ECS4100-12T
L2+/L3 Lite Gigabit Ethernet Access Switch

Product Overview

The Edgecore ECS4100-12T switch is a 8 ports Gigabit Ethernet access switch with 2 combo Gigabit and 2 100/1000 SFP ports. The switch is ideal for Internet Service Providers (ISPs) and Multiple System Operators (MSOs) to provide home users with triple-play services with up to a Gigabit of bandwidth. It ia also an ideal Gigabit access switch for SMB, enterprise, and campus networks. The ECS4100-12T switch is packed with features that bring high availability, comprehensive security, robust multicast control, and advanced QoS to the network edge, while maintaining simple management. The switch also supports the most advanced IPv6 management, IPv6 security, and IPv6 multicast control in accordance with the growth of IPv6 deployment. ISPs can expand their services for home to business users by providing a more reliable and resilient network (ITU-T G.8032 ERPS), L2 VPNs, and advanced OAM (Operations, Administration, and Maintenance) functions to ensure service-level agreements.

Key Features and Benefits
Performance and Scalability

The Edgecore ECS4100-12T is a high-performance Gigabit Ethernet Layer 2+ managed switch with 24 Gbps switching capacity. The switch delivers wire-speed switching performance on all Gigabit ports, taking full advantage of existing high-performance Gigabit CPEs, PCs,11n/ac Wi-Fi APs etc, significantly improving the responsiveness of applications and file transfer times.

The two 1G SFP ports provide uplink flexibility, allowing the insertion of fiber or copper Gigabit transceivers, to create up to 4 Gbps high-speed uplinks to service provider, corporate, or campus networks, reducing bottlenecks and increasing the performance of the access network.

The fanless design of ECS4100-12T ensures noiseless operation and increases the reliability of the system.

Continuous Availability

The IEEE 802.1w Rapid Spanning Tree Protocol provides a loop-free network and redundant links to the core network with rapid convergence, to ensure faster recovery from failed links, enhancing overall network stability and reliability.

The IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base, providing Layer 2 load sharing on redundant links up to 64 instances.

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The ECS4100-12T 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 ECS4100-12T supports G.8032 Ethernet Ring Protection Switching with the ability for the network to detect 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 ms.

Reliability and Energy Efficiency

The design of the ECS4100-12T incorporates high energy efficiency in order to reduce the impact on the environment. The Green Ethernet power-saving features and fanless design significantly reduce the power consumption.

Enhanced Security

Port security limits the total number of devices from using a switch port and protects against MAC flooding attacks. IEEE 802.1X port-based or MAC-based access control ensures all users are authorized before being granted access to the network. When a user is authenticated, the VLAN, QoS and security policy are automatically applied the port where the user is connected, otherwise the port is grouped in a guest VLAN with limited access.

DHCP snooping allows a switch to protect a network from rogue DHCP servers that offer invalid IP addresses. IP Source Guard prevents users from using IP addresses that were not assigned to them.

Access Control Lists (ACLs) can be used to restrict access to sensitive network resources by denying packets based on source and destination MAC addresses, IP addresses, or TCP/UDP ports. ACLs are hardware supported, so switching performance is not compromised.

Private VLANs (traffic segmentation per port) isolate edge ports to ensure user privacy.

DAI (Dynamic ARP Inspection) is a security feature that validates Address Resolution Protocol (ARP) packets in a network. DAI allows a network administrator to intercept, log, and discard ARP packets with invalid MAC-to-IP address bindings.

Secure Shell (SSH) and Secure Sockets Layer (SSL/HTTPS) encrypt Telnet and web access to the switch, providing secure network management.

The ECS4100-12T also supports both RADIUS and TACACS+ authentication methods to secure your network.

For a world always connected...

Key Features and Benefits

Comprehensive QoS

The ECS4100-12T offers advanced 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 through the switch.

Traffic is prioritized according to 802.1p and DSCP to provide optimal performance for real-time applications. Weighted Round Robin (WRR) and strict priority ensure differential prioritization of packet flows and avoid congestion of ingress and egress queues. Asymmetric bidirectional rate-limiting, per port or per traffic class, preserves network bandwidth and allows maximum control of network resources.

Robust Multicast Control

IGMP snooping prevents the flooding of multicast traffic by dynamically configuring switch ports so that multicast traffic is forwarded to only those ports associated with an IP multicast receiver. IGMP increases the performance of networks by reducing multicast traffic flooding.

IGMP groups allow you to create customer packages for IP-TV channels, making switch configuration easy. IGMP Filtering prevents subscribers seeing unsubscribed IP-TV channels. And, IGMP Throttling allows you to set how many IP-TV channels a subscriber can receive simultaneously.

Multicast VLAN Registration (MVR) is designed for applications such as Media-on-Demand that send multicast traffic across an Ethernet network. Multicast VLANs are shared in the network, while subscribers remain in separate VLANs. This increases network security and saves bandwidth on core links. Multicast streams do not have to be routed in core L3 switches, which saves CPU power.

IPv6 Support

The switch supports a number of IPv6 features, including IPv6 Management, DCHPv6 Snooping with Option 37, IPv6 Source Guide, and MVR6.

Superior Management

An industry-standard command-line interface (CLI), accessed through the console port or Telnet, provides a familiar user interface and command set for users to manage the switch.

An embedded user-friendly web interface helps users to quickly and simply configure switches.

The ECS4100-12T supports SNMPv1,2c,3 and four-group RMON. The switch provides a complete private MIB for the configuration of most functions via the SNMP protocol.

Administrators can backup and restore firmware and configuration files via TFTP or FTP. The switch also provides the configuration of auto-provision for ease of use in large deployments.

AAA (Authentication, Authorization and Accounting) via RADIUS, TACACS+, enables centralized control of the switches. Access rights can be authorized per user and account for all actions performed by administrators.

Service Monitoring and Management

The ECS4100-12T supports IEEE 802.1ag and ITU-T Y.1731, allowing service providers to monitor end-to-end services, identify connectivity and performance issues, and isolate problems from a remote location without dispatching an engineer onsite.

The switch also provides the capability to monitor service availability, delay, jitter, and dropped packets for verifying SLA conformance (for billing purposes) and providing advance indication of performance degradation before a service outage occurs.

Virtual Private Networks

The ECS4100-12T supports Layer 2 VPNs by using Q-in-Q functions, where an 802.1Q tag from a customer VLAN (called CE-VLAN ID) is encapsulated in a second 802.1Q tag from a service-provider network (called an SP-VLAN ID). The switch supports rewriting the VLAN tag of egress traffic when the ingress traffic is tagged.

The switch also supports Layer 2 Protocol Tunneling for STP, CDP, VTP, PVST+, with Cisco-proprietary multicast address (01-00-0c-cd-cd-d0) replacement. prioritized to receive power.

ECS4100-12T Product Specifications

Features

Product Model	ECS4100-12T
Product Image	
Port	
RJ-45 10/100/1000BASE-T Ports	8
100/1000 SFP Ports	2
10/100/1000 Combo Ports	2
SFP+ 10 Gigabit Uplink Ports	0
GE Out-of-Band Management Port	No
RJ-45 Console Port	1
Performance	
Switching Capacity	24 Gbps
Forwarding Rate	17.85 Mpps
Flash Memory	32 MB
DRAM	256 MB
MAC Address Table Size	16 K
Jumbo Frames	9 KB
Auto-negotiation, Auto-MDI/MDIX	Yes
Mechanical	
Dimension (W x D x H) cm	18 x 16.4 x 3.75
Weight	804 g
Acoustics	44 dB (A)
Power Supply	
100-240 VAC, 50-60 Hz	Yes
Max System Power Consumption (Watts)	16 W
Environmental	
Operating Temperature	0℃ to 50℃
Storage Temperature	-40℃ to 70℃
Operating Humidity (non-condensing)	10% to 90%
Storage Humidity (non-condensing)	10% to 90%
Environmental Regulation Compliance: WEEE	Yes
Environmental Regulation Compliance: RoHS	Yes
Certification	
FCC Class A	Yes
CE	Yes
Safety Compliance: CB	Yes
Safety Compliance: UL	Yes

Features

L2 Features

Tri-speed (10/100/1000BASE-T) copper interfaces
Auto-negotiation for port speed and duplex mode
Auto MDI/MDI-X
1G fiber interfaces
SFP ports support:
  IEEE 802.3z (1000BASE-SX/LX/LHX/ZX) transceivers,
Digital Diagnostic Monitoring (DDM) on SFP port only
Flow Control:
  IEEE 802.3x for full duplex mode
  Back-Pressure for half duplex mode
Jumbo frames: 12 KB
Broadcast/Multicast/ Unknown Unicast Storm Control
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), 64 instances
  BPDU Guard
  BPDU filtering
  Root Guard
  BPDU transparent
  Loopback detection
Non-Spanning Tree Loopback detection
ITU-T G.8032 Ethernet Ring Protection
  Sub 50 msec convergence
  Revertive operation mode
  Multiple-ring network
VLANs:
  Supports 4K VLAN
  Port-based VLAN
  IEEE 802.1Q VLAN
  GVRP
  IEEE 802.1v Protocol-based VLAN
  IP Subnet-based VLAN
  MAC-based VLAN
  Traffic Segmentation
L2 Virtual Private VLAN
  Q-in-Q
  L2 Protocol tunneling (xSTP, CDP, VTP & PVST+, LLDP)
  CDP/PVST+ Filtering
Link Aggregation:
  Static Trunk
  IEEE 802.3ad Link Aggregation Control Protocol
  Trunk groups: 16, up to 8 GE/2 10G ports per group
  Load Balancing: SA+DA, SA, DA, SIP+DIP, SIP, DIP
IGMP Snooping:
  IGMP v1/v2/v3 snooping
  IGMP Proxy reporting
  IGMP Filtering
  IGMP Throttling
  IGMP Immediate Leave
  IGMP Querier
MVR (Multicast VLAN Registration)
  Supports 5 multicast VLANs
Port mirroring
Remote port mirror (RSPAN)

QoS Features

Priority Queues: 8 hardware queues per port
Traffic classification
  IEEE 802.1p CoS
  IP Precedence
  DSCP
  MAC Access control list (Source/Destination MAC, Ether type, Priority ID/ VLAN ID)
  IP Standard access control list (Source IP)
  IP extended access control list (Source/Destination IP, Protocol, TCP/UDP port number)
Traffic Scheduling
  Strict Priority
  Weighted Round Robin
  Strict + WRR
Ingress policy map (police rate, remark CoS)
Egress policy map (police rate, remark CoS/DSCP)
Rate Limiting (Ingress and Egress, per port base)
  GE: Resolution 64Kbps ~ 1,000Mbps
  10G: Resolution 64Kbps ~ 10,000Mbps
Auto Traffic Control

Security

Port security
IEEE 802.1X port based and MAC based authentication
Dynamic VLAN Assignment, Auto QoS
MAC authentication
Web authentication
Voice VLAN
Guest VLAN
L2/L3/L4 Access Control List
  MAC Access control list (Source/Destination MAC, Ether type, Priority ID/ VLAN ID)
  IP standard access control list (Source IP)
  IP extended access control list (Source/Destination IP, Protocol, TCP/UDP port number)
IPv6 ACL
DHCP Snooping
DHCP Option 82
DHCP Option 82 Relay
IP Source Guard
PPPoE IA
Dynamic ARP Inspection
Denial of Service
Login Security
RADIUS authentication
RADIUS accounting
TACACS + authentication
TACACS + accounting
TACACS + authorization
Management Interface Access Filtering (SNMP, Web, Telnet)
SSH (v1.5/v2.0) for security Telnet
SSL for HTTPS
SNMPv3

Green Ethernet

IEEE 802.3az Energy-Efficient Ethernet (EEE)

Features

IPv6 Features

IPv4/IPv6 Dual Protocol stack
IPv6 Address Types Stack: Unicast
IPv6 Neighbor Discovery
　Duplicate address
　Address resolution
　Unreachable neighbor detection
Stateless auto-configuration
Manual configuration
Remote IPv6 ping
IPv6 Telnet support
HTTP over IPv6
SNMP over IPv6
IPv6 Syslog support
IPv6 TFTP support
MLD Snooping v1/v2
IPv6 source guard
DHCPv6 snooping
MVR6

Management

Switch Management:
　CLI via console port or Telnet
　Web management
　SNMP v1, v2c, v3
Firmware & Configuration:
　Firmware upgrade via TFTP/HTTP/FTP server
　Dual images
　Multiple configuration files
　Configuration file upload/download via TFTP/HTTP/FTP server
RMON (groups 1, 2, 3 and 9)
BOOTP, DHCP client for IP address assignment
DHCP dynamic provision option 66,67
SNTP
Event/Error Log
Syslog
SMTP
Supports LLDP (802.1ab)
IP clustering
sFlow v4, v5
Cable diagnostics

(Optional) ECView Pro, a powerful network management software that maximizes the managed capabilities of Edgecore devices with:
　Topology management
　Performance management
　Configuration management
　Event management
　SNMP management

Routing

IPv4 Static Route

OAM

IEEE 802.3ah Link
IEEE 802.1ag Connectivity Fault Management
　Connectivity check
　Loopback
　Linktrace
ITU-T Y.1731 Performance and Throughput Management
　Frame Delay
　Frame Delay variation

Safety

UL (CSA 22.2. NO 60950-1 & UL60950-1)
CB (IEC60950-1)

Electromagnetic Compatibility

CE Mark
FCC Class A
CISPR Class A
BSMI

Environmental Specifications

Temperature:
　0°C to 50°C (Standard Operating)
　-40°C to 70°C (Non-Operating)
Humidity: 10% to 90% (Non-condensing)

Power Supply

Power input
　100 to 240 VAC, 50/60 Hz
　AC/DC: 90VAC~300VAC, 50/60 Hz
Dying gasp

Warranty

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

TEL: +886-3-5638888 FAX: +886-3-6686111
No.1, Creation Rd. III, Hsinchu Science Park, Taiwan 30077
sales@edge-core.com   www.edge-core.com

TEL: +1 (949)-336-6801
20 Mason Irvine, CA 92618

Features

For More Information

To find out more about Edgecore Networks Corporation products and solutions, visit www.edge-core.com.

About Edgecore Networks Corporation

Edgecore Networks Corporation is in the business of providing innovative network solutions. In the service provider network, in the data center or in the cloud, Edgecore Networks Corporation delivers the software and systems that transform the way the world connects. Edgecore Networks Corporation serves customers and partners worldwide. Additional information can be found at www.edge-core.com.

Edgecore Networks Corporation is a subsidiary of Accton Technology Corporation, the leading network ODM company. The Edgecore Data Center switches are developed and manufactured by Accton.

To purchase Edgecore Networks solutions, please contact your Edgecore Networks Corporation representatives at +886 3 563 8888 (HQ) or +1 (949)-336-6801 or authorized resellers.

Ordering Information

Optional Accessories	Product Description
ET4201-LX5	1Gbps, Small Form Factor Pluggable (Distance: 5 km; Wavelength: 1310 nm)
ET4201-LX15	1Gbps, Small Form Factor Pluggable (Distance: 15 km; Wavelength: 1310 nm)
ET4201-LHX	1Gbps, Small Form Factor Pluggable (Distance: 40 km; Wavelength: 1310 nm)
ET4201-ZX	1Gbps, Small Form Factor Pluggable (Distance: 80 km; Wavelength: 1550 nm)
ET4202-SX	1Gbps, Small Form Factor Pluggable (Distance: 500 m; Wavelength: 850 nm, DDM)
ET4202-LX	1Gbps, Small Form Factor Pluggable (Distance: 10 km; Wavelength: 1310 nm, DDM)
ECView Pro	Network Management Software

TEL: +886-3-5638888 FAX: +886-3-6686111
No.1, Creation Rd. III, Hsinchu Science Park, Taiwan 30077
sales@edge-core.com   www.edge-core.com

TEL: +1 (949)-336-6801
20 Mason Irvine, CA 92618

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