

Cisco CDB-8U Switch Configuration Guide



Contents

- Purpose1**
- Initial Configuration and Setup1**
 - Connection1
 - Log In1
 - Enable VLAN 11
 - Configure IP Address and Default Gateway1
 - Enable PortFast Edge on UPoE Ports.....2
 - Disable Storm-Control on UPoE Ports2
 - Disable CoAP Proxy2
 - Disable IGMP Snooping2
 - Enable LLDP3
 - Enable Telnet (Optional)3
 - Save Configuration4
- Common Commands5**
 - Enable EXEC Commands.....5
 - View Switch Hardware and IOS Software Versions.....5
 - View Status of All Switch Ports.....5
 - View PoE Power Status of All Switch Ports5
 - View Manually Set Poe Power Allocation for All Switch Ports.....5
 - View Detailed Poe Power Status of a Specific Port5
 - View PoE Power Policing Status of All Switch Ports.....5
 - View Recent Messages from Switch Log (Including Errors)5
 - Enable Console Log Messages.....5
 - Set Console Privileged EXEC Timeout.....5
 - Enable LLDP Globally on the Switch6
 - View Switch LLDP Statistics6
 - View LLDP Neighbors.....6
 - View Detailed LLDP Neighbor Information6
 - Disable and Re-enable a Specific Port6
- Power Management Modes7**
 - Default Mode: Auto.....7
 - Limit the Allocated Power Budget for Port Before Switch Discovers PD7
 - Set Static Allocated Power Level for Port Before Switch Discovers PD.....7

Cancel Port Settings7

Cable Testing via Time-Domain Reflectometer (TDR).....7

Configure Switched Port Analyzer (SPAN) Port Mirroring and Monitoring8

Force UPoE (60W) Power Availability from The Port Via Four-Pair Mode.....8

Cisco Command Short Forms8

Factory Reset of Network Switch8

Cisco References9

Purpose

This document outlines the commands used to configure a **Cisco CDB-8U network switch** to function with the Igor[®] PoE lighting control system and includes additional commands useful for reporting and troubleshooting.

Initial Configuration and Setup

Connection

Refer to the appropriate Cisco documentation for information on connecting to the switch to access the command-line interface (CLI). This is typically accomplished using a Cisco console cable and a terminal emulator application set to 9600-8-N-1.

Log In

Once you're connected to the Cisco switch and have a CLI terminal prompt, enter the following commands to log in:

```
<switch-password (if prompted)>  
Switch> enable  
Password: <config-password, default is cisco>
```

Enable VLAN 1

Determine the IP address, subnet mask, and default gateway values that you want to use to configure the network switch; and then type the following commands in the console with those values:

```
Switch# configure terminal  
Switch(config)# interface vlan 1  
Switch(config-if)# no shut  
Switch(config)# end
```

Configure IP Address and Default Gateway

Determine the IP address, subnet mask, and default gateway values you want to use to configure the network switch; and then type the following commands in the console with those values:

```
Switch# configure terminal  
Switch(config)# interface vlan 1  
Switch(config-if)# ip address <ip-address> <subnet-mask>  
Switch(config-if)# exit  
Switch(config)# ip default-gateway <default-gateway>  
Switch(config)# end
```

Enable PortFast Edge on UPoE Ports

The following commands will enable the PortFast Edge feature on a range of ports, typically the UPoE ports (Fa1/0/1-8). This feature should be enabled for any ports used for Igor nodes as it significantly reduces the delay time between when an Igor node is connected to a port and when the switch allows network communication from the node to the Igor Gateway:

```
Switch# configure terminal
Switch(config)# interface range Fa1/0/<starting port#>-<end port#>
Switch(config-if-range)# spanning-tree portfast edge
Switch(config-if-range)# end
```

Disable Storm-Control on UPoE Ports

The following commands will disable Storm-Control on the UPoE ports (Fa1/0/1-8):

```
Switch# configure terminal
Switch(config)# interface range Fa1/0/<starting port#>-<end port#>
Switch(config-if-range)# no storm-control broadcast level
Switch(config-if-range)# no storm-control multicast level
Switch(config-if-range)# no storm-control unicast level
Switch(config-if-range)# end
```

Disable CoAP Proxy

The following commands will disable the COAP Proxy on the switch:

```
Switch# configure terminal
Switch(config)# coap proxy
Switch(config-coap-proxy)# stop
Switch(config-coap-proxy)# exit
Switch(config)# no coap proxy
Switch(config)# end
```

Disable IGMP Snooping

Enter the following commands to disable IGMP snooping on the switch. This step is required to allow multicast traffic between the Igor Nodes and Gateway:

```
Switch# configure terminal
Switch(config)# no ip igmp snooping
Switch(config)# end
```

Important: If multicast traffic isn't allowed on your network, an alternative solution is to configure the network DHCP server to pass the Igor Gateway server IP address in DHCP Option 229. Contact Igor for more details.

Enable LLDP

To enable LLDP, enter the following commands:

```
Switch# configure terminal
Switch(config)# lldp run
Switch(config)# end
```

Enable Telnet (Optional)

This is an optional step to enable telnet on the Cisco switch. Determine the value you want to use for the telnet password, and then enter the following commands:

```
Switch# configure terminal
Switch(config)# line vty 0 15
Switch(config-line)# password <telnet-password>
Switch(config-line)# end
```

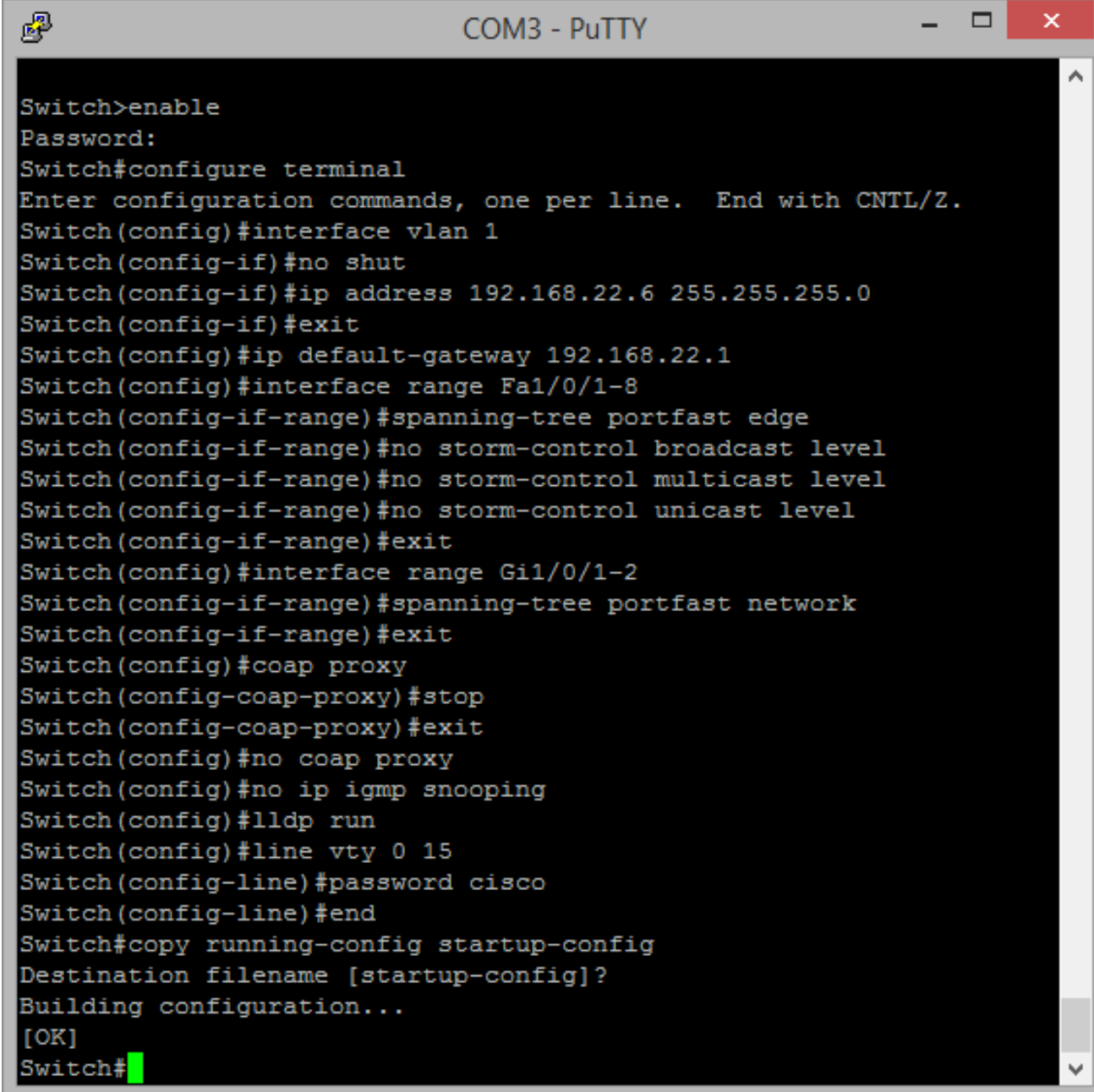
Save Configuration

From the switch prompt, enter the following command:

```
Switch# copy running-config startup-config  
[Enter]
```

Important: If the configuration changes are not saved, then the switch will return to the previous settings the next time it is rebooted.

Example:



```
COM3 - PuTTY  
Switch>enable  
Password:  
Switch#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Switch(config)#interface vlan 1  
Switch(config-if)#no shut  
Switch(config-if)#ip address 192.168.22.6 255.255.255.0  
Switch(config-if)#exit  
Switch(config)#ip default-gateway 192.168.22.1  
Switch(config)#interface range Fa1/0/1-8  
Switch(config-if-range)#spanning-tree portfast edge  
Switch(config-if-range)#no storm-control broadcast level  
Switch(config-if-range)#no storm-control multicast level  
Switch(config-if-range)#no storm-control unicast level  
Switch(config-if-range)#exit  
Switch(config)#interface range Gi1/0/1-2  
Switch(config-if-range)#spanning-tree portfast network  
Switch(config-if-range)#exit  
Switch(config)#coap proxy  
Switch(config-coap-proxy)#stop  
Switch(config-coap-proxy)#exit  
Switch(config)#no coap proxy  
Switch(config)#no ip igmp snooping  
Switch(config)#lldp run  
Switch(config)#line vty 0 15  
Switch(config-line)#password cisco  
Switch(config-line)#end  
Switch#copy running-config startup-config  
Destination filename [startup-config]?  
Building configuration...  
[OK]  
Switch#
```

Common Commands

Enable EXEC Commands

```
Switch> enable  
Password: <switch-password>  
Switch#
```

View Switch Hardware and IOS Software Versions

```
Switch# show version
```

View Status of All Switch Ports

```
Switch# show interface status
```

View PoE Power Status of All Switch Ports

```
Switch# show power inline
```

View Manually Set Poe Power Allocation for All Switch Ports

```
Switch# show power inline consumption
```

View Detailed Poe Power Status of a Specific Port

```
Switch# show power inline gi1/0/<port#> detail
```

View PoE Power Policing Status of All Switch Ports

(i.e., Real-time Power Demand Limits)

```
Switch# show power inline police
```

View Recent Messages from Switch Log (Including Errors)

```
Switch# show log
```

Enable Console Log Messages

```
Switch# terminal monitor
```

Set Console Privileged EXEC Timeout

```
Switch# configure terminal  
Switch(config)# line console  
Switch(config-line)# exec-timeout minutes [seconds]  
Switch(config-line)# end
```


Enable LLDP Globally on the Switch

```
Switch# configure terminal
Switch(config)# lldp run
```

View Switch LLDP Statistics

```
Switch# show lldp statistics
```

View LLDP Neighbors

```
Switch# show lldp neighbors
```

View Detailed LLDP Neighbor Information

```
Switch# show lldp neighbors detail
```

Disable and Re-enable a Specific Port

(i.e., Cycle PoE Power on a Port)

```
Switch# configure terminal
Switch(config)# int gil/0/<port#>
Switch(config-if)# shutdown
Switch(config-if)# no shutdown
Switch(config-if)# end
```

Power Management Modes

Default Mode: Auto

Automatically allocates power to the PoE port after device detection. This is the default setting:

```
Switch# configure terminal
Switch(config)# int gi1/0/<port#>
Switch(config-if)# power inline auto
Switch(config-if)# end
```

Limit the Allocated Power Budget for Port Before Switch Discovers PD

```
Switch# configure terminal
Switch(config)# int gi1/0/<port#>
Switch(config-if)# power inline auto max <milliwatts>
Switch(config-if)# end
```

Set Static Allocated Power Level for Port Before Switch Discovers PD

The switch reserves this amount of power for the port even when no device is connected:

```
Switch# configure terminal
Switch(config)# int gi1/0/<port#>
Switch(config-if)# power inline static max <milliwatts>
Switch(config-if)# end
```

Cancel Port Settings

To cancel specific port settings, reissue the configuration command with a "no" preceding it. Example:

```
Switch(config-if)# no power inline static max
```

Cable Testing via Time-Domain Reflectometer (TDR)

The following command will instruct the switch to run a TDR test on a specific interface to help determine if there's a fault in the cable and approximately how far away from the switch that fault exists:

```
Switch# test cable tdr int gi1/0/<port#>
Show the results:
Switch# show cable tdr int gi1/0/<port#>
```

Configure Switched Port Analyzer (SPAN) Port Mirroring and Monitoring

The following command sends a copy of the traffic from the source port to the destination port on the switch. SPAN mirrors receive or transmit (or both) traffic on one or more source ports to a destination port for analysis:

```
Switch# configure terminal
Switch(config)# no monitor session all
Switch(config)# monitor session 1 source int gi1/0/<port#>
Switch(config)# monitor session 1 destination int gi1/0/<port#>
```

Force UPoE (60W) Power Availability from The Port Via Four-Pair Mode

```
Switch# configure terminal
Switch(config)# int gi1/0/<port#>
Switch(config-if)# power inline four-pair forced
Switch(config-if)# shutdown
Switch(config-if)# no shutdown
Switch(config-if)# end
```

Cisco Command Short Forms

The Short Form commands below can be used in place of those listed in the commands above.

COMMAND	SHORT FORM
configure terminal	conf t
importance	imp
level	lev
name	n
show	sh
shutdown	shut
timeout	t

Factory Reset of Network Switch

To perform a hard factory reset, which resets everything, including the VLANs, hold the **Mode** button for more than 3 seconds.

Cisco References

1. Cisco Digital Building Series Switch Hardware Installation Guide:
https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst_digital_building_series_switches/hardware/install/b-cdb-hig/b-cdb-hig_chapter_01.html
2. Cisco IOS Command-Line Interface Basic Configuration:
http://www.cisco.com/c/en/us/td/docs/routers/access/1800/1841/software/configuration/guide/sw/b_cli.html#wp1047439
3. Troubleshooting Power over Ethernet (PoE):
http://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst3750/software/troubleshooting/g_power_over_ethernet.html
4. Cisco PoE Power Calculator (PoE+ only):
<https://tools.cisco.com/cpc/launch.jsp>

END.