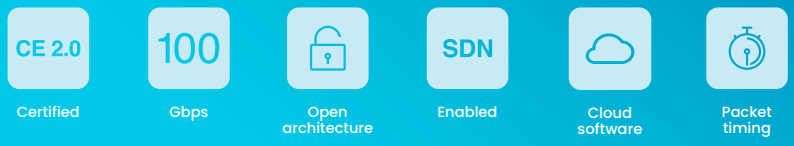
Adtran

Data sheet

# SDX 8200/8100 Series

## SD-Access aggregation switches




## 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 8200 and SDX 8100 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 8200/8100 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, 25 and up to 400Gbit/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. The Adtran 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 8200/8100 Series

## Portfolio summary

### SDX 8230

- 400/100GbE aggregation switch
- 2x 400GbE, 8x 100GbE, 4x 1/10/25GbE interfaces
- Advanced Carrier Ethernet features with H-QoS
- Side-to-side airflow; optional baffle kits available
- Remote OLT and Carrier Ethernet services aggregation
- Less than 300mm in depth
- Temperature-hardened



### SDX 8210

- 48-port 10GbE Carrier Ethernet switch
- 6x 100GbE, 48x 10GbE interfaces
- Advanced Carrier Ethernet features with H-QoS
- Front-to-back airflow
- Remote OLT and Carrier Ethernet services aggregation



### SDX 8205-54/54M

- 48-port 10GbE Carrier Ethernet switch
- 6x 100GbE, 48x 10GbE interfaces
- Advanced Carrier Ethernet features with H-QoS
- Side-to-side airflow; optional baffle kits available
- Remote OLT and Carrier Ethernet services aggregation
- Less than 300mm in depth



### SDX 8120

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



# SDX 8200/8100 Series

## Product specifications

| Feature | SDX 8230 | SDX 8210 | SDX 8205-54 | SDX 8205-54M | SDX 8120 |
|---|---|---|---|---|---|
| **Link interfaces** | 2x 400GbE (QSFP56-DD)<br>8x 100GbE (QSFP28)<br>4x 1/10/25GbE (SFP28) | 6x 100GbE (QSFP28)<br>48x 10GbE (SFP+) | 2x 100GbE (QSFP-DD/28)<br>4x 100GbE (QSFP28)<br>48x 10GbE (SFP+) | 2x 100GbE (QSFP-DD/28)<br>4x 100GbE (QSFP28)<br>48x 10GbE (SFP+) | 4x 10GbE (SFP+)<br>10x 1GbE (SFP) |
| **Each port supports** | **QSFP56-DD:**<br>1x 400GbE<br>4x 100GbE (breakout)<br>1x 100GbE<br><br>**QSFP28:**<br>1x 100GbE<br>4x 25GbE (breakout)<br>4x 10GbE (breakout)<br><br>**SFP28:**<br>1x 25GbE<br>1x 10GbE<br>1x 1GbE | **QSFP28:**<br>1x 100GbE<br>1x 40GbE<br>4x 25GbE (breakout)<br>4x 10GbE (breakout)<br><br>**SFP+:**<br>1x 10GbE<br>1x 1GbE | **QSFP-DD/28:**<br>1x 100GbE<br>1x 40GbE<br>4x 25GbE (breakout)<br>4x 10GbE (breakout)<br><br>**SFP+:**<br>1x 10GbE<br>1x 1GbE | **QSFP-DD/28:**<br>1x 100GbE<br>1x 40GbE<br>4x 25GbE (breakout)<br>4x 10GbE (breakout)<br><br>**SFP+:**<br>1x 10GbE<br>1x 1GbE | **SFP+:**<br>1x 10GbE<br>1x 1GbE |
| **Switch capacity** | 1.2Tbit/s | 880Gbit/s | 880Gbit/s | 880Gbit/s | 140Gbit/s |
| **Jumbo frames MTU** | 9216 Bytes | 9216 Bytes | 9216 Bytes | 9216 Bytes | 9216 Bytes |
| **MAC addresses** | 256K | 750K | 750K | 750K | 64K |
| **Rack units** | 1RU | 1RU | 1.5RU | 1.5RU | 1RU |
| **Mounting options** | 19, 21, 23-in | 19, 21, 23-in | 19, 21, 23-in | 19, 21, 23-in | 19, 21, 23-in |
| **Airflow options** | Side-to-side | Front-to-back | Side-to-side | Side-to-side | Side-to-side |
| **Baffle kits available** | F2B, F2F, B2T, T2B | | F2B, F2F, B2T, T2B | F2B, F2F, B2T, T2B | |
| **Dimensions (D x W x H)** | 235 x 387 x 44mm | 548 x 440 x 44mm | 225 x 437 x 66mm | 225 x 437 x 66mm | 236 x 437 x 44mm |
| **Weight** | 8.8 lbs. (4kg) | 21.4 lbs. (9.7kg) | 10.14 lbs. (4.6kg) | 10.14 lbs. (4.6kg) | 9.05 lbs. (4.11kg) |
| **Powering options** | -48VDC<br>redundant feed | Hot-swappable AC<br>or DC | -48VDC<br>redundant feed | -48VDC<br>redundant feed | Hot-swappable AC<br>or DC |
| **Typ. power consumption without optics at 25°C** | 57W | 270W | 95W | 135W | 50W |
| **Typ. power consumption with optics*** | 110W | 330W | 220W | 270W | 60W |
| **Max. power consumption without optics** | 125W | 420W | 106W | 144W | 72W |
| **Operational temperature range** | -40 to 70°C | 0 to 40°C | 0 to 50°C | 0 to 50°C | -25 to 70°C |
| **Relative humidity** | up to 95%<br>non-condensing | up to 95%<br>non-condensing | up to 95%<br>non-condensing | up to 95%<br>non-condensing | up to 95%<br>non-condensing |

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

### 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

# SDX 8200/8100 Series

## Ordering information

| Equipment | | Part No. |
|---|---|---|
| SDX 8230 | 400/100GbE aggregation switch | 11971222F1* |
| SDX 8205-54 | 48-port 10GbE Carrier Ethernet switch | 1197122lF1* |
| SDX 8205-54M | 48-port 10GbE Carrier Ethernet switch with MACsec | 11971221F2* |
| SDX 8120 | 14-port 1GbE Carrier Ethernet switch DC-powered | 11971230F1* |
| SDX 8120 | 14-port 1GbE Carrier Ethernet switch AC-powered | 11971230F2* |
| **SDX 8210 bundles** | **48-port 10GbE Carrier Ethernet switch** | |
| SDX 8210 | DC-powered, 19-in brackets | 41971111F11** |
| SDX 8210 | AC-powered, 19-in brackets | 41971111F31** |
| SDX 8210 | DC-powered, 21-in brackets | 41971111F12** |
| SDX 8210 | AC-powered, 21-in brackets | 41971111F32** |
| SDX 8210 | DC-powered, 23-in brackets | 41971111F13** |
| SDX 8210 | AC-powered, 23-in brackets | 41971111F33** |
| **SDX Aggregation Suite software licensing** | | **Perpetual** |
| Base license | Includes Base software with Layer 2 capabilities. Enables VLAN forwarding, translation and QoS management for efficient traffic handling. | 119711SW10F1*** |
| Carrier Ethernet license | Builds on Base license with advanced Carrier Ethernet features. Supports E-LAN, E-Line, ELPS and Ethernet OAM for enhanced reliability and performance. | 119711SW11F1*** |

* Unit includes the base chassis, fans, power supply and 19-in brackets.
** Bundles include the base chassis, fans, power supply, power cords and brackets.
*** Additional licenses are available. Please consult with a sales representative for more information.

Updated August 6, 2025

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