

Release Notes for SONiC on Cisco 8000 Series Routers, Release 202012

SONiC on Cisco 8000 Series Routers, Release 202012 2

Component Version 2

Supported Features 3

Software Download 6

SONiC on DevNet Sandbox 6

Related Documentation 6

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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 introduces support for installing Software for Open Networking in the Cloud (SONiC) on fixed form factors on the Cisco 8000 series routers.

Product ID (PID)	**Description**
8102-64H-O	Cisco 8100 2 RU Chassis with 64x100G QSFP28 with Open Software and without 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 1.7.1 for release 202012. 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	linux_4.19.0-12-2 (4.19.152-1)
SAI API	1.7.1
FRR	7.5.1-sonic-0
lldpd	1.0.4-1
teamd	1.30-1
snmpd	5.7.3+dfsg-5
Python	3.7.3-1
syncd	1.0.0
swss	1.0.0

Feature	Version
radvd	2.17-2
isc-dhcp	4.4.1-2
sonic-telemetry	0.1
redis-server/ redis-tools	6.0.6-1~bpo10+1

Supported Features

202012.3.2

The following features are introduced or enhanced in this release:

- Fixes for the following issues:
  - Upgrade from earlier versions of Field Programmable Device (FPD)
  - CPU usage causing telemetry container crash or system reboot
- Display Complex Programmable Logic Device (CPLD) version using FW utility **fwutil** command
- Upgrade FPD with single reboot

202012.3.1

The following features are introduced or enhanced in this release:

- Bug fixes from previous releases.
- Field Programmable Device (FPD) is updated to version 1.88. For information about updating the FPD after you install version 202012.3.1, see Migrate from Cisco IOS XR to SONiC.

202012.2.1

The following features are introduced or enhanced in this release::

- Bug fixes from previous releases.
- Enhancements to serviceability commands.

202012.1.2

The following features are introduced or enhanced in this release::

- Bidirectional Forwarding Detection (BFD) hardware offload
- VxLAN-based overlay ECMP with BFD monitoring

202012.1.1

The following features are introduced or enhanced in this release::

- 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
- L2 access and trunk port
- Link Layer Discovery Protocol (LLDP)
- Media Access Control (MAC) address aging
- 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
- VxLAN-based overlay ECMP
- 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
- SVI: IPv4 or IPv6 Support
- SVI: IP DHCP Relay Support for IPv4 and IPv6 server destination
- 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
- Layer 2 ACLs
    - VLAN ACLs (VACLs)
    - Layer 2 ACLs: Port ACLs
    - Layer 2 ACLs: Routed ACLs (RACLs) for IPv4 or IPv6 addresses on native L3 or SVI interfaces
- 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
- Fast reboot
- Warm reboot
- XR to SONiC migration and rollbacks
- Syslog support

- gRPC: Dial-out support to stream telemetry data

Optics

To determine the transceivers that Cisco hardware supports, see the Transceiver Module Group (TMG) Compatibility Matrix tool.

Software Download

Download the SONiC image from the Software Download Center.

SONiC on DevNet Sandbox

We want you to interact with SONiC on the Cisco 8000 router. Introducing SONiC on DevNet Sandbox!

You see in action, a 3-stage Clos topology bring-up and deploy a reliable network that is optimised for latency.

We included a narration to summarise the main ideas in each stage. As you hit the `Play` button, configurations are applied on the Cisco 8000 router running as an Emulator in the DevNet Sandbox. You see real-time responses from the Emulator. What's more, you can add your own configurations and interact with the setup.



Note Some features like the Priority Flow Control (PFC), Bidirectional Forwarding Detection (BFD) are not supported on the Emulator.

Related Documentation

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

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

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