Dell EMC S4048T–ON System Release Notes, OS Version 9.14(1.10)

This document contains information on open and resolved caveats, and operational information specific to the Dell EMC Networking OS software and the S4048T-ON platform.
Current Release Version: 9.14(1.10)
Release Date: 2021-09-30
Previous Release Version: 9.14(1.9P4)

Topics:

For more information on hardware and software features, commands, and capabilities, refer to the Dell EMC Networking support website at: https://www.dell.com/support

Document Revision History

Table 1. Revision History

Date	Description
2021–09	Initial release.

Supported Hardware

The following hardware is supported with this platform:

Hardware
Forty-eight fixed 10GBase-T ports supporting 1G/10G speeds

Hardware
Six fixed QSFP+ ports supporting either one port of 40G or four ports of 10G in breakout mode
Two PSUs
Four fan modules
One MicroUSB serial console port
One universal serial bus (USB Type-A) port for additional file storage
Management Ethernet interface
RS-232 Serial interface
Dual core 1.7GHz Rangeley central processing unit (CPU) system
Temperature monitoring
Software-readable thermal monitor
Real time clock (RTC) support
Two hot pluggable redundant power supplies
Power management monitoring
Four removable fans
Standard 1U chassis

The following lists the individual Dell S4048T−ON system hardware components that are available to order:

Table 2. Hardware Components Available to Order

Fan with airflow from I/O side to PSU side (red — normal air flow direction)
Fan with airflow from PSU side to I/O side (blue — reversed air flow direction)
AC or DC power supply with airflow from I/O side to PSU side
AC or DC power supply with airflow from PSU side to I/O side

ⓘ **NOTE:** Fan modules and power supplies are field replaceable units.

ⓘ **NOTE:** All fans and PSUs must have the same airflow direction. If you mix the airflow direction, the switch detects the discrepancy, issues an alarm, and may auto-shutdown to avoid heat damage to components. You must correct the mixed airflow direction.

Supported Software

The following software is supported with this platform:

Software	Minimum Release Requirement
Dell EMC Networking OS	9.14(1.10)

Software	Minimum Release Requirement
ONIE	3.27.1.10−0

ⓘ **NOTE:** For information on non-Dell OS versions, see the Release Notes for the Hardware Platform S4048T−ON.

New Dell EMC Networking OS Version 9.14(1.10) Features

The following features have been added to the S4048T-ON with Dell EMC Networking OS version 9.14(1.10):

None.

Restrictions

- If you downgrade the Dell EMC Networking OS version from 9.14(1.10) to 9.11(0.0) or any older version, the system displays the following error message even though there is no functional impact:

```
CDB boot error:    C.cdb file format
```

Before downgrading, save the current configuration and then remove the CDB files (confd_cdb.tar.gz.version and confd_cdb.tar.gz). To remove the files, use the following steps:

```
DellEMC#write memory
DellEMC#delete flash://confd_cdb.tar.gz.version
DellEMC#delete flash://confd_cdb.tar.gz
DellEMC#reload
```

- In a VXLAN scenario, hybrid port is not supported.
- While deploying the system in the normal-reload mode in BMP configuration, use the `ip ssh server enable` command at the beginning of the startup configuration if the write memory command is used at the end of the configuration.

- You can use non-Dell qualified cables, adapters, and optics in a S4048T-ON switch, but Dell EMC Networking does not guarantee their performance as the S4048T-ON does not support non-Dell qualified 40G transceivers. If you insert a non-Dell qualified 40G transceiver into a S4048T-ON 40GbE port, the switch places the interface in an error-disabled (operationally down) state and generates a syslog message, such as: `%S4048LC0640:8 %IFAGT-2-TRANSCEIVER_UNSUPPORTED_ERROR: Transceiver in slot 1 port 49 unrecognized, putting interface in operational-down state.`

  To verify the error-disabled status of an interface, enter any of the following show commands.

```
DellEMC# show inventory media
Slot    Port    Type         Media            Serial Number    DellQualified
------------------------------------------------------------------
   1     49    UNKNOWN      UNKNOWN          USC1D6J          No**
   1     50    QSFP         40GBASE-LR4      UQ90C7B          No**
   1     51    QSFP         40GBASE-SR4      7503835V009Y     Yes
   1     52    QSFP         40GBASE-CR4      10190002         No
   1     53    QSFP         40GBASE-SR4      FE2429470007     Yes
   1     54            Media not present or accessible
** Interface is down(error disabled) as transceiver is not DellQualified

DellEMC# show interfaces fortyGigE 1/49
fortyGigE 1/49 is up, line protocol is down(error-disabled[Transceiver Unsupported])
...
```

- The following features are not available in the Dell EMC Networking OS from version 9.7(0.0):
  - PIM ECMP
  - Static IGMP join (`ip igmp static-group`)
  - IGMP querier timeout configuration (`ip igmp querier-timeout`)

- ○ IGMP group join limit (`ip igmp group join-limit`)
- You can use the `negotiation auto` command to turn auto-negotiation on or off only on fiber interfaces operating at 1G speed.
- If you use the `interface range` command to select multiple interfaces that are added to the management VRF, the `ipv6 address` command does not display the `autoconfig` option. You can configure the `autoconfig` command on individual interfaces.
- If you use the `interface range` command to select multiple interfaces that are added to the management VRF, the `ipv6 nd` command displays the following options but they do not take effect if you use them:
  - ○ dns-server
  - ○ hop-limit
  - ○ managed-config-flag
  - ○ max-ra-interval
  - ○ mtu
  - ○ other-config-flag
  - ○ prefix
  - ○ ra-guard
  - ○ ra-lifetime
  - ○ reachable-time
  - ○ retrans-timer
  - ○ suppress-ra
- REST API does not support AAA authentication.
- Do not configure the `vxlan-instance` command on the port, which is configured with the `portmode hybrid` command. Do not configure the vxlan-instance enabled port as a member of VLAN, which does not have VXLAN-VNI configuration.

Documentation Corrections

This section describes the errors identified in the current release of the Dell EMC Networking OS.

Dell EMC Networking OS Configuration guide mentions that the maximum number of source sessions supported on a switch is 4. The guide will be updated later with the following information:

When you configure remote port mirroring, you can create a maximum of 3 source RSPAN sessions with port mirroring direction as either RX or TX. If you want to configure port mirroring for both directions (TX and RX), you can configure a maximum of 2 RSPAN sessions with one monitor session for both directions and the other session with only one direction.

Changes to Default Behavior and CLI Syntax

Following default behavior and CLI syntax changes occurred during the Dell EMC Networking OS release:
- To enhance security, the default RSA key size has been changed to 2048 bits from 1024 bits from 9.14.1.10 onwards.

Deferred Issues

Issues that appear in this section were reported in Dell Networking OS version 9.14(1.0) as open, but have since been deferred. Deferred issues are those that are found to be invalid, not reproducible, or not scheduled for resolution.

Deferred issues are reported using the following definitions.

Category	Description
PR#	Problem Report number that identifies the issue.
Severity	**S1** — Crash: A software crash occurs in the kernel or a running process that requires a restart of AFM, the router, switch, or process. **S2** — Critical: An issue that renders the system or a major feature unusable, which can have a pervasive impact on the system or network, and for which there is no work-around acceptable to the customer.

Category	Description
	S3 — Major: An issue that affects the functionality of a major feature or negatively effects the network for which there exists a work-around that is acceptable to the customer.
	S4 — Minor: A cosmetic issue or an issue in a minor feature with little or no network impact for which there might be a work-around.
Synopsis	Synopsis is the title or short description of the issue.
Release Notes	Release Notes description contains more detailed information about the issue.
Work around	Work around describes a mechanism for circumventing, avoiding, or recovering from the issue. It might not be a permanent solution.
	Issues listed in the "Fixed Issues" section should not be present, and the work-around is unnecessary, as the version of code for which this release note is documented has resolved the issue.

Deferred S4048T-ON 9.14(1.0) Software Issues

Issues that appear in this section were reported in Dell EMC Networking OS version 9.14(1.0) as open, but have since been deferred. Deferred caveats are those that are found to be invalid, not reproducible, or not scheduled for resolution.

The following issues have been deferred in the Dell EMC Networking OS version 9.14(1.0):

None.

Fixed Issues

Fixed issues are reported using the following definitions.

Category	Description
PR#	Problem Report number that identifies the issue.
Severity	**S1** — Crash: A software crash occurs in the kernel or a running process that requires a restart of AFM, the router, switch, or process.
	S2 — Critical: An issue that renders the system or a major feature unusable, which can have a pervasive impact on the system or network, and for which there is no work-around acceptable to the customer.
	S3 — Major: An issue that affects the functionality of a major feature or negatively effects the network for which there exists a work-around that is acceptable to the customer.
	S4 — Minor: A cosmetic issue or an issue in a minor feature with little or no network impact for which there might be a work-around.
Synopsis	Synopsis is the title or short description of the issue.
Release Notes	Release Notes description contains more detailed information about the issue.
Work around	Work around describes a mechanism for circumventing, avoiding, or recovering from the issue. It might not be a permanent solution.
	The work-around is unnecessary, as the version of code for which this release note is documented has resolved the issue.

Fixed S4048T-ON 9.14(1.10) Software Issues

ⓘ **NOTE:** Dell EMC Networking OS 9.14(1.10) includes fixes for issues addressed in previous 9.14 releases. Refer to the respective release notes documentation for the list of issues fixed in earlier 9.14 releases.

The following issues are fixed in Dell EMC Networking OS version 9.14(1.10):

PR#170115

Severity:	Sev 3
Synopsis:	The switch may encounter an exception when an incorrect length field is specified in a TACACS packet.
Release Notes:	The switch may encounter an exception when an incorrect length field is specified in a TACACS packet.
Workaround:	None

PR#170159

Severity:	Sev 3
Synopsis:	SSH connections with Cipher Block Chaining (CBC) ciphers are vulnerable.
Release Notes:	SSH connections with Cipher Block Chaining (CBC) ciphers are vulnerable.
Workaround:	Configure a stronger Cipher/MAC/KEX setting using the `ip ssh server` command.

PR#170161

Severity:	Sev 2
Synopsis:	SSH connections may be vulnerable with switches running on a 1024 bit RSA key.
Release Notes:	SSH connections may be vulnerable with switches running on a 1024 bit RSA key.
Workaround:	Create a new 2048 bit RSA key using the `crypto key generate rsa` command.

PR#170206

Severity:	Sev 2
Synopsis:	Addressed OpenSSL CVE's: CVE-2021-3711 and CVE-2021-3712.
Release Notes:	The following CVEs have been addressed: ● CVE-2021-3711 ● CVE-2021-3712 The CVE database can be accessed here: https://cve.mitre.org/cve/search_cve_list.html.
Workaround:	None

PR#170211

Severity:	Sev 2
Synopsis:	When a switch with scaled VLANs is reloaded, traffic drop may occur due to a delay in VLAN programming.
Release Notes:	When a switch with scaled VLANs is reloaded, traffic drop may occur due to a delay in VLAN programming.

Workaround:	None

Known Issues

Known issues are reported using the following definitions.

Category	Description
PR#	Problem Report number that identifies the issue.
Severity	**S1** — Crash: A software crash occurs in the kernel or a running process that requires a restart of AFM, the router, switch, or process.
	S2 — Critical: An issue that renders the system or a major feature unusable, which can have a pervasive impact on the system or network, and for which there is no work-around acceptable to the customer.
	S3 — Major: An issue that affects the functionality of a major feature or negatively effects the network for which there exists a work-around that is acceptable to the customer.
	S4 — Minor: A cosmetic issue or an issue in a minor feature with little or no network impact for which there might be a work-around.
Synopsis	Synopsis is the title or short description of the issue.
Release Notes	Release Notes description contains more detailed information about the issue.
Work around	Work around describes a mechanism for circumventing, avoiding, or recovering from the issue. It might not be a permanent solution.
	Issues listed in the "Fixed Issues" section should not be present, and the work-around is unnecessary, as the version of code for which this release note is documented has resolved the issue.

Known S4048T–ON 9.14(1.10) Software Issues

The following issues are open in Dell EMC Networking OS version 9.14(1.10):

PR#169841

Severity:	Sev 2
Synopsis:	In certain scenarios, an MSDP learnt PIM TIB entry stays in `registering` state indefinitely.
Release Notes:	In certain scenarios, an MSDP learnt PIM TIB entry stays in `registering` state indefinitely.
Workaround:	Set the affected node as a non-designated router in the RPF neighbor interface.

Upgrading the ONIE Package for the S4048T-ON System

To upgrade the ONIE package, use one of the following two processes:
- Zero touch (dynamic): Copy the update ONIE installer for your system to the TFTP/HTTP server. Configure the DHCP options using the ONIE specifications shown at the following link: https://github.com/opencomputeproject/onie/wiki/Design-Spec-SW-Updating-ONIE.
- Manual: Copy the image onto the TFTP/HTTP servers and boot ONIE. Update the ONIE using the `onie-self-update` command, then download and run an ONIE updater image (*onie-updater-x86_64-s4048t_c2338-r0*). The supported URL types are: HTTP, FTP, TFTP, and FILE.

To upgrade ONIE, perform the following steps:

1. Reboot the system. During the reboot process, the system displays the following message prompting you to press the Esc key in order to stop the auto-boot process:

```
Press Esc to stop autoboot ... 5
Grub 2.02~beta2 (Dell EMC)
 Built by root at ubuntu on Fri_Sep_24_06:23:40_UTC_2021
```

2. At this prompt message, press the Esc key. The following menu appears:

```
Grub 2.02~beta2 (Dell EMC)
Built by root at ubuntu on Fri_Sep_24_07:13:20_UTC_2021

+-----------------------------------------------------------------------+
| Dell EMC Networking OS                                                 |
| Dell EMC-Boot Line Interface                                          |
| DIAG-OS                                                                |
|*ONIE                                                                   |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
+-----------------------------------------------------------------------+

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, 'f' to boot FTOS, 'b' to go to
BLI, 'o' to boot ONIE, 'd' to boot DIAG-OS, 'e' to edit the commands
before booting or 'c' for a command-line.
```

3. From the menu, choose the ONIE option.

   ⓘ **NOTE:** To choose an option from the menu, highlight one of the options using the up or down arrow key and press Enter.

   The following menu appears:

```
                    GNU GRUB  version 2.02~beta2+e4a1fe391

+-----------------------------------------------------------------------+
| ONIE: Install OS                                                       |
| ONIE: Rescue                                                           |
| ONIE: Uninstall OS                                                     |
|*ONIE: Update ONIE                                                      |
| ONIE: Embed ONIE                                                       |
| EDA-DIAG                                                               |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
+-----------------------------------------------------------------------+
Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands
before booting or `c' for a command-line.
```

4. From this menu, choose the ONIE : Update ONIE option.

   ⓘ **NOTE:** To choose an option from the menu, highlight one of the options using the up or down arrow key and press Enter.

   The ONIE update mode is enabled and the ONIE prompt appears, as shown:

```
ONIE: ONIE Update Mode ...
Version   : 3.27.1.0-3
Build Date: 2021-09-24T09:43-0700
Info: Mounting kernel filesystems... done.
```

```
Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...
Info: Using eth0 MAC address: 00:a0:c9:00:00:36
Info: Using eth1 MAC address: 00:a0:c9:00:00:37
Info: eth0:  Checking link... up.
Info: Trying DHCPv4 on interface: eth0
DHCPv4 on interface: eth0 failedONIE: Using default IPv4 addr: eth0:
192.168.3.10/255.255.255.0
Info: eth1:  Checking link... down.
ONIE: eth1: link down.  Skipping configuration.
ONIE: Failed to configure eth1 interface
Starting: dropbear ssh daemon... done.
Starting: telnetd... done.
discover: ONIE update mode detected.  Running updater.
Starting: discover... done.

Please press Enter to activate this console. Info: eth0:  Checking link... up.
Info: Trying DHCPv4 on interface: eth0

ONIE:/ #
```

5. At the ONIE prompt, to stop the ONIE discovery process, enter the following command:
   ONIE:/ # onie-discovery-stop
   The ONIE discovery stops, as shown:

```
discover: ONIE update mode detected.
Stopping: discover... done.
ONIE:/ #
```

6. Configure an interface and assign an IP address to that interface using the following command:
   ONIE:/ # ifconfig eth0 10.16.133.213/16

7. Enter the following command to upgrade ONIE:ONIE:/ # onie-self-update tftp://<tftp-server-address>/
   onie-updater-x86_64-s4048t_c2338-r0.

   (i) **NOTE:** You must copy the onie-updater-x86_64-s4048t_c2338-r0 file to the /tftpboot folder in the server.

   ONIE is updated on the system, as shown:

```
ONIE:/ # onie-self-update tftp://10.16.127.86/tftpboot/onie-updater-x86_64-
s4048t_c2338-r0
discover: ONIE update mode detected.
Stopping: discover... done.
Info: Fetching tftp://10.16.127.86/tftpboot/onie-updater-x86_64-s4048t_c2338-r0 ...
Eswar/onie-updater-x 100% |*****************************|  8561k  0:00:00 ETA
ONIE: Executing installer: tftp://10.16.127.86/tftpboot/onie-updater-x86_64-
s4048t_c2338-r0
Verifying image checksum ... OK.
Preparing image archive ... OK.
ONIE: Version        : 3.27.1.0-3
ONIE: Architecture   : x86_64
ONIE: Machine        : s4048t_c2338
ONIE: Machine Rev    : 0
ONIE: Config Version : 1
Installing ONIE on: /dev/sda
Rebooting...
ONIE:/ # discover: ONIE update mode detected.
Stopping: discover...start-stop-daemon: warning: killing process 533: No such process
 done.
Stopping: dropbear ssh daemon... done.
Stopping: telnetd... done.
Stopping: syslogd... done.
Info: Unmounting kernel filesystems
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL tosd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart
```

Upgrading the DIAG Package for the S4048T-ON System

To upgrade the DIAG package, use one of the following two processes:

- Zero touch (dynamic): Copy the update ONIE installer for your system to the TFTP/HTTP server. Configure the DHCP options using the ONIE specifications shown at the following link: https://github.com/opencomputeproject/onie/wiki/Design-Spec-SW-Updating-ONIE.
- Manual: Copy the image onto the TFTP/HTTP servers and boot ONIE. Update the ONIE using the `onie-self-update` command, then download and run an ONIE updater image (`diag-installer-x86_64-s4048t_c2338-r0.bin`). The supported URL types are: HTTP, FTP, TFTP, and FILE.

To upgrade DIAG, perform the following steps:

1. Reboot the system. During the reboot process, the system displays the following message prompting you to press the Esc key in order to stop the auto-boot process:

```
Press Esc to stop autoboot ... 5
Grub 2.02~beta2 (Dell EMC)
 Built by root at ubuntu on Fri_Sep_24_06:23:40_UTC_2021
```

2. At this prompt message, press the Esc key. The following menu appears:

```
Grub 2.02~beta2 (Dell EMC)
 Built by root at ubuntu on Fri_Sep_24_07:13:20_UTC_2021
  +--------------------------------------------------------------------+
  | Dell EMC Networking OS                                             |
  | Dell EMC-Boot Line Interface                                       |
  | DIAG-OS                                                            |
  |*ONIE                                                              |
  |                                                                    |
  |                                                                    |
  |                                                                    |
  |                                                                    |
  |                                                                    |
  |                                                                    |
  |                                                                    |
  +--------------------------------------------------------------------+
  Use the ^ and v keys to select which entry is highlighted.
  Press enter to boot the selected OS, 'f' to boot FTOS, 'b' to go to
  BLI, 'o' to boot ONIE, 'd' to boot DIAG-OS, 'e' to edit the commands
  before booting or 'c' for a command-line.
```

3. From the menu, choose the `ONIE` option.

   (i) **NOTE:** To choose an option from the menu, highlight one of the options using the up or down arrow key and press Enter.

   The following menu appears:

```
                 GNU GRUB   version 2.02~beta2+e4a1fe391

   +--------------------------------------------------------------------+
   |*ONIE: Install OS                                                  |
   | ONIE: Rescue                                                      |
   | ONIE: Uninstall OS                                                |
   | ONIE: Update ONIE                                                 |
   | ONIE: Embed ONIE                                                  |
   | EDA-DIAG                                                          |
   |                                                                    |
   |                                                                    |
   |                                                                    |
   |                                                                    |
   |                                                                    |
   |                                                                    |
   +--------------------------------------------------------------------+
   Use the ^ and v keys to select which entry is highlighted.
   Press enter to boot the selected OS, `e' to edit the commands
```

```
before booting or `c' for a command-line.
```

4. From this menu, choose the `ONIE : Install OS` option.

   The ONIE Installer mode is enabled and the ONIE prompt appears, as shown:

```
GRUB loading.
ONIE: OS Install Mode ...
Version   : 3.27.1.0-3
Build Date: 2021-09-24T09:43-0700
Info: Mounting kernel filesystems... done.
Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...
Info: Using eth0 MAC address: 00:a0:c9:00:00:36
Info: Using eth1 MAC address: 00:a0:c9:00:00:37
Info: eth0:  Checking link... up.
Info: Trying DHCPv4 on interface: eth0
Info: eth1:  Checking link...down.
ONIE: eth1: link down.  Skipping configuration.
ONIE: Failed to configure eth1 interface
Starting: dropbear ssh daemon... done.
Starting: telnetd... done.
discover: installer mode detected.  Running installer.
Starting: discover... done.
ONIE:/ #
```

5. At the ONIE prompt, to stop the ONIE discovery process, enter the following command:
   `ONIE:/ # onie-discovery-stop`
   The ONIE discovery stops, as shown:

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

6. Configure an interface and assign an IP address to that interface using the following command:
   `ONIE:/ # ifconfig eth0 10.16.133.213/16`

7. Enter the following command to upgrade DIAG on the S4048T-ON system:
   `onie-nos-install tftp://<tftp-server-adress>/tftpboot/diag-installer-x86_64-s4048t_c2338-r0.bin`

   The DIAG is updated on the system, as shown:

```
ONIE:/ # onie-nos-install tftp://10.16.127.86/diag-installer-x86_64-s4048t_c2338-
r0.bin
discover: installer mode detected.
Stopping: discover... done.
Info: Fetching tftp://10.16.127.86/diag-installer-x86_64-s4048t_c2338-r0.bin ...
Eswar/diag-installer 100% |*****************************|   148M  0:00:00 ETA
ONIE: Executing installer: tftp://10.16.127.86/diag-installer-x86_64-s4048t_c2338-
r0.bin
Ignoring Verifying image checksum ... OK.
cur_dir / archive_path /installer tmp_dir /tmp/tmp.a5Kpax
Preparing image archive ...sed -e '1,/^exit_marker$/d' /installer | tar xf - OK.
Diag-OS Installer: platform: x86_64-s4048t_c2338-r0
 Found EDA-DIAG partition at (/dev/sda3)
 /tmp/diag_os_install_mode does not exist, installer would run in update mode

Diag OS Installer Mode : UPDATE


EDA-DIAG dev is /dev/sda3

Mounted /dev/sda3 on  /tmp/tmp.jZpckM
```

```
Update mode: Copying rootfs.....

Preparing /dev/sda3 EDA-DIAG for rootfs install
untaring into /tmp/tmp.jZpckM

rootfs copy done
Success: Support tarball created: /tmp/tmp.jZpckM/onie-support.tar.bz2

INSTALLER DONE...
Removing /tmp/tmp.a5Kpax
Rebooting...
ONIE:/ # discover: installer mode detected.
Stopping: discover...start-stop-daemon: warning: killing process 546: No such process
 done.
Stopping: dropbear ssh daemon... done.
Stopping: telnetd... done.
Stopping: syslogd... done.
Info: Unmounting kernel filesystems
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL tosd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart
```

Installing Dell EMC Networking OS on the S4048T-ON using ONIE

ⓘ **NOTE:** You will need the Dell EMC Networking OS installer package, `FTOS-SK-9.14.1.10.bin` to install the Dell EMC Networking OS on your S4048T-ON system that has only ONIE.

To install the Dell EMC Networking OS version 9.14(1.10) on a new S4048T-ON device, perform the following steps:

1. Reboot the system. During the reboot process, the system displays the following message prompting you to press the Esc key in order to stop the auto-boot process:

```
Press Esc to stop autoboot ... 5

Grub 2.02~beta2 (Dell EMC Inc)
Built by root at ubuntu on Fri_Sep_24_07:05:39_UTC_2021
S4048T Boot Flash Label 3.27.2.10 NetBoot Label 3.27.2.10
```

2. At this prompt message, press the Esc key. The following menu appears:

```
    GNU GRUB  version 2.02~beta2+e4a1fe391

   +--------------------------------------------+
   |DELL                                        |
   |DELL-Boot Line Interface                    |
   |DIAG-OS                                     |
   |ONIE                                        |
   |                                            |
   +--------------------------------------------+

   Use the ^ and v keys to select which entry is highlighted.
   Press enter to boot the selected OS, 'f' to boot FTOS, 'b' to go to
   BLI, 'o' to boot ONIE, 'd' to boot DIAG-OS, 'e' to edit the commands
   before booting or 'c' for a command-line.
```

3. From the menu, choose the `ONIE` option.

    ⓘ **NOTE:** To choose an option from the menu, highlight one of the options using the up or down arrow key and press Enter.

The following menu appears:

```
                    GNU GRUB   version 2.02~beta2+e4a1fe391

 +--------------------------------------------------------------------------+
 |*ONIE: Install OS                                                         |
 | ONIE: Rescue                                                            |
 | ONIE: Uninstall OS                                                     |
 | ONIE: Update ONIE                                                      |
 | ONIE: Embed ONIE                                                       |
 | EDA-DIAG                                                               |
 |                                                                        |
 |                                                                        |
 |                                                                        |
 |                                                                        |
 |                                                                        |
 |                                                                        |
 +--------------------------------------------------------------------------+
 Use the ^ and v keys to select which entry is highlighted.
 Press enter to boot the selected OS, `e' to edit the commands
 before booting or `c' for a command-line.
```

4. From this menu, choose the `ONIE : Install OS` option.

   (i) **NOTE:** To choose an option from the menu, highlight one of the options using the up or down arrow key and press Enter.

   The ONIE Installer mode is enabled and the ONIE prompt appears, as shown:

```
ONIE: OS Install Mode ...
Version   : 3.27.1.0-3
Build Date: 2021-09-24T09:43-0700
Info: Mounting kernel filesystems... done.
Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...
Info: Using eth0 MAC address: 00:a0:c9:00:00:36
Info: Using eth1 MAC address: 00:a0:c9:00:00:37
Info: eth0:  Checking link... up.
Info: Trying DHCPv4 on interface: eth0
Info: eth1:  Checking link...down.
ONIE: eth1: link down.  Skipping configuration.
ONIE: Failed to configure eth1 interface
Starting: dropbear ssh daemon... done.
Starting: telnetd... done.
discover: installer mode detected.  Running installer.
Starting: discover... done.

ONIE:/ #
```

5. At the ONIE prompt, to stop the ONIE discovery process, enter the following command:
   `ONIE:/ # onie-discovery-stop`
   The ONIE discovery stops, as shown:

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

6. Configure an interface and assign an IP address to that interface using the following command:
   `ONIE:/ # ifconfig eth0 ip-address/prefix`

7. Enter the following command to begin the installation process:

```
ONIE:/ # onie-nos-install tftp://<tftp-server-address>/FTOS-SK-9.14.1.10.bin
```

   (i) **NOTE:** You must copy the `FTOS-SK-9.14.1.10.bin` file to the `/tftpboot` folder in the server.

   (i) **NOTE:** After the Dell EMC Networking OS installation completes, the system automatically reboots.

Following is the installation and boot log of Dell EMC Networking OS:

```
ONIE:/ # onie-nos-install tftp://10.16.127.143/FTOS-SK-9.14.1.10.bin
discover: Rescue mode detected. No discover stopped.
GRUB loading.
Welcome to GRUB!
 Built by root at ubuntu on Fri_Sep_24_07:05:39_UTC_2021
WARNING: skipping large memory map entry: 0x100000000/0x40000000/0x1
Copyright (c) 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005,
    2006, 2007, 2008, 2009, 2010
    The NetBSD Foundation, Inc.  All rights reserved.
Copyright (c) 1982, 1986, 1989, 1991, 1993
    The Regents of the University of California.  All rights reserved.


Dell EMC Networking OS Release 9.14(1.10)
 NetBSD 5.1_STABLE (S4000) #0: Fri Sep 24 21:41:13 PDT 2021
Detecting hardware...: EMC230x RPM based fan controller 0
: EMC230x RPM based fan controller 1
swwdog0: software watchdog initialized
done.
WARNING: 4 errors while detecting hardware; check system log.
route: writing to routing socket: File exists
/etc/8g.disklabel.s4048t -> /etc/8g.disklabel.s4000
Partitioning 7641mb flash ....Pass!
Mounting /boot
Image Product name FTOS-SK Match
```

8. After the installation completes, the system displays the following DELL EMC prompt:
   `DellEMC>`

Upgrading the S4048T-ON Dell EMC Networking OS Image using the Dell EMC Networking OS CLI

Bare Metal Provisioning

ⓘ **NOTE:** If you are using Bare Metal Provisioning (BMP), see the Bare Metal Provisioning topic in the Dell EMC Networking OS Configuration Guide or the Open Automation Guide.

Manual Upgrade Procedure

Follow these steps carefully to upgrade your S4048T-ON systems:

1. Dell EMC Networking recommends that you back up your startup configuration and any important files and directories to an external media prior to upgrading the system.

2. Upgrade the Dell EMC Networking OS in flash partition A: or B:

   `upgrade system [flash: | ftp: stack-unit <1-6> | tftp: | scp: | usbflash:] [A: | B:]`

   EXEC Privilege

```
DellEMC#upgrade system ftp: a:
Address or name of remote host []: 10.16.127.86
Source file name []: /tftpboot/FTOS-SK-9.14.1.10.bin
User name to login remote host: veswar
Password to login remote host:
!!!!!!!!!!Sep 24 06:10:47: %S4048T-ON:1 %KERN-6-INT: CP Mgmt port receiving excessive
traffic; will be rate controlled
!!!!!!!!!!!!Sep 24 06:10:58: %S4048T-ON:1 %KERN-6-INT: CP Mgmt port receiving
excessive traffic; will be rate controlled

                       - repeated 3 times
!!!!!!!!!!!!!!!!!!!!!!!!Sep 24 06:11:22: %S4048T-ON:1 %KERN-6-INT: CP Mgmt port
receiving excessive traffic; will be rate controlled

                       - repeated 5 times
!!!!!!!!...................................................................................
...........................................................................................
.................................................!
```

```
66927711 bytes successfully copied
System image upgrade completed successfully.
DellEMC#Sep 24 06:12:19: %STKUNIT1-M:CP %DOWNLOAD-6-UPGRADE: Upgrade completed
successfully
```

3. Verify that the Dell EMC Networking OS has been upgraded correctly in the upgraded flash partition

   `show boot system stack-unit [1-6] | all]`

   EXEC Privilege

```
DellEMC#show boot system stack-unit all

Current system image information in the system:
===========================================================
Type            Boot Type       A                        B
-----------------------------------------------------------
stack-unit 1  FLASH BOOT       9.14(1.10)[boot]  9.14(1.9P4)
stack-unit 2 is not present.
stack-unit 3 is not present.
stack-unit 4 is not present.
stack-unit 5 is not present.
stack-unit 6 is not present.
DellEMC#
```

4. Change the Primary Boot Parameter of the S4048T-ON to the upgraded partition A: or B:

   `boot system stack-unit 1 primary system: [A: | B: | tftp: | ftp:]`

   CONFIGURATION

5. Save the configuration so that the configuration will be retained after a reload using write memory command.

   `write [memory]`

   EXEC PRIVILEGE

```
DellEMC#
DellEMC#write memory
!
Sep 24 06:15:48: %STKUNIT1-M:CP %FILEMGR-5-FILESAVED: Copied running-config to
startup-config in flash by default


DellEMC#
```

6. Reload the unit

   `reload`

   EXEC PRIVILEGE

```
DellEMC#reload
```

7. Verify the S4048T-ON has been upgraded to the Dell Networking OS version 9.14(1.10)

   `show version`

   EXEC PRIVILEGE

```
DellEMC#show version
Dell EMC Real Time Operating System Software
Dell EMC Operating System Version:  2.0
Dell EMC Application Software Version:  9.14(1.10)
Copyright (c) 1999-2021 by Dell Inc. All Rights Reserved.
Build Time: Fri Sep 24 21:22:46 2021
Build Path: /build/build02/SW/SRC
Dell EMC Networking OS uptime is 1 hour(s), 34 minute(s)

System image file is "system://A"

System Type: S4048T-ON
Control Processor: Intel Rangeley with 3 Gbytes (3181805568 bytes) of memory, core(s)
2.

8G bytes of boot flash memory.
```

```
  1 48x10G, 6x40G TE/FO G (S4048T-ON)
 48 Ten GigabitEthernet/IEEE 802.3 interface(s)
  6 Forty GigabitEthernet/IEEE 802.3 interface(s)
```

Upgrade the Boot Flash and BIOS from Dell EMC Networking OS

To upgrade the Boot Flash and BIOS from Dell EMC Networking OS, perform the following steps:

1. Upgrade the S4048T-ON Boot Flash image.

   upgrade boot bootflash-image stack-unit [<id> | all] [booted | flash: | ftp: | scp: | tftp: | usbflash:]

   EXEC Privilege

```
DellEMC#upgrade boot bootflash-image stack-unit 1 booted

Current Boot information in the system:
==========================================================================
  Card                      BootFlash     Current Version     New Version
--------------------------------------------------------------------------
    Unit1                   Boot Flash         3.27.2.3         3.27.2.10

    *************************************************************************
    *  Warning - Upgrading boot flash is inherently risky and should only *
    *  be attempted when necessary.  A failure at this upgrade may cause  *
    *  a board RMA.  Proceed with caution !                               *
    *************************************************************************

Proceed upgrade Boot Flash image for stack-unit 1 [yes/no]: y

Bootflash image upgrade for stack-unit 1 completed successfully.
DellEMC#
```

2. Upgrade the S4048T-ON Boot Selector image.

   upgrade boot bootseletor-image stack-unit [<id> | all]

   EXEC Privilege

   Dell EMC Networking OS version 9.14(1.10) requires S4048T-ON Boot Selector image version 3.27.0.0-4 or higher. The booted option is used to upgrade the Boot Selector image to the image version packed with the loaded Dell EMC Networking OS image. The Boot Selector image version packed with the loaded Dell EMC Networking OS can be found using the **show os-version** command in EXEC Privilege mode.

```
DellEMC#upgrade boot bootselector-image stack-unit 1 booted

Current Boot information in the system:
==========================================================================
  Card                      BootSelector     Current Version     New Version
--------------------------------------------------------------------------
    Unit1                   Boot Selector         3.27.0.2       3.27.0.0-4

    *************************************************************************
    *  Warning - Upgrading boot selectors is inherently risky and should  *
    *  only be attempted when necessary.  A failure at this upgrade may    *
    *  cause a board RMA.  Proceed with caution !                          *
    *************************************************************************

Proceed upgrade Boot Selector image for stack-unit 1 [yes/no]: y

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Bootselector image upgrade for stack-unit 1 completed successfully.
DellEMC#
```

3. Reload the unit

```
reload
```
EXEC Privilege

4. Verify the Boot Selector image
```
show system stack-unit <id>
```
EXEC Privilege

```
DellEMC#show system stack-unit 1

--  Unit 1 --
Unit Type                    : Management Unit
Status                       : online
Next Boot                    : online
Required Type                : S4048T-ON - 48x10G, 6x40G TE/FO G (S4048T-ON)
Current Type                 : S4048T-ON - 48x10G, 6x40G TE/FO G (S4048T-ON)
Master priority              : 14
Hardware Rev                 : 2.0
Num Ports                    : 72
Up Time                      : 1 hr, 14 min
Dell EMC Networking OS Version : 9.14(1.10)
Jumbo Capable                : yes
POE Capable                  : no
FIPS Mode                    : disabled
Boot Flash                   : 3.27.2.10
Boot Selector                : 3.27.0.0-4
Memory Size                  : 3181805568 bytes
Temperature                  : 33C
Voltage                      : ok
Serial Number                : NA
Part Number                  : 0YVCK0     Rev A00
Vendor Id                    : DL
Date Code                    : 24092021
Country Code                 : CN
Piece Part ID                : CN-0YVCK0-28298-6BM-0080
PPID Revision                : A00
Service Tag                  : 34P0Y42
Expr Svc Code                : 681 424 632 2
Auto Reboot                  : enabled
Burned In MAC                : f4:8e:38:2b:3e:85
No Of MACs                   : 3

--  Power Supplies  --
Unit   Bay   Status       Type     FanStatus   FanSpeed(rpm)
------------------------------------------------------------
  1    1     up           AC       up          14688
  1    2     down         UNKNOWN  down         0

--  Fan  Status  --
Unit Bay   TrayStatus  Fan1      Speed   Fan2     Speed
------------------------------------------------------------
  1    1     up          up       7840     up      7546
  1    2     up          up       7840     up      7546
  1    3     up          up       7840     up      7546
  1    4     up          up       7840     up      7546

Speed in RPM
```

Upgrading the CPLD

The S4048T-ON system with Dell EMC Networking OS Version 9.14(1.10) requires System CPLD revision 12 and Master CPLD revision 13.

ⓘ **NOTE:** If your CPLD revisions are higher than the ones shown here, DO NOT make any changes. If you have questions regarding the CPLD revision, contact technical support.

Verify that a CPLD upgrade is required

Use the following command to identify the CPLD version:

```
DellEMC#show revision

--  Stack unit 1  --
S4048TON SYSTEM CPLD     : 12
S4048TON MASTER CPLD     : 13

DellEMC#
```

Use the following command to view CPLD version that is associated with the Dell EMC Networking OS image:

```
DellEMC#show os-version

RELEASE IMAGE INFORMATION :
---------------------------------------------------------------------------
        Platform            Version          Size              ReleaseTime
 S-Series:S4048T-ON     9.14(1.10)      66927711      Sep 24 2021 17:17:19

TARGET IMAGE INFORMATION :
---------------------------------------------------------------------------
          Type            Version                      Target      checksum
       runtime            9.14(1.10)            Control Processor     passed

BOOT IMAGE INFORMATION :
---------------------------------------------------------------------------
          Type            Version                      Target     checksum
     boot flash           3.27.2.10            Control Processor     passed

BOOTSEL IMAGE INFORMATION :
---------------------------------------------------------------------------
          Type            Version                      Target     checksum
  boot selector           3.27.0.0-4           Control Processor     passed

FPGA IMAGE INFORMATION :
---------------------------------------------------------------------------
         Card                      FPGA Name      Version
  stack-unit 1           S4048TON SYSTEM CPLD        12
  stack-unit 1           S4048TON MASTER CPLD        13
DellEMC#
```

Upgrading the CPLD Image

> (i) **NOTE:** The upgrade fpga-image stack-unit 1 booted command is hidden when using the FPGA Upgrade feature in the CLI. However, it is a supported command and will be accepted when entered as documented.

To upgrade the CPLD image on S4048T-ON, follow these steps.

1. Upgrade the CPLD image.

   `upgrade fpga-image stack-unit <id> booted`

   EXEC Privilege

```
DellEMC#upgrade fpga-image stack-unit 1 booted

Current information for the system:
===========================================================================
  Card                    Device Name     Current Version     New Version
---------------------------------------------------------------------------
  Unit1          S4048TON SYSTEM CPLD                  12                 12
  Unit1          S4048TON MASTER CPLD                  13                 13

     ****************************************************************
     *  Warning - Upgrading FPGA is inherently risky and should        *
     *  only be attempted when necessary.  A failure at this upgrade may    *
     *  cause a board RMA.  Proceed with caution !                    *
```

```
       ******************************************************************

Upgrade image for stack-unit 1 [yes/no]: yes


FPGA upgrade in progress!!! Please do NOT power off the unit!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

Upgrade result :
================
Unit 1 FPGA upgrade successful Unit 1. Please power cycle to take effect.

DellEMC#Sep 24 06:35:00: %S4048T-ON:1 %DOWNLOAD-6-FPGA_UPGRADE: stack-unit 1 fpga
upgrade success.

DellEMC#
```

2. Power cycle the system physically. Switch off the system by unplugging the power chords from the REAR PSUs and wait until the PSU FAN–REAR STATUS LED is completely OFF.

> (i) **NOTE:** Do not switch on the system with PSU–REAR LED glowing AMBER.

You can alternatively power cycle the switch using the `power-cycle stack-unit <1-6>` command as follows:

```
DellEMC#power-cycle stack-unit 1
Proceed with power-cycle? Confirm [yes/no]:yes
```

3. The CPLD version can be verified using show revision command output :

show revision

EXEC PRIVILEGE

```
DellEMC#sh revision

--  Stack unit 1  --
S4048TON SYSTEM CPLD     : 12
S4048TON MASTER CPLD     : 13

DellEMC#
```

> (i) **NOTE:** Do not power off the system while FPGA upgrade is in progress. For any queries, contact technical support

Uninstalling Dell EMC Networking OS on the S4048T-ON

To uninstall the Dell EMC Networking OS version 9.14(1.10) from the S4048T-ON device, perform the following steps:

1. Reboot the system. During the reboot process, the system displays the following message prompting you to press the Esc key in order to stop the auto-boot process:

```
Version 2.17.1245. Copyright (C) 2020 American Megatrends, Inc.
BIOS Date: 09/24/2021 18:21:39 Ver: 0ACBZ028
Press DEL or F2 to enter setup.


GRUB loading.
Welcome to GRUB!


 Grub 2.02~beta2 (Dell EMC)
 Built by root at ubuntu on Fri_Sep_24_07:05:39_UTC_2021
 S4000 Boot Flash Label 3.27.2.10 NetBoot Label 3.27.2.10



Press Esc to stop autoboot ... 0
```

2. At this prompt message, press the Esc key. The following menu appears:

```
+-------------------------------------------------------------------------+
 | Dell EMC Networking OS
 | Dell EMC-Boot Line Interface
 | DELL-DIAG
 | ONIE

+-------------------------------------------------------------------------+
```

3. From the menu, choose the **ONIE** option.

   ⓘ **NOTE:** To choose an option from the menu, highlight one of the options using the up or down arrow key and press **Enter**.

   The following menu appears:

```
+-------------------------------------------------------------------------+
 | ONIE: Install OS                                                        |
 | ONIE: Rescue                                                            |
 |*ONIE: Uninstall OS                                                      |
 | ONIE: Update ONIE                                                       |
 | ONIE: Embed ONIE                                                        |
 | ONIE: Diag ONIE                                                         |
 | DELL-DIAG                                                               |
+-------------------------------------------------------------------------+
```

4. From this menu, choose the **ONIE : Uninstall OS**option.

   ⓘ **NOTE:** To choose an option from the menu, highlight one of the options using the up or down arrow key and press Enter.

   The uninstall process begins. Following is the log generated by the system while Dell EMC Networking OS 9.14(1.10) uninstalls:

```
Version    : 3.27.1.0-3
Build Date: 2021-09-24T09:43-0700

Info: Mounting kernel filesystems... done.
Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...
Info: Using eth0 MAC address: 00:a0:c9:00:00:36
Info: Using eth1 MAC address: 00:a0:c9:00:00:37
Info: eth0:  Checking link... up.
Info: Trying DHCPv4 on interface: eth0
DHCPv4 on interface: eth0 failed
ONIE: Using default IPv4 addr: eth0: 192.168.3.10/255.255.255.0
Info: eth1:  Checking link... down.
ONIE: eth1: link down.  Skipping configuration.
ONIE: Failed to configure eth1 interface
Starting: dropbear ssh daemon... done.
Starting: telnetd... done.
discover: Uninstall mode detected.  Running uninstaller.
Erasing internal mass storage device: /dev/sda4 (32MB)
  Percent complete: 100%
Erase complete.
Deleting partition 4 from /dev/sda
Erasing internal mass storage device: /dev/sda5 (300MB)
  Percent complete: 100%
Erase complete.
Deleting partition 5 from /dev/sda
Erasing internal mass storage device: /dev/sda6 (300MB)
  Percent complete: 100%
Erase complete.
Deleting partition 6 from /dev/sda
Erasing internal mass storage device: /dev/sda7 (5854MB)
  Percent complete: 100%
Erase complete.
Deleting partition 7 from /dev/sda
Installing for i386-pc platform.
Installation finished. No error reported.
Uninstall complete.  Rebooting...
discover: Uninstall mode detected. No discover stopped.
```

```
Stopping: dropbear ssh daemon... done.
Stopping: telnetd... done.
Stopping: syslogd... done.
Info: Unmounting kernel filesystems
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
sd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart
```

5. After the installation completes, the system displays the following ONIE prompt:
```
ONIE:/ #
```

Installing a Third Party Operating System

Apart from the Dell EMC Networking OS, you can also install a supported third party operating system on the S4048T-ON system. For more information on installing a third party operating system, refer to the third party OS vendor's website for OS installation instructions.

Support Resources

The following support resources are available for the S4048T-ON system.

Documentation Resources

This document contains operational information specific to the S4048T-ON system.

For information about using the S4048T-ON, refer to the following documents at http://www.dell.com/support:
- *Installing the S4048T-ON System*
- *Quick Start Guide*
- *Dell EMC Networking Command Line Reference Guide for the S4048T-ON System*
- *Dell EMC Networking Configuration Guide for the S4048T-ON System*

For more information about hardware features and capabilities, refer to the Dell EMC Networking website at https://www.dellemc.com/networking.

For more information about the open network installation environment (ONIE)-compatible third-party operating system, refer to http://onie.org.

Issues

Issues are unexpected or incorrect behavior and are listed in order of Problem Report (PR) number within the appropriate sections.

Finding Documentation

This document contains operational information specific to the S4048T-ON system.

- For information about using the S4048T-ON, refer to the documents at http://www.dell.com/support.
- For more information about hardware features and capabilities, refer to the Dell EMC Networking website at https://www.dellemc.com/networking.
- For more information about the open network installation environment (ONIE)-compatible third-party operating system, refer to http://onie.org.

Contacting Dell EMC

> **NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell EMC product catalog.

Dell EMC provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell EMC for sales, technical support, or customer service issues:

Go to www.dell.com/support.

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.