

# **VEP4600 Operating System Installation Guide**

March 2020

## 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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<b>1 VEP4600 overview</b> .....	<b>5</b>
<b>2 VEP4600 start up and serial console connection</b> .....	<b>6</b>
<b>3 VEP4600 configuration guidelines</b> .....	<b>10</b>
<b>4 Update to the Latest DiagOS</b> .....	<b>11</b>
Burn DiagOS ISO image onto a bootable USB .....	11
Configure BIOS to install DiagOS from a bootable USB.....	11
DiagOS Installation.....	13
Configure BIOS and boot into DiagOS.....	14
Update to the latest DiagTools.....	15
<b>5 Upgrade Firmware through DiagOS</b> .....	<b>17</b>
Check the existing firmware version.....	17
Copy the Unified Firmware Updater to USB.....	17
Mount_USB_on_the_VEP4600.....	18
Run the Unified Firmware Updater through USB.....	18
<b>6 Upgrade Firmware through BMC</b> .....	<b>21</b>
Check the existing firmware version.....	21
Configure BMC Management Address in BIOS.....	21
Configure BMC Management address on BMC console.....	23
Run the Unified Firmware Updater from a Linux server.....	23
<b>7 Upgrade rNDC Firmware workaround</b> .....	<b>27</b>
Upgrade rNDC firmware when ESXi is running on VEP4600.....	27
Upgrade rNDC firmware when CentOS is running on VEP4600.....	27
<b>8 Prepare bootable USB with OS ISO image</b> .....	<b>31</b>
Prepare bootable USB.....	31
Download Rufus.....	31
<b>9 Configure BIOS and Install RHEL OS</b> .....	<b>34</b>
Configure BIOS to Boot From USB.....	34
Install Red Hat OS.....	35
Start Red Hat OS installation.....	43
Configure BIOS to boot from SSD.....	46
<b>10 Configure BIOS and Install Ubuntu OS</b> .....	<b>49</b>
Configure BIOS to boot from USB .....	49
Ubuntu OS installation.....	52
Configure BIOS to boot from SSD.....	58

<b>11 Configure BIOS and Install Adva OS.....</b>	<b>60</b>
Configure BIOS to boot from USB.....	60
ADVA OS Installation.....	62
Configure BIOS to boot from SSD.....	63
<b>12 Configure BIOS and Install ESXi OS.....</b>	<b>66</b>
Configure BIOS to boot from USB.....	66
Install ESXi OS.....	69
Configure BIOS to boot from SSD.....	72
Logging into ESXi.....	72
Configuring the network on ESXi.....	74
How to add ESXi license.....	76

## VEP4600 overview

The VEP4600 platform is a one rack unit, x86-based networking platform running virtualized universal customer premise equipment (uCPE) functions, and basic switching/routing functions as a top-of-rack device with 4, 8, or 16 cores.



**Figure 1. VEP4600 platform**

- |                                 |   |
|---------------------------------|---|
| 1. Platform status icon LEDs    | 2. RS-232 ports (top) and 10/100/1000 Base-T ports (bottom) |
| 3. SFP+ ports                   | 4. Luggage tag  |
| 5. 1000 Base-T networking ports | 6. Processor power on/off button                            |
| 7. Micro USB-B port             | 8. USB Type A ports   |

For detailed information about the VEP4600 platform, see the following documents at <https://www.dell.com/support>:

- *BMC User Guide*
- *BIOS User Guide*
- *VEP4600 Installation Guide*
- *VEP4600 Setup Guide*
- *uCPE Networking DIAG OS Guide*

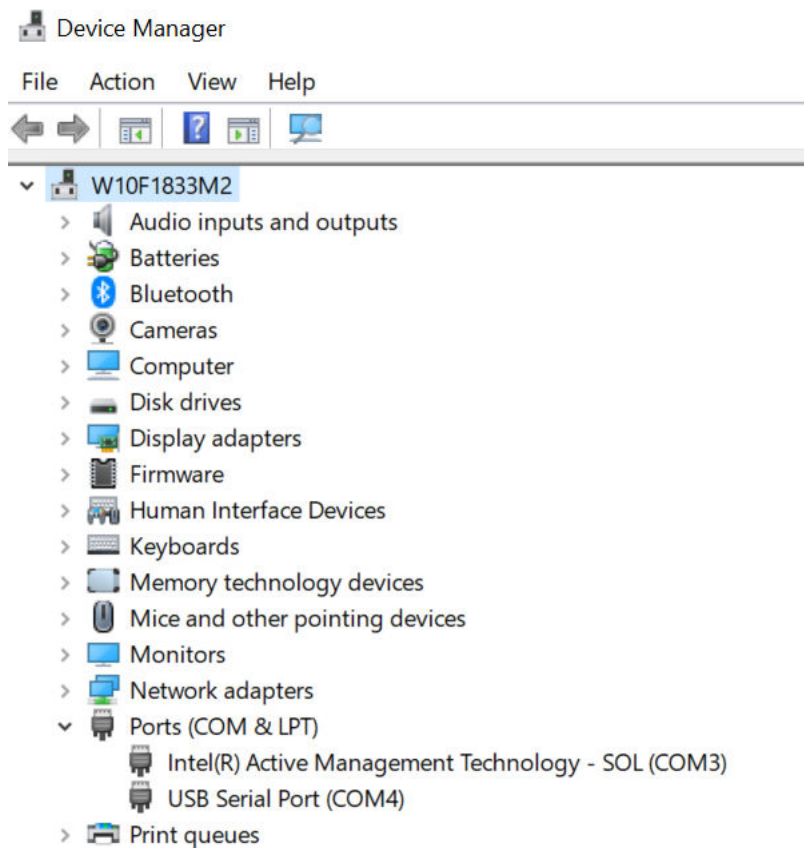
This document describes the steps for OS installation on VEP4600 device. The OS installation steps are tested and verified on VEP4600 device with the OS versions listed below.

- *DiagOS image: `diagos-recovery-x86_64-dellemc_vep4600_d21xyt-r0.3.41.3.81-6.iso`*
- *RHEL OS image: `rhel-server-7.5-x86_64-dvd.iso`*
- *Ubuntu OS image: `ubuntu-18.10-live-server-amd64.iso`*
- *Adva OS image: `SVCS_connector-18.3.2.61-18.3-standard-dell.134.iso`*
- *ESXi OS image: `VMware-VMvisor-Installer-6.7.0.update01-10764712.x86_64-DellEMC_Customized-A03.iso`*

# VEP4600 start up and serial console connection

1. On a laptop connected to the VEP4600, bring up Windows Device Manager to get the COM port.

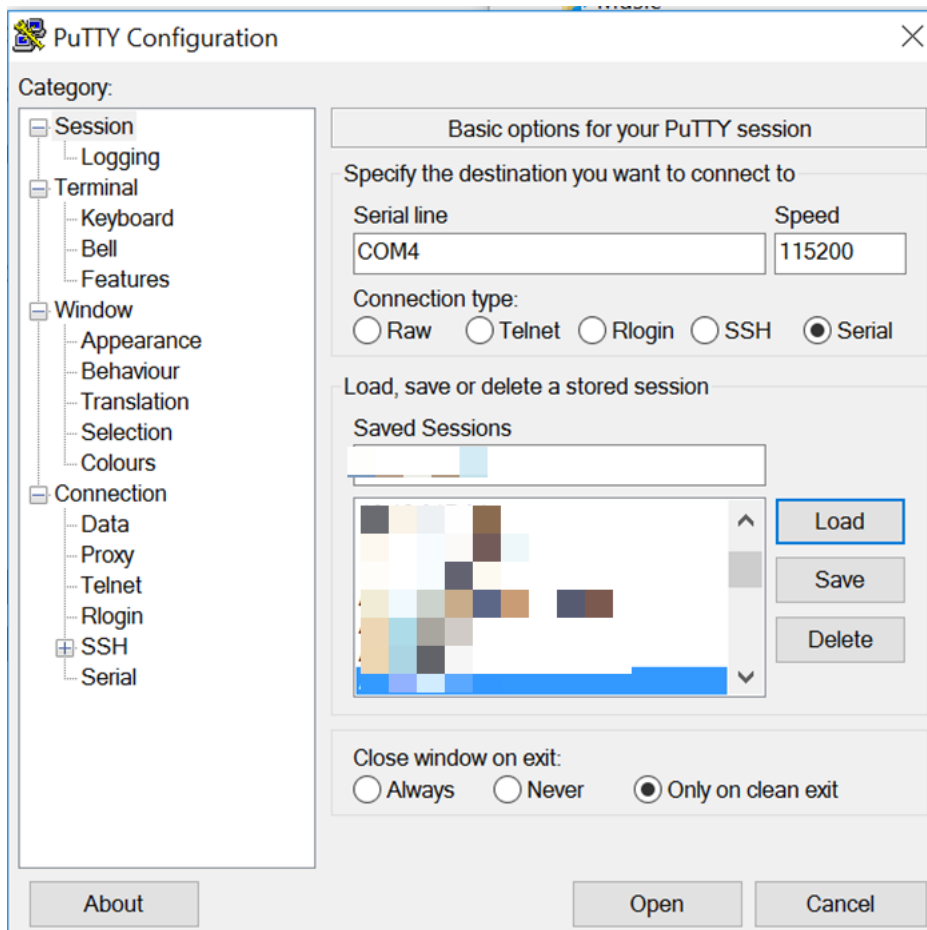
Windows Device Manager



It's the USB Serial Port drive in this case for our USB to serial console adapter. The COM port number is 4.

2. Using Putty, configure a console connection with the right COM port and speed.

PuTTY session options



3. Plug in a power cord to the back of VEP4600. It starts to power up immediately. Watch for VEP4600 console window.  
VEP4600 console window

BIOS Boot Selector for VEP-4600  
Primary BIOS Version 3.41.0.9-14

CPLD Version:1.0  
CPLD Reset Source=0x44

POST Configuration  
CPU Signature 50654  
CPU FamilyID=6, Model=55, SteppingId=4, Processor=0  
Microcode Revision 2000057  
Platform ID: 0x1000000000000000  
PKG\_CST\_CFG\_CTL: 0x3  
Misc EN: 0x4000840088  
Gen PM Con1: 0x0  
Therm Status: 0x8000000  
POST Control=0xEA000301, Status=0xE600FF00

BIOS initializations...

POST:  
RTC Battery OK at last cold boot  
RTC date 8/22/2019 4:18:29

POST SPD test ..... PASS

POST Lower DRAM Memory test .....  
DRAM Interface test .....  
Perf cnt (curr, fixed): 0x13E3512956, 0x13EC46B39C  
POST Lower DRAM Memory test ..... PASS  
POST Lower DRAM ECC check ..... PASS

After the POST Lower DRAM Memory test text displays, the cursor moves to the upper left corner of the console window.  
Curser



4. Press the **Delete** button until the **Press <DEL> ...** string displays on the console window.

Console window

```
Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.  
BIOS Date: 04/11/2018 02:44:05 Ver: 0ACJF020  
Press <DEL> or <F2> to enter setup.
```

**NOTE:** If you miss the setup screen, a boot up screen displays. If this happens, power cycle the VEP4600 and press the **Delete** button. Repeat the process until you see the setup screen.

Setup screen



```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main  Advanced  Platform Configuration  Socket Configuration >
-----+-----
BIOS Information                                ^| Choose the system
BIOS Vendor      American Megatrends          *| default language
Core Version     5.14                          *|
Compliance      UEFI 2.6; PI 1.4              *|
Project Version  3.41.0.9-14                   *|
Build Date and Time 04/10/2019 00:01:36      *|
Access Level     Administrator                 *|
*|
Platform Information                             *|
Platform         TypeYubaCityRP               *|
Processor        50654 - SKX M0               *|-----+-----
PCH              - B2-D                       *| ><: Select Screen
RC Revision      06D25                         *| ^v: Select Item
*| Enter: Select
*| +/-: Change Opt.
*| F1: General Help
*| F2: Previous Values
+| F3: Optimized Defaults
+| F4: Save & Exit
v| ESC: Exit
-----+-----
System Language      [English]
Version 2.20.1271. Copyright (C) 2019 American Megatrends, Inc.

```

# VEP4600 configuration guidelines

## Topics

- Types of VEP4600 with pre-installed OS from manufacturing
- Guidelines for upgrading VEP4600 based on manufacturing configuration

This section describes the steps to take to complete the VEP4600 configuration. The VEP4600 will arrive from manufacturing with one of the following configurations.

- Config1: VEP4600 preinstalled with ESXi
- Config2: VEP4600 preinstalled with DiagOS
- Config3: VEP4600 preinstalled with Versa flex NFV

### **Config1 – ESXi v6.7 Ux is installed on the VEP4600:**

- Update firmware from the BMC - See [Upgrade Firmware through BMC](#)

### **Config2 – DiagOS is installed on the VEP4600:**

- Update to the latest version of DiagOS - See [Upgrade Firmware through DiagOS](#)
- Update the firmware.

### **Config3 – Versa flex NFV is installed on the VEP4600:**

- Update firmware from the BMC - See [Upgrade Firmware through BMC](#)

# Update to the Latest DiagOS

This section describes the steps to take to update the DiagOS if your VEP4600 arrived from Dell with the DiagOS as the only operating system. Updating the DiagOS is required prior to updating any other firmware.

## Topics:

- [Burn DiagOS ISO image onto a bootable USB](#)
- [Configure BIOS to install DiagOS from a bootable USB](#)
- [DiagOS Installation](#)
- [Configure BIOS and boot into DiagOS](#)
- [Update to the latest DiagTools](#)

## Burn DiagOS ISO image onto a bootable USB

1. Insert the USB into a Linux computer.
2. Log in to the Linux OS and mount the USB.
3. Download the DIAG OS .ISO image to the Linux computer using TCP, SCP, or a similar protocol.
4. Use the following dd (data duplicator) Linux command to burn the DIAG OS install image to the USB.

```
dd if= diagos-recovery-x86_64-dellemc_vep4600_d21xyt-r0.3.41.3.81-6.iso of=/dev/sdb bs=4M
```

**NOTE:** Use `/dev/sdb`, not `sdb#` number even if `fdisk` did show `sdb#` as one of the USBs plugged in.

Device	Boot	Start	End	Sectors	Size	Id	Type
/dev/sdb1	*	7516	7899	384	192K	ef	EFI (FAT-12/16/32)

5. Remove the USB from the Linux computer and plug it into the VEP4600. Reboot the system and go to BIOS settings.

## Configure BIOS to install DiagOS from a bootable USB

1. Select the **Boot** menu tab. Using the up and down arrow keys, go down to the UEFI USB Drive BBS Priorities. Boot menu tab

```

Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
< Security Boot Save & Exit
-----
Boot Configuration                               ^|Specifies the Boot
Setup Prompt Timeout                             5          *|Device Priority
Bootup NumLock State                             [On]         *|sequence from available
Quiet Boot                                        [Disabled]   *|UEFI USB Drives.
*|
Boot mode select                                 [UEFI]       *|
*|
FIXED BOOT ORDER Priorities                       *|
Boot Option #1                                   [Hard Disk:UEFI OS
(P3: M.2 (S80) 3ME4)] *|
Boot Option #2                                   [USB Device:UEFI:
Dell Dell USB PMAP,
Partition 1] *|
Boot Option #3                                   [Network]    *|
Boot Option #4                                   [UEFI AP]    *|
-----
> UEFI Hard Disk Drive BBS Priorities
> UEFI USB Drive BBS Priorities
*|><: Select Screen
*|^v: Select Item
*|Enter: Select
*|+/-: Change Opt.
*|F1: General Help
*|F2: Previous Values
+|F3: Optimized Defaults
v|F4: Save & Exit
|ESC: Exit
-----
Version 2.20.1271, Copyright (C) 2018 American Megatrends, Inc.

```

2. Select **UEFI:** then **USB Device:** to boot the DIAG OS from a USB drive.

DIAG OS USB to boot UEFI

```

----- Boot Option #1 -----
| UEFI: Dell Dell USB PMAP, Partition 1
| UEFI: Generic Flash Disk 8.07
| UEFI: Generic Flash Disk 8.07, Partition 1
| Disable

```

DIAG OS USB to boot USB device

```

----- Boot Option #1 -----
| Hard Disk:UEFI OS (P3: M.2 (S80) 3ME4)
| USB Device:UEFI: Generic Flash Disk 8.07, Partition 1
| Network
| UEFI AP
| Disabled

```

3. Verify that Boot Option 1 lists the DIAG OS USB as the boot option.

Boot Option 1

```

Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
< Security Boot Save & Exit

-----+-----
Boot Configuration                               ^|Sets the system boot
Setup Prompt Timeout                             5          *|order
Bootup NumLock State                             [On]         *|
Quiet Boot                                        [Disabled]   *|
                                                    *|
Boot mode select                                 [UEFI]       *|
                                                    *|
FIXED BOOT ORDER Priorities                       *|
Boot Option #1                                   [USB Device:UEFI:
Generic Flash Disk                               *|-----
8.07, Partition 1]                             *|><: Select Screen
Boot Option #2                                   [Hard Disk:UEFI OS
(P3: M.2 (S80) 3ME4)] *|^v: Select Item
Boot Option #3                                   [Network]    *|Enter: Select
Boot Option #4                                   [UEFI AP]    *|+/-: Change Opt.
                                                    *|F1: General Help
                                                    *|F2: Previous Values
> UEFI Hard Disk Drive BBS Priorities           +|F3: Optimized Defaults
> UEFI USB Drive BBS Priorities                 v|F4: Save & Exit
                                                    |ESC: Exit
-----+-----

Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.

```

4. Press the **F4** key to Save the changes and exit the utility.

Save and Exit prompt

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
< Dell Diagnostics Server Mgmt Security Boot Save & Exit

-----+-----
Save Options                                     ^|Exit system setup after
Save Changes and Exit                           *|saving the changes.
Discard Changes and Exit                         *|
                                                    *|
Save Changes and Reset                           +|
Discard Changes and R/----- Save & Exit Setup -----
                                                    |
Save Changes                                     |
Discard Changes                                  |
                                                    |
Default Options                                  |
Restore Defaults                                 |
Save as User Defaults                             |
Restore User Defaults                             |
                                                    |
Boot Override                                    +|+/-: Change Opt.
UEFI: Built-in EFI Shell                         +|F1: General Help
                                                    +|F2: Previous Values
                                                    +|F3: Optimized Defaults
                                                    v|F4: Save & Exit
                                                    |ESC: Exit
-----+-----

Version 2.20.1271. Copyright (C) 2019 American Megatrends, Inc.

```

5. Confirm saving the configuration by selecting **Yes** and press **Enter**.

6. The system will boot from the USB and start the installation.

## DiagOS Installation

1. Select VEP4600 DiagOS Install.

GNU GRUB version 2.02



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.

2. DiagOS starts Installing.

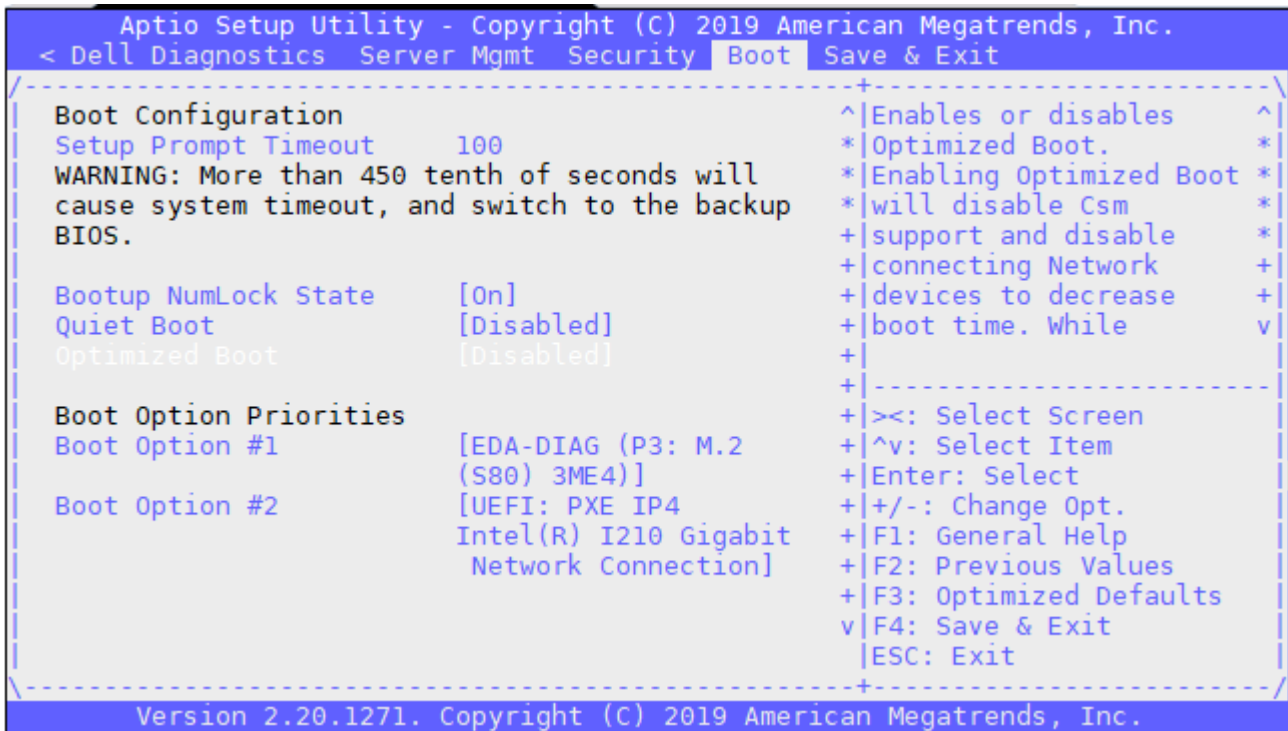
```
Booting `VEP4600 DiagOS Install`  
  
Platform :  
Version  : 3.41.3.81-6  
Build Date: 2019-05-07T00:34-07:00  
█
```

3. After the DIAG OS installation completes, DiagOS will reboot automatically.
4. When the machine reboots, remove the USB.

## Configure BIOS and boot into DiagOS

1. Boot into the BIOS settings again.
2. Select Boot Option number 1 from the Boot configuration screen, to select boot from DIAG OS on the hard disk.

Boot configuration screen

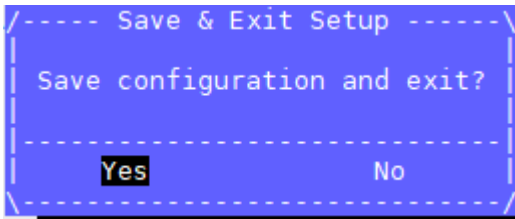


3. Press the **F4** key to Save the changes and exit the utility.



4. Confirm saving the configuration by selecting **Yes** and press **Enter**.

Save & exit



5. The system will boot into the Diag OS and the login command prompt displays.

```
Starting OpenBSD Secure Shell server...
[ OK ] Started OpenBSD Secure Shell server.
Starting Regular background program processing daemon...
[ OK ] Started Regular background program processing daemon.
Starting /etc/rc.local Compatibility...
Starting getty on tty2-tty6 if dbus and logind are not available...
Starting System Logging Service...
Starting Permit User Sessions...
[ OK ] Started Permit User Sessions.
[ OK ] Started System Logging Service.
[ OK ] Started getty on tty2-tty6 if dbus and logind are not available.
[ OK ] Listening on D-Bus System Message Bus Socket.
Starting D-Bus System Message Bus...
[ OK ] Started D-Bus System Message Bus.
[ OK ] Started /etc/rc.local Compatibility.
Starting Getty on tty6...
[ OK ] Started Getty on tty6.
Starting Getty on tty5...
[ OK ] Started Getty on tty5.
Starting Getty on tty4...
[ OK ] Started Getty on tty4.
Starting Getty on tty3...
[ OK ] Started Getty on tty3.
Starting Getty on tty2...
[ OK ] Started Getty on tty2.
Starting Getty on tty1...
[ OK ] Started Getty on tty1.
Starting Serial Getty on ttyS0...
[ OK ] Started Serial Getty on ttyS0.
[ OK ] Reached target Login Prompts.
[ OK ] Reached target Multi-User System.
[ OK ] Reached target Graphical Interface.
Starting Update UTMP about System Runlevel Changes...
[ OK ] Started Update UTMP about System Runlevel Changes.

Debian GNU/Linux 8 dellemc-diag-os ttyS0

dellemc-diag-os login: █
```

6. To login, type `root/calvin`.

## Update to the latest DiagTools

1. Check the Diag Tool version using `dpkg --get-architecture | grep dn-diags-vep4600.deb`

DiagTool Version

```
root@dellemc-diag-os:~# dpkg --list | grep dn-diags-vep4600.deb
ii dn-diags-vep4600.deb_          3.41.4.81-16          amd64          Dell Networking Diagnostics
```

2. If the Diag Tools version is 3.41.4.81-16, upgrade it to the latest 3.41.4.81-17.
3. Copy the latest Diag Tools to the VEP4600.

**NOTE: Diag Tools will contain some file in /opt/dellemc. Remove dellemc file so that no other files exist.**

4. Use `dpkg -i dn-diags-VEP4600-DiagOS-3.41.4.81-17.deb` to install the Diag Tools.

Installing Latest DiagTools

```
root@dellemc-diag-os:~# dpkg -i dn-diags-VEP4600-DiagOS-3.41.4.81-17-2019-04-24.d
Selecting previously unselected package dn-diags-vep4600.deb.
(Reading database ... 20026 files and directories currently installed.)
Preparing to unpack dn-diags-VEP4600-DiagOS-3.41.4.81-17-2019-04-24.deb ...
Unpacking dn-diags-vep4600.deb (3.41.4.81-17) ...
Setting up dn-diags-vep4600.deb (3.41.4.81-17) ...
root@dellemc-diag-os:~# █
```

5. Verify the latest Diag Tools is running: `dpkg --list | grep dn-diags-VEP4600.deb`

```
root@dellemc-diag-os:~# dpkg --list | grep dn-diags-vep4600.deb
ii dn-diags-vep4600.deb          3.41.4.81-17          amd64          Dell Networking Diagnostics
root@dellemc-diag-os:~# █
```



# Upgrade Firmware through DiagOS

This section describes the steps to take to upgrade the VEP4600's firmware if your VEP4600 arrived from Dell with the DiagOS as the only operating system.

The Unified Firmware Updater will need to be copied to a USB and run from the mounted USB.

## Topics:

- [Check the existing firmware version](#)
- [Copy the Unified Firmware Updater to USB](#)
- [Mount USB on the VEP4600](#)
- [Run the Unified Firmware Updater through USB](#)

## Check the existing firmware version


To check the current VEP4600 firmware versions from the DiagOS run the following command:

DiagOS installed: login and type `updatetool -D ALL -V`

## Copy the Unified Firmware Updater to USB

1. Download the Unified Firmware Updater (UFW) from the [Dell support site](#).
2. Unzip `vep4600_ufw_2.8.zip` which contains the Unified Firmware Updater zip file, (`vep4600_ufw_2.8.zip`)

Contents of zip file `vep4600_ufw_2.8.zip`

vep4600_ufw_2.8.zip				
	Name	Type	Modified	Size
<input type="checkbox"/>	 VEP4600-BMC-v2.00.zip	WinZip File	5/14/2019 3:0...	23,403,442
<input type="checkbox"/>	 VEP4600-BIOS-3.41.0.9-15.zip	WinZip File	9/3/2019 3:05...	8,181,875
<input type="checkbox"/>	 vep4600_ufw_2.8.zip	WinZip File	9/4/2019 4:02...	70,695,365
<input type="checkbox"/>	 VEP4600_CPLD_V10.zip	WinZip File	3/28/2019 12:...	44,000

3. Unzip `vep4600_ufw_2.8.zip` file to obtain the `vep4600_ufw_2.8` (Unified Firmware Updater) script.

`vep4600_ufw_2.8.zip` contents

vep4600_ufw_2.8.zip				
	Name	Type	Modified	Size
<input type="checkbox"/>	 <code>vep4600_ufw_2.8.md5.md5</code>	MD5 File	9/4/2019 3:56...	50
<input type="checkbox"/>	 <code>vep4600_ufw_2.8</code>	8 File	9/4/2019 3:56...	70,684,333

4. `vep4600_ufw_2.8` contains the following firmware versions:

- CPLD – 0x10
- BMC – v2.0

- BIOS – 3.41.0.9-15
  - WiFi CPLD image – 0x01
  - rNDC CPLD image – 0x02
  - rNDC nvme images (DUP package – 18.08.200)
5. From a Windows or Linux server, copy the `vep4600_ufw_2.8` file to a USB. (USB size 2GB is sufficient)

## Mount\_USB\_on\_the\_VEP4600

1. Insert the USB into the USB port in the VEP4600 front panel.
2. From the serial console DiagOS:
  - a. Run the command `mkdir /mnt/usb` to create the mount point
  - b. Run the command `mount /dev/sdb /mnt/usb`
3. The USB can take a different device name, but usually VEP4600 DIAG OS assigns `sdb` for the USB. If you run `fdisk -l` the USB is usually one of the last drives in the list.

```
Device      Boot Start          End  Sectors  Size Id Type
/dev/sdb1           32 30031871 30031840 14.3G  c W95 FAT32 (LBA)
```

## Run the Unified Firmware Updater through USB

1. From mounted USB, run the Unified Firmware Updater with the following commands:
  - a. `root@dellemc-diag-os:~# cd /mnt/usb`
  - b. `root@dellemc-diag-os:/mnt/usb# chmod 777 vep4600_ufw_x.x`
  - c. `root@dellemc-diag-os:/mnt/usb# ./vep4600_ufw_x.x interactive`
2. The following menu is displayed below:

```
root@dellemc-diag-os:/mnt/usb# chmod 777 vep4600_ufw_x.x
root@dellemc-diag-os:/mnt/usb# ./vep4600_ufw_x.x interactive
Creating directory images
Verifying archive integrity... 100% MD5 checksums are OK. All good.
Uncompressing release 100%
Selecting previously unselected package zlib1g-dev:amd64.
(Reading database ... 20150 files and directories currently installed.)
Preparing to unpack ../zlib1g-dev_1%3a1.x.x.dfsg-2+b1_amd64.deb ...
Unpacking zlib1g-dev:amd64 (1:1.x.x.dfsg-2+b1) ...
Setting up zlib1g-dev:amd64 (1:1.x.x.dfsg-2+b1) ...
Processing triggers for man-db (2.7.0.2-5) ...
fopen: Permission denied
Selecting previously unselected package libssl-dev:amd64.
(Reading database ... 20181 files and directories currently installed.)
Preparing to unpack ../libssl-dev_1.0.1t-1+deb8u6_amd64.deb ...
Unpacking libssl-dev:amd64 (1.0.1t-1+deb8u6) ...
Setting up libssl-dev:amd64 (1.0.1t-1+deb8u6) ...
Selecting previously unselected package libssl-doc.
(Reading database ... 20267 files and directories currently installed.)
Preparing to unpack ../libssl-doc_1.0.1t-1+deb8u6_all.deb ...
Unpacking libssl-doc (1.0.1t-1+deb8u6) ...
Setting up libssl-doc (1.0.1t-1+deb8u6) ...
Processing triggers for man-db (2.7.0.2-5) ...
fopen: Permission denied
Selecting previously unselected package bc.
(Reading database ... 21629 files and directories currently installed.)
Preparing to unpack diag/bc_1.06.95-9_amd64.deb ...
Unpacking bc (1.06.95-9) ...
Setting up bc (1.06.95-9) ...
Processing triggers for man-db (2.7.0.2-5) ...
fopen: Permission denied

Package version: x.x
Packaged images:
```

```
BMC image: x.x
BIOS image: 3.41.0.x-xx
CPLD image: XxXX
Wifi CPLD image: XxX
Note:If BMC version is less than 1.23 CPLD versions will not be shown correctly
```

1. Automatically update all firmware components
2. BMC image[Primary version:x.x, backup version:1.23]
3. BIOS image[Booted version: 3.41.0.x-xx]
4. CPLD image[CPLD version: XxXX]
5. rNDC left CPLD image[CPLD version: 0x2]
6. rNDC right CPLD image[CPLD version: 0x2]
- q. Exit

Enter your choice:1

3. Enter **1** Automatically update all firmware components.

```
updating ALL images

updating BMC image

*****
* BMC version = x.x *
* Back-up Version = x.x *
*****
Already have x.x programmed

updating BIOS image

*****
* BIOS version = 3.41.0.9-13 *
*****
updating primary image only..
BIOS image is ./VEP4600-BIOS-3.41.0.x-xx.BIN
01
INFO: Yafu INI Configuration File not found... Default options will not be applied...

Creating IPMI session via USB...Done

-----
YAFUFlash - Firmware Upgrade Utility (Version 4.11x.x)
-----

(C)Copyright 2016, American Megatrends Inc.
Beginning BIOS Update...
Uploading Image : 100%... done
Flashing Firmware Image : 100%... done
Verifying Firmware Image : 100%... done
Done with updating image
Will continue to update rest of components
Power cycle cpu to boot new BIOS after update is complete
updating CPLD image
Already have XxXX programmed
updating MC1_CARD CPLD image
Already have 0x2 programmed
WARNING: To avoid damage to your device, do not stop the update or reboot or power off the
system during t update.

Intel(R) Ethernet NVM Update Tool
NVMUpdate version 1.32.20.18
Copyright (C) 2013 - 2018 Intel Corporation.

done updating
Power cycle chassis for updates to take effect

Package version: x.x
Packaged images:
  BMC image: x.x
  BIOS image: 3.41.0.x-xx
```

```
CPLD image: XxXX
Wifi CPLD image: XxX
Note:If BMC version is less than 1.23 CPLD versions will not be shown correctly
```

1. Automatically update all firmware components
2. BMC image[Primary version:x.x, backup version:1.23]
3. BIOS image[Booted version: 3.41.0.x-xx]
4. CPLD image[CPLD version: XxXX]
5. rNDC left CPLD image[CPLD version: 0x2]
6. rNDC right CPLD image[CPLD version: 0x2]
- q. Exit

```
Enter your choice:q
```

4. After firmware upgrade complete, enter **q** to exit.
5. Once all firmware updates are complete, a system power cycle is required either with remote power cycler or manually unplugging and plugging back the power cord.

 **NOTE:** Please note that the power down state should be minimum of 15 seconds for the complete power drain.

# Upgrade Firmware through BMC

This section describes the steps to take to upgrade the VEP4600's firmware if your VEP4600 arrived from Dell with the DiagOS as the only operating system.

## Topics:

- [Check the existing firmware version](#)
- [Configure BMC Management Address in BIOS](#)
- [Configure BMC Management address on BMC console](#)
- [Run the Unified Firmware Updater from a Linux server](#)

## Check the existing firmware version

To check the current VEP4600 firmware versions when an Operating system is installed:

- a. To find the CPLD and BIOS versions:

From the CPU mgmt console:

- ESXi is installed: scroll up to last boot output to see BIOS and CPLD versions
- DiagOS installed: login and type `updatetool -D ALL -V`

- b. To find the BMC version:

From BMC mgmt console: type `ipmitool -I lanplus -H 127.0.0.1 -U admin -P admin mc info`

```
~ # ipmitool -I lanplus -H 127.0.0.1 -U admin -P admin mc info
Device ID           : 32
Device Revision     : 1
Firmware Revision   : 2.00
IPMI Version        : 2.0
Manufacturer ID     : 12290
Manufacturer Name   : Unknown (0x3002)
Product ID          : 1147 (0x047b)
Product Name        : Unknown (0x47B)
Device Available    : yes
Provides Device SDRs : no
```

## Configure BMC Management Address in BIOS

1. From the BMC console window, run the following commands to boot into the BIOS:

```
ipmitool -I lanplus -H 127.0.0.1 -U admin -P admin chassis bootparam set bootflag
force_bios

ipmitool -I lanplus -H 127.0.0.1 -U admin -P admin power reset
```

2. In the BIOS, tab to Server Mgmt menu, then move cursor down to BMC network configuration.

Select BMC network configuration

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
< Dell Diagnostics Server Mgmt Security Boot Save & Exit
-----
| BMC Firmware Revision      1.23                ^|Configure BMC network
| IPMI Version              2.0                  +|parameters
| BMC Interface(s)          KCS, USB             +|
|                            *|
| BMC Support                [Enabled]         *|
| Wait For BMC              [Disabled]         *|
| FRB-2 Timer               [Enabled]         *|
| FRB-2 Timer timeout       [6 minutes]       *|
| FRB-2 Timer Policy        [Do Nothing]       *|
| OS Watchdog Timer         [Disabled]       *|-----
| OS Wtd Timer Timeout      [10 minutes]    *|><: Select Screen
| OS Wtd Timer Policy       [Reset]           *|^v: Select Item
| Serial Mux                [Disabled]       *|Enter: Select
|> System Event Log         *|+/-: Change Opt.
|> BMC self test log        *|F1: General Help
|> View FRU information     *|F2: Previous Values
|> BMC network configuration +|F3: Optimized Defaults
|> View System Event Log    v|F4: Save & Exit
|                            |ESC: Exit
-----

```

3. Move cursor down to highlight, Configuration address source and press **Enter**. Select **Static**.
4. Use **Ctrl-h** to clear the fields and enter your BMC ip address, Subnet mask and Router IP address (gateway address).  
Select Static

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Server Mgmt
-----
| --BMC network configuration--                ^|Select to configure LAN
| *****                                     *|channel parameters
| Configure IPV4 support                       *|statically or
| *****                                     *|dynamically(by BIOS or
|                            *|BMC). Unspecified
| Lan channel 1                               *|option will not modify
| Configuration Address source ---\MC network
| Unspecified                                +|parameters during BIOS
| Current Configuration source               +|
| Address source                             +|
| BMC interface IP address                   +|-----
| Subnet mask                               +|^><: Select Screen
| Station MAC address      D8-9E-F3-BC-56-A9 +|^><: Select Item
| Router IP address        100.67.144.254    +|^><: Select
| Router MAC address       F8-B1-56-84-E1-26 +|^><: Select
|                            *|+/-: Change Opt.
|                            *|F1: General Help
|                            *|F2: Previous Values
|                            *|F3: Optimized Defaults
|                            v|F4: Save & Exit
|                            |ESC: Exit
| *****
-----

```

5. Press the **F4** key to Save the changes and exit the utility.
6. Confirm saving the configuration by selecting Yes and press Enter to boot.
7. Log into the CPU mgmt (DiagOS) console and run the following command:

```

root@dellmc-diag-os:~# ipmitool lan set 1 ipsrc bios -> this will update the /etc/network/interfaces file to
what you have set in the bios

```

# Configure BMC Management address on BMC console

From the BMC console, run the following commands:

```
ipmitool -H 127.0.0.1 -U admin -P admin lan set 1 ipsrc <static or dhcp>
ipmitool -H 127.0.0.1 -U admin -P admin lan set 1 ipaddr xxx.xx.xxx.xx
ipmitool -H 127.0.0.1 -U admin -P admin lan set 1 netmask 255.255.255.0
ipmitool -H 127.0.0.1 -U admin -P admin lan set 1 defgw ipaddr xxx.xx.xxx.254
```

## Run the Unified Firmware Updater from a Linux server

1. Deploy a Linux OS (CentOS, RedHat, Ubuntu) that connects to the VEP4600 BMC network. Can be a VM based Linux server.
2. Verify you can reach the BMC ip address with ipmitool:

```
test@LinuxVM:~/UFW$ ipmitool -I lanplus -H xxx.xx.xx.xxx -U admin -P admin power status
Chassis Power is on
```

3. Run the UFW from the Linux server with the following command:

```
./vep4600_ufw_x.x <BMC IP address> interactive
```

```
test@LinuxVM:~/UFW$ ./vep4600_ufw_x.x xxx.xx.xxx.xx interactive
Creating directory temp
Verifying archive integrity... 100% MD5 checksums are OK. All good.
Uncompressing release 100%
./start.sh: line 20: sh_ver: command not found
firmware_updater/
firmware_updater/VEP4600-BIOS-3.41.0.9-15.BIN
firmware_updater/AZUL_CPLD_V10_refresh.vme
firmware_updater/libcrypto.so.1.0.0
firmware_updater/ipmitool
firmware_updater/AZUL_CPLD_V10_norefresh.vme
firmware_updater/mstr_01_20181226.vme
firmware_updater/MCCARD_mstr_cpld_00_02_201809101600.vme
firmware_updater/libcrypto.so.1.1
firmware_updater/x520/
firmware_updater/x520/Intel_Proprietary_License.pdf
firmware_updater/x520/PIEConfig.sh
firmware_updater/x520/smbiosHelp.txt
firmware_updater/x520/UpdRollBack.lst
firmware_updater/x520/spUtilityHelp.txt
firmware_updater/x520/sagepond_map.txt
firmware_updater/x520/payload/
firmware_updater/x520/payload/BootIMG.CFB
firmware_updater/x520/payload/FmpUpdateWrapper.efi
firmware_updater/x520/PIEInfo.txt
firmware_updater/x520/os_mapping.xml
firmware_updater/x520/en.prop
firmware_updater/x520/duppmdatacollector.bin
firmware_updater/x520/nvmupdate.cfg
firmware_updater/x520/nvmupdate64e
firmware_updater/x520/package.xml
firmware_updater/x520/nvminv.cfg
firmware_updater/x520/BootIMG.FLB
firmware_updater/x520/vpd.txt
firmware_updater/x520/LinuxDepWrapperLinux.bin
firmware_updater/x520/svmExeMsg.xsl
firmware_updater/x520/Version.txt
firmware_updater/x520/uni-eol.txt
firmware_updater/x520/buildVer.sh
```

```

firmware_updater/x520/package.xml.sign
firmware_updater/x520/getSystemId
firmware_updater/x520/shellfit.sh
firmware_updater/x520/aqua_map.txt
firmware_updater/x520/HashOfHashFileList.txt
firmware_updater/x520/spconfig.xml
firmware_updater/x520/OSFlavourUtils.sh
firmware_updater/x520/00-secupd-dell.rules
firmware_updater/x520/mc.txt
firmware_updater/x520/sputility.bin
firmware_updater/x520/spsetup.sh
firmware_updater/x520/sphelp.txt
firmware_updater/x520/98-secupdusb.rules
firmware_updater/firmware.files
firmware_updater/install.sh
firmware_updater/libreadline.so.7
firmware_updater/libfreeipmi.so.16
firmware_updater/VEP4600-BMC-v2.00.ima
firmware_updater/centos7/
firmware_updater/centos7/ipmitool-1.8.18-7.el7.x86_64.rpm
firmware_updater/centos7/OpenIPMI-modalias-2.0.23-2.el7.x86_64.rpm
firmware_updater/x710/
firmware_updater/x710/Intel_Proprietary_License.pdf
firmware_updater/x710/PIEConfig.sh
firmware_updater/x710/smbiosHelp.txt
firmware_updater/x710/08XJ7.txt
firmware_updater/x710/UpdRollBack.lst
firmware_updater/x710/spUtilityHelp.txt
firmware_updater/x710/payload/
firmware_updater/x710/payload/BootIMG.CFB
firmware_updater/x710/payload/FmpUpdateWrapper.efi
firmware_updater/x710/kerby_map.txt
firmware_updater/x710/harbor_map.txt
firmware_updater/x710/PIEInfo.txt
firmware_updater/x710/DX69G.txt
firmware_updater/x710/os_mapping.xml
firmware_updater/x710/en.prop
firmware_updater/x710/duppmdatacollector.bin
firmware_updater/x710/demere_map.txt
firmware_updater/x710/nvmupdate.cfg
firmware_updater/x710/nvmupdate64e
firmware_updater/x710/XD56X.txt
firmware_updater/x710/package.xml
firmware_updater/x710/nvminv.cfg
firmware_updater/x710/6VDPG.txt
firmware_updater/x710/BootIMG.FLB
firmware_updater/x710/vpd.txt
firmware_updater/x710/LinuxDepWrapperLinux.bin
firmware_updater/x710/svmExeMsg.xsl
firmware_updater/x710/6VDPG_1G.txt
firmware_updater/x710/Version.txt
firmware_updater/x710/uni-eol.txt
firmware_updater/x710/buildVer.sh
firmware_updater/x710/Y348Y.txt
firmware_updater/x710/package.xml.sign
firmware_updater/x710/KF46X.txt
firmware_updater/x710/getSystemId
firmware_updater/x710/shellfit.sh
firmware_updater/x710/HashOfHashFileList.txt
firmware_updater/x710/spconfig.xml
firmware_updater/x710/OSFlavourUtils.sh
firmware_updater/x710/00-secupd-dell.rules
firmware_updater/x710/mc.txt
firmware_updater/x710/sputility.bin
firmware_updater/x710/68M95.txt
firmware_updater/x710/spsetup.sh
firmware_updater/x710/sphelp.txt
firmware_updater/x710/98-secupdusb.rules
firmware_updater/x710/DDJKY.txt
firmware_updater/x710/Y5M7N.txt
firmware_updater/diag/
firmware_updater/diag/bc_1.06.95-9_amd64.deb
firmware_updater/diag/libssl-dev_1.0.1t-1+deb8u6_amd64.deb

```



```
firmware_updater/diag/zlib1g-dev_1%3a1.2.8.dfsg-2+b1_amd64.deb
firmware_updater/diag/libssl-doc_1.0.1t-1+deb8u6_all.deb
firmware_updater/Yafuflash
~/UFW/temp ~/UFW/temp
```

```
Package version: x.x
Packaged images:
  BMC image: x.x
  BIOS image: x.xx.x.x-xx
  CPLD image: XxXX
  Wifi CPLD image: XxX
Note:If BMC version is less than 1.23 CPLD versions will not be shown correctly
```

1. Automatically update all firmware components
2. BMC image[Primary version:x.x, backup version:1.23]
3. BIOS image[Booted version: x.xx.x.x-xx]
4. CPLD image[CPLD version: XxXX]
5. rNDC left CPLD image[CPLD version: XxX]
6. rNDC right CPLD image[CPLD version: XxX]
- q. Exit

4. Select the appropriate number of your choice to upgrade the firmware.

```
Enter your choice:1
updating ALL images
updating BMC image

*****
* BMC version = 1.23      *
* Back-up Version = 2.0  *
*****
updating primary image only..
INFO: Yafu INI Configuration File not found... Default options will not be applied...

Creating IPMI session via network with address xxx.xx.xxx.xxx...Done

Continuing with Full Firmware Update

*****
WARNING!
FIRMWARE UPGRADE MUST NOT BE INTERRUPTED ONCE IT IS STARTED.
PLEASE DO NOT USE THIS FLASH TOOL FROM THE REDIRECTION CONSOLE.
*****
Preserving Env Variables... done
Uploading Firmware Image : 100%... done

Uploading Firmware Image : 100%... done
Flashing [boot] Module ....
Flashing Firmware Image : 100%... done
Verifying Firmware Image : 100%... done
Flashing [conf] Module ....
Flashing Firmware Image : 100%... done
Verifying Firmware Image : 100%... done
Flashing [root] Module ....
Flashing Firmware Image : 100%... done
Verifying Firmware Image : 100%... done
Flashing [osimage] Module ....
Flashing Firmware Image : 100%... done
Verifying Firmware Image : 100%... done
Flashing [www] Module ....
Flashing Firmware Image : 100%... done
Verifying Firmware Image : 100%... done
Flashing [testapps] Module ....
Flashing Firmware Image : 100%... done
Verifying Firmware Image : 100%... done
Flashing [ast2500e] Module ....
Flashing Firmware Image : 100%... done
Verifying Firmware Image : 100%... done
Setting Env variables... done
Resetting the firmware.....
Done with updating image
```

```

Waiting while BMC reboots..
\ updating BIOS image

*****
* BIOS version = 3.41.0.9-12 *
*****
updating primary image only..
BIOS image is ./VEP4600-BIOS-3.41.0.9-15.BIN
01
INFO: Yafu INI Configuration File not found... Default options will not be applied...

Creating IPMI session via network with address xxx.xx.xxx.xxx...Done

-----
YAFUFlash - Firmware Upgrade Utility (Version 4.112.0)
-----

(C)Copyright 2016, American Megatrends Inc.
Beginning BIOS Update...
Uploading Image : 100%... done
Flashing Firmware Image : 100%... done
Verifying Firmware Image : 100%... done
Done with updating image
Reseting CPU
Chassis Power Control: Cycle

\ Error: Unable to establish IPMI v2 / RMCP+ session
updating CPLD image
Already have 0x10 programmed
updating MC1_CARD CPLD image
Already have 0x2 programmed
Power cycle chassis for updates to take effect

Package version: x.x
Packaged images:
    BMC image: x.x
    BIOS image: x.xx.x.x-xx
    CPLD image: XxXX
    Wifi CPLD image: XxX
Note:If BMC version is less than 1.23 CPLD versions will not be shown correctly

1. Automatically update all firmware components
2. BMC image[Primary version:x.x, backup version:1.23]
3. BIOS image[Booted version: x.xx.x.x-xx]
4. CPLD image[CPLD version: XxXX]
5. rNDC left CPLD image[CPLD version: XxX]
6. rNDC right CPLD image[CPLD version: XxX]
q. Exit

```

5. After firmware upgrade complete, enter **q** to exit.
6. Once all firmware updates are complete, a system power cycle is required either with remote power cycler or manually unplugging and plugging back the power cord.

**(i) NOTE: The power down state should be a minimum of fifteen seconds for the complete power drain.**

**(i) NOTE: This solution has a limitation that rNDC Firmware upgrade cannot be done through the BMC network. Follow the next section for the workaround.**

# Upgrade rNDC Firmware workaround

This section describes the steps to take to upgrade the VEP4600's firmware if your VEP4600 arrived from Dell with the DiagOS as the only operating system.

## Topics:

- [Upgrade rNDC firmware when ESXi is running on VEP4600](#)
- [Upgrade rNDC firmware when CentOS is running on VEP4600](#)

## Upgrade rNDC firmware when ESXi is running on VEP4600

1. Download the rNDC firmware from the Dell Support site: <https://www.dell.com/support/home/us/en/19/drivers/driversdetails?driverid=5vj7v>
2. Scroll down to **File Name:** `Intel_LAN_18.8.0_ESXi_FWUPDATEPACKAGE_A00.zip` and click on **Download File**.
3. Copy the `Intel_LAN_18.8.0_ESXi_FWUPDATEPACKAGE_A00.zip` file to ESXi through WinSCP.
4. Login into the ESXi ssh shell
5. Unzip the `Intel_LAN_18.8.0_ESXi_FWUPDATEPACKAGE_A00.zip` file to the `/tmp` directory (default root directory has a small space.)
6. Run the following command in the unzipped directory under `/tmp`

```
chmod a+x ./intelfw.sh
./intelfw.sh
```

7. Wait until the command has been successfully run (takes about 10 minutes)
8. Reboot the unit
9. Verify the FW upgrade by checking the lights on the ports:
  - a) Connect a cable to both ports. You should see a green light on both ports. If not, it means you have not successfully upgraded firmware.
10. Check both fixed 10G ports and rNDC 10G ports.
11. Check both fixed 1G ports and rNDC 1G ports (if applicable)

## Upgrade rNDC firmware when CentOS is running on VEP4600

If the unit has an OS other than ESXi installed, follow the steps below to update rNDC firmware via CentOS 7.5 or higher:

1. Download the rNDC firmware from the Dell Support site:
  - a) Intel NIC Firmware Family Version 18.8.9 on Intel I350, I354, X520, X540, and X550 adapters:
 

<https://www.dell.com/support/home/us/en/19/drivers/driversdetails?driverid=yhf9v&oscode=rhe70&productcode=poweredge-r730xd>

 Scroll down to **File Name:** `Network_Firmware_YHF9V_LN_18.8.9_A00.BIN` and click on **Download File**.
  - b) Intel NIC Firmware Family Version 18.8.9 on Intel X710, XXV710, and XL710 adapters:
 

<https://www.dell.com/support/home/us/en/19/drivers/driversdetails?driverid=3w5y5&oscode=rhe70&productcode=poweredge-r730xd>

 Scroll down to **File Name:** `Network_Firmware_3W5Y5_LN_18.8.9_A00.BIN` and click on **Download File**.
2. Copy the .BIN files to CentOS on VEP4600 through WinSCP.



7. The device will reboot.
8. Commands to confirm the firmware was updated:

```
[root@localhost]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
inet 127.0.0.1/8 scope host lo
valid_lft forever preferred_lft forever
inet6 ::1/128 scope host
valid_lft forever preferred_lft forever
2: enp2s0f0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether 54:bf:64:be:08:40 brd ff:ff:ff:ff:ff:ff
3: enp2s0f1: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether 54:bf:64:be:08:41 brd ff:ff:ff:ff:ff:ff
4: enp2s0f2: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether 54:bf:64:be:08:42 brd ff:ff:ff:ff:ff:ff
6: enp2s0f3: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether 54:bf:64:be:08:43 brd ff:ff:ff:ff:ff:ff
8: enp4s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen
1000
link/ether 54:bf:64:be:08:44 brd ff:ff:ff:ff:ff:ff
inet 100.67.144.132/24 brd 100.67.144.255 scope global noprefixroute dynamic enp4s0
valid_lft 542sec preferred_lft 542sec
inet6 fe80::56bf:64ff:febe:844/64 scope link noprefixroute
valid_lft forever preferred_lft forever
9: enp23s0f0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether e4:43:4b:3c:b9:90 brd ff:ff:ff:ff:ff:ff
10: enp23s0f1: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether e4:43:4b:3c:b9:91 brd ff:ff:ff:ff:ff:ff
12: enp23s0f2: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether e4:43:4b:3c:b9:92 brd ff:ff:ff:ff:ff:ff
13: enp23s0f3: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether e4:43:4b:3c:b9:93 brd ff:ff:ff:ff:ff:ff
19: enp101s0f0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether e4:43:4b:38:8c:90 brd ff:ff:ff:ff:ff:ff
20: enp101s0f1: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether e4:43:4b:38:8c:91 brd ff:ff:ff:ff:ff:ff
21: enp101s0f2: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether e4:43:4b:38:8c:92 brd ff:ff:ff:ff:ff:ff
22: enp101s0f3: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether e4:43:4b:38:8c:93 brd ff:ff:ff:ff:ff:ff
23: enp181s0f0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default
qlen 1000 - (Updated x710)
link/ether 54:bf:64:be:08:45 brd ff:ff:ff:ff:ff:ff
24: enp181s0f1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default
qlen 1000
link/ether 54:bf:64:be:08:46 brd ff:ff:ff:ff:ff:ff
25: enp181s0f2: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether 54:bf:64:be:08:47 brd ff:ff:ff:ff:ff:ff
26: enp181s0f3: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
link/ether 54:bf:64:be:08:48 brd ff:ff:ff:ff:ff:ff
```

9. Run the following command to check the version:

```
[root@localhost]# ethtool -i enp101s0f0
driver: i40e
version: 2.6.12
firmware-version: 6.80 0x80003d74 18.8.9 - (confirmed FW has been updated)
```

```
expansion-rom-version:  
bus-info: 0000:65:00.0  
supports-statistics: yes  
supports-test: yes  
supports-EEPROM-access: yes  
supports-register-dump: yes  
supports-priv-flags: yes
```

**Optional commands:**

```
[root@localhost]# rmmod i40e -- (command to remove module)  
[root@localhost]# modprobe i40e - (command to add module)
```

# Prepare bootable USB with OS ISO image

This section describes the how to prepare a USB key to install the operating system of your choice. For this procedure, you need a bootable USB. On a Windows CPU, use Rufus to burn the bootable USB.

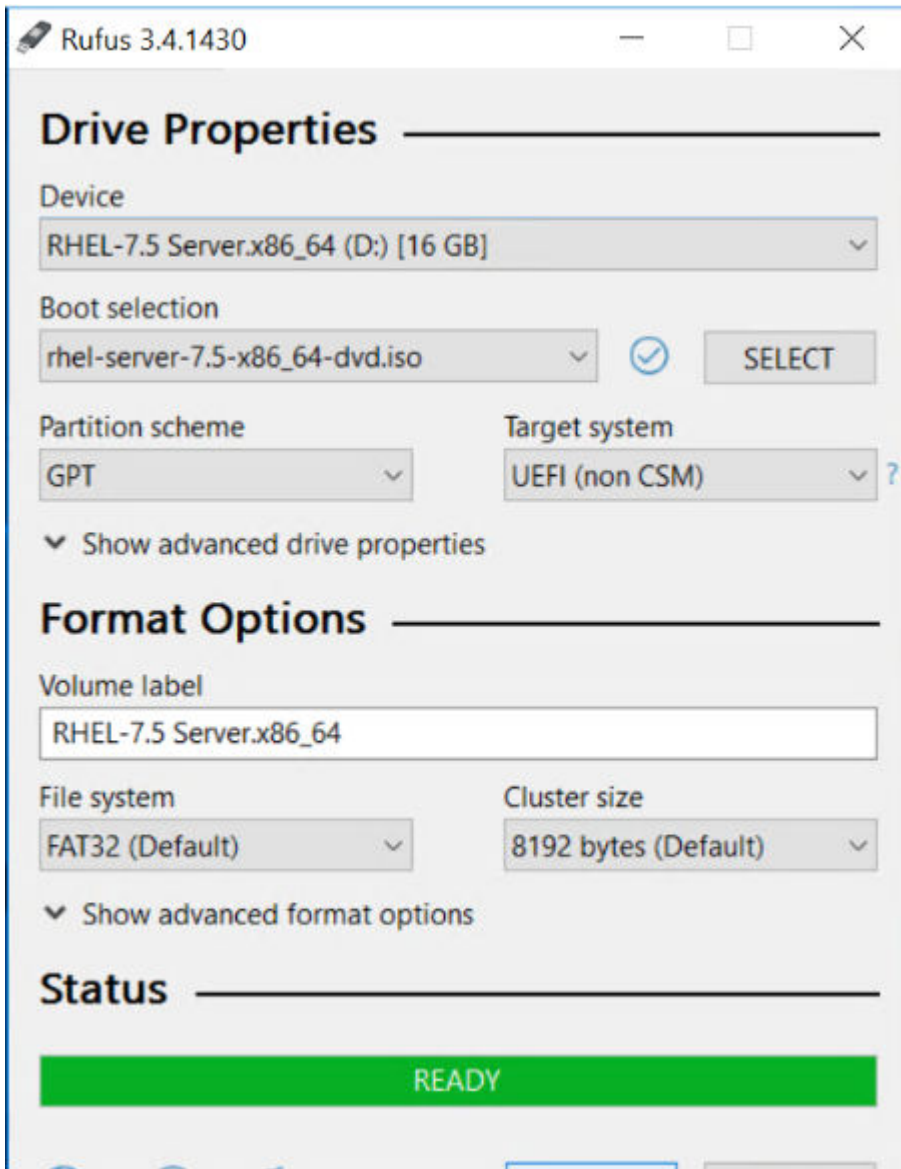
## Topics:

- [Prepare bootable USB](#)
- [Download Rufus](#)

## Prepare bootable USB

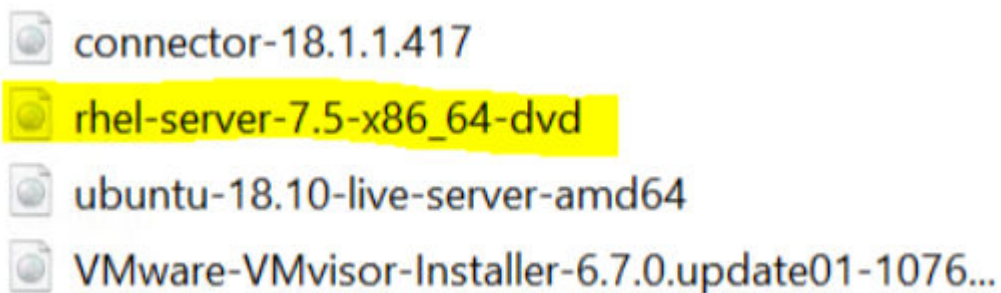
## Download Rufus

1. To download Rufus, go to: <https://rufus.akeo.ie>
2. Open Rufus and click on SELECT button to load the ISO image from the Windows disks.  
Prepare bootable USB



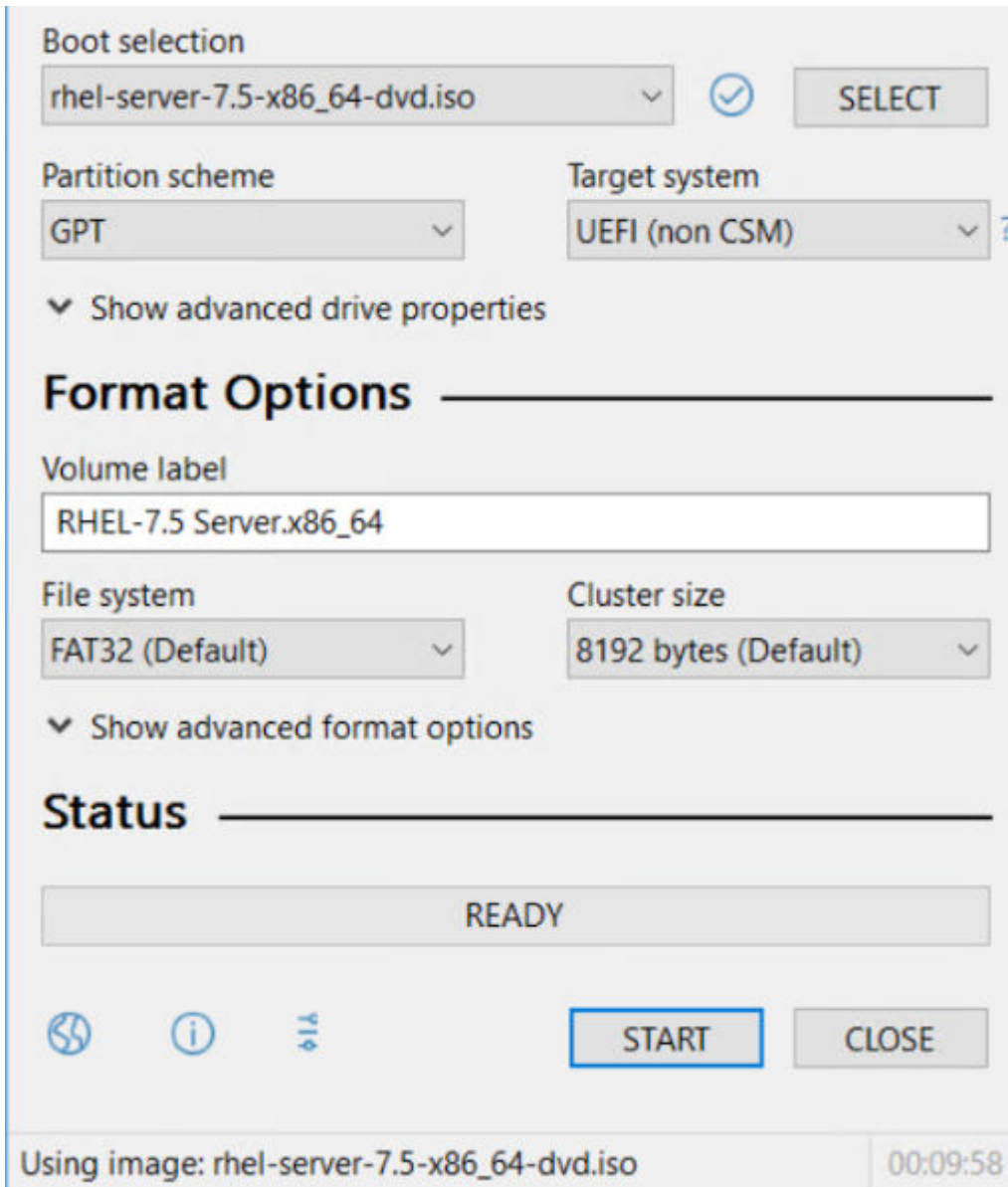
3. Navigate to the ISO file and click to select the file.

Select ISO file



4. Verify that the file name selected displays at the bottom of the Rufus device dialog box.





Rufus device dialog box

**NOTE:** Use the same process to burn a USB with Ubuntu, Adva and ESXi ISO images.

# Configure BIOS and Install RHEL OS

## Topics:

- Configure BIOS to Boot From USB
- Install Red Hat OS
- Start Red Hat OS installation
- Configure BIOS to boot from SSD

## Configure BIOS to Boot From USB

1. Boot the VEP4600 into the BIOS and tab to the Boot menu. For more information on how to access the BIOS, see [VEP4600 Start up and serial console](#).
2. Select the Advanced tab. Select CSM Configuration and press **Enter**.

CSM Configuration

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main Advanced Platform Configuration
-----
|> Trusted Computing
|> ACPI Settings
|> Serial Port Console Redirection
|> SIO Configuration
|> Option ROM Dispatch Policy
|> PCI Subsystem Settings
|> USB Configuration
|> Network Stack Configuration
|> CSM Configuration
|> NVMe Configuration
  
```

CSM support enabled

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Advanced
-----
| Compatibility Support Module Configuration | This option controls
| CSM Support [Enabled] | Legacy/UEFI ROMs
| | priority
  
```

3. Use UEFI to install the Red Hat OS.
4. Select the Boot menu tab.
5. Highlight the UEFI USB Drive BBS Priorities option using the left and right arrows and press **Enter**.



2. Type **e** to edit the installation menu entry.

```
setparams 'Install Red Hat Enterprise Linux 7.5'

    linuxefi /images/pxeboot/vmlinuz inst.stage2=hd:LABEL=RHEL-7.5\x20Serv\
er.x86_64 quiet console=ttyS0,115200 vga=791
    initrdefi /images/pxeboot/initrd.img

Press Ctrl-x to start, Ctrl-c for a command prompt or Escape to
discard edits and return to the menu. Pressing Tab lists possible
completions.
```

3. Attach the `console=ttyS0,115200` string to the end of the first install line.
4. Press **ctrl-x** to start the installation.

```
Starting installer, one moment...
anaconda 21.48.22.134-1 for Red Hat Enterprise Linux 7.5 started.
```

5. Select **4** for Software selection.

```
Installation wizard

=====
=====
Installation

1) [x] Language settings                2) [x] Time settings
   (English (United States))           (US/Central timezone)
3) [!] Installation source              4) [!] Software selection
   (Processing...)                     (Processing...)
5) [x] Installation Destination         6) [x] Kdump
   (Automatic partitioning              (Kdump is enabled)
   selected)
7) [x] Network configuration           8) [x] Root password
   (Wired (enp2s0f2) connected)         (Password is set.)
9) [x] User creation
   (User dell_ucpe will be
   created)
--
(Local media)                          (source changed - please
5) [x] Installation Destination         verify)
   (Automatic partitioning              6) [x] Kdump
   selected)                           (Kdump is enabled)
7) [x] Network configuration           8) [x] Root password
   (Wired (enp2s0f2) connected)         (Password is set.)
9) [x] User creation
   (User dell_ucpe will be
   created)

Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: 4

=====
=====
```

6. Select `Minimal Install` from the options.

```

=====
Base environment
Software selection

Base environment

1) [x] Minimal Install
2) [ ] Infrastructure Server
3) [ ] File and Print Server
4) [ ] Basic Web Server
5) [ ] Virtualization Host
6) [ ] Server with GUI

Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: c
=====

```

7. Configure the disk destination for the installation by entering **5** and enter **1** for hard drive, then enter **c** to continue.  
 Configure Installation Destination

```

=====
Installation

1) [x] Language settings
   (English (United States))
2) [x] Time settings
   (US/Central timezone)
3) [!] Installation source
   (Processing...)
4) [!] Software selection
   (Processing...)
5) [!] Installation Destination
   (No disks selected)
6) [x] Kdump
   (Kdump is enabled)
7) [ ] Network configuration
   (Not connected)
8) [!] Root password
   (Password is not set.)
9) [!] User creation
   (No user will be created)

Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: 5
=====

Probing storage...
Installation Destination

[x] 1) M.2 (S80) 3MG2-P: 924.06 GiB (sda)

1 disk selected; 924.06 GiB capacity; 922.94 GiB free ...

Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: c
=====

```

8. Enter **3** to Use Free Space, then enter **c** to continue.

 **CAUTION:** You must select this option. If you do not select this option, the Red Hat OS deletes the DIAG OS.

```

=====
Autopartitioning Options

[ ] 1) Replace Existing Linux system(s)
[x] 2) Use All Space
[ ] 3) Use Free Space

Installation requires partitioning of your hard drive. Select what space to use
for the install target.

Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: 3
=====
Autopartitioning Options

[ ] 1) Replace Existing Linux system(s)
[ ] 2) Use All Space
[x] 3) Use Free Space

Installation requires partitioning of your hard drive. Select what space to use
for the install target.

Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: c
=====
Partition Scheme Options

```

9. Enter **3** to select LVM, then enter **c** to continue.

```

=====
Partition Scheme Options

[ ] 1) Standard Partition
[ ] 2) Btrfs
[x] 3) LVM
[ ] 4) LVM Thin Provisioning

Select a partition scheme configuration.

Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: c
Generating updated storage configuration
Checking storage configuration...
=====

```

10. Enter **2** to configure the Time settings.



```
Time settings
Timezone: not set
NTP servers: not configured

1) Set timezone
2) Configure NTP servers
Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: 1
=====
Timezone settings

Available regions
1) Europe          6) Pacific        10) Arctic
2) Asia            7) Australia     11) US
3) America        8) Atlantic      12) Etc
4) Africa         9) Indian
5) Antarctica

Please select the timezone.
Use numbers or type names directly [b to region list, q to quit]: 11
=====
Timezone settings

Available timezones in region US
1) Alaska          4) Eastern        6) Mountain
2) Arizona        5) Hawaii         7) Pacific
3) Central

Please select the timezone.
Use numbers or type names directly [b to region list, q to quit]: 3
=====
```

- 11. Enter **9** to configure User creation.
- 12. Optionally, configure the root password.

---

---

## Installation

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Language settings<br>(English (United States))                   | 2) <input checked="" type="checkbox"/> Time settings<br>(US/Central timezone)         |
| 3) <input checked="" type="checkbox"/> Installation source<br>(Local media)                             | 4) <input type="checkbox"/> Software selection<br>(Source changed - please<br>verify) |
| 5) <input checked="" type="checkbox"/> Installation Destination<br>(Automatic partitioning<br>selected) | 6) <input checked="" type="checkbox"/> Kdump<br>(Kdump is <b>enabled</b> )            |
| 7) <input checked="" type="checkbox"/> Network configuration<br>(Wired (enp2s0f2) <b>connected</b> )    | 8) <input checked="" type="checkbox"/> Root password<br>(Password is set.)            |
| 9) <input type="checkbox"/> User creation<br>(No user will be created)                                  |   |
- Please make your choice from above ['q' to quit | 'b' to begin installation |  
'r' to refresh]: 9
- 
- 

## User creation

- 1)  Create user  
Please make your choice from above ['q' to quit | 'c' to continue |  
'r' to refresh]: 1
- 
- 

## User creation

- 1)  Create user  
2) Fullname  
3) Username  
4)  Use password  
5)  Administrator  
6) Groups  
Please make your choice from above ['q' to quit | 'c' to continue |



```
Please make your choice from above ['q' to quit | 'c' to continue |  
'r' to refresh]: 2
```

```
=====
```

```
Enter new value for 'Fullname' and press enter  
dell_ucpe
```

```
=====
```

```
User creation
```

- 1)  Create user
  - 2) Fullname  
dell\_ucpe
  - 3) Username  
dell\_ucpe
  - 4)  Use password
  - 5)  Administrator
  - 6) Groups
- ```
Please make your choice from above ['q' to quit | 'c' to continue |  
'r' to refresh]: 4
```

```
=====
```

```
User creation
```

- 1)  Create user
  - 2) Fullname  
dell\_ucpe
  - 3) Username  
dell\_ucpe
  - 4)  Use password
  - 5) Password
  - 6)  Administrator
  - 7) Groups
- ```
Please make your choice from above ['q' to quit | 'c' to continue |
```

```
=====
User creation
1) [x] Create user
2) Fullname
   dell_ucpe
3) Username
   dell_ucpe
4) [x] Use password
5) Password
6) [ ] Administrator
7) Groups
   Please make your choice from above ['q' to quit | 'c' to continue |
   'r' to refresh]: 5
=====
Password:
Password (confirm):
=====
User creation
1) [x] Create user
2) Fullname
   dell_ucpe
3) Username
   dell_ucpe
4) [x] Use password
5) Password
   Password set.
6) [ ] Administrator
7) Groups
   Please make your choice from above ['q' to quit | 'c' to continue |
   'r' to refresh]: c
=====
```

13. Select **7** for network configuration of management interface.

Configure Network interface

```
=====
Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: 7
=====
```

14. And assign IPV4, netmask, gateway, name server as per network setup.

Setting IP, subnet mask, nameserver

```
=====
Device configuration
```

- 1) IPv4 address or "dhcp" for DHCP  
100.67.147.22
  - 2) IPv4 netmask  
255.255.255.0
  - 3) IPv4 gateway  
100.67.147.254
  - 4) IPv6 address[/prefix] or "auto" for automatic, "dhcp" for DHCP, "ignore" to turn off  
auto
  - 5) IPv6 default gateway
  - 6) Nameservers (comma separated)  
8.8.8.8
  - 7) [x] Connect automatically after reboot
  - 8) [x] Apply configuration in installer
- ```
Configuring device enp2s0f2.
```

```
Please make your choice from above ['q' to quit | 'c' to continue |  
'r' to refresh]: c
```

```
=====
Network configuration complete
```

```
Wired (enp2s0f0) disconnected
Wired (enp2s0f1) disconnected
Wired (enp2s0f2) connected
  IPv4 Address: 100.67.147.22 Netmask: 255.255.255.0 Gateway: 100.67.147.254
  DNS: 8.8.8.8
Wired (enp2s0f3) disconnected
Wired (enp5s0) disconnected
Wired (enp24s0f0) disconnected
Wired (enp24s0f1) disconnected
Wired (enp102s0f0) disconnected
Wired (enp102s0f1) disconnected
Wired (enp23s0f0) disconnected
Wired (enp23s0f1) disconnected
Wired (enp101s0f0) disconnected
Wired (enp101s0f1) disconnected

Host name: localhost.localdomain

Current host name: localhost
```

## Start Red Hat OS installation

1. Enter **b** to start the installation.

Start installation

```
=====
Installation
1) [x] Language settings                2) [x] Time settings
   (English (United States))           (US/Central timezone)
3) [!] Installation source             4) [!] Software selection
   (Processing...)                     (Processing...)
5) [x] Installation Destination       6) [x] Kdump
   (Automatic partitioning             (Kdump is enabled)
   selected)
7) [x] Network configuration          8) [x] Root password
   (Wired (enp2s0f2) connected)       (Password is set.)
9) [x] User creation
   (User dell_ucpe will be
   created)
Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: b
=====
```

```
=====
Progress
Setting up the installation environment
.
Creating xfs on /dev/sda3
.
Creating lvm pv on /dev/sda4
.
Creating swap on /dev/mapper/rhel-swap
.
Creating xfs on /dev/mapper/rhel-home
.
Creating xfs on /dev/mapper/rhel-root
.
Running pre-installation scripts
.
```

2. The installation process begins.

```

Preparing transaction from installation source
Installing libgcc (1/340)
Installing grub2-common (2/340)
Installing redhat-release-server (3/340)
Installing setup (4/340)
Installing filesystem (5/340)
Installing tzdata (6/340)
Installing basesystem (7/340)
Installing grub2-pc-modules (8/340)
Installing ncurses-base (9/340)
Installing nss-softokn-freebl (10/340)
Installing glibc-common (11/340)
Installing glibc (12/340)
Installing nspr (13/340)
Installing nss-util (14/340)
Installing libstdc++ (15/340)
Installing ncurses-libs (16/340)
Installing bash (17/340)
Installing libsepol (18/340)
Installing pcre (19/340)
Installing libselinux (20/340)
Installing zlib (21/340)
Installing info (22/340)
Installing xz-libs (23/340)
Installing libcom_err (24/340)
Installing libuuid (25/340)
Installing popt (26/340)
Installing chkconfig (27/340)
Installing sed (28/340)
Installing libxml2 (29/340)
Installing bzip2-libs (30/340)

```

3. Remove the USB and press **Return** to reboot the system after the installation completes.

```

Installing rootfiles (334/340)
Installing iwl7265-firmware (335/340)
Installing iwl1000-firmware (336/340)
Installing iwl6000-firmware (337/340)
Installing iwl4965-firmware (338/340)
Installing iwl6000g2b-firmware (339/340)
Installing iwl5150-firmware (340/340)
Performing post-installation setup tasks
Installing boot loader
.
Performing post-installation setup tasks
.
Configuring installed system
.
Writing network configuration
.
Creating users
.
Configuring addons
.
Generating initramfs
.
Running post-installation scripts
.
Use of this product is subject to the license agreement found at /usr/share/redhat-release/EULA

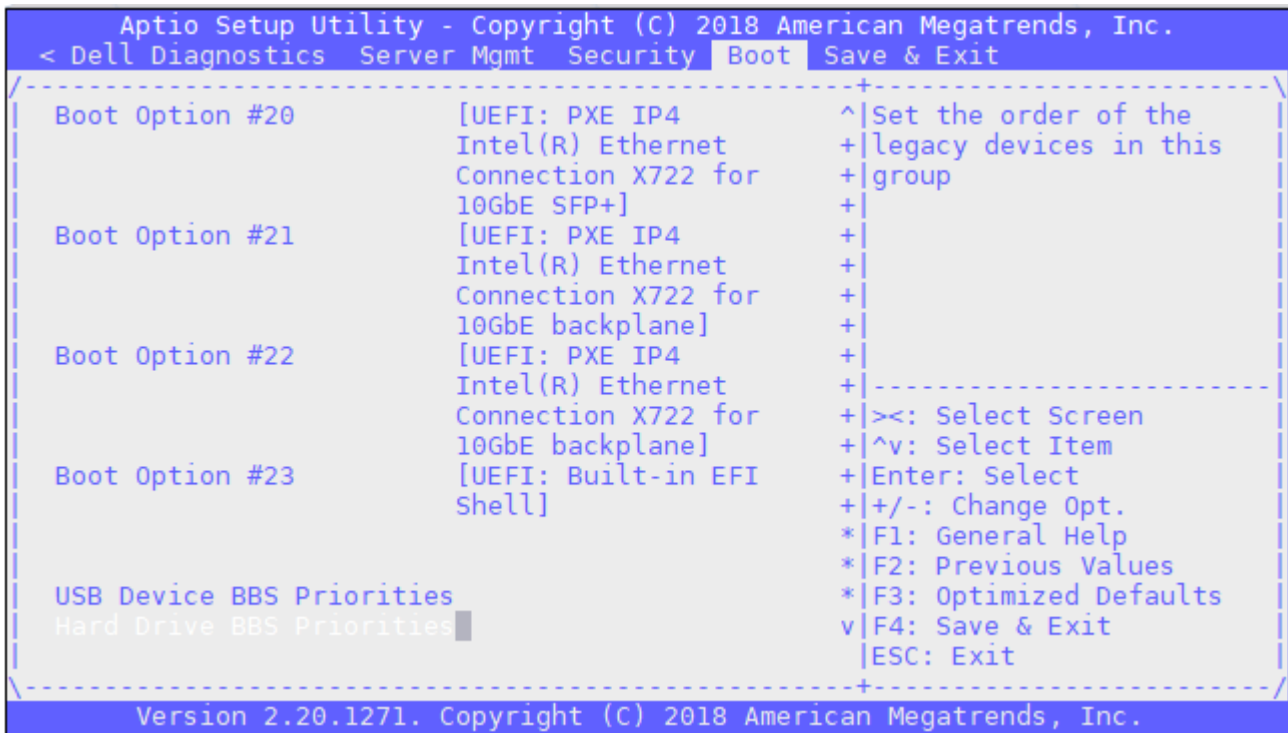
Installation complete. Press return to quit

[anaconda] 1:main* 2:shell 3:log 4:storage-lo> Switch tab: Alt+Tab | Help: F1

```

# Configure BIOS to boot from SSD

1. Boot up the VEP4600 and navigate to the BIOS settings.
2. Navigate to Boot Tab. Scroll to Hard Disk Drive BBS Priorities using the up and down arrow keys and press **Enter**.

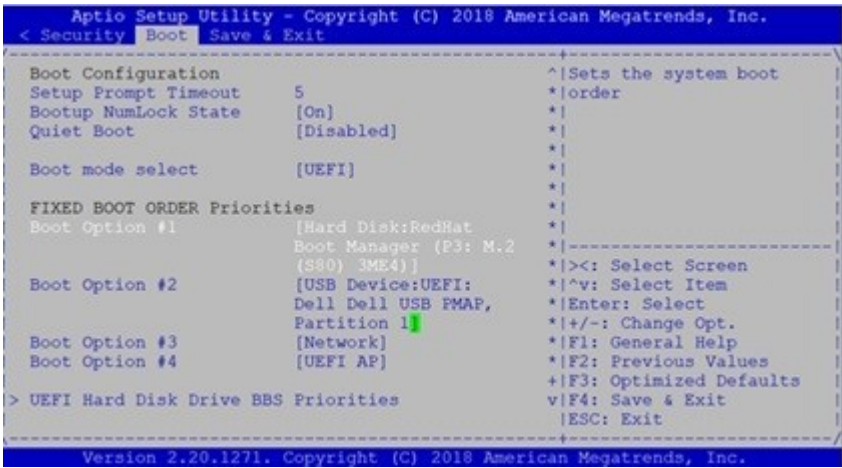


3. Select Red Hat Boot Manager as Boot Option #1.

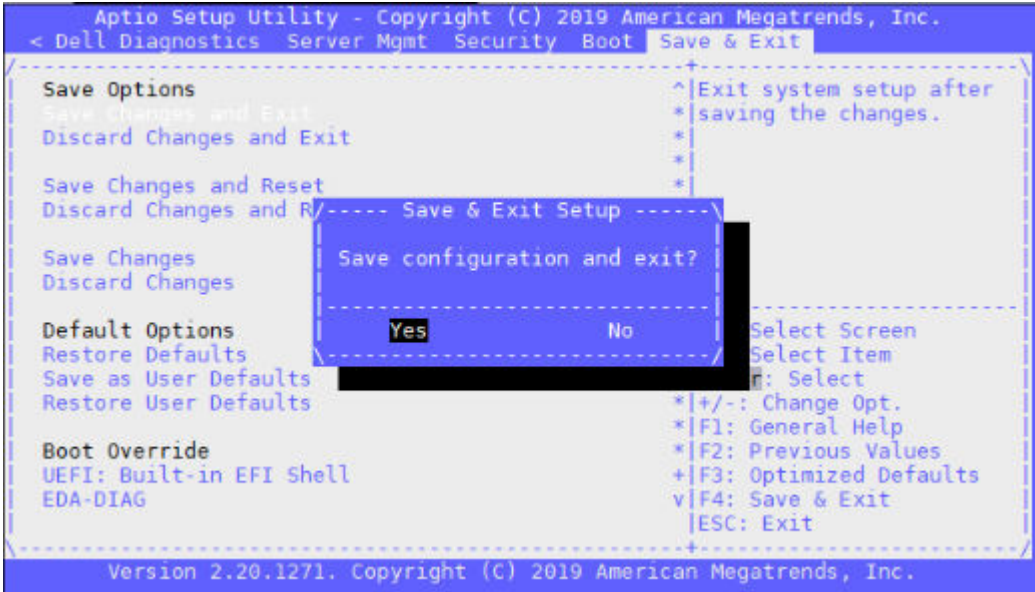


4. Configure the boot order priorities and select Red Hat as the first boot option.





5. Traverse to Save & Exit tab and hit **enter** on Save Changes and Exit. Select **Yes** to start reboot.



Red Hat 7.5 boot screen

```
[ 17.384290] IPv6: ADDRCONF(NETDEV_UP): enp2s0f0: link is not ready
[ 17.391027] IPv6: ADDRCONF(NETDEV_UP): enp2s0f1: link is not ready
[ 17.397740] IPv6: ADDRCONF(NETDEV_UP): enp2s0f2: link is not ready
[ 17.404427] IPv6: ADDRCONF(NETDEV_UP): enp2s0f3: link is not ready
[ 17.411097] IPv6: ADDRCONF(NETDEV_UP): enp5s0: link is not ready
[ 17.417608] IPv6: ADDRCONF(NETDEV_UP): enp24s0f0: link is not ready
[ 17.424370] IPv6: ADDRCONF(NETDEV_UP): enp24s0f1: link is not ready
[ 17.431117] IPv6: ADDRCONF(NETDEV_UP): enp102s0f0: link is not ready
[ 17.437954] IPv6: ADDRCONF(NETDEV_UP): enp102s0f1: link is not ready
[ 17.444800] IPv6: ADDRCONF(NETDEV_UP): enp23s0f0: link is not ready
[ 17.451602] IPv6: ADDRCONF(NETDEV_UP): enp23s0f1: link is not ready
[ 17.458395] IPv6: ADDRCONF(NETDEV_UP): enp101s0f0: link is not ready
[ 17.465300] IPv6: ADDRCONF(NETDEV_UP): enp101s0f1: link is not ready
[ 17.509135] IPv6: ADDRCONF(NETDEV_UP): enp2s0f2: link is not ready
[ 19.068001] igb 0000:05:00.0 enp5s0: igb: enp5s0 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX/TX
[ 19.178751] IPv6: ADDRCONF(NETDEV_CHANGE): enp5s0: link becomes ready

Red Hat Enterprise Linux Server 7.5 (Maipo)
Kernel 3.10.0-862.el7.x86_64 on an x86_64

localhost login:
Red Hat Enterprise Linux Server 7.5 (Maipo)
Kernel 3.10.0-862.el7.x86_64 on an x86_64
```

6. Enter the user credentials and verify.

```
localhost login: dell_ucpe
Password:
[dell_ucpe@localhost ~]$ █
```

7. Enter the root credentials and verify.

```
localhost login: root
Password:
[root@localhost ~]# █
```



# Configure BIOS and Install Ubuntu OS

## Topics:

- Configure BIOS to boot from USB
- Ubuntu OS installation
- Configure BIOS to boot from SSD

## Configure BIOS to boot from USB

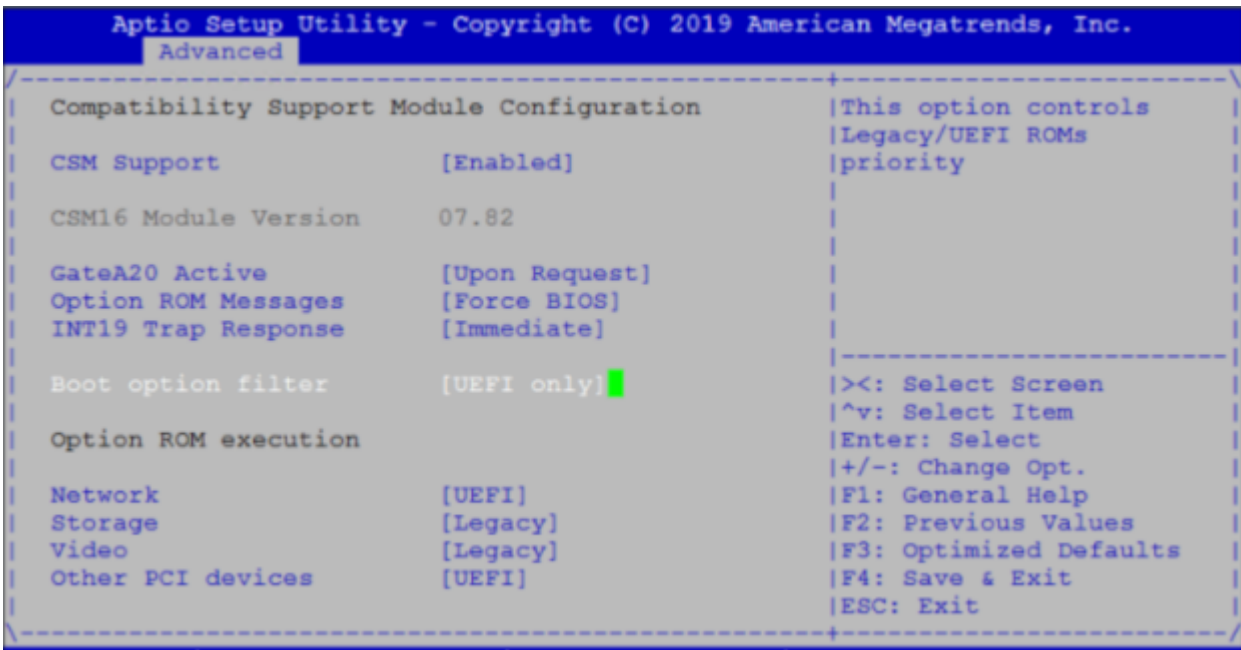
1. Boot into BIOS settings, select CSM configuration under Advanced Tab.

```

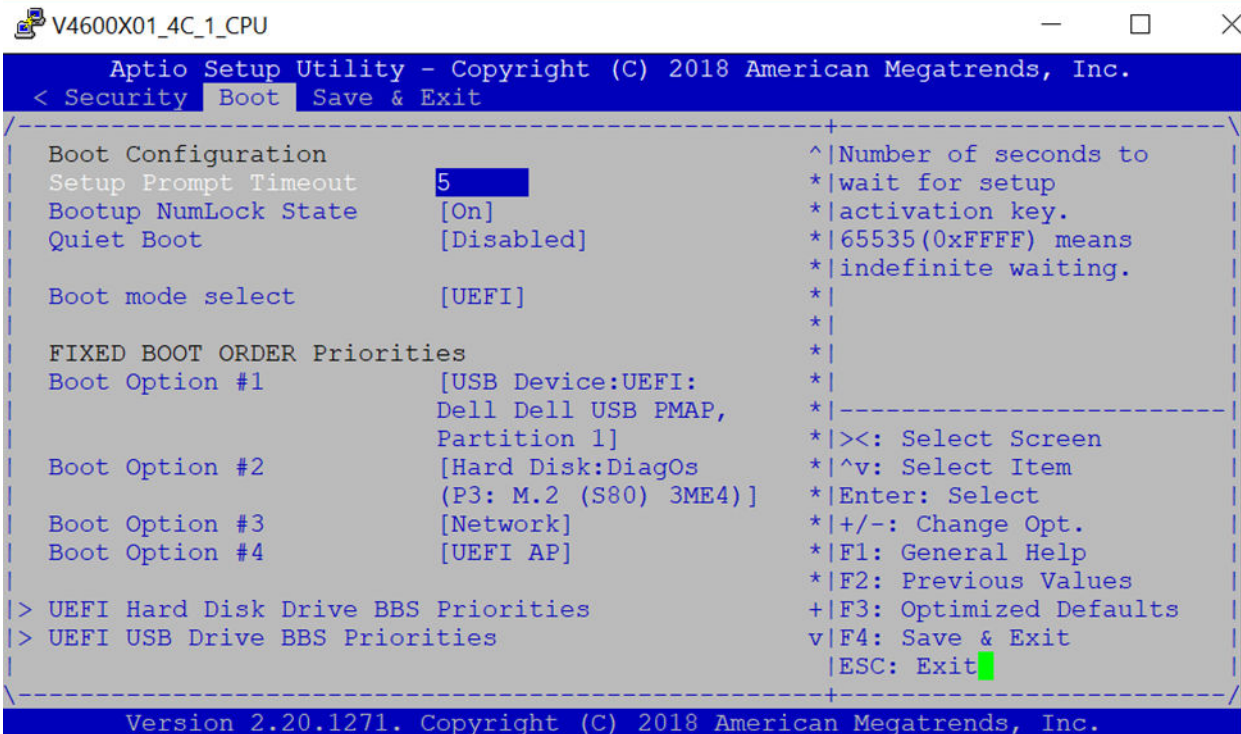
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main  Advanced  Platform Configuration  Socket Configuration  >
-----
|> Trusted Computing                ^|CSM configuration:
|> ACPI Settings                   +|Enable/Disable, Option
|> Serial Port Console Redirection *|ROM execution settings,
|> SIO Configuration               *|etc.
|> Option ROM Dispatch Policy      *|
|> PCI Subsystem Settings          +|
|> USB Configuration              +|
|> Network Stack Configuration    +|
|> CSM Configuration              +|
|> NVMe Configuration             +|-----
|                                  +|><: Select Screen
|> Intel(R) Virtual RAID on CPU    +|^v: Select Item
|> Tls Auth Configuration          +|Enter: Select
|> All Cpu Information             +|+/-: Change Opt.
|> Intel(R) I350 Gigabit Network Connection -
| 54:BF:64:BE:05:40               +|F1: General Help
|> MAC:54BF64BE0540-HTTP Boot Configuration
|                                  +|F2: Previous Values
|                                  +|F3: Optimized Defaults
|                                  v|F4: Save & Exit
|                                  |ESC: Exit
|
-----
Version 2.20.1271. Copyright (C) 2019 American Megatrends, Inc.

```

2. Change the Boot option filter to UEFI only mode



3. Go to the Boot tab.



4. Under Boot Option #1, press **Enter** and select USB .

```

V4600X01_4C_1_CPU
Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
< Security Boot Save & Exit
-----+-----
| Setup Prompt Timeout      5                ^|Sets the system boot
| Bootup NumLock State     [On]             +|order
| Quiet Boot                [Disabled]        *|
|                            *|
| Boot mode select         [UEFI]             *|
|                            *|
|-----+----- Boot Option #1 -----+-----
| FIXED BOOT | Hard Disk:DiagOs (P3: M.2 (S80) 3ME4)
| Boot Option | USB Device:UEFI: Dell Dell USB PMAP, Partition 1
|             | Network
|             | UEFI AP
| Boot Option | Disabled
|             |
| Boot Option #
| Boot Option #4          [UEFI AP]          *|+/-: Change Opt.
|                            *|F1: General Help
|> UEFI Hard Disk Drive BBS Priorities      *|F2: Previous Values
|> UEFI USB Drive BBS Priorities           *|F3: Optimized Defaults
|> UEFI Application Boot Priorities        v|F4: Save & Exit
|   |ESC: Exit
|   |
-----+-----
Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.

```

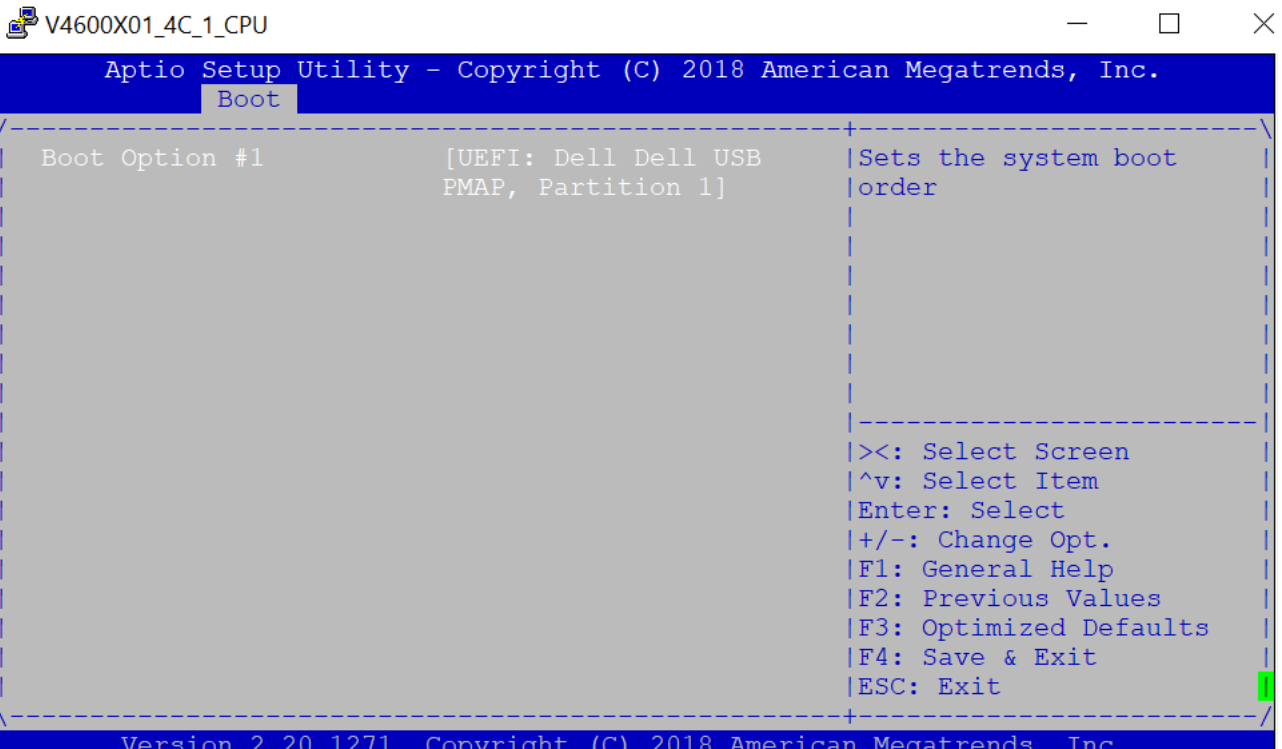
5. If you don't see required USB boot, go down to UEFI USB Drive BBS Priorities and press **Enter**.

```

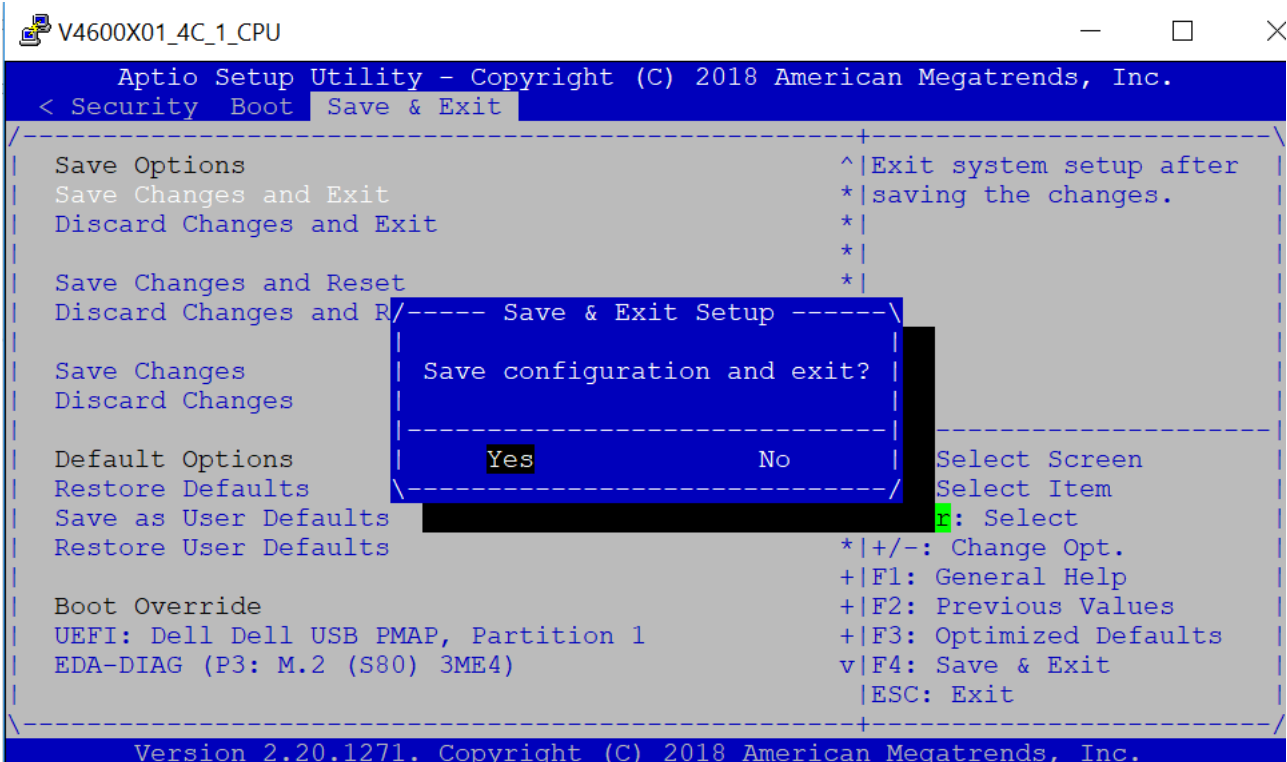
V4600X01_4C_1_CPU
Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
< Security Boot Save & Exit
-----+-----
| Setup Prompt Timeout      5                ^|Specifies the Boot
| Bootup NumLock State     [On]             +|Device Priority
| Quiet Boot                [Disabled]        *|sequence from available
|                            *|UEFI USB Drives.
|                            *|
| Boot mode select         [UEFI]             *|
|                            *|
| FIXED BOOT ORDER Priorities                 *|
| Boot Option #1          [USB Device:UEFI:   *|
|                        Dell Dell USB PMAP,  *|
|                        Partition 1]         *|
|                            *|-----+-----
| Boot Option #2          [Hard Disk:DiagOs   *|><: Select Screen
|                        (P3: M.2 (S80) 3ME4)] *|^v: Select Item
|                            *|Enter: Select
| Boot Option #3          [Network]           *|+/-: Change Opt.
| Boot Option #4          [UEFI AP]           *|F1: General Help
|> UEFI Hard Disk Drive BBS Priorities      *|F2: Previous Values
|> UEFI USB Drive BBS Priorities           *|F3: Optimized Defaults
|> UEFI Application Boot Priorities        v|F4: Save & Exit
|   |ESC: Exit
|   |
-----+-----
Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.

```

6. Make sure the required USB is selected.



7. Press the **F4** key to save the changes and exit the utility.
8. Confirm saving the configuration by selecting **Yes** and press **Enter**.



9. The system will boot from the USB and start the installation.

## Ubuntu OS installation

1. Boot into Ubuntu GRUB menu. Highlight Install Ubuntu Server option

GNU GRUB version 2.02

```
-----  
| Install Ubuntu Server  
| OEM install (for manufacturers)  
| Check disc for defects  
|
```

2. Type **e** and Add console=ttyS0,115200 string as shown in the following figure.

Edit Boot Entry

GNU GRUB version 2.02

```
-----  
| setparams 'Install Ubuntu Server'  
|  
|     set gfxpayload=keep  
|     linux      /casper/vmlinuz console=ttyS0,115200 boot=casper quiet  
| t ---  
|     initrd     /casper/initrd.gz  
|
```

Minimum Emacs-like screen editing is supported. TAB lists completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a command-line or ESC to discard edits and return to the GRUB menu.

3. Press **ctrl-x** to start the installation.
4. Choose Preferred Language (In this case, preferred language selection is English)

```
Willkommen! Bienvenue! Welcome! Добро пожаловать! Welkom!  
  
Please choose your preferred language.  
  
[ English ]  
[ Asturianu ]  
[ Català ]  
[ Hrvatski ]  
[ Nederlands ]  
[ Suomi ]  
[ Français ]  
[ Deutsch ]  
[ Ελληνικά ]  
[ Magyar ]  
[ Latviešu ]  
[ Norsk bokmål ]  
[ Polski ]  
[ Русский ]  
  
1 / 11  
  
Use UP, DOWN and ENTER keys to select your language.
```

5. Select **Done**.
6. Select Install Ubuntu.

GNU GRUB version 2.02

```
-----  
* Install Ubuntu Server  
| OEM install (for manufacturers)  
| Check disc for defects  
|
```

7. Scroll up/down to select management network interface accordingly (In this case, enp4s0 is selected as management interface of the VEP4600 device)

Network connections

Configure at least one interface this server can use to talk to other machines, and which preferably provides sufficient access for updates.

```
[ enp4s0 eth 100.67.147.216/24 (from dhcp) ]  
3c:2c:30:3d:eb:04 / Intel Corporation / I210 Gigabit Network  
Connection  
  
[ ens4f0 eth DHCPv4 has supplied no addresses ]  
24:6e:96:02:63:80 / Intel Corporation / 82599ES 10-Gigabit SFI/SFP+  
Network Connection (Ethernet 10G 4P X520/I350 rNDC)  
  
[ ens4f1 eth DHCPv4 has supplied no addresses ]  
  
[ Done ]  
[ Back ]
```

8. Follow the installation wizard to complete interface configuration (In this case, choose Edit IPv4 from the list to modify Interface configuration for static IP assignment).

Choose Edit IPv4

Network connections

Configure at least one interface this server can use to talk to other machines, and which preferably provides sufficient access for updates.

```
[ enp4s0 eth 100.67.147.216/24 (from dhcp) ]  
3c:2c:30:3d:eb:04 / Intel Corporation / I210 Gigabit  
Connection  
  
[ ens4f0 eth DHCPv4 has supplied no addresses ]  
24:6e:96:02:63:80 / Intel Corporation / 82599ES 10-G  
Network Connection (Ethernet 10G 4P X520/I350 rNDC)  
  
[ ens4f1 eth DHCPv4 has supplied no addresses ]  
  
[ Done ]  
[ Back ]
```

◀ (close)  
Info  
Edit IPv4  
Edit IPv6  
Add a VLAN tag

9. Fill the entries manually according to your network (Subnet, Address, Gateway and Name Server)

```
----- Edit enp4s0 IPv4 configuration -----  
IPv4 Method: [ Manual ]  
  
Subnet:   
  
Address: Address cannot be empty  
  
[ Save ]  
[ Cancel ]
```

10. Click **Done** to apply network configuration.



Applying network configuration

Configure at least one interface this server can use to talk to other machines, and which preferably provides sufficient access for updates.

```
[ ens6f0 eth DHCPv4 has supplied no addresses ▶ ]▲
24:6 FP+
Netw
[ ens6 Applying network config
24:6 0 %
Netw [ Cancel ] ]
FP+
[ Create bond ▶ ] ▼
[ Done ]
[ Back ]
```

11. Click **Done**.

Proxy address

If this system requires a proxy to connect to the internet, enter its details here.

Proxy address:

If you need to use a HTTP proxy to access the outside world, enter the proxy information here. Otherwise, leave this blank.

The proxy information should be given in the standard form of "http://[[user][:pass]@]host[:port]/".

[ Done ]

12. Click **Done**.

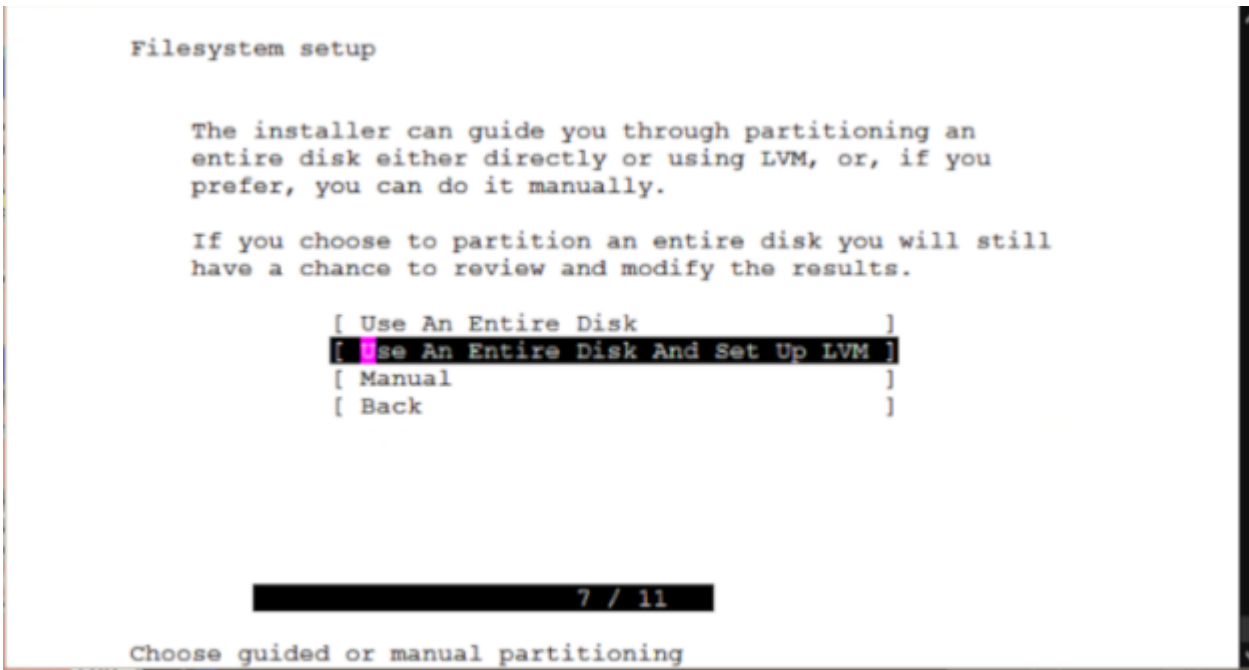
If you use an alternative mirror for Ubuntu, enter its details here.

Mirror address:

http://archive.ubuntu.com/ubuntu  
You may provide an archive mirror that will be used instead of the default 'http://archive.ubuntu.com/ubuntu'

[ Done ]

13. Select Use Entire Disk and Set Up LVM or follow the installation wizard for different configuration options.



14. Select Hard Drive.

Filesystem setup

The LVM guided partitioning scheme creates three partitions on the selected disk: one as required by the bootloader, one for '/boot', and one covering the rest of the disk.

A LVM volume group is created containing the large partition. A 4 gigabyte logical volume is created for the root filesystem. It can easily be enlarged with standard LVM command line tools.

Choose the disk to install to:

```
[ M.2 S80 3MG2-P BCA11804210360142 924.060G ▶ ]
```

15. Click **Done** to continue the selected disk partition format.

Filesystem setup

| MOUNT POINT | SIZE     | TYPE  | DEVICE TYPE                 |
|-------------|----------|-------|-----------------------------|
| [ /         | 4.000G   | ext4  | LVM logical volume ▶ ]      |
| [ /boot     | 1.000G   | ext4  | partition of local disk ▶ ] |
| [ /boot/efi | 512.000M | fat32 | partition of local disk ▶ ] |

AVAILABLE DEVICES

| DEVICE      | SIZE        | TYPE                 |
|-------------|-------------|----------------------|
| [ ubuntu-vg | 922.554G    | LVM volume group ▶ ] |
| [ ubuntu-lv | 4.000G (0%) | ▶ ]                  |

formatted as ext4, mounted at /

```
[ Done ]
[ Reset ]
[ Back ]
```

16. Select **Continue** to start the installation.



Filesystem setup

Confirm destructive action

Selecting Continue below will begin the installation process and result in the loss of data on the disks selected to be formatted.

You will not be able to return to this or a previous screen once the installation has started.

Are you sure you want to continue?

[ No ]  
[ Continue ]

7 / 11

Select available disks to format and mount

17. Enter your profile information and choose **Done**.

Enter the username and password (or ssh identity) you will use to log in to the system.

Your name:

Your server's name:

The name it uses when it talks to other computers.

Pick a username:

[ Done ]

18. Click **Done** to start the installation.

19. After Installation completes, remove the USB from the device.

20. Choose Reboot Now.

Installation complete

Install complete!

```
----- Finished install! -----
setting up swap
apply networking config
writing etc/fstab
configuring multipath
updating packages on target system
configuring pollinate user-agent on target
finalizing installation
running 'curtin hook'
curtin command hook
executing late commands
```

```
[ View full log ]
[ Reboot Now ]
[ Reboot Now ]
```

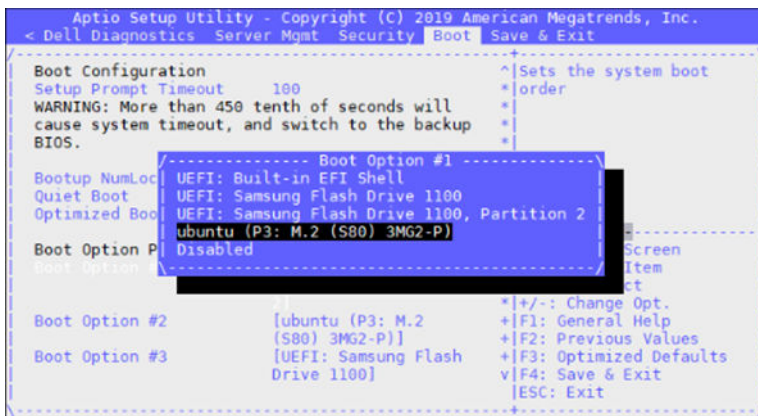
11 / 11

Thank you for using Ubuntu!

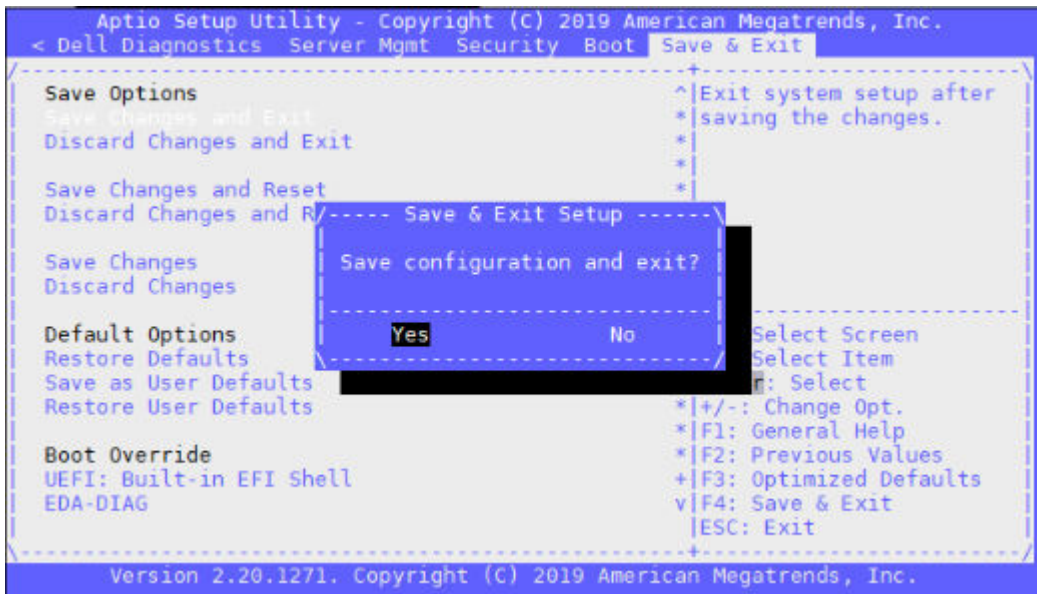
## Configure BIOS to boot from SSD

1. Change the Boot Option Priority to Ubuntu Hard Drive in the Boot Tab.

Select Ubuntu Hard Drive



2. Save and Exit



Boot up screen



# Configure BIOS and Install Adva OS

Configure BIOS settings required for Adva (UEFI and Legacy)

## Topics:

- Configure BIOS to boot from USB
- ADVA OS Installation
- Configure BIOS to boot from SSD

## Configure BIOS to boot from USB

1. Boot into the BIOS and go to the Advanced menu tab.
2. Select CSM Configuration and press **Enter**.

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main  Advanced  Platform Configuration  Socket Configuration  >
-----+-----
|> Trusted Computing                ^| CSM configuration:
|> ACPI Settings                   *| Enable/Disable, Option
|> Serial Port Console Redirection  *| ROM execution settings,
|> SIO Configuration               *| etc.
|> Option ROM Dispatch Policy       *|
|> PCI Subsystem Settings          +|
|> USB Configuration               +|
|> Network Stack Configuration     +|
|> CSM Configuration               +|
|> NVMe Configuration              +|
|                                   +|-----+-----
|                                   +|><: Select Screen
|                                   +|^v: Select Item
|                                   +|Enter: Select
|                                   +|+/-: Change Opt.
|                                   +|F1: General Help
|                                   +|F2: Previous Values
|                                   +|F3: Optimized Defaults
|                                   v|F4: Save & Exit
|                                   |ESC: Exit
-----+-----
|> Intel(R) Virtual RAID on CPU
|> Tls Auth Configuration
|> All Cpu Information
|> Intel(R) I350 Gigabit Network Connection -
|   54:BF:64:BE:05:40
|> MAC:54BF64BE0540-HTTP Boot Configuration
  
```

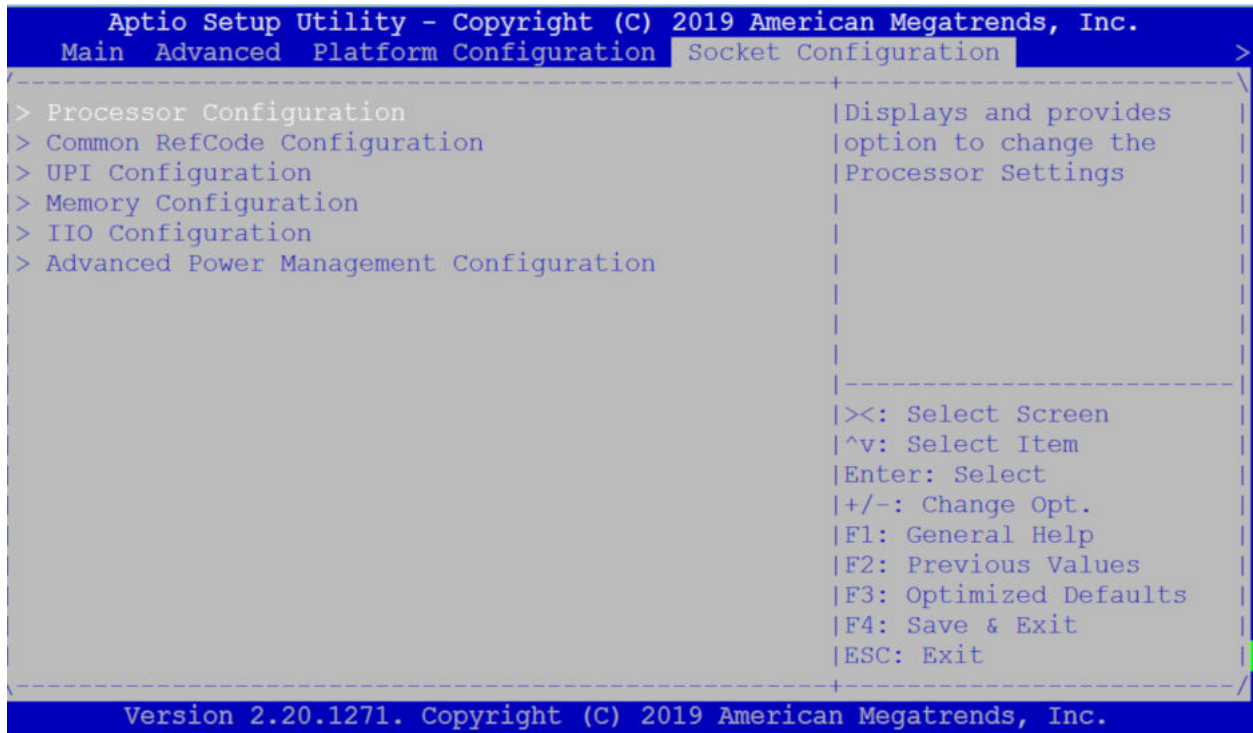
3. Change the Boot option filter to UEFI and Legacy mode.

```

Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
Advanced
-----+-----
| Compatibility Support Module Configuration  ^| This option controls
| CSM Support [Enabled]                    *| Legacy/UEFI ROMs
| CSM16 Module Version 07.82              *| priority
| GateA20 Active [Upon Request]           *|
| Option ROM Messages [Force BIOS]        *|
| INT19 Trap Response [Immediate]         *|
| HDD Connection Order [Adjust]           *|
| Boot option filter [UEFI and Legacy]     *|-----+-----
| Option ROM execution                    *|><: Select Screen
| Network [UEFI]                          *|^v: Select Item
| Storage [Legacy]                        *|Enter: Select
| Video [Legacy]                          *|+/-: Change Opt.
|   *|F1: General Help
|   *|F2: Previous Values
|   +|F3: Optimized Defaults
|   v|F4: Save & Exit
|   |ESC: Exit
-----+-----
Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.
  
```

4. Disable Hyper-Threading

a) Tab to Socket Configuration, press **Enter** on Processor Configuration



b) Scroll down to Hyper-Threading, press **Enter** and select **Disable**.

5. Go to the Boot menu, select USB using the up and down arrows for Boot Option #1 and press **Enter**.

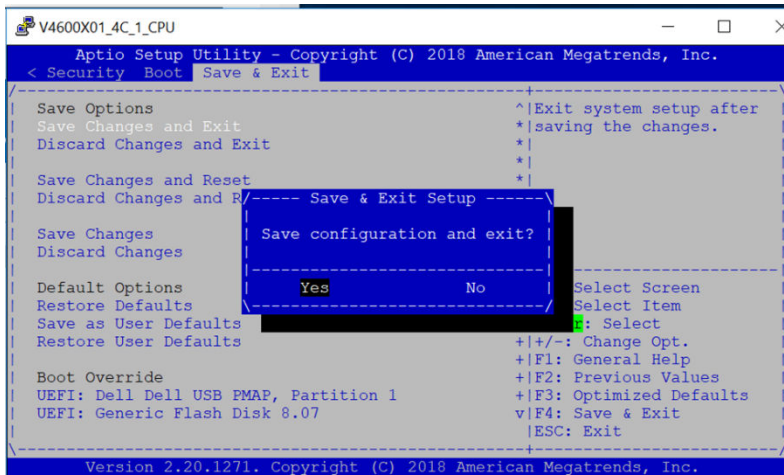
Select USB



6. Press the **F4** key to Save the changes and exit the utility.

7. Confirm saving the configuration by selecting **Yes** and press **Enter**.





8. The system will boot from the USB and start the installation.

## ADVA OS Installation

1. The OS installation starts.

```
[ 7.125864] i8042: No controller found
[ 10.644350] dracut-pre-udev[417]: modprobe: ERROR: could not insert 'floppy': No such device
[ 10.660267] dracut-pre-udev[417]: modprobe: ERROR: could not insert 'edd': No such device
[ OK ] Started Device-Mapper Multipath Device Controller.
      Starting Open-iSCSI...
[ OK ] Started Show Plymouth Boot Screen.
[ OK ] Started Forward Password Requests to Plymouth Directory Watch.
[ OK ] Reached target Paths.
[ OK ] Reached target Basic System.
[ OK ] Started Open-iSCSI.
      Starting dracut initqueue hook...
[ 11.940931] c6xx 0000:b5:00.0: Failed to load MMP firmware qat_c62x_mmp.bin
[ 11.947901] c6xx 0000:b5:00.0: Failed to load acceleration FW
[ 12.065306] c6xx 0000:b6:00.0: Failed to load MMP firmware qat_c62x_mmp.bin
[ 12.072272] c6xx 0000:b6:00.0: Failed to load acceleration FW
[ 12.189301] c6xx 0000:b7:00.0: Failed to load MMP firmware qat_c62x_mmp.bin
[ 12.196258] c6xx 0000:b7:00.0: Failed to load acceleration FW
[ 14.139242] dracut-initqueue[1776]: mount: /dev/sdb is write-protected, mounting read-only
[ OK ] Started dracut initqueue hook.
      Starting dracut pre-mount hook...
[ OK ] Reached target Remote File Systems (Pre).
[ OK ] Reached target Remote File Systems.
[ OK ] Started dracut pre-mount hook.
[ OK ] Reached target Initrd Root File System.
      Starting Reload Configuration from the Real Root...
[ OK ] Started Reload Configuration from the Real Root.
[ OK ] Reached target Initrd File Systems.
```

Disk formatting and installation complete successfully

```

np2s0f3', u'em4', u'em1', u'em3', u'em2'])
[ 52.164932] sysprep.py[13896]: Comparing physical_core_count, expected 8
[ 52.165143] sysprep.py[13896]: Comparing physical_core_count, expected 8
[ 52.165346] sysprep.py[13896]: Comparing physical_core_count, expected 8
[ 52.165549] sysprep.py[13896]: Comparing physical_core_count, expected 8
[ 52.165753] sysprep.py[13896]: Comparing physical_core_count, expected 8
[ 52.165956] sysprep.py[13896]: Comparing interface_names, expected {'set_requires': [u'wpp0s2lu4i12', u'emp2s0f0', u'emp2s0f1',
u'emp2s0f2', u'emp2s0f3', u'emp8s0f0', u'emp8s0f1', u'emp7s0f1', u'emp7s0f0']}
[ 52.166170] sysprep.py[13896]: Comparing interface_names, expected {'set_requires': [u'wpp0s2lu4i12', u'emp2s0f0', u'emp2s0f1',
u'emp2s0f2', u'emp2s0f3', u'emp8s0f0', u'emp8s0f1', u'emp7s0f1', u'emp7s0f0']}
[ 52.166377] sysprep.py[13896]: Comparing physical_core_count, expected 4
[ 52.166581] sysprep.py[13896]: Comparing physical_core_count, expected 4
[ 52.166785] sysprep.py[13896]: Comparing physical_core_count, expected 12
[ 52.166989] sysprep.py[13896]: Comparing physical_core_count, expected 8
[ 52.167193] sysprep.py[13896]: Comparing physical_core_count, expected 8
[ 52.167402] sysprep.py[13896]: Comparing physical_core_count, expected 16
[ 52.167605] sysprep.py[13896]: Comparing dmi_system_manufacturer, expected DELL
[ 52.167847] sysprep.py[13896]: Comparing interface_pci_addrs, expected {'set_requires': [u'0000:b8:00.0', u'0000:b8:00.1', u'00
00:02:00.0', u'0000:02:00.1', u'0000:02:00.2', u'0000:02:00.3', u'0000:04:00.0']}
[ 52.168061] sysprep.py[13896]: Comparing dmi_system_product_name, expected VEP-4600
[ 52.168267] sysprep.py[13896]: szm= True tym= True
[ 52.168471] sysprep.py[13896]: hd_type= any drv_type= ssd
[ 52.168674] sysprep.py[13896]: min_size_in= 100.0 size= 924.1 max_size_in= 1048576.0
[ 52.168877] sysprep.py[13896]: initializing DiskAttributes, disk device is sda
[ 52.169087] sysprep.py[13896]: Checking max_size 64 against disk size 924
[ 52.169291] sysprep.py[13896]: Checking max_size 72 against disk size 924
[ 52.169493] sysprep.py[13896]: Checking max_size 100 against disk size 924
[ 52.169697] sysprep.py[13896]: Checking max_size 128 against disk size 924
[ 52.169903] sysprep.py[13896]: Checking max_size 99999999 against disk size 924
[ 52.170115] sysprep.py[13896]: found matching disk policy
Disk formatting and installation completed successfully. Shutting down.
-----

```

Power down prompt

```

[ OK ] Stopped Rebuild Journal Catalog...
[ OK ] Stopped Rebuild Journal Catalog...
[ OK ] Stopped target Local File Systems.
[ OK ] Stopped Configure read-only root support.
Stopping Configure read-only root support...
Unmounting /run/install/repo...
Unmounting /mnt/images...
Unmounting /mnt/var...
Unmounting Configuration File System...
Unmounting /boot/efi...
[ OK ] Stopped Rebuild Hardware Database.
Stopping Rebuild Hardware Database...
[ OK ] Stopped Read and set NIS domainname from /etc/sysconfig/network.
Stopping Read and set NIS domainname from /etc/sysconfig/network...
[ OK ] Stopped Apply Kernel Variables.
Stopping Apply Kernel Variables...
[ OK ] Stopped target Slices.
[ OK ] Removed slice User and Session Slice.
[ OK ] Stopped Load/Save Random Seed.
[ OK ] Failed unmounting /run/install/repo.
[ OK ] Failed unmounting Configuration File System.
[ OK ] Unmounted /mnt/var.
[ OK ] Unmounted /boot/efi.
Unmounting /boot...
[ OK ] Unmounted /mnt/images.
[ OK ] Unmounted /boot.
[ OK ] Reached target Unmount All Filesystems.
[ OK ] Stopped target Local File Systems (Pre).
[ OK ] Stopped Create Static Device Nodes in /dev.
Stopping Create Static Device Nodes in /dev...
[ OK ] Stopped Collect Read-Ahead Data.
Stopping Collect Read-Ahead Data...
Stopping Monitoring of LVM2 mirrors... dmeventd or progress polling...
[ OK ] Stopped Monitoring of LVM2 mirrors...ng dmeventd or progress polling.
Stopping Device-mapper event daemon...
Stopping LVM2 metadata daemon...
[ OK ] Stopped LVM2 metadata daemon.
[ OK ] Stopped Device-mapper event daemon.
[ OK ] Reached target Shutdown.
[ OK ] Reached target Final Step.
Starting Power-Off...
[ 206.034665] systemd-shutdown[1]: Failed to finalize file systems, DM devices, ignoring
[ 206.192576] i40e 0000:b6:00.3: Failed to update MAC address registers; cannot enable Multicast Magic packet wake up
[ 206.318374] i40e 0000:b6:00.2: Failed to update MAC address registers; cannot enable Multicast Magic packet wake up
[ 206.438395] i40e 0000:b6:00.1: Failed to update MAC address registers; cannot enable Multicast Magic packet wake up
[ 206.558378] i40e 0000:b6:00.0: Failed to update MAC address registers; cannot enable Multicast Magic packet wake up
[ 207.328928] Power down.

```

2. Remove the USB and start up the system.

 **NOTE:** User required to power on/off device either physically or by using PDU.

## Configure BIOS to boot from SSD

1. After the install completes, reboot the system and go into the BIOS settings.
2. In the Boot menu, select Hard Drive BBS Priorities then press **Enter**.

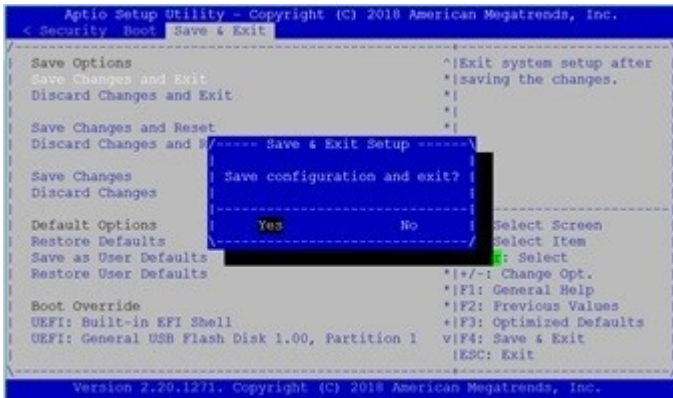


3. Select sSATA P3: INTEL as Boot Option #1.



4. Press the **F4** key to Save the changes and exit the utility.

5. Confirm saving the configuration by selecting Yes and press **Enter**.



6. The system will boot from the hard drive.



---

```
[ OK ] Started containerd container runtime.
[ OK ] Started Notify NFS peers of a restart.
[ OK ] Started OpenSSH server daemon.
[ OK ] Reached target Remote File Systems (Pre).
[ OK ] Reached target Remote File Systems.
      Starting Permit User Sessions...
      Starting Virtualization daemon...
[ OK ] Started Permit User Sessions.
[ OK ] Started Serial Getty on ttyS0.
[ OK ] Started Getty on tty1.
[ OK ] Reached target Login Prompts.
[ OK ] Started Command Scheduler.
[ OK ] Started 65vse Time Verifier.
[ OK ] Started 65vse Time Store.
[ OK ] Started Virtualization daemon.
[ OK ] Started Dynamic System Tuning Daemon.
[ OK ] Started LSB: modprobe the QAT modul...o pass configuration parameters.
      Starting Virtualization daemon...
[ OK ] Started Virtualization daemon.
      Stopping irqbalance daemon...
[ OK ] Stopped irqbalance daemon.
[ OK ] Started irqbalance daemon.
      Mounting FUSE Control File System...
[ OK ] Mounted FUSE Control File System.
[ OK ] Started vSE Prepare.
```

```
CentOS Linux 7 (Core)
Kernel 4.14.79-adva-23 on an x86_64
```

```
MaestrOS login: root
Password:
Last login: Wed Aug 28 03:54:35 EST 2019 on ttyS0
Last login: Wed Aug 28 04:08:18 on ttyS0
[root@MaestrOS ~]# █
```

7. Login to the ADVA OS (with username as `root` and password as `overture`)

# Configure BIOS and Install ESXi OS

## Topics:

- Configure BIOS to boot from USB
- Install ESXi OS
- Configure BIOS to boot from SSD
- Logging into ESXi
- Configuring the network on ESXi
- How to add ESXi license

## Configure BIOS to boot from USB

1. In BIOS, set Boot Option Filter to UEFI only.
  - a) Select the Advanced menu tab using the up and down arrow keys from the Setup Utility screen. Select CSM Configuration.

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main  Advanced  IntelRCSetup  Event Logs  Security  Boot  Save & Exit
-----
|> Trusted Computing                ^|CSM configuration:
|> ACPI Settings                    *|Enable/Disable, Option
|> S5 RTC Wake Settings              *|ROM execution settings,
|> Serial Port Console Redirection   *|etc.
|> Debug Port Table Configuration    *|
|> PCI Subsystem Settings            *|
|> Network Stack Configuration       *|
|> CSM Configuration                 *|
|> NVMe Configuration                *|
|> SDIO Configuration                *|-----
|> USB Configuration                 *|><: Select Screen
|> POST Test                          *|^v: Select Item
|                                       *|Enter: Select
|                                       *|+/-: Change Opt.
|> Intel(R) Ethernet Connection X553 10 GbE SF... *|F1: General Help
|> Intel(R) Ethernet Connection X553 10 GbE SF... *|F2: Previous Values
|> Intel(R) Ethernet Connection X553 1GbE - 50... +|F3: Optimized Defaults
|> Intel(R) Ethernet Connection X553 1GbE - 50... v|F4: Save & Exit
|                                       |ESC: Exit

```

- b) Verify that UEFI is selected for the Boot option filter from the Compatibility Support Module Configuration screen.

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced
-----+-----
Compatibility Support Module Configuration |Enable/Disable CSM
CSM Support                             |Support.
      [Enabled]
CSM16 Module Version                     |
      07.81
GateA20 Active                           |
      [Upon Request]
INT19 Trap Response                       |
      [Immediate]
Boot option filter                        |
      [UEFI only]
Option ROM execution                      |
-----+-----
Network                                  |><: Select Screen
Storage                                  |^v: Select Item
Video                                    |Enter: Select
Other PCI devices                         |+/-: Change Opt.
      [UEFI]
      [UEFI]
      [UEFI]
      [UEFI]
   |F1: General Help
   |F2: Previous Values
   |F3: Optimized Defaults
   |F4: Save & Exit
   |ESC: Exit
-----+-----

```

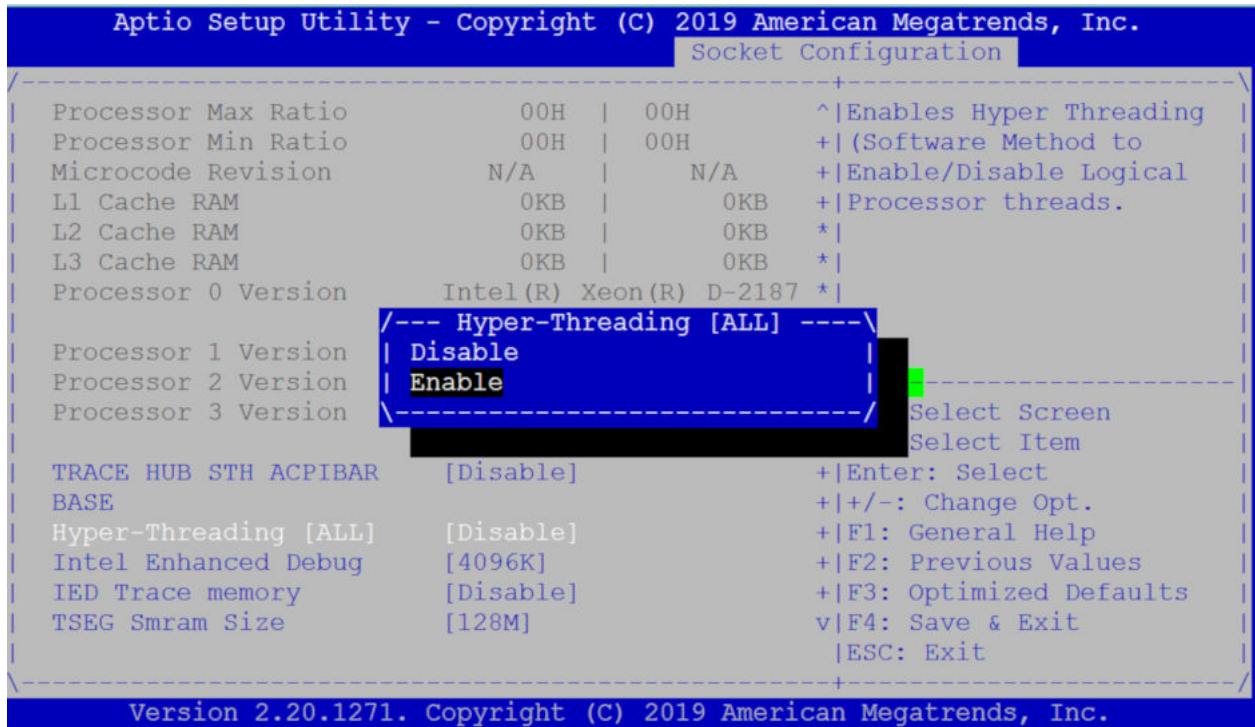
2. Enable Hyper-Threading
  - a) Tab to Socket Configuration, press **Enter** on Processor Configuration

```

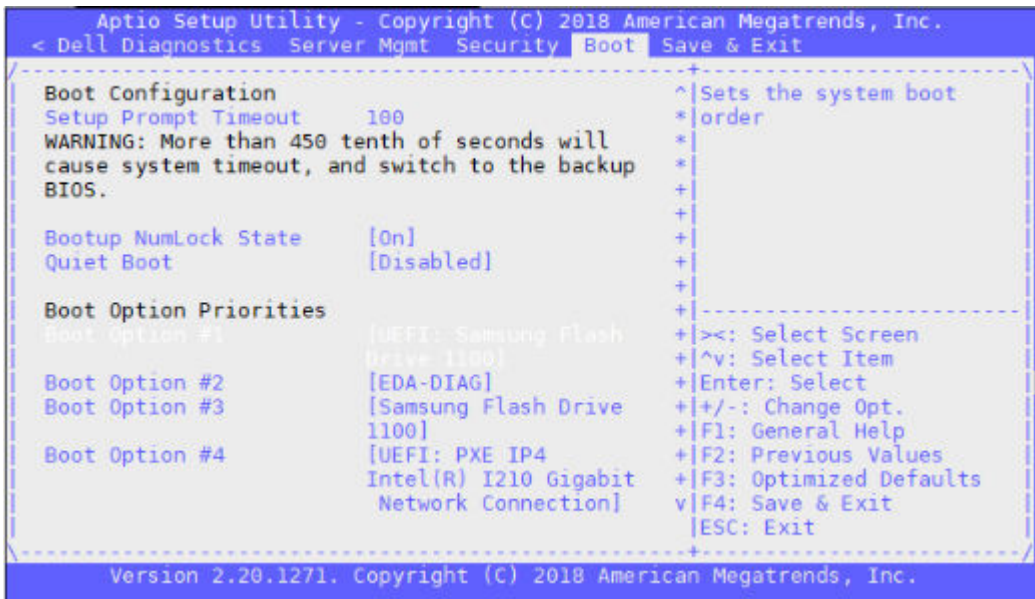
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main  Advanced  Platform Configuration  Socket Configuration >
-----+-----
> Processor Configuration                 |Displays and provides
> Common RefCode Configuration           |option to change the
> UPI Configuration                       |Processor Settings
> Memory Configuration                   |
> IIO Configuration                       |
> Advanced Power Management Configuration |
   |
   |><: Select Screen
   |^v: Select Item
   |Enter: Select
   |+/-: Change Opt.
   |F1: General Help
   |F2: Previous Values
   |F3: Optimized Defaults
   |F4: Save & Exit
   |ESC: Exit
-----+-----
Version 2.20.1271. Copyright (C) 2019 American Megatrends, Inc.

```

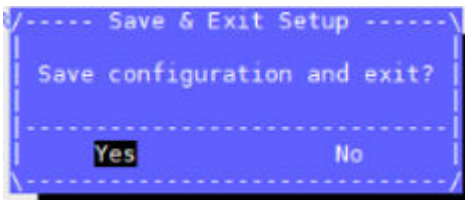
- b) Scroll down to Hyper-Threading, press **Enter** and select Enable.



- Configure the USB, UEFI:Samsung Flash Drive- 1100, as Boot Option #1 from the Boot Configuration screen, then press **Enter** to save the changes.



- Press the **F4** key to Save the changes and exit the utility.
- Confirm saving the configuration by selecting **Yes** and press **Enter**.



- The system will boot from the USB and start the ESXi installation.  
ESXi installation output



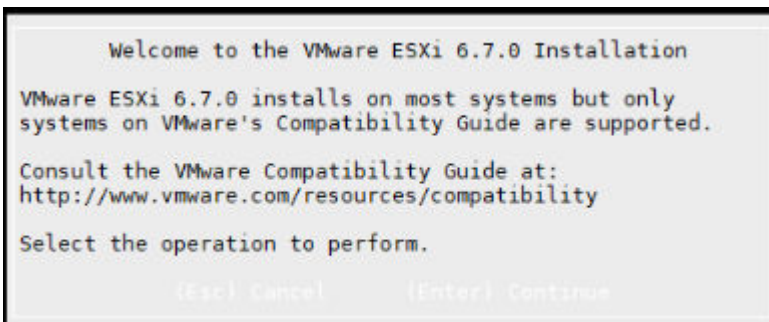
```

<6>Loading /lsu_lsi.v00
<6>Loading /lsu_lsi.v01
<6>Loading /lsu_lsi.v02
<6>Loading /lsu_lsi.v03
<6>Loading /lsu_smar.v00
<6>Loading /native_m.v00
<6>Loading /rste.v00
<6>Loading /vmware_e.v00
<6>Loading /vsan.v00
<6>Loading /vsanheal.v00
<6>Loading /vsanmgmt.v00
<6>Loading /tools.t00
<6>Loading /dell_con.v00
<6>Loading /xorg.v00
<6>Loading /imgdb.tgz
<6>Loading /imgpayld.tgz
<6>UEFI Secure Boot is not enabled
<6>Shutting down firmware services...
Starting VMKernel initialization ...
Initializing memory ...
Initializing hardware support ...
Initializing timing ...
Initializing scheduler ...
Initializing device support ...
Initializing processors ...
Late chipset initialization ...
Initializing PCI ...
Initializing IOV ...
Enabling interrupts ...
Initializing ACPI ...
Initializing storage stack ...
Initializing power management ...
Initializing page cache ...
Initializing PCI passthru ...
Initializing events ...
Initializing heartbeat ...
VMKernel loaded successfully.

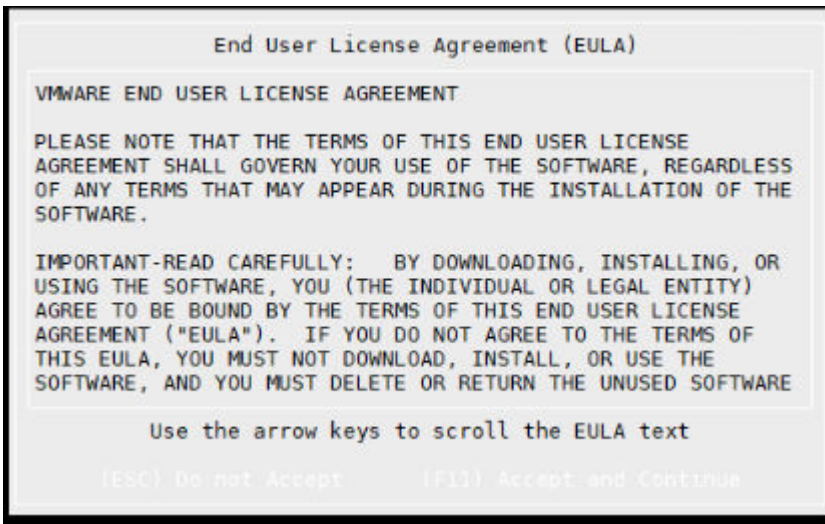
```

## Install ESXi OS

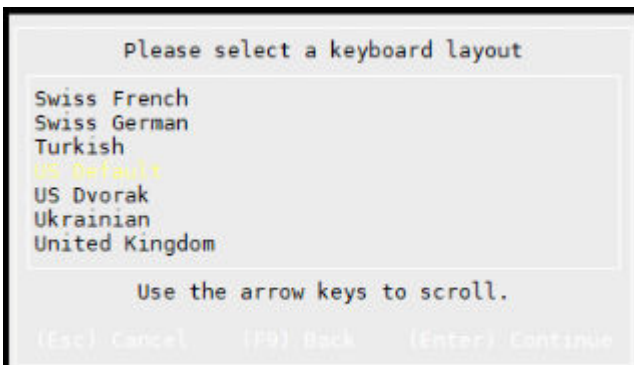
1. Press Enter to continue installation process.



2. Press **F11** to Accept and Continue Licence Agreement.



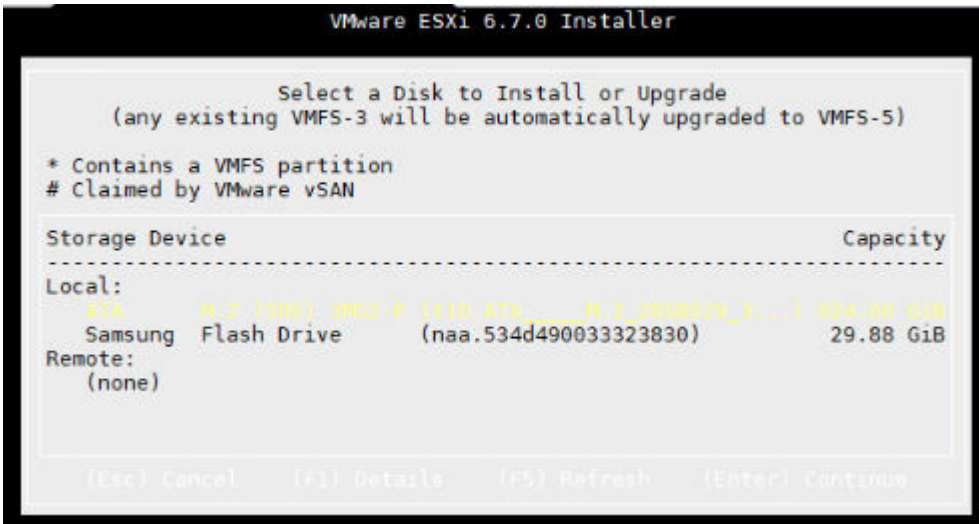
3. Select the keyboard layout option using up down keys and press **Enter**.



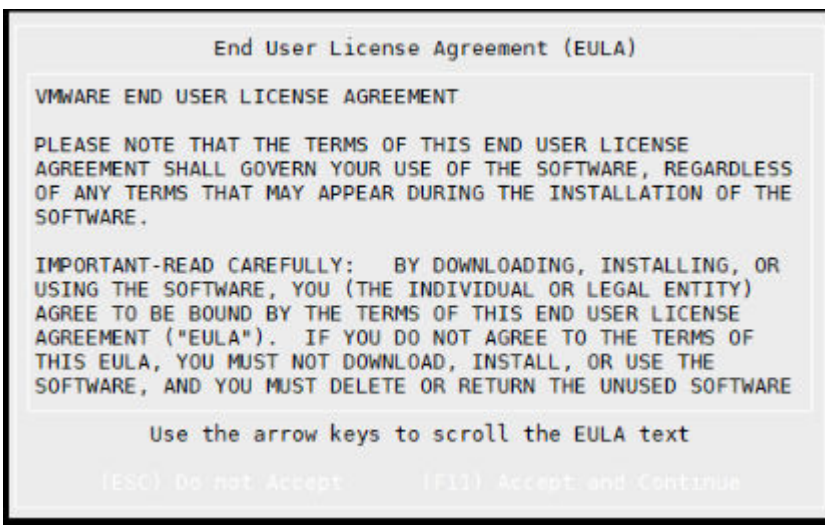
4. Enter Root Password and press **Enter**



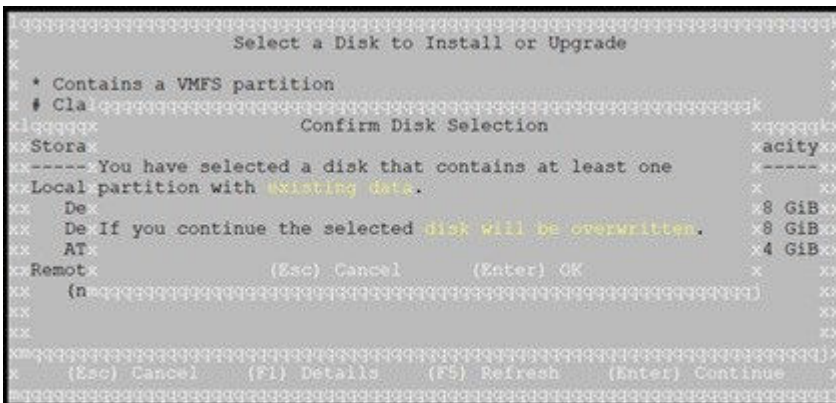
5. Select SSD from the VMware ESXi 6.7.0 screen as the destination disk..



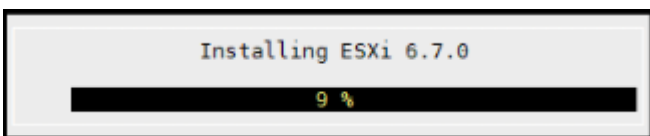
6. Press **F11** to confirm the repartition and installation.



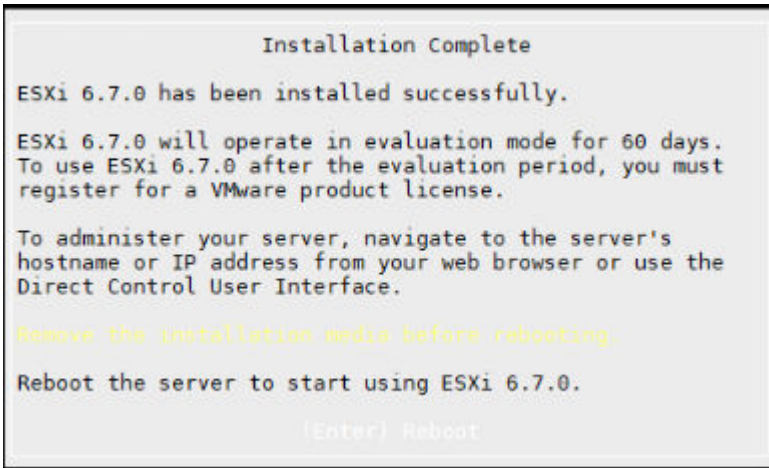
7. Confirm the disk selection by pressing Enter.



8. The ESXi installation status screen displays.



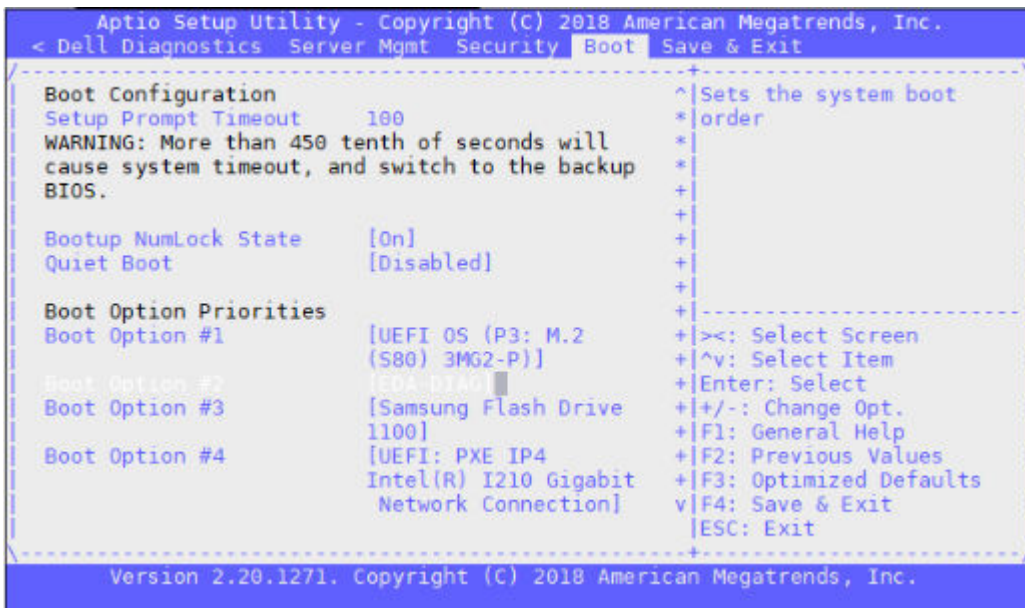
9. Press **Enter** to reboot after the installation completion screen displays.



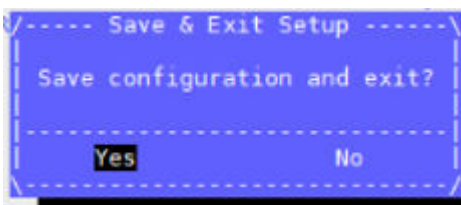
10. Remove the USB and press **Enter** to continue. The VEP4600 platform reboots.

## Configure BIOS to boot from SSD

1. Boot into the BIOS settings and select the Boot menu tab.
2. Configure the hard disk as Boot Option 1.



3. Press **Save** and Exit. Reboot the system..



## Logging into ESXi

**NOTE:** Logging into the ESXi console will invoke the 90-day license. You can log into the browser-based vSphere UI without starting the clock on the license.



1. Login credentials for ESXi will be the VEP4600 Service Tag + !. To get the Service Tag, pull out the luggage tag on the top right corner of the VEP4600 server. The Service Tag can also be found in the BIOS.
2. To view Service tag in the BIOS, go to Server Mgmt tab.

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
< Dell Diagnostics Server Mgmt Security Boot Save & Exit
-----+-----
| BMC Firmware Revision      2.00          ^|Press <Enter> to view
| IPMI Version               2.0           +|FRU information.
| BMC Interface(s)          KCS, USB       +|
|                            *|
| BMC Support                [Enabled]    *|
| Wait For BMC              [Disabled]    *|
| FRB-2 Timer               [Enabled]     *|
| FRB-2 Timer timeout       [6 minutes]   *|
| FRB-2 Timer Policy        [Do Nothing]   *|
| OS Watchdog Timer         [Disabled]   *|-----+-----
| OS Wtd Timer Timeout      [10 minutes] *|><: Select Screen
| OS Wtd Timer Policy       [Reset]       *|^v: Select Item
| Serial Mux                [Disabled]   *|Enter: Select
|> System Event Log         *|+/-: Change Opt.
|> BMC self test log        *|F1: General Help
|> View FRU information     *|F2: Previous Values
|> BMC network configuration +|F3: Optimized Defaults
|> View System Event Log    v|F4: Save & Exit
|                            |ESC: Exit
-----+-----
Version 2.20.1271. Copyright (C) 2019 American Megatrends, Inc.

```

3. Scroll down to View FRU information and press **Enter**.

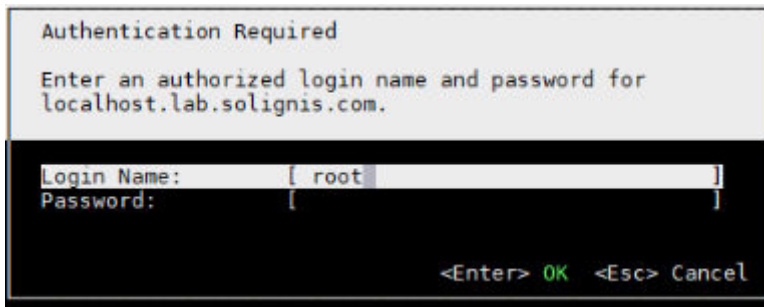
```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Server Mgmt
-----+-----
| FRU Information
|
| System Manufacturer      DELL
| System Product Name      VEP-4600-V930
|
| System Version           A0
| System Serial Number     FHXR02
|
| Board Manufacturer       DELL
| Board Product Name       VEP-4600-V930
|-----+-----
| Board Version            0CWV1NA00
| Board Serial Number      CNCES0084C0030
|
|><: Select Screen
|^v: Select Item
|Enter: Select
|+/-: Change Opt.
|F1: General Help
|F2: Previous Values
|F3: Optimized Defaults
|F4: Save & Exit
|ESC: Exit
-----+-----
Version 2.20.1271. Copyright (C) 2019 American Megatrends, Inc.

```

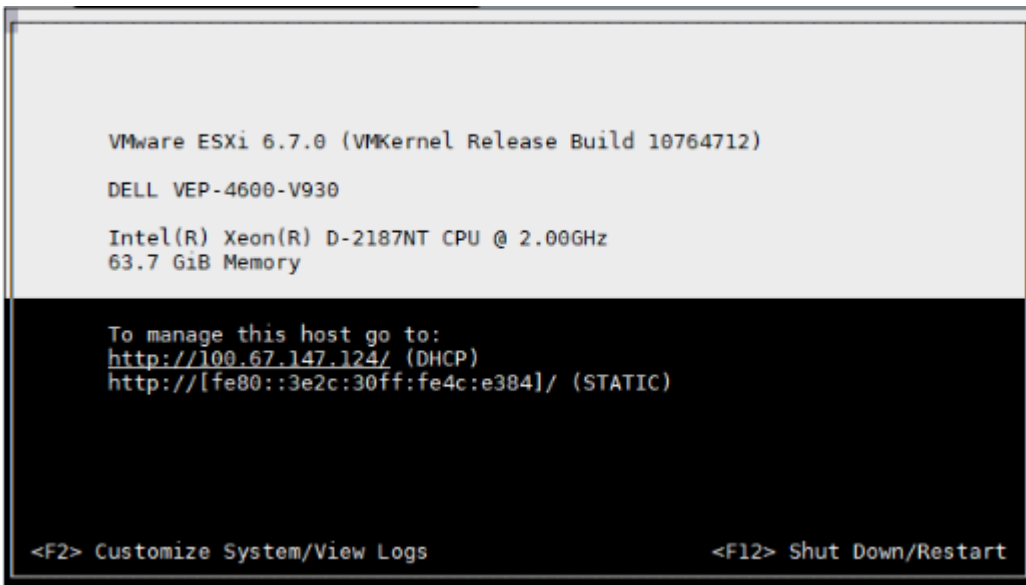
**NOTE:** System serial number is the service tag.

4. To log into the serial console:
  - a) After ESXi boots, press **F2**.
  - b) Enter the required login and password credentials at the login screen then press **Enter**.

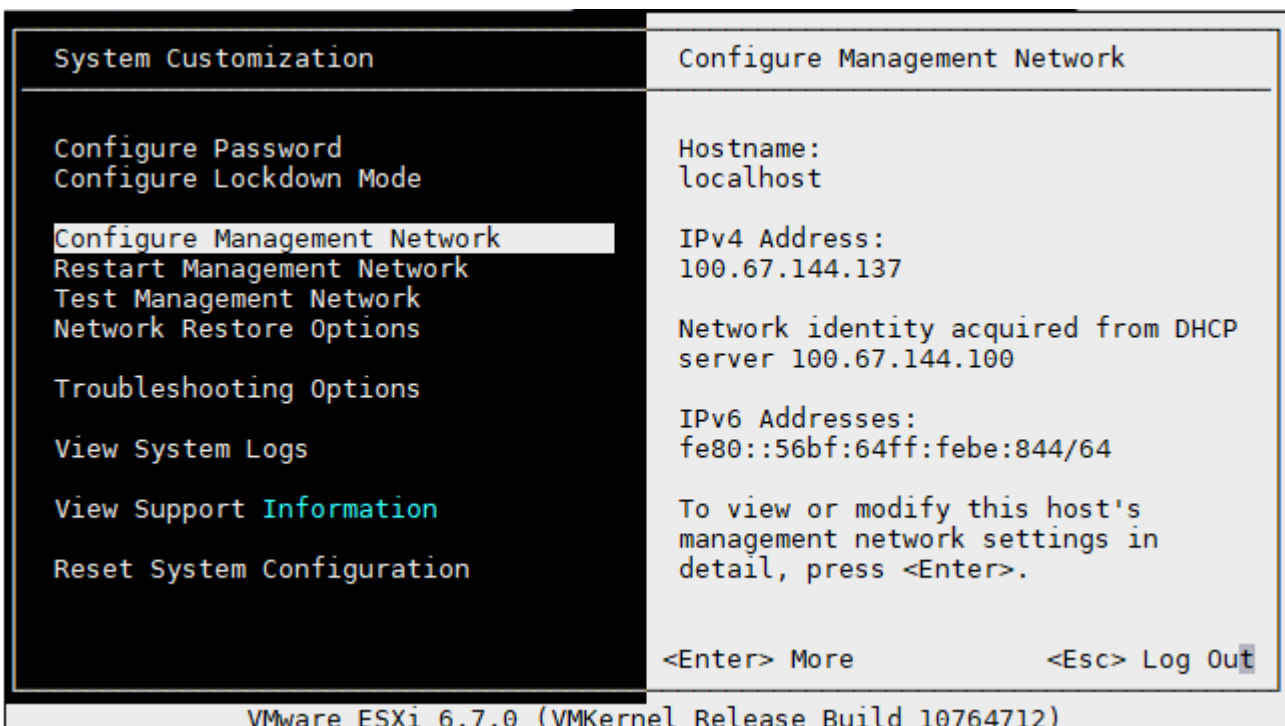


## Configuring the network on ESXi

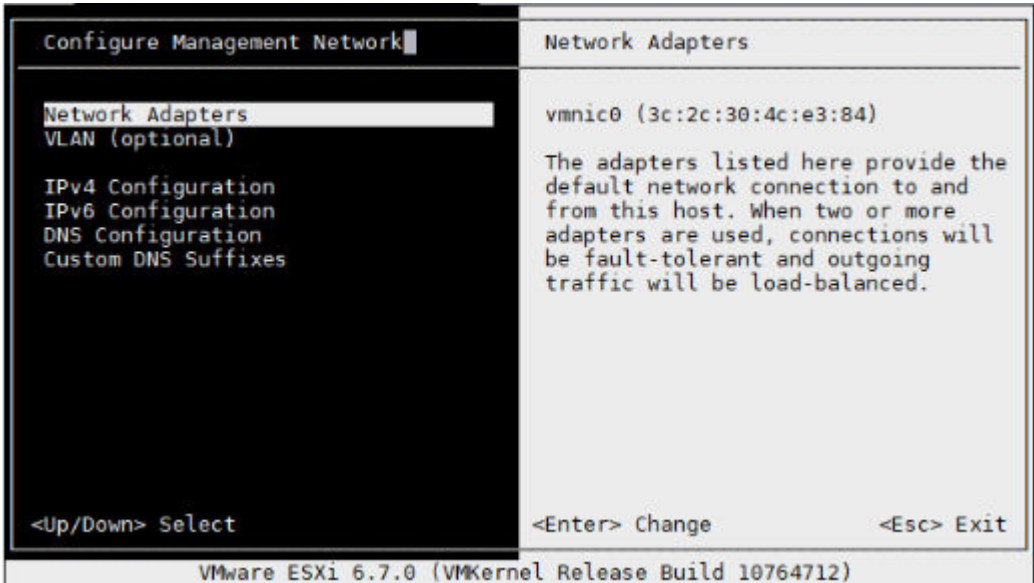
1. After booting with ESXi, Press **F2** to configure the static network.



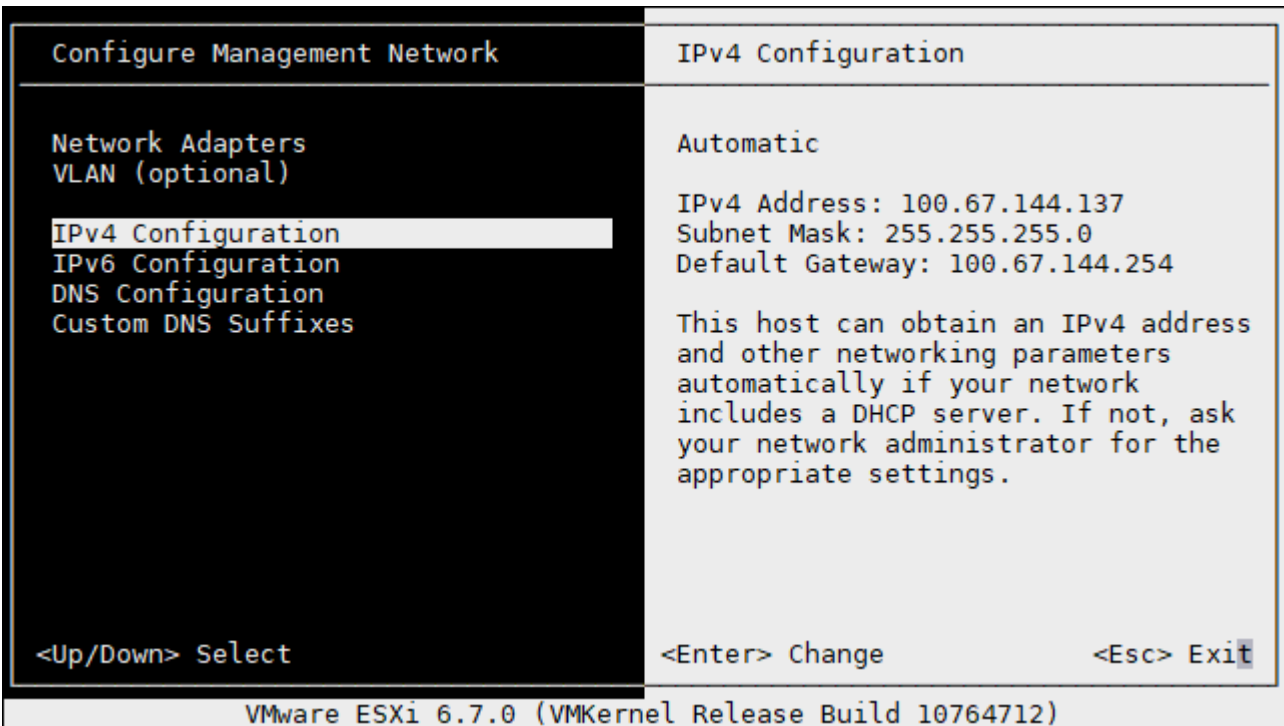
2. Select Configure network management from the System Customization screen then press **Enter**.



3. Select Network Adapters using the up and down arrow keys from the Configure Management Network screen and press **Enter**.

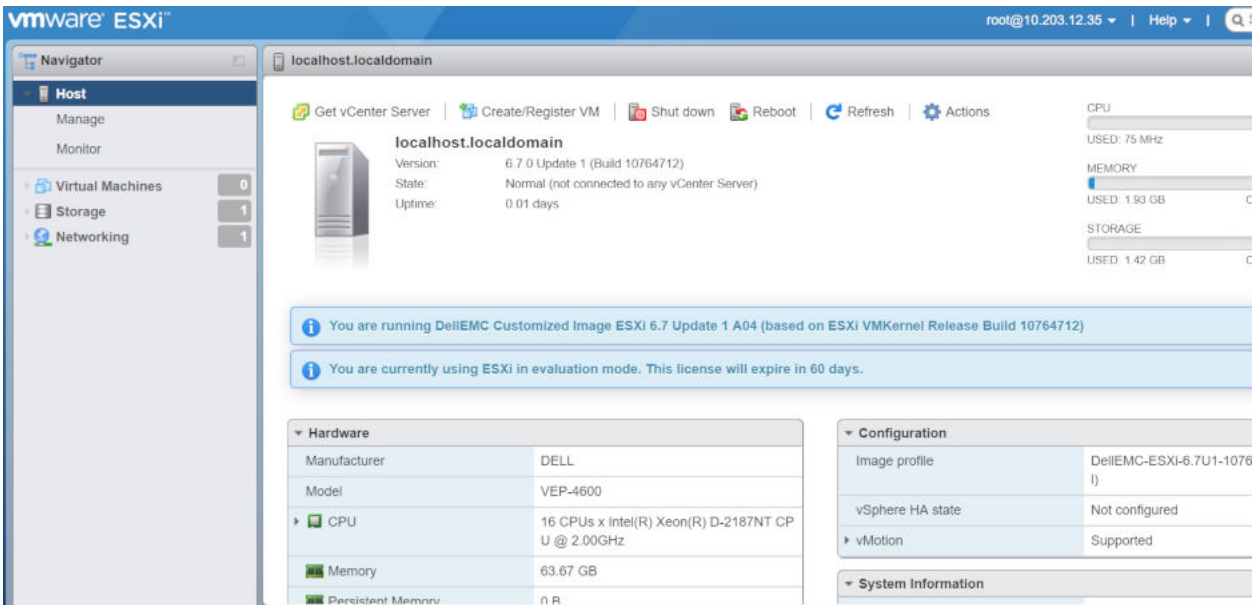


4. Select IPv4 Configuration.

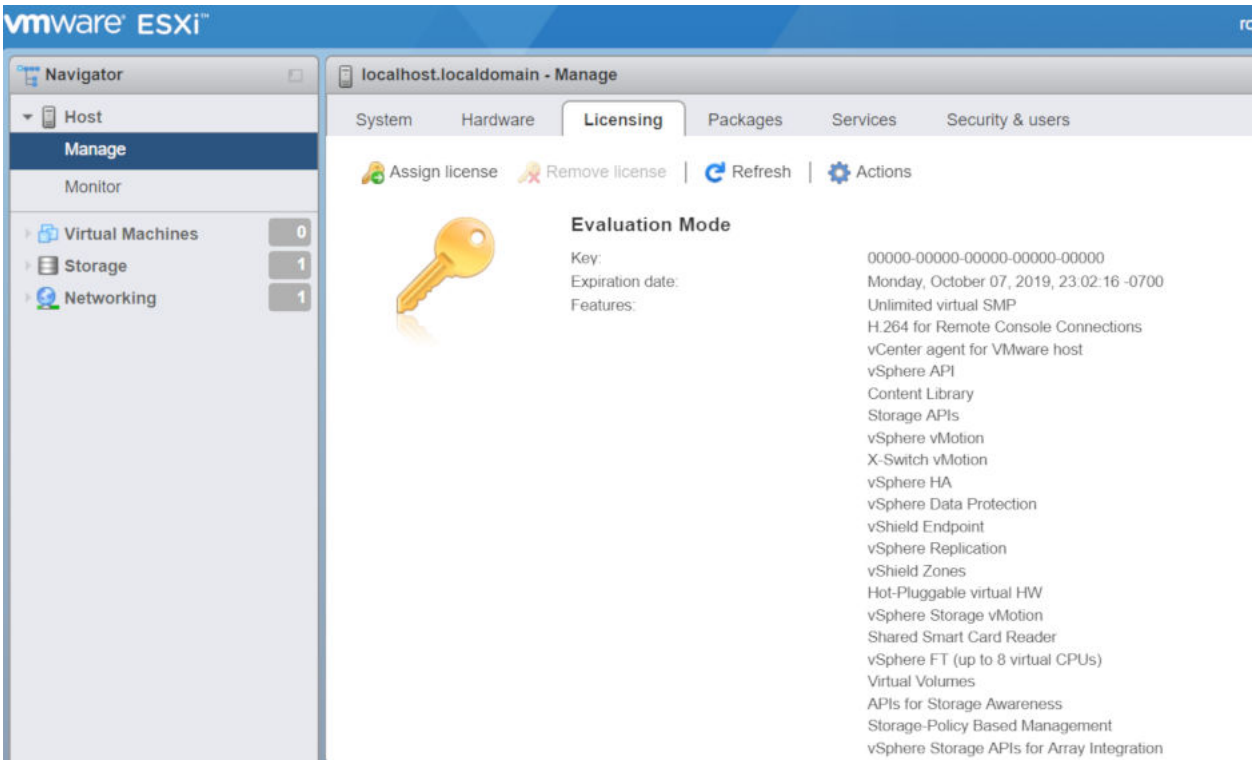


5. Select Set Static IPv4 address and network configuration.
6. Select Network Adapter which is connected, and press **Enter** to save changes.





2. Click Manage from the menu on the left panel.  
Click on the Licensing tab



3. Enter a valid license and click **Check license**.



