

Problem determination and troubleshooting

Problem determination for the SD535 V3 and D3 chassis

Lenovo

SD535 V3 Problem determination and troubleshooting

Perform the following actions to determine the cause of problems on the SD535 V3

- Check the system health status on the XCC2 dashboard
- Check the system event log in XCC2
- Check the event log in UEFI
- Check the LEDs on the system

For more information about how to use XCC2, UEFI, or OneCLI to monitor system status and collect logs, refer to the following courses:

- [ES51757B – Introducing ThinkSystem tools](#)
- [ES52374 – ThinkSystem tools for the ThinkSystem V3 platform](#)
- [ES41759C – ThinkSystem problem determination](#)
- [ES42714 – Servicing Neptune Liquid Cooling systems](#)

System LEDs

Check the LEDs for hardware status monitoring and problem determination. For more information about the SD535 V3 LEDs, refer to the *Troubleshooting by system LEDs and diagnostics display* section of the *ThinkSystem SD535 V3 User Guide* on [Lenovo Support](#).

Click the buttons to see LED location and description information.

Drive LEDs

**System error
LED**

**Power button
with power
status LED**

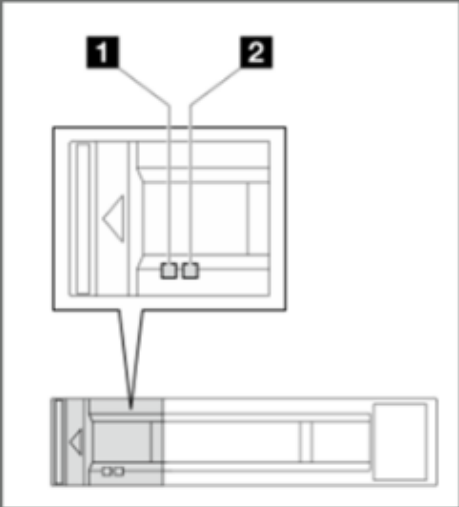
**Power supply
LED**

**Firmware and
RoT security
module LEDs**

**System board
LED**

**XCC system
management
port LED**

Drive LEDs



LED	Description
1 Drive activity LED (green)	Each hot-swap drive comes with an activity LED. When this LED is flashing, it indicates that the drive is in use.
2 Drive status LED (yellow)	The drive status LED indicates the following status: <ul style="list-style-type: none">• The LED is lit: the drive has failed.• The LED is flashing slowly (once per second): the drive is being rebuilt.• The LED is flashing rapidly (three times per second): the drive is being identified.

System error LED



Status	Color	Description	Action
On	Yellow	<p>An error has been detected on the server. Causes might include one or more of the following errors:</p> <ul style="list-style-type: none">• The temperature of the server reached the non-critical temperature threshold.• The voltage of the server reached the non-critical voltage threshold.• A fan has been detected to be running at low speed.• The power supply has a critical error.• The power supply is not connected to the power.	Check the Event log to determine the exact cause of the error.
Off	None	The server is off or the server is on and is working correctly.	None.

Power button with power status LED



Status	Color	Description
Off	None	No power supply is properly installed, or the LED itself has failed.
Flashing rapidly (four times per second)	Green	The server is turned off and is not ready to be turned on. The power button is disabled. This will last approximately 5 to 10 seconds.
Flashing slowly (once per second)	Green	The server is turned off and is ready to be turned on. You can press the power button to turn on the server.
Lit	Green	The server is turned on.

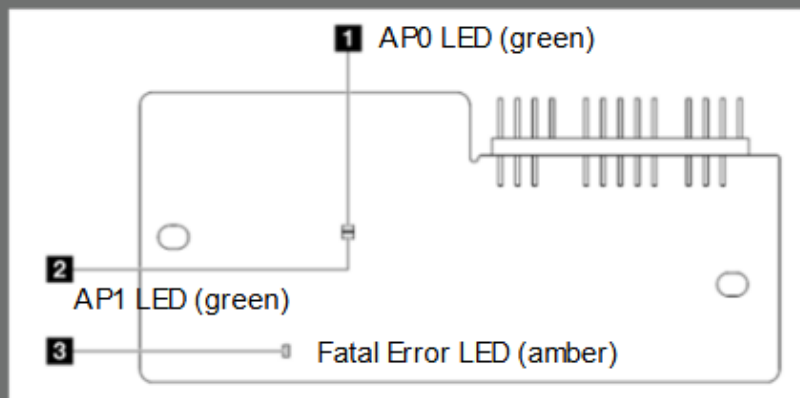
Power supply LED



1 Power supply status

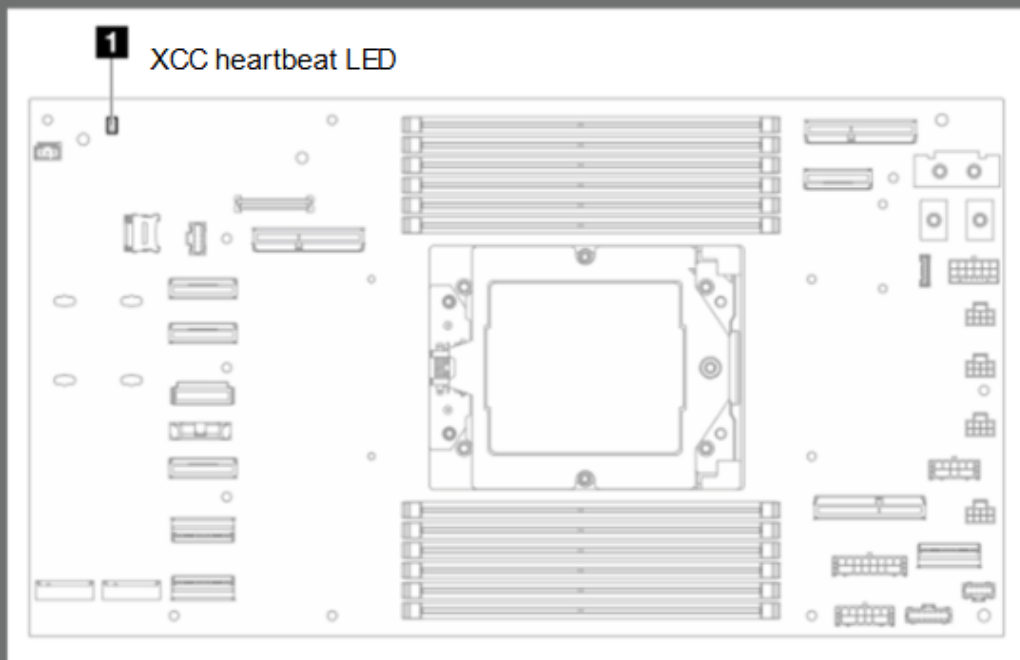
LED	Description
1 Power supply status	<p>The power supply status LED can be in one of the following states:</p> <ul style="list-style-type: none">• Green: The power supply is connected to the AC power source and working normally.• Off: The power supply is disconnected from the AC power source.• Slow blinking green (about one flash every second): The power supply is in PSU standby state with AC present, cold standby state, or always standby state.• Amber: The AC power cord is unplugged, AC power lost (with a second power supply in parallel still in AC power input power), or power supply has failed. To resolve the issue, replace the power supply.• Slow blinking amber (about one flash every second): Power supply warning events where the power supply continues to operate.• Fast blinking green (about 2 flashes each second): Power supply firmware updating.

Firmware and RoT security module LEDs



Scenario	AP0 LED	AP1 LED	Fatal Error LED	XCC heart-beat LED	Actions
RoT security module fatal firmware failure	Off	Off	On	N/A	Replace the firmware and RoT security module.
	Blink	N/A	On	N/A	Replace the firmware and RoT security module.
	Blink	N/A	On	N/A	Replace the firmware and RoT security module.
No system power	Off	Off	Off	Off	<p>If the AC power is on, but the system board assembly does not have power, then:</p> <ol style="list-style-type: none"> 1. Check the power supply unit (PSU) or power distribution board (PDB). If the PSU or PDB has any error, replace it. 2. If there is no problem with the PSU or PDB, replace the system board.
XCC firmware recoverable error	Blink	N/A	Off	N/A	Information only. No action is required.
XCC firmware is recovered from error	On	N/A	Off	N/A	Information only. No action is required.
UEFI firmware authentication failure	N/A	Blink	Off	N/A	Information only. No action is required.
UEFI firmware is recovered from authentication failure	N/A	On	Off	N/A	Information only. No action is required.
System is OK	On	On	Off	On	Information only. No action is required.

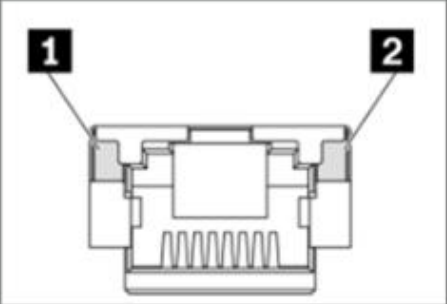
System board LED



XCC heartbeat LED (green) behavior:

- **Blinking slowly:** XCC is functioning
- **Blinking rapidly and constantly:** XCC is initializing or malfunctioning
- **On:** XCC is malfunctioning
- **Off:** XCC is malfunctioning

XCC system management port LED



LED	Description
1 XCC system management port (1GB RJ-45) Ethernet port link LED	Use this green LED to distinguish the network connectivity status: <ul style="list-style-type: none">• Off: The network link is disconnected.• Green: The network link is established.
2 XCC system management port (1 GB RJ-45) Ethernet port activity LED	Use this green LED to distinguish the network activity status: <ul style="list-style-type: none">• Off: The server is disconnected from a LAN.• Green (blinking): The network is connected and active.

D3 chassis PSU troubleshooting

Due to the SMM-free design, users must log in to XCC2 on the master node to monitor the status of the D3 chassis. Use the following guidelines to troubleshoot D3 chassis issues:

- Log in to the master node XCC2 and look for the PSU and midplane information under **Server Configuration → Chassis**
- To check the PSU status, collect the FFDC log from XCC2 – the service data does not contain PSU information
- The `ipmitool sdr elist | grep PSU` IPMI command can also be used to check PSU status

```
XCC2> ipmitool sdr elist | grep PSU
PSU Mismatch | FBh | ok | 19.1 | Transition to OK
Power Supply 1 | DDh | ok | 10.1 | Presence detected
PSU1 Failure | DEh | ok | 10.1 | Transition to OK
PSU1 PF Failure | DFh | ok | 10.1 | Transition to OK
PSU1 IN Failure | E0h | ok | 10.1 | Transition to OK
PSU1 AC In Pwr | 86h | ok | 19.5 | 64 Watts
PSU1 DC Out Pwr | 87h | ok | 19.5 | 48 Watts
Power Supply 2 | E1h | ok | 10.2 |
PSU2 Failure | E2h | ok | 10.2 | Transition to OK
PSU2 PF Failure | E3h | ok | 10.2 | Transition to OK
PSU2 IN Failure | E4h | ok | 10.2 | Transition to OK
PSU2 AC In Pwr | 88h | ok | 19.6 | 0 Watts
PSU2 DC Out Pwr | 89h | ok | 19.6 | 0 Watts
Power Supply 3 | E5h | ok | 10.3 |
PSU3 Failure | E6h | ok | 10.3 | Transition to OK
PSU3 PF Failure | E7h | ok | 10.3 | Transition to OK
PSU3 IN Failure | E8h | ok | 10.3 | Transition to OK
PSU3 AC In Pwr | 8Ah | ok | 19.7 | 0 Watts
PSU3 DC Out Pwr | 8Bh | ok | 19.7 | 0 Watts
```

PSU information in XCC

Power Supply: 1/3 Installed

Slot	Status	Part Number	Serial Number	Version
Power Supply 1	Normal	SP57B19903	G1SZ2CX0019	0.00

FRU Number

CRPS

Manufacture ID

GREA

On Duration

N/A

Power Cycles

N/A

Rated Power

2700 W

Chassis Firmware Update

PSU Firmware

Update Firmware

Bay No.	Version	Manufacturer
1	0.00	GREAT WALL

Midplane information in XCC

Chassis Information

UUID:

04257B7225D44380B9D0865158700037

Machine Type/Model:

1234567812

Serial Number:

□□□□□□□□□□

PSoC Firmware Version:

2.5

PSoC Firmware			 Update Firmware
Version	Release Date	Manufacturer	
2.5	2023-10-30	Lenovo	

Switching the master node

By default, node 1 is the master node. If node 1 fails or times out (default = 180 secs), control will switch to the next available node. After node 1 is fixed, the `ipmitool raw 0x3a 0xf5 0x01 0x01` IPMI command can be used to force a reallocation of the master to node 1.

* `0x01` refers to node1

```
(XCC) [/] > ipmitool raw 0x3a 0xf5 0x01 0x01
00
(XCC) [/] > █
```