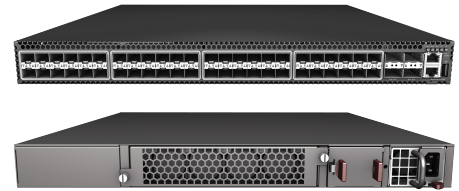


# ECS5610-52S

## High Density Ethernet Switch with 48 Ports of 10GbE SFP+ and 4 Ports of 40GbE QSFP+



### Product Overview

The Edge-Core ECS5610-52S is a 48-port 10GbE SFP+ with 4-port of 40GbE switch designed from the ground up to be deployed and utilized in medium to large data centers and Enterprise Campus. The ECS5610-52S is designed for high-availability and mission-critical Enterprise environments in 1RU enclosure with redundant, hot swappable, load-sharing PSUs along with hot swappable fan tray with n+1 redundant fans; and port-to-power and power-to-port airflow direction options.

### Key Features and Benefits

#### Performance and Scalability

The ECS5610-52S is a high density 10Gb Ethernet switch encased in a small 1U form factor. This switch meets the high performance, availability and network scaling requirements of enterprise and cloud data centers. Deployed as part of a distributed spine network, the ECS5610-52S provides full line rate switching at Layer 2 or Layer 3 across 48\*10GbE ports with 4 x 40GbE uplinks.

The ECS5610-52S is capable of 1.28Tbps of network throughput. Given the demand for bandwidth brought on by server virtualization.

#### Continuous Availability

Dual hot-swappable power supplies allow the system to continue operation even in the event of a single power supply failure. To ensure longevity, the ECS5610-52S employs data center-friendly front to back cooling, dissipating unwanted heat efficiently and effectively.

#### Data Center Requirements

With Ethernet fast becoming the de facto standard for the interconnection of data center devices, the ECS5610-52S is conceived and designed to overcome the challenges in a high traffic load environment, ensuring that traffic flows smoothly through the network without delay. It features Jumbo frame up to 12K bytes.

- 802.1Qau congestion notification
- 802.1Qbb priority flow control
- 802.1Qaz enhanced transmission selection

#### Energy Efficiency

The ECS5610-52S is easy on the environment as well as your energy budget. 175W typical power consumption at full line rate forwarding over 48 x 10GbE DAC cables and 4\*40Gbase-SR4.

#### Simple and Flexible Management

The ECS5610-52S features both an user-friendly web interface and a command line interface for the advanced user. SNMP based management is also fully supported. When used in conjunction with ECView Pro, Edge-Core own network management system, the task of monitoring and provisioning can be easily accomplished.

#### Applications

The ECS5610-52S is designed to fit in various applications in the Enterprise environment. These applications include:

**TOR Switch for 10GE Data Center:** The ECS5610-52S can be deployed as a ToR switch to interconnect up to 48 units of 10GE servers in the same rack while providing 4 ports of 40GbE uplinks to interconnect to the data center SPINE switches.

**SPINE Switch for 1GE Data Center:** The ECS5610-52S can also be deployed as a SPINE switch interconnecting up to 48 ECS4510 or ECS4610 together in a star network topology. In this deployment scenario, ECS4510/4610 will act as a TOR switch interconnecting up to 48 units of 1GE servers in the same rack.

**Campus 10GE Aggregation Switch:** In the Enterprise campus environment, the ECS5610-52S can also be deployed as an aggregation switch interconnecting up to 48 ECS4510 or ECS4610 together to form a medium-size L2 or L3 campus network. In this deployment scenario, the 4 40-GbE uplinks can be used to interconnect multiple ECS5610 to form a large-size campus network.

## Features

### Physical Ports

- 48 10Gigabit SFP+ ports supporting 10GbE or 1GbE
- 4 QSFP+ each supporting 40GbE or 4\*10GbE
- 1 RJ-45 management port
- 1 RJ-45 console port
- 1 USB type A storage port on the rear panel

### Performance

- Switching Capability: 1.28Tbps
- Forwarding Rate: 952Mpps
- Packet Buffer Size: 9MB
- MAC Address Table: 128K

### L2 Features

- Digital Diagnostic Monitoring (DDM)
- Flow Control:
  - IEEE 802.3x for full duplex mode
  - Back-Pressure for half duplex mode
- Storm Control:
  - Broadcast
  - Multicast
  - Unknown Unicast
- Spanning Tree Protocol:
  - IEEE 802.1D Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
  - BPDU Guard
  - BPDU filtering
  - Root Guard
  - BPDU forward
  - Loopback detection
- VLANs
  - Supports 4K VLAN
  - Port-based VLAN
  - IEEE 802.1Q VLAN
  - GVRP (256 VLANs)
  - IEEE 802.1v Protocol-based VLAN
  - IP Subnet based VLAN
  - MAC-based VLAN
  - Traffic Segmentation
  - Support Voice VLAN
  - VLAN Translation
  - VLAN Trunking
- L2 Virtual Private VLAN
  - Q-in-Q
  - Select Q-in-Q
- Link Aggregation:
  - Static Trunk
  - IEEE 802.3ad Link Aggregation Control Protocol
  - Trunk groups: 26
  - Load balance based on MAC SA/DA, SIP, DIP
- IGMP Snooping:
  - IGMP v1/v2/v3 snooping
  - IGMP SNP Proxy
  - IGMP Filtering
  - IGMP Throttling
  - IGMP Immediate Leave
  - IGMP Querier
- MVR (Multicast VLAN Registration)
  - Support 5 Multicast VLAN
- L2 Protocol Tunneling(CDP,PVST,STP,LLDP)
- Supports jumbo frames up to 12KB

### QoS Features

- Priority Queues: 8 hardware queues per port
- Traffic Classification COS
  - IEEE 802.1P based COS
  - IP Precedence based COS
  - IP DSCP based COS
- Traffic Scheduling
  - Strict Priority
  - Weighted Round Robin
  - Strict + WRR traffic scheduling
- Two Rate Three Color Marker
- Ingress traffic policing
- Rate Limiting (ingress and egress, per port base)
  - GE: Resolution 64 Kbps ~ 10000000 Mbps
- DiffServ

### Security

- Denial of Service Protection (DoS)
- IEEE 802.1X port-based and MAC-based authentication
- VLAN assignment
- QoS assignment
- Guest VLAN
- EAPOL frames pass-through
- L2/L3/L4 Access Control Lists
- DHCP Snooping
- DHCP Snooping Option 82
- IP Source Guard
- RADIUS Authentication
- RADIUS Accounting
- TACACS+ Authentication
- TACACS+ Authorization and Accounting
- HTTPS and SSL
- SSH (v1.5/v2.0)
- User name password authentication
  - Local authentication
  - Remote authentication via RADIUS/TACACS+
- Management Interface Access Filtering
  - SNMP
  - Web
  - Telnet/SSH
- Dynamic ARP Inspection (DAI)
- MAC filter
- Instruction lock (link detection)

### IPv6 Features

- IPv4/IPv6 dual protocol stack
- IPv6 Address Types Stack: Unicast & Multicast
- IPv6 Neighbor Discovery
- Manual Configuration
- Router Advertisement
- HTTP over IPv6
- SNMP over IPv6
- SSH over IPv6
- IPv6 Telnet support
- IPv6 DNS Resolver
- IPv6 Syslog support
- IPv6 SNTP support
- IPv6 TFTP support
- Remote IPv6 ping
- Ping over IPv6
- Trace route over IPv6
- IPv6 Source Guard
- Sflow over IPv6
- MLD v1/v2 Snooping
- DHCPv6 Snooping
- IPv6 DSCP remapping CoS
- IPv6 DiffServ
- RA Guard

## Features

### Management

- Switch Management:
  - CLI via console port or Telnet
  - Web management
  - SNMP v1, v2c, v3
- Firmware & Configuration:
  - Firmware download/Upgrade via TFTP, HTTP, FTP
  - Multiple configuration files
  - Configuration file upload/download via TFTP, HTTP, FTP
- RMON (groups 1, 2, 3 and 9)
- BOOTP, DHCP client for IP address assignment
- DHCP dynamic provision option 66, 67
- SNTP
- NTP
- Event/Error Log/Syslog
- SMTP
- DNS
- LLDP (802.1ab)
- IP clustering
- Port Mirroring
- Remote Switched Port Analyzer (RSPAN)
- sFlow
- Traceroute/Traceroute6
- MIB I/II
- Auto Traffic Control (ATC)

### L3 Features

- L3 IPv4 Host Table: 16K
- L3 IPv4 Net Table: 8K
- L3 IPv4 Multicast Table: 4K
- L3 IPv6 Host Table: 8K
- L3 IPv6 Net Table: 4K
- L3 IPv6 Multicast Table: 4K
- Unicast routing
  - Static unicast routes
  - RIP v1/v2
  - OSPF
- Multicast routing
  - PIM-DM
  - PIM-SM
  - IGMP v1/v2/v3
  - IGMP v2/v3 proxy
- Proxy ARP
- IP Redundancy: VRRP
- UDP Helper
- BGP/BGP+

### L3 Features IPV6

- IPv6 hardware IP routing
- IPv6 Routing
- Static Route
- OSPFv3
- MLD v1/v2
- IPv6 Multicast routing
  - PIM-DM6
  - PIM-SM6
  - IPv6 MVR

## Ordering Information

### Optional Accessories

- ET4201-SX
- ET4201-LX
- ET4201-ZX
- ET4202-SR
- ET4202-LR
- ET5402-SR
- ET5402-LR
- ET6401-SR4

### Data Features

- Data Center Bridging
- 802.1Qau Congestion Notification (QCN)
- 802.1Qaz Enhanced Transmission Selection (ETS)
- 802.1Qbb Priority Based Flow Control (PFC)

### Electromagnetic Compatibility

- UL (CSA 22.2 NO 60950-1 & UL 60950-1)
- CB (IEC/EN 60950-1)
- CE Mark
- FCC Class A

### Environmental Specifications

- Temperature:
  - 0°C to 40°C (Standard Operating)
  - -40°C to 70°C (Non-Operating)
- Humidity: 5% to 95% (Non-condensing)
- Vibration: IEC 68-2-36, IEC 68-2-6
- Shock: IEC 68-2-29
- Drop: IEC 68-2-32

### Mechanical

- Dimensions (W x D x H): 44 x 47 x 4.3 cm (17.32 x 18.50 x 1.69 in)
- Weight: 8.5 kg (18.73 lbs)
- Fan Tray: Hot swappable tray with 3+1 redundant fans

### Power

- PSUs: Two redundant, Load sharing, Hot swappable
- Input Voltage: 90V~264V AC, 50-60 Hz
- Max Input Current: 6 A at 100/120 VAC; 3 A at 200/240 VAC

### Warranty

Please check [www.edge-core.com](http://www.edge-core.com) for the warranty terms in your country.

### For More Information

To find out more about Edge-Core Networks products and solutions, visit [www.edge-core.com](http://www.edge-core.com)

### About Edge-Core Networks

Edge-Core Networks is in the business of providing innovative network solutions. In the service provider network, in the data center or in the cloud, Edge-Core Networks delivers the software and systems that transform the way the world connects. Edge-Core Networks serves customers and partners worldwide. Additional information can be found at [www.edge-core.com](http://www.edge-core.com).

To purchase Edge-Core Networks solutions, please contact your Edge-Core Networks representative at 886 3 563 8888 or authorized reseller.

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## Product Description

- 1Gbps Small Form Factor Pluggable (Distance: 500m; Wavelength: 850nm)
- 1Gbps Small Form Factor Pluggable (Distance: 10Km; Wavelength: 1310nm)
- 1Gbps Small Form Factor Pluggable (Distance: 10Km; Wavelength: 1550nm)
- 1Gbps Small Form Factor Pluggable (Distance: 500m; Wavelength: 850nm)
- 1Gbps Small Form Factor Pluggable (Distance: 10km; Wavelength: 1310nm)
- 10Gbps, Small Form Factor Pluggable (Distance: 350m; Wavelength: 850nm)
- 10Gbps, Small Form Factor Pluggable (Distance: 10km; Wavelength: 1310nm)
- QSFP-SR4, 3.3v, DD, CML/CML, 0-70C, 100M, 82m/100m(OM2/OM3), lead-free infiniband QDR/DDR interconnects