Release Notes for SONiC on Cisco 8000 Series Routers, Release 202305.1.x

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Cisco 8000 series routers support disaggregating the hardware and software to provide a more robust, open ecosystem for service provider networks.

With the introduction of Open Compute Project (OCP), vendors collaborate on designs and specifications to enable a more efficient, scalable, and versatile consumption of hardware and software. This initiative broadens the spectrum for cloud and service provider transformations, hardware innovations, software evolutions, flexibility, lower costs, and better control of the network infrastructure.

As part of the disaggregation journey, Cisco supports installing Software for Open Networking in the Cloud (SONiC) on the following PIDs on the Cisco 8000 series routers:

Product ID (PID)	Description
8101-32FH-O	Cisco 8100 1 RU Chassis with 32x400G QSFP56-DD with Open Software and without HBM on Q200 Silicon
8102-64H-O	Cisco 8100 2 RU Chassis with 64x100G QSFP28 with Open Software and without HBM on Q200 Silicon
8111-32EH-O	Cisco 8100 1 RU Chassis with 32x800G or 64x400GbE QSFP-DD800 with Open Software and without HBM
8201-32FH-O	Cisco 8200 1 RU Chassis with 32x400G QSFP56-DD with Open Software and HBM on Q200 Silicon

SONiC is an open source network operating system based on Linux that runs on switches from multiple vendors and ASICs. SONiC offers a full-suite of network functionality, like BGP and RDMA, that has been production-hardened in the data centers of some of the largest cloud-service providers. Cisco is part of this ecosystem harnessing the innovation in Cisco Silicon One to provide seamless infrastructure experience in data center deployments. Cisco Silicon One devices can assign ports to be generic Ethernet or a fully scheduled fabric. The Cisco Silicon One architecture enables optimized fixed form factor systems. Cisco leverages the SONiC capabilities from the community for a deployment-hardened network stack on the Cisco 8000 series routers.

SONiC uses Switch Abstraction Interface (SAI) API version 1.10.2 for release 202305. The SAI API defines the API to provide a mechanism to control forwarding elements, such as a switching ASIC, an NPU or a software switch in a uniform manner. For more information about SAI APIs, refer the Github repository.

For more information about the benefits of integrated innovation, see Cisco 8000 series routers.

Component Version

Feature	Version
Linux kernel	5.10.0-18-2 (5.10.140-1)
SAI API	1.10.2
FRR	8.2.2
LLDPD	1.0.4-1
TeamD	1.30-1
SNMPD	5.9+dfsg-4+deb11u1
Python	3.9.2-1
SYNCD	1.0.0
swss	1.0.0
Radvd	1:2.18-3
Isc-dhcp	4.4.1-2
sonic-telemetry	0.1
redis-server/ redis-tools	5:6.0.16-1+deb11u2

Tier 1 Baseline Features

The following list provides common Tier 1 (T1) baseline features supported on SONiC:

- TACACS+ authentication for IPv4 or IPv6 addresses
- SSHv2 authentcation for IPv4 or IPv6 addresses
- AAA authentication
- Syslog logging for IPv4 or IPv6 addresses
- Network Time Protocol (NTP) for IPv4 or IPv6 addresses
- Simple Network Management Protocol (SNMP) over IPv4 and IPv6 transport
- TFTP file transfers over IPv4 or IPv6 addresses
- Secure Copy (SCP) server support
- Dynamic Host Configuration Protocol (DHCP) relay agent
- Access Control Lists (ACLs) over IPv4 and IPv6 addresses
- IPv4 or IPv6 ACL match on 7 tuple

- ERSPAN and Everflow Support
  - Source interface to support IPv4 capture and IPv6 capture at the same time
  - Bit-wise match on DSCP
  - Capture IPv4 and IPv6 source packets and encapsulation with either IPv4 or IPv6 addresses
- IPv4 or IPv6 decapsulation
- IPv4 or IPv6 routing
- Static route
- iBGP over IPv4 or IPv6 addresses
- eBGP over IPv4 or IPv6 addresses
- Route policies
- IP prefix lists
- BGP
  - Multihop, AS-set, prefix-set, community-list
  - Max prefix limit
  - Bestpath as-path multipath-relax
  - Soft reconfiguration
  - Update source loopback
- 32-way ECMP
- LAG: IPv4 or IPv6 interfaces addresses
- LACP Support
- RDMA: QOS-RDMA and QOS-ECN
- MTU: Jumbo MTU 9100 for Management, Switched Virtual Interface (SVI) and Native interfaces
- SNMP: Trap source management interface in the management VRF
- COPP/LPTS: For both management and inband interfaces (v4 or v6 UMPP)
- NTP:
  - Support of IPv4 or IPv6 Servers
  - Access-group server ACL
- Security ACL:
  - SSH IPv4 and IPv6 access
  - Physical interfaces—IPv4 and IPv6 ACL support
  - ACL permit, deny actions or counters

- ACL

  Match conditions:

  - 5-tuple match for an ACL (source and destination IP, source and destination port and protocol type)
  - port range

- QoS classification and scheduling over IPv4 or IPv6 addresses
- Syslog support
- gRPC: Dial-out support to stream telemetry data

What's New in the Release

The following features are introduced or enhanced in this release:

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- Supported PIDs—8101-32FH-O, 8102-64H-O, 8111-32EH-O, 8201-32FH-O
- Quality enhancements for platform infrastructure and forwarding features
- SDK Bullseye Debian support
- Packet Capture CLI for all dropped packets
- Support for Zero Touch Provisioning (ZTP) and standard image versions

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The following features are introduced or enhanced in this release:

- Supported PIDs—8101-32FH-O, 8102-64H-O, 8111-32EH-O, 8201-32FH-O
- Support for T1 baseline features
- Support for T0 baseline features on 8111-32EH-O and 8102-64H-O PIDs
- Quality enhancements for platform infrastructure and forwarding features
- RDMA support
- Address Resolution Protocol (ARP)
- L2 access, trunk port and VLAN support on 8111-32EH-O PID and 8102-64H-O PIDs
- SVI: IPv4 and IPv6 support on 8111-32EH-O and 8102-64H-O PIDs

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The following features are introduced or enhanced in this release:

- Supported PID—8111-32EH-O
- Support for T0 and T1 baseline features
- Quality enhancements for platform infrastructure and forwarding features
- RDMA support
- Address Resolution Protocol (ARP)
- L2 access, trunk port and VLAN support on 8111-32EH-O PID
- SVI: IPv4 and IPv6 support on 8111-32EH-O PID

Software Download

Download the SONiC image from the Cisco Software Download Center.

Related Documentation

Refer the following pages for more information about SONiC on Cisco 8000 Series Routers:

- Explore SONiC on Cisco 8000 Series Routers
  - Install SONiC on Cisco 8000 Series Routers
  - Setup SONiC on Cisco 8000 Series Routers
  - Network Scenario: 3-Stage Clos Network with Static VXLAN
  - Serviceability
- Cisco 8000 Series Routers Data Sheet