PowerEdge Product Group

Direct from Development

PowerEdge MX7000 LED Device Status

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SUMMARY

The MX7000 chassis and modular devices in a MX7000 chassis are equipped with multi-purpose LEDs which can indicate the current health state of the device, provide identification or implement device specific features.

This whitepaper intends to provide a single point of comprehensive status information for LED behaviors on PowerEdge MX7000.

Users want to be able to look at the chassis and deduce its current health state when physically in front of the chassis. Most of the components that are present in the MX7000 chassis are able to display their current health state via LEDs.

Users also want to be able to accurately identify components in a chassis. A useful feature to do this is the Identify function that can be activated from the front panel, or remotely via the OpenManage Enterprise Modular GUI. This can be a very useful feature when you are managing a multi-chassis setup and want to remotely identify a particular device in the pool.

Some devices also implement their own specific LED behavior, for example PowerEdge MX5016s implement an LED feature that indicates mapping state. This document will cover these features.

Management Module LED Behavior

The Management Module (MM) is located at the rear of the chassis (Figure 1) and contains two LEDs: Power LED (Green only) and Status LED/Button (Blue or Amber).

Figure 1: Management Module

Status LED/Button (Blue or Amber) is on the left and the Power LED (Green only) is on the right as shown by red highlights.

The Power and Status LED (color is dependent on status) states are as follows:

Healthy Chassis

MM State	Power LED State	Status LED State
Active	LED ON (Green)	LED ON (Blue-solid)
Standby	LED ON (Green)	LED OFF
Identify (Active)	LED ON (Green)	LED ON (Blue-blinking)

Faulted Chassis

MM State	Power LED State	Status LED State
Active	LED ON (Green)	LED ON (Amber-blinking)
Identify (Active)	LED ON (Green)	LED ON (Blue-blinking)

(Note: Only active MM will reflect faulted chassis state and provide identification functionality.)

Management Module Hardware Failure

Issue	Power LED State	Status LED State
MM unable to power on	LED OFF	LED OFF
MM unable to boot up	LED OFF	LED ON (Amber-solid)

The Status LED/Button on the rear of the chassis changes to AMBER when any of the Front Panel iconic indicators shows AMBER. When the chassis/MM is in Identify State, the combo Status LED/Button shall always blink BLUE and override any other Status LED state.

IO Module LED Behavior

I/O Modules (IOMs) are inserted in the rear of the chassis and support a two-stacked arrangement of LEDS: Top = AMBER/GREEN, Bottom = BLUE.

Figure 2a – Typical Fab A/B IO Module: Power/Status LED on the top and Identification LED on bottom as shown by red highlights.

Figure 2b – Typical Fab C IO Module: Power/Status LED on the top and Identification LED on bottom as shown by red highlights.

The LEDs support the following functions

IOM Health	Power/Status LED State	Identification LED State
Healthy	LED ON (Green)	-
Faulted	LED ON (Amber)	-
Identify	-	LED ON (Blue-blinking)

The green LED behavior can be overridden to indicate fabric mismatch. In case there is a fabric mismatch, green LED will blink for 2.5 seconds and then stay lit.

Sled LED Behavior

The Sleds are inserted in the front of the chassis and contain an LED for Power/Status/Identification via Blue or Amber colors.

Figure 3: Current PowerEdge MX Sled Options

MX740c MX840c MX5016s

The Power/Status/Identification LED is on the top left highlighted in red.

The Power/Status/Identification (color is dependent on status) LED states for a sled device will be as follows:

Chassis manager firmware console

Sled Health	Power/Status/Identification LED State
Off	LED_OFF
Healthy	LED ON (Blue)
Errors exist (System on/off)	LED ON (Amber-blinking)
Identify	LED ON (Blue-blinking)
Failsafe	LED ON (Amber-solid)

For PowerEdge MX5016s (*Figure 3*), a cylindrical LED is also available marked with green highlight in the figure.

Its behavior is as follows:

Mapping state	Cylinder LED on PowerEdge MX5016s
Mapped to Compute that is powered ON	LED ON (Blinking)
Unmapped	LED OFF
All mapped compute sleds are off	LED OFF

NOTE: It is unsafe to remove the PowerEdge MX5016s any time the LED is Blinking, as it is has active mappings to compute sleds that are powered on. To remove the PowerEdge MX5016s, either unmap storage from all compute sleds, or power down all compute sleds that are using this storage. See the User Guide for more information.

PSU LED Behavior

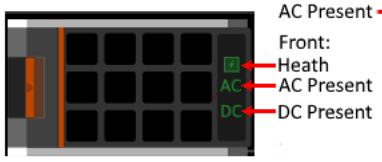

Figure 4 – Front PSU LED

Figure 5 – Rear PSU LED

The PSU LED States are as follows:

PSU State	Health LED (Front)	AC Present (Front)	DC Present (Front)	AC Present (Rear)
Healthy	LED ON (Green)	LED ON	LED ON	LED ON
Faulted	LED ON (Amber)	-	-	-

The Power Supply Units (PSUs) are inserted in the front of the chassis and utilize four LEDs: 3 on the front (*Figure 4*) and 1 in the back (*Figure 5*).

On the front of the PSU, if the AC Present LED is illuminated, then AC is detected and within tolerance. If the DC Present LED is illuminated, then the PSU is supplying DC to the chassis. The AC Present LED on the rear of the chassis, when illuminated, indicates that AC is detected.

FAN LED Behavior

The Fans are inserted in the front and the back of the chassis (Figure 8) and contain one LED: Power/Status LED (Green or Amber).

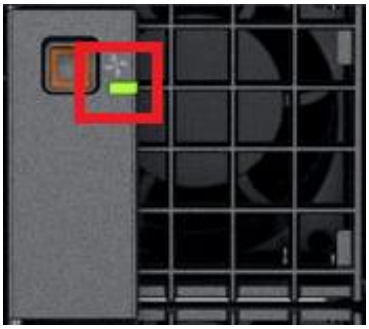

Figure 6 – Front Fans Power/Status LED

Figure 7 – Rear Fans Power/Status LED

The Power/Status/Identification (color is dependent on status) LED states will be as follows:

Fan Health	Power/Status LED State
Off	LED_OFF
Healthy	LED ON (Green)
Fault	LED ON (Amber-blinking)
Firmware Update in Progress	LED ON (Green-blinking)

Conclusion: A thorough understanding of the physical LED status can ensure efficient health status and provide feedback for timely troubleshooting. The PowerEdge MX management module, compute sleds, storage sleds, IO Modules, power supply, and fans, each have LED state indicators that deliver identification on specific features.