

# Oracle Talari E100

## Hardware Guide



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## About This Document

This guide describes the physical characteristics of the Talari E100 Adaptive Private Networking (APN) Appliance. It includes setting up the physical connections on front panel as well as how to mount this appliance in a rack. The intended audience of this document is a Network Administrator or a Network Operator.

## Revision History

This section provides a revision history for this document.

Date	Description
October 2019	<ul style="list-style-type: none"> <li>Initial Oracle release.</li> </ul>
August 2020	<ul style="list-style-type: none"> <li>Adds “Creating a Bootable USB Drive on Linux,” “Creating a Bootable USB Drive on Windows,” and “Reimaging of the E50” sections.</li> </ul>
October 2020	<ul style="list-style-type: none"> <li>Fixes mentions of E50.</li> </ul>
April 2021	<ul style="list-style-type: none"> <li>Adds Out of Band ZTP section.</li> </ul>
August 2021	<ul style="list-style-type: none"> <li>Removes Easy 1<sup>st</sup> Install instructions.</li> </ul>

## My Oracle Support

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Call the CAS main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select 2 for New Service Request.
2. Select 3 for Hardware, Networking, and Solaris Operating System Support.
3. Select one of the following options:

- For technical issues such as creating a new Service Request (SR), select 1.
- For non-technical issues such as registration or assistance with My Oracle Support, select 2.

You are connected to a live agent who can assist you with My Oracle Support registration and opening a support ticket.

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A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

### Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) site, <http://docs.oracle.com>. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at <http://www.adobe.com>.

1. Access the Oracle Help Center site at <http://docs.oracle.com>.
2. Click Industries.
3. Click the Oracle Communications link.

Under the SD-WAN header, select a product.

4. Select the Release Number.

A list of the entire documentation set for the selected product and release appears.

5. To download a file to your location, right-click the PDF link, select Save target as (or similar command based on your browser), and save to a local folder.

# Hardware and Software Requirements

Talari E100 APN Appliances (APNAs) have the following hardware and software requirements:

## Hardware:

E100 APNAs require a standard 19 inch (480mm) two post rack for mounting.

## Software:

The APNA Web Console is supported in latest versions of the following web browsers:

- Mozilla Firefox
- Google Chrome

Supported browsers must have cookies enabled.

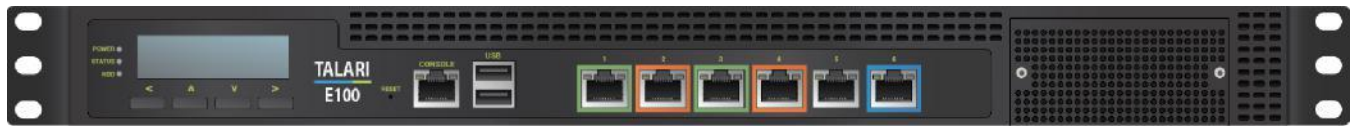
Supported browsers must have JavaScript installed and enabled.

## Display:

A minimum screen resolution of 1024 x 960 or greater is recommended.

## About the APN Appliance

Designed to bring reliability and bandwidth to branch locations, the 1U rack-mountable E100 APN Appliance (APNA) affordably delivers up to 100 Mbps across 8 WAN links and connects up to 32 sites, complementing Talari's higher-capacity APNA models.



## Talari APN Overview

Talari Networks is redefining WAN reliability and application performance with its family of APN Appliances by aggregating and transforming affordable broadband links to deliver business-class performance and reliability at consumer prices. Talari APN Appliances (APNAs) are seamlessly added to existing networks to deliver more bandwidth, reduced WAN operating expenses, and greater reliability than any existing single-provider WAN.

Using our patented Adaptive Private Network technology, Talari's solution combines diverse, abundant, affordable IP bandwidth sources, and provides reliable, resilient and high-quality connectivity between sites, insuring application continuity. Talari APNAs deployed in the main office and remote offices provide a network of Conduits between sites. Each Conduit is made of multiple WAN links and data transmitted across the Conduits is controlled and optimized to use network resources available across all WAN Links.

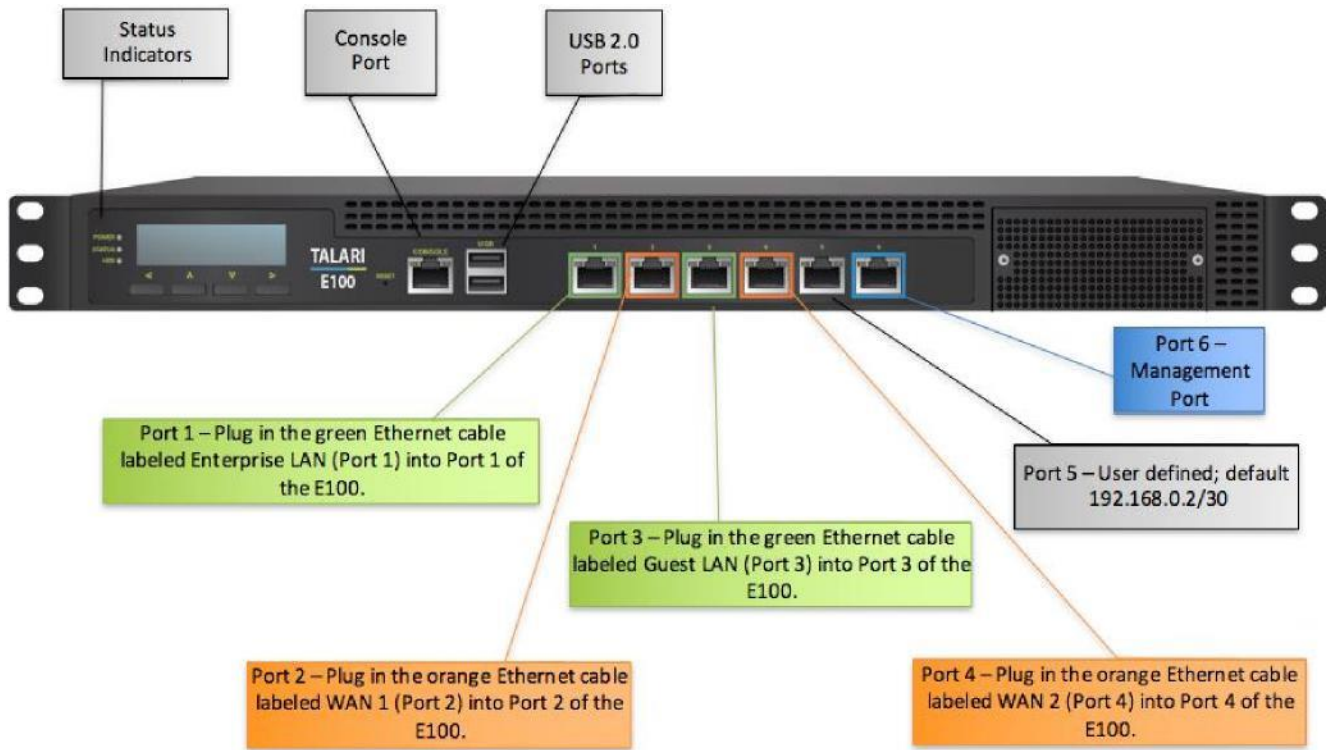


## Front Panel Configuration



### Front LED Codes

LED	Description
Power	If the LED is on it indicates that the system is powered on. If it is off, it indicates that the system is powered off.
Status	If the LED is green, it indicates that the system's operational state is normal. If it is red, it indicates that the system is malfunctioning.
HDD	If the LED blinks, it indicates data access activities; otherwise, it remains off.

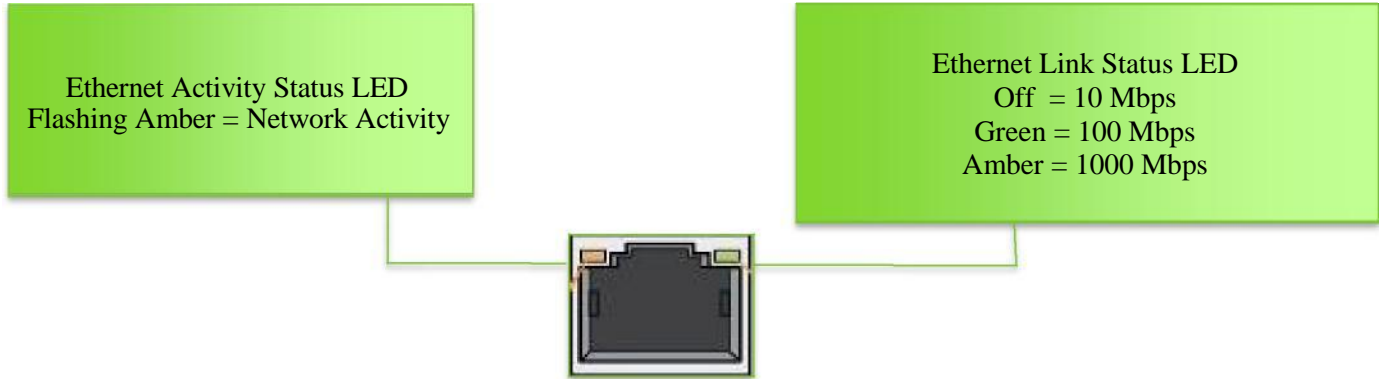


## Ethernet Ports

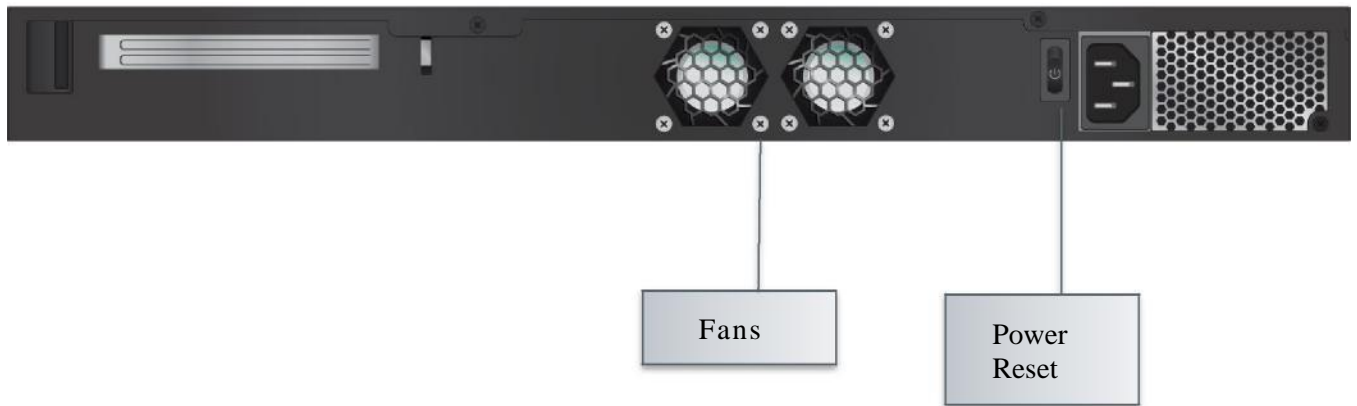
Port	Description
1	User defined; Fail-To-Block by Default, configurable as a Bypass pair with Port 2 as Fail-To-Wire.
2	User defined; Fail-To-Block by Default, configurable as a Bypass pair with Port 1 as Fail-To-Wire.
3	User defined; Fail-To-Block by Default, configurable as a Bypass pair with Port 4 as Fail-To-Wire.
4	User defined; Fail-To-Block by Default, configurable as a Bypass pair with Port 3 as Fail-To-Wire.
5	User defined; functions as management auxiliary port; default IP address is 192.168.0.2/30.
6	Management port (dedicated-out of band).
Console	Used for service and maintenance.
USB (2)	Used for service and maintenance.

## NIC Indicator Codes

Ethernet ports on the front panel have indicator lights for information on network activity and link status.



## Rear Panel Configuration



## Hardware Specifications

The E100 APNA has the following are the hardware specifications.

	Specification
Power	100-240V, 50-60 Hz, 3-1.5 Amp Max, 200W
Physical Dimensions	EIA RS-310 standards 1U Height 1.7" (44mm) Width 16.9" (431mm) Depth 12.0" (305mm) Gross Weight 11lbs (5kg)
Mounting Options	Rack mount recessed flanges
System LEDs Front Panel	Power Status HDD
Link LEDs Front Panel	Link Activity Link Speed
Operating Temperature	32°F to 104°F (0° to 40°C)
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Humidity Range	5% to 90% (non-condensing) operating environment 5% to 95% (non-condensing) storage environment
Capacity	6 individual Gigabit Ethernet Ports
User interfaces	2 front accessible USB 2.0 ports Console Port 6 individual Gigabit Ethernet ports
Mean Time Between Failure (MTBF) in Hours	47,934

# Installing the APN Appliance

## Rack Installation

Prior to installing the system in a rack, adhere to the following rack installation guidelines:

- Ensure that there is adequate airflow in the rack. Improper installation or restricted airflow can damage the equipment.
- You should leave at least 1U of vertical space between each system you install in a rack.
- The rack width and depth must allow for proper serviceability and cable management.
- Make sure the rack is properly secured to the floor or ceiling and grounded.
- Always load the rack from the bottom up.
- Load the heaviest component in the rack first.
- Make sure the rack is level and stable before pulling a component out of the rack.
- Do not move racks by yourself; at least two people are needed to move a rack and to safely stage equipment.
- Cables should be easily identifiable.

## LAN/WAN Connections

When connecting each Ethernet cable (LAN, WAN) to the appropriate connector on the E100 APNA:

- Position the cables carefully, so that they do not put strain on the connectors.
- Organize cables in bundles such that cables do not intertwine.
- Inspect the cables to make sure that the routing and bend radii are satisfactory. Reposition cables, if necessary.
- Install cable ties in accordance with site requirements.

## Connecting Power to the Appliance

When connecting power to the E100 APNA:

- Make sure the system is powered off using the power button on the rear of the appliance.
- Plug the AC power cord into the appliance.
- Plug the AC power cord into an uninterrupted AC power source.

The E100 APNA uses 120-240 V AC.

## Important Note About Cabling and Bypass Mode

If your APNA is operating in bypass mode, logic used by the appliance represents the functionality provided by a crossover cable. This may cause a loss of the link between the APNA and older network devices that do not support auto-mdix when straight-through cables are used to connect the LAN and WAN ports of the APNA. In such a case, a crossover cable is required from the APNA WAN port to the device.

If your network devices support auto-mdix capability, the link should be automatically established when in bypass mode and there should be no need for crossover cables. Talari recommends testing and verifying this capability with the APNA powered off for proper operation.

For assistance, please contact your Talari representative, or the Talari Support team.

## Powering Up the Appliance

### Checklist for Power Up

Power up the E100 APNA by completing the following steps:

- Confirm that the chassis is securely mounted.
- Confirm that power and Ethernet cables are connected.

Power up is complete when the following indications appear:

- The green power LED on the front of the appliance comes on.
- Two quick beeps indicate that the Appliance is booting normally.
- The fans operate.
- The hard drive LED will flicker as the hard drive is accessed.

Note: Upon power up, the user must select a physical topology of Fail-to-Wire or Fail-to-Block. Procedure to select this mode is described below.

## Bypass Configuration using the LCD

The bypass configurable option on the LCD will appear once the unit is initially powered on and will last for 30 seconds.

- If the user selects “Yes” on the LCD, this will set the device to Inline mode (interfaces in Fail-to-Wire), allowing traffic to pass.
- If the user selects “No” on the LCD, this will set the device to Router mode (interfaces in Fail-to-Block).

- If there is no response after 30 seconds, the unit will select the default setting of Router mode (interfaces in Fail-to-Block).

**NOTE:** The user's response is retained until either a configuration is loaded containing a different Ethernet Interface configuration than the one the user initially selected, or the unit is set to factory defaults.

# Configuring the E100 APN Appliance

## Out of Band ZTP Option

Out of Band Zero Touch Provisioning (ZTP) is a serverless, secure way to provision new SD-WAN Edge devices in your network. This method is used to provision clients without any initial configuration upon start up.

**Note:** Your appliance must have already be running SD-WAN Edge 9.1 for OOB ZTB to function.

## Formatting the USB Drive

Oracle recommends use of a new USB drive to ensure there are no partitions on the device. The SD-WAN appliance expects a single partition with the specified label.

### For Windows

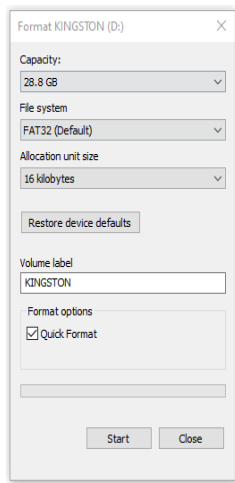
1. Insert the USB drive into your computer
2. If asked, do not encrypt your USB drive



3. Open your Windows or File Explorer to locate the USB drive
4. Ensure the USB drive is at least 100 MB.
5. Select This PC to show the USB drive under the Devices and Devices and drives section.

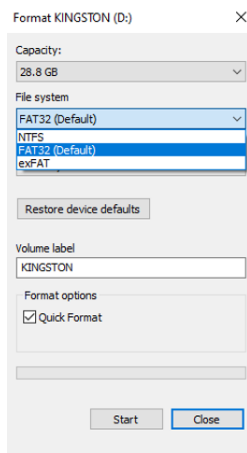


6. Right click on the USB drive and select Format... to display the format menu



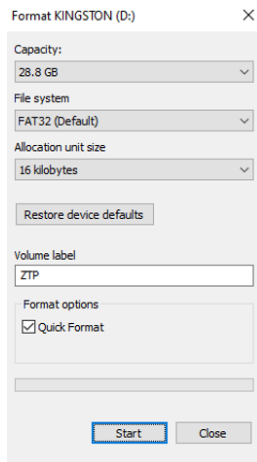
7. In the **Format dialog box**, do the following:

a. Select FAT32 in the File system field if not already selected. It is often the default option.

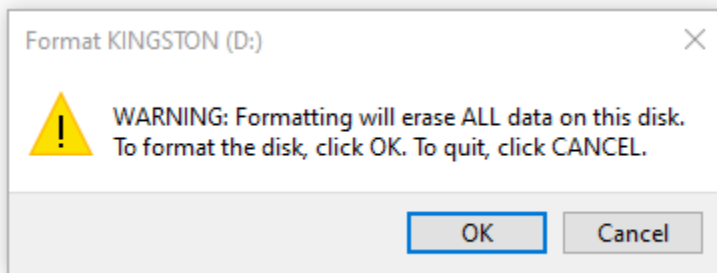


b. Type ZTP in the Volume label field.

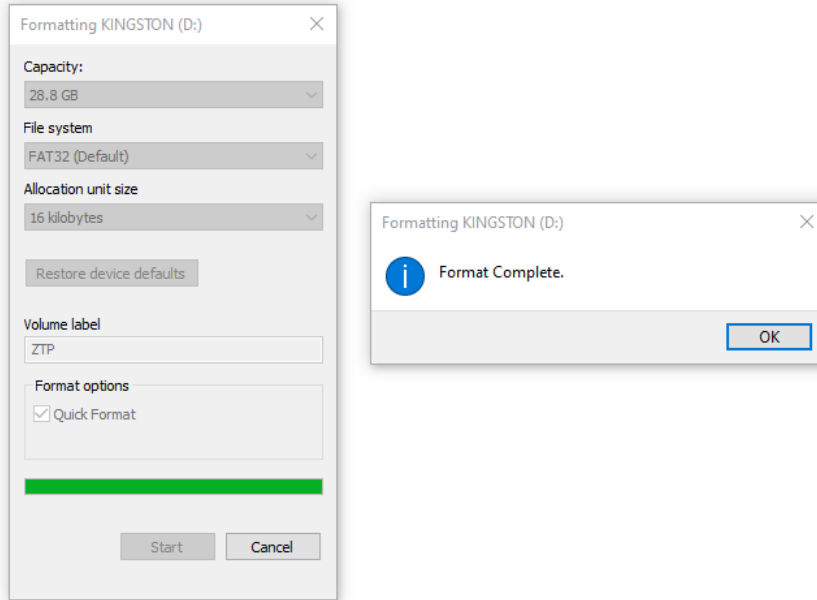
c. Select Start button to confirm show the confirmation box



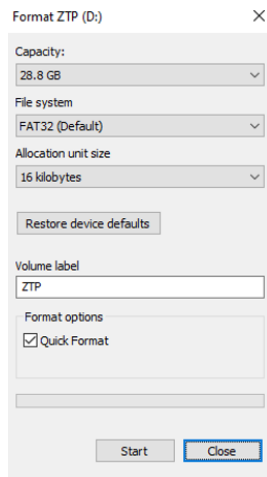
d. Select OK to confirm and being formatting



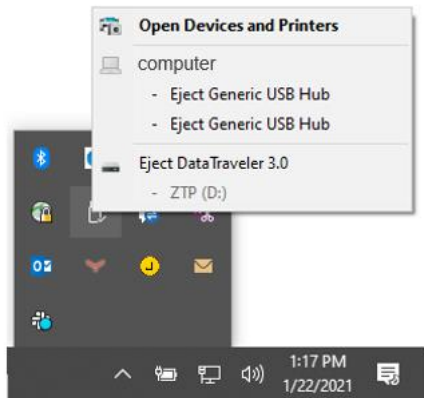
8. After formatting completes, click OK.



9. Confirm the Format dialog box by doing the following:
- The Volume label field and dialog box name shows ZTP.
  - The File system type is FAT32
  - After above is confirmed, select the Close button at the bottom.



10. Locate the downloaded software package (.zip file) on your computer. (ex. Package name: <ApplianceName>-A-R9\_1\_0\_0\_0\_GA\_<date>.zip)
11. Copy the file over to the ZTP USB drive. You should have a single software package on the drive in the top directory. Do not create any folders for the file.
12. Eject the ZTP USB drive.



13. Continue to the instructions to Configure SD-WAN using out-of-band ZTP.

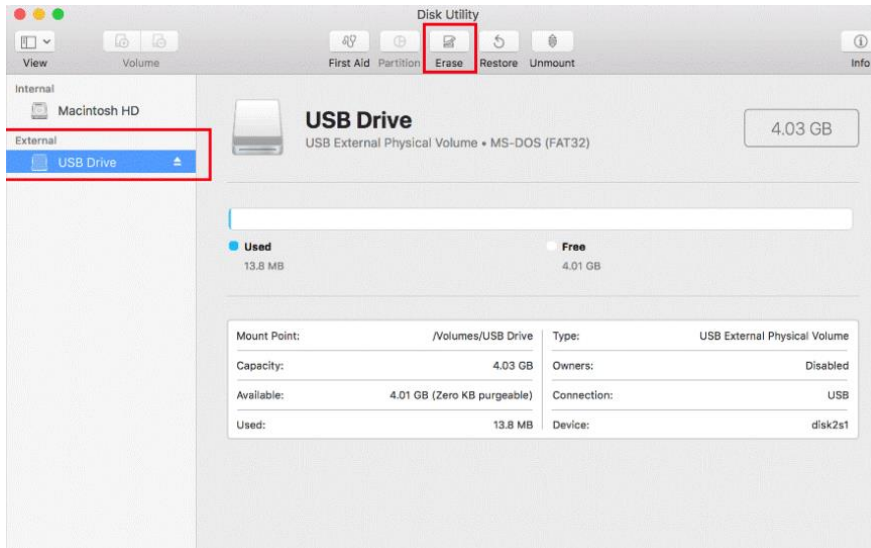
## For Linux

1. Insert the USB drive into the computer
2. Ensure the USB drive is at least 100 MB.
3. Check the device name. These instructions assume it is /dev/sdb.
4. Clear the USB using command `sgdisk -Z /dev/sdb`
5. Create a single partition using command `sgdisk /dev/sdb -n 1::0 -t 1:ef00`
6. Format the partition as FAT32 format using command `mkfs.vfat -F32 /dev/sdb1`
7. Format the USB drive for NTFS, naming the volume ZTP
8. Copy the downloaded software package (.zip file) onto the USB drive. It should be the ONLY software package on the USB drive. (ex. Package name: <ApplianceName>-A-R9\_1\_0\_0\_0\_GA\_<date>.zip)

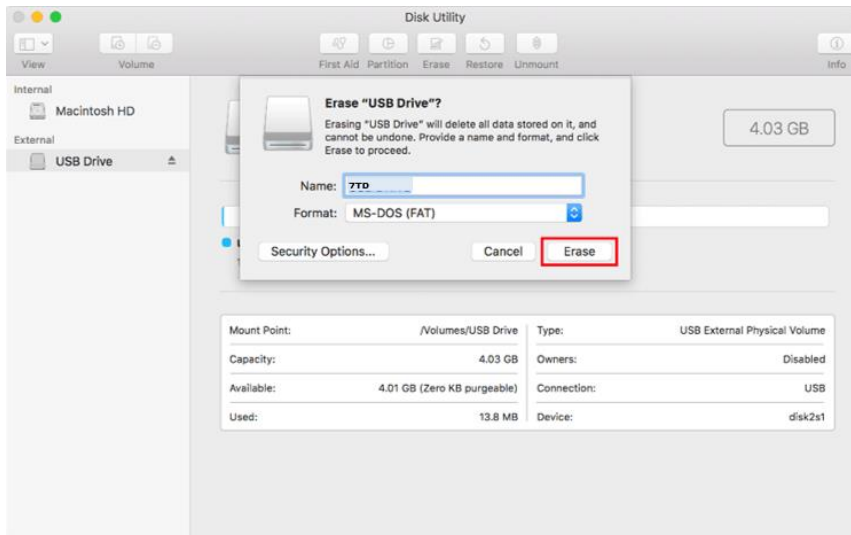
9. Eject the ZTP USB drive
10. Continue to the instructions to Configure SD-WAN using out-of-band ZTP

### For Mac

1. Insert the USB drive into the Mac
2. Launch Disk Utility, located in Applications > Utilities
3. Locate the USB drive name on the left hand side of Disk Utility window and select it



4. Ensure the USB drive is at least 100 MB.
5. In the Disk Utility window for your USB drive, do the following:
  - a. Select FAT if it is not already the default option in the Format field
  - b. Type ZTP in the Name field
  - c. Select Erase to begin formatting



6. Once Erasing is complete, select the Done button in the Erasing and creating dialog box
7. Locate the downloaded software package (.zip file) on your computer. (ex. Package name: <ApplianceName>-A-R9\_1\_0\_0\_0\_GA\_<date>.zip)
8. Copy the file over to the ZTP USB drive. You should have a single software package on the drive in the top directory. Do not create any folders for the file
9. Eject the ZTP USB drive.
10. Continue to the instructions to Configure SD-WAN using out-of-band ZTP

## **Configure SD-WAN Using Out-of-Band ZTP**

1. If not powered, plug in your appliance without a USB drive.
2. After it starts, insert the formatted USB drive with single software package for this appliance into the USB port of your SD-WAN appliance/hypervisor.
3. After installation, remove the USB drive from your SD-WAN appliance/hypervisor.

## Legacy Deployment Method

The E100 APNA ships with a default IP address of 192.168.0.2/30. In order to access your appliance remotely, you must first connect to it directly via Port 5 and configure a Management IP address for the appliance.



### From the PC connected to the Talari

- Change the IP address of your PC to 192.168.0.1.
- Change the Subnet Mask of your PC to 255.255.255.25
- Open a web browser and go to Talari web console (192.168.0.2). The username is *talariuser* and the default password is *talari*. **We strongly recommend changing the default password as soon as possible.**
- Select **Manage Appliance > Local Network Settings** from the pull-down menu.
- Set the IP address, Subnet Mask, and Gateway IP address for the Talari.
- When satisfied with the settings, select Change Settings.
- Be sure to change the network interface settings on your PC back to the original settings.

After the network administrator has created the Client package for the new site from the NCN, it may be uploaded to the new appliance via **Manage Appliance > Local Change Management**.

In order to serial into your appliance via the console port, on your terminal application you must select the specific serial line and use the following settings:

- Speed (baud rate) - 115200
- Data bits - 8
- Stop bits - 1

- Parity - None
- Flow control - XOFF
- Console cable - DB9-DB9

## Creating a Bootable USB Drive on Linux

Ensure that the capacity of your USB drive is at least 4 GB.

To create a bootable USB drive on Linux:

1. Download the E50 or E100 image from MOS.
2. Copy the image on the USB drive.  
Doing this destroys all existing data on the USB drive.
3. Insert the USB drive into the computer and run the `dmesg|tail` command.

```
[4317966.832947] usb 4-1: new SuperSpeed USB device number 39 using
xhci_hcd
[4317966.845892] usb 4-1: New USB device found, idVendor=0951,
idProduct=1666
[4317966.845893] usb 4-1: New USB device strings: Mfr=1, Product=2,
SerialNumber=3
[4317966.845894] usb 4-1: Product: DataTraveler 3.0
[4317966.845895] usb 4-1: Manufacturer: Kingston
[4317966.845896] usb 4-1: SerialNumber: E0D55EA57419E3C139680956
[4317966.848319] usb-storage 4-1:1.0: USB Mass Storage device detected
[4317966.848421] scsi host6: usb-storage 4-1:1.0
[4317967.863955] scsi 6:0:0:0: Direct-Access      Kingston DataTraveler 3.0 PMAP PQ: 0
ANSI: 6
```



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```
[4317967.864524] sd 6:0:0:0: Attached scsi generic sg4 type 0
[4317967.864606] sd 6:0:0:0: [sdd] 60604416 512-byte logical blocks: (31.0 GB/28.9 GiB)
[4317967.864790] sd 6:0:0:0: [sdd] Write Protect is off
[4317967.864792] sd 6:0:0:0: [sdd] Mode Sense: 45 00 00 00
[4317967.864972] sd 6:0:0:0: [sdd] Write cache: disabled, read cache: enabled, doesn't
support DPO or FUA
```

In this case, the device name is "sdd", and will be referenced by Linux as "/dev/sdd".

If Linux has been configured to auto-mount USB devices, unmount the partitions on the drive. Run the "df" command to detect the status of the partitions of the drive:

```
df
Filesystem                1K-blocks      Used Available Use% Mounted on
devtmpfs                  16416036         0 16416036  0% /dev
/dev/mapper/ol_lobi7u6-root 52403200  37842328 14560872  73% /
/dev/sda1                  1038336     427060    611276  42% /boot
/dev/mapper/ol_lobi7u6-home 164415040 112140980 52274060  69% /home
/dev/sdd2                  2755604     2389404    222896  92%
/run/media/oracle/USBBoot
```

In this example, the second partition of /dev/sdd is mounted and must be unmounted. In your case there may be no mounts on the USB or more.

4. To unmount the partition on the drive, run the command: `umount /run/media/oracle/USBBoot`.
5. Run the `df` command again to make sure that there are no mounts matching your USB device name (/dev/sdd in the example.)
6. Insert the USB drive. At this point, the USB drive is ready to receive the image.
7. `gunzip` the downloaded USB raw image file.

```
gunzip d6000v1_OS_7_0_1_0_0_GA_02282020_OS_52_GA_05022019_R8_2_1_0_0_GA_01282020.raw.gz
```

8. Burn the image, copy the USB raw image file to the USB device. In the example, the USB device is identified as `dev/sdd`. This command requires root access and is prefixed with "sudo".

```
sudo cp
d6000v1_OS_7_0_1_0_0_GA_02282020_OS_52_GA_05022019_R8_2_1_0_0_GA_01282020
.raw /dev/sdd
```

9. The USB burn process on a USB3 device can take 15 minutes. It may take a longer time if the device or port is USB2. After the process is complete, you can remove the USB. It is ready for use.

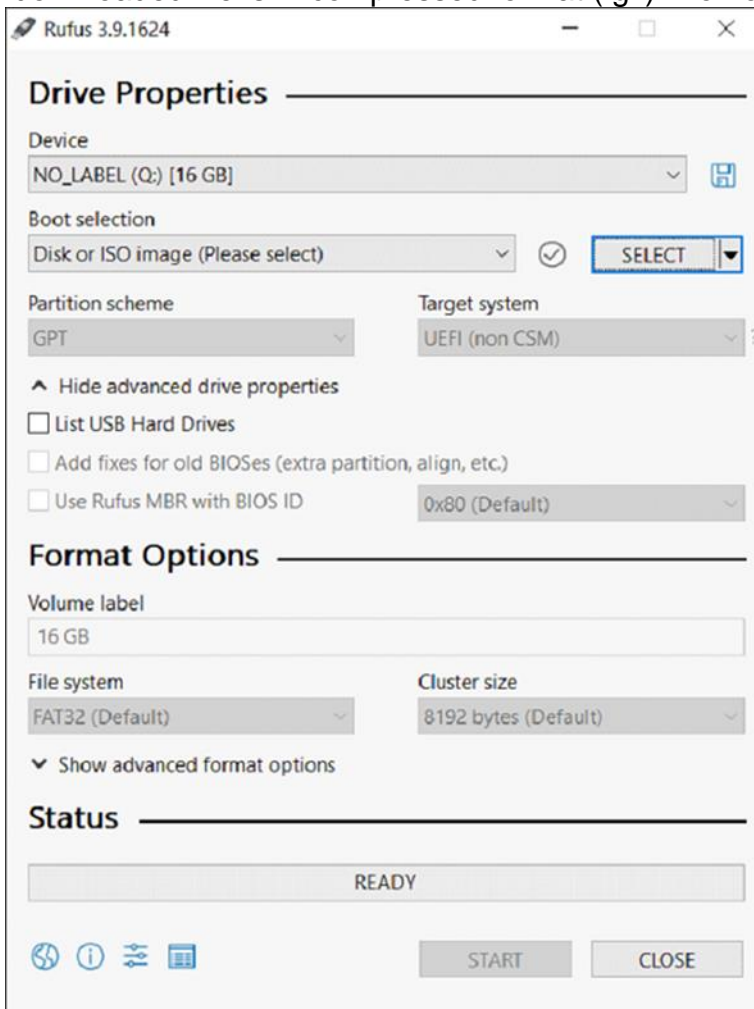
# Creating a Bootable USB Drive on Windows

Before starting this process, ensure that the capacity of your USB drive is at least 4 GB.

To create a bootable USB drive on Windows:

1. Download the E50 or E100 image from MOS.
2. Download the Rufus tool. It is a standalone program and requires no installation <https://rufus.ie/>.
3. Place the image on the USB drive. Doing this destroys all existing data on the USB drive.
4. Run Rufus.  
You will be prompted to allow administrator access.
5. Click **Yes**.

Click **SELECT** and choose the file that you downloaded from MOS. The downloaded file is in compressed format (.gz). Do not uncompress it.

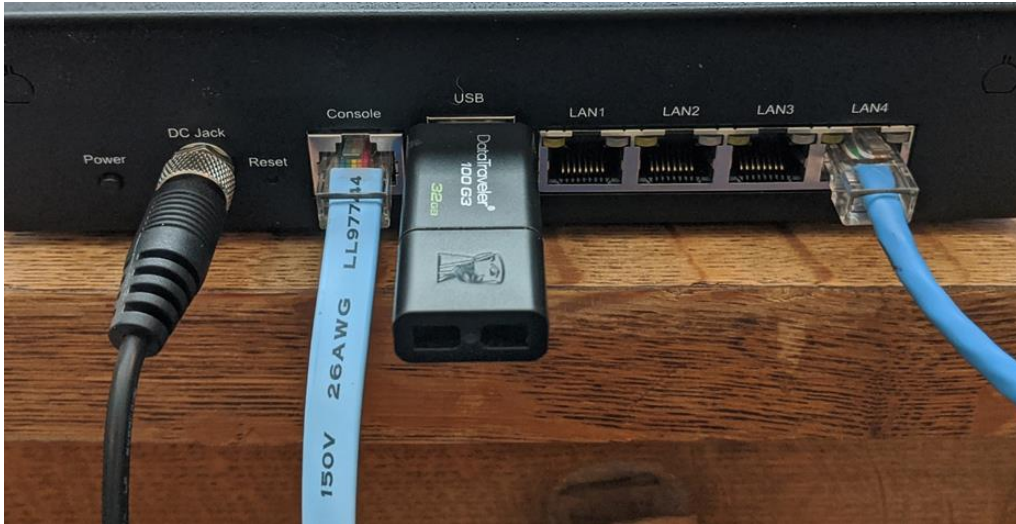


6. Click **Start**.  
You will be asked if it is OK to destroy all the data in the device.
7. Click **Yes**.

The USB burn process on a USB3 device can take 15 minutes. It may take longer if the device or port is USB2. After the process is complete, you can remove the USB. It is ready for use.

## Reimaging of the E100

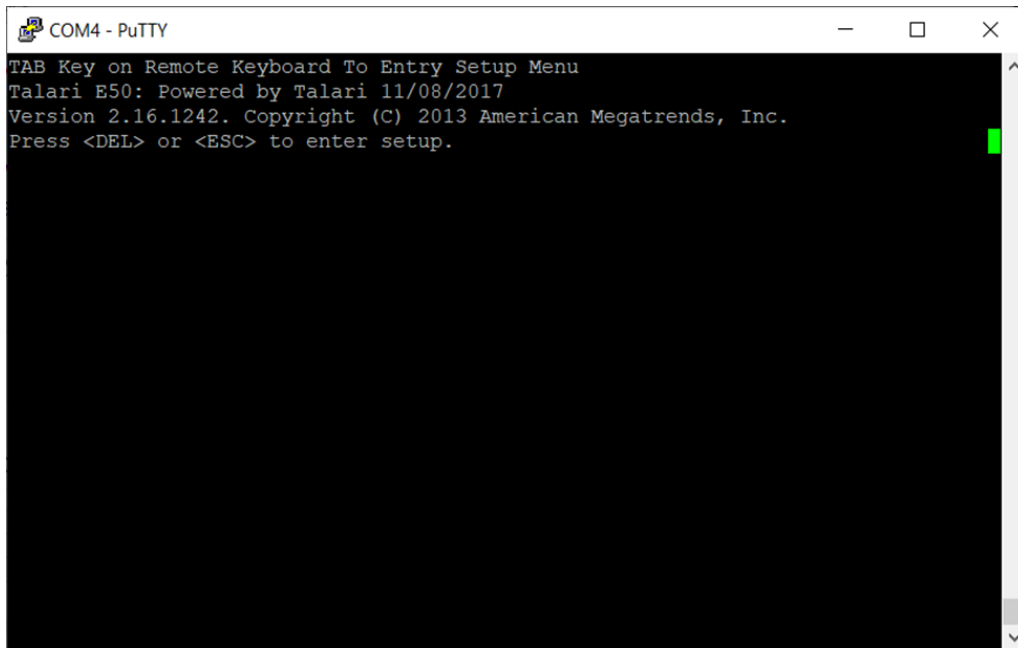
1. Connect a serial cable to the Console port. It will be configured at 115200 baud.
2. Insert the USB flash drive into the USB port and power cycle the unit.



The E50 shown in the image above also has the management port connected in the LAN4 port.

3. Enter the BIOS to set the USB stick to first in the boot order.

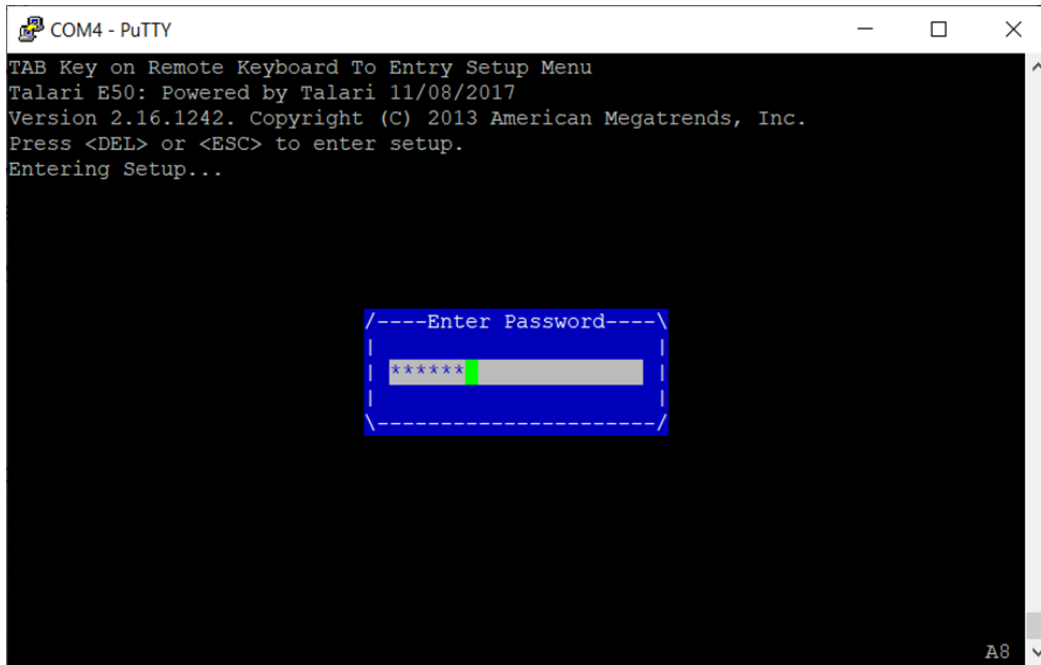
About 30 seconds after the appliance is power cycled, the following screen appears.



Press DEL a few times until the password prompt appears.

Note: For the E100, use the ESC key instead.

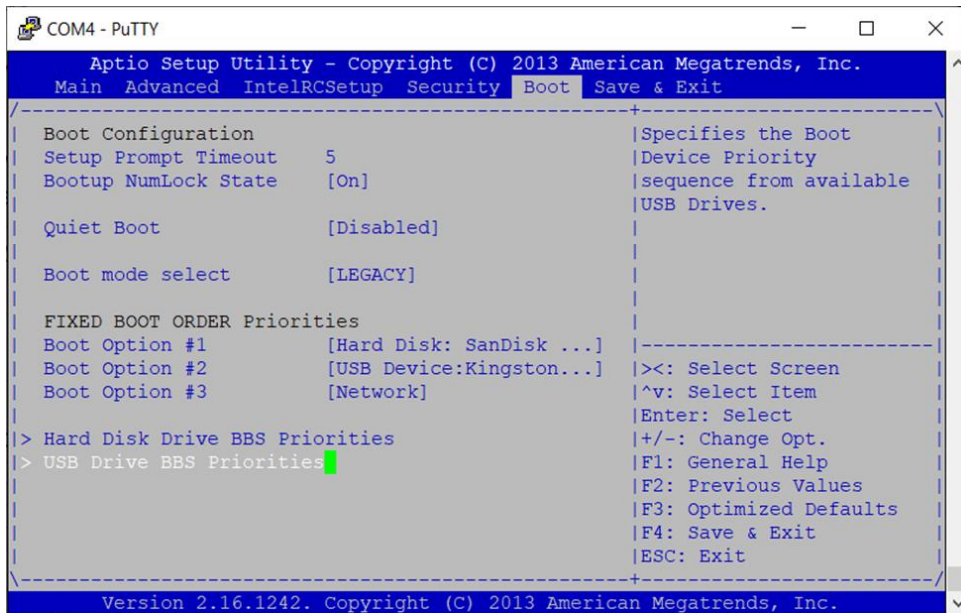
4. Type the password and press Enter. The E50 BIOS password is “talari”.



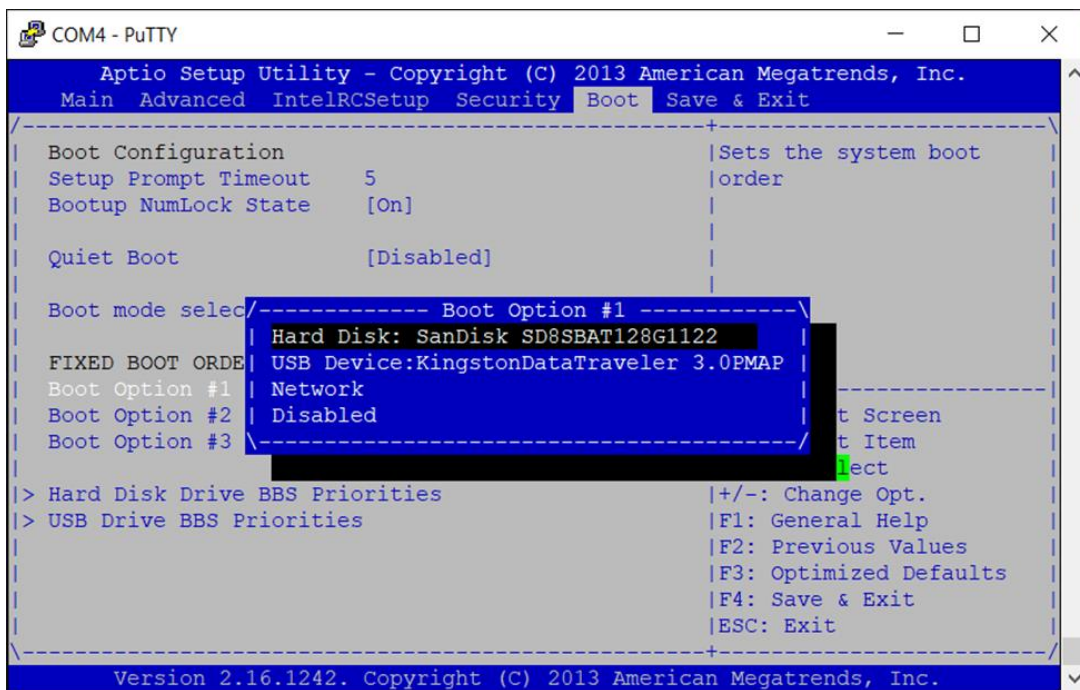
5. Use the Right Arrow to position to the Boot screen/page once you are on the Main BIOS screen



In the middle of the Boot screen is “FIXED BOOT ORDER Priorities”. In the following example, “Boot Option #1” is set to “Hard Drive” and must be changed to USB. If the USB is already first, you may proceed to Step 7.

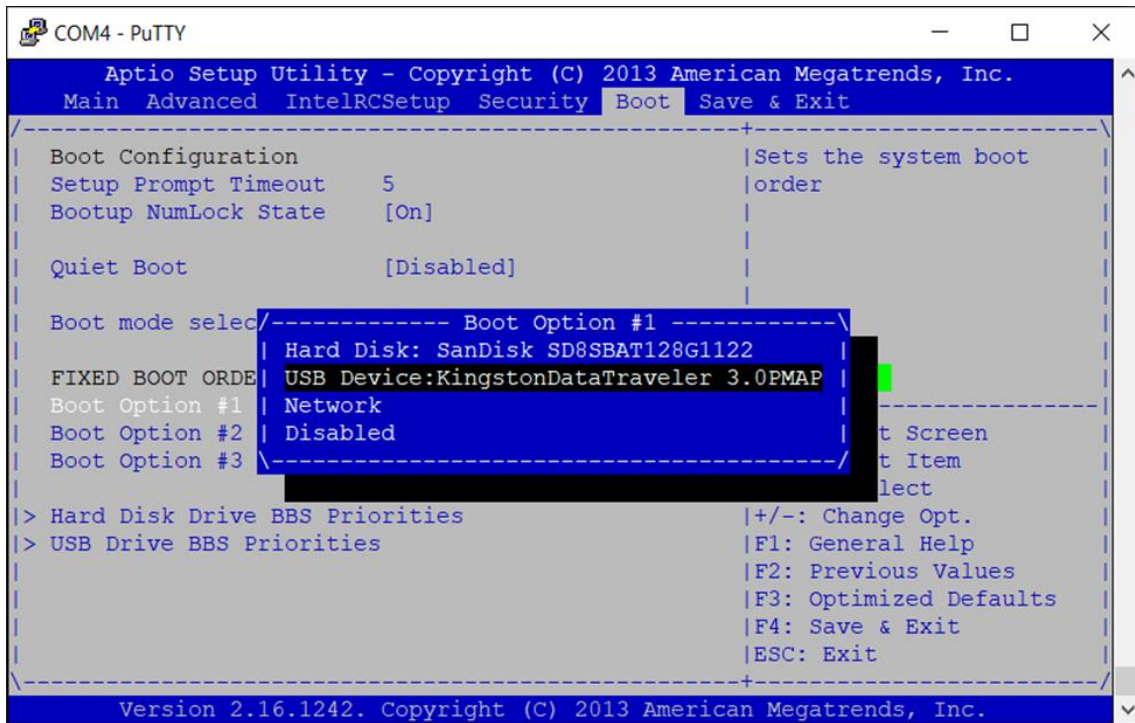


- 6. Use the Up and Down keys to select Boot Option #1 and press Enter. You are presented with a pop-up of available boot devices

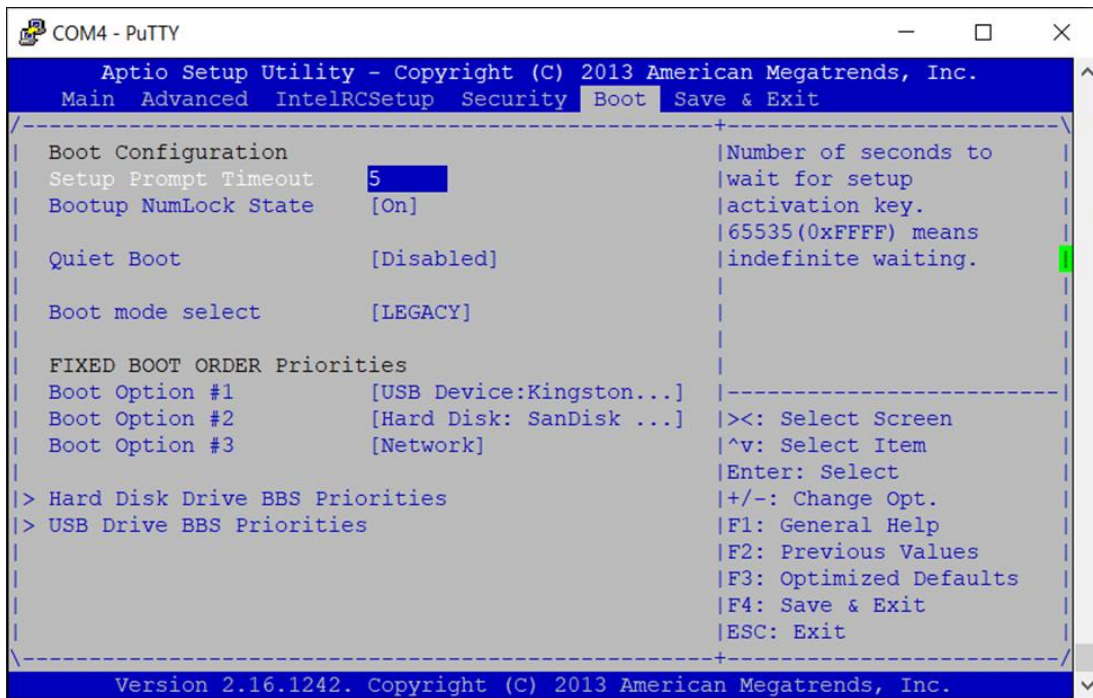


- 7. Use the UP and DOWN keys to select the USB Device and press ENTER.

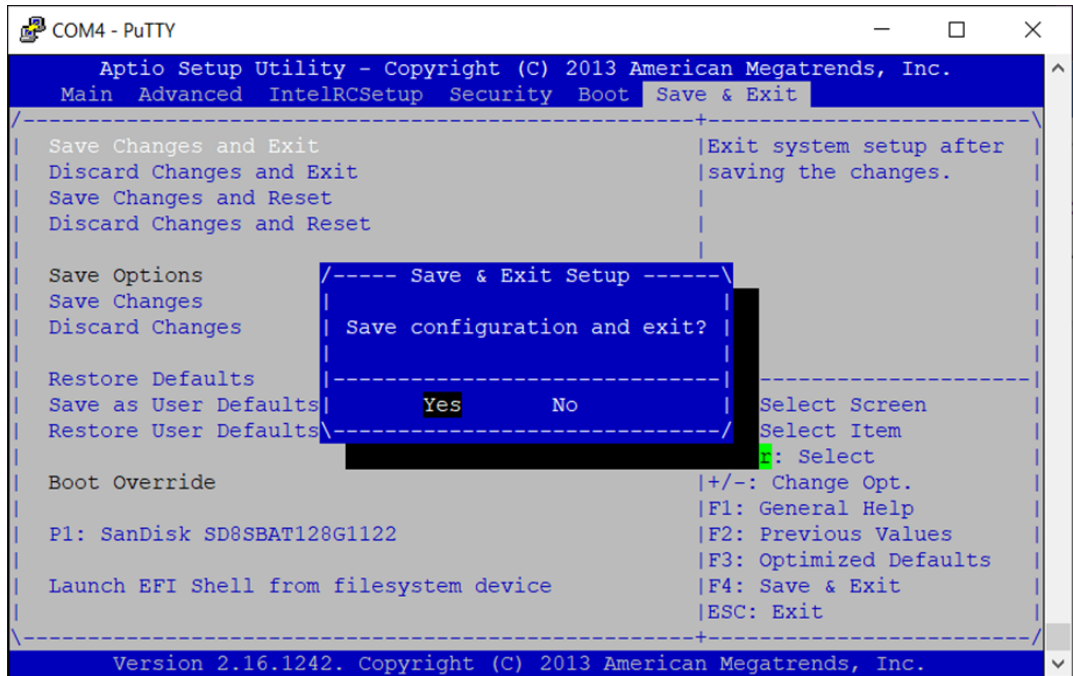




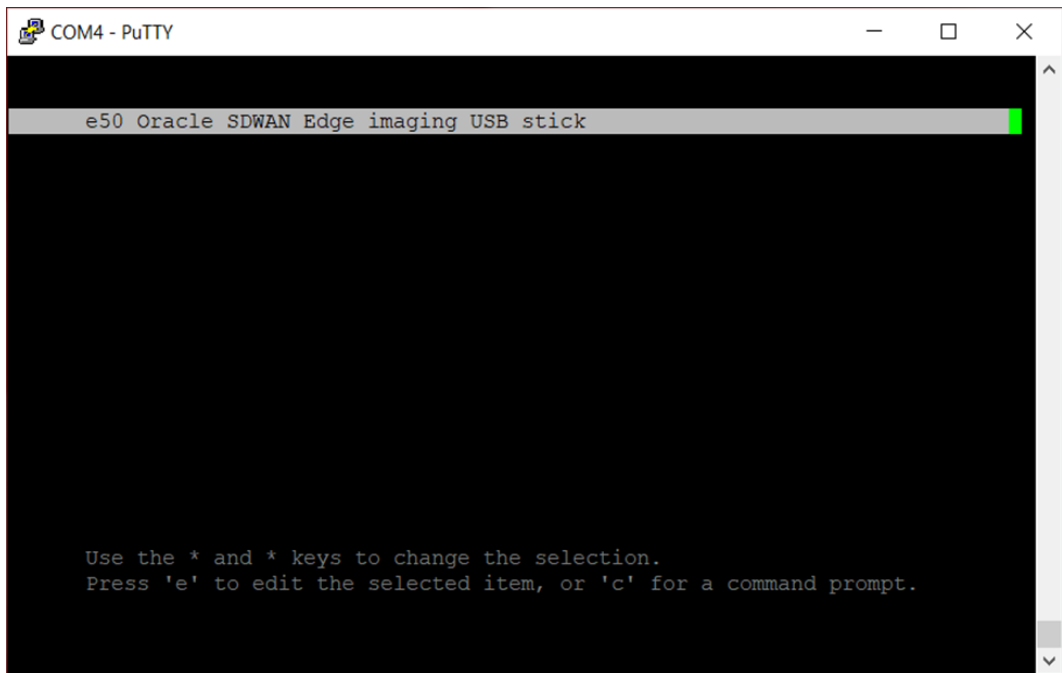
Your screen should appear as below, with Boot Option #1 as the USB Device. If Boot Option #2 is not the “Hard Disk”, repeat the process on Boot Option #2, to set it to “Hard Disk”



8. Use the RIGHT arrow key and select the Save and Exit screen. Select Save Changes and Exit, press Enter, and press Enter again at the pop-up screen.



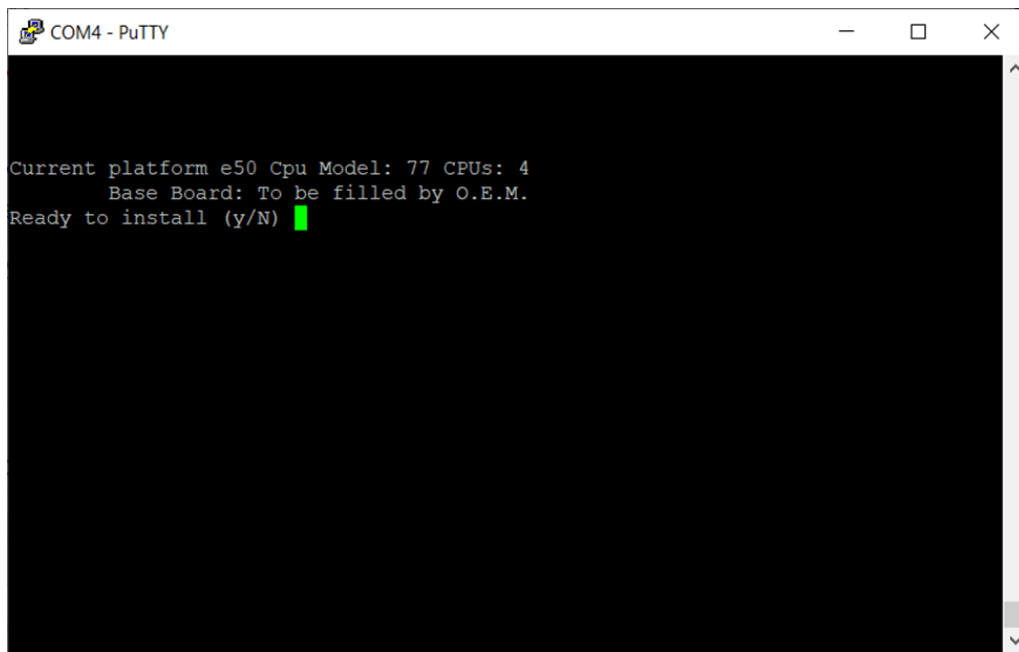
The appliance will now boot up from the USB flash device. You will see the following GRUB screen, press ENTER to continue.



9. At the login prompt, login as root when you see the standard Linux boot; there is no password. The Linux boot should take less than 1 minute.

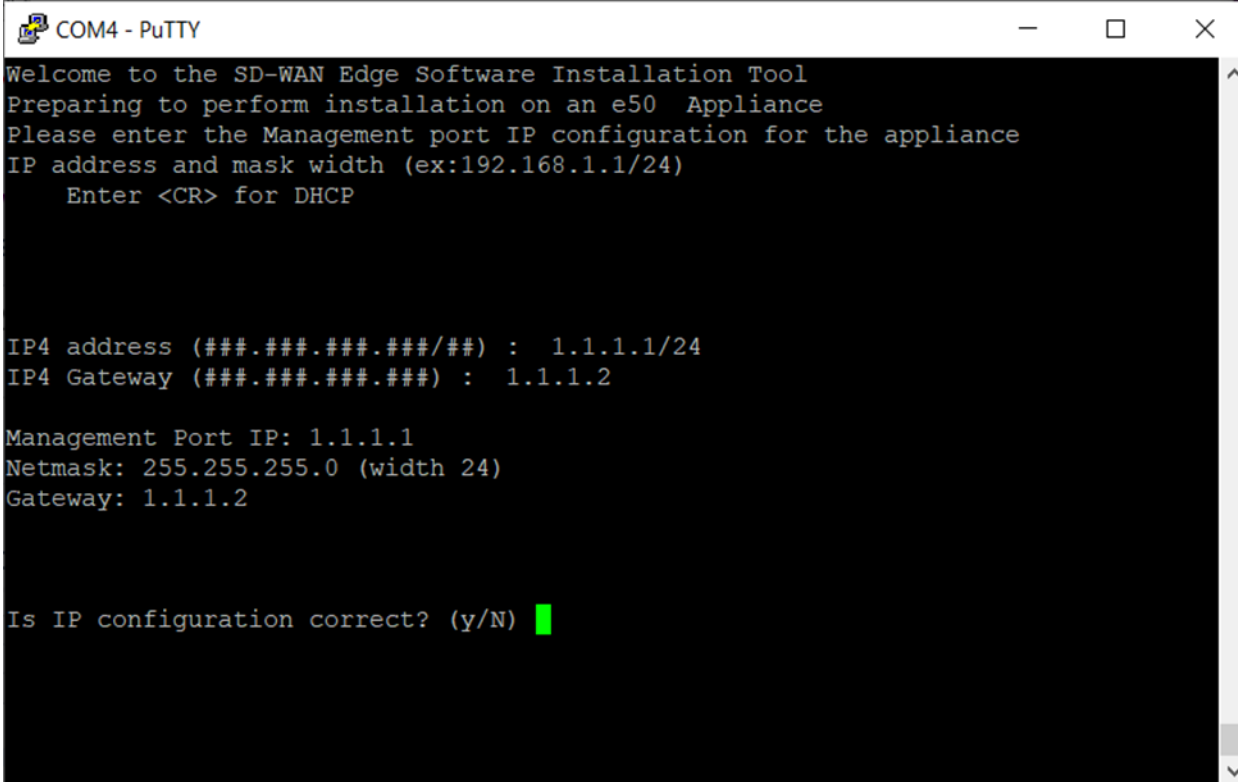






## Setting the IP Address

You have the option to set the IP address of the appliance now, as opposed to setting it after installation. If you want to defer this setup, hit Enter when asked for “IP4 address” and ‘y’ that the configuration is correct; this will configure DHCP on the MGT port. Otherwise, enter the IP4 address with mask width and optionally the gateway. When these are to your satisfaction, enter ‘y’ that the configuration is correct.



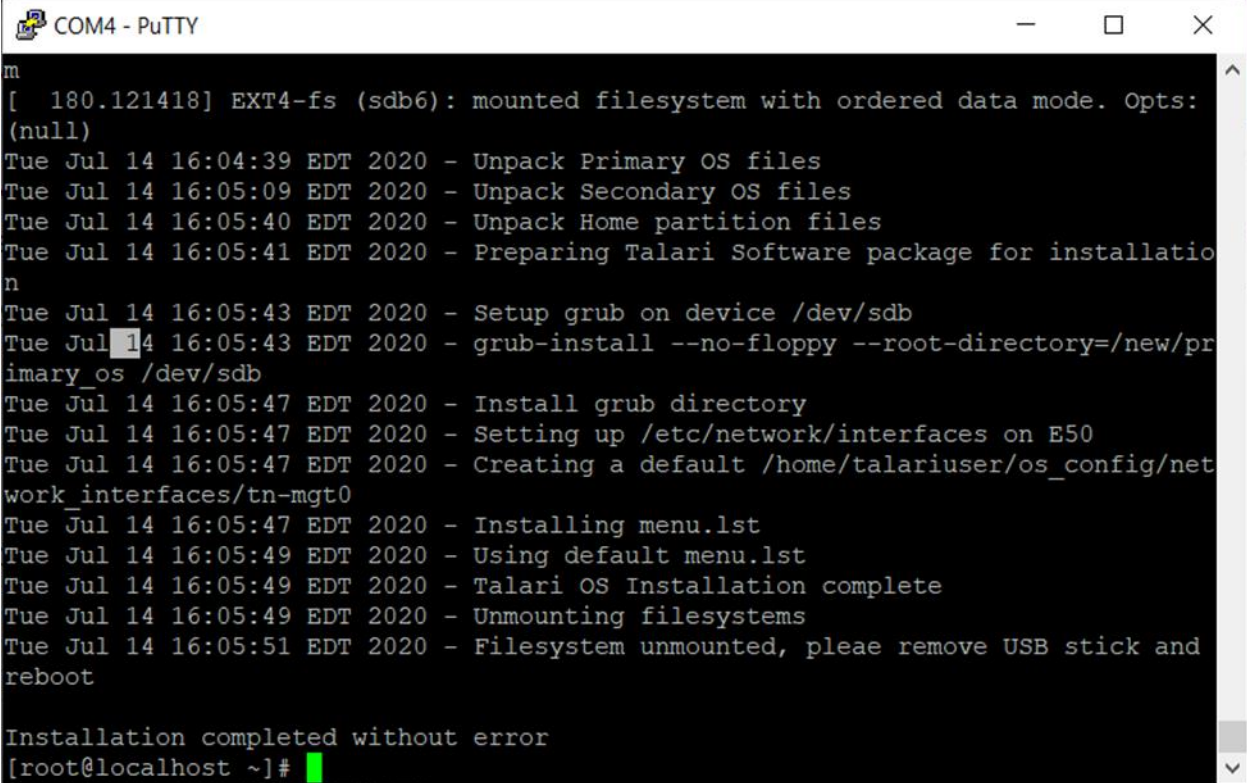
```
COM4 - PuTTY
Welcome to the SD-WAN Edge Software Installation Tool
Preparing to perform installation on an e50 Appliance
Please enter the Management port IP configuration for the appliance
IP address and mask width (ex:192.168.1.1/24)
  Enter <CR> for DHCP

IP4 address (###.###.###.###/##) : 1.1.1.1/24
IP4 Gateway (###.###.###.###) : 1.1.1.2

Management Port IP: 1.1.1.1
Netmask: 255.255.255.0 (width 24)
Gateway: 1.1.1.2

Is IP configuration correct? (y/N) █
```

Once you accept the IP4 configuration, the installation script creates the partitions, formats them and loads the SDWAN OS and application software on the system. When complete, remove the USB and type “reboot”. The appliance will boot from the hard disk. It will take a few minutes to complete the Edge Software installation and configure the IP address. The software installation will take less than 2 minutes.



```
COM4 - PuTTY
m
[ 180.121418] EXT4-fs (sdb6): mounted filesystem with ordered data mode. Opts:
(null)
Tue Jul 14 16:04:39 EDT 2020 - Unpack Primary OS files
Tue Jul 14 16:05:09 EDT 2020 - Unpack Secondary OS files
Tue Jul 14 16:05:40 EDT 2020 - Unpack Home partition files
Tue Jul 14 16:05:41 EDT 2020 - Preparing Talari Software package for installatio
n
Tue Jul 14 16:05:43 EDT 2020 - Setup grub on device /dev/sdb
Tue Jul 14 16:05:43 EDT 2020 - grub-install --no-floppy --root-directory=/new/pr
imary_os /dev/sdb
Tue Jul 14 16:05:47 EDT 2020 - Install grub directory
Tue Jul 14 16:05:47 EDT 2020 - Setting up /etc/network/interfaces on E50
Tue Jul 14 16:05:47 EDT 2020 - Creating a default /home/talariuser/os_config/net
work_interfaces/tn-mgt0
Tue Jul 14 16:05:47 EDT 2020 - Installing menu.lst
Tue Jul 14 16:05:49 EDT 2020 - Using default menu.lst
Tue Jul 14 16:05:49 EDT 2020 - Talari OS Installation complete
Tue Jul 14 16:05:49 EDT 2020 - Unmounting filesystems
Tue Jul 14 16:05:51 EDT 2020 - Filesystem unmounted, please remove USB stick and
reboot

Installation completed without error
[root@localhost ~]#
```

When the reboot and second stage install is complete (which may take around 5 minutes) you can login to the appliance. The appliance is ready for use.

## Troubleshooting

The E100 APNA has LEDs and NIC indicators on the front panel for the indication of power, disk activity, Ethernet activity, etc. These indicators can assist in isolating the problem to a specific subsystem.

### Appliance Troubleshooting Basics

Problem	Resolution
Cannot ping the E100 APN appliance	Make sure the appliance has power. Confirm the device has a Management IP address assigned. Verify the Management port has link on the Talari and switch.
Ethernet port not forwarding traffic	Verify the switch has auto-negotiation enabled. Verify the switch has the port enabled. Confirm you connected to the correct port on the Talari.
Cannot access the Talari APNA Web Console	Confirm you are using the correct IP address. Confirm the management port of the E100 APNA is connected to a switch and there is activity.
LEDs do not turn on	Check AC power source.
Six beeps during boot process	Ensure that the Appliance's memory is installed and available

### Troubleshooting Inline Mode (Fail-to-Wire)

The E100 APNA is equipped with a capability known as Inline mode with the interfaces in Fail-to-Wire. This capability is designed to prevent a single point of failure. If there is a serious problem with the E100 APNA, the bypass pair goes into bypass mode and forwards traffic through as though the appliance were a wire.

Interfaces may be configured as either Fail-to-Wire or Fail-to-Block. If a bypass pair is configured for Fail-to-Block, bypass mode will never be activated, even if power is lost.

If configured, bypass mode is used when the APNA is not powered on or when the Talari Service is disabled.

Please also see the section above.

Problem	Resolution
Bypass mode blocking traffic	Verify that the E100 APN appliance has connectivity to the L2/L3 devices on its LAN/WAN ports. Verify that the correct cables are used and that the networking devices have auto-negotiate set for their ports.
E100 stays in bypass mode	Confirm that the E100 is configured properly and that the Talari Service is enabled.