

SPiDER PPA (Post-Processing Appliance) Conversion Kit Installation Instructions

P/N MH903, v2 - 02.13.20



CUES Manhole Inspection Division

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CUES® equipment is designed to be easy to use during day to day operation. However, it is powered electrically and thus must be operated with care and safety. PLEASE READ THE INFORMATION ON SAFETY AND MAINTENANCE EVEN IF THE SYSTEM IS SET UP BY SOMEONE ELSE.

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SAFETY PRECAUTIONS

Precautions must always be taken when operating electronic equipment. Exposed wires, damaged equipment, or improper operation can lead to a dangerous situation.

Please take a few minutes and read this entire manual prior to operating the equipment. Follow all safety procedures and thoroughly inspect equipment prior to use each day. This will help the equipment retain its full value and will reduce the risk of injury, property, and/or equipment damage.



- Read the entire manual before attempting to connect or operate any equipment.
- Connect and disconnect cables only when the electric power is turned OFF.
- Never remove protection covers from the equipment or power generator. Internal repairs should only be done by an authorized CUES technician.
- If using a portable generator, always place it in an open area away from other equipment, manholes or obstructions prior to start-up; do not use a portable generator in an enclosed area.
- Upon receipt of the equipment, check for visible damage. If there is any evidence of rough handling, if damage is found, or if any equipment is missing, please contact the CUES Customer Service at 1-800-327-7791.

PERSONAL SAFETY EQUIPMENT & TRAINING

CUES stresses the use of appropriate safety equipment while working in and around manholes and during system operation. Safety should constantly remain the utmost priority. NOTE: The user of CUES products is responsible for all training and operation under federal, state and local guidelines and regulations for both confined space entry and traffic control. Recommended safety equipment includes but is not limited to the following:

- Safety goggles
- Work gloves
- Steel-toed boots
- Reflective vests
- Hard hats
- Filter masks (full respirators may be necessary)
- Flashlights
- Safety lines
- Traffic warning signs
- Traffic cones
- Gas detectors
- Ventilation fans

CUES ® makes no warranty for the use of its products and assumes no responsibility for any errors or omissions in this document or for incidental or consequential damages resulting from misuse of the products.



REQUIRED ITEMS:

- VGA ready display
- VGA cable
- USB keyboard and mouse
- MH310 SPiDER PPA (Post-Processing Appliance) Conversion Kit

PROCEDURE:

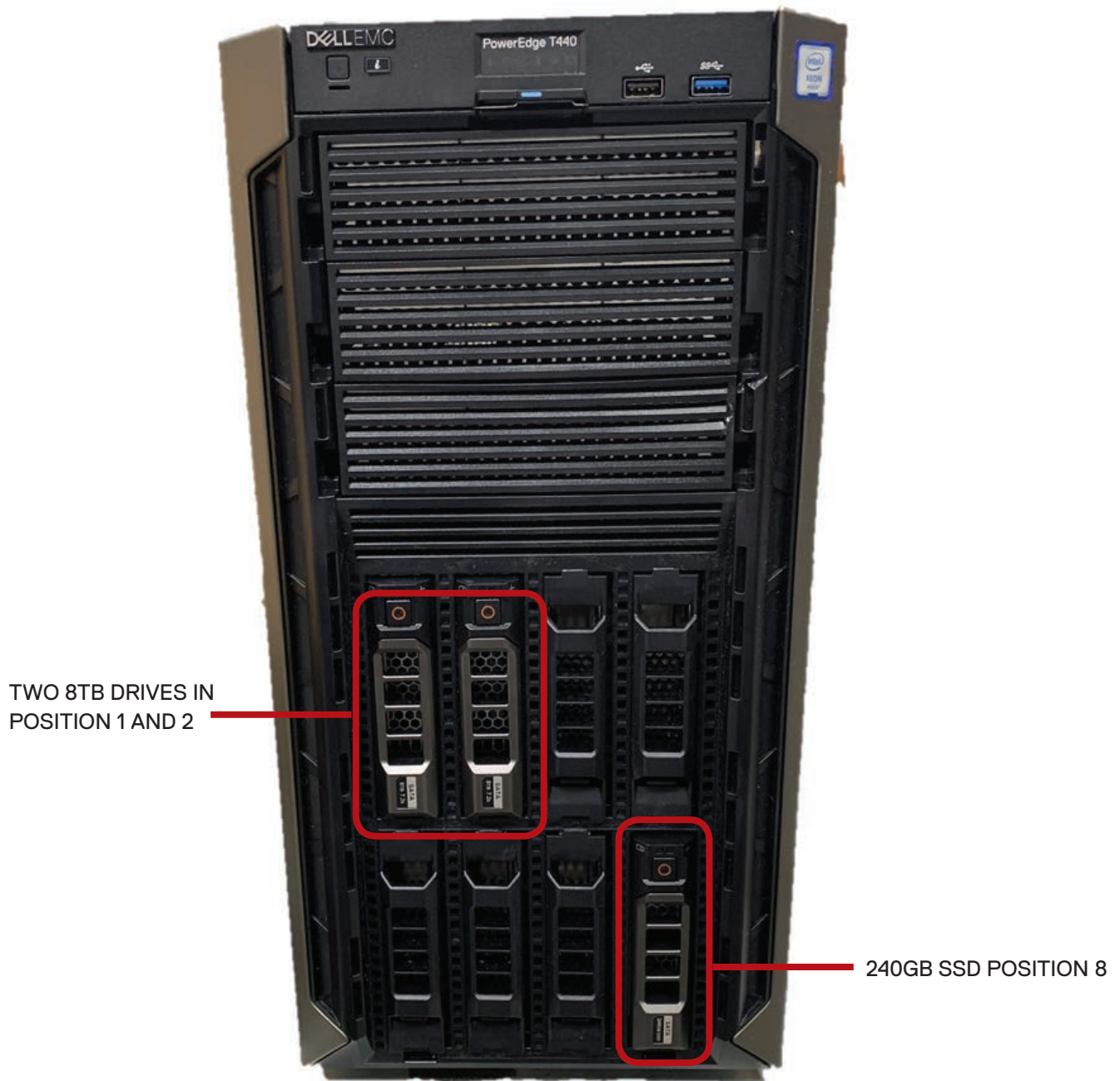
1. Open the latch on the side door as referenced in the image to release the side panel.
 - It may be necessary to unlock the latch using a screwdriver before being able to release the panel.



2. Slide the panel down to remove and place aside to continue with the assembly.



3. The hard drives and hard drive bays will need to be arranged in the following order:
- The two 8TB drives will be in the first and second slot counting from the top left.
 - The 240GB SSD will be placed in the bottom right slot corresponding to number 8.
- The orientation should match the picture shown below. If not in this orientation, follow steps 4-9 for how to remove and rearrange the drives.



4. In order to remove the hard drive bay, press the red circle shown on the hard drive bay.



5. Once the red circle is pressed, the lever will be released.



6. Use the lever to pull the drive out of its bay.



7. To remove the small blank hard drive covers, press the release tab on the top section of the holder.



8. While pressing on the release tab, pull the hard drive bay holder out of the slot.



9. To reinstall hard drives in proper locations, reverse previous steps to achieve orientation of drives in picture from step 3.
10. To install the Display Touchscreen assembly, it is necessary to remove the 3 large blank covers that are located on the top front of the computer.



11. To remove the 3 large blank covers, press and hold the side latch down and push on the back of the large blank covers to move them outwards.



12. Once the bays are moved outwards, remove them from the front of the display by grabbing the sides and removing them one by one.



13. Once all three bays have been removed, begin the installation of the Touch Screen Display Bezel.



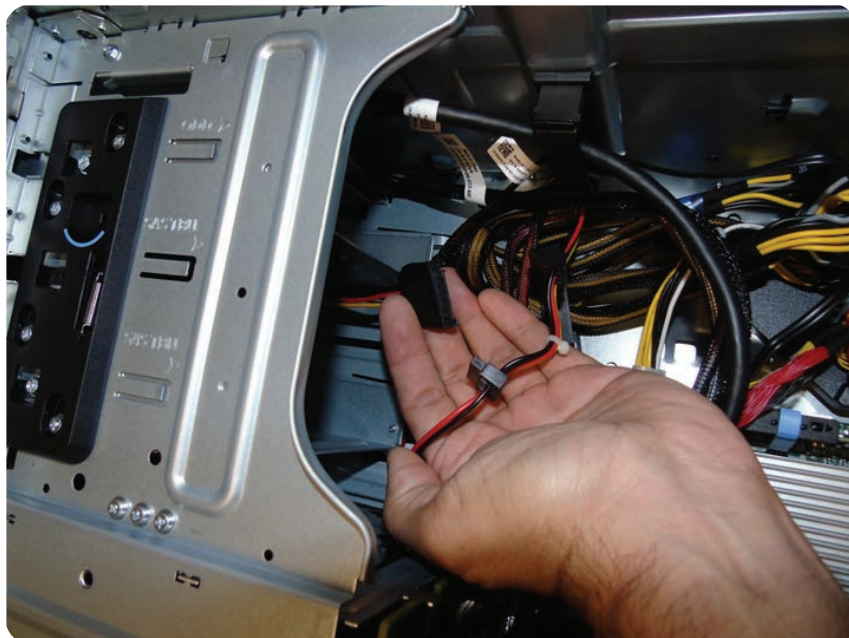
14. Insert the bezel assembly into the same slots that the drive bays were removed from; the assembly will slide easily into place.
- The bottom side of the bezel assembly is identified by a Phillips head screw



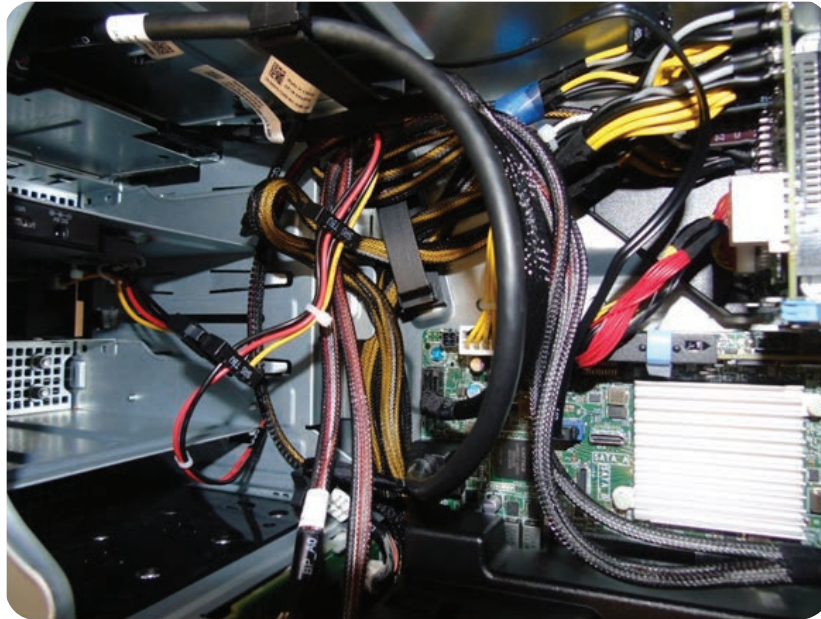
15. Push the bezel assembly into place. There will be an audible click once it has been seated properly and is flush with the front of the computer display.



16. Next, connect the SATA cable that is attached to the back of the Bezel Display. Connect this cable to the corresponding cable that is installed on the computer. The photo below shows the two cables, which should be connected as shown.
 - Note that there are two connectors on the computer, either connector may be used.

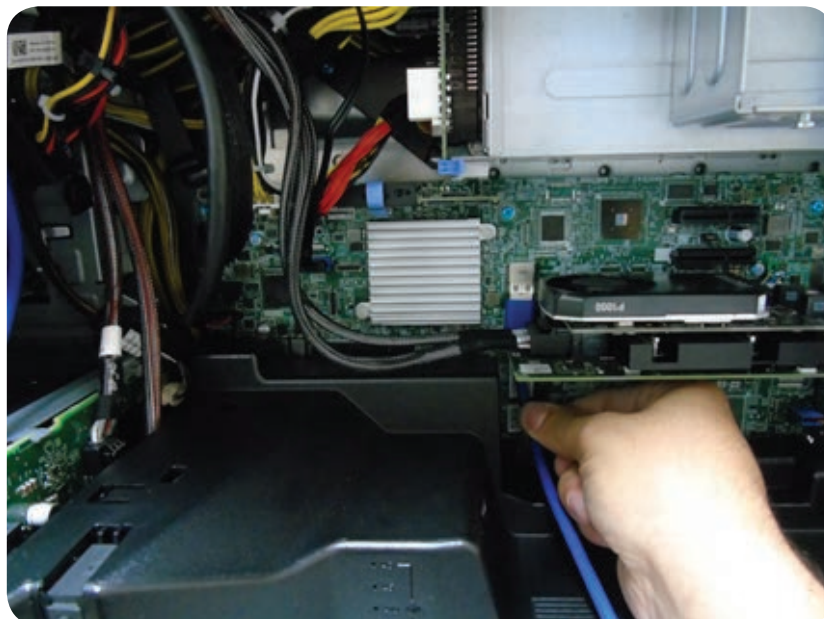


17. Once the cable is properly connected, it should look like the following photo:

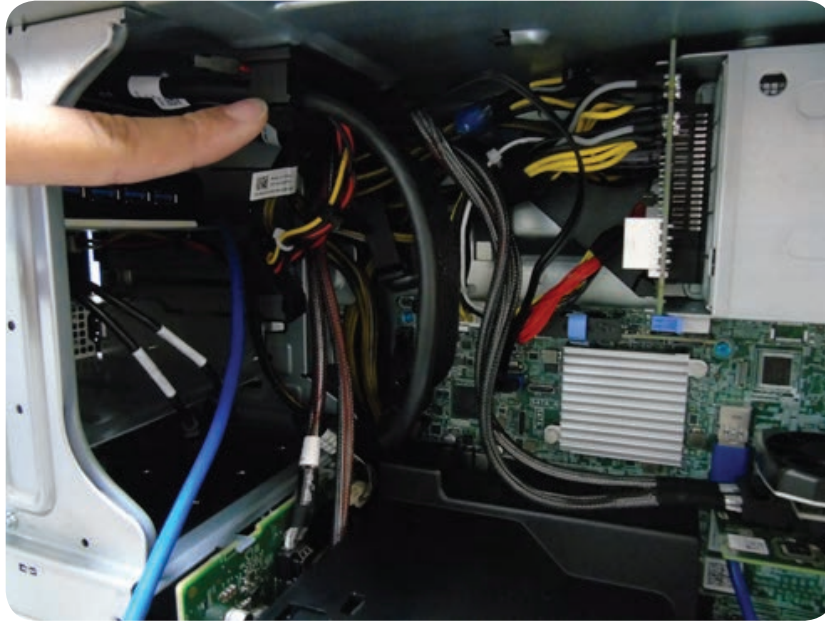


18. The next cable that needs to be connected will be from the display to the USB port on the motherboard.

19. Attach the USB cable to the motherboard as shown in the following image. Take caution as to not damage the motherboard with the end of the USB cable. Route the cable behind any of the attached cards.



20. To release the cable management bracket, push on the bottom edge of the bracket and it will be released.



21. Organize the slack in the blue cable by forming a loop to the left of the bracket as shown.

22. Feed the cable through the opening in the bracket. Once positioned, close the bracket to secure.



23. Attach the loose USB cables from the display to the two right—most ports on the hub as shown.



24. Reinstall the side panel of the computer and close it properly. There will be an audible click when the side panel is attached correctly.
25. At this point ,the physical assembly is complete. It is now necessary to install the software for proper operation.
26. In order to flash the software necessary to operate the computer, connect a VGA cable (not included) between the back of the computer and a VGA ready display.

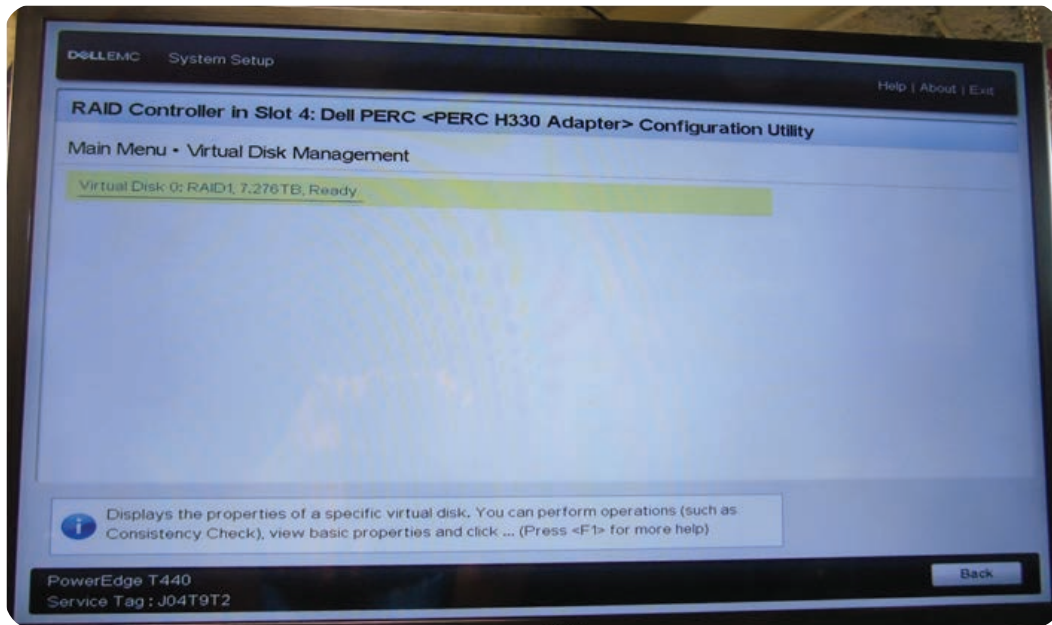


27. Connect a keyboard and mouse using USB ports on the back of the computer.

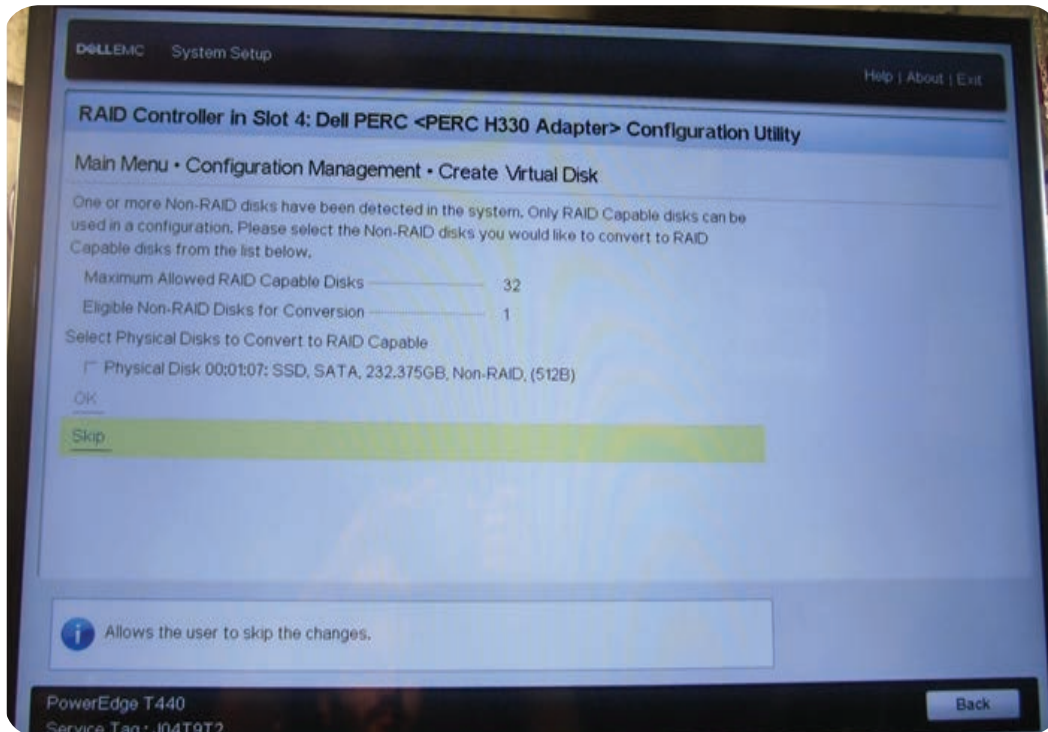
Connect the power cable and turn ON the post process appliance; the power button is on the top left front of the unit.



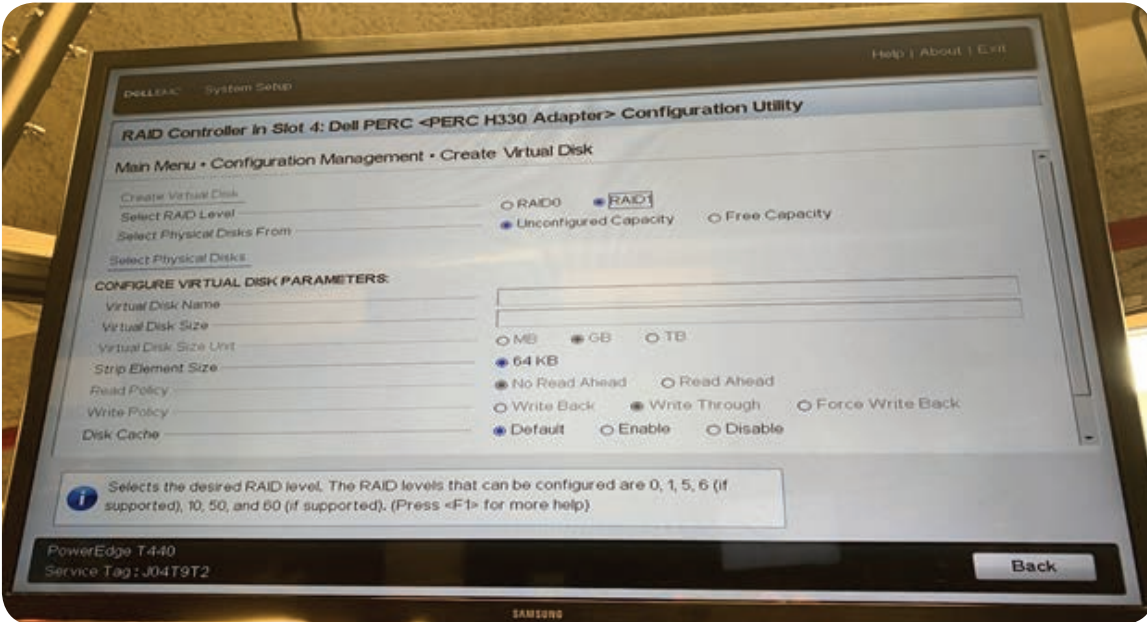
28. Press F2 repeatedly to enter the System Setup while the device is booting.
29. Select "Device Settings", then press enter.
30. Select "Raid Controller in Slot 4: Dell PERC <PERC H330 Adapter> Configuration Utility", press ENTER. Then select "Virtual Disk Management", press ENTER.
 - If the following selection is shown, "Virtual Disk 0: RAID1, 7.276TB, Ready", no additional configuration is necessary and you may proceed to step 46. If the configuration does not match, continue to the next step.



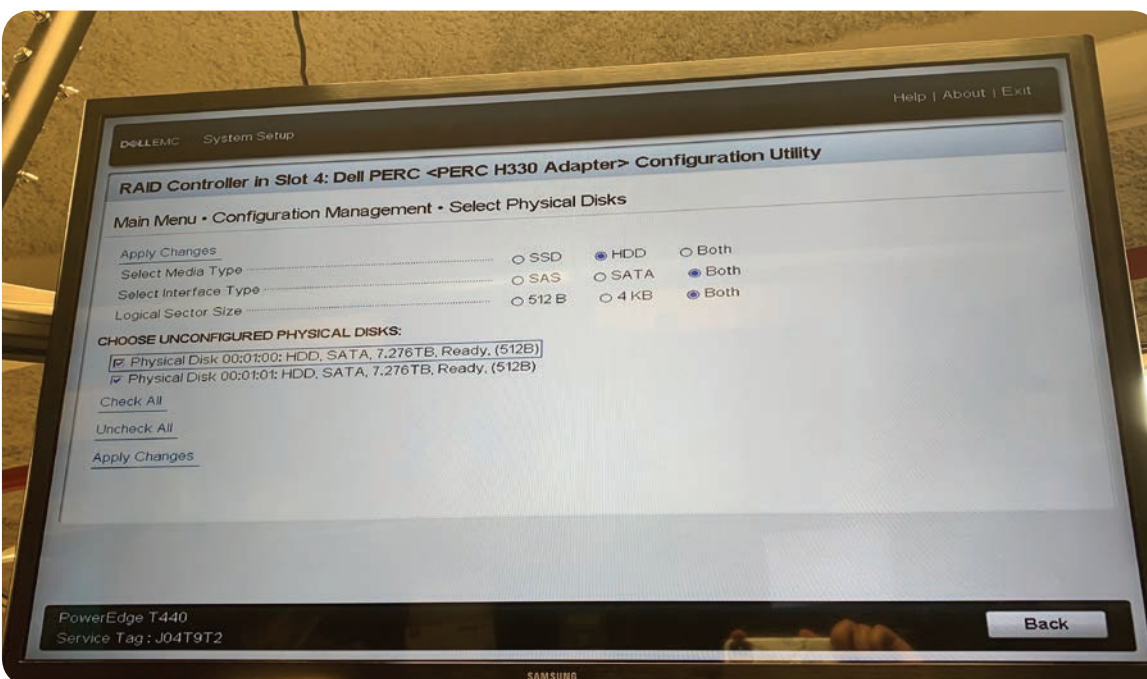
31. Select "Configuration Management", then press enter.
32. Select "Create Virtual Disk", then press enter.
33. Select "Skip" on the following screen, then press enter.



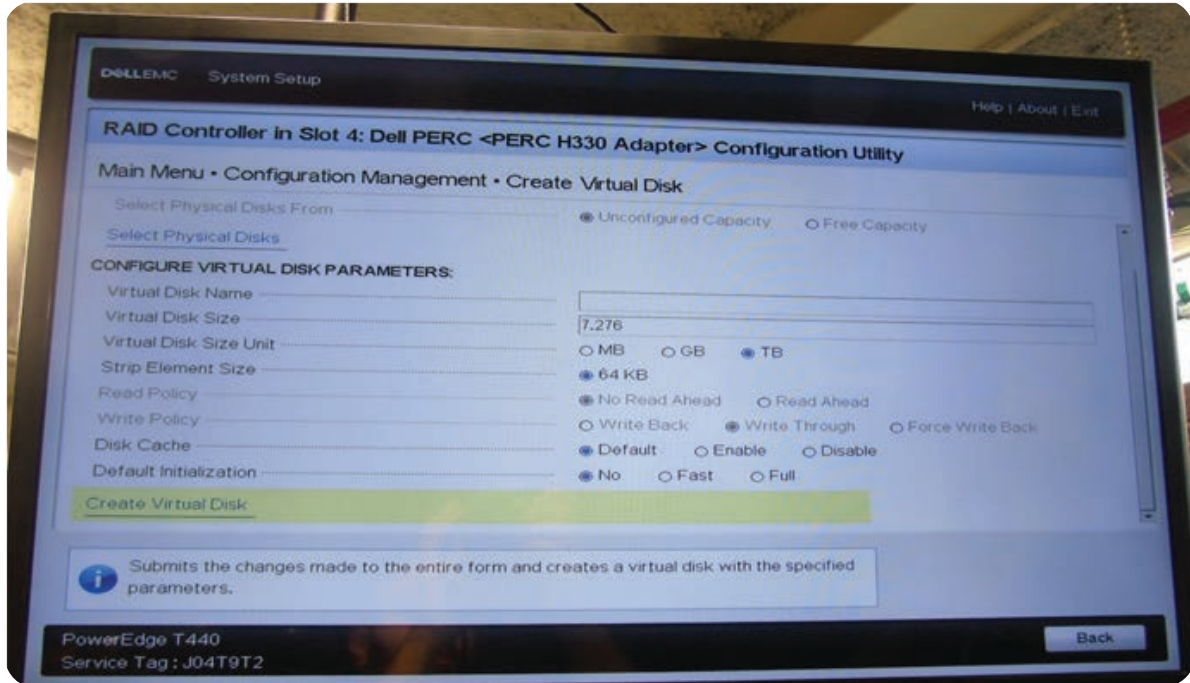
34. Scroll to Select RAID Level and make sure that RAID1 is selected.
Scroll down to select physical disks, then press enter.



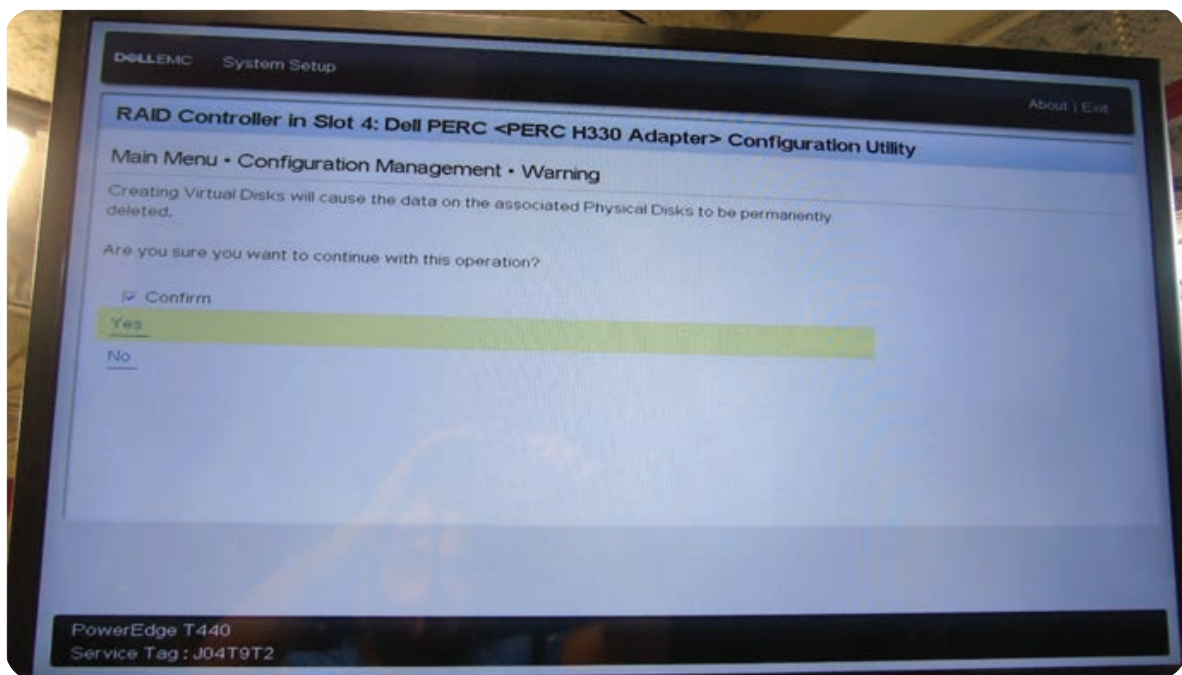
35. Scroll down to select both drives "Physical Disk 00:01:00,HDD, SATA, 7.276TB, Ready, (512B)", and "Physical Disk 00:01:01,HDD, SATA 7.276TB, Ready, (512B)", then press ENTER and ensure that both drives are selected by the checkmark to the left of the drive name.



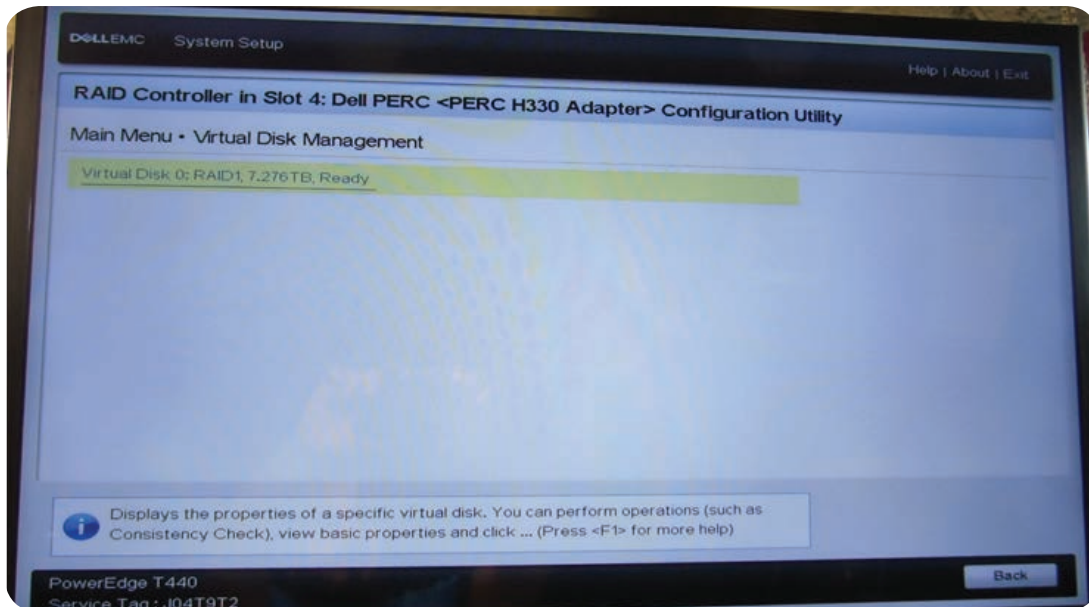
36. Scroll down to “Apply Changes”, then press enter.
37. Scroll down to “Create Virtual Disk”, then press enter.



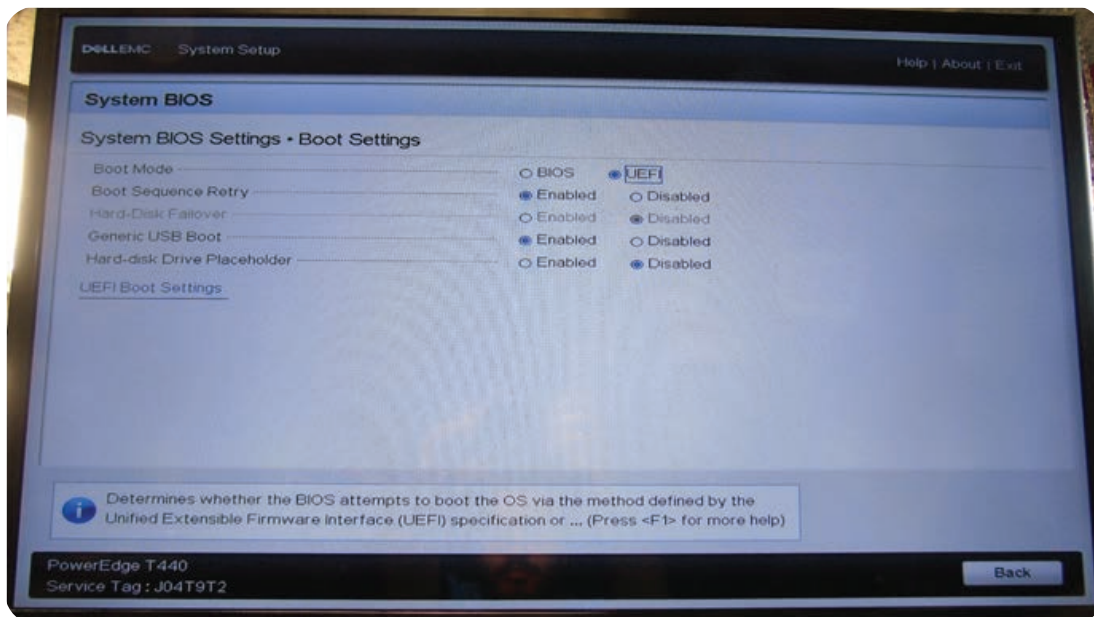
38. To confirm, press ENTER, then scroll to YES and press ENTER.



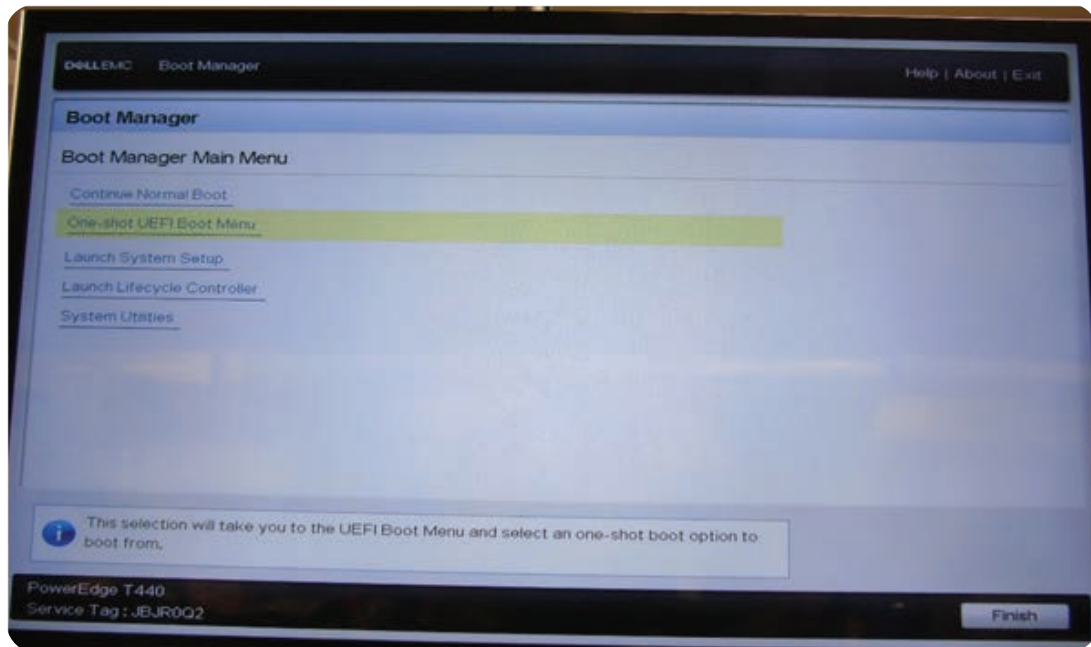
39. Press ENTER to move beyond the success screen.
40. Press ESCAPE to return to the Configuration Management Menu, then press ESCAPE again to return to the Main Menu.
41. Select Virtual Disk Management and ensure that the Virtual Disk is displayed.



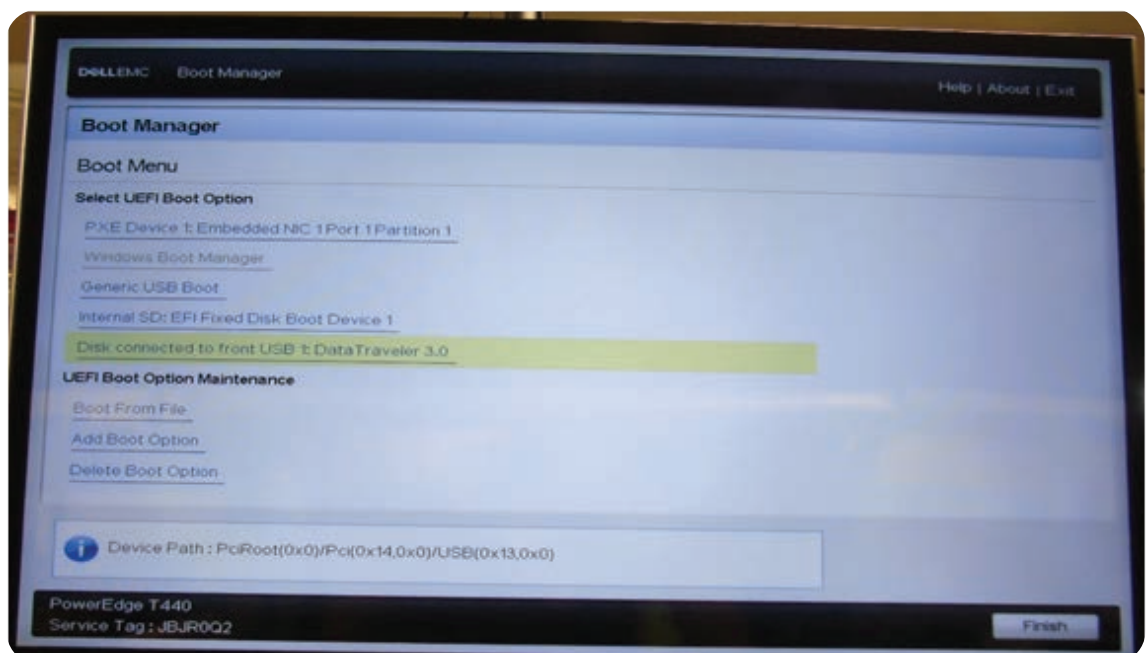
42. Once the configuration matches the one that is shown above, press the escape key until reaching the system setup menu, navigate to system bios press enter.
43. Once you have entered system setup, Select "System BIOS", then press ENTER.
44. Select "Boot Settings" then press enter.
 - Verify that UEFI boot mode is selected, if not, select UEFI and press ENTER.



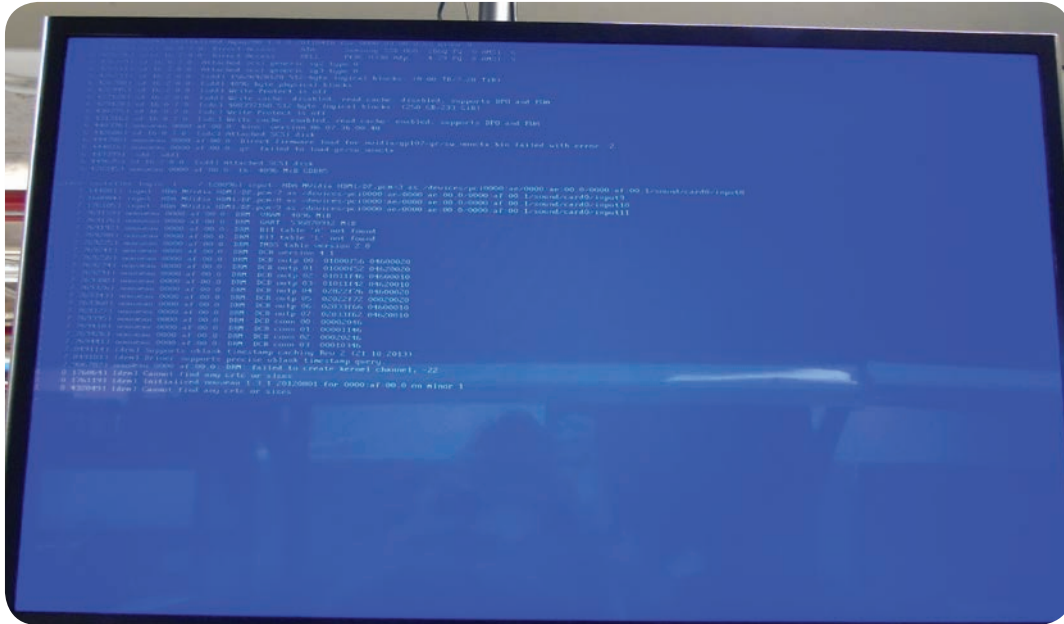
45. Once selected or changed, press the escape key three times to exit the boot settings menu. If prompted, confirm the setting changes and allow system to reboot.
46. Connect the supplied USB flash drive to the far right USB 3.0 (blue) port on the front of the computer.
47. Press and hold the power button on the front of the unit to turn it off. Install the USB drive on the front right USB port (blue port), and press the power button to turn it on. While booting up press F11 repeatedly to enter the boot manager.
48. Once you have entered the Boot Manager, use the keyboard to select ONE-SHOT UEFI BOOT MENU and press ENTER.



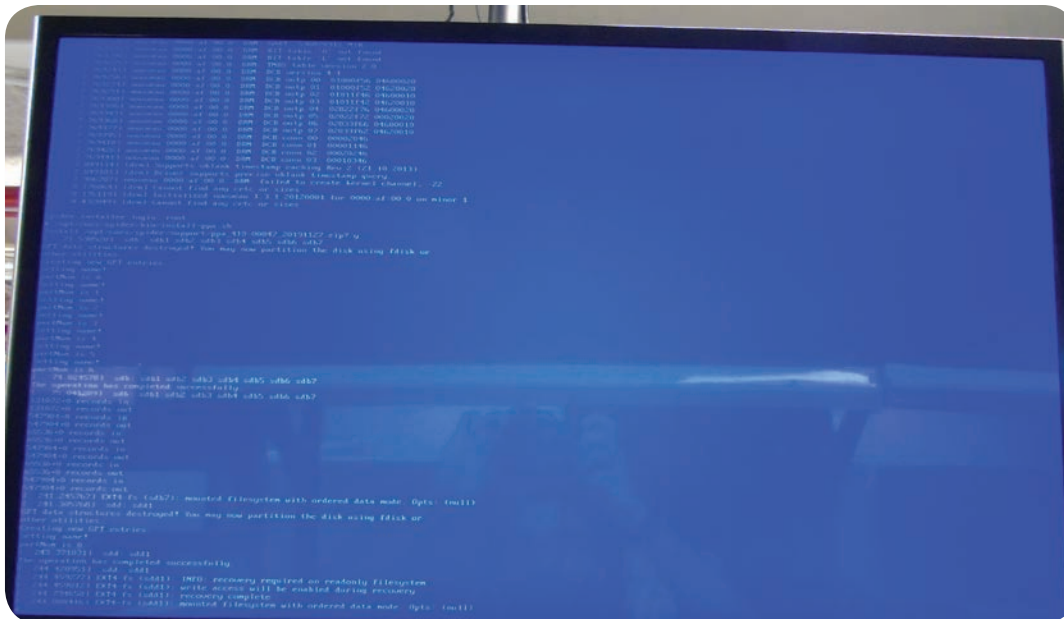
49. Scroll down and choose "Disk connected to front USB 1", then press ENTER.



50. Wait until the system boots into the installer. The installer should be on a blue background indicating that the boot up was successful.

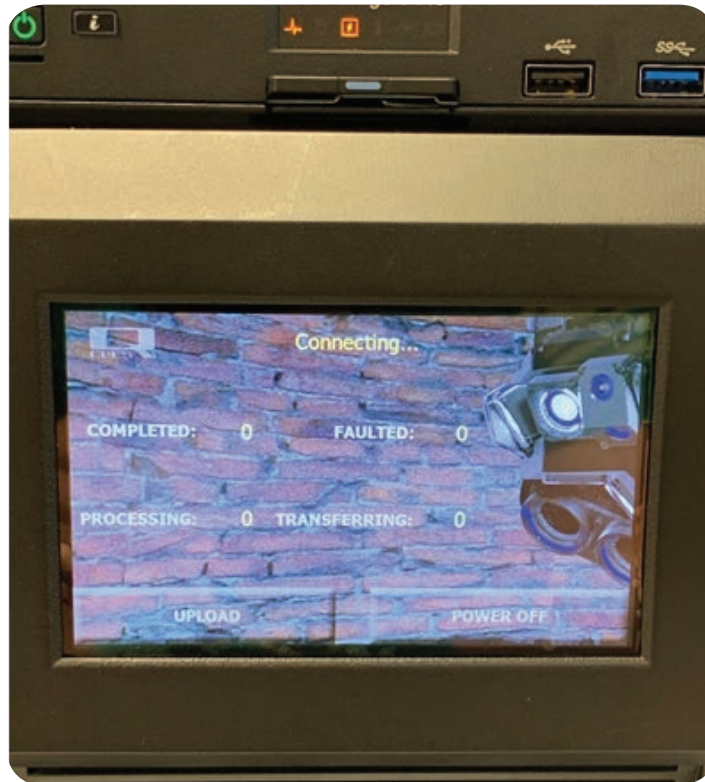


51. Login by typing ROOT, then press ENTER. There should be a “#” on the last line indicating that login was successful.
52. Type in the following command (case sensitive):
- /opt/cues/spider/bin/install-ppa.sh
 - Press ENTER
53. Press y and then press ENTER to continue.
54. Once the installer has finished running the commands, there should be a “#” on the last line indicating that it was successful.



55. To reboot the PPA, type reboot, then press ENTER. Remove the USB drive from the front of the unit with the OS image file.

56. The PPA will boot up. Ensure that the following screen is shown after allowing significant time for boot up (first boot up can take up to 20 minutes).



This Record of Revision page is designed to allow the manual user to determine the engineering/manufacturing level to which the manual is written. As engineering changes to this hardware are made at CUES, necessary information in the manual will be revised to reflect those changes. The latest change level and the rationale for any change(s) will be explained in tabular format on this page to allow the manual user to be better equipped should the need arise to call CUES regarding technical information.

Original Manual	Revision	Change Description
SPiDER PPA Conversion Kit Installation Guide	v1 - 12.16.19	Initial preliminary release
	v2 - 02.13.20	Numerous changes required to update procedures to current.



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