Gigamon®

GigaVUE-OS Installation Guide for DELL S4112F-ON

GigaVUE-OS

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(See Change Notes for document updates.)

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Change Notes

When a document is updated, the document version number on the cover page will indicate a new version and will provide a link to this Change Notes table, which will describe the updates.

Product Version	Document Version	Date Updated	Change Notes
5.10.00	1.0	08/14/2020	Original release of this document with 5.10.00 GA.

Contents

GigaVUE-OS Installation Guide for DELL S4112F-ON **1**
- Change Notes 3
- Contents 1
- GigaVUE-OS on Dell S4112F-ON 2
  - Dell S4112F-ON Features 2
- Prerequisites 3
  - License 3
- GigaVUE-OS Installation 4
  - Uninstall third party OS from DELL S4112F-ON 4
  - Install GigaVUE-OS in DELL S4112F-ON using ONIE Discovery 5
- Configuration Using CLI (Command Line Interface) 8
  - Device Configuration Commands 9
  - License Installation Commands 10
  - Device Show Commands (Traffic) 10
  - Device Status Show Commands (Environment) 10
- Supported Devices 10
- Supported Functionality 10
- Limitations 12
- Troubleshoot Dell S4112F-ON Issues 12
  - DELL S4112F-ON enters GRUB Rescue Mode 12
  - DELL S4112F-ON prevented from booting the GigaVUE-OS Image 14
  - Additional Sources of Information 16

GigaVUE-OS on Dell S4112F-ON

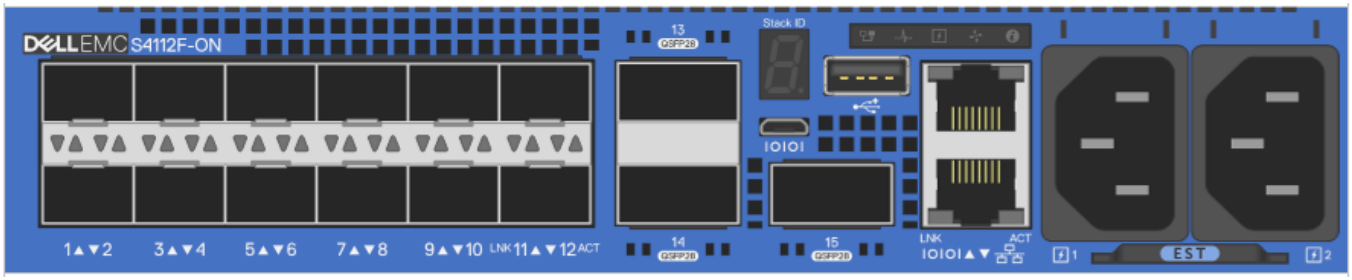
GigaVUE-OS is now accessible on Dell S4112F-ON provided that the required license is installed. This enables DELL S4112F-ON to integrate with GigaVUE-FM, supports CLI-command-based configurations and is in par with the available features and functionalities of GigaVUE TA Series platform.

> **NOTE:** DELL S4112F-ON is also referred to as DELL 12 port switch .

Dell S4112F-ON Features

Dell S4112F-ON is a half rack unit switch with the following features:

- One management port and serial console
- Two PSU (power supply units) in the front side of the platform
- Three integrated fans at the rear side of the platform
- 12 x10G and 3 x100G native port cages supporting a 1G-100G range of speed: 1G, 10G, 40G, and 100G.
- A 4x10G breakout is possible when a 40G optic is plugged into any one or all three 100G port cages.



> **NOTE:** All features and functionalities available in Gigamon platforms are subject to licensing and hardware conditions.

Prerequisites

To install GigaVUE-OS and access the features, the following prerequisites is mandatory :

- License

License

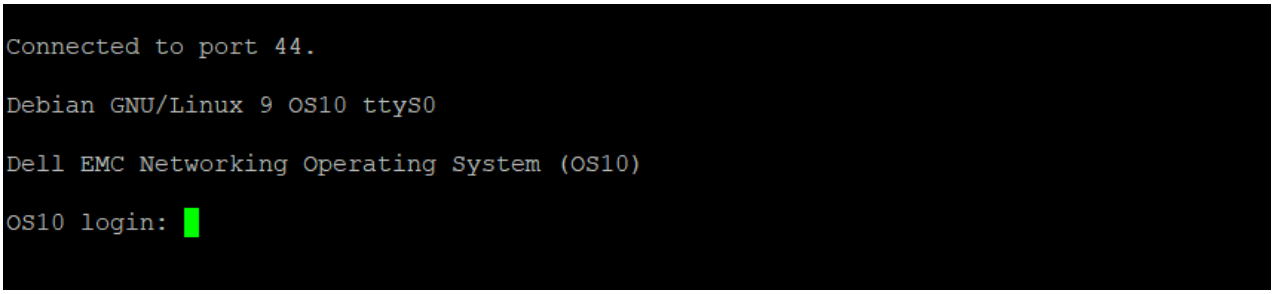
Ensure that you have purchased and installed the license before accessing your platform with GigaVUE-OS. The license key for each DELL S4112F-ON platform accessing GigaVUE-OS is unique and is generated based on the individual chassis serial number. After you install the license it activates your configured ports and provides access to most of the features and functionalities that can be accessed from GigaVUE-OS. An additional license is required to enable cluster ,L2GRE, VXLAN and circuit tunnel functionality.

Please contact support team for respective license keys.

GigaVUE-OS Installation

After powering on the S4112F-ON switch, it goes through a power-on self-test (POST). After the POST, the switch uses GRUB bootloader to access the operating system (OS). Use the up and down arrow keys on your keyboard to select an entry. For more information about using GRUB, refer to the GNU GRUB documentation.

NOTE: Before installing GigaVUE-OS, you must uninstall any pre-installed third party OS in the switch. You must uninstall any pre-installed OS in the Dell S4112F-ON switch before installing GigaVUE-OS. For example, if it is preloaded with Dell's Operating System (OS), it will prompt you to log in after you power-on, as shown below. To uninstall the previous OS, refer to Uninstall OS in DELL S4112F-ON.

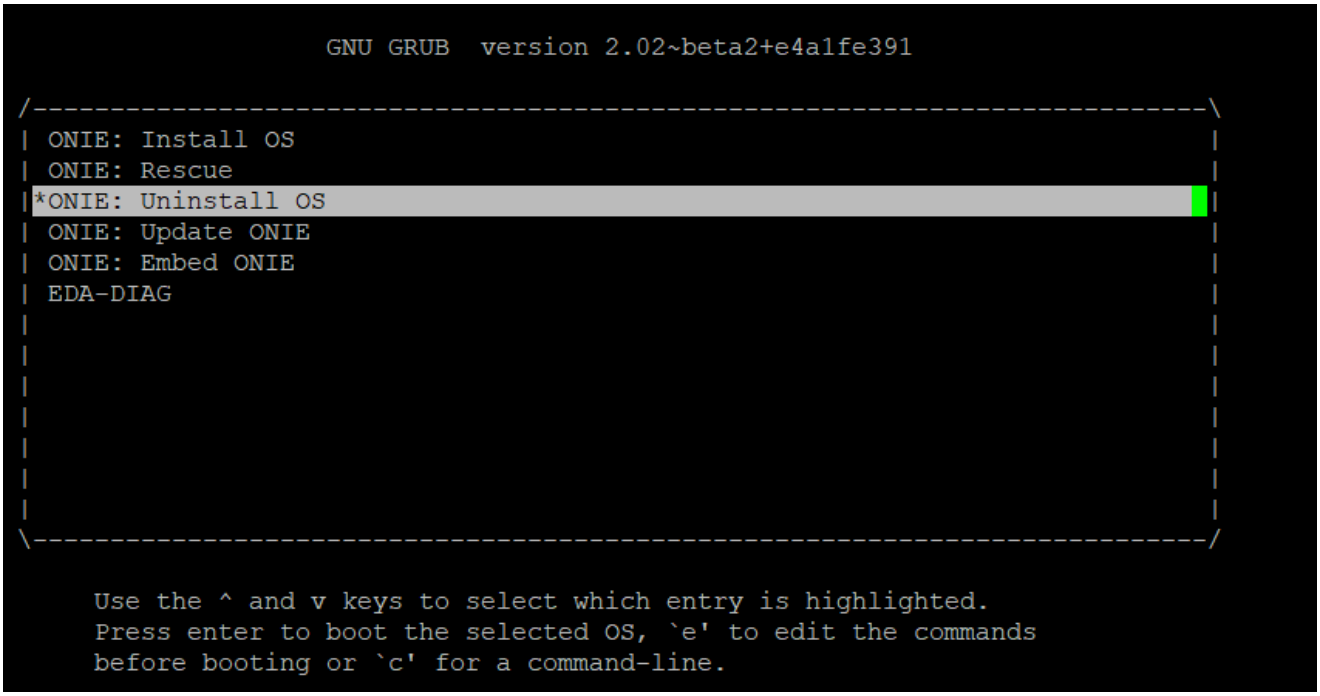


Uninstall third party OS from DELL S4112F-ON

To uninstall an existing third party operating system follow below instructions:

1. Power cycle the device and select "ONIE" from the GRUB menu .

2. Select "ONIE: Uninstall OS" option and press ENTER . The system will start uninstalling the DELL image and perform a reboot once completed.



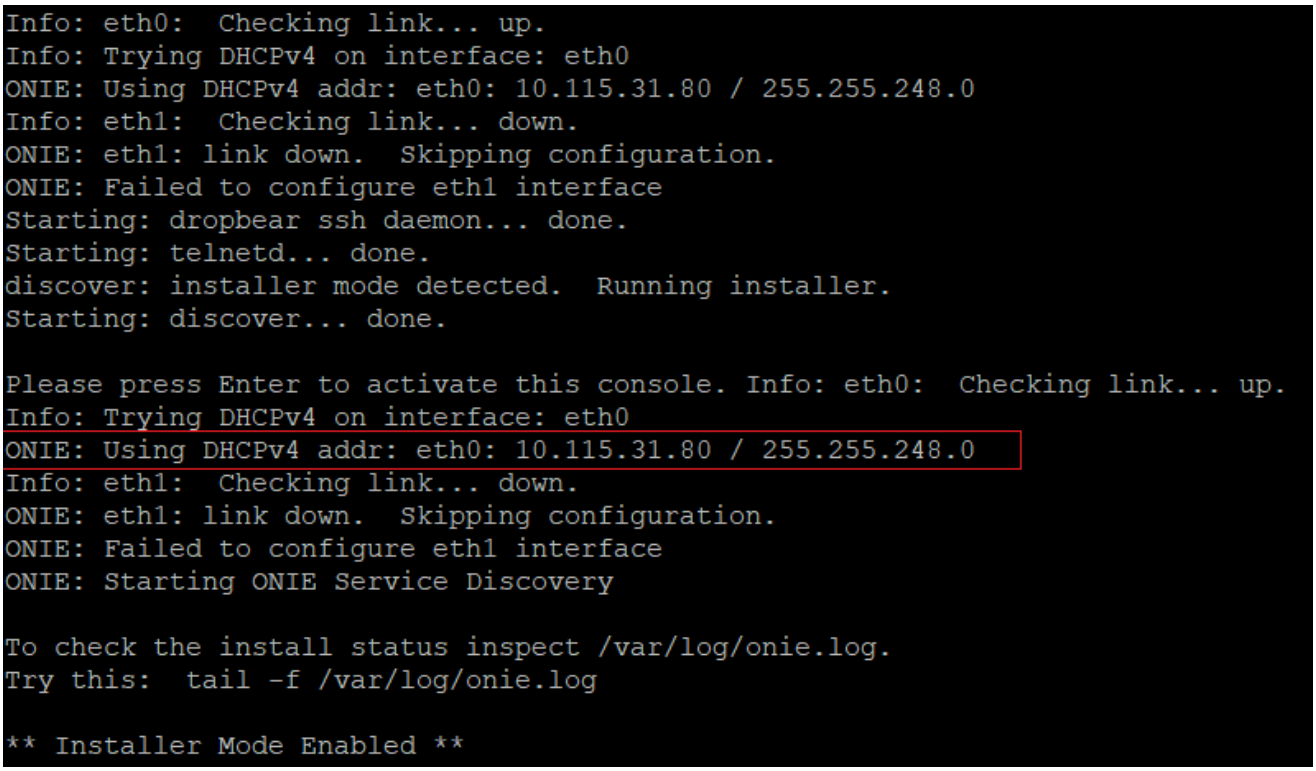
Install GigaVUE-OS in DELL S4112F-ON using ONIE Discovery

ONIE Discovery can utilize multiple methods to discover the possible operating system. Refer to *S4112–ON Series Installation Guide* for details.

Installing GigaVUE-OS in DELL S4112F-ON using ONIE discovery:

1. Power cycle the device.
2. Select the "ONIE: Install OS" option from the GNU GRUB Menu and press ENTER.

3. The DHCP will assign an IP address to the device. Once it does, press ENTER.



4. After your installer is successfully discovered and installed, you can disable the ONIE discovery using the onie-discovery-stopcommand.

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

5. You can manually install the operating system by one of the following methods:

To load the GigaVUE-OS image from TFTP Server:

- Install the image directly using the following command from "ONIE:/ prompt"

```
ONIE:/ # onie-nos-install  https://tftpserver.com:/image_path/image-GigaVUE-OS-x86_64-gvd4112-20200525-181004.img
```

To load the GigaVUE-OS image using SCP Server:

- Copy the image into temporary directory (/tmp) from the ONIE prompt :[1]

```
ONIE:/ # scp user@scpserver.com:/image_path/image-GigaVUE-OS-x86_64-gvd4112-20200525-181004.img    /tmp
```

- Install the image using the below command from "ONIE:/ prompt".

```
ONIE:/ #onie-nos-install <image_path>/<image_name>
```

For Example:

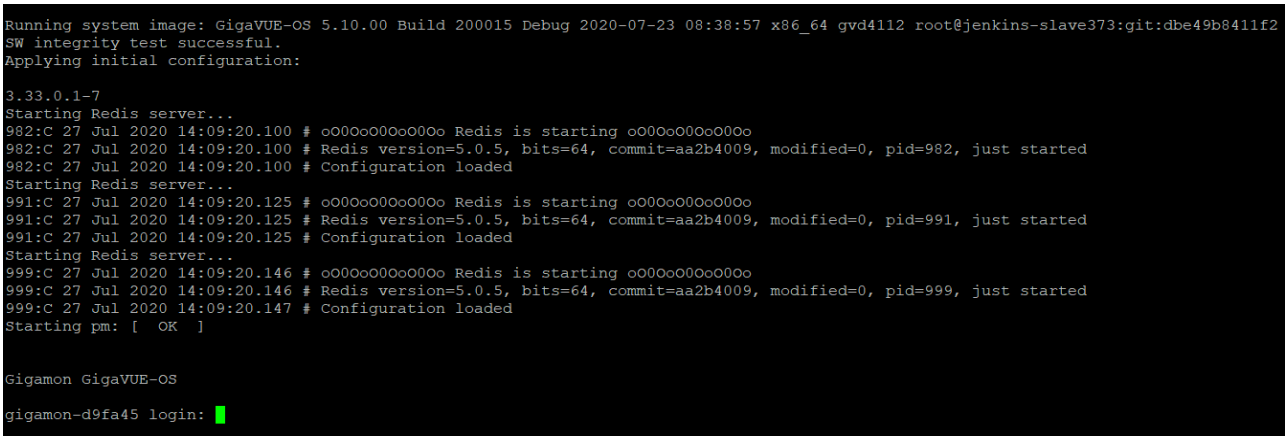
ONIE:/ # onie-nos-install /tmp/image-GigaVUE-OS-x86_64-gvd4112-20200525-181004.img

```
ONIE:/ # onie-nos-install /tmp/image-GigaVUE-OS-x86_64-gvd4112-20200421-120459.img
discover: installer mode detected.
Stopping: discover... done.
ONIE: Executing installer: /tmp/image-GigaVUE-OS-x86_64-gvd4112-20200421-120459.img
Verifying image checksum ... OK.
Preparing image archive ... OK.
Installing GIGAMON OS in ONIE
```

[1]

Configuration Using CLI (Command Line Interface)

When the installation is complete, the system will automatically reboot and prompt you to log in to the GigaVUE-OS image.



1. Log in and proceed with the default configuration wizard as shown below:

```
GigaVUE-OS configuration wizard

Do you want to use the wizard for initial configuration? yes

Step 1: Hostname? [gigamon-d9fa45] DELL-S4112F-ON
Step 2: Management Interface <eth0> ? [eth0]
Step 3: Use DHCP on eth0 interface? [yes]
Step 4: Enable IPv6? [yes]
Step 5: Enable IPv6 autoconfig (SLAAC) on eth0 interface? [no]
Step 6: Enable DHCPv6 on eth0 interface? [yes]
Step 7: Enable SNMP communities? [no]
Step 8: Enable secure cryptography? [no]
Step 9: Minimum password length? [8]
Step 10: Admin password (Enter to leave unchanged)?
Step 11: Cluster enable? [no]
Step 12: Box-id for the chassis? [1]

You have entered the following information:

   1. Hostname: DELL-S4112F-ON
   2. Management Interface <eth0> : eth0
   3. Use DHCP on eth0 interface: yes
   4. Enable IPv6: yes
   5. Enable IPv6 autoconfig (SLAAC) on eth0 interface: no
   6. Enable DHCPv6 on eth0 interface: yes
   7. Enable SNMP communities: no
   8. Enable secure cryptography: no
   9. Minimum password length: 8
   10. Admin password (Enter to leave unchanged): (unchanged)
   11. Cluster enable: no
   12. Box-id for the chassis: 1

To change an answer, enter the step number to return to.
Otherwise hit <enter> to save changes and exit.

Choice:

Configuration saved to database 'initial'

Configuration changes saved.

To return to the wizard from the CLI, enter the "configuration jump-start"
command from configure mode.  Launching CLI...

Software Version: GigaVUE-OS 5.10.00 200015 Debug 2020-07-23 08:38:57
System in classic mode.
DELL-S4112F-ON >
```

2. When you are done, your entries will be played back to you.

3. Enter the step number to revise an entry or press **Enter** to save the configuration and exit.

Refer to"GigaVUE Administration Guide" to administer the GigaVUE-OS and GigaVUE-FM software.

Device Configuration Commands

Use these CLI commands to configure a DELL S4112F-ON platform:

```
DELL-S4112F-ON # configure terminal
DELL-S4112F-ON (config) # chassis box-id 1
DELL-S4112F-ON (config) # card slot 1
DELL-S4112F-ON (config) # port 1/1/x1 params admin enable
```

NOTE: You will need licenses to enable the ports and the admin user role. Refer to the Prerequisites section. The command **`(config) #chassis box-id 1`** is not required if you are using the configuration wizard.

License Installation Commands

Use these commands to install the license from GigaVUE-OS CLI or GigaVUE-FM:

```
DELL-S4112F-ON (config) # license install box-id 1 key *****
DELL-S4112F-ON (config) # show license
```

Device Show Commands (Traffic)

Use these show commands to monitor device traffic :

```
DELL-S4112F-ON (config) # show chassis
DELL-S4112F-ON (config) # show cards
DELL-S4112F-ON (config) # show port
```

Device Status Show Commands (Environment)

Use these show commands to monitor the device environment:

```
DELL-S4112F-ON (config) # show environment
DELL-S4112F-ON (config) # show environment type psu
DELL-S4112F-ON (config) # show environment type temperature
DELL-S4112F-ON (config) # show environment type fan
DELL-S4112F-ON (config) # show environment type temperature threshold
DELL-S4112F-ON (config) # show environment psu-detail all
```

Supported Devices

The DELL S4112F-ON platform supports interoperability with GigaVUE-HC1, GigaVUE-HC3 (CCv1,CCv2) GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100 and GigaVUE-TA200 respectively .

Supported Functionality

Once you install the required License for DELL S4112F-ON ,the features and functionalities that can be accessed are as follows:

Features	Description	Refer To
Web-Based or CLI based Management	Manage operations via a Web GUI or via CLI .	*'GigaVUE Fabric Management'* from GigaVUE Fabric Management Guide *'Introducing the GigaVUE-OS CLI'* from GigaVUE-OS CLI Reference Guide
Scalable Port Density	Configure ports with pluggable transceivers 1Gb, 10Gb, 40Gb, 100Gb multi-mode and single-mode fiber. Compatible with SFP, SFP+, QSFP+ and QSFP28 MSA compliant transceivers as well.	GigaVUE-OS Compatibility and Interoperability Matrix
Port Configurability	Allows you to be flexible in using the ports as ingress, intermediate, interconnect, egress functions ,unidirectional and bi-directional ports. Tunnel Termination by L2GRE or VXLAN is also available to access traffic over an IP network.	*'About Ports'* from GigaVUE Fabric Management Guide
Flow Mapping	Allows you to direct traffic arriving on network ports to one or more tool ports based on different packet criteria, including VLAN IDs, IP addresses, port ranges, protocols, bit patterns, and so on. Filter traffic up to 4k map rule and load balancing from layers 2 to 4 hashing criteria.	*'Flow Mapping'* from GigaVUE Fabric Management Guide
VLAN port tagging	Tags the point of source of traffic	*'Ingress and Egress VLAN Tagging'* from GigaVUE Fabric Management Guide
Device and Link discovery with ARP and LLDP	Reduces time to install and configure GigaVUE nodes	*'Manage Nodes and Clusters'* from GigaVUE Fabric Management Guide
Clustering	Enables resilient traffic forwarding and manage up to 32 nodes in a cluster as a single virtual node. An advanced feature license is required to enable this functionality.	*'Create and Manages Clusters'* from GigaVUE Fabric Management Guide
Fabric Maps	Enact end-to-end Flow Mapping, across clusters, scaling to hundreds of nodes. An advanced feature license is required to enable this functionality.	*'About Fabric Maps'* from GigaVUE Fabric Management Guide
L2GRE/VXLAN	• Tunnel Encapsulation-Back-haul across IP networks to central sites or cloud-based tools. • Tunnel Decapsulation-Facilitate traffic forwarding from cloud or virtual infrastructures An advanced feature license is required to enable this functionality.	*'Traffic Intelligence'* from GigaVUE Fabric Management Guide

Limitations

The below given are few limitations as per current release when you access GigaVUE-OS on DELL S4112F-ON:

- DELL optics are not supported.
- VXLAN Header -Stripping is not supported.
- Interoperability with GigaVUE-TA25 platform is not supported.
- Stacking on 10G, 40G and 4x10G breakout ports is not supported.

Troubleshoot Dell S4112F-ON Issues

This section lists issues related to DELL S4112F-ON and the steps to troubleshoot such issues. Refer to the following sections for details:

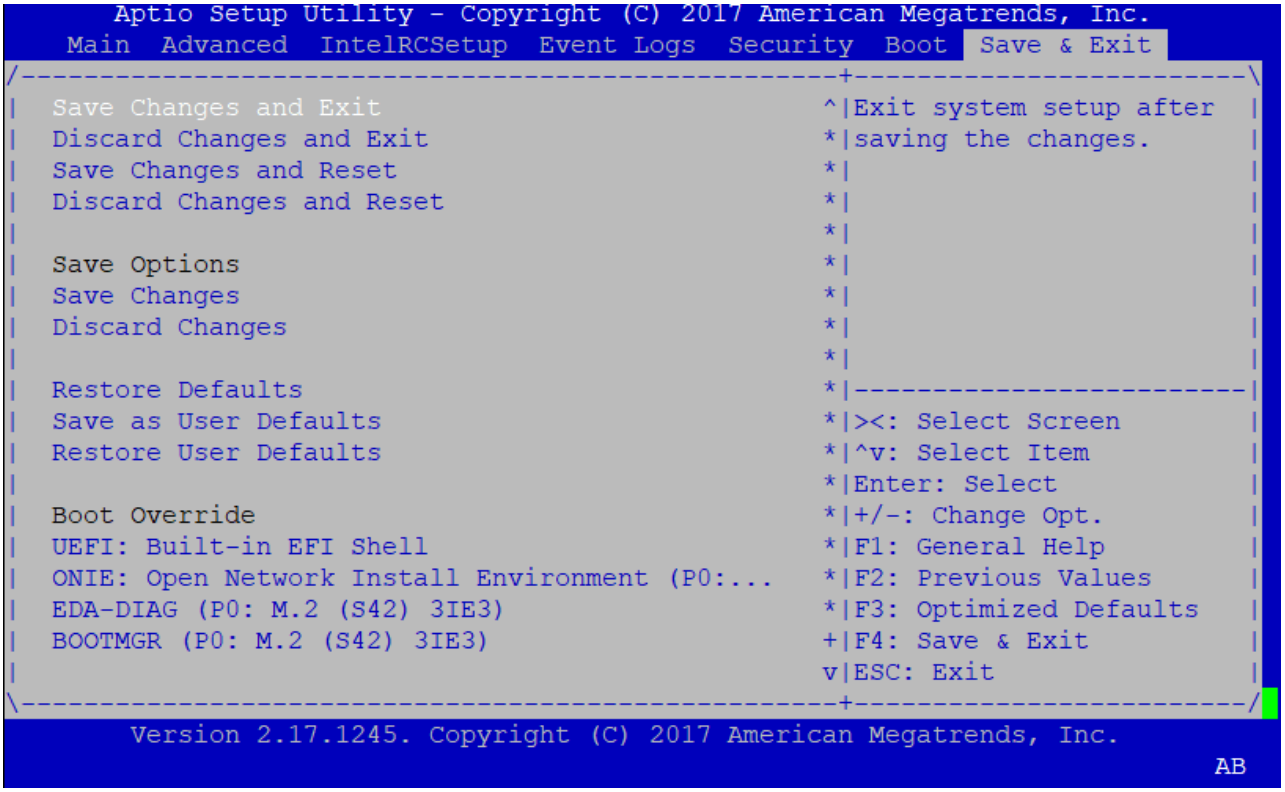
- DELL S4112F-ON enters GRUB Rescue Mode
- DELL S4112F-ON prevented from booting the GigaVUE-OS image

DELL S4112F-ON enters GRUB Rescue Mode

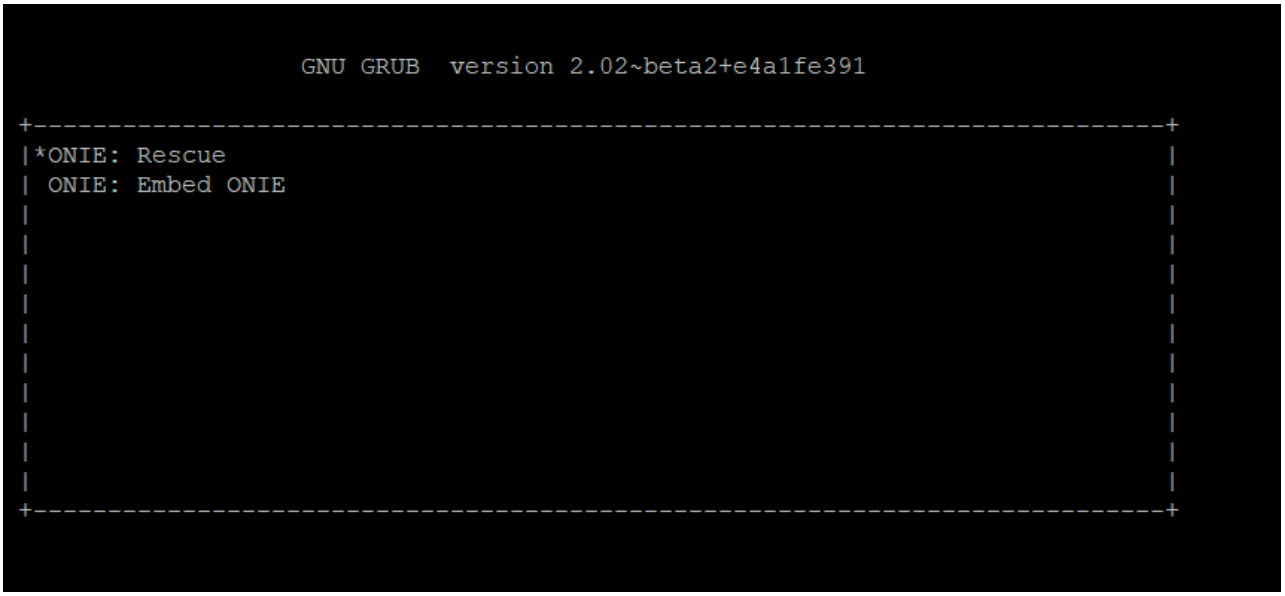
Problem Description: The DELL S4112F-ON enters in to a GRUB rescue mode due corrupted ONIE files.

Corrective Action: Perform the following tasks to troubleshoot the issue:

1. Plug-in a Golden USB, this is the bootable or recovery USB .
2. Power cycle the device.
3. Press **DELETE** when prompted and you will get the below 'Setup Utility' menu. Go to 'Boot Override' section and select the plugged in USB device then click on *"Save Changes and Exit "* and press **F4** key .
4. The system will now boot with the ISO image present in the USB and will enter into GRUB Menu with ONIE Rescue and Embed ONIE options.



5. Select "*ONIE: Rescue*" option from the below GRUB Menu. Once it is in Resume mode in ONIE prompt, reboot the device. This will mount the file system and assign an IP address using DHCP and then will enter *"Rescue Mode"*.



6. Use the "^" and "v" key to select an entry. Press 'ENTER' to booth the selected OS , 'e' to edit the command before booting and 'c' for command-line.
7. The command lines for '*ONIE: Rescue*' is as follows

```
ONIE: Rescue Mode ...

Info: Using eth0 MAC address: 88:6f:d4:be:25:5d
Info: eth0: Checking link... up.
Info: Trying DHCPv4 on interface: eth0


ONIE: Using DHCPv4 addr: eth0: 10.60.95.28 / 255.255.240.0

Starting: dropbear ssh daemon... done.
Starting: telnetd... done.
discover: Rescue mode detected. Installer disabled.
```

8. Press 'ENTER' to activate the console. To check the install status use: *inspect /var/log/onie.log*.

```
** Rescue Mode Enabled **
ONIE-RECOVERY:/ #
ONIE-RECOVERY:/ # reboot
```

9. Once the system reboots and starts with GRUB Menu, Select *"ONIE: EMBED"* option from the GRUB menu. This will enable the device to get ONIE installed on *"/dev/sda"*, update the ONIE firmware and restart the system.

```
ONIE: Embedding ONIE ...
Platform : x86_64-dellemc_s4100_c2338-r0
Version : 3.33.1.1-7
Build Date: 2018-08-09T11:43-0700
Info: Mounting kernel filesystems... done.

** ONIE Update Mode Enabled **

ONIE-RECOVERY:/ # ONIE: Success: Firmware update URL: file:///lib/onie/onie-updater
ONIE: Success: Firmware update version: 3.33.1.1-7
ONIE: Rebooting...
discover: ONIE embed mode detected.
Stopping: discover...start-stop-daemon: warning: killing process 16332: No such process
done.
```

10. Once the system reboots and starts with GRUB menu, install the GigaVUE-OS image.

> **NOTE:** Remove the bootable USB before installing a GigaVUE-OS image.

DELL S4112F-ON prevented from booting the GigaVUE-OS Image

Problem Description: Sometimes, after recovering the device from an issue ,the Golden USB or recovery USB is not removed . This can prevent the device from booting with GigaVUE-OS.

Corrective Action: Follow below steps to troubleshoot the issue:

1. To confirm the USB presence in the device, type *"lsusb"* from ONIE prompt, then the below highlighted 3rd partition will appear.

```
ONIE:/ # lsusb
Bus 001 Device 002: ID 8087:07db
Bus 001 Device 001: ID 1d6b:0002
Bus 001 Device 003: ID 0781:5567
ONIE:/ #
```

2. Remove the USB from the device and perform a reboot from ONIE prompt or power cycle the device.

Additional Sources of Information

This appendix provides additional sources of information. Refer to the following sections for details:

- Documentation
- Documentation Feedback
- Contact Technical Support
- Contact Sales
- The VÜE Community

Documentation

This table lists all the guides provided for GigaVUE-OS software and hardware. The first row provides an All-Documents Zip file that contains all the guides in the set for the release.

NOTE: In the online documentation, view What's New to access quick links to topics for each of the new features in this Release; view Documentation Downloads to download all PDFs.

Table 1: Documentation Set for Gigamon Products

GigaVUE-OS 5.13 Hardware and Software Guides
DID YOU KNOW? If you keep all PDFs for a release in common folder, you can easily search across the doc set by opening one of the files in Acrobat and choosing **Edit > Advanced Search** from the menu. This opens an interface that allows you to select a directory and search across all PDFs in a folder.
Hardware how to unpack, assemble, rackmount, connect, and initially configure ports the respective GigaVUE-OS devices; reference information and specifications for the respective GigaVUE-OS devices
GigaVUE-HC1 Hardware Installation Guide
GigaVUE-HC3 Hardware Installation Guide
GigaVUE-HC1-Plus Hardware Installation Guide
GigaVUE-HCT Hardware Installation Guide
GigaVUE-TA25 Hardware Installation Guide
GigaVUE-TA25E Hardware Installation Guide
GigaVUE-TA100 Hardware Installation Guide
GigaVUE-TA200 Hardware Installation Guide
GigaVUE-TA200E Hardware Installation Guide
GigaVUE-TA400 Hardware Installation Guide

GigaVUE-OS 5.13 Hardware and Software Guides
GigaVUE-OS Installation Guide for DELL S4112F-ON
G-TAP A Series 2 Installation Guide
GigaVUE M Series Hardware Installation Guide
GigaVUE-FM Hardware Appliances Guide
Software Installation and Upgrade Guides
GigaVUE-FM Installation, Migration, and Upgrade Guide
GigaVUE-OS Upgrade Guide
GigaVUE V Series Migration Guide
Fabric Management and Administration Guides
GigaVUE Administration Guide covers both GigaVUE-OS and GigaVUE-FM
GigaVUE Fabric Management Guide how to install, deploy, and operate GigaVUE-FM; how to configure GigaSMART operations; covers both GigaVUE-FM and GigaVUE-OS features
Cloud Guides how to configure the GigaVUE Cloud Suite components and set up traffic monitoring sessions for the cloud platforms
GigaVUE V Series Applications Guide
GigaVUE V Series Quick Start Guide
GigaVUE Cloud Suite Deployment Guide - AWS
GigaVUE Cloud Suite Deployment Guide - Azure
GigaVUE Cloud Suite Deployment Guide - OpenStack
GigaVUE Cloud Suite Deployment Guide - Nutanix
GigaVUE Cloud Suite Deployment Guide - VMware (ESXi)
GigaVUE Cloud Suite Deployment Guide - VMware (NSX-T)
GigaVUE Cloud Suite Deployment Guide - Third Party Orchestration
Universal Cloud TAP - Container Deployment Guide
Gigamon Containerized Broker Deployment Guide
GigaVUE Cloud Suite Deployment Guide - AWS Secret Regions
GigaVUE Cloud Suite Deployment Guide - Azure Secret Regions

GigaVUE-OS 5.13 Hardware and Software Guides
Reference Guides
GigaVUE-OS CLI Reference Guide library of GigaVUE-OS CLI (Command Line Interface) commands used to configure and operate GigaVUE HC Series and GigaVUE TA Series devices
GigaVUE-OS Security Hardening Guide
GigaVUE Firewall and Security Guide
GigaVUE Licensing Guide
GigaVUE-OS Cabling Quick Reference Guide guidelines for the different types of cables used to connect Gigamon devices
GigaVUE-OS Compatibility and Interoperability Matrix compatibility information and interoperability requirements for Gigamon devices
GigaVUE-FM REST API Reference in GigaVUE-FM User's Guide samples uses of the GigaVUE-FM Application Program Interfaces (APIs)
Release Notes
GigaVUE-OS, GigaVUE-FM, GigaVUE-VM, G-TAP A Series, and GigaVUE Cloud Suite Release Notes new features, resolved issues, and known issues in this release ; important notes regarding installing and upgrading to this release **NOTE:** Release Notes are not included in the online documentation. **NOTE:** Registered Customers can log in to My Gigamon to download the Software and Release Notes from the Software and Docs page on to My Gigamon. Refer to How to Download Software and Release Notes from My Gigamon.
In-Product Help
GigaVUE-FM Online Help how to install, deploy, and operate GigaVUE-FM.

How to Download Software and Release Notes from My Gigamon

Registered Customers can download software and corresponding Release Notes documents from the **Software & Release Notes** page on to My Gigamon. Use the My Gigamon Software & Docs page to download:

- Gigamon Software installation and upgrade images,
- Release Notes for Gigamon Software, or
- Older versions of PDFs (pre-v5.7).

To download release-specific software, release notes, or older PDFs:

1. Log in to My Gigamon.
2. Click on the **Software & Release Notes** link.
3. Use the **Product** and **Release** filters to find documentation for the current release. For example, select Product: "GigaVUE-FM" and Release: "5.6," enter "pdf" in the search box, and then click **GO** to view all PDF documentation for GigaVUE-FM 5.6.xx.

NOTE: My Gigamon is available to registered customers only. Newer documentation PDFs, with the exception of release notes, are all available through the publicly available online documentation.

Documentation Feedback

We are continuously improving our documentation to make it more accessible while maintaining accuracy and ease of use. Your feedback helps us to improve. To provide feedback and report issues in our documentation, send an email to: documentationfeedback@gigamon.com

Please provide the following information in the email to help us identify and resolve the issue. Copy and paste this form into your email, complete it as able, and send. We will respond as soon as possible.

Documentation Feedback Form		
About You	**Your Name**	
	Your Role	
	Your Company	
For Online Topics	**Online doc link**	*(URL for where the issue is)*
	Topic Heading	*(if it's a long topic, please provide the heading of the section where the issue is)*
For PDF Topics	**Document Title**	*(shown on the cover page or in page header)*
	Product Version	*(shown on the cover page)*
	Document Version	*(shown on the cover page)*
	Chapter Heading	*(shown in footer)*
	PDF page #	*(shown in footer)*

How can we improve?	**Describe the issue**	*Describe the error or issue in the documentation.* *(If it helps, attach an image to show the issue.)*
	How can we improve the content? **Be as specific as possible.**	
	Any other comments?	

Contact Technical Support

For information about Technical Support: Go to **Settings** **> Support > Contact Support** in GigaVUE-FM.

You can also refer to https://www.gigamon.com/support-and-services/contact-support for Technical Support hours and contact information.

Email Technical Support at support@gigamon.com.

Contact Sales

Use the following information to Gigamon channel partner or Gigamon sales representatives.

Telephone: +1.408.831.4025

Sales: inside.sales@gigamon.com

Partners: www.gigamon.com/partners.html

Premium Support

Email Gigamon at inside.sales@gigamon.com for information on purchasing 24x7 Premium Support. Premium Support entitles you to round-the-clock phone support with a dedicated Support Engineer every day of the week.

The VÜE Community

The VÜE Community is a technical site where Gigamon users, partners, security and network professionals and Gigamon employees come together to share knowledge and expertise, ask questions, build their network and learn about best practices for Gigamon products.

Visit the VÜE Community site to:

- Find knowledge base articles and documentation
- Ask and answer questions and learn best practices from other members.
- Join special-interest groups to have focused collaboration around a technology, use-case, vertical market or beta release
- Take online learning lessons and tutorials to broaden your knowledge of Gigamon products.
- Open support tickets (Customers only)
- Download the latest product updates and documentation (Customers only)

The VÜE Community is a great way to get answers fast, learn from experts and collaborate directly with other members around your areas of interest.

Register today at community.gigamon.com

Questions? Contact our Community team at community@gigamon.com.