

ADTRAN

## 8320-64

## 100G Aggregation Switch

SDX Series



## Benefits

- Deliver SLA-based enterprise services via comprehensive MEF support
- Offer broadband video from multiple video content providers and deployment models
- Supports stringent backhaul services features including low latency/jitter, network timing sync.
- Accelerates differentiated service creation via open, multi-vendor, SDN programmability
- Supports the uncertain demand of emerging differentiated services through data centre switching architectures.
- Improves customer experience via strong traffic management and QoS feature set
- Avoids vendor-specific component lock-in via open interfaces and APIs

## Overview

The ADTRAN SDX 8200 and 8300 Series access and aggregation switches apply open, programmable SDN models and data centre scaling principles. These differentiated attributes allow our next-generation services access solution to achieve the massive scalability required to support the uncertain demand of emerging differentiated broadband services and the consolidation of SLA-based enterprise and backhaul services.

### High-Performance, Meshed Switching

These ADTRAN access and aggregation switches support switching capacity up to 12.8 Tbps and offer 10G SFP+, 40G QSFP+, and 100G QSFP28 interface configurations. This allows these highly flexible solutions to be deployed as either a Spine, Top of Rack/Leaf switch or middle of row Leaf switch to interconnect computing and storage functions; as well as aggregate Fibre-to-the-Premises and Carrier Ethernet access and aggregation components.

### Traffic Management and Service Assurance

To ensure high customer Quality of Experience these switches use efficient meshed network protocols like Layer 3 BGP with ECMP, segment routing, and multi-chassis LAG load sharing, providing strong performance guarantees when scaling the system. The switches also support VxLANs for virtualised data centre environments, allowing faster scale while logically isolating tenant apps and physical compute resources. The switches also feature hot-swappable power supplies and fans, and redundant AC or DC

power supplies ensuring non-stop, continuous operations for critical service provider and enterprise data center environments.

### Multi-market, Multi-service Consolidation

These switches are an integral part of a next-generation access solution supporting the consolidation of 1Gbps and 10Gbps services across multiple market segments. Residential broadband, mobile backhaul/fronthaul and enterprise networking and cloud connectivity services can be simultaneously deployed on a common architecture due to its comprehensive feature set combined with its enormous scale. Operators can offer broadband video from multiple video content providers via unicast and multicast IPTV and OTT deployment models. Deliver SLA-based enterprise and mobile backhaul and fronthaul services through MEF CE2.0 compliance, Ethernet OAM and PM as well as support for stringent network timing distribution and synchronisation.

### Open, SDN-programmable Architecture

These switches support open interfaces and APIs from vendor-neutral SDN controllers helping operators avoid vendor-specific component and process lock-in that lead to long release schedules that stifle the agility of in-house DevOps teams. The switches support multiple, Linux-based Network Operating Systems, and offer Open-Flow and NETCONF/YANG APIs for SDN programmability.



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## Product Specifications

### Ports

- Switch Ports: 64 x QSFP28 100 GbE
- Management ports on port side:
  - ◆ 1 x RJ-45 serial console
  - ◆ 1 x RJ-45 100/1000BASE-T management
  - ◆ 1 x USB Type A storage

### Key Components

- Switch Silicon: BCM56970 Tomahawk II
- CPU Modules:
  - Intel Xeon D-1518 quad-core 2.4 GHz
  - 8 GB x 2 2133MHz with ECC (DDR4 SO-DIMM)
  - 8 MB x 2 SPI Flash (Boot)
  - m.2 SSD: 32 GB
  - Reserve mSATA connector

### Performance

- Switching Capability: 12.8 Tbps full duplex
- Forwarding Rate: 9.5 bpps
- Jumbo frames support up to 9 Kbytes
- Packet Buffer Size: 42 MB integrated packet buffer
- Subject to NOS:
  - ◆ MAC Addresses: 8 K min./264 K max.
  - ◆ VLAN IDs: 4 K
  - ◆ IPv4: 76 K min./128 K max. L3 hosts/extended view; IPv4/32:
  - ◆ 32 K LPM entries with TCAM-only mode
  - ◆ Pv6: 46 K min./64 K max. L3 hosts/extended view; IPv6/64: 16 K
  - ◆ LPM entries with TCAM-only mode

### Physical and Environmental

- Dimensions (WxDxH): 43.8 x 58.0 x 8.8 cm (17.2 x 22.8 x 3.5 in)
- Weight: 14.11 kg (31.1 lb)
- Fans: Hot-swappable 3 + 1 redundant fans
- Operating Temperature: 0°C ~ 50°C (32°F ~ 122°F)
- Operating Humidity: 5% ~ 95% non-condensing

### QSFP28 Port LEDs

- LED1: Blue (100 G), Orange (40 G), White (25 G), Green (10 G)
- LED2~LED4: White (25 G), Green (10 G)
- Management Port LED: Green: (10 M/100 M/1 G), Flashing:
  - Activity
  - System LEDs: PSU1, PSU2, Fan, Diag, and Loc
  - Reset button

### Software

- Switch is loaded with Open Network Install Environment (ONIE) software installer
- Compatible with the following NOS options:
  - ◆ Open Network Linux, the open-source, OCP reference NOS
  - ◆ SONiC open source network software
  - ◆ Supports the Redfish management API, now a requirement of the Open Compute Project
  - ◆ Cisco IOS-XR software
  - ◆ CN-NOS software from SnapRoute
  - ◆ Cumulus@Linux®

### Power

- PSUs: 2 redundant, load-sharing, hot-swappable AC or -48 VDC
- Input Voltage: 100-240 VAC, 50-60 Hz
- Regulatory
  - EMI
  - CE Mark
  - EN 55032
  - AS/NZS CISPR 32
  - EN 55024
  - EN 61000 3-2
  - EN 61000 3-3
  - CISPR 32
  - FCC Part 15 Subpart B Class A
  - VCCI Class A
  - Safety
    - CB
    - UL
  - Environmental:
    - GR63-CORE (Pre-test)
    - RoHS-6 Compliant
    - Country of Origin: Taiwan (TAA Compliant)
  - Electrical and Electronic Equipment (WEEE Directive 2002/96/EC)

## Ethernet Services Support

- Single Stack VLAN and Double Stack VLANs (Q-in-Q)
- Manipulation Based on 802.1q and DSCP Field
- STAG TPID Provisioning Supports 802.1ad and 802.1Q Standards
- Port-based Service Support
- Service Scale and Flexibility
- MEF Compliant E-Line, E-LAN, E-Tree, E-Access
- Strict Priority and WDRR Scheduling
- Support for full VLAN Range plus Tag Stacking
- Supports 10k Jumbo Frame in Four Byte Increments
- Egress Shaping Per Port and Per Queue
- Hierarchical QoS

## IPTV Support

- IGMP v2 and v3
- Dynamic Host Configuration Protocol (DHCP) Support with Option 82
- Lightweight DHCPv4 and DHCPv6 Relay Agent Support

## Layer 3 Features

- VxLAN
- OSPF
- IS-IS
- VRRP
- RSVP
- L3VPN
- MPLS
- Multicast Routing (PIM-SM, DM, SSM)
- Virtual Routing and Forwarding (VRF)
- RIP
- OSPFv3
- BFD
- LDP
- L2VPN (VPWS and VPLS)
- Segment Routing

## Security

- Accounting and Authorisation (RADIUS, AAA, TACACS+)
- ACL Logging and Mirroring
- DHCP Snooping
- DOS Protection
- Ingress/Egress L2/L3/L4 ACL
- IP Source Guard
- Management IP Filtering (SNMP/Telnet/SSH)
- Port MAC Locking
- Static MAC Filtering

## Network Timing and Synchronisation

- ADTRAN Differential and Adaptive Timing Methods
- Synchronous Ethernet

## Network Management and Monitoring

- NETCONF/YANG
- CLI
- Telnet/SSH
- FTP/SFTP
- IPv4/IPv6 management
- DHCPv4, DHCPv6
- Port Mirroring
- sFlow
- SNMPv3
- Syslog

## Regulatory Agency Approvals

- 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 Compliant

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## Ordering Information

Equipment	Part No.
SDX8320-64 switch bundle (Front-to-back DC powered, 19" rack mounting)	41971103F11
SDX8320-64 switch bundle (Back-to-front DC powered, 19" rack mounting)	41971103F21
SDX8320-64 switch bundle (Front-to-back AC powered 19" rack mounting)	41971103F31
SDX8320-64 switch bundle (Front-to-back DC powered, 21" rack mounting)	41971103F12
SDX8320-64 switch bundle (Back-to-front DC powered, 21" rack mounting)	41971103F22
SDX8320-64 switch bundle (Front-to-back AC powered 21" rack mounting)	41971103F32
SDX8320-64 switch bundle (Front-to-back DC powered, 23" rack mounting)	41971103F13
SDX8320-64 switch bundle (Back-to-front DC powered, 23" rack mounting)	41971103F23
SDX8320-64 switch bundle (Front-to-back AC powered 23" rack mounting)	41971103F33
SDX8320-64 switch chassis	11971103F1



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