

AS5600-52X

10GbE Data Center Switch

White-Box Switch with L2/L3 SwitchOS



Product Overview

The Edge-Core white-box AS5600-52X switch meets the high-performance, availability, and network scaling requirements of enterprise and cloud data centers. The AS5600-52X provides full line-rate switching at Layer 2 or Layer 3 across 64 x 10 GbE ports, or 48 x 10 GbE ports with 4 x 40 GbE uplinks. The switch can be deployed either as a Top-of-Rack switch, or as part of a 10 GbE or 40 GbE distributed spine forming a folded CLOS data center fabric.

AS5600-52X hardware is designed for data centers with a high port density of 64 x 10 GbE in a 1 RU enclosure; redundant, hot-swappable, load-sharing AC or 48VDC* PSUs; fan tray with n+1 redundant fans; and port-to-power or power-to-port airflow options.

DCSS switching software is designed for data center fabrics with up to tens of thousands of dual stack IPv4/IPv6 servers. The switch provides a full set of Layer 2 switching features used for aggregating servers within a rack, or across an easily managed medium sized data center fabric. A full set of IPv4/IPv6 routing features, including ECMP, OSPF, and BGP, supports large Layer 3 fabrics.

Software Defined Networks

The AS5600-52X includes an Open-Flow v1.3 agent, enabling it to operate as an OpenFlow-controlled or hybrid switch. The AS5600-52X forms a scalable L3 transport network for use with third-party virtualization overlay software solutions. The DCSS software provides an open API for scripts and applications to run on the switch in a Linux user space. Applications can be written in Python, Ruby, C, cURL, OpenSSH, or OpenSSL with the DCSS Application Development Kit.

Key Features and Benefits

- Cost effective, white-box infrastructure.
- 48 x SFP+ switch ports, supporting 10 GbE (DAC, 10GBASE-SR/LR/ER/ LRM) or 1 GbE (1000Base-T/SX/LX).
- 4 x 40G QSFP switch ports, supporting 40 GbE (DAC, 40GBASE-SR4/LR4) or 4 x 10 GbE (DAC or fiber breakout cable).
- Port Grouping to group 4 x 10G ports into 40G port at physical layer for maximum bandwidth utilization, and 300m optical reach over MMF.
- Full line-rate Layer 2 or Layer 3 forwarding of 1.28 Tbps
- Support hot/cold aisle with port-to-power and power-to-port airflow SKUs.
- All ports on front; PSUs, fan tray on rear.
- Hot swappable, load sharing, redundant AC or 48VDC* PSUs
- Swappable fan tray with 3:1 fans.
- Energy Efficiency. 196W typical power consumption at full line rate forwarding over 48 x 10 GbE DAC and 4 x 40GBASE-SR4, with AC PSU.
- Layer 2 Switching: VLANs, COS, LAG.
- Converged Enhanced Ethernet: DCBX, 802.1Qbb PFC, 802.1Qau QCN, 802.1Qaz ETS, FCOE forwarder.
- Layer 3 IPv4/IPv6 Switching: 32-way ECMP, OSPFv2, OSPFv3, BGP-4, VRRP. Requires L3 software package.
- QoS: 802.1p, DiffServ, ACLs, SP/WRR/WFQ scheduling, WRED.
- Management: Ethernet and console RJ45 ports; USB storage port. Industry standard CLI, SNMPv1/2/3, AAA.

AS5600-52X Product Specifications

Features

Ports

Switch Ports:
48 x SFP+ each supporting 10 GbE or 1 GbE
4 x QSFP each supporting 40 GbE or 4 x 10 GbE
Management Ports on front panel:
1 x RJ-45 serial console
1 x RJ-45 100/1000BASE-T management
1 x USB Type A storage port

Performance

Wire Speed Forwarding: L2 and L3
Switching Capacity: 1.28 Tbps
Forwarding Rate: 960 Mpps
MAC Addresses: 128K
VLAN IDs: 4K
Link Aggregation: 8 ports per group: 64 groups per switch
L3 Hosts: 16K
L3 Routes IPv4 16K, IPv6 8K
Packet Buffer Size: 9 MB shared buffer pool
Latency (RFC2544): 860 ns to 1.2 us (L2/L3, cut thru, full line rate)
CPU, Memory, Flash: Dual core 1.0 GHz P2020 CPU, 2 GB, 2 GB

Ethernet and IP Standards

802.3ab 1000BASE-T
802.3ae 10G Ethernet
802.3u 100BASE-T
802.3x Flow Control
802.3z 1000BASE-X
RFC 768 UDP
RFC 791 IP
RFC 792/4443 ICMP/ICMPv6
RFC 793 TCP
Jumbo Frames (9216 Bytes)

L2 Switching Features

Spanning Tree:
802.1D Spanning Tree
802.1s Multiple Spanning Tree
802.1w Rapid Spanning Tree
Per-VLAN Rapid Spanning Tree
Storm Control
802.3ad Link Aggregation
Selectable LAG hashing algorithm
802.1AB LLDP Discovery
ANSI/TIA-1057 LLDP, MED
Virtual LANs:
802.1Q VLAN
Port-based VLAN
802.1v Protocol-based VLAN
802.3ac VLAN Tagging
Q-in-Q
IGMP Snooping v1/v2/v3
RFC 4541 IGMP, MLD Snooping
ISDP

QoS Features

Up to 8 queues per port
IEEE 802.1p COS
DSCP/TOS Classification, Remarking
SP, WRR, WFQ Queuing, WRED
Per port bandwidth mgmt, shaping
DCBX Data Center Bridging
802.1Qau QCN
802.1Qaz ETS
802.1Qbb PFC
ACLs: L2, L3, L4

Supported Optics and Cables

SFP+ Ports:
10GBASE-CR DAC: 0.5 m to 7 m
10GBASE-SRL/SR: up to 100/300 m over OM3 MMF
10GBASE-LR: Up to 10 km over SMF
10GBASE-ER: Up to 40 km over SMF
10GBASE-LRM: Up to 220 m over OM1/2/3 MMF
1000BASE-SX, 1000BASE-LX, 100/1000BASE-T
QSFP Ports:
40GBASE-CR4 DAC: 0.5 m to 7 m
40GBASE-CR4 DAC to 4 x SFP+ 10GBASE-CR DAC: 0.5 to 7 m
40GBASE-SR4: Up to 100 m over OM3 MMF, 150 m over OM4 MMF
40GBASE-SR4 to 4 x 10 GBASE-SR: 100 m over OM3, 150 m OM4
40GBASE-LR4: Up to 10 km over SMF

L3 Routing Features (Require L3 Software License)

RFC 826 ARP
RFC 1519 CIDR
RFC 1812 IPv4 Routers
RFC 2711 IPv6 Router Alert
Static Routing
VLAN and Port Based Routing
Route Redistribution
ECMP: 32-way, enhanced hash
RFC 3056: IPv4 to v6 tunnels
RFC 3768 VRRP
OSPF:
RFC 1765 OSPF Database Overflow
RFC 2328 OSPFv2
RFC 2740 OSPFv3
RFC 3101 OSPF NSSA Option
BGP:
RFC 2385 MD5
RFC 2918 Route Refresh
RFC 4271 BGP-4
RFC 4486 BGP Cease Notification
RFC 5492 Capabilities Advertisement

Physical and Environmental

Dimensions (WxDxH): 438.4 x 473 x 43.4 mm (17.26 x 18.62 x 1.71 inches)
Weight: 8.5 kg (18.74 lbs), with two installed power supply modules
Fan Tray: hot-swappable tray with 3+1 redundant fans
Operating Temperature: 0°C to 40°C (32°F to 104°F)
Storage Temperature: -40°C to 70°C (-40°F to 158°F)
Operating Humidity: 5% to 95% non-condensing

Power

PSUs: 2 redundant, load-sharing, hot-swappable AC or 48VDC*
Input Voltage: 90 to 264VAC at 50-60 Hz. -48 to -72 VDC.
Input Current: Max 6A @100/120 VAC, 3 A @200/240 VAC, 10A @-72VDC
Max Power: 244 W, line-rate, 48 x 10GBASE-SR, 4 x 40GBASE-SR4, AC
Typical Power: 196 W, no traffic, 48 x 10G DAC, 4 x 40GBASE-SR4, AC

Features

Management

OpenFlow v1.3
 Programmatic API
 Industry Standard CLI
 SSH v1.5, v2
 SNMP v1, v2, v3
 Dual firmware images
 RFC 783 TFTP firmware upgrade
 Multiple Configuration Files
 RFC 951/1534/ BOOTP
 RFC 2131/2132 DHCP
 RFC 3315/3736 DHCPv6
 RFC 2030 SNTTP
 RFC 3046 DHCP/BOOTP Relay
 RFC 3579 RADIUS: TACACS+
 Port Mirroring, Flow-based Mirroring
 sFlow, Traceroute
 Event and Error Logging
 Buffer Usage and Traffic Monitoring
 RFC 1213 MIBII
 RFC 1493 Bridge MIB
 RFC 1643 Ethernet-like MIB
 RFC 2233 Interfaces SMIv2
 RFC 2618 RADIUS Authentication
 RFC 2620 RADIUS Accounting
 RFC 2674 VLAN MIB
 RFC 2737 Entity MIB v2
 RFC 2819 RMON 1,2,3,9
 RFC 3291 Network Addresses
 IEEE 802.1AD MIB
 MIBs with L3 License:
 RFC 3289 Diff Services MIB
 RFC 2465 IPv6 MIB
 RFC 2466 ICMPv6 MIB
 RFC 2787 VRRP MIB
 RFC 3419 Transport Addresses
 RFC 4273 BGP-4 MIB

*Future Release

Regulatory

EMI
 CE Mark (EN55022 Class A)
 FCC Part 15 Class A
 VCCI
 Environmental:
 Temperature: IEC 68-2-14
 Drop: ISTA 2A
 RoHS-6 Compliant
 Safety
 CB, EN 60950
 UL/CUL

Warranty

Please check www.edge-core.com for the warranty terms in your country. The warranty provides return-to-factory hardware replacement for a three year period in North America.

For More Information

To find out more about Edge-Core Networks products and solutions, visit 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.

EdgeCore Networks 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 solutions, please contact your Edge-Core Network representatives at +886 3 563 8888 (HQ) or +1 (877) 828-CORE (877-828-2673) or authorized resellers.

© Copyright 2013 Edge-Core Networks Corp. The information contained herein is subject to change without notice. This document is for informational purposes only and does not set forth any warranty, expressed or implied, concerning any equipment, equipment feature, or service offered by Edge-Core Networks. Edge-Core Networks shall not be liable for technical or editorial errors or omissions contained herein.

Ordering Information

5600-52X-D2-AC-F-US	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 2 software, dual AC PSUs, port-to-power airflow, N. America
5600-52X-D2-AC-B-US	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 2 software, dual AC PSUs, power-to-port airflow, N. America
5600-52X-D3-AC-F-US	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 3 software, dual AC PSUs, port-to-power airflow, N. America
5600-52X-D3-AC-B-US	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 3 software, dual AC PSUs, power-to-port airflow, N. America

AS5600-52X Ordering Information

Ordering Information

5600-52X-D2-AC-F-EU	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 2 software, dual AC PSUs, port-to-power airflow, Europe
5600-52X-D2-AC-B-EU	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 2 software, dual AC PSUs, power-to-port airflow, Europe
5600-52X-D3-AC-F-EU	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 3 software, dual AC PSUs, port-to-power airflow, Europe
5600-52X-D3-AC-B-EU	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 3 software, dual AC PSUs, power-to-port airflow, Europe
5600-52X-D2-AC-F-UK	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 2 software, dual AC PSUs, port-to-power airflow, UK
5600-52X-D2-AC-B-UK	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 2 software, dual AC PSUs, power-to-port airflow, UK
5600-52X-D3-AC-F-UK	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 3 software, dual AC PSUs, port-to-power airflow, UK
5600-52X-D3-AC-B-UK	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 3 software, dual AC PSUs, power-to-port airflow, UK
5600-52X-D2-AC-F-JP	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 2 software, dual AC PSUs, port-to-power airflow, Japan
5600-52X-D2-AC-B-JP	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 2 software, dual AC PSUs, power-to-port airflow, Japan
5600-52X-D3-AC-F-JP	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 3 software, dual AC PSUs, port-to-power airflow, Japan
5600-52X-D3-AC-B-JP	AS5600-52X 48-Port 10G SFP+ with 4x40G QSFP uplinks, DCSS Layer 3 software, dual AC PSUs, power-to-port airflow, Japan
PSU-AC-400-F	400W AC Power Supply FRU, port-to-power airflow, no power cord
PSU-AC-400-B	400W AC Power Supply FRU, power-to-port airflow, no power cord
FAN-1U-1x4-F	Fan Tray FRU, port-to-power airflow
FAN-1U-1x4-B	Fan Tray FRU, power-to-port airflow
CBL-PWR-US	AC Power Cable - US (125V/13A, 1830mm)-- only required with spare power supplies
CBL-PWR-EU	AC Power Cable - Europe (250V/10A, 1830mm)-- only required with spare power supplies
CBL-PWR-UK	AC Power Cable - UK (250V/10A, 1830mm)-- only required with spare power supplies
CBL-PWR-JP	AC Power Cable - Japan-- only required with spare power supplies
5600-52X-UPG-D23	AS5600-52X Software Upgrade, DCSS Layer 2 to Layer 3
5600-52X-SVC-D2	AS5600-52X Annual Software Maintenance, Technical Support and Upgrades, DCSS Layer 2 software
5600-52X-SVC-D3	AS5600-52X Annual Software Maintenance, Technical Support and Upgrades, DCSS Layer 3 software
5600-52X-SVC-RTF	AS5600-52X Annual Hardware Service, Return-to-Factory