB Serial Number        : FDO28310870
        Top Assy. Part Number    : 68-7625-01
        Hardware Revision        : 1.0
        CLEI Code                : CMM8K00ARA
SPA EEPROM data for subslot 0/0:

        Product Identifier (PID) : 4M-2xSFP+
        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) : C-NIM-8M
        Version Identifier (VID) : V01
        PCB Serial Number        : FDO26500YDL
        Hardware Revision        : 1.0
        CLEI Code                : CMUIAYSCAA
SPA EEPROM data for subslot 0/2 is not available
```

```
SPA EEPROM data for subslot 0/3 is not available

SPA EEPROM data for subslot 0/4 is not available

SPA EEPROM data for subslot 0/5 is not available

SPA EEPROM data for subslot 0/6 is not available

SPA EEPROM data for subslot 1/0 is not available

SPA EEPROM data for subslot 1/1 is not available

SPA EEPROM data for subslot 1/2 is not available

SPA EEPROM data for subslot 1/3 is not available

SPA EEPROM data for subslot 1/4 is not available

SPA EEPROM data for subslot 1/5 is not available

SPA EEPROM data for subslot 1/6 is not available
```

show diag all eeprom: Example for C8355-G2

```
Router# show diag all eeprom
MIDPLANE EEPROM data:

                                                                Product Identifier (PID)
 : C8355-G2

Version Identifier (VID) : V01

PCB Serial Number        : FDO28330C27

Top Assy. Part Number    : 68-7722-01

Hardware Revision        : 1.0

CLEI Code                : CMM8J00ARA

Power/Fan Module P0 EEPROM data is not initialized

Power/Fan Module P1 EEPROM data:

Product Identifier (PID) : PWR-CC1-230WAC

Version Identifier (VID) : V02

PCB Serial Number        :

CLEI Code                : IPUPAMFAAB

Slot R0 EEPROM data:
Product Identifier (PID) : C8355-G2

Version Identifier (VID) : V01

PCB Serial Number        : FDO28330C27

Top Assy. Part Number    : 68-7722-01

Hardware Revision        : 1.0
```

```
CLEI Code                : CMM8J00ARA

Slot F0 EEPROM data:

Product Identifier (PID) : C8355-G2

 Version Identifier (VID) : V01

PCB Serial Number        : FDO28330C27
Top Assy. Part Number    : 68-7722-01

Hardware Revision        : 1.0

CLEI Code                : CMM8J00ARA

Slot 0 EEPROM data:
Product Identifier (PID) : C8355-G2

Version Identifier (VID) : V01

PCB Serial Number        : FDO28330C27

Top Assy. Part Number    : 68-7722-01

Hardware Revision        : 1.0

CLEI Code                : CMM8J00ARA

SPA EEPROM data for subslot 0/0:

Product Identifier (PID) : 4M-2x1G-4xSFP+

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 is not available

SPA EEPROM data for subslot 0/2 is not available

SPA EEPROM data for subslot 0/3 is not available
SPA EEPROM data for subslot 0/4 is not available

SPA EEPROM data for subslot 0/5 is not available

SPA EEPROM data for subslot 0/6 is not available
```

show environment: Example for C8375-E-G2

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:     2

 Slot        Sensor          Current State   Reading
Threshold(Minor,Major,Critical,Shutdown)
 ----------  --------------  --------------- ------------
--------------------------------------
 R0          Temp: Inlet 1   Normal          23    Celsius      (40 ,na ,42 ,na )(Celsius)
 R0          Temp: Inlet 2   Normal          26    Celsius      (90 ,na ,100,na )(Celsius)
 R0          Temp: Outlet 1  Normal          24    Celsius      (70 ,na ,75 ,na )(Celsius)
 R0          Temp: Outlet 2  Normal          26    Celsius      (70 ,na ,75 ,na )(Celsius)
 R0          Temp: CPU       Normal          34    Celsius      (na ,na ,na ,na )(Celsius)
 R0          Temp: Working   Normal          23    Celsius      (na ,na ,na ,na )(Celsius)
 R0          V: 12V          Normal          12044 mV           na
 R0          V: 5V           Normal          5010  mV           na
 R0          V: 3.3V_STBY    Normal          3314  mV           na
 R0          V: 3.3V         Normal          3315  mV           na
 R0          V: 3.3V_USB     Normal          3315  mV           na
 R0          V: 2.5V         Normal          2502  mV           na
 R0          V: 1.8V         Normal          1799  mV           na
 R0          V: 1.2V_CPU     Normal          1197  mV           na
 R0          V: 1.2V         Normal          1208  mV           na
 R0          V: 1.1V         Normal          1100  mV           na
 R0          V: 1.0V         Normal          1001  mV           na
 R0          V: 0.8V_SW      Normal          790   mV           na
 R0          V: 0.85V_DDR    Normal          850   mV           na
 R0          V: 0.8V_SYS     Normal          848   mV           na
 R0          V: 0.8V_CORE    Normal          800   mV           na
 R0          V: 0.75V        Normal          750   mV           na
 R0          P: Power        Normal          41    Watts        na
 P0          Temp: Temp 1    Normal          0     Celsius      (na ,na ,na ,na )(Celsius)
 P0          Temp: Temp 2    Normal          0     Celsius      (na ,na ,na ,na )(Celsius)
 P0          Temp: Temp 3    Normal          0     Celsius      (na ,na ,na ,na )(Celsius)
 P0          V: PEM In       Normal          0     mV           na
 P0          V: PEM Out      Minor_Low       0     mV           na
 P0          I: PEM In       Normal          0     mA           na
 P0          I: PEM Out      Normal          0     mA           na
 P0          P: In power     Normal          0     Watts        na
 P0          P: Out power    Normal          0     Watts        na
 P0          RPM: fan0       Minor_Low       0     RPM          na
 P1          Temp: Temp 1    Normal          28    Celsius      (na ,na ,na ,na )(Celsius)
 P1          Temp: Temp 2    Normal          31    Celsius      (na ,na ,na ,na )(Celsius)
P1          Temp: Temp 3    Normal          30    Celsius      (na ,na ,na ,na )(Celsius)
 P1          V: PEM In       Normal          226503mV           na
 P1          V: PEM Out      Normal          12000 mV           na
 P1          I: PEM In       Normal          265   mA           na
 P1          I: PEM Out      Normal          3600  mA           na
 P1          P: In power     Normal          54    Watts        na
 P1          P: Out power    Normal          42    Watts        na
 P1          RPM: fan0       Normal          6080  RPM          na
 P2          P: Power        Normal          3     Watts        na
 P2          RPM: fan0       Normal          9480  RPM          na
 P2          RPM: fan1       Normal          9540  RPM          na
 P2          RPM: fan2       Normal          9360  RPM          na
 0/1         P: pwr: Pwr     Normal          11    Watts        na
```

show environment: Example for C8355-G2

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
Threshold(Minor,Major,Critical,Shutdown)
----------  --------------  --------------- ------------
---------------------------------------
R0          Temp: Inlet 1   Normal          30     Celsius     (na ,na ,na ,na )(Celsius)

R0          Temp: Inlet 2   Normal          35     Celsius     (na ,na ,na ,na )(Celsius)

R0          Temp: Outlet 1  Normal          42     Celsius     (na ,na ,na ,na )(Celsius)

R0          Temp: Outlet 2  Normal          40     Celsius     (na ,na ,na ,na )(Celsius)

R0          Temp: CPU       Normal          46     Celsius     (na ,na ,95 ,na )(Celsius)

R0          Temp: Working   Normal          30     Celsius     (na ,na ,na ,na )(Celsius)

R0          V: 12V          Normal          12242  mV          na

R0          V: 5V           Normal          5012   mV          na

R0          V: 3.3V_STBY    Normal          3299   mV          na

R0          V: 3.3V         Normal          3300   mV          na

R0          V: 3.3V_USB     Normal          3302   mV          na

R0          V: 2.5V         Normal          2504   mV          na

R0          V: 1.8V         Normal          1802   mV          na

R0          V: 1.2V_CPU     Normal          1202   mV          na

R0          V: 1.2V         Normal          1205   mV          na

R0          V: 1.1V         Normal          1104   mV          na

R0          V: 1.0V         Normal          998    mV          na

R0          V: 0.8V_SW      Normal          796    mV          na

R0          V: 0.8V_SYS     Normal          851    mV          na

R0          V: 0.8V_CORE    Normal          748    mV          na

R0          V: 0.8V_PHY     Normal          800    mV          na

R0          V: 0.75V        Normal          754    mV          na
R0          P: Power        Normal          33     Watts       na

R0          P: module       Normal          0      Watts       na
```

show environment all: Example for C8375-E-G2

```
Router# show environment all
Sensor List:  Environmental Monitoring
 Sensor           Location          State             Reading
```

```
Temp: Temp 1     P0               Normal           36 Celsius
Temp: Temp 2     P0               Normal           38 Celsius
Temp: Temp 3     P0               Normal           38 Celsius
V: PEM In        P0               Normal           206502 mV
V: PEM Out       P0               Normal           12000 mV
I: PEM In        P0               Normal           281 mA
I: PEM Out       P0               Normal           3500 mA
P: In pwr        P0               Normal           53 Watts
P: Out pwr       P0               Normal           43 Watts
RPM: fan0        P0               Normal           3712 RPM
RPM: fan0        P2               Normal           7260 RPM
RPM: fan1        P2               Normal           7260 RPM
RPM: fan2        P2               Normal           7200 RPM
P: pwr           P2               Normal           3 Watts
Temp: Inlet 1    R0               Normal           19 Celsius
Temp: Inlet 2    R0               Normal           21 Celsius
Temp: Outlet 1   R0               Normal           25 Celsius
Temp: Outlet 2   R0               Normal           23 Celsius
Temp: CP-CPU     R0               Normal           29 Celsius
V: 12v           R0               Normal           11984 mV
V: 5v            R0               Normal           5018 mV
V: 3.3v          R0               Normal           3311 mV
V: 3.0v          R0               Normal           2992 mV
V: 2.5v          R0               Normal           2488 mV
V: 1.8v          R0               Normal           1785 mV
V: 1.2v          R0               Normal           1201 mV
V: 1.2v_CPU      R0               Normal           1200 mV
V: 1.05v_CPU     R0               Normal           1051 mV
V: 1.05v         R0               Normal           1058 mV
V: 1.0v          R0               Normal           1001 mV
V: 0.6v          R0               Normal           595 mV
P: pwr           R0               Normal           45 Watts
```

show environment all: Example for C8355-G2

```
Router# show environment all
Sensor List:  Environmental Monitoring
Sensor                  Location        State           Reading

Temp: Inlet 1           R0              Normal          30 Celsius

Temp: Inlet 2           R0              Normal          35 Celsius

Temp: Outlet 1          R0              Normal          41 Celsius

Temp: Outlet 2          R0              Normal          40 Celsius

Temp: CPU               R0              Normal          45 Celsius

Temp: Working           R0              Normal          30 Celsius

V: 12V                  R0              Normal          12250 mV

V: 5V                   R0              Normal          5016 mV

V: 3.3V_STBY            R0              Normal          3297 mV

V: 3.3V                 R0              Normal          3302 mV

V: 3.3V_USB             R0              Normal          3306 mV

V: 2.5V                 R0              Normal          2505 mV
```

```
V: 1.8V                 R0              Normal          1802 mV

V: 1.2V_CPU             R0              Normal          1201 mV

V: 1.2V                 R0              Normal          1206 mV

V: 1.1V                 R0              Normal          1104 mV

V: 1.0V                 R0              Normal          999 mV

V: 0.8V_SW              R0              Normal          797 mV

V: 0.8V_SYS             R0              Normal          850 mV

V: 0.8V_CORE            R0              Normal          748 mV

V: 0.8V_PHY             R0              Normal          800 mV

V: 0.75V                R0              Normal          752 mV

P: Power                R0              Normal          33 Watts

P: module               R0              Normal          0 Watts
```

show inventory: Example for C8375-E-G2

```
Router# show inventory

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

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

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

NAME: "Chassis", DESCR: "Cisco C8375-E-G2 Chassis"

PID: C8375-E-G2         , VID: V01  , SN: FDO2833M01A

NAME: "Power Supply Module 0", DESCR: "760W AC Power Supply for Cisco C8375"

PID: PWR-CC1-760WAC     , VID: V01  , SN: LIT2748A9MU

NAME: "Power Supply Module 1", DESCR: "400W AC power supply for Cisco C8300 1RU"

PID: PWR-CC1-400WAC     , VID: V01  , SN: LIT2650C53E

NAME: "Fan Tray", DESCR: "Cisco C8300 1RU Fan Assembly"

PID: C8300-FAN-1R       , VID: V02  , SN: LIT2214364L

NAME: "POE Module 0", DESCR: "760W AC Power Supply for Cisco C8375"

PID: PWR-CC1-760WAC     , VID: V01  , SN: LIT2748A9MU
```

```
NAME: "module 0", DESCR: "Cisco C8375-E-G2 Built-In NIM controller"

PID: C8375-E-G2        , VID:      , SN:


NAME: "NIM subslot 0/1", DESCR: "C-NIM-8M"

PID: C-NIM-8M          , VID: V01  , SN: FDO26500YDL


NAME: "NIM subslot 0/0", DESCR: "4M-2xSFP+"

PID: 4M-2xSFP+         , VID: V01  , SN:
NAME: "subslot 0/0 transceiver 4", DESCR: "10G AOC5M"

PID: SFP-10G-AOC5M       , VID: V01  , SN: DPZ2618A261-B


NAME: "subslot 0/0 transceiver 5", DESCR: "10G AOC5M"

PID: SFP-10G-AOC5M       , VID: V01  , SN: DPZ2618A261-A


NAME: "module 1", DESCR: "Cisco C8375-E-G2 Built-In SM controller"

PID: C8375-E-G2        , VID:      , SN:


NAME: "module R0", DESCR: "Cisco C8375-E-G2 Route Processor"

PID: C8375-E-G2        , VID: V01  , SN: FDO28310870


NAME: "module F0", DESCR: "Cisco C8375-E-G2 Forwarding Processor"

PID: C8375-E-G2        , VID:      , SN:
```

show inventory: Example for C8355-G2

```
Router# show inventory

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

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

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
NAME: "Chassis", DESCR: "Cisco C8355-G2 Chassis"

PID: C8355-G2          , VID: V01  , SN: FDO2836M06D

NAME: "Power Supply Module 1", DESCR: "230W AC PS w/ POE Module for Cisco C823X/C835X"

PID: PWR-CC1-230WAC    , VID: V02  , SN:

NAME: "POE Module 1", DESCR: "230W AC PS w/ POE Module for Cisco C823X/C835X"

PID: PWR-CC1-230WAC    , VID: V02  , SN:

NAME: "module 0", DESCR: "Cisco C8355-G2 Built-In SM controller"
```

```
PID: C8355-G2          , VID:      , SN:

NAME: "NIM subslot 0/0", DESCR: "4M-2x1G-4xSFP+"

PID: 4M-2x1G-4xSFP+    , VID: V01  , SN:

NAME: "subslot 0/0 transceiver 8", DESCR: "SFP+ 10GBASE-SR"

PID: SFP-10G-SR-S        , VID: V01  , SN: OPM26181F0B

NAME: "subslot 0/0 transceiver 9", DESCR: "SFP+ 10GBASE-SR"

PID: SFP-10G-SR-S        , VID: V01  , SN: OPM26200JQA

NAME: "module R0", DESCR: "Cisco C8355-G2 Route Processor"

PID: C8355-G2          , VID: V01  , SN: FDO28330C27
NAME: "harddisk", DESCR: "M.2 USB"

PID: eMMC  HS-SD/MMC   , VID:      , SN:

NAME: "module F0", DESCR: "Cisco C8355-G2 Forwarding Processor"

PID: C8355-G2          , VID:      , SN:
```

show platform: Example for C8375-E-G2

```
Router# show platform
 Chassis type: C8375-E-G2

Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
0         C8375-E-G2          ok                    3d17h
0/0       4M-2xSFP+           ok                    3d17h
0/1       C-NIM-8M            ok                    3d17h
1         C8375-E-G2          ok                    3d17h
R0        C8375-E-G2          ok, active            3d17h
F0        C8375-E-G2          ok, active            3d17h
P0        PWR-CC1-760WAC      fail, badinput        3d17h
P1        PWR-CC1-400WAC      ok                    3d17h
P2        C8300-FAN-1R        ok                    3d17h
POE0      PWR-CC1-760WAC      fail, badinput        3d17h

Slot      CPLD Version        Firmware Version
--------- ------------------- ---------------------------------------
0         25033132            v17.15(1.17r).s2.cp
```

```
1         25033132            v17.15(1.17r).s2.cp

R0        25033132            v17.15(1.17r).s2.cp

F0        25033132            v17.15(1.17r).s2.cp
```

show platform: Example for C8355-G2

```
Router# show platform
 Chassis type: C8355-G2
Slot      Type                State                 Insert time (ago)

--------- ------------------- --------------------- -----------------

0         C8355-G2            ok                    06:21:27

0/0      4M-2x1G-4xSFP+      ok                    06:20:36

R0        C8355-G2            ok, active            06:21:27

F0        C8355-G2            ok, active            06:21:27

P0        Unknown             empty                 never

P1        PWR-CC1-230WAC      ok                    06:20:52

POE1      PWR-CC1-230WAC      ok                    06:20:52

Slot      CPLD Version        Firmware Version

--------- ------------------- --------------------------------------

0         25071533            v17.15(3.3r).s2.cp

R0        25071533            v17.15(3.3r).s2.cp

F0        25071533            v17.15(3.3r).s2.cp
```

show platform diag: Example for C8375-E-G2

```
Router# show platform diag
Chassis type: C8375-E-G2


Slot: 0, C8375-E-G2

Running state               : ok

Internal state              : online

Internal operational state  : ok

Physical insert detect time : 00:00:24 (3d17h ago)

Software declared up time   : 00:01:16 (3d17h ago)

CPLD version                : 25033132

Firmware version            : v17.15(1.17r).s2.cp
```

```
Sub-slot: 0/0, 4M-2xSFP+

Operational status          : ok

Internal state              : inserted

Physical insert detect time : 00:01:24 (3d17h ago)

Logical insert detect time  : 00:01:24 (3d17h ago)


Sub-slot: 0/1, C-NIM-8M

Operational status          : ok

Internal state              : inserted

Physical insert detect time : 00:01:26 (3d17h ago)

Logical insert detect time  : 00:01:26 (3d17h ago)


Sub-slot: 0/4, VDSP-CC

Operational status          : ok

Internal state              : inserted

Physical insert detect time : 00:01:27 (3d17h ago)

Logical insert detect time  : 00:01:27 (3d17h ago)
Slot: 1, C8375-E-G2

Running state               : ok

Internal state              : online

Internal operational state  : ok

Physical insert detect time : 00:00:24 (3d17h ago)

Software declared up time   : 00:01:17 (3d17h ago)

CPLD version                : 25033132

Firmware version            : v17.15(1.17r).s2.cp


Slot: R0, C8375-E-G2

Running state               : ok, active

Internal state              : online

Internal operational state  : ok

Physical insert detect time : 00:00:24 (3d17h ago)

Software declared up time   : 00:00:24 (3d17h ago)

CPLD version                : 25033132

Firmware version            : v17.15(1.17r).s2.cp
```

```
Slot: F0, C8375-E-G2

Running state               : ok, active

Internal state              : online

Internal operational state  : ok

Physical insert detect time : 00:00:24 (3d17h ago)

Software declared up time   : 00:01:04 (3d17h ago)

Hardware ready signal time  : 00:01:02 (3d17h ago)

Packet ready signal time    : 00:01:17 (3d17h ago)

CPLD version                : 25033132

Firmware version            : v17.15(1.17r).s2.cp
Slot: P0, PWR-CC1-760WAC

State                       : fail, badinput

Physical insert detect time : 00:00:02 (3d17h ago)


Slot: P1, PWR-CC1-400WAC

State                       : ok

Physical insert detect time : 00:00:02 (3d17h ago)


Slot: P2, C8300-FAN-1R

State                       : ok

Physical insert detect time : 00:00:02 (3d17h ago)


Slot: POE0, PWR-CC1-760WAC

State                       : fail, badinput

Physical insert detect time : 00:00:02 (3d17h ago)


Slot: POE1, Unknown

State                       : empty

Physical insert detect time : 00:00:00 (never ago)
```

show platform diag: Example for C8355-G2

```
Router# show platform diag
Chassis type: C8355-G2

Slot: 0, C8355-G2
```

```
Running state               : ok

Internal state              : online

Internal operational state  : ok

Physical insert detect time : 00:00:22 (06:14:37 ago)

Software declared up time   : 00:01:09 (06:13:50 ago)

CPLD version                : 25071533

Firmware version            : v17.15(3.3r).s2.cp

Sub-slot: 0/0, 4M-2x1G-4xSFP+

Operational status          : ok

Internal state              : inserted

Physical insert detect time : 00:01:13 (06:13:46 ago)

Logical insert detect time  : 00:01:13 (06:13:46 ago)

Slot: R0, C8355-G2

Running state               : ok, active

Internal state              : online

Internal operational state  : ok

Physical insert detect time : 00:00:22 (06:14:37 ago)

Software declared up time   : 00:00:22 (06:14:37 ago)

CPLD version                : 25071533

Firmware version            : v17.15(3.3r).s2.cp

Slot: F0, C8355-G2

Running state               : ok, active

Internal state              : online
 Internal operational state  : ok

Physical insert detect time : 00:00:22 (06:14:37 ago)

Software declared up time   : 00:01:04 (06:13:55 ago)

Hardware ready signal time  : 00:01:02 (06:13:57 ago)

Packet ready signal time    : 00:01:16 (06:13:43 ago)

CPLD version                : 25071533

Firmware version            : v17.15(3.3r).s2.cp

Slot: P0, Unknown

State                       : empty
```

```
Physical insert detect time : 00:00:00 (never ago)

Slot: P1, PWR-CC1-230WAC

State                       : ok

Physical insert detect time : 00:00:03 (06:14:02 ago)

Slot: POE1, PWR-CC1-230WAC

State                       : ok

Physical insert detect time : 00:00:03 (06:14:02 ago)
```

show platform software status control-processor: Example for C8375-E-G2

```
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 platform software status control-processor: Example for C8355-G2

```
Router# show platform software status control-processor
RP0: online, statistics updated 4 seconds ago

Load Average: healthy

1-Min: 11.00, status: healthy, under 18.00

5-Min: 11.03, status: healthy, under 18.00

15-Min: 11.12, status: healthy, under 18.00

Memory (kb): healthy

Total: 16134276

Used: 4006772 (25%), status: healthy
```

```
Free: 12127504 (75%)

Committed: 4515476 (28%), under 90%

Per-core Statistics

CPU0: CPU Utilization (percentage of time spent)

User:  1.89, System:  3.19, Nice:  0.00, Idle: 94.20

IRQ:  0.49, SIRQ:  0.19, IOwait:  0.00

CPU1: CPU Utilization (percentage of time spent)

User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00

IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00

CPU2: CPU Utilization (percentage of time spent)

User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00

IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00

CPU3: CPU Utilization (percentage of time spent)

 User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00

IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00

CPU4: CPU Utilization (percentage of time spent)

User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00

IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00

CPU5: CPU Utilization (percentage of time spent)

User: 99.80, System:  0.00, Nice:  0.00, Idle:  0.00

IRQ:  0.09, SIRQ:  0.09, IOwait:  0.00
CPU3: CPU Utilization (percentage of time spent)

User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00

IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00

CPU4: CPU Utilization (percentage of time spent)

User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00

IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00

CPU5: CPU Utilization (percentage of time spent)

User: 99.80, System:  0.00, Nice:  0.00, Idle:  0.00

IRQ:  0.09, SIRQ:  0.09, IOwait:  0.00

CPU6: CPU Utilization (percentage of time spent)

User: 99.80, System:  0.00, Nice:  0.00, Idle:  0.00

IRQ:  0.09, SIRQ:  0.09, IOwait:  0.00
```

```
CPU7: CPU Utilization (percentage of time spent)
User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00
IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00
CPU8: CPU Utilization (percentage of time spent)
User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00
IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00
CPU9: CPU Utilization (percentage of time spent)
User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00
IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00
CPU10: CPU Utilization (percentage of time spent)
 User: 14.81, System: 60.06, Nice:  0.00, Idle: 21.62
IRQ:  3.50, SIRQ:  0.00, IOwait:  0.00
CPU11: CPU Utilization (percentage of time spent)
User: 99.90, System:  0.00, Nice:  0.00, Idle:  0.00
IRQ:  0.10, SIRQ:  0.00, IOwait:  0.00
```

show diag slot R0 eeprom detail: Example for C8375-E-G2

```
Router# show diag slot R0 eeprom detail

       Slot R0 EEPROM data:

                                                                        EEPROM version
          : 4
Compatible Type          : 0xFF
FRU Specific Info        : 0100
PCB Serial Number        : FDO28310870
Controller Type          : 4487
Hardware Revision        : 1.0
PCB Part Number          : 73-20702-08
Board Revision           : 03
Top Assy. Part Number    : 68-7625-01
Deviation Number         : 0
Fab Version              : 08
Product Identifier (PID) : C8375-E-G2
```

```
Version Identifier (VID) : V01

CLEI Code                : CMM8K00ARA

Chassis Serial Number    : FDO2833M01A

Chassis MAC Address      : 481b.a465.9470

MAC Address block size   : 144

Manufacturing Test Data  : 00 00 00 00 00 00 00 00

Asset ID                 :
```

show diag slot R0 eeprom detail: Example for C8355-G2

```
Router# show diag slot R0 eeprom detail
Slot R0 EEPROM data:
EEPROM version           : 4
Compatible Type          : 0xFF

FRU Specific Info        : 0100

PCB Serial Number        : FDO28330C27

Controller Type          : 4486

Hardware Revision        : 1.0

PCB Part Number          : 73-20990-07

Board Revision           : 05

Top Assy. Part Number    : 68-7722-01

Deviation Number         : 0

Fab Version              : 07

Product Identifier (PID) : C8355-G2

Version Identifier (VID) : V01

CLEI Code                : CMM8J00ARA

Chassis Serial Number    : FDO2836M06D

Chassis MAC Address      : 4874.104a.e9e0

MAC Address block size   : 96

Manufacturing Test Data  : 00 00 00 00 00 00 00 00

Asset ID                 :
```

show version: Example for C8375-E-G2

```
Router# show version
Cisco IOS XE Software, Version BLD_V1718_THROTTLE_LATEST_20250513_033132_V17_18_0_38
Cisco IOS Software [IOSXE], c8kg2be Software (ARMV8EL_LINUX_IOSD-UNIVERSALK9-M), Experimental
```

```
 Version 17.18.20250513:042531
[BLD_V1718_THROTTLE_LATEST_20250513_033132:/nobackup/mcpre/s2c-build-ws 101]
Copyright (c) 1986-2025 by Cisco Systems, Inc.
Compiled Mon 12-May-25 21:26 by mcpre


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GPL code under the terms of GPL Version 2.0.  For more details, see the
documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.


ROM: v17.15(1.19d).s2.cp.RSA2K
Crestone-1 uptime is 4 minutes
Uptime for this control processor is 5 minutes
System returned to ROM by Reload Command
System image file is "bootflash:c8kg2be-universalk9.17.18.01.0.700_V17_18_0_38.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.


Technology Package License Information:

------------------------------------------------------------------
Technology     Type         Technology-package Technology-package
                            Current            Next Reboot
------------------------------------------------------------------
Smart License  Subscription advantage          advantage

The current crypto throughput level is 10000 kbps (Aggregate)


Smart Licensing Status: Smart Licensing Using Policy

cisco C8375-E-G2 (1RU) processor with 3703488K/6147K bytes of memory.
Processor board ID FDO2721M02R
Router operating mode: Autonomous
1 Virtual Ethernet interface
4 Gigabit Ethernet interfaces
4 2.5 Gigabit Ethernet interfaces
8 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
8388608K bytes of physical memory.
```

```
20257791K bytes of flash memory at bootflash:.

Configuration register is 0x3922
```

show version: Example for C8355-G2

```
Router# show version

Cisco IOS XE Software, Version 17.18.01eft30

Cisco IOS Software [IOSXE], c8kg2be Software (ARMV8EL_LINUX_IOSD-UNIVERSALK9-M), Version
17.18.1eft30, RELEASE SOFTWARE (fc1)

Technical Support: http://www.cisco.com/techsupport

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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: v17.15(3.3r).s2.cp

Wilson1 uptime is 5 hours, 53 minutes

Uptime for this control processor is 5 hours, 54 minutes

System returned to ROM by PowerOn

System image file is "bootflash:c8kg2be-universalk9.17.18.01eft30.SPA.bin"

Last reload reason: PowerOn


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.
Technology Package License Information:


------------------------------------------------------------------

Technology     Type         Technology-package Technology-package

Current            Next Reboot

------------------------------------------------------------------

Smart License  Subscription advantage          advantage

The current crypto throughput level is unthrottled
cisco C8355-G2 (1RU) processor with 7799156K/6147K bytes of memory.

Processor board ID FDO2836M06D

Router operating mode: Autonomous

2 Virtual Ethernet interfaces

2 Gigabit Ethernet interfaces

4 Ten Gigabit Ethernet interfaces

4 Five Gigabit Ethernet interfaces

32768K bytes of non-volatile configuration memory.

16777216K bytes of physical memory.

18250751K bytes of flash memory at bootflash:.

29933568K bytes of M.2 USB at harddisk:.

Configuration register is 0x2102
```

Configure power supply mode

You can configure the power supplies of both the device and a connected Power over Ethernet (PoE) module.

• Configure the external PoE Service Module power supply mode, on page 29

- Examples to configure power supply mode, on page 29
- Available PoE power, on page 30

For more information on the Power Supply Mode, See the Overview of the Power Options section.

- Hardware Installation Guide for Cisco 8300 Series Secure Routers

Configure the external PoE Service Module power supply mode

Configure the power supply of an external PoE service module using the **power inline redundant** command:

- **power inline redundant**—Sets the external PoE service module power supply in redundant mode.
- **no power inline redundant**—Sets the external PoE service module power supply in boost mode.



Note The default mode for the external PoE service module power supply is redundant mode.

The **show power** command shows whether boost or redundant mode is configured and whether this mode is currently running on the system.

Examples to configure power supply mode

Example—Configured Mode of Redundant for Main PSU and PoE Module

In this example, the **show power** command shows the configured mode is `Redundant` for both the main and inline power. The system has one 400 W and one 360 W power supply.

```
Router# show powerMain PSU :
    Router#show power
Main PSU :
    Power Operating Mode : Normal
    Configured Mode : Redundant
    Current runtime state same : Yes
    Total power available : 400 Watts
POE Module :
    Configured Mode : Redundant
    Current runtime state same : Yes
    Total power available : 360 Watts

Router#
```

Example—Configured Mode of Boost for PoE Power

In this example, an attempt is made to configure the inline power in boost mode by using the **no** form of the **power inline redundant** command. The inline power mode is **not** changed to boost mode because that would require a total power available in redundant mode of 1000 W. The inline power mode is redundant and is shown by the following values for the PoE Module:

- `Configured Mode : Boost`

- Current runtime state same : No

```
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# no power inline redundant
Router(config)#
*Jan 31 03:42:40.947: %PLATFORM_POWER-6-MODEMISMATCH: Inline power not in Boost mode
Router(config)#
Router(config)# exit
Router#
*Jan 31 03:36:13.111: %SYS-5-CONFIG_I: Configured from console by console
Router# show power
    Main PSU :
    Power Operating Mode : Normal
    Configured Mode : Redundant
    Current runtime state same : Yes
    Total power available : 400 Watts
POE Module :
    Configured Mode : Boost
    Current runtime state same : Yes
    Total power available : 720 Watts
Router#
```

Available PoE power

For the PoE feature to be available on the external PoE module, the total power from the power supplies must be 760 W or higher.

Note To ensure the PoE feature is functional on the external PoE module, verify the availability of PoE power on your router using the **show platform** and **show power** commands.

To determine there is enough PoE power for use by an external PoE service module, use the **show platform** and **show power** commands to calculate the available PoE power based on the wattage values of the main power supplies and PoE inverters.

Take the values of your main P0 and P1 power supplies to give the Total Power (for main power supplies.) Then take the values of your PoE1 and PoE2 power inverters to calculate the Total PoE Power.

The following table shows example modes of operation, which may be similar to your configuration.

The Total PoE Power value, in the final column of the table needs to be 760 W or higher for the PoE feature to be functional on a connected PoE service module.

Note Add power inverters to the router before inserting an external PoE module. Otherwise, even if the Total PoE Power is sufficient, the PoE power will not be used by the external PoE module and the module will need to be re-booted for the PoE feature to be functional.

Configuring a power mode of boost or redundant on the main power supplies, or PoE inverters, may affect the value for Total PoE Power.

The following table shows all power values in Watts. The wattage ratings of the main power supplies are shown in columns Main P0 and Main P1. The wattage ratings of the PoE inverters are shown in columns PoE0 and PoE1.

Table 2: Modes of operation for C8375-E-G2

Mode Example	Main P0	Main P1	Config Mode	Total Power (Main)	PoE0	PoE1	Config Mode	Total PoE Power
1	400	None	Redundant	400	None	None	Redundant or Boost	0 (None)
2	None	400	Redundant	400	None	None	Redundant or Boost	0 (None)
3	400	None	Redundant	400	360	None	Redundant or Boost	360
4	None	400	Redundant	400	None	360	Redundant or Boost	360
5	400	400	Redundant	400	None	None	Redundant or Boost	0 (None)
6 **Note** When installed 760WAC in P0 only	400	None	Redundant	400	360	None	Redundant or Boost	360
7 **Note** When installed 760WAC in P1 only	None	400	Redundant	400	None	360	Redundant or Boost	360
8	400	400	Redundant	400	360	360	Redundant	360
9	400	400	Redundant	400	360	360	Boost	720
10	500	None	Redundant	500	None	None	Redundant or Boost	0 (None)
11	None	500	Redundant	500	None	None	Redundant or Boost	0 (None)

Mode Example	Main P0	Main P1	Config Mode	Total Power (Main)	PoE0	PoE1	Config Mode	Total PoE Power
12	500	500	Redundant	500	None	None	Redundant or Boost	0 (None)

Note In the table above, for 360 W or higher Total PoE Power to be available, the "Total Power" (of the main power supplies) must be 760 W or higher.

For 720 W Total PoE Power (see Mode Example 6), there must be two 760 W main power supplies (in `Boost` mode) and two PoE inverters (also in `Boost` mode).

Table 3: Modes of operation for C8355-G2

Mode Example	Main P0	Main P1	Config Mode	Total Power (Main)	PoE0	PoE1	Config Mode	Total PoE Power
1	110	None	Redundant	110	None	None	Redundant or Boost	0 (None)
2	None	110	Redundant	110	None	None	Redundant or Boost	0 (None)
3 **Note** When installed 230WAC in P0 only	110	None	Redundant	110	None	None	Redundant or Boost	0 (None)
4	None	110	Redundant	110	None	120	Redundant or Boost	120
5	110	110	Redundant	110	None	None	Redundant or Boost	0 (None)
6 **Note** When installed 230WAC in P0 and P1	110	110	Redundant	110	None	120	Redundant or Boost	120

Mode Example	Main P0	Main P1	Config Mode	Total Power (Main)	PoE0	PoE1	Config Mode	Total PoE Power
7 **Note** When installed 110WAC in P0 and 230WAC in P1	110	110	Redundant	110	None	120	Redundant or Boost	120
8	110	110	Redundant	110	None	None	Redundant	0 (None)



Note For C8355-G2, only power outlet 1 supports PoE. Hence POE0 is always none in all the scenarios.



Caution Care should be taken while removing the power supplies and power inverters (especially in `Boost` mode of operation). If the total power consumption is higher than can be supported by one power supply alone and in this condition a power supply is removed, the hardware can be damaged. This may then result in the system being unstable or unusable.

Similarly, in the case where there is only one PoE inverter providing PoE power to a service module, and in this condition the PoE inverter is removed, the hardware may be damaged, and may result in the system being unstable or unusable.