SONiC 4.0.0 Release Notes

These release notes describe the features and Celestica networking hardware devices that are supported in the SONiC 4.0.0 release.

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Chapter 1: **Overview**

SONiC is an open-source Network Operating System (NOS) that offers a wide variety of features that are essential for building large-scale network infrastructures. SONiC is based on Linux, with its wide range of features, modularity, flexible architecture, and compatibility with multiple hardware platforms make it an attractive solution for organizations.

Open Networking for SONiC by Celestica is a “hardened” stress tested and fixed version of Community SONiC. This is open source with all fixes up-streamed back to the SONiC Community. Support services will be available from Celestica.

Note: Refer to the supported platform section for a list of platforms supported in this version of the release.

Chapter 2: **Introduction**

This document provides the release information for software release 4.0.0 SONiC. The release 4.0.0 is based on the community 202311 repo. Starting from release 4.0.0, platforms namely DS4001 and DS4100 are supported. The Complete set of platforms supported in this release is mentioned in Supported/Qualified Platforms.

2.1 Purpose

The purpose of this document is to provide detailed release content, version information, download and installation instructions.

2.2 Supported/Qualified Platforms

The following Celestica white-boxes (only BMC variant) will be supported in this release. The detailed datasheet of the below networking hardware is found here.

2.2.1 DS1000

DS1000 is a 48-port 1GbE RJ45 and 8-port 10GbE SFP+ Ethernet switch in a 1RU form factor used in data center top-of-rack, management and enterprise access applications. It is designed with Broadcom's TD3-X2.

2.2.2 DS2000

DS2000 is a 48-port 25GbE SFP28 plus 8-port 100GbE QSFP28 Ethernet switch in a 1RU form factor used in data center top-of-rack, enterprise aggregation and core applications.It is designed with Broadcom's TD3-X5.

2.2.3 DS3000

DS3000 is a 32-port 100GbE QSFP28 Ethernet switch in a 1RU form factor used in data center leaf, spine, enterprise aggregation and core applications. It is designed with Broadcom's TD3-X7.

2.2.4 DS4000

DS4000 is a 32-port 400GbE QSFP56-DD Ethernet switch in a 1RU form factor used in data center top-of-rack, leaf, spine, enterprise aggregation and core applications. It is designed with Broadcom's TH3.

2.2.5 DS4101

DS4101 is a 32-port 2x400GbE OSFP switch in a 1RU form factor that provides 25.6Tbps bandwidth, transforming connectivity for the future with unprecedented speed and agility. It is designed with Broadcom's TH4.

2.2.6 DS5000

DS5000 is a 64-port 800GbE OSFP switch in a 2RU form factor that provides 51.2Tbps bandwidth, transforming connectivity for the future with unprecedented speed and agility. It is designed with Broadcom's TH5.

2.2.7 ES1010/ES1050

Celestica's ES1010/ES1050 are 1RU 48-port 1GbE or 32-port 1GbE plus 16-port 2.5GbE switches with optional PoE and 25GbE SFP28 uplink ports. It is ideal for organizations looking for secured, scalable switches and gateways for the enterprise edge. It is designed with Broadcom's TD3.X2.

2.2.8 EG1050

Celestica's EG1050 is an "OCP Inspired" 1RU 32-port 1GbE plus 16-port 2.5GbE PoE gateway with 25GbE SFP28 WAN uplink ports and optional WiFi and 5G/LTE backhaul capabilities. It is ideal for organizations looking for a highly integrated wired/wireless gateway solution for the enterprise edge. It is designed with Broadcom's TD3.X2.

2.2.9 ES1000

Celestica's ES1000 are 1RU 24-port / 48-port 1GbE switches with optional PoE and 25GbE SPF28 uplink ports. It is ideal for organizations looking for cost-effective, entry-level secured switches for the enterprise access/edge. It is designed with Marvell's AC5X.

2.2.10 DS4100

DS4100 is a 16-port 800G switch in a 1U form factor that provides 12.8Tbps bandwidth, delivering unparalleled high-density and high-performance, the ideal foundation for large scalable data centers. It is designed with Broadcom's TH4-GT.

2.2.11 DS4001

DS4001 is a 32-port 400GbE switch in a compact 1U form factor that provides 12.8Tbps bandwidth for the most demanding data center needs. It is designed with Marvell's TL7.

2.3 Platform Release History

The following table provides a summary of platforms supported across the releases leading to 4.0.0.

S. No	Release	Platform Supported	Comments
1.	SONiC 3.0.0 [and older release]	DS1000, DS2000, DS3000 and DS4000	
2.	SONiC 3.1.0	DS1000, DS2000, DS3000, DS4000 ***New Platform:*** DS4101and DS5000	**Manufacturing Release**
3.	SONiC 3.1.1	DS1000, DS2000, DS3000, DS4000, DS4101, DS5000 ***New Platform****:* ES1010/ES1050, EG1050,	**Manufacturing Release**

S. No	Release	Platform Supported	Comments
		and ES1000	
4.	SONiC 3.1.2	DS1000, DS2000, DS3000, DS4000, DS4101, DS5000, ES1010/ES1050, EG1050, and ES1000	**GA Release**
5.	SONiC 4.0.0	DS1000, DS2000, DS3000, DS4000, DS4101, DS5000, ES1010/ES1050, EG1050, and ES1000 ***New Platform****:* DS4100, DS4001	**GA and Manufacturing release**

Chapter 3: Version Information

3.1 Release Tag

The release tag for the current release is SONiC-OS-cls_sonic_4.0.0

3.2 Community SONiC by Celestica – Version Information

Software package details are as follows:

Attribute	Version
SONiC Software Version	SONiC-OS-cls_sonic_4.0.0-de0fd7e72
Distribution	Debian 11.11
Kernel x86/ARM	**x86** : 5.10.0-32-2-amd64
	ARM: 5.10.0-32-2-arm64
Build commit	de0fd7e72
Built By	autobuild@AZUHPSP10
Based on Sonic Community Branch	202311

3.3 Package Version

Community SONiC by Celestica is delivered along with other SW/FWs listed in the below table. While using the SONiC 3.1.0 or above release, users are requested to move to following SW/FW or higher versions(this is due to changes in the product name of devices).

S.No	SW/FW Component	DS1000	DS2000	DS3000	DS5000
1	CPLD	CPLD_C:0.6 CPLD_B:2.6	CPLD COMe:0.8 CPLD BASE:1.9 CPLD SW1 :1.0 CPLD SW2 :1.0	CPLD COMe:0.8 CPLD BASE:1.9 CPLD SW1 :1.0 CPLD SW2 :1.0	CPLD COMe:2.1 CPLD BASE:1.4 CPLD SW1 :0.2 CPLD SW2 :0.2
2	BIOS	DS1000.03.03.00	DS2000.03.00.02	DS3000.02.00.04	DS5000.05.00.04
3	ONIE	2019.02.01.4.0.1	2021.11.3.0.0	2022.08.3.0.0	2022.08.0.6.2
4	BCM PCIe FW	D102_0B	D102_0B	D102_0B	NA
5	FPGA	NA	00010008	00000007	0000000d
6	BMC	NA	3.50	3.40	3.04
7	Linux	Debian GNU/Linux 11 (bullseye)			
8	BCM SDK	[sdk-6.5.30-SP4]			
9	BCM SAI	11.2.8.1			

Firmware or Software Components for Enterprise Access Platforms (ES/EG platform) are listed below.

S.No	SW/FW Component	ES1010/ ES1050/ EG1050	ES1000-x86	ES1000-ARM
1	CPLD	CPLD_C version: 0.7 CPLD_B version: 2.4	CPLD_B Version 2.7 CPLD_C Version 0.7	CPLD_B Version: 2.6
2	BIOS/UBOOT	ES10x0.03.00.02	ES1000.03.00.02	ES1000.03.00.02
3	ONIE	2022.08.3.0.3	2022.08.3.0.0	2022.08.3.0.2
4	Linux	Debian GNU/Linux 11 (bullseye)		
5	NPU SDK	6.5.30-SP4	CPSS 4.3.13	CPSS 4.3.13
6	NPU SAI	11.2.8.1	1.13.3-3	1.13.3-4

Firmware or Software Components for DS4k series.

S.No	SW/FW Component	DS4000	DS4101	DS4100	DS4001
1	CPLD	CPLD COMe:2.1 CPLD BASE:2.2 CPLD SW1:2.1 CPLD SW2:2.1 CPLD FAN:2.3	CPLD COMe:2.1 CPLD FAN :1.7 CPLD SYS :1.7	CPLD CoME:2.1 CPLD BASE:1.3 CPLD FAN:1.2	CPLD COMe:2.0.0 CPLD BASE:1.5 CPLD SW1:0.6 CPLD SW2:0.6 CPLD FAN:0.2
2	BIOS	DS4000.03.02.00	DS4101.03.01.00	DS4100.03.00.00	3.00.00
3	ONIE	2021.11.3.0.1	2021.11.2.2.0	2021.11.2.2.0	2019.02.01.4.0.1
4	BCM PCIe FW	D102_0B	NA	NA	NA
5	FPGA	00000007	2.1	1.3	00040004
6	BMC	3.30	3.20	3.02	3.60
7	Linux	Debian GNU/Linux 11 (bullseye)			
8	NPU SDK	[sdk-6.5.30-SP4]			sdk-3.1.4
9	NPU SAI	11.2.8.1			1.11.0

Chapter 4: Download Instructions

Project Repo details for this release version of the software is shared below, please note this is for Celestica internal stakeholders.

Azure DevOps Project Repo	CLS-SONiC Project
Release Tag	SONiC-OS-cls_sonic_4.0.0
Branch	unistream/202311

4.1 Download using Customer Portal

Step 1: Visit the Celestica customer support portal link(click). Proceed to the “Access Knowledge Base” page.

Step 2: New users should register with the support portal by visiting register page(click)

Step 3: Utilize the search function to locate the desired software release version (example: SONIC, to list all the releases).

Step 4: Click the **Download** option to obtain the release package files in a compressed .tar archive format.

Step 5: Uncompress the downloaded .zip file to access the release artifacts. These artifacts typically include:

- Software release binary file (sonic-broadcom.bin)
- Release notes documentation

Follow the steps in section 5.1 Install the Image for installing the image.

4.2 Download using Azure CLI

Note: These instructions in this section are specific to Celestica internal stakeholders who have Azure DevOps Access.

This section provides instructions for download of the SONiC SW from the Azure DevOps Service via Azure CLI.

4.2.1 Pre-requisites

Step 1: Azure CLI.

Note: Follow the instructions at How to install the Azure CLI if Azure CLI is not already installed.

Step 2: Azure DevOps extension.

Note: Follow the instructions at Getting Started with Azure DevOps CLI, if Azure DevOps extension is not already installed.

4.2.2 Environment Setup

Set the AZURE_DEVOPS_EXT_PAT environment variable in your VM for authentication purposes.

```
export AZURE_DEVOPS_EXT_PAT="22cxfyhmbieiuoon3kltlnjod5zufxyet362vpykz6yof7csrfwa"
```

Note: The above PAT has been created to exclusively download Azure Artifacts and it cannot be used for any other purposes(PAT valid till 08/2025).

4.2.3 Download the Artifacts

In order to download the release artifacts, execute the following azure CLI command CLS-SONiC Azure Artifacts.

The below artifacts include Broadcom x86, Marvell-ARM, Marvell-x86 and Innovium(TL7) platforms.

```
az artifacts universal download \
--organization "https://dev.azure.com/celestica-hps/" \
--project "3106477a-d66f-49e3-a9b6-4aa86282b6a0" \
--scope project \
--feed "SONiC-OS-cls_sonic_4.0.0" \
--name "sonic-os-cls_sonic_4.0.0_broadcom" \
--version "0.0.6" \
--path .
```

```
az artifacts universal download \
--organization "https://dev.azure.com/celestica-hps/" \
--project "3106477a-d66f-49e3-a9b6-4aa86282b6a0" \
--scope project \
--feed "SONiC-OS-cls_sonic_4.0.0" \
--name "sonic-os-cls_sonic_4.0.0_marvell" \
--version "0.0.6" \
--path .
```

```
az artifacts universal download \
--organization "https://dev.azure.com/celestica-hps/" \
--project "3106477a-d66f-49e3-a9b6-4aa86282b6a0" \
--scope project \
--feed "SONiC-OS-cls_sonic_4.0.0" \
--name "sonic-os-cls_sonic_4.0.0_marvell-arm64" \
--version "0.0.6" \
--path .
```

```
az artifacts universal download \
--organization "https://dev.azure.com/celestica-hps/" \
--project "3106477a-d66f-49e3-a9b6-4aa86282b6a0" \
--scope project \
--feed "SONiC-OS-cls_sonic_4.0.0" \
--name "sonic-os-cls_sonic_4.0.0_innovium" \
--version "0.0.6" \
--path .
```

Note:

- After downloading the release artifact, extract the **tar.gz** using the command, (Example provided for broadcom

based platform, should be similar for Marvell , innovium as well).

```
tar -xvzf SONiC-OS-cls_sonic_4.0.0_broadcom.tar.gz
cd SONiC-OS-cls_sonic_4.0.0_broadcom/
tar -xvzf target.tar.gz
```

Check the md5sum of the binary image and verify with the same inside md5sum.txt.

Chapter 5: Install Instructions

5.1 Install the Image

If SONiC NOS is already installed, then follow the (5.2 Upgrade of SONiC NOS) section to upgrade the image. If SONiC NOS is getting installed for the first time in the switch, then follow the section (5.4 Fresh Installation of SONiC NOS).

5.2 Upgrade of SONiC NOS

Step 1: Install the NOS.

- Transfer the sonic-broadcom.bin file to the device using standard file transfer protocols.
- Install the sonic-broadcom.bin using `sonic-installer` by specifying the absolute path in the installation command.

Note: Alternatively, Place the sonic-broadcom.bin file on a remote HTTP server and provide the HTTP URL to the `sonic-installer` command.

```
sudo sonic-installer install <ABSOLUTE PATH or URL to sonic-broadcom.bin>
```

Step 2: Check the Image status.

- Check the image status by using the below command. The newly installed image should show up under “Next:” where
  - *Current* *:* refers to current running image
  - *Next* :refers to next boot up image
  - *Available* : refers to all installed SONiC images

```
sudo sonic-installer list
```

Step 3: Reboot.

- After installation reboot the system and the new image should appear as one of the NOS install options (which is also the default)

```
sudo reboot
```

5.3 Upgrading to 3.1 or later from Older Version

Due to changes in the product name in the version of 3.1 or later, upgrading the SONIC from older release to 3.1 to later, will cause issues. To avoid the same please save the config and use the below steps for upgrade. Also please ensure that correct FW/SW are present as stated in the section Package Version.

Step 1: Save the configs.

```
root@Celestica-Silverstone-v2:~# config save -y backup_config.json
Running command: /usr/local/bin/sonic-cfggen -d --print-data > backup_config.json
Running command: docker exec -i bgp vtysh -c 'write mem'
Note: this version of vtysh never writes vtysh.conf
Building Configuration...
Configuration saved to /etc/frr/zebra.conf
Configuration saved to /etc/frr/bgpd.conf
Configuration saved to /etc/frr/staticd.conf

root@Celestica-Silverstone-v2:~# cd /etc/sonic/frr/
root@Celestica-Silverstone-v2:/etc/sonic/frr# tar -cvf bgp.gz ./*
./bgpd.conf
./bgpd.conf.sav
./startup_config/
./startup_config/vtysh.conf.new
./startup_config/bgpd.conf
./startup_config/zebra.conf
./startup_config/staticd.conf
./startup_config/vtysh.conf
./staticd.conf
./staticd.conf.sav
./vtysh.conf
./zebra.conf
./zebra.conf.sav
root@Celestica-Silverstone-v2:/etc/sonic/frr# mv bgp.gz ~/
```

Step 2: Install the image.

```
root@Celestica-Silverstone-v2:~# sonic-installer install --skip-package-migration --
skip_migration sonic-broadcom.bin
New image will be installed, continue? [y/N]: y
secure boot not enabled - exiting without image verification

Installing image SONiC-OS-SONiC-OS-celestica_sonic_3.1.0-7be349805 and setting it as
default...
```

Note: Ignore any Traceback or installation errors printed in the console. However, the new image will get installed.

Step 3: Restore the configs

```
root@Celestica-DS4000:/host/image-ClsSONiC-3.0/rw/root# cp backup_config.json
/etc/sonic/config_db.json
root@Celestica-DS4000:/host/image-ClsSONiC-3.0/rw/root#
root@Celestica-DS4000:/host/image-ClsSONiC-3.0/rw/root# cd /etc/sonic/frr/
root@Celestica-DS4000:/etc/sonic/frr# tar -xvf /host/image-ClsSONiC-
3.0/rw/root/bgp.gz
./bgpd.conf
./bgpd.conf.sav
./startup_config/
./startup_config/vtysh.conf.new
./startup_config/bgpd.conf
./startup_config/zebra.conf
./startup_config/staticd.conf
./startup_config/vtysh.conf
./staticd.conf
./staticd.conf.sav
./vtysh.conf
./zebra.conf
./zebra.conf.sav
```

Step 4: Reboot

```
root@Celestica-DS4000:/etc/sonic/frr# reboot
requested COLD shutdown
```

5.4 Fresh Installation of SONiC NOS

Step 1: Enter the ONIE install mode.

For x86 Platform

- From the GRUB menu, select **ONIE**.
- Under ONIE, select **ONIE: Install OS**
- Ensure that **eth0** is assigned a static IP or via DHCP.
  For ES1000 x86 Ensure **eth2** is assigned a static IP or via DHCP.
  For ES1010/ES1050/EG1050 Ensure **eth2** is assigned a static IP or via DHCP.

Note: ES1000 x86 and ES1010/ES1050/EG1050 ONIE eth2 is considered as Management `interface.`

- Stop ONIE discovery mode using **onie-stop**.

ARM platform

- For ARM platform run onie_bootcmd from UBOOT prompt

Step 2: Install the image using tftp/http.

```
ONIE:/#  onie-nos-install <remote URL>
```

After installation is successful, the device will reboot automatically and boot-up with SONiC. Use the default username: **admin** and password: **YourPaSsWoRd** to login to SONiC NOS.

Please note:

- Wait for the “System is ready” to be displayed before login
- First time login, will prompt the user to change the password. Enter a new password that meets the password policy requirements. This password cannot be the same as the default password.
- ZTP will be enabled by default (Note: for ES1000 ARM platform, ZTP is disabled by default), user has to disable using “**`sudo config ztp disable`**” (This will take approx 2 min) and update the new password using the Click CLI **`config user modify admin --password <password>`**

The new password will be saved into startup configuration only when configuration is saved.

Chapter 6: **Release Content**

6.1 Features Supported

This section describes the features supported in this release.

Following new features are supported

1. POE in ES1000 and ES/EG1050,ES1010
2. MACSec in ES1000

The following table specifies the feature supported for the Networking Platforms.

Feature group	Features	DS1000	DS2000	DS3000	DS4000	DS4101	DS5000	DS4001	DS4100	ES1010E	ES1000 x86	ES1000 ARM
Management/ Telemetry/ Monitoring	• sFlow	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• NTP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Mirroring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Snmp/net-snmp agent and supported SONiC MIB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• SNMPv3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Ethernet Management Port	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Environment Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Support for gRPC/gNMI telemetry	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
Layer 2	• Link Aggregation - LACP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• VLAN/LAGs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• MAC, ARP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• LLDP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• DHCPv4 Relay Agent	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• DHCPv6 Relay Agent	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• L2 MC-LAG	✓	✓	✓	✓	✓	✓	X	✓	✓	X	X
	• EVPN/VXLAN - L2 VNI	X	✓	✓	X	X	X	✓	X	X	X	X

Feature group	Features	DS10000	DS20000	DS30000	DS40000	DS41101	DS50000	DS40001	DS41100	ES-10-10E	ES1000 x86	ES1000 ARM
Layer 3	• IPv4/v6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• VRF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• BGP-4+, support IPv4/IPv6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• BGP unnumbered	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• BGP multipath	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• ECMP	✓	✓	✓	✓	✓	✓	X	✓	✓	X	X
	• OSPFv2/v3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• L3 VXLAN (Asymmetric routing not supported)	X	✓	✓	X	✓	✓	✓	X	X	X	X
	• L3 MC-LAG	✓	✓	✓	✓	✓	✓	X	✓	✓	X	X
	• L3 sub-interface + 802.1q VLANs on LAGs and physical ports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
ACL/QOS/Traffic Management	• L3 - IPv4 Ingress ACLs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• L3 - IPv6 Ingress ACLs	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓
	• ACL support on ingress LAG interface	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• ACL support on egress LAG interface	X	X	X	X	X	X	X	X	X	X	X
	• ACL support on VLAN Interface	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	X
	• QoS - Buffer Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• QoS - ECN/WRED Support	✓	✓	✓	✓	✓	✓	X	✓	✓	X	X
	• QoS - Support for PFC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• QoS - Support for ROCEv2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• QoS - Traffic Classification (dot1p,dscp)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X

Feature group	Features	DS1000	DS2000	DS3000	DS4000	DS4101	DS5000	DS4001	DS4100	ES-10-10E	ES1000 x86	ES1000 ARM
	• QoS - Remarking (dot1p, dscp)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• QoS - Queuing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• QoS - Scheduling	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
System/OS	•SONiC update	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• Syslog/Technical Support Log	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• CRM - Critical Resource Monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• CoPP - Control Plane Policing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Hostname	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• System management (clock, uptime, process statistics, memory statistics, Services statistics, health summary, environment data, logging, user sessions)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Configuration backup & restore	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Feature management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• ZTP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	• Port Breakout	X	✓	✓	✓	✓	✓	✓	✓	X	X	X
Security/Timing	• TACACS+ AAA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• RADIUS Authentication(Accounting and Authorization not supported)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• BUM Storm Control	✓	✓	✓	X	X	X	X	X	✓	X	X
	• MACsec	X	X	X	X	X	X	X	X	X	✓	✓
Misc	• POE	X	X	X	X	X	X	X	X	✓	✓	✓

Note: The DS4001 does not support dynamic port break configuration. Users need to set it up using a separate hardware SKU profile and then reboot the system for the changes to take effect.

Usage:

```
config hwsku-profile [OPTIONS] <hwsku_profile_name>
show hwsku-profile
show hwsku-profile detail
```

- **Scalability (unidimensional): For Broadcom NPU based Platforms**

Feature (Max Limit)	DS1000	DS2000/ DS3000	DS4000	DS4101	DS4100	DS5000	ES1010 ES1050 EG1050
VLAN	2038	4k	4k	4k	4K	4k	2038
MAC entries per system	64k	32k	8k	8k	8k	8k	64k
LAGs/port-channel per system	8	8	16	16	16	16	8
Ports in a LAG group/single port-channel	8	16	16	16	16	16	8
ARP	1000	1000	1000	1000	1000	1000	1000
L3 Interface	255	255	255	255	255	255	255
VRF	127	127	127	127	127	127	50
L2 ACL	Ingress ACL: Physical Interface 5120, VLAN Interface :5120	Ingress ACL : Physical Interface: 2304, VLAN interface:2304	Ingress ACL: Physical Interface:2304, VLAN interface:2304	Ingress ACL: Physical Interface: 767 VLAN Interface: 767	Ingress ACL: Physical Interface: 767 VLAN Interface: 767	Ingress ACL: Physical Interface: 767 VLAN Interface: 767	Ingress ACL: Physical Interface 5120, VLAN Interface :5120
	Egress ACL: Physical interface: 512, VLAN interface :512	Egress ACL: Physical Interface: 1024, VLAN interface:1024	Egress ACL: Physical Interface: 256 VLAN interface:256	Egress ACL: Physical Interface: 127 Vlan interface: 127	Egress ACL: Physical Interface: 127 Vlan interface: 127	Egress ACL: Physical Interface: 127 Vlan interface: 127	Egress ACL: Physical interface: 512, VLAN interface :512

Feature (Max Limit)	DS1000	DS2000/ DS3000	DS4000	DS4101	DS4100	DS5000	ES1010 ES1050 EG1050
L3 ACL	Ingress ACL: Physical Interface: 5120, VLAN Interface: 5120	Ingress ACL: Physical Interface: 2304 VLAN Interface:2304	Ingress ACL: Physical Interface: 768, VLAN Interface:768	Ingress ACL: Physical Interface: 767, Vlan interface:767	Ingress ACL: Physical Interface: 767, Vlan interface:767	Ingress ACL: Physical Interface: 767, Vlan interface: 767	Ingress ACL: Physical Interface: 5120, VLAN Interface: 5120
	Egress ACL: Physical Interface: 256 VLAN interface: 256	Egress ACL: Physical Interface: 512, VLAN interface: 512	Egress ACL: Physical Interface:128, VLAN interface:128	Egress ACL: Physical Interface: 127, Vlan interface:127	Egress ACL: Physical Interface: 127, Vlan interface:127	Egress ACL: Physical Interface: 127, Vlan interface: 127	Egress ACL: Physical Interface: 256 VLAN interface: 256
Port Mirror / ERSPAN	Port Based sessions: 4 - RX direction only (or) 4 - TX direction only (or) 3 - Both direction only (or) 3 - RX direction and 1 - TX direction (or) Flow based sessions - 8	Port Based sessions: 4 - RX direction only (or) 4 - TX direction only (or) 3 - Both direction only (or) 3 - RX direction and 1 - TX direction (or) Flow based sessions - 8	Port Based sessions: 4 - RX direction only (or) 4 - TX direction only (or) 3 - Both direction only (or) 3 - RX direction and 1 - TX direction (or) Flow based sessions - 8	Port Based sessions: 4 - RX direction only (or) 4 - TXonly (or) 3 - Both direction only (or) 3 - RX direction and 1 - TX direction (or) Flow based sessions - 8	Port Based sessions: 4 - RX direction only (or) 4 - TXonly (or) 3 - Both direction only (or) 3 - RX direction and 1 - TX direction (or) Flow based sessions - 8	Port Based sessions: 4 - RX direction only (or) 4 - TXonly (or) only (or) 3 - Both direction only (or) 3 - RX direction and 1 - TX direction (or) Flow based sessions - 8	Port Based sessions: 4 - RX direction only (or) 4 - TX direction only (or) 3 - Both direction only (or) 3 - RX direction and 1 - TX direction (or) Flow based sessions - 8
EVPN- L2 VNI	Not Supported	256	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported

Feature (Max Limit)	DS1000	DS2000/ DS3000	DS4000	DS4101	DS4100	DS5000	ES1010 ES1050 EG1050
RADIUS/ TACACS	8 servers	8 servers	8 servers	8 servers	8 servers	8 servers	8 servers
NTP Servers	10	10	10	10	10	10	10
IPv4 routes	15K	100K	128K	850K	500k	329k	15K
IPv6 routes	7.5K	50K	50K	850K	500k	329K	7.5K

- **Scalability (unidimensional): For Marvell NPU based Platforms**

Feature (Max Limit)	ES1000	DS4001
VLAN	2038	4k
MAC entries per system	64k	20k
LAGs/port-channel per system	8	64
Ports in a LAG group/single port-channel	8	8
ARP	1000	4k
L3 Interface	255	4K
VRF	64	127
L2 ACL	Not Supported	Not Supported
	Not Supported	Not Supported

Feature (Max Limit)	ES1000	DS4001
L3 ACL	Ingress ACL: Physical Interface: 3825, VLAN Interface:2560	IPv4 Interface Ingress: 128 IPv4 VLAN Ingress: Not Supported IPv4 LAG Ingress: 128 IPv6: Not Supported
	Egress ACL: Physical Interface: 256 VLAN interface:128	IPv4 Interface Egress: 256 IPv4 VLAN Egress: Not Supported IPv4 LAG Egress: Not Supported IPv6: Not Supported
Port Mirror / ERSPAN	Port Based sessions: 4 - RX direction only (or) 4 - TX direction only (or) 3 - Both direction only (or) 3 - RX direction and 1 - TX direction (or) Flow based sessions - 8	Port Based sessions: 4 - RX direction only (or) 4 - TX direction only (or) 3 - Both direction only (or) 3 - RX direction and 1 - TX direction (or) Flow based sessions - 8
EVPN- L2 VNI	Not Supported	256
RADIUS/TACACS	8 servers	8 servers

Feature (Max Limit)	ES1000	DS4001
NTP Servers	10	10
IPv4 routes	15K	147k
IPv6 routes	7.5K	73k

- **Performance data**

Access/Distribution/Leaf

Platform	MAC Learning Rate (MAC/sec)
DS1000	4700
DS2000	4150

Core/Spine

Platform	MAC Learning Rate (MAC/sec)
DS3000	4120
DS4000	65

- Front Panel LED behavior
  - SYSTEM/STATUS LED is set to 4Hz Alternative Blinking as soon as the NOS(SONiC) takes control. After SONiC boots up depending on the status of system-health it either changes to Solid GREEN(normal) or Solid AMBER(fault).
  - The PSU LED is driven based on the power good signal. If both PSUs are present and power good then it will be in GREEN else in AMBER.
  - The FAN LED is driven based on individual fan tray LED status. If all FANs are present and status OK then it will be in GREEN else in AMBER.
  - The ALARM LED is set to OFF for non-BMC SKU. However the ALARM LED is set to appropriate status by BMC in BMC SKU. Refer BMC spec for more details.

- **Optics and Cables Tested**

S.No	Platform	Transceivers/ Cable	Type	Speed	Vendor	Part Number
1	DS5000	AOC	400G OSPF AOC Cable	400G	Luxshare-ICT	PA0FFB010-SD-R
		Transceivers	OSFP 2x FR4	800G	FINISAR	FTCE4717E1PCB
		Transceivers	OSFP 2x VR4	800G	FINISAR	FTCE8627E1PCA

S.No	Platform	Transceivers/ Cable	Type	Speed	Vendor	Part Number
		Transceivers	OSFP 2x FR4	800G	INNOLIGHT	T-OL8CNT-NF2
		Transceivers	800G OSFP 2xDR4	800G	HyperPhotonix	HSO6-800-DR-P8S
		Transceivers	OSPF DR8	1x800G	INNOLIGHT	T-OP8CNH-N00
		AOC	400G OSPF AOC Cable	400G	Luxshare-ICT	PA0FFB010-SD-R
		Transceivers	OSFP 2x FR4	800G	FINISAR	FTCE4717E1PCB
		Transceivers	OSFP 2x VR4	800G	FINISAR	FTCE8627E1PCA
		Transceivers	OSFP 2x FR4	800G	INNOLIGHT	T-OL8CNT-NF2
			2x400G	2x400G	HyperPhotonix	HSO6-800-DR-P8S
			2x400 FR4	2x200G	FINISAR	FTCE4717E1PCB
		DAC	10G SFP+ to 10G SFP+	10G	10GTek	CAB-10GSFP-P3M
		Transceiver	10G SFP+ SR	10G	Accelink	RTXM228-551
		Transceiver	800G 0SFP 2xDR4	800G	Accelink	RTXM600-2001
		DAC	10G SFP+ to 10G SFP+	10G	Bizlink	C45593-C1180-D30
		Transceiver	10G SFP+ SR	10G	HGG	MTRS-01X11-G
		Transceiver	800G 0SFP 2xDR4	800G	HGG	MTRO-D5F6C
		Transceiver	800G 0SFP 2xDR4	800G	HyperPhotonix	HSO6-800-DR-P8SS
		DAC	10G SFP+ to 10G SFP+	10G	Luxshare	LR3SF016-SD-R
2	DS4101	Transceiver	10G SFP+ SR	10G	Luxshare	PA01SMA01-GR-T
	DS4000		100GBASE QSFP28 SR4	100G	INNOLIGHT	TR-FC85S-N00

S.No	Platform	Transceivers/ Cable	Type	Speed	Vendor	Part Number
3			DAC Cable	100G	Molex	1002973501
			400GBASE QSFP-DD LR4	400G	INNOLIGHT	T-DQ4CNL-N00
			400GBASE-SR8	400G	INNOLIGHT	T-DQ8FNS-N00
			DAC Cable	400G	Molex	2015911010
			400GBASE-DR-4	4x100G Breakout	FINISAR	FTCD4523E3PCM
			100GBASE QSFP28 SR4	100G	INNOLIGHT	TR-FC85S-N00
			DAC Cable	100G	Molex	1002973501
			DAC Cable	4x25G(4)/ 4x10G Breakout	Amphenol	NDAQGF-0002
4	DS2000		100GBASE QSFP28 SR4	100G	FINISAR CORP	FTLC9558REPM
			100GBASE QSFP28 SR4	100G	INNOLIGHT	TR-FC85S-N00
			100G BASE QSFP28	100G	Hyper Photonix	HSQ2-100-DR-C2SP
			DAC Cable	100G	Molex	1002973501, 1002971101
			DAC Cable	100G	DELL EMC	FN4FC
			DAC Cable	25G	Molex	1111451101
			DAC Cable	40G	Molex	1110401104
			DAC Cable	10G	Molex	74752-1101
		DAC	100G QSFP28 to 100 QFP28	100G	10GTek	CAB-ZQP/ZQP-P3M
		DAC	10G SFP+ to 10G SFP+	10G	10GTek	CAB-10GSFP-P3M
		DAC	25G SFP28 to SFP28	25G	10GTek	CAB-ZSP/ZSP-P3M

S.No	Platform	Transceivers/ Cable	Type	Speed	Vendor	Part Number
		DAC Breakout	100 QSFP28 to 4x25G SFP28	100G to 4x25G	10GTek	CAB-ZQP/4ZSP-P3M
		Transceiver adapter	QSFP to SFP	QSFP Adapter	10GTek	WADQS-28
		Transceiver	100G QSFP28 DR1	100G	Accelink	RTXM500-200
		Transceiver	100G QSFP28-LR4 (DML)	100G	Accelink	RTXM290-806
		Transceiver	100G QSFP28-SR4	100G	Accelink	RTXM420-550
		Transceiver	10G SFP+ SR	10G	Accelink	RTXM228-551
		Transceiver	40G QSFP+ SR4	40G	Accelink	RTXM320-571
		DAC	100G QSFP28 to 100 QFP28	100G	Bizlink	C45593-D2180-D30
		DAC	10G SFP+ to 10G SFP+	10G	Bizlink	C45593-C1180-D30
		DAC	25G SFP28 to SFP28	25G	Bizlink	C45593-C2180-D30
		DAC Breakout	100 QSFP28 to 4x25G SFP28	100G to 4x25G	Bizlink	C45593-D2184-D30
		Transceiver	100G QSFP28-LR4 (DML)	100G	HGG	MTRQ-4LA01-4
		Transceiver	100G QSFP28-LR4 (EML)	100G	HGG	MTRQ-4LA01-5
		Transceiver	100G QSFP28-SR4	100G	HGG	MTRQ-4S101
		Transceiver	10G SFP+ SR	10G	HGG	MTRS-01X11-G
		Transceiver	1G SFP-SX	1G	HGG	MXPD-243S
		Transceiver	25G SFP28 SR	25G	HGG	MTRA-3A90A

S.No	Platform	Transceivers/ Cable	Type	Speed	Vendor	Part Number
		Transceiver	40G QSFP+ SR4	40G	HGG	MTRQ-4S300
		Transceiver	100G QSFP28 DR1	100G	HyperPhotonix	HSQ2-100-DR-C2SZ
		DAC	100G QSFP28 to 100 QFP28	100G	Luxshare	LR3QF050-SD-R
		DAC	10G SFP+ to 10G SFP+	10G	Luxshare	LR3SF016-SD-R
		DAC	25G SFP28 to SFP28	25G	Luxshare	LR3SF015-SD-R
		Transceiver	100G QSFP28-LR4 (DML)	100G	Luxshare	PA01QSD01-GR-T
		Transceiver	10G SFP+ SR	10G	Luxshare	PA01SMA01-GR-T
		Transceiver	40G QSFP+ SR4	40G	Luxshare	PA00QMA05-SD-T
			100GBASE QSFP28 SR4	100G	FINISAR CORP	FTLC9558REPM
			100GBASE QSFP28 SR4	100G	INNOLIGHT	TR-FC85S-N00
			100G BASE QSFP28	100G	Hyper Photonics	HSQ2-100-DR-C2SP
			DAC Cable	100G	Molex	1002973501, 1002971101
			DAC Cable	100G	DELL EMC	FN4FC
			DAC Cable	40G	Molex	1110401104
		DAC	100G QSFP28 to 100 QFP28	100G	10GTek	CAB-ZQP/ZQP-P3M
		DAC	10G SFP+ to 10G SFP+	10G	10GTek	CAB-10GSFP-P3M
		DAC	25G SFP28 to SFP28	25G	10GTek	CAB-ZSP/ZSP-P3M
5	DS3000	DAC Breakout	100 QSFP28 to 4x25G SFP28	100G to 4x25G	10GTek	CAB-ZQP/4ZSP-P3M

S.No	Platform	Transceivers/ Cable	Type	Speed	Vendor	Part Number
		Transceiver adapter	QSFP to SFP	QSFP Adapter	10GTek	WADQS-28
		Transceiver	100G QSFP28 DR1	100G	Accelink	RTXM500-200
		Transceiver	100G QSFP28-LR4 (DML)	100G	Accelink	RTXM290-806
		Transceiver	100G QSFP28-SR4	100G	Accelink	RTXM420-550
		Transceiver	10G SFP+ SR	10G	Accelink	RTXM228-551
		Transceiver	40G QSFP+ SR4	40G	Accelink	RTXM320-571
		DAC	100G QSFP28 to 100 QFP28	100G	Bizlink	C45593-D2180-D30
		DAC	10G SFP+ to 10G SFP+	10G	Bizlink	C45593-C1180-D30
		DAC	25G SFP28 to SFP28	25G	Bizlink	C45593-C2180-D30
		DAC Breakout	100 QSFP28 to 4x25G SFP28	100G to 4x25G	Bizlink	C45593-D2184-D30
		Transceiver	100G QSFP28-LR4 (DML)	100G	HGG	MTRQ-4LA01-4
		Transceiver	100G QSFP28-LR4 (EML)	100G	HGG	MTRQ-4LA01-5
		Transceiver	100G QSFP28-SR4	100G	HGG	MTRQ-4S101
		Transceiver	10G SFP+ SR	10G	HGG	MTRS-01X11-G
		Transceiver	1G SFP-SX	1G	HGG	MXPD-243S
		Transceiver	25G SFP28 SR	25G	HGG	MTRA-3A90A
		Transceiver	40G QSFP+ SR4	40G	HGG	MTRQ-4S300
		Transceiver	100G QSFP28 DR1	100G	HyperPhotonix	HSQ2-100-DR-C2SZ
		DAC	100G QSFP28 to 100 QFP28	100G	Luxshare	LR3QF050-SD-R
		DAC	10G SFP+ to 10G SFP+	10G	Luxshare	LR3SF016-SD-R

S.No	Platform	Transceivers/ Cable	Type	Speed	Vendor	Part Number
		DAC	25G SFP28 to SFP28	25G	Luxshare	LR3SF015-SD-R
		Transceiver	100G QSFP28-LR4 (DML)	100G	Luxshare	PA01QSD01-GR-T
		Transceiver	10G SFP+ SR	10G	Luxshare	PA01SMA01-GR-T
		Transceiver	40G QSFP+ SR4	40G	Luxshare	PA00QMA05-SD-T
			SFP	1G	Finisar	FCLF8522P2BTL
			SFP+	10G	Finisar	FTLX8571D3BCV
			SFP+	10G	Finisar	FTLX1475D3BCL
			SFP+	10G	FS	SFP-10GSR-85
			DAC Cable	10G	Molex	74752-1101
		DAC	10G SFP+ to 10G SFP+	10G	10GTek	CAB-10GSFP-P3M
		Transceiver	10G SFP+ SR	10G	Accelink	RTXM228-551
		DAC	10G SFP+ to 10G SFP+	10G	Bizlink	C45593-C1180-D30
		Transceiver	10G SFP+ SR	10G	HGG	MTRS-01X11-G
		Transceiver	1G SFP-SX	1G	HGG	MXPD-243S
		DAC	10G SFP+ to 10G SFP+	10G	Luxshare	LR3SF016-SD-R
6	DS1000	Transceiver	10G SFP+ SR	10G	Luxshare	PA01SMA01-GR-T
		AOC	400G OSPF AOC Cable	400G	Luxshare-ICT	PA0FFB010-SD-R
		Transceiver	2x400 FR4	2x400G	FINISAR	FTCE4717E1PCB
		Transceiver	2x400 VR4	2x400G	FINISAR	FTCE8627E1PCA
7	DS4100	Transceiver	2x400 FR4	2x400G	INNOLIGHT	T-OL8CNT-NF2

S.No	Platform	Transceivers/ Cable	Type	Speed	Vendor	Part Number
		DAC Cable	DAC Cable	4x200G	Molex	2111665010
		Transceiver	2x400G	2x400G	Hyper Photonix	HSO6-800-DR-P8S
		Transceiver	2x400 FR4	2x200G	FINISAR	FTCE4717E1PCB
8	ES1010 ES1050 EG1050	Transceiver	SFP	1G	Finisar	FCLF8522P2BTL
		Transceiver	SFP+	10G	Finisar	FTLX8571D3BCV
		Transceiver	SFP+	10G	Finisar	FTLX1475D3BCL
		Transceiver	SFP+	10G	FS	SFP-10GSR-85
		DAC Cable	DAC Cable	10G	Molex	74752-1101

Note:

For 1G transceiver support on SFP+ port, speed command should be configured.

For 1G transceiver support on SFP28 port, FEC should be set to None before changing the speed from native port speed.

- **Break out Tested and Qualified**

Platform	Breakout Mode	Connectors	
		DAC	Optics
DS2000 (Due to ASIC limitation: Port 49 and Port 55 support 4x, 2x & 1x breakout modes. Port 50 and Port 56 support 1x and 2x breakout modes. Ports 51,52,53 and 54 support 1x breakout mode)	4 x 25G	Qualified	Qualified
	4 x 10G	Qualified	Qualified
	1 x 40G	Qualified	Qualified
	1 x 100G	Qualified	Qualified
	2 x 50G	Qualified (Recommended to disable Autoneg)	Not Qualified

Platform	Breakout Mode	Connectors	
		DAC	Optics
DS3000	4 x 25G	Qualified	Qualified
	4 x 10G	Qualified	Qualified
	1 x 40G	Qualified	Qualified
	1 x 100G	Qualified	Qualified
	2 x 50G	Qualified	Not Qualified
DS4000	4 x 25G	Qualified	Not Qualified
	1 x 400G	Qualified (Recommended to disable Autoneg)	Qualified
	1 x 40G	Qualified	Not Qualified
	4 x 10G	Qualified	Not Qualified
	4 x 100G	Qualified	Qualified
	1 x 100G	Qualified	Qualified
DS4101	4 x 200G	Qualified	Qualified
	8 x 100G	Qualified	Qualified
	1 x 400G	Qualified	Qualified
	2 x 400G	Enabling autoneg on the 400G interface will fail. Not supported in SDK. Recommended to use with autoneg OFF and Link Training ON.	Qualified

Platform	Breakout Mode	Connectors	
		DAC	Optics
DS5000 (Due to ASIC limitation: Odd Labeled Front panel ports support upto 8x Breakout modes. Even Labeled Front panel supports upto 2x Breakout modes)	1 x 800G	Qualified	Qualified
	2 x 400G	Qualified	Qualified
	4 x 200G	Qualified	Not Qualified
	2 x 200G	Qualified (Recommended to disable Autoneg)	Not Qualified
	8 x 100G	Qualified	Qualified(DR8 to DR8)
	1 x 400G	Qualified	Not Qualified
	4 x 100G	Qualified	Not Qualified
DS4100	1 x 400G	Qualified	Qualified
	2 x 100G	Qualified	Not Qualified
	2 x 400G	Qualified	Qualified
	4 x 100G	Qualified	Not Qualified
	4 x 200G	Not Qualified	Not Qualified
	8 x 100G	Not Qualified	Qualified
	8 x 50G	Not Qualified	Not Qualified

Note: After the breakout configuration, users need to explicitly set the FEC, Auto Negotiation, Link Training and Port Admin state parameters based on the Transceivers. Also speed setting is not supported, use breakout modes to switch between different modes/speeds.

6.2 Configuration Mode Supported

CLICK/vtysh/CfgGen Tool as supported in the SONiC community release 202311.

Feature group	Features	CLICK	vtysh	CfgGen Tool
Management/ Telemetry/ Monitoring	• sFlow	✓		
	• NTP	✓		
	• Mirroring	✓		
	• Snmp/net-snmp agent and supported SONiC MIB	✓		
	• SNMPv3	✓		
	• Ethernet Management Port	✓		
	• Environment Reporting	✓		
	• Support for gRPC/gNMI telemetry			✓
Layer 2	• Link Aggregation - LACP	✓		
	• VLAN/LAGs	✓		
	• MAC, ARP	✓		
	• LLDP	✓		
	• DHCPv4 Relay Agent	✓		
	• DHCPv6 Relay Agent	✓		
	• L2 MCLAG	✓		
	• EVPN/VXLAN - L2 VNI	✓		
Layer 3	• IPv4/v6		✓	
	• VRF		✓	
	• BGP-4+, support IPV4/IPV6		✓	
	• BGP unnumbered		✓	
	• BGP multipath		✓	
	• ECMP		✓	
	• OSPFv2/v3		✓	
	• L3 sub interfaces + 802.1q VLANs on LAGs and physical ports	✓		
	• L3 VXLAN	✓		
	• L3 MCLAG	✓		
ACL/QOS/Traffic Management	• L3 - IPv4 / IPv6 Ingress ACLs	✓		
	• ACL support on LAG interface	✓		
	• ACL support on VLAN Interface	✓		
	• QoS Buffer Management			✓
	• QoS Traffic Classification (dot1p,dscp)			✓
	• QoS Remarking (dot1p, dscp)			✓
	• QoS Queuing			✓
	• QoS Scheduling			✓
	• QoS ECN/WRED Support			✓

Feature group	Features	CLICK	vtysh	CfgGen Tool
	• QoS Support for PFC			✓
	• QoS Support for ROCEv2			✓
DC Features	• L2 MCLAG	✓		
	• EVPN/VXLAN - L2 VNI	✓		
	• L3 VXLAN	✓		
	• L3 MCLAG	✓		
System/OS	•SONiC update	✓		
	• Syslog/Technical Support Log	✓		
	• CRM - Critical Resource Monitoring	✓		
	• CoPP - Control Plane Policing			✓
	• Hostname	✓		
	• System management (clock, uptime, process statistics, memory statistics, Services statistics, health summary, environment data, logging, user sessions)	✓		
	• Configuration backup & restore	✓		
	• Feature management	✓		
	• ZTP	✓		
	• Port Breakout	✓		
Security/Timing	• TACACS+ AAA	✓		
	• RADIUS Authentication	✓		
	• MACsec	✓		
	• BUM Storm Control			✓
Misc	• POE	✓		

Chapter 7: Miscellaneous Information

7.1 Console Setting

The following table lists the different console setting parameters.

Setting Item	Value
Baud Rate	115200
Word	8
Parity	No
Stop	1

7.2 Open/Known Issues

Below table details the list of known open issues in this release:

S.No	Celestica Internal Bug Id	Issue Headline	Remarks/Comments/Workaround	Platform affected
1.	RCSQ-466 /CLS-51	EVPN - Momentary flooding happens even with continuous bi-directional traffic for 64 MACs	The problem is some MACs are aged out in the kernel and removed from the local device's kernel and eventually in the remote node as well, however the same gets reinstalled again with time. This issue is exacerbated with the scale. Please refer to 15004, an open issue in the community.	DS2000 DS3000
2.	RCSQ-524	user defined ospfv2 router-id may not get removed upon executing "no ospf router-id <router-id>"	We can use the other options like interface IP or loopback IP for OSPFv2 path selection.	DS1000 DS2000 DS3000 DS4000
3.	RCSQ-496	L3 traffic is not forwarded by standby mlag peer when active peer device is rebooted	The traffic loss is seen when an active reboot is in progress. When both active and standby are UP and running, the standby inherits the VLAN interface mac from active. This will be relinquished in standby devices when active reboots. This means, for mclag clients, the default gateway arp needs to be refreshed, for l3 traffic to be routed.	DS1000 DS2000 DS3000 DS4000

S.No	Celestica Internal Bug Id	Issue Headline	Remarks/Comments/Workaround	Platform affected
4.	RCSQ-363	snmpwalk throws "Decryption error" when same SNMPv3 user config is removed and readded with different encryption protocol	Configure snmp user as DES encryption, delete the users and again add the same user as AES encryption. An SNMP walk with that user will result in “Decryption error”. The workaround is to configure using different user names.	DS1000 DS2000 DS3000 DS4000
5.	RCSQ-428	EVPN - Ping is not working on tenant VLAN interface IP address (across VXLAN tunnel)	There is not functional impact, as the ping between tenant host interfaces is working and also ping from vtep to tenant host interface also working	DS2000 DS3000
6.	CLS-152	CRM resources available count is not reducing for IPv4 route when routes are learned	The routes are actually getting installed however the count in CRM is not getting reduced.	DS5000 ES1000
7.	CLS-190	Configuring advertise speed doesn't change the port speed as expected	Configure speed on both sides as a workaround	ES1010 ES1050 EG1050 ES1000
8.	CLS-46	Observing traffic drop in L3 vxlan asymmetric routing	Currently vxlan asymmetric routing is not supported	DS2000 DS3000 DS4001
9.	CLS-480	After deleting an active l2/l3 vxlan tunnel and reconfiguring it with different source-ip is not working	There is an issue with cleanup of vxlan tunnel. The workaround is to configure the same vtep source-ip	DS2000 DS3000 DS4001

7.3 Software/Hardware Limitations

S.No	Celestica Internal Bug Id	Issue Headline	Remarks/Comments/Workaround	Platform
1.	CLS-87	For self-destined traffic , the number of sample packets generated by sflow does not change when the sampling-rate is changed. Frame Received rate is always in range "90-100" for all sample-rate in collector.	The number of sampled packets received on collector is different for the traffic destined for the DUT interface and the traffic passing through the DUT. This limitation is due to difference in the rate limiting	DS1000 DS2000 DS3000 DS4000

S.No	Celestica Internal Bug Id	Issue Headline	Remarks/Comments/Workaround	Platform
			of the destined packets and passthrough traffic.	
2.	RCSQ-511	crm resources like nexthop group member/object may still show the resources even after deleting all the ECMP routes and L3 resources.	The ECMP Group and ECMP Members are created based on the existence of the Neighbour Cache entries in Kernel so as long as the Kernel Neighbour Cache entry exists for this NextHop the ECMP Group and ECMP Member will exist.	DS1000 DS2000 DS3000 DS4000
3.	RCSQ-452	EVPN - "show vxlan counters" is not working properly	"show vxlan counters" may not show proper value with -p option, For the first time tunnel counter is executed with -p option it may show 0 and for next time it may show double the number of packets. Here in the next time interval(say -p 5) tunnel counters are updated twice.	DS2000 DS3000
4.	CLS-6	NDP is not resolved on the physical interface after peer reboot.	The workaround is to manually ping for the traffic to restore	DS1000 DS2000 DS3000 DS4000 DS5000
5.	CLS-153	In the ES1000 ARM, Sonic does not load automatically when uboot0 fails.	When uboot0 fails for some reason, the sonic cannot boot from uboot1 seamlessly. Users are recommended to install the same SONiC version from both uboot during first time installation of SONiC	ES1000-ARM
6.	CLS-191	Front-panel port LED color does not change to amber with lower speeds.	Port LED will not support speed-based color indication. This is because Broadcom SDK does not distinguish speeds less than 100G and sets LED control data to AMBER.	All platform
7.	CLS521	ACL table creation fails for egress interface and vlan & ingress LAG on Moonstone & Greystone devices	Only one egress ACL table can be created for DS5000/DS4101 platforms. Though a hardware egress slice is available, the second egress table cannot be created due to non availability of flex counters(SAI limitation).	DS4101 DS5000

S.No	Celestica Internal Bug Id	Issue Headline	Remarks/Comments/Workaround	Platform
10.	CLS-510	send_sci option in MACsec is not supported	Confguring MACSec sci bits in the macsec profile is not supported in this release.	ES1000
11.	CLS-496	MACsec profile for trunk port is not supported	Configuring MACSec on tagged port is not supported in this release.	ES1000
12.	CLS-450	Tunnel counters are not working for L3 vxlan traffic	This is due to SAI limitations.	DS4001
13.	CLS-449	L3 vxlan tunnel status is not shown in "show vxlan remotevtep" in silverstoneX. However functionality seems to work fine. L3 vxlan Traffic is going fine without any issues.	This is due to SAI limitations.	DS4001

Chapter 8: **Support resources**

Celestica operates a customer service portal.

- Self-support resources (knowledge base, FAQ, common fixes, new firmware) are available.
- Our support teams are connected to the support portal and can receive notifications for requests.
- The portal also tracks and collects customer inputs for further improvements to our products and services.

Customers can register and request support (as well as search information in the knowledge base) at: https://customersupport.celestica.com/csm

In case there are any questions or issues using the customer portal visit: https://www.celestica.com/contact-us. For immediate questions, please feel free to call your responsible account manager.


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