Dell EMC PowerSwitch S6010–ON Firmware Updater Release Notes

January 2021
Rev. A02

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.

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- S6010–ON Firmware updater release notes

S6010–ON Firmware updater release notes

This document describes firmware updater information for the Dell EMC PowerSwitch S6010-ON switch.

Document revision history

Table 1. Revision history

Revision	Date	Description
A00	2018–10	Initial release
A01	2019-03	Updated the *Important information* section.
A02	2021-01	Updated the *IP address assignment in ONIE*, *Important information*, *ONIE based firmware update*, and *Contacting Dell EMC* sections. Removed the *Firmware update staging* and *Firmware update using Discovery* sections.

Firmware requirements

Table 2. Firmware requirements

Firm	Minimum Release Requirement
BIOS	v3.26.0.0-4
CPLD	v12, v12, v5

Important information

The following is important information you need to know when working with your switch:

Firmware downgrade not recommended

After you upgrade the firmware, Dell Technologies does not recommend downgrading to an earlier BIOS version. Downgrading to an earlier BIOS version causes the AMI label to change. This AMI label change may cause an unwanted change to the NVRAM variable layout.

ONIE install mode recovery

For information about the ONIE install mode recovery process, see the *Dell EMC PowerSwitch S6010-ON Release Notes*.

ONIE

You must first update to the latest ONIE version, then update to the latest firmware updater.

BIOS

Downgrading BIOS is not supported. You can only upgrade to the latest BIOS version.

Marginal reset timing change

Changed the marginal reset timing for out-of-band (OOB) the management port.

BIOS version numbering change

The BIOS version nomenclature has changed. The version X.Y.Z.U-V:

X The processor family. For example, 3 for X86 on an S6010-ON switch.

Y The platform ID within the processor family. For example, the S6010-ON switch is 26.

Z The image type. For example, BIOS = 0.

U The bit definitions for the BIOS are:

Table 3. BIOS bit definitions

Bit	Feature	State
0	Partition	0=MBR, 1=UEFI
1	Baud rate	0=115200, 1=9600
2	N/A	N/A
3	PXE	0=not supported
4	N/A	N/A
5	Bootloader	0=AMI BIOS

V The image version.

Additional BIOS information

- Updated Microcode for Spectre/Meltdown from version M01406D8125 to M01406D812A.
  - CVE-2018-3639, Spectre/Variant #4, and CVE-2018-3640, Spectre/Variant #3a, are addressed by applying the updated processor microcode from Intel included in this release.
  - This BIOS revision includes the updated processor microcode that is a required part of the mitigation for CVE-2018-3639, Spectre/Variant #4, and CVE-2018-3640, Spectre/Variant#3a.
- Changed the Intel Reference Code from version 1.0.0.43 to 1.0.0.48 to support higher-density DIMMs.
- Added the critical device feature for POST to detect if an OS-critical device is missing or misconfigured.

ONIE self-update

WARNING: Do not power-cycle the board when an ONIE self-update is in progress. If the install or upgrade task is interrupted, the board might have an invalid MBR/GPT/Grub, and would not boot into ONIE. In this case, use a recovery procedure to bring up the switch so long as the BIOS is functional.

I2C bus

NOTE: After a thermal shutdown, the I2C bus could lock up occasionally. If this action happens, you must manually power cycle the switch.

Direct attach cables (DACs)

CAUTION: When removing optics with direct attach cables (DACs) from the port, pull the release tab firmly and steadily. If you have difficulties pulling out the cable, gently push the optic into the port with one hand while at the same time pulling the release tab slightly upwards—towards the cable/module center—with the other hand. Do not jerk or tug repeatedly on the tab.

IP address assignment in ONIE

By default, DHCP is enabled in ONIE. If your network has DHCP configured, ONIE gets the valid IP address for the management port using DHCP, as shown.

```
Info: Using eth0 MAC address: 64:00:6a:ed:06:ad
Info: Using eth1 MAC address: 64:00:6a:ed:06:ae
Info: eth0: Checking link... up.
Info: Trying DHCPv4 on interface: eth0
ONIE: Using DHCPv4 addr: eth0: xx.xx.xxx.xx / xxx.xxx.xxx.x
```

You can manually assign an IP address.

1. Wait for ONIE to complete a DHCP timeout and return to the prompt.
2. Wait for ONIE to assign a random default IP address. This address may not be valid for your network.
3. Enter the `ifconfig` command to assign a valid IP address.

```
** Rescue Mode Enabled ** ONIE:/ #
ONIE:/ #  ifconfig eth0 xx.xx.xxx.xxx/xx
```

ONIE-based firmware update process

NOTE: Always update the ONIE operating system first. After this update finishes, update the firmware, such as the BIOS, CPLD, FPGA, and so forth.

NOTE: The output examples are for reference only. Your output may vary.

You can update the firmware by using any of the following methods:

- Firmware update invoked manually from ONIE
- Firmware update using the USB
- Firmware update staging from NOS
- Firmware update staging from ONIE

WARNING: Do not power cycle or power off your switch when you upgrade the CPLD image.

WARNING: The FW-updater program updates the switch as needed.

NOTE: Upgrading the CPLD may take up to 10 minutes.

NOTE: After you have successfully upgraded, the FW-updater program power-cycles the switch.

Firmware update invoked manually from ONIE

Manually invoke the firmware update from the ONIE prompt using the `onie-self-update` command.

NOTE: This method allows you to update the firmware components, for example BIOS and CPLD, in one step without requiring a switch reboot. However, this method is not support for platforms supporting the multistage reboot sequence.

There are two ways to use the `onie-self-update` command. For ease of use, Dell Technologies recommends using Option 1.

OPTION 1:

1. Boot into Rescue mode.
2. Start the firmware update process using the `onie-self-update` command.

```
ONIE:/ # onie-self-update tftp://x.x.x.x/onie-firmware-x86_64-VENDOR_MACHINE -r0.bin
```

OPTION 2:

1. Boot into Rescue mode.
2. Copy the firmware update binary to the target.

   Using SCP:

   - `ONIE:/ # scp <name@xx.xx.xx.xx> :/tftp/users/<name>/fw-updater.bin<space> .`
   - `ONIE:/ # scp <name@xx.xx.x.xx> :/home/<name>/fw-updater.bin<space> .`

   WGET supports HTTP and FTP options. You can use `ONIE: / # wget` if supported by the host server or machine. Using WGET:

   - `ONIE: / # wget --quiet http://xx.xx.x.xxx/tftpboot/users/<name>/fw-updater.bin`

   Use TFTP if the host or server supports this option. The .txt file must be present in the TFTP directory; for example, `/tftpboot/users/<name>/fw-updater.bin`. Using TFTP:

   - `ONIE: / # tftp -g -r fw-updater.bin xx.xx.xxx.xxx .`
3. Start the firmware update process using the `onie-self-update` command.

```
ONIE:/ # onie-self-update onie-firmware-x86_64-VENDOR_MACHINE -r0.bin
```

Verify firmware update

After you have updated the firmware, verify that all components—BIOS and CPLD, are running the correct version.

- To check the BIOS version, use the `dmidecode -s system-version` command. The BIOS version also displays during switch bootup. You can run this command from either ONIE or the DIAG OS.
- To check the CPLD version, use the `cpldupgradetool --cpldver` command.

Firmware update using USB

You can manually install the OS10 software image using a USB device. Verify that the USB device supports a FAT or EXT2 file system. For instructions to format a USB device in FAT or EXT2 format, see the Windows documentation accompanying the USB device.

NOTE: Using the `onie-firmware-x86_64-dellemc_platform_c3538-r0.bin` image only updates the ONIE firmware components, such as BIOS and CPLD. This image does not update the base ONIE version.

1. Plug the USB storage device into the USB storage port on the switch.
2. Power up the switch to automatically boot using the `ONIE: Rescue` option.
3. Create a USB mount location on the system.

```
$ mkdir /mnt/media
```

4. Identify the path to the USB drive.

```
$ fdisk -l, blkid
```

5. Mount the USB media plugged into the USB port on the device.

```
$ mount -t vfat usb-drive-path /mnt/media
```

6. Install the software from the USB, where `/mt/media` specifies the path where the USB partition is mounted.

```
$ onie-self-update /mnt/media/onie-firmware-x86_64-dellemc_platform_c3538-r0.bin
```

Verify firmware update

After you have updated the firmware, verify that all components—BIOS and CPLD, are running the correct version.

- To check the BIOS version, use the `dmidecode -s system-version` command in ONIE. The BIOS version also displays during switch bootup. You can run this command from either ONIE or the DIAG OS.
- To check the CPLD version, use the `cpldupgradetool --cpldver` command.

Firmware update staging from NOS

There are two options for staging the firmware update from the networking operating system (NOS).

NOTE: These steps are for a switch with Dell EMC SmartFabric OS10 installed.

For systems running software version 10.5.x.x or later, use Option 1. For systems running software version 10.4.x.x or earlier, use Option 2.

Option 1

For systems running software version 10.5.x.x or later:

1. Download the OS10 firmware file from a server using the `image download <server-filepath/firmware-filename>` command in EXEC mode.

   ```
   OS10# image download http://xx.xx.x.xxx/tftpboot/users/regr//neteng/okelani/files
   /new/onie-firmware-x86_64-dellemc_<platform>_c3538-rx.x.xx.x.x-x.bin
   ```

2. Install the OS10 firmware file using the `image install <firmware-file-url>`l command in EXEC mode, where *firmware-file* is the name of the firmware file downloaded in Step 1.

   ```
   OS10# image install image://onie-firmware-x86_64-dellemc_<platform>_c3538-rx.x.xx.x.x-
   x.bin
   ```

   To view the pending firmware upgrade, use the `show image firmware` command. To cancel a firmware installation and remove any pending firmware upgrades, use the `image cancel` command.

3. Reload the switch in EXEC mode.

   ```
   OS10# reload
   ```

Option 2

For systems running software version 10.4.x.x or earlier:

1. Log in to Dell EMC SmartFabric OS10 as the Linux administrator.

   ```
   Debian GNU/Linux 9 OS10 ttyS0
   Dell EMC Networking Operating System (OS10)
   OS10 login: admin
   Password: admin
   ```

2. Configure an IP address for the management port to get the firmware updater over the network.

   ```
   OS10# configure terminal
   OS10(config)# interface mgmt 1/1/1
   OS10(conf-if-ma-1/1/1)# no ip address dhcp
   OS10(conf-if-ma-1/1/1)# ip address xx.xx.xxx.xx/xx
   OS10(conf-if-ma-1/1/1)# no shutdown
   OS10(conf-if-ma-1/1/1)# exit
   OS10(config)# management route xx.xx.x.x/xx managementethernet
   OS10(config)# exit
   OS10#
   ```

3. Confirm you can reach the network.

   ```
   OS10# ping -c4 xx.xx.x.xxx
   PING xx.xx.x.xxx (xx.xx.x.xxx) 56(84) bytes of data.
   64 bytes from xx.xx.x.xxx: icmp_seq=1 ttl=61 time=2.59 ms
   ```

```
64 bytes from xx.xx.x.xxx: icmp_seq=2 ttl=61 time=2.48 ms
64 bytes from xx.xx.x.xxx: icmp_seq=3 ttl=61 time=2.62 ms
64 bytes from xx.xx.x.xxx: icmp_seq=4 ttl=61 time=2.41 ms
--- xx.xx.x.xxx ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 2.411/2.526/2.621/0.104 ms
OS10#
```

4. Get the Linux prompt using the `system bash` command.

```
OS10# system bash
admin@OS10:/config/home/admin$
```

5. Change the directory to `/home/admin` using the `cd` command.

```
admin@OS10:/config/home/admin$ cd
admin@OS10:~$
```

6. Confirm that the ONIE partition is already mounted.

```
admin@OS10:~$ mount | grep onie
/dev/sda2 on /mnt/onie-boot type ext4 (rw,relatime,data=ordered)
admin@OS10:~$
```

As shown, the ONIE partition is mounted. If it is not mounted, follow these steps:

a. Change to Root mode.

```
admin@OS10:~$ sudo -i
We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:
    #1) Respect the privacy of others.
    #2) Think before you type.
    #3) With great power comes great responsibility.

[sudo] password for admin: admin
```

b. Mount the ONIE partition, if not already mounted.

```
root@OS10:~# mkdir -p /mnt/onie-boot/
root@OS10:~# mount LABEL=ONIE-BOOT /mnt/onie-boot
```

7. Confirm that the `onie-fwpkg` command is accessible.

This action also confirms that the ONIE partition is mounted correctly.

```
root@OS10:~# /mnt/onie-boot/onie/tools/bin/onie-fwpkg
** Pending firmware update information:
No pending firmware updates present.
root@OS10:~#
```

8. Use the `scp` command to copy the firmware updater binary from the host to the target.

```
root@OS10:~# scp <name>@xx.xx.x.xx:/home/<name>/fw-updater.bin .
Password: admin
fw-updater.bin                                100%   18MB  28.0MB/s   00:00
admin@OS10:~$ ls -ltr fw-updater.bin
-rw-r--r-- 1 admin sysadmin 19314551 Mar 16 02:46 fw-updater.bin
root@OS10:~#
```

9. Use the `add` option of the `onie-fwpkg` command to stage the firmware updater from the OS10.

```
root@OS10:~# /mnt/onie-boot/onie/tools/bin/onie-fwpkg add fw-updater.bin
Staging firmware update: fw-updater.bin
```

```
root@OS10:~# /mnt/onie-boot/onie/tools/bin/onie-fwpkg
** Pending firmware update information:
Name            | Version      | Attempts  |Size (Bytes)    | Date
======== ====+====   =====+==========+==============+====================
fw-updater.bin | x.xx.x.x-xx |        0   |     19314551   | 2018-02-17 03:19:35
=============+==========+==========+==============+====================

For more detailed information run: onie-fwpkg show-pending <update_name>
root@OS10:~#
```

10. Set next boot to ONIE update mode.

```
root@OS10:~# os10-image -o update
WARNING: ONIE update requested
Are you sure (y/N)? y
Success setting boot mode to ONIE update
Reboot required to take effect
root@OS10:~#
```

11. Reboot your switch to enter ONIE update mode and start the firmware update.

Optionally, to set the next boot to ONIE mode, use the `ONIE:/# onie-boot-mode -o update` command.

Verify firmware update

After you have updated the firmware, verify that all components—BIOS and CPLD, are running the correct version.

- To check the BIOS version, use the `dmidecode -2 system-version` command in ONIE. The BIOS version also displays during switch bootup. You can run this command from either ONIE or the DIAG OS.
- To check the CPLD version, use the `cpldupgradetool --cpldver` command.

Firmware update staging from ONIE

1. Boot into ONIE Rescue or Update mode.
   If you boot into Update mode, stop discovery using the `onie-discovery-stop` command.
2. Copy the fw-updater image from the host to the target.

```
onie-fwpkg command with 'add' option would queue the firmware update.
  onie-fwpkg add <fw_updater.bin>
```

3. Boot back to ONIE update mode if you previously booted to Rescue mode.
   After you boot into ONIE Update mode, the ONIE firmware updates infrastructure, locates the firmware update archive, and proceeds to update the components.

If you were previously in ONIE Update mode and stopped discovery using the `onie-discovery-stop` command, restart discovery using the `onie-discovery-start` command. This command causes the ONIE firmware updater infrastructure to locate the firmware updater binary image and proceed with the firmware update.

The following is a list of ONIE staging command options:

```
ONIE:/mnt/onie-boot # onie-fwpkg purge
Removing all pending firmware updates (
y/N)? y Purging all pending firmware updates. ONIE:/mnt/onie-boot #

ONIE:/mnt/onie-boot # onie-fwpkg
** Pending firmware update information:
No pending firmware updates present.
ONIE:/mnt/onie-boot #

ONIE:/mnt/onie-boot # wget http://xx.xx.x.xxx//tftpboot/users/<name>/<platform>/FWUPG
RD/onie-firmware-x86_64-dell_<platform>_c2338-r0.x.x.x.x.bin
Connecting to xx.xx.x.xxx (xx.xx.x.xxx:xx)
onie-firmware-x86_64 100% |*******************************| 12521k 0:00:00 ETA

ONIE:/mnt/onie-boot #
ONIE:/mnt/onie-boot # onie-fwpkg add onie-firmware-x86_64-dell_<platform>_c2338-r0x.x.x.x.bin
Staging firmware update: onie-firmware-x86_64-dell_<platform>_c2338-r0.x.x.x.x.bin
ONIE:/mnt/onie-boot #
```

```
ONIE:/mnt/onie-boot # onie-fwpkg show-pending
** Pending firmware update information:
Name                                                    |Version|Attempts|Size (Bytes)|Date
========================================================+=======+========+============+===
onie-firmware-x86_64-dell_<platform>_c2338-r0.x.x.x.x.bin|x.x.x.x| 0 |12822391|2016-11-03
23:45:45
========================================================+=======+========+============+===

For more detailed information run: onie-fwpkg show-pending <update_name> ONIE:/mnt/onie-
boot #
ONIE:/mnt/onie-boot # ONIE:/mnt/onie-boot #
ONIE:/mnt/onie-boot # onie-fwpkg show-pending onie-firmware-x86_64-dell_<platform>_c2338-r0.x.x.x.x.bin
** Pending firmware update information:
Name                                                    |Version|Attempts|Size (Bytes)|Date
========================================================+=======+========+============+===
onie-firmware-x86_64-dell_<platform>_c2338-r0.x.x.x.x.bin|x.x.x.x| 0 |12822391 |
2016-11-03
23:45:45
========================================================+=======+========+============+===
```

Verify firmware update

After you have updated the firmware, verify that all components—BIOS and CPLD, are running the correct version.

- To check the BIOS version, use the `dmidecode -s system-version` command. The BIOS version also displays during switch bootup. You can run this command from either ONIE or the DIAG OS.
- To check the CPLD version, use the `cpldupgradetool --cpldver` command.

Support resources

The following support resources are available for the Dell EMC PowerSwitch S6010-ON:

Documentation resources

This document contains operational information specific to the S6010-ON switch.

For information about using the Dell EMC PowerSwitch S6010-ON, see the following documents at www.dell.com/support:

- *Dell Installation Guide for the S6010–ON System*
- *Dell Getting Started Guide for the S6010–ON System*
- *Open Networking Hardware Diagnostic Guide for the S6010–ON System*
- *Dell EMC SmartFabric OS10 User Guide*
- *Dell Command Line Reference Guide for the S6010–ON System*
- *Dell Configuration Guide for the S6010–ON System*

For more information about the open network installation environment (ONIE)-compatible third-party operating system, see Onie.org.

Contacting Dell EMC

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 access the Dell EMC support site, go to www.dell.com/support/. To display information in your language, scroll down to the bottom of the web page and select your country from the drop-down menu.

- To obtain product-specific information, enter the 7-character Service Tag or 11-digit express service code of your switch, which is found on the pull-out tag, also known as a luggage tag, and click **Submit**.
- To receive more technical support, click **Contact Us**. On the Contact Information web page, click **Technical Support**.

To access product documentation and resources for specific Dell EMC Networking switches, see the Dell EMC Networking OS10 Info Hub.

To search for drivers and downloads, go to the *Drivers and Downloads* section for your switch at www.dell.com/drivers/.

To participate in Dell EMC community blogs and forums, go to www.dell.com/community.