

# SDX 8000 Series

## SD-Access aggregation switches



Certified



Gbps



Open  
architecture



Enabled



Cloud  
software



Packet  
timing

## Benefits

- Accelerates differentiated service creation via open, multi-vendor, SDN programmability
- Avoids vendor-specific component lock-in via open interfaces and APIs
- Complete single-source product that can run independently from vendors for smooth migration into the whitebox world
- Supports broadband video deployment models compatible with leading IPTV middleware providers
- Supports data center, central office, cabinet racking, and customer premises options
- Supports stringent backhaul services with enhanced features, including low latency and network timing synchronization
- Mitigates the uncertain demand of emerging differentiated services through data center switching architectures
- Improves customer experience via strong traffic management and QoS
- Delivers SLA-based enterprise services via comprehensive Carrier Ethernet support

## Overview

The Adtran SDX 8000 Series of access and aggregation switches applies open and programmable SDN architectures for scaling data centers. These differentiated attributes enable our Software-Defined Access (SD-Access) architectures to achieve the massive scalability required to support the uncertain demand of emerging differentiated broadband services and supports the consolidation of SLA-based enterprise and backhaul services.

### Horizontal scalability and mesh network resiliency

Access and aggregation switches support advanced switching architectures that are highly scalable and resilient. The SDX 8000 Series supports horizontal scalability (scaling out versus up), which allows the operator to add capacity on the fly. Mesh switching provides multiple paths for each network element, creating a highly fault-tolerant network. These switches can be deployed as a spine, top-of-rack leaf switch, or middle-of-row leaf switch to interconnect computing and storage functions with aggregate fiber-to-the-premises, Carrier Ethernet access, and aggregation components.

### Multi-market, multi-service consolidation

These switches are an integral part of a next-generation access solution, supporting the consolidation of 1, 10 and 100Gbit/s services across multiple market segments. Residential broadband, mobile backhaul/fronthaul, enterprise networking, and cloud connectivity services can be simultaneously deployed on a common architecture due to their

comprehensive feature set and enormous scale. Operators can offer broadband video from multiple video content providers via unicast and multicast, IPTV, and over-the-top (OTT) deployment models. Deliver SLA-based enterprise and mobile backhaul and fronthaul services through Carrier Ethernet, Ethernet OAM, and performance monitoring, as well as support for stringent network timing distribution and synchronization.

### The SDX Aggregation Suite

The SDX Aggregation Suite is a collection of optimized, flexible software that enables advanced carrier-grade features on bare-metal switches. Adtran's SDX Aggregation Suite is built upon Open Network Linux (ONL), which provides an industry-standard, open platform. We then harness the power of containerization to apply open, programmable SDN models and data center scaling principles.

### Open, SDN-programmable architecture

These switches support open interfaces and open APIs from vendor-neutral SDN controllers helping operators avoid vendor-specific component and process lock-in that leads to long release schedules that stifle the agility of in-house DevOps teams. They support multiple Linux-based network operating systems and offer NETCONF/YANG APIs for SDN programmability.

# SDX 8000 SERIES

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## Portfolio summary

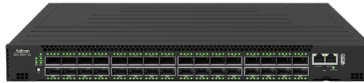
### SDX 8310-64

- 64-port 100GbE switch
- 64x100GbE interfaces
- High capacity L2/L3 forwarding
- Front-to-back airflow
- High-density OLT aggregation



### SDX 8310-32

- 32-port 100GbE switch
- 32x100GbE interfaces
- High capacity L2/L3 forwarding
- Front-to-back airflow
- High-density OLT aggregation



### SDX 8305-20

- 20-port 100GbE switch
- 20x100GbE interfaces
- Side-to-side, front-to-back, front-to-top airflow options
- Less than 300mm in depth



### SDX 8210-54

- 48-port 10GbE Carrier Ethernet switch
- 48x10GbE, 6x100GbE interfaces
- Advanced Carrier Ethernet features with H-QoS
- Side-to-side airflow
- Remote OLT and Carrier Ethernet services aggregation



### SDX 8205-54/54M

- 48-port 10GbE Carrier Ethernet switch
- 48x10GbE, 6x100GbE interfaces
- Advanced Carrier Ethernet features with H-QoS
- Side-to-side airflow
- Remote OLT and Carrier Ethernet services aggregation
- Less than 300mm in depth
- Temperature-hardened



### SDX 8120-14

- 10-port 1GbE Carrier Ethernet switch
- 10x1GbE, 4x10GbE interfaces
- Advanced Carrier Ethernet features with H-QoS
- Side-to-side airflow
- Edge router and point-to-point Ethernet access function
- Less than 300mm in depth
- Temperature-hardened



## Product specifications

Feature	8310-64	8310-32	8305-20	8210-54	8205-54	8205-54M	8120-14
<b>Link interfaces</b>	4x100GbE QSFP-DD/28 60x100GbE QSFP28	32x100GbE QSFP28	20x100GbE QSFP28	6x100GbE QSFP28 48x10GbE SFP+	2x100GbE QSFP-DD/28 4x100GbE QSFP28 48x10GbE SFP+	2x100GbE QSFP-DD/28 4x100GbE QSFP28 48x10GbE SFP+	4x10GbE SFP+ 10x1GbE SFP
<b>Each port supports</b>	QSFP: 1x100GbE 1x40GbE 4x25GbE (breakout cables) 4x10GbE (breakout cables)	QSFP: 1x100GbE 1x40GbE 4x25GbE (breakout cables) 4x10GbE (breakout cables)	QSFP: 1x100GbE 1x40GbE 4x25GbE (breakout cables) 4x10GbE (breakout cables)	QSFP: 1x100GbE 1x40GbE 4x25GbE (breakout cables) 4x10GbE (breakout cables)  SFP+: 1x10GbE 1x1GbE	QSFP: 1x100GbE 1x40GbE 4x25GbE (breakout cables) 4x10GbE (breakout cables)  SFP+: 1x10GbE 1x1GbE	QSFP: 1x100GbE 1x40GbE 4x25GbE (breakout cables) 4x10GbE (breakout cables)  SFP+: 1x10GbE 1x1GbE	SFP+: 1x10GbE 1x1GbE
<b>Switch capacity</b>	6.4 Tbps	3.2 Tbps	3.2 Tbps	880 Gbit/s	880 Gbit/s	880 Gbit/s	140 Gbps
<b>Jumbo frames MTU</b>	9216 Bytes	9216 Bytes	9216 Bytes	9216 Bytes	9216 Bytes	9216 Bytes	9216 Bytes
<b>MAC addresses</b>	136K	136K	136K	750K	750K	750K	64K
<b>Rack units</b>	2RU	1RU	1RU	1RU	1.5RU	1.5RU	1RU
<b>Mounting brackets</b>	19, 21, 23-in	19, 21, 23-in	19, 21, 23-in	19, 21, 23-in	19, 21, 23-in	19, 21, 23-in	19, 21, 23-in
<b>Airflow options</b>	F2B	F2B	S2S, F2B, F2T	F2B	S2S	S2S	S2S
<b>Dimensions (DxWxH)</b>	550 x 438 x 89 mm	511 x 440 x 43 mm	235 x 386 x 43.7 mm	548 x 440 x 44 mm	230 x 387 x 66 mm	230 x 387 x 66 mm	230 x 387 x 44 mm
<b>Weight</b>	23 lbs/10 kg	24 lbs/10.9 kg	8.8 lbs/4 kg	21.4 lbs/9.7 kg	23 lbs/10 kg	23 lbs/10 kg	8.8 lbs/4 kg
<b>Powering options</b>	Hot-swappable AC or DC	Hot-swappable AC or DC	-48VDC redundant feed	Hot-swappable AC or DC	-48VDC redundant feed	-48VDC redundant feed	Hot-swappable AC or DC
<b>Typical power consumption w/o optics</b>	375 W	240 W	130 W	270 W	100 W	135 W	50 W
<b>Typical power consumption with optics*</b>	735 W	280 W	206 W	330 W	220 W	270 W	60 W
<b>Max power consumption w/o optics</b>	500 W	543 W	170 W	420 W	160 W	200 W	100 W
<b>Temperature range</b>	0 to 45°C	0 to 45°C	0 to 50°C	0 to 40°C	0 to 50°C	0 to 50°C	-25 to 70°C
<b>Relative humidity</b>	up to 95% non- condensing	up to 95% non- condensing	up to 95% non- condensing	up to 95% non- condensing	up to 95% non- condensing	up to 95% non- condensing	up to 95% non- condensing

\* Please note, the typical power consumption with optics is dependent on the equipped optical modules.

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## Ethernet services support

- Classification of traffic based on:
  - Per UNI port
  - CE VLAN ID (C-tag)
  - CE VLAN P-bit
  - DSCP fields
  - Single stack VLAN
  - Double stack VLANs (Q-in-Q)
- 802.1q single/double tag manipulation
- S-TAG TPID provisioning supports 802.1ad and 802.1q standards
- Ingress and egress policing
- Strict priority with 8 queues per port
- Shaping per queue
- Scheduling support:
  - Tail drop
  - Weighted Random Early Detection (WRED)
  - Weighted Deficit Round Robin (WDRR) (future)

## Network management and monitoring

- NETCONF/YANG
- CLI
- Telnet/SSH
- IPv4/v6 management
- DHCPv4/v6
- Traceroute
- Port Mirroring
- Traffic mirroring (future)
- Syslog
- NTP
- LLDP (future)

## Network timing and synchronization

- Synchronous Ethernet (SyncE)
- Prepared 1588v2

## Security

- Accounting and authorization support:
  - RADIUS
  - TACACS+ (future)
- ACL logging and mirroring (future)
- DHCP snooping (future)
- DOS protection

## Layer 2 and Layer 3 features

- Carrier-grade Ethernet switching
- EVC (EPL, EVPL), MEF compliant
- Link Aggregation Group (LAG)
- Multi-chassis Link Aggregation Group (MC-LAG)
- Ethernet Linear Protection Switching (ELPS)
- 802.1ag Ethernet OAM Connectivity Fault Management (CFM)
- ITU-T Y.1731 Ethernet in the First Mile OAM
- Ethernet Local Management Interface (E-LMI)
- Link State Awareness (LSA)
- Static Routing (IPv6/VRF)
- Dynamic routing support (future):
  - BGPv4/v6
  - OSPFv2/v3
- Bidirectional Forwarding Detection (BFD)
- Virtual Router Redundancy Protocol (VRRP)
- Label Distribution Protocol (LDP) (future)
- Multiprotocol Label Switching (MPLS) (future)
- Layer 2 VPN (VPWS/VPLS) (future)
- Layer 3 VPN (future)
- Multicast routing support:
  - Source-specific Mode (SSM)
  - Any Source Multicast (ASM)
  - Sparse Mode (PIM-SM) (future)
  - Dense Mode (PIM-DM) (future)
- Multicast Listener Discovery Version 2 (MLDv2) (future)
- IGMP v2/v3, IGMP snooping, and IGMP proxy support
- Media Access Control Security (MACsec) (SDX 8205-54M only)

## LEDs

- Port LEDs: Link Status, Activity, Rate
- Ethernet management port LED: Link Status, Activity
- Console port LED: Link Status
- System LEDs: Diagnostic, Locator, PSU, and Fan Status

## Regulatory standards

- FCC Part 15 Class A
- FCC Part 68
- UL 60950, CAN/CSA C22.2 No.60950
- EN 60950, IEC 60950, AS 3260/ AS NZS60950
- RoHS compliant
- ITU-T K21:2000
- CE marking
- NEBS Level 3 capable

## Ordering information

Equipment		Part No.
SDX 8120-14	10-port 1GbE Carrier Ethernet switch DC-powered	11971230F1*
SDX 8120-14	10-port 1GbE Carrier Ethernet switch AC-powered	11971230F2*
SDX 8205-54	48-port 10GbE Carrier Ethernet switch	11971221F1*
SDX 8205-54M	48-port 10GbE Carrier Ethernet switch with MACsec	11971221F2*
SDX 8305-20	20-port 100GbE switch	11971211F1*
SDX 8310-64	64-port 100GbE switch DC-powered	11971103F1*
SDX 8310-64	64-port 100GbE switch AC-powered	11971103F2*
<b>SDX 8210-54 bundles</b>	<b>48-Port 10GbE Carrier Ethernet switch</b>	
SDX 8210-54	DC-powered, 19-in brackets	41971111F1**
SDX 8210-54	AC-powered, 19-in brackets	41971111F31**
SDX 8210-54	DC-powered, 21-in brackets	41971111F12**
SDX 8210-54	AC-powered, 21-in brackets	41971111F32**
SDX 8210-54	DC-powered, 23-in brackets	41971111F13**
SDX 8210-54	AC-powered, 23-in brackets	41971111F33**
<b>SDX 8310-32 bundles</b>	<b>32-Port 100GbE switch</b>	
SDX 8310-32	DC-powered, 19-in brackets	41971101F11**
SDX 8310-32	AC-powered, 19-in brackets	41971101F31**
SDX 8310-32	DC-powered, 21-in brackets	41971101F12**
SDX 8310-32	AC-powered, 21-in brackets	41971101F32**
SDX 8310-32	DC-powered, 23-in brackets	41971101F13**
SDX 8310-32	AC-powered, 23-in brackets	41971101F33**

\* Unit includes the base chassis, fans, power supply, and 19-in brackets

\*\* Bundles include the base chassis, fans, power supply, power cords, and brackets



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