



# Nokia community SONiC

Release SONiC 202405.1 and 202505.1

## Software Upgrade and Recovery Guide

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# 1 Getting started

*Find information about this documentation.*

## 1.1 About this guide

This guide provides the information users need to deploy the Nokia community SONiC (Software for Open Networking in the Cloud) on supported Nokia highly-scalable hardware platforms, such as the 7215 IXS-A1, 7250 IXR-10e, and 7220 IXR-H routers. This includes connectivity, upgrade, recovery, and CLI usage procedures for the SONiC open-source network operating system (NOS).

This guide assumes the use of supported Nokia hardware platforms that ship with Nokia community SONiC preinstalled. See the *Nokia community SONiC Software Release Notes* for the list of hardware that supports Nokia community SONiC. See the installation guide for each supported hardware platform for hardware-specific installation steps.



**Note:** This guide generically covers Nokia community SONiC Release 202405 and 202505 content, and may contain some content that will be released in later maintenance loads. See the Nokia community SONiC Software Release Notes for features supported or not supported per device in each load of the Release 202405 and 202505 software.

For additional build, configuration, and CLI references, see [Resources for Nokia community SONiC users](#).

## 1.2 Conventions

This section describes the general conventions used in this guide.

### 1.2.1 Precautionary and information messages

The following information symbols are used in the documentation.



**DANGER:** Danger warns that the described activity or situation may result in serious personal injury or death. An electric shock hazard could exist. Before you begin work on this equipment, be aware of hazards involving electrical circuitry, be familiar with networking environments, and implement accident prevention procedures.



**WARNING:** Warning indicates that the described activity or situation may, or will, cause equipment damage, serious performance problems, or loss of data.



**Caution:** Caution indicates that the described activity or situation may reduce your component or system performance.



**Note:** Note provides additional operational information.



**Tip:** Tip provides suggestions for use or best practices.

## 1.2.2 Options or substeps in procedures and sequential workflows

Options in a procedure or a sequential workflow are indicated by a bulleted list. In the following example, at step 1, the user must perform the described action. At step 2, the user must perform one of the listed options to complete the step.

### **Example: Options in a procedure**

1. User must perform this step.
2. This step offers three options. User must perform one option to complete this step.
  - This is one option.
  - This is another option.
  - This is yet another option.

Substeps in a procedure or a sequential workflow are indicated by letters. In the following example, at step 1, the user must perform the described action. At step 2, the user must perform two substeps (a. and b.) to complete the step.

### **Example: Substeps in a procedure**

1. User must perform this step.
2. User must perform all substeps to complete this action.
  - a. This is one substep.
  - b. This is another substep.

## 2 About Nokia community SONiC

*Nokia community SONiC is a Linux-based open-source NOS that integrates SONiC software with Nokia's high-performance hardware platforms to enable scalable, automated, and reliable data-center networking.*

Nokia community SONiC brings the flexibility of a modular, open-source NOS to data center deployments.

SONiC is an open-source, Linux-based NOS originally developed by Microsoft for the Azure data centers that runs on switches from multiple vendors and Application-Specific Integrated Circuits (ASICs). It is now part of the [SONiC Foundation–Linux Foundation project](#). Nokia community SONiC combines the SONiC open-source NOS with Nokia's advanced hardware platforms, leading-edge automation, and expert support.

The Nokia community SONiC solution includes the following features:

- SONiC NOS functionality runs transparently on Nokia's highly scalable, hardware platforms (for example, 7215 IXS-A1, 7250 IXR-10e, and 7220 IXR-H routers) that provide reliable data center switching architectures for leaf, spine, super-spine, and management top-of-rack (ToR) applications.



**Note:** See the applicable *Nokia community SONiC Software Release Notes* for information about Nokia hardware platforms that run community SONiC.

- SONiC open-source NOS offers a full suite of network functionality that is production-hardened in demanding cloud and data center environments.

### 2.1 Resources for Nokia community SONiC users

*Users who want to explore information and learn more about SONiC details beyond this upgrade guide can use the following background information, builds, and configuration resources.*

#### Nokia community SONiC

See [Nokia community SONiC](#) for information about the Nokia implementation of community SONiC.

#### SONiC background and overview

See the [SONiC Foundation \(Linux Foundation\) home page](#) for information about the following topics:

- SONiC background and architecture
- SONiC developer resources including central resources page with links to SONiC documentation, community references, and learning material

#### SONiC builds, images, and repositories

The following sites provide information about SONiC source code, documentation, and build images:

- [SONiC GitHub](#) repository for SONiC build-related files
- [Azure DevOps](#) build pipelines and artifacts for SONiC images

## SONiC CLI configuration

See the [SONiC GitHub](#) repository for SONiC documentation including the SONiC User Manual, SONiC CLI guide, and SONiC utilities documentation.

## 2.2 Nokia community SONiC options

*Nokia community SONiC is provided on supported Nokia hardware platforms. Users can also build Nokia community SONiC from the open-source SONiC project.*

Nokia community SONiC is provided on supported Nokia routers listed in the *Nokia community SONiC Software Release Notes*. Alternatively, users who want to do so can compile a Nokia community SONiC image as described in [Appendix A: Building Nokia community SONiC from the open-source repository](#).

Users must follow the same procedure to upgrade Nokia community SONiC, regardless of whether the image is provided by Nokia or is a user-compiled Nokia community SONiC. See [Upgrading the Nokia community SONiC release](#) for more information.

## 3 Using Nokia community SONiC

*Learn about the management interface connectivity options, SONiC CLI, and how to verify the Nokia community SONiC image that is running on your hardware platform.*

### 3.1 Connecting to the management interface and verifying the image

#### Connecting to the management interface using the CLI

If the Nokia community SONiC device is connected to a network with a DHCP server, the Nokia community SONiC device automatically obtains an IP address for its management interface from the DHCP server. If a user's terminal device is connected to the same network, the terminal device can use DHCP to obtain the management IP address for the user's terminal device.

When the user logs into the Nokia community SONiC device, the system automatically enters into the command line interface (CLI). See the SONiC CLI guide available from the [SONiC GitHub](#) repository for more information about the SONiC CLI.

#### Management connectivity with no DHCP

If the Nokia community SONiC device does not have a management IP address automatically assigned, the user must first connect to the device through a console to assign a temporary management IP address. This allows the user to fetch or copy the upgrade image.

SONiC provides the CLI for configuring a static IP address for the management interface. There are different ways to configure the IP address. The following example shows how to use the **config interface ip add eth0** Linux command.

#### Example: IP address configuration using config interface ip add eth0

```
admin@sonic:~$ sudo config interface ip add eth0 192.168.0.0/16 192.168.0.1
```

See the SONiC CLI guide available from the [SONiC GitHub](#) repository for more information about the SONiC CLI.

#### Verifying the Nokia community SONiC image

To verify the Nokia community SONiC image for the target platform, use the **show version** command. The following example shows output for a 7215 IXS-A1 platform running a SONiC 202411 software version.

#### Example: Version information for a 7215 IXS-A1 platform

```
admin@router:~$ show version

SONiC Software Version: SONiC-05-HEAD.1086978-202411-ce988a8c
SONiC OS Version: 13
Distribution: Debian 13.1
Kernel: 6.12.41+deb13-sonic-armmp
Build commit: 95bc89dec
Build date: Fri Nov 7 18:51:44 UTC 2025
```

```
Built by: gitlab-runner@sonic-armv01

Platform: arm64-nokia_ixs7215_52xb-r0
HwSKU: Nokia-7215-A1
ASIC: marvell
ASIC Count: 1
Serial Number: 123460XXXX
Model Number: 3HE18723AAXXX
Hardware Revision: 0
Uptime: 23:16:39 up 4 min, 1 user, load average: 4.73, 3.26, 1.38
Date: Fri 15 Aug 2025 23:16:39
```

## Using the SONiC CLI

Nokia community SONiC fully supports configuration using the SONiC CLI.

See the SONiC CLI Guide at the [SONiC GitHub](#) for more information about the SONiC CLI.

## 3.2 Configuring Nokia community SONiC

This section provides an overview and guidelines for configuring Nokia community SONiC on supported Nokia platforms. See the SONiC CLI guide available from the [SONiC GitHub](#) repository for more information about the SONiC CLI commands and parameters.

### Management interface IP configuration

Use the management interface configuration commands to display the current interface settings and assign an IP address for the management interface.

#### Example: Display the current management interface configuration

```
admin@sonic:~$ show ip interface
Interface  Master  IPv4 address/mask  Admin/Oper  BGP Neighbor  Neighbor IP
-----
eth0      10.0.0.1/24      up/up         N/A         N/A
```

#### Example: Configure an IP address and default gateway for the management interface

```
admin@sonic:~$ sudo config interface ip add eth0 10.0.0.1/24 10.0.0.254
```

### Layer 2 configuration

Use the VLAN configuration commands to create VLANs and add member ports.

#### Example: Create a Layer 2 VLAN

```
admin@sonic:~$ sudo config vlan add 200
```

#### Example: Add a tagged member port to VLAN 200

The member port is tagged by default.

```
admin@sonic:~$ sudo config vlan member add 200 Ethernet0
```

### Example: Add an untagged member port to VLAN 200

To add an untagged member port, include the `-u` option.

```
admin@sonic:~$ sudo config vlan member add 200 Ethernet0 -u
```

### Port channel configuration

Use the port-channel configuration commands to configure port channels and add physical interfaces as members.

#### Example: Add a port channel

```
admin@sonic:~$ sudo config portchannel add PortChannel101
```

#### Example: Add a member interface to a port channel

```
admin@sonic:~$ sudo config portchannel member add PortChannel101 Ethernet0
```

### Switchport modes

Use switch-port mode configuration commands to configure a port or port channel in access, trunk, or routed mode.

#### Example: Change an interface to routed mode

```
admin@sonic:~$ sudo config switchport mode routed Ethernet0
```

### Layer 3 configuration

Use the IP interface configuration commands to assign IP addresses to routed ports, VLAN interfaces, and port channels.

#### Example: Assign an IP address to a routed port

```
admin@sonic:~$ sudo config interface ip add Ethernet0 192.168.0.1/24
```

#### Example: Assign an IP address to a VLAN interface

```
admin@sonic:~$ sudo config interface ip add Vlan200 192.168.0.1/24
```

#### Example: Assign an IP address to a port channel

```
admin@sonic:~$ sudo config interface ip add PortChannel101 192.168.0.1/24
```

### Static routes

Use the route configuration commands to add static IPv4 routes to the system routing table.

#### Example: Add an IPv4 static route

```
admin@sonic:~$ config route add prefix 192.168.2.0/24 nexthop 192.168.0.2
```

## BGP configuration using CONFIG\_DB

The BGP configuration is stored by default in the `config_db.json` file under `/etc/sonic/`.

### Example: Configure the device BGP ASN

```
"DEVICE_METADATA": {  
  "localhost": {  
    "bgp_asn": "65001"  
  }  
}
```

The following example shows a BGP peer configuration.

### Example: Configure a BGP peer

```
"BGP_NEIGHBOR": {  
  "10.0.0.1": {  
    "admin_status": "up",  
    "asn": "65200",  
    "holdtime": "180",  
    "keepalive": "60",  
    "local_addr": "10.0.0.0",  
    "name": "peer1",  
    "nhopself": "0",  
    "rrclient": "0"  
  }  
}
```

## BGP configuration using FRR

By default, SONiC does not support BGP configuration using FRRouting (FRR). To enable FRR-based configuration of BGP for SONiC, the user must set the `docker_routing_config_mode` parameter to the value **split-unified** in the `config_db.json` file. The following example shows how to enable split-unified mode.

### Example: Enable split-unified mode

```
"DEVICE_METADATA": {  
  "localhost": {  
    "docker_routing_config_mode": "split-unified"  
  }  
}
```

In split-unified mode, users can use the FRR IP routing commands to configure the routing protocols. The following examples show how to configure and save a BGP router instance using FRR. See the [FRR open-source](#) documentation for a full list of FRR CLI commands.

### Example: Enter the FRR CLI

```
admin@sonic:~$ vtysh  
sonic# config terminal  
sonic(config)#
```

### Example: Configure a BGP router instance

```
sonic(config)# router bgp 65250
```

### Example: Add a BGP neighbor

```
sonic(config-router)# neighbor 10.0.0.1 remote-as 65200
```

### Example: Configure BGP timers

```
sonic(config-router)# neighbor 10.0.0.1 timers 60 180
```

### Example: Save the FRR configuration

```
sonic(config-router)# end  
sonic# write
```

## ACL configuration

Configure an ACL table by creating an ACL table and then applying rules to that table.

### Example: Create an ACL table

```
admin@sonic:~$ sudo config acl add table DATAACL L3 -p Ethernet0 -s ingress
```

### Example: Update ACL rules using a JSON file

```
admin@sonic:~$ sudo config acl update full DATAACL_rules.json
```

### Example: Sample ACL JSON file

The following JSON file adds a single ACL rule that forwards traffic from the source IP address 10.0.0.2/32.

```
{  
  "acl": {  
    "acl-sets": {  
      "acl-set": {  
        "DATAACL": {  
          "acl-entries": {  
            "acl-entry": {  
              "1": {  
                "actions": {  
                  "config": {  
                    "forwarding-action": "ACCEPT"  
                  }  
                },  
                "config": {  
                  "sequence-id": 1  
                },  
                "ip": {  
                  "config": {  
                    "source-ip-address": "10.0.0.2/32"  
                  }  
                }  
              }  
            }  
          }  
        }  
      }  
    }  
  }  
}
```

```
}
```

## Security configuration

Use the commands shown in the following examples to configure TACACS+, AAA authentication, and AAA fail-through.

### Example: Configure a TACACS+ server using a shared key

```
admin@sonic:~$ sudo config tacacs add 10.0.0.50 -t 10 -k testing123 -a pap
```

### Example: Configure AAA authentication using TACACS+

```
config aaa authentication tacacs+
```

### Example: Enable AAA fail-through

AAA fail-through is disabled by default.

```
config aaa authentication failthrough enable
```

## NTP configuration

Configure an NTP server.

### Example: Configure an NTP server

```
admin@sonic:~$config ntp add 192.168.0.10
```

## Syslog configuration

Configure a remote syslog server.

### Example: Configure a remote syslog server

```
admin@sonic:~$config syslog add 192.168.0.10
```

## 4 Upgrading the Nokia community SONiC release

Users can upgrade the Nokia community SONiC image on the Nokia hardware platform, including a user-compiled image.

Use the procedures described in this section to upgrade the Nokia community SONiC image provided on supported Nokia hardware platforms, or a user-compiled Nokia community SONiC image as described in [Appendix A: Building Nokia community SONiC from the open-source repository](#).

### 4.1 Upgrading the Nokia community SONiC software image

Upgrade the Nokia community SONiC software to the latest supported image on your system.

#### Prerequisites

The following are required to perform the Nokia community SONiC software upgrade on your hardware platform:

- administrative access to the device CLI
- reachable management interface (SCP or HTTP)
- the correct Nokia community SONiC image for the target platform or variant
- the correct filename for the platform; see the following table

Table 1: Image filename for Nokia products and platform architectures

Platform / ASIC	Architecture	Filename	Nokia Product
Broadcom DNX	x86-64	sonic-broadcom-dnx.bin	7250 IXR-X3b
Broadcom generic	x86-64	sonic-broadcom.bin	7220 IXR-H4, 7220 IXR-H5
Broadcom generic (GB syncd)	x86-64	sonic-broadcom-gbsyncd.bin	7220 IXR-D4
Marvell	ARM64	sonic-marvell-arm64.bin Applies to SONiC releases up to 202411	7215 IXS-A1
Marvell Prestera	ARM64	sonic-marvell-prestera-arm64.bin Applies to SONiC releases 202505 and later	7215 IXS-A1

## About this task

You can upgrade the Nokia community SONiC image that is currently installed on the Nokia hardware platform. This applies to Nokia devices running either a preinstalled Nokia community SONiC image, or a custom-built image compiled from source, as described in [Appendix A: Building Nokia community SONiC from the open-source repository](#).



**Note:** The examples in the following upgrade procedure use the image filename for the Marvell ARM64 7215 IXS-A1 product. Replace this with the filename corresponding to your specific hardware product as shown in the preceding table.  
The examples in the following procedure show an upgrade from version 202311 to 202411.

## Procedure

**Step 1.** Verify the version of the Nokia community SONiC software that is currently running on your system.

The Nokia community SONiC software version and commit ID identify the currently installed image. The following example shows output for a 7215 IXS-A1 platform.

### Example

#### 7215 IXS-A1 platform

```
admin@router:~$ show version
SONiC Software Version: SONiC-OS-HEAD.677949-202311-bca46cc0
SONiC OS Version: 13
Distribution: Debian 13.1
Kernel: 6.12.41+deb13-sonic-armmp
Build commit: 95bc89dec
Build date: Fri Nov 7 18:51:44 UTC 2025
Built by: gitlab-runner@sonic-armv01

Platform: arm64-nokia_ixs7215_52xb-r0
HwSKU: Nokia-7215-A1
ASIC: marvell
ASIC Count: 1
Serial Number: 123460XXXX
Model Number: 3HE18723AAXXX
Hardware Revision: 0
Uptime: 23:16:39 up 4 min, 1 user, load average: 4.73, 3.26, 1.38
Date: Fri 7 Nov 2025 23:16:39
```

**Step 2.** Display the current, available, and next software images.

This information can be used to compare the results after the upgrade.

### Example

```
admin@router:~$ sudo sonic-installer list
Current: SONiC-OS-HEAD.677949-202311-bca46cc0
Next: SONiC-OS-HEAD.677949-202311-bca46cc0
Available:
SONiC-OS-HEAD.677949-202311-bca46cc0
```

**Step 3.** Install the image using one of the following methods.



**Note:** The following examples are for ARM64-based platforms; see the preceding table for the list of image filenames for the Nokia product platforms and architectures.

- Copy the SCP image to the system you are upgrading.

### Example

```
# scp sonic-marvell-arm64.bin admin@MGMT-IP:/tmp
admin@MGMT-IP's password:
sonic-marvell-arm64.          100% 877MB 24.7MB/s  00:35
```

- Install the image directly from a URL.

### Example

```
admin@router:~$ sudo sonic-installer install http://server-ip/path/to/sonic-marvell-arm64.bin
```

- Install the image using a script with the **-y** option to avoid manual interactions.

### Example

```
admin@router:~$ sudo sonic-installer install -y /tmp/sonic-marvell-arm64.bin
```

## Step 4. Install the latest Nokia community SONiC image.

The installer takes several minutes to verify and stage the image.

### Example

#### Upgrading from SONiC 202311 to 202411

```
admin@router:~$ sudo sonic-installer install /tmp/sonic-marvell-arm64.bin
New image will be installed, continue? [y/N]: y
Installing image SONiC-OS-HEAD.1086978-202411-ce988a8c and setting it as default...
Command: bash ./sonic-marvell-arm64.bin
Verifying image checksum ... OK.
Preparing image archive ... OK.
Installing SONiC in SONiC
ONIE Installer: platform: arm64-marvell-r0
onie_platform: arm64-nokia_ixs7215_52xb-r0
Preparing for installation ...
Intalling SONiC from sonic on Platform arm64-nokia_ixs7215_52xb-r0
/dev/mmcblk0
Selected mmc /dev/mmcblk0
Installing SONiC to /host/image-HEAD.1086978-202411-ce988a8c

<truncated>

ONIE_IMAGE_PART_SIZE=32768
EXTRA_CMDLINE_LINUX=
Sync up cache ...
Setting up U-Boot environment...
Using pre-configured uboot env
Installed SONiC base image SONiC-OS successfully

Command: config-setup backup
Taking backup of current configuration

<truncated>

Command: sync

Command: sleep 3

Done
```

## Step 5. Display the software images and confirm the new version is available and selected as the next image to boot.

The following example shows the new image has been installed and is set as the next boot, replacing the older version (shown in step 2).

### Example

```
admin@router:~$ sudo sonic-installer list
Current: SONiC-OS-HEAD.677949-202311-bca46cc0
Next: SONiC-OS-HEAD.1086978-202411-ce988a8c
Available:
SONiC-OS-HEAD.1086978-202411-ce988a8c
SONiC-OS-HEAD.677949-202311-bca46cc0
```

### Step 6. Reboot the node.

This process may take several minutes to complete.

### Example

```
admin@router:~$ sudo reboot
requested COLD shutdown
/var/log: 221.7 MiB (232480768 bytes) trimmed on /dev/loop1
/host: 267.3 MiB (280330240 bytes) trimmed on /dev/mmcblk0p2
Thu 10 Jul 2025 08:35:02 PM UTC Rebooting with platform arm64-nokia_ixs7215_52xb-r0
specific tool ...
Fri 7 Nov 2025 08:35:04 PM UTC Platform specific reboot failed!
Fri 7 Nov 2025 08:35:04 PM UTC Issuing OS-level reboot ...
```

### Expected outcome

The system reboots and applies the new load.

### Step 7. Display the new version information and confirm that the Nokia community SONiC software version and the build commit match the expected new version.

### Example

```
admin@router:~$ show version

SONiC Software Version: SONiC.HEAD.1086978-202411-ce988a8c
SONiC OS Version: 13
Distribution: Debian 13.1
Kernel: 6.12.41+deb13-sonic-arm64
Build commit: ce988a8c
Build date: Fri Nov 7 11:55:35 UTC 2025
Built by: gitlab-runner@sonic-armv16

Platform: arm64-nokia_ixs7215_52xb-r0
HwSKU: Nokia-7215-A1
ASIC: marvell
ASIC Count: 1
Serial Number: 124080XXXX
Model Number: 3HE18723AAXXXX
Hardware Revision: 0
```

### Step 8. Display the software loads and confirm that the current and next software load match the expected version.

### Example

```
admin@router:~$ sudo sonic-installer list
Current: SONiC-OS-HEAD.1086978-202411-ce988a8c
Next: SONiC-OS-HEAD.1086978-202411-ce988a8c
```

```
Available:  
SONiC-OS-HEAD.1086978-202411-ce988a8c  
SONiC-OS-HEAD.677949-202311-bca46cc0
```

### What to do next

You can optionally manage images after upgrading. See [Managing Nokia community SONiC images](#). For deeper build and CLI topics, see [Resources for Nokia community SONiC users](#).

## 4.2 Managing Nokia community SONiC images

Use the **sonic-installer** CLI commands to manage images after an upgrade. These commands are optional and supplemental to the main upgrade procedure.

```
admin@router:~$ sonic-installer --help  
Usage: sonic-installer [OPTIONS] COMMAND [ARGS]...  
Commands:  
  cleanup          Remove installed images which are not current and next  
  install          Install image from local binary or URL  
  remove          Uninstall image  
  verify-next-image Verify the next image for reboot
```

## 5 Recovery

*If the community SONiC image in the system becomes corrupted, it may be necessary to perform recovery procedures to correct the image.*

### 5.1 Reimaging from ONIE using a local Nokia community SONiC image

*The user can recover a Nokia community SONiC device by reinstalling the Nokia community SONiC image from a local image through the Open Network Install Environment (ONIE). This method is typically used when it's not possible to boot the existing image or a factory reset is needed.*

#### Prerequisites

- Ensure the RS-232 console is connected to the front port; the rate depends on the platform, for example, 9600 baud or 115200 baud.
- Have the ability to power cycle the device.
- Ensure the local image file is available, for example, in the directory `/tmp/IMAGE_FILE.bin`, on a USB drive or an SD card, or another method supported on your platform (for example, over the network).
- If you are using a 7215 IXS device, have the bootloader (U-Boot) credentials available.

#### About this task

This procedure uses the bootloader (U-Boot) and ONIE installer. The boot-timing windows are short. The examples in this task show reimaging of a 202411 software version.

#### Procedure

- Step 1.** If you are using an ARM64 device, use the following steps to run the ONIE boot; otherwise, go to step 2.
- a. Power-cycle the device and hit **CTRL-C** within 5 seconds when the following prompt appears.

```
Autoboot in 5 seconds, to stop use 'CTRL-C'
```

- b. Enter the U-Boot password when prompted.  
The default U-Boot password is 'Sonic123'.

#### Example

```
Autoboot in 5 seconds, to stop use 'CTRL-C'  
Enter passwd: Sonic123
```

#### Expected outcome

The system halts autoboot and displays the `Nokia>` prompt.

- c. At the `Nokia>` prompt, run the following command to boot ONIE.

### Example

```
Nokia> run onie_boot
```

### Expected outcome

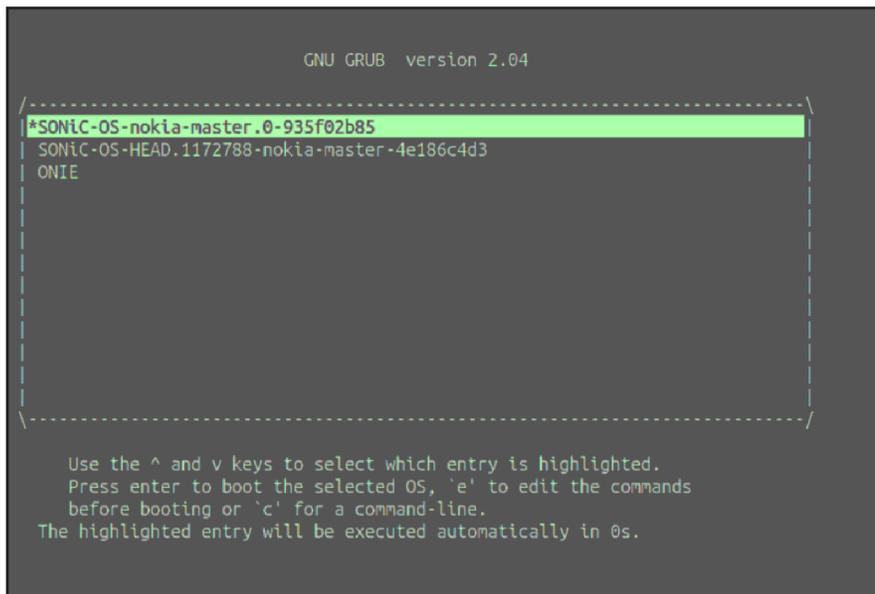
The system loads ONIE and displays the ONIE prompt. ONIE starts automatic discovery by default.

d. Go to step 3.

**Step 2.** If you are using an x86 device, use the following steps to run ONIE boot.

- a. Display the GNU GRUB menu by pressing the up arrow key during power on.
- b. Select ONIE from the GNU GRUB menu as shown in the following figure.
- c. Go to step 3.

Figure 1: GNU GRUB menu



sc0291

### Expected outcome

ONIE starts automatic discovery by default.

**Step 3.** Stop the ONIE automatic discovery before running a manual installation.

### Example

```
ONIE:/ # onie-stop  
discover: installer mode detected.  
Stopping: discover... done.
```

**Step 4.** Reinstall the image (from your local storage, a USB drive or SD card, or over your network), using the **onie-nos-install** command.

### Example

Reinstall image from local disk

```
ONIE:/ #  
ONIE:/ # ls /tmp  
sonic-marvell-prestera-arm64.bin  
ONIE:/ #  
ONIE:/ # onie-nos-install /tmp/sonic-marvell-prestera-arm64.bin
```

### Expected outcome

The system installs the Nokia community SONiC image.

- Step 5.** When the reinstallation completes, use the **show version** command to verify the Nokia community SONiC software version and build details.

### Example

```
admin@router:~$ show version  
  
SONiC Software Version: SONiC.HEAD.1086978-202411-ce988a8c  
SONiC OS Version: 13  
Distribution: Debian 13.1  
Kernel: 6.12.41+deb13-sonic-arm64  
Build commit: ce988a8c  
Build date: Fri Nov 7 11:55:35 UTC 2025  
Built by: gitlab-runner@sonic-armv16  
  
Platform: arm64-nokia_ixs7215_52xb-r0  
HwSKU: Nokia-7215-A1  
ASIC: marvell  
ASIC Count: 1  
Serial Number: 124080XXXX  
Model Number: 3HE18723AAXXXX  
Hardware Revision: 0
```

### Expected outcome

The output confirms that the expected Nokia community SONiC image is reinstalled and active.

## 6 Troubleshooting

*Troubleshooting may be required to identify and correct problem situations when the Nokia community SONiC system is not operating normally.*

Troubleshooting includes identifying the symptoms of a problem, detecting the fault that caused it, and correcting the fault.

Before contacting the Nokia technical support service for assistance with troubleshooting, use the **show techsupport** CLI command to collect diagnostic information about the device.

This command gathers information such as syslog entries, database state, and routing-stack state, and then compresses it into an archive file. The system saves the archive as `/var/dump/<DEVICE_HOST_NAME>_YYYYMMDD_HHMMSS.tar.gz`. Provide this information when you contact Nokia technical support.

### Example

```
admin@sonic:~$ show techsupport [--since=<time_specifier>]
```

See the SONiC documentation at the [SONiC GitHub](#) for more information about troubleshooting community SONiC.

## 7 Appendix A: Building Nokia community SONiC from the open-source repository

*Users can build Nokia community SONiC from the open-source SONiC project, including environment setup and image compilation.*

This section describes how to build Nokia community SONiC software using the open-source SONiC repository. The procedures apply to supported Nokia hardware platforms.

After completing the build process, perform an upgrade as needed. See [Upgrading the Nokia community SONiC software image](#) for more information.

### 7.1 Building the Nokia community SONiC software image

*Build the Nokia community SONiC image from source using the open-source SONiC build framework.*

#### About this task

This task describes how to compile a Nokia community SONiC image. It follows the open-source SONiC build process with Nokia-specific board support packages (BSPs) and platform adapters.



**Note:** The following task provides an example of how to perform a build for a Nokia community SONiC Broadcom-based (x86) platform. Contact your Nokia technical support representative if you require build information for other supported Nokia community SONiC platforms.

#### Prerequisites

The following are required to perform the build:

- Ubuntu 20.04 build server with **docker** and **python3** installed
- administrative access and sufficient disk space
- Internet access to clone community SONiC repositories from GitHub

#### Procedure

**Step 1.** Install and set up Docker.

If Docker was installed via **snap**, first remove it. Then add the Docker repository and install the Docker Engine and related tools.

#### Example

```
# If your Ubuntu 20.04 server already includes an instance of docker installed by
  snap, the SONiC build may not work. Please uninstall it first

>> sudo snap remove docker

# and follow the instructions below to install docker

>> sudo apt-get update
>> sudo apt-get install ca-certificates curl
>> sudo install -m 0755 -d /etc/apt/keyrings
```

```
>> sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo tee \ /etc/apt/  
keyrings/docker.asc > /dev/null  
>> sudo chmod a+r /etc/apt/keyrings/docker.asc  
>> echo \  
"deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc] \  
https://download.docker.com/linux/ubuntu \  
$(. /etc/os-release && echo "$VERSION_CODENAME") stable" \  
| sudo tee /etc/apt/sources.list.d/docker.list > /dev/null  
>> sudo apt-get install -y docker-ce docker-ce-cli containerd.io docker-buildx-plugin  
dockercompose-plugin  
>> sudo gpasswd -a ${USER} docker  
>> newgrp docker
```

**Step 2.** Use the Python pip utility to install the j2cli template utility used by the community SONiC build systems.

**Example**

```
>> sudo apt install python3-pip  
>> pip install j2cli  
>> export PATH="$HOME/.local/bin:$PATH"  
>> source ~/.bashrc
```

**Step 3.** Clone the community SONiC build repository.

- a. Download the community SONiC build framework.
- b. Switch to the working directory.

The following example shows cloning a community SONiC 202505 build.

**Example**

```
git clone https://github.com/sonic-net/sonic-buildimage.git -b 202505  
cd sonic-buildimage
```

**Step 4.** Run the following command to initialize the sub-repositories, fetch sub-modules, and prepare the build environment.

**Example**

```
make init
```

**Step 5.** Configure the Broadcom build settings.

**Example**

```
make configure PLATFORM=broadcom
```

**Step 6.** Start the compilation to build the image.

The build time depends on the server resources and network speed.

**Example**

```
make SONIC_BUILD_JOBS=4 target/sonic-broadcom.bin
```

**Expected outcome**

The output directory contains the built image file, for example sonic-broadcom.bin.

## What to do next

You can now use the generated image to upgrade a device. See [Upgrading the Nokia community SONiC software image](#) for instructions.

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