



Contents

Preface	5
Audience	5
Purpose	5
Conventions	5
Related Publications	6
Product Overview	7
Overview	7
Switch Models	8
Front Panel Overview	10
Ports and Slots	14
10/100BASE-T Downlink Ports	15
10/100BASE-T Uplink Ports	15
10/100/1000BASE-T Uplink Ports	15
100 Mb/s SFP Module Downlink Slots	15
100/1000 Mb/s SFP Module Uplink Slots	15
10/100/1000BASE-T Copper SFP Module Uplink Slots	15
Dual-Purpose Fast Ethernet Uplink Ports	15
Dual-Purpose Gigabit Ethernet Uplink Ports	16
Power over Ethernet Ports	16
Management Ports	16
Power Connectors	17
DC Power Connector	17
PoE Power Connector	17
Alarm Connector	18
SFP Modules	19
SFP Module Patch Cable	20
LEDs	20
Express Setup LED	21
System LED	22
USB-Mini Console LED	22
Alarm LEDs	22
Power Status LEDs	23
Port Status LEDs	23
Dual-Purpose Port LEDs	23
PoE Status LED	24

Flash Memory Card	25
Rear Panel	25
Management Options	26
Network Configurations	27
Switch Installation	29
Preparing for Installation	29
Warnings	29
Additional Information for Installation in a Hazardous Environment	30
Hazardous Area Installation Warnings	30
North American Hazardous Location Approval	31
EMC Environmental Conditions for Products Installed in the European Union	32
Installation Guidelines	32
Environment and Enclosure Guidelines	32
General Guidelines	32
Verifying Package Contents	33
Installing or Removing the Flash Memory Card (Optional)	33
Connecting to a Console Port	35
RJ-45 Console Port	35
USB Mini-Type B Console Port	36
Connecting to Power	39
Tools and Equipment	39
Supported Power Supplies	39
Installing the Power Converter on a DIN Rail, Wall, or Rack Adapter	40
Grounding the Switch	40
Connecting the Power Converter to an AC Power Source	43
Preparing the AC Power Connection	43
Connecting the AC Power Source to the Power Converter	44
Connecting the Power Converter to a DC Power Source	45
Wiring the DC Power Source	46
Attaching the Power Connectors to the Switch	50
Connecting Power to the Switch PoE DC-Input (Optional)	52
Applying Power to the Power Converter	55
Running Boot Fast	55
Powering On the Switch	55
Verifying Boot Fast	55
Disconnecting Power	55
Installing the Switch	55
Installing the Switch on a DIN Rail	56
Removing the Switch from a DIN Rail	57
Installing the Switch on the Wall	58
Connecting Alarm Circuits	60

Wiring the Protective Ground and DC Power for Alarm Circuits	60
Wiring the External Alarms	60
Attaching the Alarm Connector to the Switch.	63
Connecting Destination Ports	64
Connecting to 10/100 and 10/100/1000 Ports	64
Installing and Removing SFP Modules	66
Installing LC SFP Modules	67
Installing 1000BASE-T SFP Modules	67
Removing SFP Modules from SFP Module Slots	69
Connecting to SFP Modules	69
Connecting to a Fiber Optic SFP Module	70
Connecting to a 1000BASE-T SFP Module	71
Connecting to a Dual-Purpose Port.	71
Verifying Switch Operation	72
Where to Go Next.	72
Troubleshooting	75
Diagnosing Problems	75
Switch Boot Fast	75
Switch LEDs	75
Switch Connections	75
Bad or Damaged Cable	75
Ethernet and Fiber-Optic Cables	76
Link Status.	76
10/100 and 10/100/1000 Port Connections	76
SFP Module.	76
Interface Settings	77
Ping End Device	77
Spanning Tree Loops.	77
Switch Performance	77
Speed, Duplex, and Autonegotiation	77
Autonegotiation and Network Interface Cards	77
Cabling Distance	78
Resetting the Switch.	78
How to Recover Passwords	78
Finding the Switch Serial Number	78
Technical Specifications	81
Operating Temperature Specifications	81
Technical Specifications	81
Alarm Ratings	86

Hazardous Locations Standards	86
Cable and Connectors	87
Connector Specifications	87
10/100 Ports	87
SFP Module Connectors	88
Dual-Purpose Ports	88
Console Port	89
Alarm Port	89
Cables and Adapters	90
SFP Module Cables	90
Cable Pinouts	93
Console Port Adapter Pinouts	94
Running Express Setup	97
Configuring the Switch with the CLI-Based Setup Program	101
Accessing the CLI Through the Console Port	101
Removing the USB Mini-Type B Console Port Cover	101
RJ-45 Console Port	102
USB Mini-Type B Console Port	103
Installing the Cisco Microsoft Windows XP, 2000, Vista, 7, 8, and 10 USB Device Driver 105	
Uninstalling the Cisco Microsoft Windows XP, 2000, Vista, 7, 8, and 10 USB Driver	106
Entering the Initial Configuration Information	106
IP Settings	106
Completing the Setup Program	106