

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 Sntp
 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.

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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