ARISTA

Firmware Upgrade for Dell Switches

Version 1.2

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Arista Networks

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TABLE OF CONTENTS

HOW TO IDENTIFY AND UPGRADE THE ONIE ON DELL EMC SWITCHES

1.1 Introduction

Dell EMC may release ONIE updates for their switch platforms independently of Arista software release. During Dell EMC switch hardware troubleshooting, if Dell EMC Support recommends ONIE upgrade as part of the root cause analysis, Arista CCF/DMF software will support the new switch ONIE version. Please note, Switch Light OS no longer bundles the new firmware updates for all Dell EMC switches. As a best practice, Arista recommends reviewing the relevant Dell EMC switch ONIE upgrade release notes with the Dell EMC Support team prior to the switch ONIE upgrade.

Note: While the following sections describe how to identify and upgrade the ONIE component on a Dell EMC switch, the steps below are for reference only. Please contact Dell EMC Support to review switch ONIE release note details and to plan the switch ONIE upgrade.

LINK Dell EMC's Support Page

1.2 Identify the Current ONIE Version

The following information is for reference only. Please consult the Dell EMC Support team for any questions and/or clarifications. There are 2 basic methods to identify the current ONIE version installed on the switch.

1.2.1 Method #1 Show Switch Version

For switches that are currently running Switch Light OS, the ONIE version is available in the `show switch <switch name> version` detail output from the controller. If connected to the switch console, use the `show version` command. In this example the ONIE version is 3.40.1.1-4.

```
C1# show switch s5248 version
Model: S5248F-ON
Manufacturer: DellEMC
Ports: 54 (48x25 + 4x100 + 2x200)
Platform Revision: r0
System Object Id: 1.3.6.1.4.1.42623.1.1.2.674.5248.1
System Information:
    Country Code: CN
    Device Version: 1
    Diag Version: 3.40.4.1-2
    Label Revision: A01
    MAC: 3c:2c:30:4f:30:00
```

```
    Manufacture Date: 01/25/2019 19:33:34
    Manufacturer: CES00
    ONIE Version: 3.40.1.1-4
```

1.2.2 Method #2 ONIE Rescue Mode (console connection required)

The ONIE version on a switch can be identified while in ONIE Rescue Mode. This method is need for switches that do not have Switch Light OS installed. Attach a console to the switch. Reboot the switch and then select ONIE → ONIE Rescue. The ONIE version is displayed in the output of `onie-syseeprom` and in the file `/etc/machine.conf`. In this example the ONIE version is 3.40.1.1-4.

```
ONIE:/ # onie-syseeprom
TlvInfo Header:
    Id String:    TlvInfo
    Version:      1
    Total Length: 180
TLV Name              Code Len Value
-------------------- ---- --- -----
Product Name          0x21   9 S5248F-ON
Part Number           0x22   6 01XR4W
Serial Number         0x23  20 CN01XR4WCES0091C0018
Base MAC Address      0x24   6 3C:2C:30:4F:30:00
Manufacture Date      0x25  19 01/25/2019 19:33:34
Device Version        0x26   1 1
Label Revision        0x27   3 A01
MAC Addresses         0x2A   2 256
Manufacturer          0x2B   5 CES00
Country Code          0x2C   2 CN
Vendor Name           0x2D   8 Dell EMC
Diag Version          0x2E  10 3.40.4.1-2
Service Tag           0x2F   7 CJGZZP2
Vendor Extension      0xFD   4  0x00 0x00 0x02 0xA2
Platform Name         0x28  30 x86_64-dellemc_s5248f_c3538-r0
ONIE Version          0x29  10 3.40.1.1-4
CRC-32                0xFE   4 0xCB24F7EC
Checksum is valid.
```

```
ONIE:/ # cat /etc/machine.conf
onie_version=3.40.1.1-4
onie_vendor_id=674
onie_build_machine=dellemc_s5200_c3538
onie_machine_rev=0
```

1.3 Download the ONIE Update

Go to Dell EMC's Support website for the respective switch model. The following information is for reference only. Before proceeding with the switch ONIE upgrade, please consult the Dell EMC Support team for any questions and/or clarifications.

1. Go to Dell EMC's Support website for the respective switch model. Search for the switch model by using the Service Tag or Model#. Alternative is to browse the list of networking switches. The switches supported belong to the PowerSwitch series. This is the direct link to the PowerSwitch series page: Dell EMC's Support Page for PowerSwitch Series

2. Choose the switch model. In this example, the ONIE for the S5248F-ON is needed.

PowerSwitch N2100 Series	PowerSwitch S4148F-ON/S4148T-ON/S4148FE-ON	PowerSwitch S5212F-ON	PowerSwitch Z9100-ON
PowerSwitch N2200-ON Series	PowerSwitch S4148U-ON	PowerSwitch S5224F-ON	PowerSwitch Z9264F-ON
PowerSwitch N3000 Series	PowerSwitch S4248FB-ON /S4248FBL-ON	PowerSwitch S5232F-ON	PowerSwitch Z9332F-ON
PowerSwitch N3200-ON Series	PowerSwitch S4810-ON	PowerSwitch S5248F-ON	

3. Once on the support page for the switch model, choose **DRIVERS & DOWNLOADS**

PowerSwitch S5248F-ON

Enter Service Tag to view details

‹ Change product

OVERVIEW	DRIVERS & DOWNLOADS	DOCUMENTATION	SERVICE EVENTS	PARTS & ACCESSORIES

4. In the list of files available, look for the ONIE Software. In this example ONIE Software v3.40.1.1-6 is available for the S5248F-ON switch.

	NAME ⇕	CATEGORY ▲	RELEASE DATE ⇕	ACTION	
☐	Dell Networking Diagnostic Tools v3.40.4.1-6 for S5200F Series Open Networking Switches	Application	09 Sep 2019	Download ⓘ	⌄
☐	Dell Networking Diagnostic OS v3.00.3.41-2 for Open Networking Switches	Diagnostics	20 Mar 2019	Download ⓘ	⌄
☐	Dell Networking Firmware Updater v3.40.5.1-13 for S5248F-ON Switch	Firmware	16 Nov 2019	Download ⓘ	⌄
☐	Dell EMC Networking OpenSwitch OPX 3.1.0	Operating System	15 Jan 2019	Download	⌄
☐	ONIE Software v3.40.1.1-6 for Dell Networking S5200F-ON Series Switch	System Utilities	16 Nov 2019	Download ⓘ	⌄

5. Click on the down arrow to expand the details of this ONIE Software file.

| ☐ | ONIE Software v3.40.1.1-6 for Dell Networking S5200F-ON Series Switch | System Utilities | 16 Nov 2019 | Download | ⓘ | ∧ |

Version
3.40.1.1-6, A00 | Older versions

Last Updated Date
16 Nov 2019

File Name
RN_S5200-ON_11152019c_final.pdf | Other formats

File size
229.44 KB

Description
ONIE Software v3.40.1.1-6 for Dell Networking S5200F-ON Series Switches

Important Information
Software Versions:
DIAG OS v3.00.3.41-2
DIAG Tools v3.40.4.1-6
Firmware Updater v3.40.5.1-13
ONIE v3.40.1.1-6

Firmware Versions:
CPLD v00_06
BIOS v3.40.0.9-10
BMC v4.40.6.0-1.02

View full driver details

6. Click on **View full driver details**. This brings up the full details of the download file.

⌂ > Support > Product Support > Driver Details

ONIE Software v3.40.1.1-6 for Dell Networking S5200F-ON Series Switch

ONIE Software v3.40.1.1-6 for Dell Networking S5200F-ON Series Switches

Fixes & Enhancements
The Fixes & Enhancements can be found in the file Release Notes as one of the available downloads for this application.

Version
Version 3.40.1.1-6, A00

Category
System Utilities

Release date
16 Nov 2019

Last Updated
16 Nov 2019

Importance
Recommended

Available formats ⓘ View Important Information

File Format:	Firmware Images
File Name:	ONIE_3.40.1.1-6.zip
Download Type:	HTTP
File Size:	54.69 MB
Format Description:	⭳ Download File

To ensure the integrity of your download, please verify the checksum value.

MD5:	d737076f2fcee5a38035a146fc194228
SHA1:	4a1c10e91a623733c7e59f01f7be244ded928a36
SHA-256:	33e485a3456be457794815d0643045e609899ba6c6391b439f35824c9d3afffb

File Format:	An archive of PDF files to provide help and procedural information to the customers
File Name:	RN_S5200-ON_11152019c_final.pdf
Download Type:	HTTP
File Size:	229.44 KB
Format Description:	This format consists of an archive of PDF files used to provide help and procedural information to the customer. It is necessary to install the Adobe Acrobat Reader first to view the files in this archive.
	⭳ Download File

To ensure the integrity of your download, please verify the checksum value.

MD5:	e41030d344bac9c612f1542a38a88e16
SHA1:	a1ff9e7b15b43f7cdc8fb2e9cd91da93ccc68769
SHA-256:	fe5d6889ace515066853736df92477fa7a4d8fa33c3b199b5e1c5c01db9de4f1

By downloading, you accept the terms of the Dell Software License Agreement.

7. Click on **Download File** for the ONIE zip file. Download the PDF of the release notes too. The release notes contain details of this ONIE release and full instructions on how to perform the ONIE upgrade.

8. To ensure the integrity of your download, please verify the checksum value.

```
host:~$ md5 ONIE_3.40.1.1-6.zip
MD5 (ONIE_3.40.1.1-6.zip) = d737076f2fcee5a38035a146fc194228
```

9. Extract the zip archive. The file needed to upgrade the ONIE on a switch is the `onie-updater` file. The onie-recovery ISO file is needed only if the switch needs a complete ONIE install from USB.

```
host:~$ unzip ONIE_3.40.1.1-6.zip
Archive:  ONIE_3.40.1.1-6.zip
  inflating: md5_checkusm.txt
  inflating: onie-recovery-x86_64-dellemc_s5200_c3538-r0.3.40.1.1-6.iso
  inflating: onie-updater-x86_64-dellemc_s5200_c3538-r0.3.40.1.1-6
  inflating: ONIE_Recovery_11052015B.pdf
```

1.4 Install the the ONIE Upgrade

The following information is for reference only. Please consult the Dell EMC Support team for any questions and/or clarifications.

Upgrading the ONIE on the switch can be done several ways. TFTP and HTTP are supported. For full details of the upgrade methods supported, please review the PDF of the release notes downloaded from the previous section. A simple way is to use SCP to copy the onie-updater file to the switch. The following steps gives an example of how to upgrade the ONIE by copying the file to the S5248F-ON switch directly.

1. Attach a console session to the switch. The default console port speed is 115200 baud.

2. Reboot the switch and then select **ONIE** at the GNU GRUB menu.

```
                        GNU GRUB  version 2.02
+--------------------------------------------------------------------------+
| Switch Light OS                                                          |
|*ONIE                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+
```

3. Select **ONIE Rescue**.

```
                   GNU GRUB   version 2.02~beta2+e4a1fe391


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

4. Within ONIE Rescue Mode, use SCP to copy the onie-updater file to the local file system. This `onie-updater` file was the one downloaded in the prior section for the S5248-ON switch.

```
ONIE:/ # scp bsn@10.8.34.11:/var/tmp/onie-updater-x86_64-dellemc_s5200_c3538-r0.3.40.1.1-6␣
  ↪.

Host '10.8.34.11' is not in the trusted hosts file.
(ecdsa-sha2-nistp256 fingerprint md5 99:3f:77:6c:e6:bd:82:39:45:c5:fd:d9:c9:b2:b0:2d)
Do you want to continue connecting? (y/n) y
bsn@10.8.34.11's password:
onie-updater-x86_64-dellemc_s5200_c3538-r0.3. 100%   18MB  17.7MB/s   00:01
ONIE:/ #
```

5. Verify the onie-updater file was copied to the local file system with `ls-l`.

```
ONIE:/ # ls -l
drwxrwxr-x    2 root      0               1980 Nov 14  2018 bin
drwxr-xr-x    3 root      0                 60 Nov 23 23:46 boot
drwxr-xr-x   10 root      0              13480 Nov 23 23:46 dev
drwxrwxr-x    8 root      0                440 Nov 23 23:46 etc
lrwxrwxrwx    1 root      0                  9 Nov 14  2018 init -> sbin/init
drwxrwxr-x    3 root      0                340 Nov 14  2018 lib
drwxrwxr-x    4 root      0                 80 Nov 23 23:46 mnt
-rw-r--r--    1 root      0           18536311 Nov 23 23:52 onie-updater-x86_64-dellemc_s5200_
→c3538-r0.3.40.1.1-6
dr-xr-xr-x  132 root      0                  0 Nov 23 23:46 proc
drwxrwxr-x    2 root      0                 60 Nov 14  2018 root
drwxrwxrwt    6 root      0                200 Nov 23 23:46 run
drwxrwxr-x    2 root      0               1100 Nov 14  2018 sbin
dr-xr-xr-x   12 root      0                  0 Nov 23 23:46 sys
drwxrwxrwt    2 root      0                 60 Nov 23 23:46 tmp
drwxrwxr-x    7 root      0                140 Nov 14  2018 usr
drwxrwxr-x    4 root      0                100 Nov 23 23:46 var
```

6. Begin the upgrade by typing `onie-self-update <onie-updater file>`. Here is the complete log of a successful ONIE upgrade performed on a S5248-ON switch. This ONIE upgrade took less than 1 minute.

```
ONIE:/ # onie-self-update onie-updater-x86_64-dellemc_s5200_c3538-r0.3.40.1.1-6
discover: Rescue mode detected. No discover stopped.
ONIE: Executing installer: onie-updater-x86_64-dellemc_s5200_c3538-r0.3.40.1.1-6
Verifying image checksum ... OK.
Preparing image archive ... OK.
ONIE: Version      : 3.40.1.1-6
ONIE: Architecture : x86_64
ONIE: Machine      : dellemc_s5200_c3538
ONIE: Machine Rev  : 0
ONIE: Config Version: 1
ONIE: Build Date   : 2018-11-13T23:24-08:00
Installing ONIE on: /dev/sda
ONIE: Success: Firmware update URL: onie-updater-x86_64-dellemc_s5200_c3538-r0.3.40.1.1-6
ONIE: Success: Firmware update version: 3.40.1.1-6
ONIE: Rebooting...
ONIE:/ # discover: Rescue mode detected. No discover stopped.
Stopping: dropbear ssh daemon... done.
Stopping: telnetd... done.
Stopping: klogd... done.
Stopping: syslogd... done.
Info: Unmounting kernel filesystems
```

7. The switch will automatically reboot after the ONIE upgrade is complete. To verify the ONIE upgrade was successful, check the ONIE version using the same methods described at the beginning of this guide. Here we can see the ONIE was upgraded from version 3.40.1.1-4 to version 3.40.1.1-6 .

```
s5248> show ver
Model: S5248F-ON
Manufacturer: DellEMC
Ports: 54 (48x25 + 4x100 + 2x200)
Platform Revision: r0
System Object Id: 1.3.6.1.4.1.42623.1.1.2.674.5248.1
System Information:
    Country Code: CN
    Device Version: 1
```

```
Diag Version: 3.40.4.1-2
Label Revision: A01
MAC: 3c:2c:30:4f:30:00
Manufacture Date: 01/25/2019 19:33:34
Manufacturer: CES00
ONIE Version: 3.40.1.1-6
```

HOW TO IDENTIFY AND UPGRADE THE FIRMWARE ON DELL EMC SWITCHES

2.1 Introduction

Dell EMC may release firmware updates for their switch platforms independently of Arista software release. During Dell EMC switch hardware troubleshooting, if Dell EMC Support recommends firmware upgrade as part of the root cause analysis, Arista CCF/DMF software will support the new switch firmware. Please note, Switch Light OS no longer bundles the new firmware updates for all Dell EMC switches. As a best practice, Arista recommends reviewing the relevant Dell EMC switch firmware upgrade release notes with the Dell EMC Support team prior to the switch firmware upgrade.

Note: While the following sections describe how to identify and upgrade the firmware components on a Dell EMC switch, the steps below are for reference only. Please contact Dell EMC Support to review switch firmware release note details and to plan the switch firmware upgrade.

Note: The firmware upgrades released by Dell EMC may have a minimum requirement of ONIE version. If such a requirement exist, the ONIE component must be upgraded first before upgrading the the firmware. Please refer to the release notes for the Dell EMC firmware package for any requirements.

LINK Dell EMC's Support Page

2.2 Identify the Current Firmware Version

The following information is for reference only. Please consult the Dell EMC Support team for any questions and/or clarifications. There are 2 basic methods to identify the existing firmware versions installed on the switch.

2.2.1 Method #1 Show Switch Version

For switches that are currently running Switch Light OS, the firmware versions are available in the `show switch <switch name> version detail` output from the controller. If connected to the switch console, use the `show version` command. In this example the the CPLD version = 7.4.4.4,3.23.0.0-10. The BIOS version = 3.23.0.0-10 (DMI System Version). The firmware package version = 3.23.5.0-10. Note starting in DMF 8.3 and CCF 6.2, the firmware package version will be reported as the Current CPLD Version.

```
Model: Z9100-ON
Manufacturer: Dell
Ports: 32 (32x100)
Platform Revision: r0
System Object Id: 1.3.6.1.4.1.42623.1.1.2.674.9100.1
```

```
System Information:
    Country Code: CN
    Device Version: 1
    Diag Version: 01_010
    Firmware Version: 3.23.5.0-10
    Label Revision: A00
    MAC: 4c:76:25:e6:d6:c0
    Manufacture Date: 11/14/2015 16:11:50
    Manufacturer: 77931
    ONIE Version: 3.23.1.0-8
    Part Number: 03GT5N
    Platform Name: x86_64-dell_z9100_c2538-r0
    Product Name: Z9100-ON
    Serial Number: CN03GT5N779315BE0004
    Service Tag: 27JRG02
    Vendor: DELL
    CPLD Versions: 7.4.4.4,3.23.0.0-10
    DMI BIOS Version: 5.6.5
    DMI System Version: 3.23.0.0-10
    Other Versions: SMF 1.2  MSS 1.49

Dataplane Features:
    Enhanced hashing support: True
    Symmetric hashing support: True
    sdk-6.5.12

Software Information:
    Switch Image Version:       SWL-OS-DMF-8.3.0(0)
    Switch Image Build Date:    2022-11-10.11:12
    Switch Image Build Id:      b23373f
    Switch Image Configuration: Release

    Current Loader Version:     SWL-OS-DMF-8.3.0(0),2022-11-10.11:12-b23373f
    Next Loader Version:        SWL-OS-DMF-8.3.0(0),2022-11-10.11:12-b23373f

    Current ONIE Version:       3.23.1.0-8
    Next ONIE Version:          3.23.1.0-8

    Current CPLD Version:       3.23.5.0-10
    Next CPLD Version:          3.23.5.0-10
```

2.2.2 Method #2 Through Dell DIAG OS (console connection required)

The CPLD version on a switch can be identified by entering EDA-DIAG. This method is need for switches that do not have Switch Light OS installed. Attach a console to the switch. Reboot the switch and then select ONIE → EDA-DIAG.

```
                  GNU GRUB  version 2.02~beta2+e4a1fe391
+-----------------------------------------------------------------------------+
|*ONIE                                                                        |
|                                                                             |
|                                                                             |
+-----------------------------------------------------------------------------+
```

```
                    GNU GRUB   version 2.02~beta2+e4a1fe391
+-----------------------------------------------------------------------------+
| ONIE: Install OS                                                            |
| ONIE: Rescue                                                               |
| ONIE: Uninstall OS                                                         |
| ONIE: Update ONIE                                                          |
| ONIE: Embed ONIE                                                           |
|*EDA-DIAG                                                                   |
|                                                                           |
+-----------------------------------------------------------------------------+
```

```
                    GNU GRUB   version 2.02~beta2+e4a1fe391
+-----------------------------------------------------------------------------+
| *EDA-DIAG                                                                  |
| ONIE                                                                       |
|                                                                           |
+-----------------------------------------------------------------------------+
```

Log into Dell Diag OS as `root`. Password is `calvin`

```
Debian GNU/Linux 8 dell-diag-os ttyS1

dell-diag-os login: root
Password:
```

The BIOS version is displayed in the output of `smbiostool -biosversion`. In this example the BIOS version is 3.23.0.0-7

```
root@dell-diag-os:~# smbiostool -biosversion
3.23.0.0-7
```

The CPLD version is displayed in the output of `cpldupgradetool --cpldver`. In this example the CPLD version is 6.4.4.4.

```
root@dell-diag-os:~# cpldupgradetool --cpldver
CPLD1 Version 6
CPLD2 Version 4
CPLD3 Version 4
CPLD4 Version 4
root@dellemc-diag-os:~#
```

The cpldupgradetool command is not available on some Dell EMC platform. On those platforms the alternative command to use is `updatetool -device_version -dev=`. In this example the CPLD version is 0.5 1.0 1.0 1.0 1.0

```
root@dellemc-diag-os:~# updatetool -device_version -dev=
BIOS version:
3.42.0.9-11

CPU_CPLD version:
0.5

SLAVE_CPLD_A version:
1.0

SLAVE_CPLD_B version:
1.0

SLAVE_CPLD_C version:
1.0
```

(continues on next page)

```
SLAVE_CPLD_D version:
1.0

FPGA version:
2.3

MAIN-BMC version:
0.19

BACKUP-BMC version:
0.19

root@dellemc-diag-os:~#
```
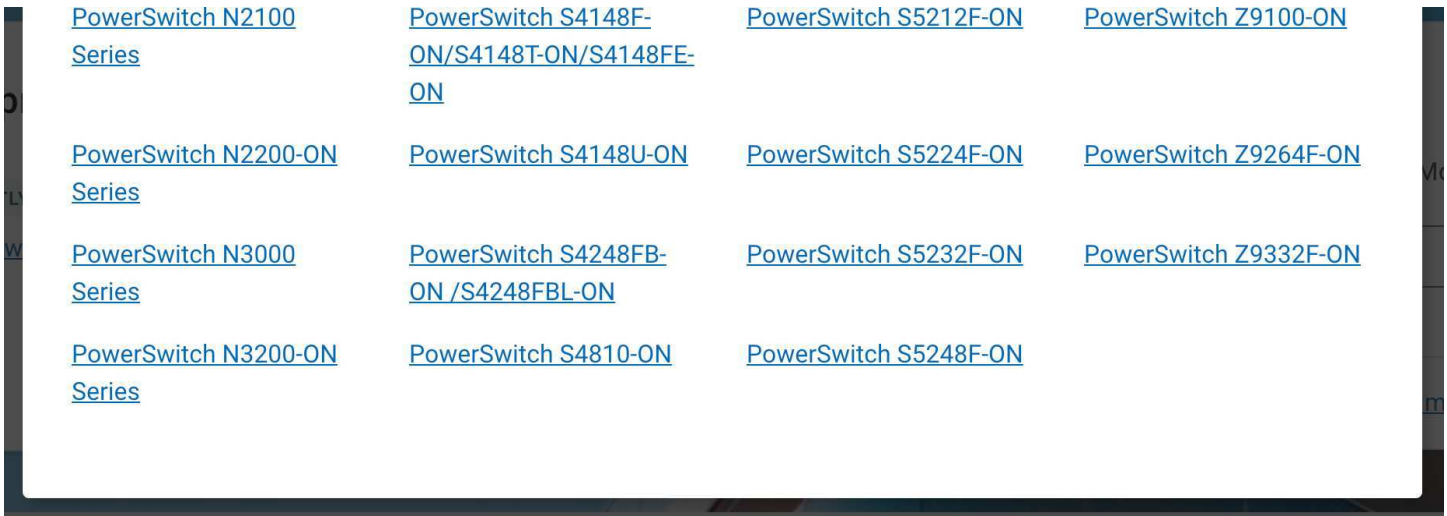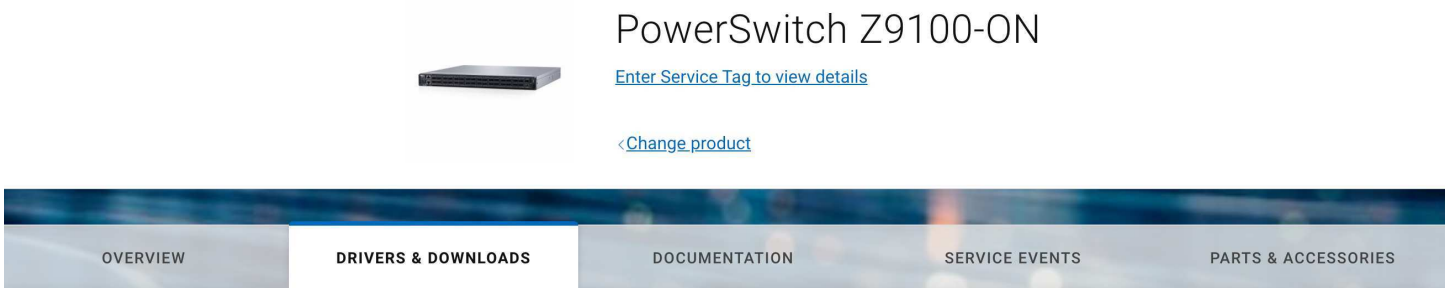
2.3 Download the Firmware update

The following information is for reference only. Please consult the Dell support team for any questions and/or clarifications.

1. Go to Dell EMC's support website for the respective switch model. Search for the switch model by using the Service Tag or Model#. Alternative is to browse the list of networking switches. The switches we support belong to the PowerSwitch series. This is the direct link to the PowerSwitch series page. Dell EMC's Support Page for PowerSwitch Series

2. Choose the switch model. In this example, the firmware for the Z9100-ON is needed.

PowerSwitch N2100 Series	PowerSwitch S4148F-ON/S4148T-ON/S4148FE-ON	PowerSwitch S5212F-ON	PowerSwitch Z9100-ON
PowerSwitch N2200-ON Series	PowerSwitch S4148U-ON	PowerSwitch S5224F-ON	PowerSwitch Z9264F-ON
PowerSwitch N3000 Series	PowerSwitch S4248FB-ON /S4248FBL-ON	PowerSwitch S5232F-ON	PowerSwitch Z9332F-ON
PowerSwitch N3200-ON Series	PowerSwitch S4810-ON	PowerSwitch S5248F-ON	

3. Once on the support page for the switch model, choose `DRIVERS & DOWNLOADS`

PowerSwitch Z9100-ON

Enter Service Tag to view details

‹ Change product

OVERVIEW	DRIVERS & DOWNLOADS	DOCUMENTATION	SERVICE EVENTS	PARTS & ACCESSORIES

4. In the list of files available, look for the Firmware Updater file. The Firmware Updater file contains the upgrade to various firmware components such as the the CPLD and BIOS. In this example, the Firmware Updater v3.23.5.0-8 is available for the Z9100-ON switch.

	NAME	CATEGORY	RELEASE DATE	ACTION	
☐	Dell Networking Firmware Updater V3.23.5.0-8 for Z9100-ON POPULAR	Firmware	23 Mar 2020	Download	⌄
☐	Dell EMC Networking OpenSwitch OPX 3.1.0 POPULAR	Operating System	15 Jan 2019	Download	⌄
☐	ONIE Software for Dell Networking Z9100-ON Open Networking Switch POPULAR	System Utilities	02 Sep 2020	Download ⓘ	⌄
☐	Dell Networking Diagnostics for Z9100 Open Networking Switch POPULAR	Diagnostics	21 Nov 2018	Download	⌄
☐	Dell Networking Diagnostics Tools for Z9100 Open Networking Switch POPULAR	Application	17 Aug 2017	Download	⌄

5. Click on the down arrow to expand the details of this Firmware Updater file.

☐	Dell Networking Firmware Updater V3.23.5.0-8 for Z9100-ON POPULAR	Firmware	23 Mar 2020	Download	⌃

Version
3.23.5.0-8, A00 | Older versions

Last Updated Date
23 Mar 2020

File Name
RNs_Z9100-ON_FW-Updater_02142020_final.pdf | Other formats

File size
185.2 KB

Description
Dell Networking Firmware Updater V3.23.5.0-8 for Z9100 Open Networking Switch.

View full driver details

RESTART REQUIRED

6. Click on `View full driver details`. This brings up the full details of the download file.

⌂ > Support > Product Support > Driver Details

Dell Networking Firmware Updater V3.23.5.0-8 for Z9100-ON `RESTART REQUIRED`

Dell Networking Firmware Updater V3.23.5.0-8 for Z9100 Open Networking Switch.

Fixes & Enhancements
The Fixes & Enhancements can be found in the file Release Notes as one of the available downloads for this application

Version	**Category**
Version 3.23.5.0-8, A00	Firmware

Release date	**Last Updated**
23 Mar 2020	23 Mar 2020

Importance
Recommended

Available formats

File Format:	Firmware Images
File Name:	FW Updater_v3.23.5.0-8.zip
Download Type:	HTTP
File Size:	28.12 MB
Format Description:	⬇ Download File

To ensure the integrity of your download, please verify the checksum value.

MD5:	2091cedc7583c4c64b6a907fb3f0bce4
SHA1:	125cfcd9d9f8345a22dc538e1fb1bac05f0515b0
SHA-256:	5db1a98867ca1193e516fcc0d39d9dabd12960c1c261adb01350bcd8b20900e7

File Format:	An archive of PDF files to provide help and procedural information to the customers
File Name:	RNs_Z9100-ON_FW-Updater_02142020_final.pdf
Download Type:	HTTP
File Size:	185.2 KB
Format Description:	This format consists of an archive of PDF files used to provide help and procedural information to the customer. It is necessary to install the Adobe Acrobat Reader first to view the files in this archive.
	⬇ Download File

To ensure the integrity of your download, please verify the checksum value.

MD5:	49d87151c4c62d9c4030e8d7f127bc87
SHA1:	bc187afc69a19307de20b1b6fbb88028dd46f1ba
SHA-256:	b7ad26561d6aadeefe313aad196dae8b23f36946b52aa6cfed16a4770aac3476

By downloading, you accept the terms of the Dell Software License Agreement.

7. Click on `Download File` for the FW Updater zip file. Download the PDF of the release notes too. The release note contains the firmware component versions included in this release. It also includes the full instructions on how to perform the firmware upgrade.

8. To ensure the integrity of your download, please verify the checksum value.

```
host:~$ md5 FW\ Updater_v3.23.5.0-8.zip
MD5 (FW Updater_v3.23.5.0-8.zip) = 2091cedc7583c4c64b6a907fb3f0bce4
```

9. Open the PDF of the release notes. Review the CPLD and BIOS versions included in this firmware updater to determine if any

upgrades are needed on the switch. In this example, the firmware package contains CPLD version 7.4.4.4 and BIOS version 3.23.0.0-8.

New in this release

Table 2. New in this release

Firmware	Version
FW Updater	v3.23.5.0-8
BIOS	v3.23.0.0-8
CPLD	v07, v4, v4, v4
SMF	v2.01, v2.1
OOB-FPGA	v1.0

10. Extract the firmware zip archive. The file needed to upgrade the firmware on a switch is the `onie-firmware-x86...bin` file. In this example, the firmware upgrade file is onie-firmware-x86_64-dell_z9100_c2538-r0.3.23.5.0-8.bin.

```
host:~$ unzip FW\ Updater_v3.23.5.0-8.zip
Archive:  FW Updater_v3.23.5.0-8.zip
  inflating: BIOS_3.23.0.0-8.zip
  inflating: onie-firmware-x86_64-dell_z9100_c2538-r0.3.23.5.0-8.bin
  inflating: onie-firmware-x86_64-dell_z9100_c2538-r0.3.23.5.0-8_md5.txt.md5
  inflating: z9100_cpld_v07.zip
  inflating: Z9100_SMF_MSS_v2.01_logic_V2.1.zip
  inflating: zx100_oobsts12152015rev1.0_with_MD5-EXT.zip
```

2.4 Install the Firmware Update

The following information is for reference only. Please consult the Dell EMC Support team for any questions and/or clarifications.

Installing the firmware on the switch can be done several ways. TFTP and HTTP are supported. For full details of the upgrade methods supported, please review the PDF of the release notes downloaded from the previous section. A simple way is to use SCP to copy the FW Updater file to the switch. The following steps gives an example of how to upgrade the firmware by copying the firmware upgrade file to the Z9100-ON switch directly.

1. Attach a console session to the switch. The default console port speed is 115200 baud.

2. Reboot the switch and then select `ONIE` at the GNU GRUB menu.

```
                    GNU GRUB  version 2.02~beta2+e4a1fe391
+----------------------------------------------------------------------+
| Switch Light OS                                                      |
|*ONIE                                                                 |
|                                                                      |
+----------------------------------------------------------------------+
```

3. Select `ONIE Rescue`.

```
                    GNU GRUB  version 2.02~beta2+e4a1fe391
+----------------------------------------------------------------------+
| ONIE: Install OS                                                    |
|*ONIE: Rescue                                                        |
| ONIE: Uninstall OS                                                  |
| ONIE: Update ONIE                                                   |
| ONIE: Embed ONIE                                                    |
| EDA-DIAG                                                            |
|                                                                      |
+----------------------------------------------------------------------+
```

4. Within ONIE Rescue Mode, use SCP to copy the Firmware updater file to the local file system. This Firmware updater file was the one downloaded in the prior section for the Z9100-ON switch.

```
ONIE:/ # scp bsn@10.8.34.11:/var/tmp/onie-firmware-x86_64-dell_z9100_c2538-r0.3.23.5.0-8.
↪bin .

Host '10.8.34.11' is not in the trusted hosts file.
(ecdsa-sha2-nistp256 fingerprint md5 99:3f:77:6c:e6:bd:82:39:45:c5:fd:d9:c9:b2:b0:2d)
Do you want to continue connecting? (y/n) y
bsn@10.8.34.11's password:
onie-firmware-x86_64-dell_z9100_c2538-r0.3.23 100%   23MB  11.6MB/s   00:02
ONIE:/ #
```

5. Verify the onie-updater file was copied to the local file system with `ls -l`

```
ONIE:/ # ls -l
drwxr-sr-x    2 root      0               2120 Jan  9  2020 bin
drwxr-xr-x    4 root      0              15540 Dec  1 01:56 dev
drwxr-sr-x    8 root      0                400 Dec  1 01:56 etc
lrwxrwxrwx    1 root      0                  9 Jan 10  2020 init -> sbin/init
drwxr-sr-x    3 root      0                440 Jul  3  2019 lib
drwxr-sr-x    3 root      0                 60 Dec  1 01:56 mnt
-rw-r--r--    1 root      0           24403831 Dec  1 01:57 onie-firmware-x86_64-dell_z9100_
↪c2538-r0.3.23.5.0-8.bin
dr-xr-xr-x   85 root      0                  0 Dec  1 01:56 proc
drwxr-sr-x    2 root      0                 60 Jul  3  2019 root
drwxrwxrwt    6 root      0                180 Dec  1 01:56 run
drwxr-sr-x    2 root      0                920 Jul  3  2019 sbin
dr-xr-xr-x   11 root      0                  0 Dec  1 01:56 sys
drwxrwxrwt    2 root      0                 60 Dec  1 01:56 tmp
drwxr-sr-x    7 root      0                140 Jan  9  2020 usr
drwxr-sr-x    4 root      0                100 Dec  1 01:56 var
```

6. Begin the upgrade by typing `onie-self-update <FW updater file>`. Here is the complete log of a successful firmware upgrade performed on a Z9100-ON switch. This firmware upgrade took about 8 minutes on this Z1900-ON switch. Allow up to 30 minutes for the firmware to install.

```
ONIE:/ # onie-self-update onie-firmware-x86_64-dell_z9100_c2538-r0.3.23.5.0-8.bin
discover: Rescue mode detected. No discover stopped.
ONIE: Executing installer: onie-firmware-x86_64-dell_z9100_c2538-r0.3.23.5.0-8.bin
Verifying image checksum ... OK.
Preparing image archive ... OK.
Firmware: Version        : 3.23.5.0-8
Firmware: Architecture   : x86_64
Firmware: Machine        : dell_z9100_c2538
Firmware: Machine Rev    : 0
Firmware: Config Version: 1
Firmware: Build Date     : 2019-07-31T12:35-07:00


 =============== ONIE FW UPDATER ===============
In fw_install.sh
/tmp/tmp.ZxwdyJ/installer/firmware
-rw-r--r--    1 7758     3000             174 Jul 31  2019 fw-version.make
-rwxr-xr-x    1 7758     3000            5095 Jul 31  2019 fw-install.sh
drwxr-xr-x    2 7758     3000             160 Dec  1 01:41 cpld
drwxr-xr-x    2 7758     3000             140 Dec  1 01:41 common_tools
drwxr-xr-x    2 7758     3000              60 Dec  1 01:41 oob_fpga
drwxr-xr-x    2 7758     3000             240 Dec  1 01:41 bios
```

(continues on next page)

```
BIOS VERSION        : 3.23.0.0-7
PACKED BIOS VERSION : 3.23.0.0-8
BIOS version mis-match between running and packed
In update_bios.sh

Changing to bios dir
/tmp/tmp.ZxwdyJ/installer/firmware/bios
-rwxr-xr-x    1 7758     3000           2947 Jul 31  2019 update_bios.sh
-rwxr-xr-x    1 7758     3000        1571309 Jul 31  2019 flashrom
-rw-r--r--    1 7758     3000       16777216 Jul 31  2019 Z9100-BIOS-3.23.0.5.bin
-rw-r--r--    1 7758     3000       16777216 Jul 31  2019 Z9100-BIOS-3.23.0.4.bin
-rw-r--r--    1 7758     3000       16777216 Jul 31  2019 Z9100-BIOS-3.23.0.3.bin
-rw-r--r--    1 7758     3000       16777216 Jul 31  2019 Z9100-BIOS-3.23.0.2.bin
-rw-r--r--    1 7758     3000       16777216 Jul 31  2019 Z9100-BIOS-3.23.0.1.bin
-rw-r--r--    1 7758     3000       16777216 Jul 31  2019 Z9100-BIOS-3.23.0.0-8.bin
-rw-r--r--    1 7758     3000       16777216 Jul 31  2019 Z9100-BIOS-3.23.0.0-7.bin
-rw-r--r--    1 7758     3000       16777216 Jul 31  2019 Z9100-BIOS-3.23.0.0-6.bin
-rwxr-xr-x    1 root     0               224 Dec  1 01:41 /tmp/reboot-cmd
-rwxr-xr-x    1 root     0            947349 Dec  1 01:41 /bin/lpctool
bios_ver : 3.23.0.0-7
bios_chip : Winbond "W25Q128.V"
"W25Q128.V" is supported
Winbond is supported
Erasing BIOS flash ...
Programming BIOS flash: Z9100-BIOS-3.23.0.0-8.bin ...
BIOS update/verified ok
BIOS update complete. No errors detected.

 CPLD VERSIONS
CPLD1 : 0x06
CPLD2 : 0x04
CPLD3 : 0x04
CPLD4 : 0x04
 PACKED CPLD VERSIONS
CPLD1 : 0x07
CPLD2 : 0x04
CPLD3 : 0x04
CPLD4 : 0x04
CPLD1 version mis-match between packed and running.

/tmp/tmp.ZxwdyJ/installer/firmware/cpld
-rw-r--r--    1 7758     3000        1029021 Jul 31  2019 z9100_cpld_v07.vme
-rwxr-xr-x    1 7758     3000         968173 Jul 31  2019 vmetool
-rwxr-xr-x    1 7758     3000            615 Jul 31  2019 update_cpld.sh
-rw-r--r--    1 7758     3000            215 Jul 31  2019 default_vme_list.cfg
-rw-r--r--    1 7758     3000           1319 Jul 31  2019 default_cpldupgrade.cfg
-rwxr-xr-x    1 7758     3000        1001899 Jul 31  2019 cpldupgradetool
-rwxr-xr-x    1 root     0               224 Dec  1 01:44 /tmp/reboot-cmd
-rwxr-xr-x    1 root     0            947349 Dec  1 01:44 /bin/lpctool
In /bin dir
/bin
-rw-r--r--    1 root     0            1029021 Dec  1 01:44 z9100_cpld_v07.vme
-rwxr-xr-x    1 root     0            1001899 Dec  1 01:44 cpldupgradetool

Upgrading CPLD using z9100_cpld_v07.vme

!!! DO NOT INTERRUPT THE BOARD, WHILE CPLD UPGRADE IS IN PROGRESS !!!
```

```
              Lattice Semiconductor Corp.


             ispVME(tm) V12.2 Copyright 1998-2011.


For daisy chain programming of all in-system programmable devices

Invalid Format: CPLD_WE assertion level
TDI:39,TCK:35,TMS:36,WE:18,TRST:19,TDO:49,SelPin:57, Freq:2400
g_CoresiIspPins Init= 30000 g_SussiIspPins Init= 2000134 g_WEAssertLevel= 0
Processing virtual machine file (/bin/z9100_cpld_v07.vme)......

Diamond Deployment Tool 3.9
CREATION DATE: Sun May 26 17:12:50 2019



+=======+
| PASS! |
+=======+




upgrade command for SWITCHCPLD : vmetool  -c  /bin/z9100_cpld_v07.vme
 CPLD upgrade done.
CPLD update complete. No errors detected.

OOB-FPGA VERSION : .
OOB-FPGA VERSION PACKED : 1.0
sh: 1: unknown operand
sh: 0: unknown operand
OOB-FPGA update not required.
 done.
ONIE: Success: Firmware update URL: onie-firmware-x86_64-dell_z9100_c2538-r0.3.23.5.0-8.bin
ONIE: Success: Firmware update version: 3.23.5.0-8
ONIE: Calling update supplied reboot-cmd...
Power-cycling the system....
```