ECS4660-28F

L2/L3/L4 Gigabit Metro Ethernet Switch

Product Overview

The Edge-Core ECS4660-28F is a standalone L2/L3/L4 Gigabit Metro Ethernet routing switch with 24 1000BASE-X SFP slots, two 10G XFP uplink slots, and two 10G module slots that can support two additional 10G uplinks*. With up to 107 Mpps performance, the ECS4660-28F is ideal for service provider aggregation deployment, providing wire-speed L2 switching and L3 unicast and multicast routing. To maintain high availability, the ECS4660-28F provides redundant power, a hot swappable fan tray, configuration rollback, and G.8032 ring protection.

Gigabit Metro Ethernet Switch

Key Features and Benefits

High Availability

With IEEE 802.1w Rapid Spanning Tree Protocol, the Edge-Core ECS4660-28F provides a loop-free network with redundant links to the core network and rapid convergence in less than 2 seconds. IEEE 802.1s Multiple Spanning Tree Protocol allows a spanning-tree instance per VLAN and Layer 2 load sharing on redundant links.

The ECS4660-28F supports IEEE 802.3ad Link Aggregation Control Protocol (LACP). It increases bandwidth by automatically aggregating several physical links together as a logical trunk and offers load balancing and fault tolerance for uplink connections.

The ECS4660-28F supports G.8032 Ethernet Ring Protection Switching, with the ability for the network to detected and recover from incidents without impacting users, meeting the most demanding quality and availability requirements. Rapid recovery time when problems do occur is as low as 50 msec.

Comprehensive QoS

The Edge-Core ECS4660-28F offers advance QoS for marking, classification, and scheduling to deliver best-in-class performance for data, voice, and video traffic at wire speed. Eight egress queues per port enable differentiated management of up to eight traffic types across the stack. Traffic is prioritized according to 802.1p, DSCP, IP precedence and TCP/UDP port number to provide optimal performance to real-time applications. Weight Round Robin (WRR) and strict priority ensure differential prioritization of packet flows and avoid congestion of ingress and egress queues.

With bidirectional rate-limiting, per port or per traffic class, the ECS4660-28F preserves network bandwidth and allows full control of network resources.

The ECS4660-28F supports Three Color Marker and Policing Single rate: Committed Information Rate (CIR) Two rate: CIR + Peak Information Rate (PIR) Traffic Policing: Drop or remark the priority tag of packets exceeds burst size.

Advanced IPv4 and IPv6 Routing

The Edge-Core ECS4660-28F supports hardware-based IPv4 and IPv6 routing for maximum performance. It provides a seamless migration path from IPv4 to IPv6 for future network upgrades and investment protection.

Advanced routing protocols such as RIP and OSPF provide dynamic routing by exchanging routing information with other Layer 3 switches or routers. Multicast routing is supported under independent multicast protocols, including PIM-DM and PIM-SM. DVMRP is also supported to interconnect two multicast-enabled networks across non-multicast networks. VRRP prevents your system from failing by dynamically backing up multiple L3 switches for routing.

Enhanced Security

The Edge-Core ECS4660-28F provides enhanced security features for connectivity and access control, including Access Control Lists (ACLs), authentication, and port-level security with IEEE 802.1X. ACLs can be used to restrict access to sensitive network resources by denying packets based on L2/L3/L4 headers. SSH and RADIUS authentication protects management access to the switch, providing secure network management. IEEE 802.1X port-based access control ensures dynamic, port-based security and user authentication for network access.

IP source guard prevents a malicious user from spoofing or taking over another user's IP address by creating a binding table between client's IP, MAC address, port, and VLAN.

Simplified Management

For IP multicast traffic, the ECS4660-28F uses IGMP snooping to provide fast client joins and leaves of multicast streams. It prevents flooding of IP multicast traffic and limits bandwidth-intensive video traffic to only the subscribers.

The ECS4660-28F supports IPv6 management functions for SNMP, HTTP, Telnet, TFTP, ICMP, SSH, RADIUS/TACACS+ authentication, and IPv6 QoS remapping when connecting to the switch.

The ECS4660-28F can be managed through an industry-standard Command Line Interface (CLI) with a common industry look and feel that reduces training and operating costs. The switch also provides an easy-to-use web GUI interface through a standard web browser.

With four-group RMON, the ECS4660-28F can easily backup and restore firmware and configuration files via TFTP.

Advanced Synchronization

The ECS4660-28F provides synchronization options optimized for cellular operators looking to backhaul their data and voice traffic from base stations to their core network over Ethernet transport.The ECS4660-28F supports bit-layer clock recovery solutions, ITU-T G.8261 and IEEE1588v2 Synchronous Ethernet, and provides a highly robust hop-by-hop frequency mechanism.

ECS4660-28F Product Specifications

www.edge-core.com

Features

Physical Ports

24 10/100/1000 Mbps SFP ports
2 10G XFP ports
2 10G optional expansion module slots*
1 RJ-45 Craft (10/100BASE-T) port for system management
1 RJ-45 console port
1 DB-15 port for alarm input and output connector
1 Alarm cut-off (ACO) push button

Performance

Switching Capacity: 128 Gbps
Forwarding Rate: 95 Mpps
MAC Address Table Size: 32K
Packet Buffer Size: 3 MB

L2 Features

Auto-negotiation for port speed and duplex mode
Flow Control: IEEE 802.3x and Back-Pressure
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)
- Loopback detection/loop prevention
- Spanning Tree transparent
- Auto edge/STP fast forwarding

VLANs:
- Support 4K IEEE 802.1Q VLANs, port-based, MAC-based, IP subnet –based, private VLANs, GVRP, GARP, protocol VLANs, VLAN translation, VLAN trunking, Q-in-Q

Link Aggregation:
- Static Trunk, IEEE 802.3ad Link Aggregation Control Protocol
- Trunk groups: 32
- Trunk links: 2~8 for Gigabit Ethernet ports
- Trunk links: 2~4 for 10 Gigabit Ethernet ports

IGMP snooping:
- IGMP query v1/v2
- IGMP snooping v1/v2/v3
- IGMP throttling/filtering
- IGMP snooping proxy: v1/v2/v3
- IGMP immediate leave

MVR

L3 Features

12K host table and 12K net table
512 static routes
4K multicast table (shared with IPv6)
Multi-netting, Super-netting (CIDR)
Static route, RIP v1/v2, OSPF
IGMP v1/v2/v3 and proxy
PIM-DM, PIM-SM
VRRP
ARP/ARP proxy
UDP helper
IPv6 hardware route:
- 6K host table and 4K net table
- 4K multicast table (shared with IPv4)
- OSPF v3
- MLD v1/v2
- PIM DM-6

QoS Features

Priority Queues: 8 hardware queues per port
Traffic classification based on IEEE 802.1p CoS, IP Precedence, DSCP, TCP/UDP port number, Access Control List, Marking
DiffServ
Supports WRR, Strict Priority, and Hybrid
Port Rate Limiting

Security

Port Security (static/dynamic)
IP Source Guard
IEEE 802.1X: port-based, MAC-based, dynamic VLAN and QoS assignment, and Guest VLAN
MAC authentication and web authentication
DHCP snooping and Option 82
AAA (RADIUS/TACACS+ authentication/accounting)
2K ACL rules/256 rules per port
Dynamic ARP Inspection

Management

Switch Management:
- CLI via console port or Telnet
- Web management
- SNMP v1, v2c, v3

Firmware and Configuration:
- Dual firmware images
- Firmware upgrade via TFTP/FTP/Xmodem
- Multiple configuration files
- Configuration file upload/download via TFTP/FTP server

IP filtering (SNMP, Telnet, web)
SSH v2/HTTPS/SSL
RMON (groups 1, 2, 3 and 9)
BOOT/DHCP/DHCP relay/DHCP server
DHCP option 66, 67
SNTPv4 (RFC2030)
sFlow
LLDP (802.1ab)
DNS client/proxy
Event/error log/system log
Thermal sensor: Fan speed control/temperature display/trap sent
IPv6:
SNMP/HTTP/Telnet/SSH/ICMP/RADIUS/SSH/SMTP/ACL/Dual/Stack/ Neighbor discovery/DSCP remapping CoS/System log/DNS/resolver/TFTP/ Remote Ping
IEEE 802.3ah Ethernet OAM (Operation, Administration and Maintenance)
IEEE 802.1ag CFM
ITU-T G.8032 Ethernet Ring Protection Switching

Environmental Specifications

Temperature:
- IEC 68-2-14
- -40ºC to 65ºC (Standard Operating)
- -40ºC to 70ºC (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 (H x W x D): 1.5U height, 67 x 440 x 254 mm (2.64 x 17.32 x 10 in.)
LED Indicators: Port, Uplink, System, Diagnostic
AC Power Input: 100 ~ 240VAC, 50 ~ 60Hz
DC Power Input: -48V
Weight: 4.65 kg

Safety

UL60950-1 & CSA 60950-1
IEC 60950-1 & EN 60950-1

Electromagnetic Compatibility

CE Mark (EN55022 (CISPR 22) Class A)
EN 61000-3/2/3
FCC Class A
VCCI Class A

Warranty

Please check www.edge-core.com for the warranty terms in your country.

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