# Cisco Catalyst Express 520 Switch

The Cisco Catalyst® Express 520 Switch is a component of the Cisco Smart Business Communications System. This integrated system of voice, security, and wireless networking products provides an affordable, comprehensive communications solution that is easy to deploy and use while allowing for business growth. With the Cisco Smart Business Communications System, even smaller organizations can provide employees and customers with secure anywhere, anytime access to the information they need to communicate and interact more effectively. The solution is complemented by award-winning support and flexible financing options delivered through local Cisco partners.

The Cisco Catalyst Express 520 Switch is a fixed-configuration, managed Ethernet switch that provides 8 ports of 10/100 Power over Ethernet (PoE) optimized for integration with the Cisco® Smart Business Communications System. The Cisco Catalyst Express 520 Switch is designed for ease of deployment and ships with a predefined software configuration to work immediately with the Cisco Unified Communications 500 Series for Small Business. Available for the Cisco Catalyst Express 520 Switch is the Cisco Configuration Assistant. This centralized management application simplifies configuration and administration tasks for Cisco switches, routers, wireless access points, and voice solutions and is downloadable free of charge at http://www.cisco.com/go/configassist.

The Cisco Catalyst Express 520 Switch offers the following features:

- PoE—The 8-port PoE configuration provides 15.4W simultaneously on all ports for transparent integration with the Cisco Smart Business Communications System.
- Advanced network security:
  ○ Support for IEEE 802.1x, port security and Secure Sockets Layer (SSL)
  ○ Integration with Cisco Network Admission Control (NAC)
- Optimized quality of service (QoS) using Cisco Smartports—Cisco Smartports roles match the appropriate class of service (CoS) and differentiated services code point (DSCP) values to the specific Cisco device connected to the Cisco Catalyst Express 520 Switch.
- Central management—In conjunction with the GUI-based Cisco Configuration Assistant, the Cisco Catalyst Express 520 Series allows centralized management of a Cisco small and medium-sized business (SMB) network, including Cisco Catalyst switches, Cisco integrated services routers, Cisco Unified Communications 500 Series for Small Business, and Cisco Unified IP Phones.
- Limited lifetime warranty—Cisco Catalyst Express 520 Switch is backed for the life of the product by the Cisco Limited Lifetime Hardware Warranty.

## Configuration

Table 1 lists the part number and SKU

**Table 1.** Part Number and SKU

| Part Number and SKU | Description |
|---|---|
| Cisco Catalyst Express 520-8PC-K9 (WS-CE520-8PC-K9) | 8 10/100 PoE + 1 10/100/1000BASE-T or SFP uplink |

**Figure 1.** Cisco Catalyst Express 520 Series Switch



## Primary Benefits

### Purpose-Built for Cisco Smart Business Communications System

The Cisco Catalyst Express 520 Switch is designed for ease of deployment and ships with a predefined software configuration to work immediately with Cisco Unified Communication 500 Series for Small Business.

**Figure 2.** Cisco Unified Communications 500 and the Cisco Catalyst Express 520 series



### High Performance

With nonblocking, wire-speed switching on all ports, the Cisco Catalyst Express 520 Series offers 10/100-Mbps ports for desktop, wireless access point, printer, and IP phone connectivity and one 10/100/1000BASE-T or Small Form-Factor Pluggable (SFP) port for uplink connectivity. With head-of-line blocking prevention, a heavily congested port will not affect performance on other ports on the switch.

### Ease of Use

The Cisco Catalyst Express 520 Switch is easy to use. The switch is initialized through the GUI Device Manager; no console cable or terminal emulation application is needed. Integrated intelligence optimizes the switch at the system level. Optimal configuration for each port can be applied by choosing from 10 preset Cisco Smartports roles. In addition, all PoE ports can supply up to the IEEE standard maximum of 15.4W simultaneously without the need of an external power supply. There is no need to perform creative power budgeting or worry about exceeding the power limit or adding an external power shelf. All ports support autonegotiation of port speed and duplex.

With automatic medium-dependent interface crossover (Auto-MDIX) detection support, you do not have to worry about incorrect cable types.

### Security

The Cisco Catalyst Express 520 Switch offers layers of security to protect your business. To secure the device, management traffic to and from the GUI Device Manager can be encrypted with SSL. For network security, you can choose from three business-optimized security levels. With the NAC appliance solution, the Cisco Catalyst Express 520 Series helps protect your network against worms and viruses and raises the overall security protection of your network to the next level.

### Easy Monitoring and Troubleshooting

Troubleshooting is easy with the Cisco Troubleshooting Advisor, which identifies cabling problems such as wiring openings and shorts, common configuration errors, and other potential problems in your network and recommends corrective action. Graphical trend charts and an alert LED help identify problems before they cause network outages.

### Service and Support

Cisco Services offer a flexible suite of support services designed to help maintain high-quality network performance while controlling operational costs. The services and support programs described in Table 2 (SMARTnet®) and Table 3 (Cisco SMB Support Assistant) are available as part of the Cisco Catalyst Express 520 Service and Support solution and are available directly from Cisco and through resellers.

**Table 2.**    SMARTnet Service and Support Programs

| Service and Support | Features | Benefits |
|---|---|---|
| • Cisco SMARTnet, available directly from Cisco<br>• Cisco Packaged SMARTnet support program, available through resellers | • Access to software updates 24 hours a day<br>• Web access to technical repositories<br>• Telephone support through the Cisco Technical Assistance Center (TAC)<br>• Advance replacement of hardware parts | • Supplements existing staff<br>• Helps ensure that functions meet needs<br>• Mitigates risk<br>• Helps enable proactive or expedited issue resolution<br>• Lowers TCO by using Cisco expertise and knowledge<br>• Helps minimize network downtime |

**Table 3.**    SMBSA Service and Support Programs

| Service and Support | Features | Benefits |
|---|---|---|
| • Cisco SMB Support Assistant, available directly from Cisco<br>• Packaged Cisco SMB Support Assistant support, available through resellers<br>• 24-hour service request (case)—SMB Technical Assistance Center (TAC) engineers will respond within one business day during normal business hours | • Next-business-day advance replacement of hardware, where available; otherwise, same-day shipping<br>• Management tools designed for SMBs: Startup and configuration assistance, basic health checks and troubleshooting, and inventory and contract management | • Lowers cost of ownership by using Cisco expertise and knowledge<br>• Minimizes network downtime |

## Product Specifications

Table 4 lists specifications for the Cisco Catalyst Express 520 Series Switches.

**Table 4.**    Specifications for Cisco Catalyst Express 520 Series Switches

| Feature | Description |
|---|---|
| **Performance** | |
| **DRAM and flash memory** | 64 MB DRAM and 16 MB flash memory |
| **Switching Capacity** | 16 Gbps |
| **Forwarding rate (based on 64-byte packets)** | 2.7 Mpps |
| **Layer 2 Switching** | |
| **Spanning Tree Protocol** | • Fast convergence using 802.1w, activated by default<br>• PortFast supported for Desktop, IP Phone + Desktop, Printer, and Server Cisco Smartports roles |
| **MAC addresses** | 8000 MAC addresses |
| **Virtual LANs (VLANs)** | Up to 32 VLANs (1000 range) and support for 802.1Q trunking using Cisco Smartports |
| **Number and type of queues** | • 4 queues per port<br>• Shaped Round Robin (SRR) queuing<br>• Support for DSCP and CoS using Cisco Smartports |
| **Cisco Smartports (Preset Cisco Recommended Network Enhancements, QoS, and Security)** | |
| **Desktop** | • Optimized for desktop connectivity<br>• Configurable VLAN setting<br>• Port security activated to limit unauthorized access to the network |
| **IP Phone + Desktop** | • Optimized QoS for IP Phone + Desktop configurations<br>• Voice traffic is placed on "Cisco Voice" VLAN<br>• Configurable data VLAN<br>• QoS level helps ensure that voice-over-IP (VoIP) traffic takes precedence<br>• Port security activated to limit unauthorized access to the network |
| **Router** | • Configured for optimal connection to a router or firewall for WAN connectivity |
| **Switch** | • Configured as an uplink port to a backbone switch for fast convergence<br>• Permits 802.1Q trunking |
| **Access point** | • Configured for optimal connection to a wireless access point<br>• Configurable VLAN |
| **Server** | • Can be classified as trusted, critical, business, or standard server<br>  ◦ Trusted—For use with Cisco Unified Communications Manager Express; same QoS setting as for voice (VoIP traffic is prioritized)<br>  ◦ Critical—For crucial servers with QoS set higher than default<br>  ◦ Business—Default setting; QoS higher than for desktop Internet traffic<br>  ◦ Standard—For servers set to same level as regular desktop Internet traffic<br>• Configurable VLAN<br>• Port security activated to limit unauthorized access to the network |
| **Printer** | • QoS settings for Printer are the same as for Desktop, Access Point, and Standard Server<br>• Configurable VLAN<br>• Port security activated to limit unauthorized access to the network |
| **Guest** | • Guests are allowed access to the Internet, but not to the company network<br>• All guest ports are placed on "Cisco Guest" VLAN<br>• Port security activated to limit unauthorized access to the network |
| **Other** | • Cisco Smartports Other role allows for flexible connectivity of nonspecified devices<br>• Configurable VLAN<br>• No security<br>• No QoS policy |
| **Diagnostic** | Customers can connect diagnostic devices to monitor traffic on other switches (configurable using Cisco Configuration Assistant only) |

| Security | |
|---|---|
| **SSL** | SSL support; encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch |
| **Security policy slider** | Three security levels: low, medium, and high (configurable using Cisco Configuration Assistant only)<br><br>• Low—For business environments where there is limited guest access; limited number of devices are allowed per port<br><br>• Medium—For business environments where security is important; only authorized devices (by MAC address) are allowed on the company network<br><br>• High—For business environments where security is crucial; only authorized devices (by MAC address) and authenticated users (using IEEE 802.1x) are allowed on the company network |
| **Multicast** | • High-bandwidth video traffic is optimized so that it does not affect other applications on the network.<br><br>• Internet Group Management Protocol (IGMP) (v1, v2, and v3) snooping constrains multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward multicast traffic to only those ports that want to receive it |

| Product Specifications | |
|---|---|
| **Inline power (PoE)** | All 8 PoE ports on the Cisco Catalyst Express 520-8PC-UC can supply up to 15.4W (IEEE 802.3af standard maximum) of power over Category 5 cable. |
| **Supported SFPs** | • 100BASE-BX-10D<br>• 100BASE-BX-10U<br>• 100BASE-FX-FE<br>• 100BASE-FX-GE<br>• 100BASE-LX<br>• 1000BASE-LX/LH<br>• 1000BASE-SX |
| **Standards and Cisco features supported** | • Broadcast suppression<br>• Cisco Discovery Protocol Version 2<br>• IEEE 802.1d Spanning Tree Protocol<br>• IEEE 802.1p CoS classification<br>• IEEE 802.1q VLAN<br>• IEEE 802.1w Rapid Convergence Spanning Tree Protocol<br>• IEEE 802.1x Port Access Authentication<br>• IEEE 802.3ad Link Aggregation Control Protocol (LACP)<br>• IEEE 802.3af PoE<br>• IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports<br>• IEEE 802.3 10BASE-T<br>• IEEE 802.3u 100BASE-T/TX<br>• IEEE 802.3ab 1000BASE-T<br>• IEEE 802.3z 1000BASE-X<br>• IGMP (v1, v2, and v3) snooping<br>• Per VLAN Spanning Tree<br>• Per VLAN Spanning Tree Plus<br>• Per VLAN Rapid Spanning Tree Plus<br>• PortFast<br>• RADIUS<br>• SSL<br>• SNMPv3<br>• Unidirectional Link Detection (UDLD) Protocol<br>• VLAN Trunking Protocol (VTP) (transparent mode only) |

| Management | • RFC1213-MIB (MIB II) |
|---|---|
| | • RMON-MIB (statistics, history, alarms, and events groups only) |
| | • CISCO-PRODUCTS-MIB |
| | • CISCO-SYSLOG-MIB |
| | • CISCO-ENVMON-MIB |
| | • BRIDGE-MIB |
| | • ENTITY-MIB |
| | • ETHERNET-MIB |
| | • E-911 MIB support |
| | • IF-MIB |
| | Device Manager: Device-level GUI |
| | • Embedded GUI |
| | • Available in localized languages: Japanese, Chinese, French, Italian, German, and Spanish |
| | Cisco Configuration Assistant: Network management tool |
| | • Free download at http://www.cisco.com/go/configassist |
| | • Available in localized languages: Japanese, Chinese, French, Italian, German, and Spanish |
| Connectors and cabling | • 10/100BASE-TX ports: RJ-45 connectors; 2-pair Category 5 unshielded twisted pair (UTP) cabling |
| | • 10/100/1000BASE-T ports: RJ-45 connectors; 4-pair Category 5 UTP cabling |
| | • 1000BASE-SX, 1000BASE-LX/LH, 100BASE-FX, 100BASE-LX, and 100BASE-BX-based ports: LC fiber connectors (single-mode or multimode fiber) |
| Physical specifications | • 1.73 x 10.6 x 9.1 in. (4.4 x 27 x 23 cm) |
| | • Weight: 5 lb (2.3 kg) |
| Power | • Maximum Power Consumption: 204W |
| | • AC Input Voltage and Current: 100-240 VAC (autoranging) |
| | • Power Rating: 0.2 kVA |
| | • PoE: |
| | ◦ Maximum power supplied per port: 15.4W |
| | ◦ Total power dedicated to PoE: 124W |
| Environmental requirements | • Operating temperature: 32 to 113ºF (0 to 45ºC) |
| | • Storage temperature: –13 to 158ºF (–25 to 70ºC) |
| | • Operating relative humidity: 10 to 85% (noncondensing) |
| | • Operating altitude: Up to 10,000 ft (3049m) |
| | • Storage altitude: Up to 15,000 ft (4573m) |
| Predicted mean time between failure (MTBF) | 353,184 hours |
| Acoustic noise | 0 dBa (no fan) |
| **Regulatory Agency Approvals** | |
| Safety certifications | • UL 60950-1, First Edition |
| | • CUL to CAN/CSA 22.2 No. 60950-1, First Edition |
| | • TUV/GS to EN 60950-1, First Edition |
| | • CB to IEC 60950-1 with all country deviations |
| | • AS/NZS 60950-1, First Edition |
| | • NOM (through partners and distributors) |
| | • CE Marking |
| Electromagnetic compatibility certifications (ECC) | • FCC Part 15 Class A |
| | • EN 55022 Class A (CISPR22) |
| | • EN 55024 (CISPR24) |
| | • VCCI Class A |
| | • AS/NZS CISPR22 Class A |
| | • MIC |
| | • China EMC requirements |
| | • GOST |

## Limited Lifetime Hardware Warranty

For details about the Cisco Catalyst Express 520 Series Limited Lifetime Hardware Warranty, visit http://www.cisco.com/en/US/products/prod_warranties_item09186a00800e6e6e.html.

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