



Product Overview

The Cisco Catalyst Digital Building Series Switch is an Ethernet switch designed to enable wired Ethernet, Power over Ethernet(PoE), and Universal Power Over Ethernet(UPOE) deployments for digitizing commercial building subsystems, especially with applications such as Network Powered Lighting, HVAC controls, and security. For simplicity, we will focus on the Network Powered Lighting use case in this guide to elaborate the use of the switch. Network Powered Lighting refers to configuring IP and Ethernet LED-based luminaries and sensors for smart lighting and building controls in an enterprise carpeted space.

Cisco Catalyst Digital Building Series Switches enable and drive this convergence of smart lighting and building systems to IP over PoE technology.

Cisco Catalyst Digital Building Series Switches provide support for the following features:

- Eight Fast Ethernet downlink ports
- Two Gigabit Ethernet uplinks
- Power over Ethernet Plus (PoE+) support up to 240W of PoE budget with the PoE/PoE+ switch model and up to 480W of PoE budget with the UPOE switch model
- Reduced power consumption and advanced energy management
- RJ-45 and USB Micro-Type B console ports
- File system support on USB Type A port

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Switch Models

Table 1: Cisco Catalyst Digital Building Series Switch Models and Description

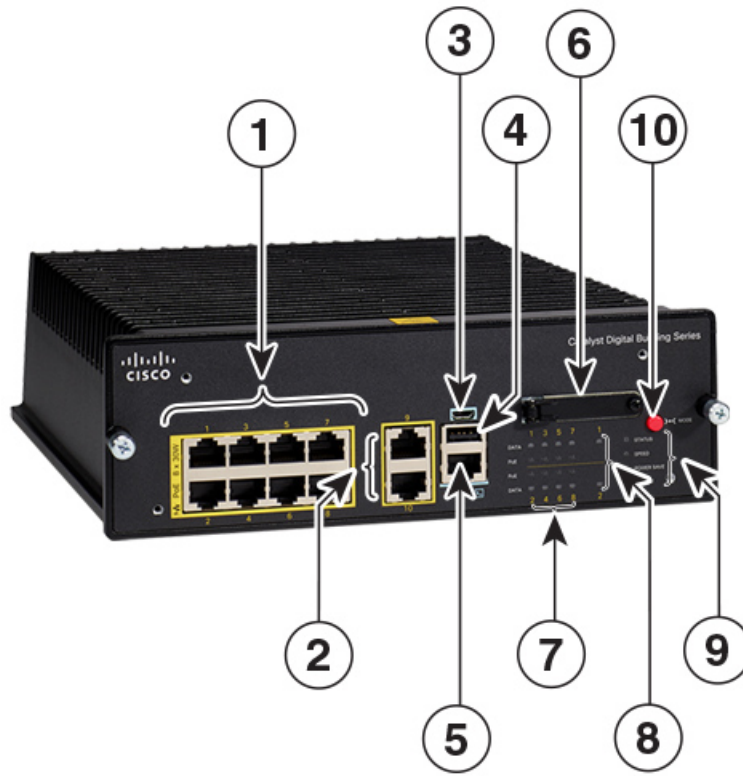
Switch Model	Software Image	Description
CDB-8U	LAN Lite	Eight Fast Ethernet downlink UPOE ports; two 1-Gigabit Ethernet uplink ports; 545W Power Supply.
CDB-8P	LAN Lite	Eight Fast Ethernet downlink PoE+ ports; two 1-Gigabit Ethernet uplink ports; 280W Power Supply.

Front Panel

This section describes the front panel components of a Catalyst Digital Building Series Switch.

Catalyst Digital Building Series PoE/PoE+ Switch	Catalyst Digital Building Series UPOE Switch
Eight downlink Fast Ethernet PoE+ ports	Eight downlink Fast Ethernet UPOE ports
Two copper uplink Gigabit Ethernet ports	Two copper uplink Gigabit Ethernet ports
Mode button	Mode button
RJ-45 console port	RJ-45 console port
USB micro-Type B (console) port	USB micro-Type B (console) port
USB Type A port	USB Type A port
LEDs	LEDs
SD card slot	SD card slot

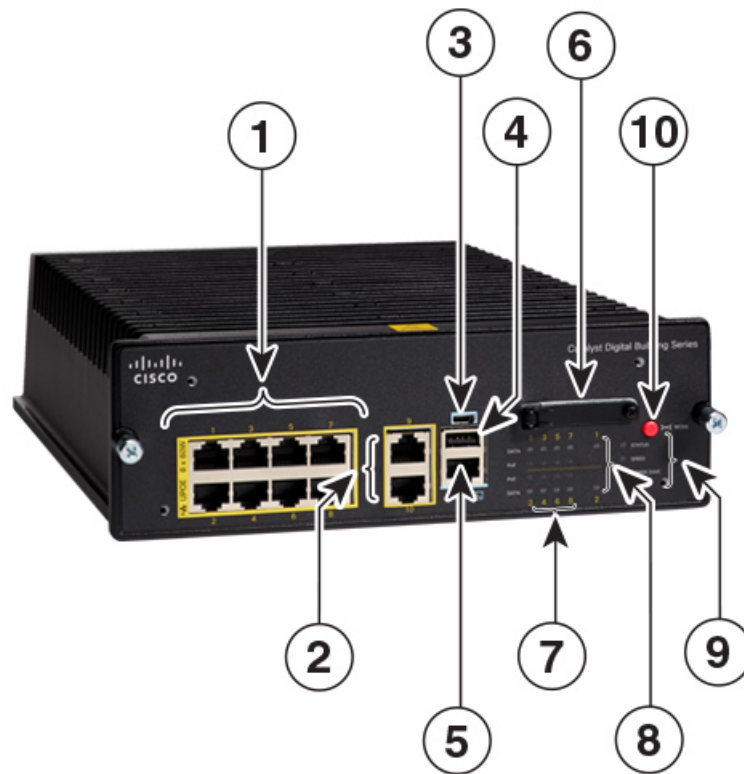
Figure 1: Front Panel of a Catalyst Digital Building Series PoE/PoE+ Switch



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1	Downlink PoE+ ports	6	SD card slot
2	Uplink Gigabit Ethernet ports	7	Downlink port Data and PoE LEDs
3	USB micro - Type B (console) port	8	Uplink port data LEDs
4	USB Type A port	9	System LEDs
5	RJ-45 Console port	10	Mode button

Figure 2: Front Panel of a Catalyst Digital Building Series UPOE Switch



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1	Downlink UPOE ports	6	SD Card Slot
2	Uplink Gigabit Ethernet ports	7	Downlink port data and PoE LEDs
3	USB micro-Type B (console) port	8	Uplink port data LEDs
4	USB Type A port	9	System LEDs
5	RJ-45 Console port	10	Mode button

PoE, PoE+ and UPOE Ports

The ports on the PoE/PoE+ switch provide PoE+ support for devices compliant with IEEE 802.3af and IEEE 802.3at and also provide PoE support for Cisco IP Phones and LED Luminaries. The PoE switch ports are Power Source equipment (PSE) capable and source power to PD devices (Luminaries) connected to the

downlink ports. The switch can source PoE power of up to 30W per port, with a total budget of 240W for the entire switch.

The UPOE ports provide support for Cisco UPOE and each port can deliver a power of up to 60W, with a total budget of 480W for the entire switch.

The PoE and UPOE ports use RJ-45 connectors with Ethernet pinouts. Luminaries are connected to PoE and UPOE switches using CAT5/CAT6 cables and they are controlled through IP.

Gigabit Uplink Ports

The copper gigabit uplink ports support speed up to 1000Mbps.

Console Ports

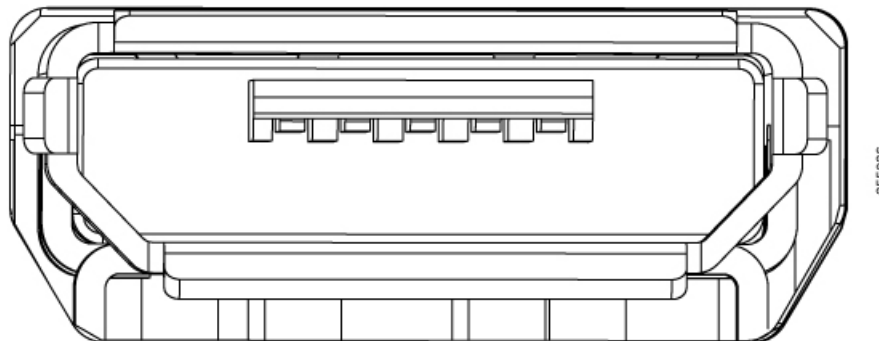
The console ports connect the switch to a PC running Microsoft Windows or to a terminal server.

- RJ-45 console port (EIA/TIA-232). The RJ-45 console port connection uses an RJ-45-to-DB-9 female cable.
- USB micro-Type B console port (5-pin connector).

If you use the USB micro-Type B console port, the Cisco Windows USB device driver must be installed on any PC connected to the console port (for operation with Microsoft Windows). Mac OS X or Linux do not require special drivers.

This illustration shows a 5-pin micro-Type B USB port.

Figure 3: USB Micro-Type B Port



With the Cisco Windows USB device driver, you can connect and disconnect the USB cable from the console port without affecting Windows HyperTerminal operations.

The console output always goes to both the RJ-45 and the USB console connectors, but the console input is active on only one of the console connectors at any one time. The USB console takes precedence over the RJ-45 console. When a cable is connected into the USB console port, the RJ-45 console port becomes inactive. Conversely, when the USB cable is disconnected from the USB console port, the RJ-45 port becomes active.

You can use the command-line interface (CLI) to configure an inactivity timeout which reactivates the RJ-45 console if the USB console has been activated and no input activity has occurred on the USB console for a specified time.

After the USB console deactivates due to inactivity, you cannot use the CLI to reactivate it. Disconnect and reconnect the USB cable to reactivate the USB console. For information on using the CLI to configure the USB console interface, see the Software Configuration Guide, Cisco IOS Release 15.2(5)EX (Cisco Catalyst Digital Building Switches).

USB Type A Port

The USB Type A port provides access to external USB flash devices (also known as thumb drives or USB keys) and to USB Bluetooth devices.

The port supports USB flash drives with capacities from 128 MB to 8 GB (USB devices with port densities of 128 MB, 256 MB, 1 GB, 4 GB, and 8 GB are supported). Cisco IOS software provides standard file system access to the flash device: read, write, erase, and copy, as well as the ability to format the flash device with a FAT file system.

The port supports USB Bluetooth devices. The USB Bluetooth device acts as a Bluetooth host and serves as either a serial port or a management port connection. You can pair it with your Bluetooth smart phone, laptop, or tablet.

SD Flash Memory Card Slot

The switch supports a Secure Digital(SD) flash memory card that makes it possible to replace a failed switch without reconfiguring the new switch. A cover protects the flash card and holds the card firmly in place. The cover is hinged and closed with a captive screw. This prevents the card from becoming loose and protects against shock and vibration.

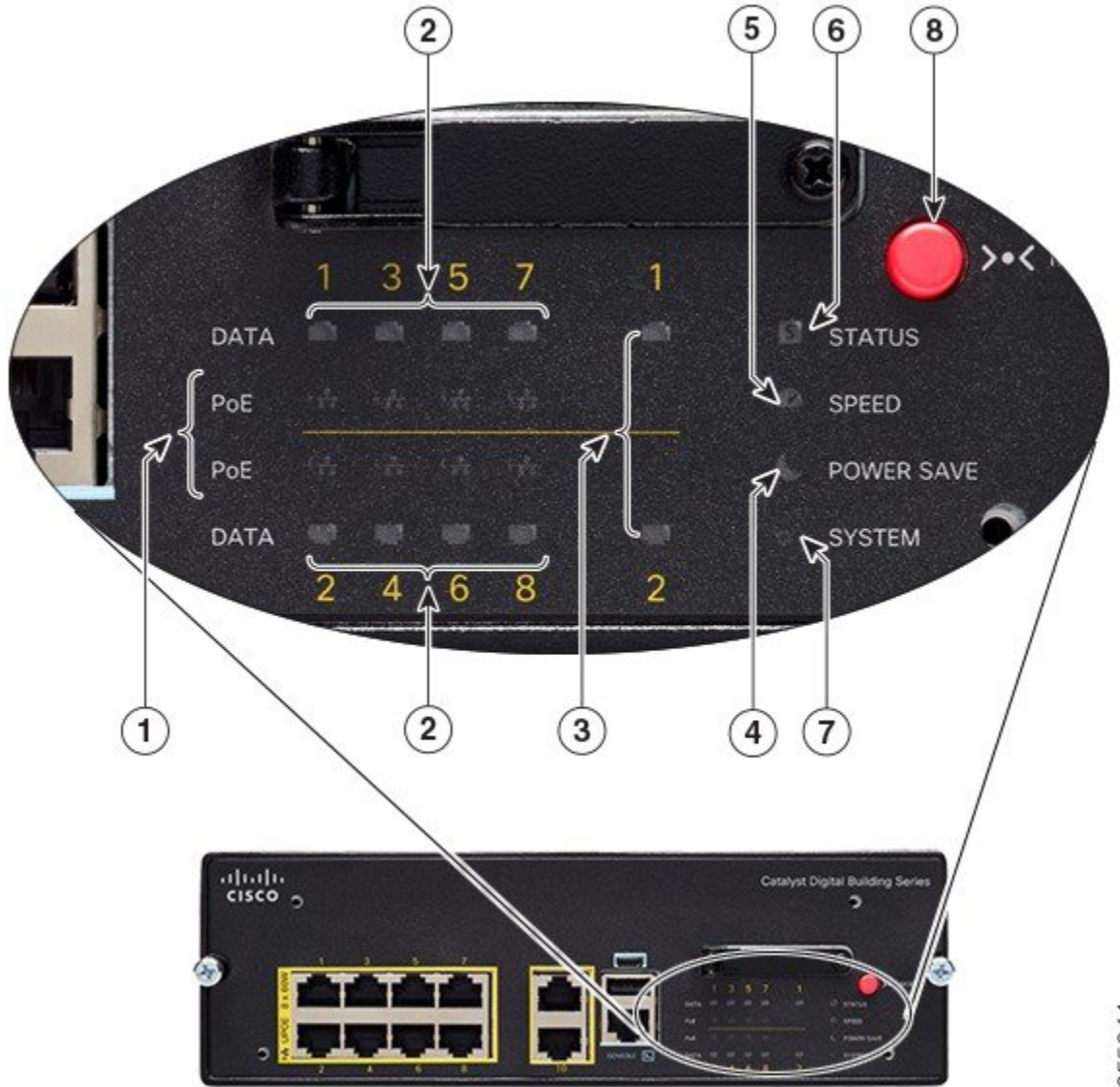
Up to 2GB of Cisco SD memory card is supported.

LEDs

You can use the switch system and port LEDs to monitor switch activity and performance. The LEDs remain off by default when switch is powered on. Press the Mode button to turn on the LEDs.

This figure shows the switch LEDs and the Mode button that you use to select a port mode.

Figure 4: Switch LEDs and Mode Button







1	Downlink Port PoE LEDs	5	STATUS LED
2	Downlink Port Data LEDs	6	MODE button
3	Uplink Port Data LEDs	7	POWER SAVE LED
4	SPEED LED	8	SYSTEM LED



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Downlink Port Data LEDs

RJ-45 ports have port LEDs. These LEDs, as a group or individually, provide information about the switch and about the individual ports.





Color	Description
Off	No link or port was administratively shut down.
Green 	Link present but is not sending or receiving data.
Blinking green 	Activity. Port is sending or receiving data.
Blinking green-amber 	Link fault. Error frames can affect connectivity, and errors such as excessive collisions, CRC errors, and alignment and jabber errors are monitored for link faults.
Amber 	Port is blocked by Spanning Tree Protocol (STP) and is not forwarding data. After a port is reconfigured, the port LED is amber for up to 30 seconds as STP searches for loops.

Downlink Port PoE LEDs



Color	Description
Off	PoE is not enabled.
Green 	PoE is enabled. Ports are functioning correctly.
Blinking amber 	<ul style="list-style-type: none"> • PoE port has been denied power. • PoE port has a PoE fault.

Uplink Port Data LEDs


LED Color	Description
Off	No link or port was administratively shut down.

LED Color	Description
Green 	Link present but is not sending or receiving data.
Blinking green 	Activity. Port is sending or receiving data.
Blinking green-amber 	Link fault. Error frames can affect connectivity, and errors such as excessive collisions, CRC errors, and alignment and jabber errors are monitored for link faults.
Amber 	Port is blocked by Spanning Tree Protocol (STP) and is not forwarding data. After a port is reconfigured, the port LED is amber for up to 30 seconds as STP searches for loops.


System LED

Color	System Status
Off	System is not powered on.
Green 	System is operating normally.
Amber 	System is receiving power but is not operating properly.


Status LED

Color	Description
Off	Status Mode disabled.
Green 	Status Mode Enabled. Port LEDs function as described in Downlink Port Data LEDs and Uplink Port Data LEDs section.

Speed LED

Color	Description
Off	Speed Mode Disabled.
Green 	Speed Mode Active. Port LEDs indicate port speed as follows: <ul style="list-style-type: none"> • Downlink: Green = 100 Mbps, Amber = 10 Mbps, Off = No Link • Uplink: Green = 1000 Mbps, Amber = 100 Mbps, Off = 10 Mbps or No Link

Power Save LED

Color	Description
Off	System is running normally
Green 	System is in a deep sleep mode.

Mode Button

The mode button is used for resetting the switch, entering express setup mode, selecting or changing an LED mode, and manually waking up the switch from hibernation mode.

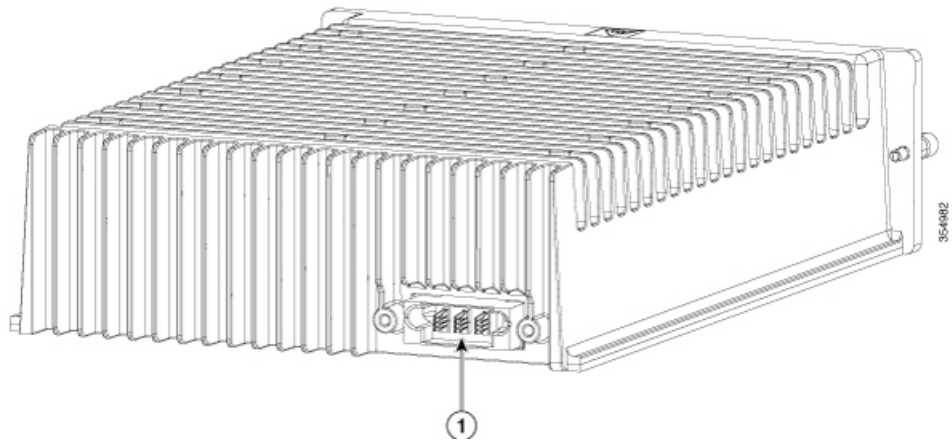
In Cisco Catalyst Digital Building series switches, LEDs are normally turned off to save power. When the mode button is pressed, the LEDs turn on for a set period (60 seconds) before they turn off again to save power. This can be overridden by a configuration parameter which alters the default 60 second timeout or disables LED power savings completely. All LEDs are affected by this function except the System LED, which only dims and does not turn off completely.

System State	Duration	Action
LEDs Off	Any	Activates the LEDs for 60 seconds, then returns the LEDs to Off State. System LED dims but does not turn off.
LEDs On	Any	Toggle between "Stat" and "Speed" LED modes. These modes only affect the port data LEDs.
Bootloader Active	Hold until bootloader completes	Stops autoboot and remains at bootloader prompt.

System State	Duration	Action
IOS Active, No Configuration Stored	Hold for more than 3 seconds	Enters Day 0 configuration.
Switch in Deep Sleep	Hold for more than 1 second	Switch wakes up to full power mode.

Rear Panel

Figure 5: Rear Panel of Catalyst Digital Building Series Switch



1	Proprietary power connector
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Note

You should mount the switch in one of the following mount accessories and complete the electrical installation to power on the switch:

- Flexible mount with IEC C14 power junction box (CDB-MNT-FLEX-C14)
- Flexible mount with direct-wired junction box (CDB-MNT-FLEX-DIR) — **Plenum rated**
- 5RU 19" rack mount chassis for up to 5 switches (CDB-MNT-RACK5-C14)

Network Configurations

See the switch software configuration guide for network configuration concepts and examples of using the switch to create dedicated network segments and interconnecting the segments through Fast Ethernet and Gigabit Ethernet connections.