Storage Configurator

Lenovo ThinkStation P340

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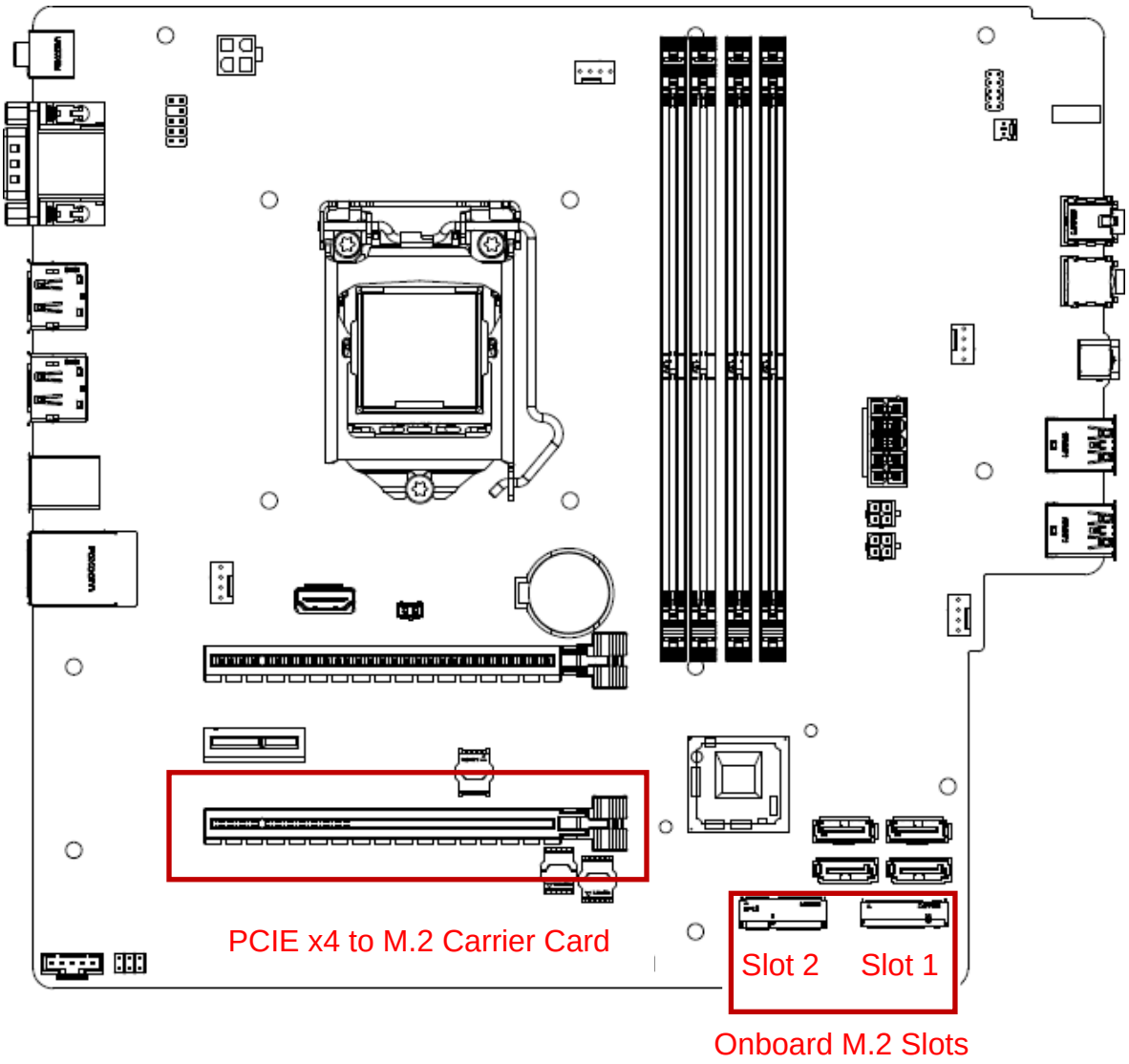
Section 1 – Installing NVMe Devices

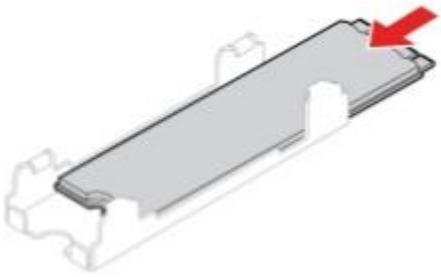
Please make sure the NVMe devices are installed into the following PCIe slot locations on the ThinkStation P340 Tower and Small-Form Factor (SFF) motherboard.



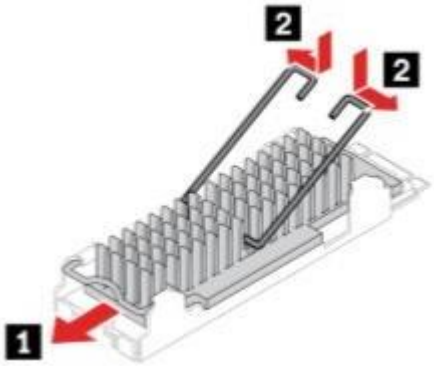
Note: The highlighted slots above are the only available slots that will allow the user to configure an NVMe RAID array on the ThinkStation P340 platform.

For M.2 NVMe drives in the onboard M.2 slots:

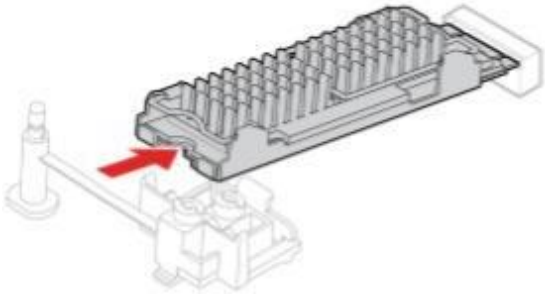
1. Remove the film that covers the thermal pad on the bracket, if any. Then, install the M.2 solid-state drive by sliding the drive in the bracket.



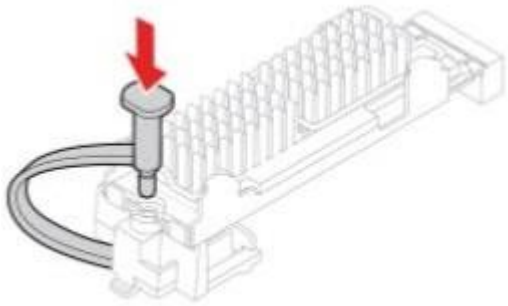
2. Remove the film that covers the thermal pad at the bottom of the heat sink, if any. Then, install the heat sink onto the M.2 drive in the bracket.



3. Install the heat sink with the bracket into the system.

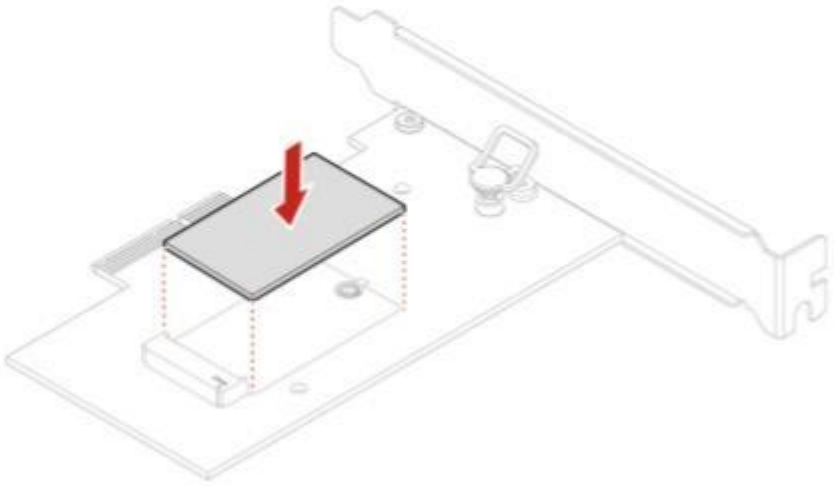


4. Insert the stopper.

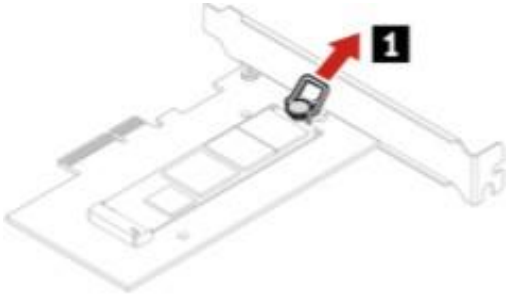


For M.2 NVMe drives installed in the Add-in Card:

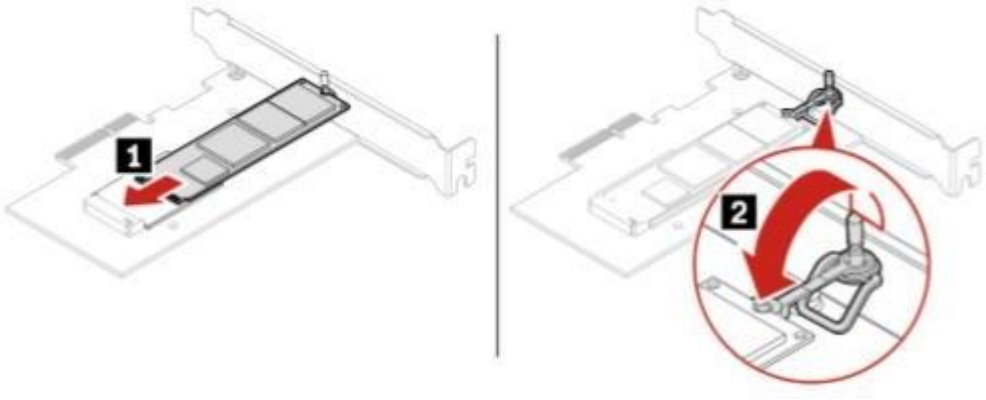
1. Ensure that a thermal pad is placed in position on the M.2 solid-state drive PCIe adapter.



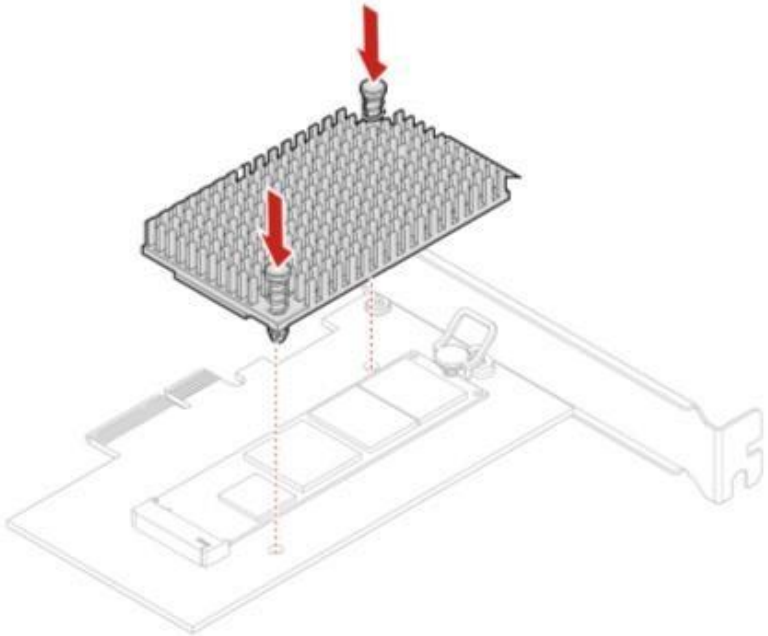
2. Pull the retention latch outward on the M.2 solid-state drive adapter.



3. Install the M.2 solid-state drive into the M.2 slot on the adapter, then insert the plug of the retention latch into the hole to secure the new drive.

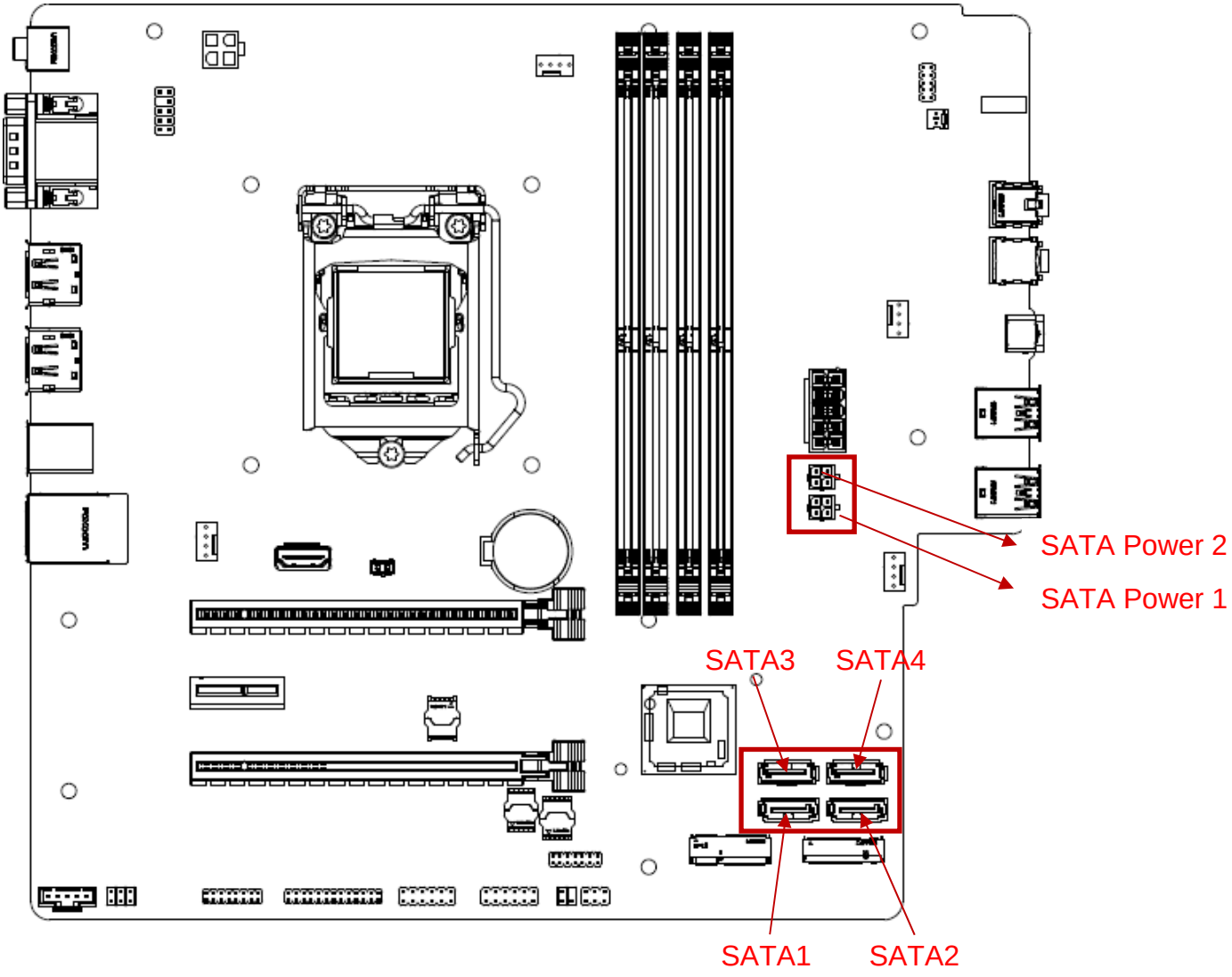


4. Position the heat sink on the M.2 solid-state drive PCIe adapter. Ensure that the two mounting studs in the heat sink are aligned with the holes in the M.2 solid-state drive PCIe adapter. Then, push the mounting studs downward to secure the heat sink to the adapter.



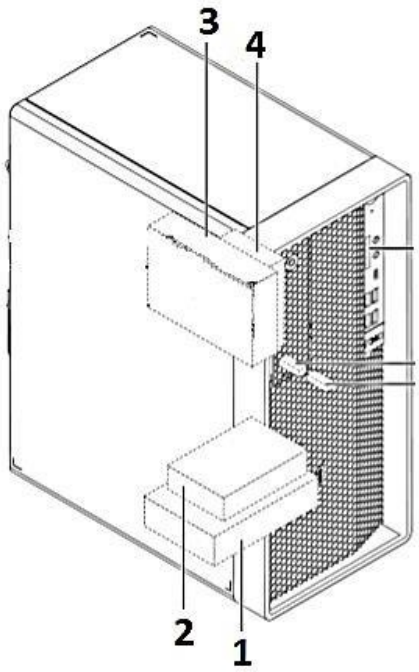
Section 2 – Installing HDD’s/SSD’s

The P340 is fairly limited on how many HDD’s/SSD’s can be installed in the P340 platform. Notice from the P340 motherboard screenshot that there are only four SATA port connections, labelled SATA1, SATA2, SATA3, and SATA4 in order as they show up in the system BIOS.



Note: Additional parts may be required to install additional HDD’s/SSD’s.

P340 Tower



1 – 3.5” primary storage drive cage

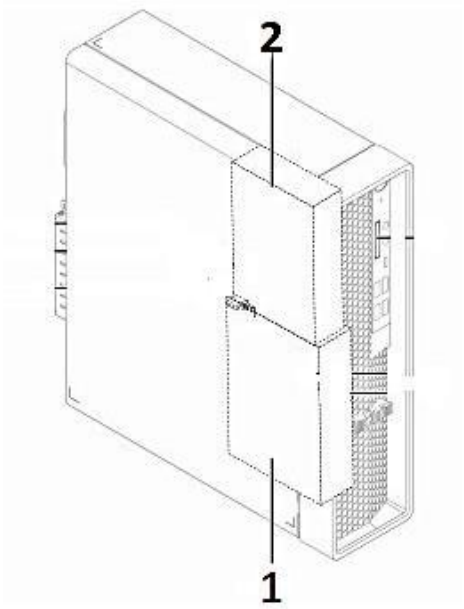
2 – 2.5” primary storage drive cage

3 – Flex bay

- Flex storage enclosure
- Front-access storage enclosure

4 – 2.5” secondary storage drive cage

P340 SFF



1 – 3.5” primary storage drive cage

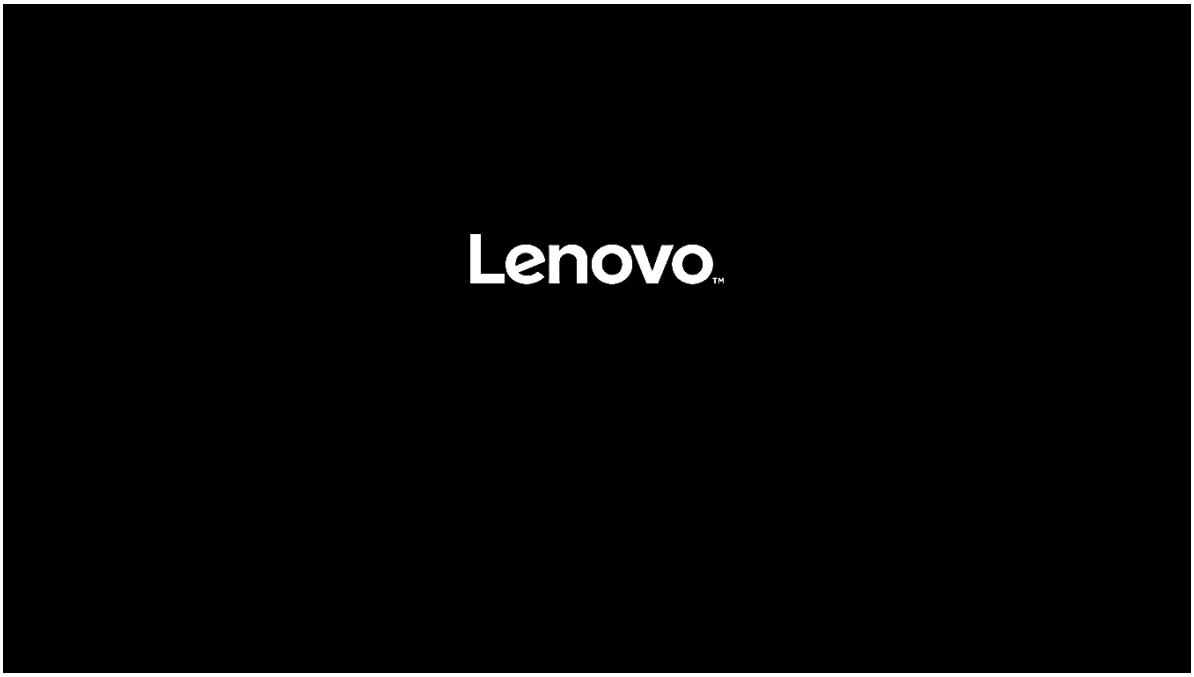
2 – 3.5” secondary storage drive cage

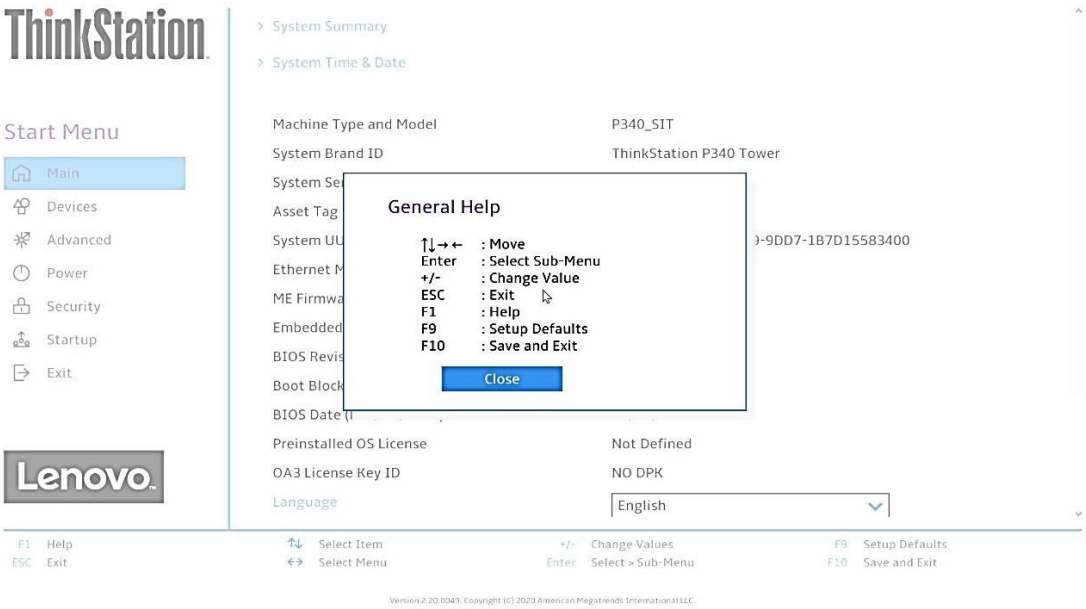
Note: Additional parts may be required to install 2.5” SATA drives in 3.5” bays.

Section 3 – Configuring NVMe RAID for P340 Tower & SFF

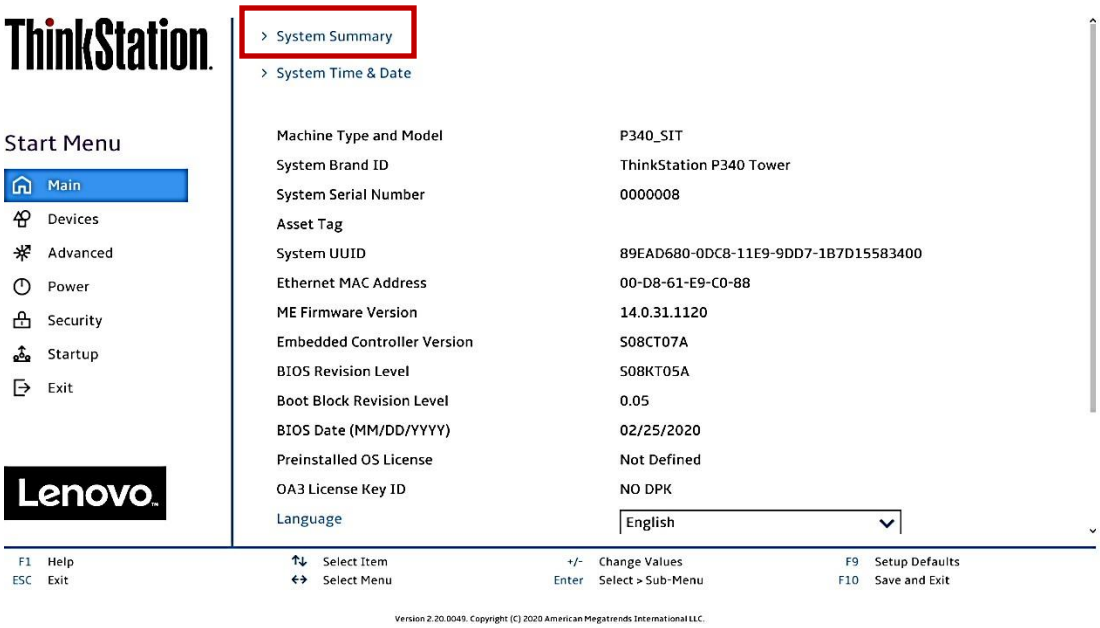
Please refer to the following steps to configure NVMe RAID.

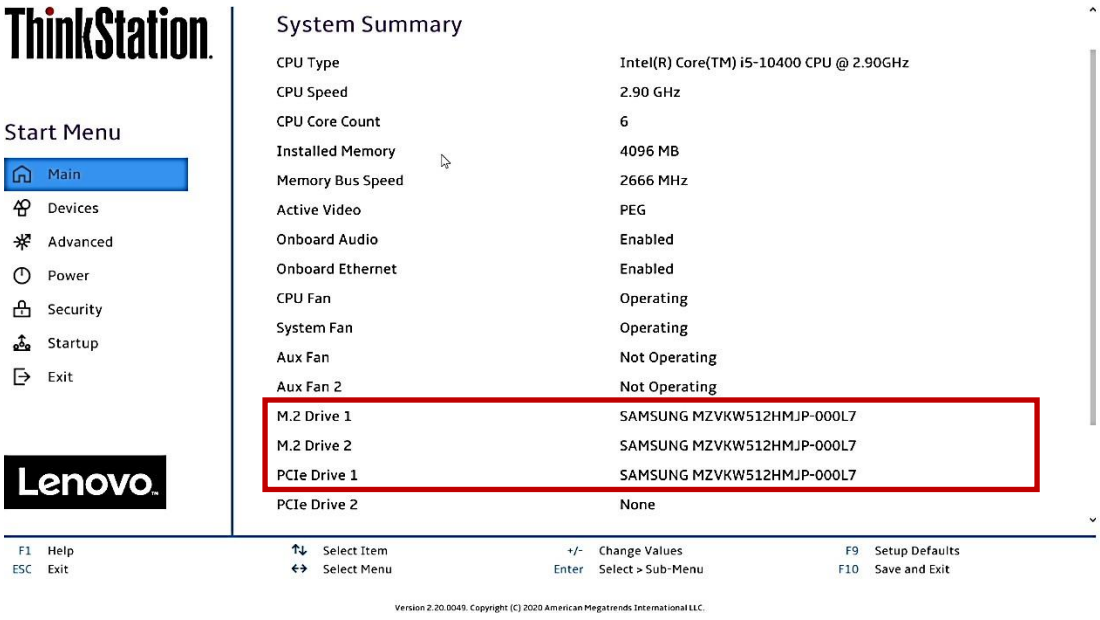
1. Boot into BIOS by pressing the function F1 key at the “Lenovo” splash screen.



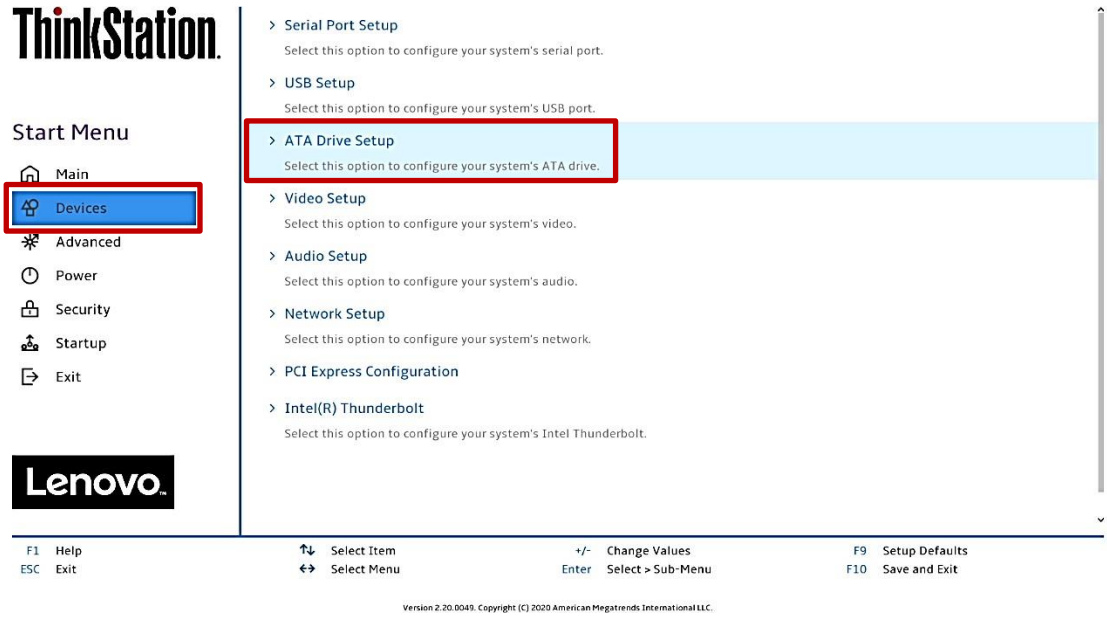


2. Select “System Summary” to verify BIOS is recognizing the NVMe drives.

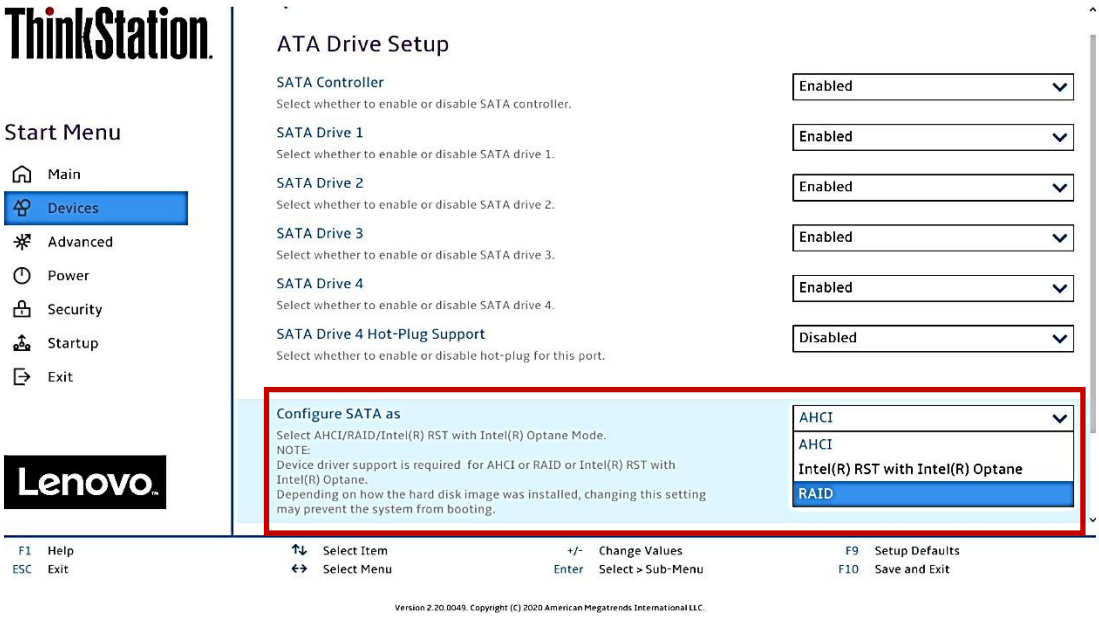




3. Select the “Devices” menu at the BIOS main screen setup utility and “ATA Drive Setup”.

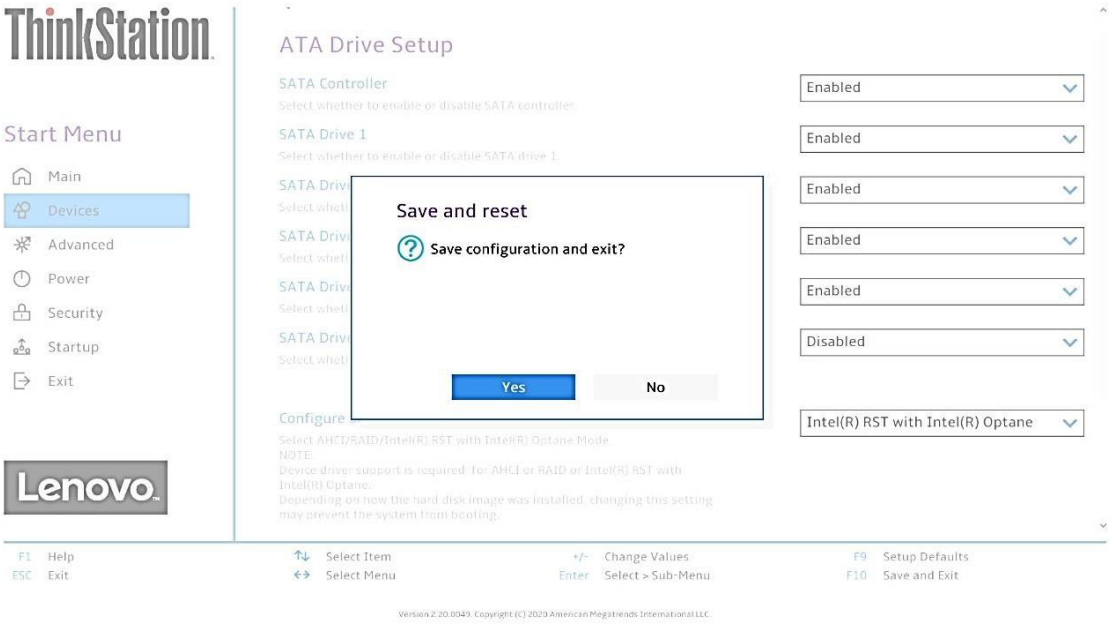


4. In the “ATA Drive Setup” menu, select “Configure SATA as” and change the option to “RAID”.

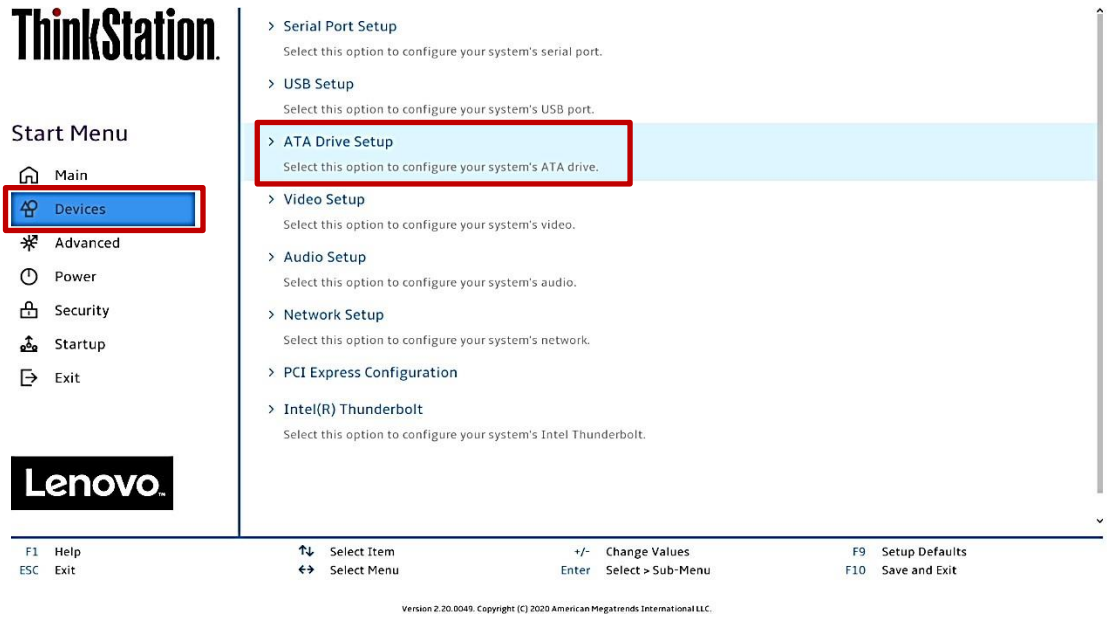


Note: In order to secure erase NVMe drives, the ‘Configure SATA as’ option must be set to ‘AHCI’ mode.

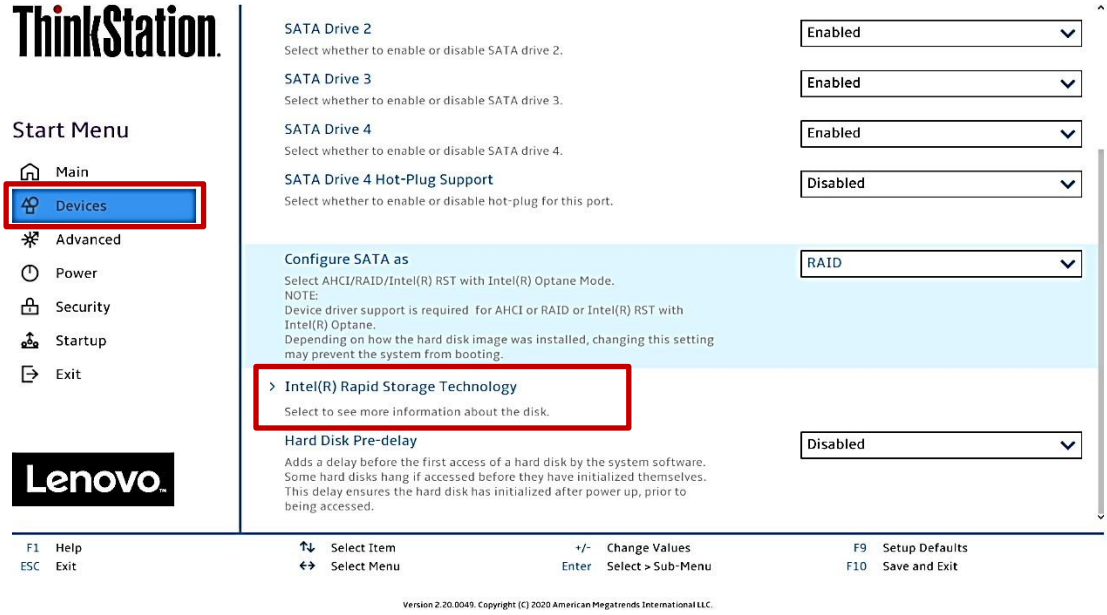
5. Press F10 to Save and Exit BIOS setup.



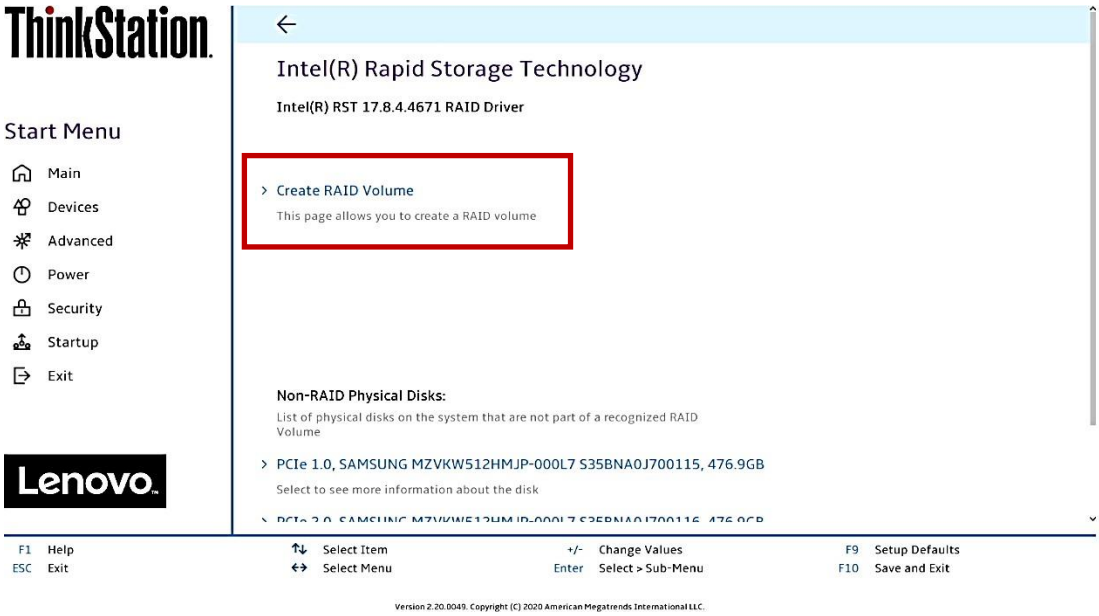
6. As the system reboots, press the function F1 key to go back into BIOS setup. Select the “Devices” menu at the BIOS main screen setup utility and “ATA Drive Setup”.



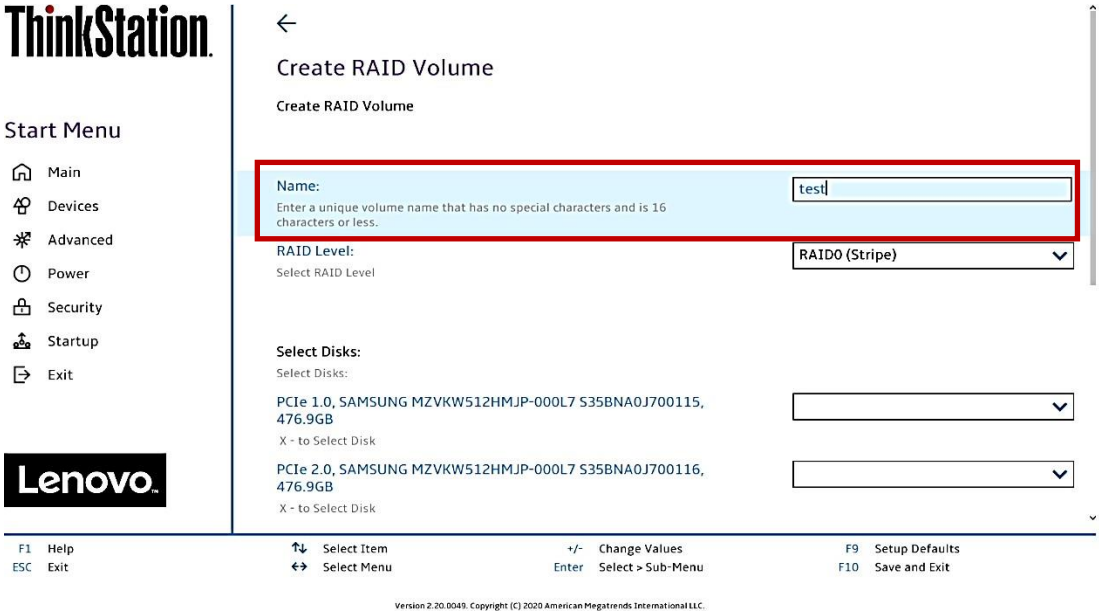
7. Select the “Intel ® Rapid Storage Technology” option.



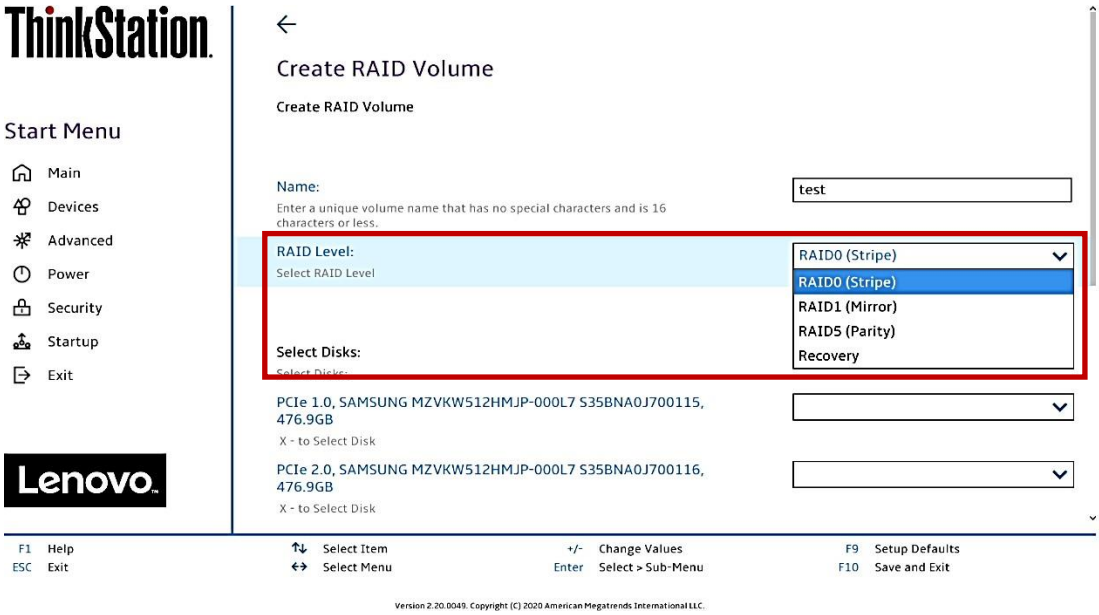
8. Select “Create RAID volume”.



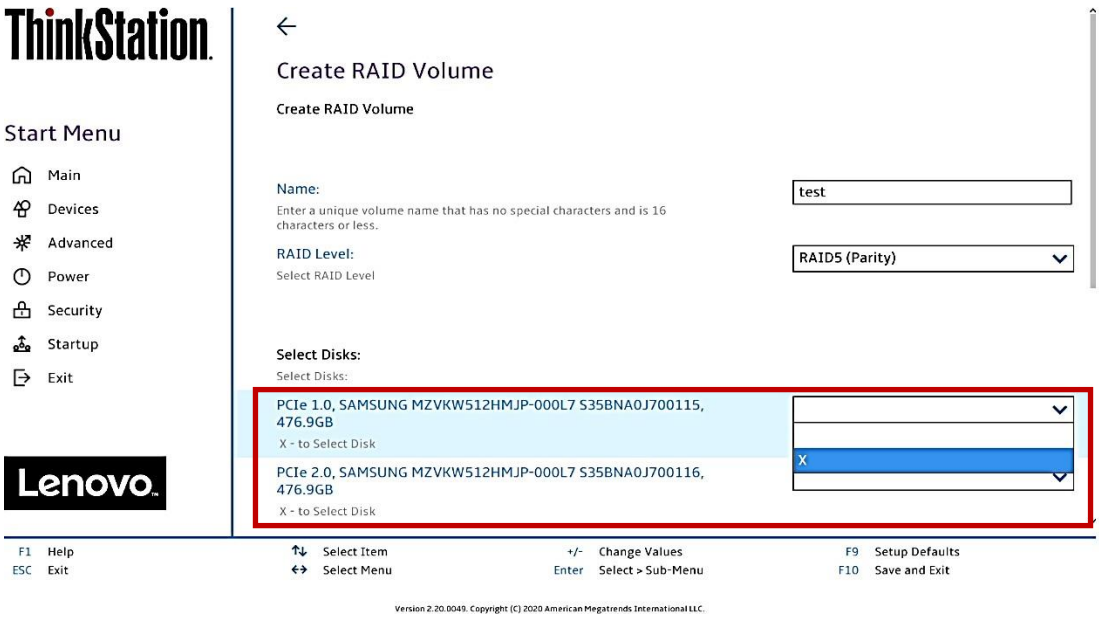
9. At the “Create RAID Volume” menu, select “Name:” and enter a unique RAID array name.
   ***Note**: In this example, the RAID array is named “test”.*

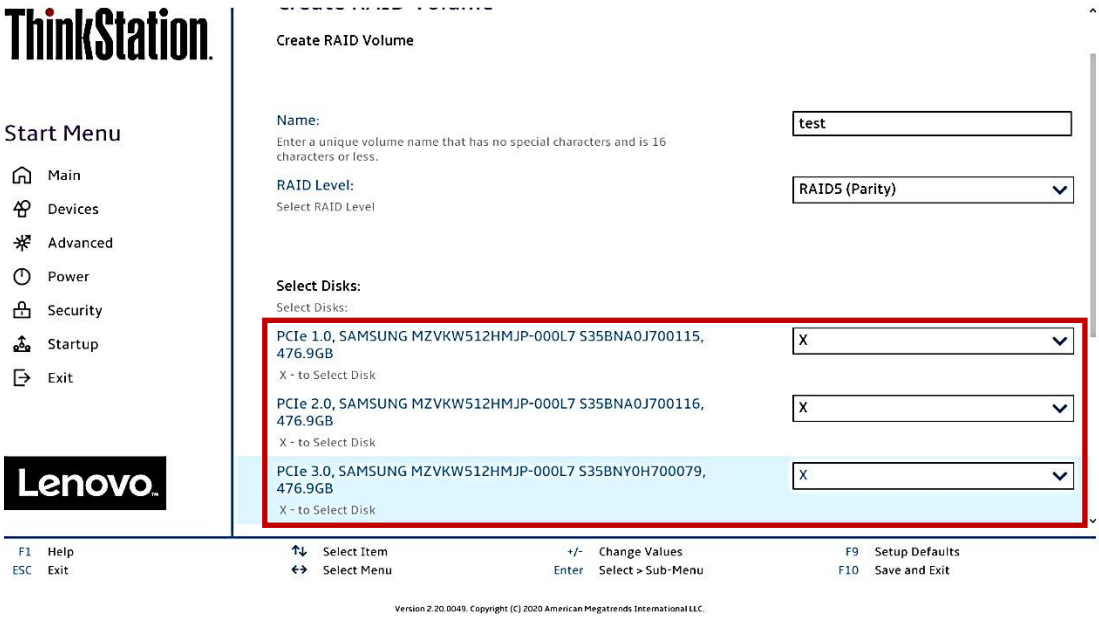


10. At the “Create RAID Volume” menu, select “RAID Level” and choose one of the options listed.
    ***Note**: Only the available RAID options will be listed here.*

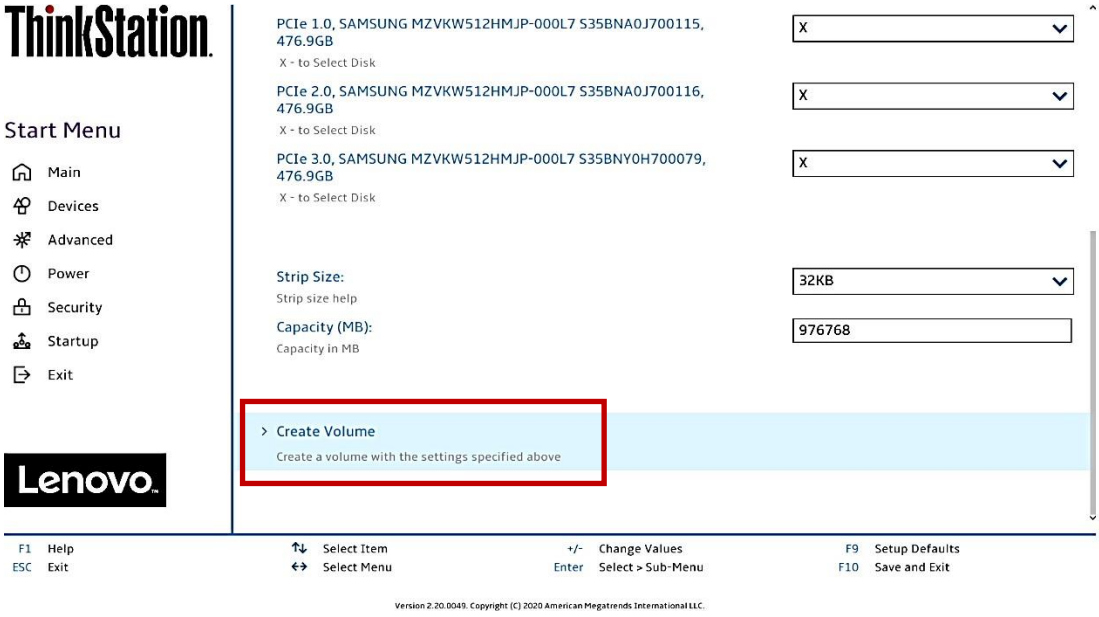


11. At the “Create RAID Volume” menu, select the dropdown menu box next to each drive and select the “X”. The dropdown to the right of the drive option should go from [ ] to [X].

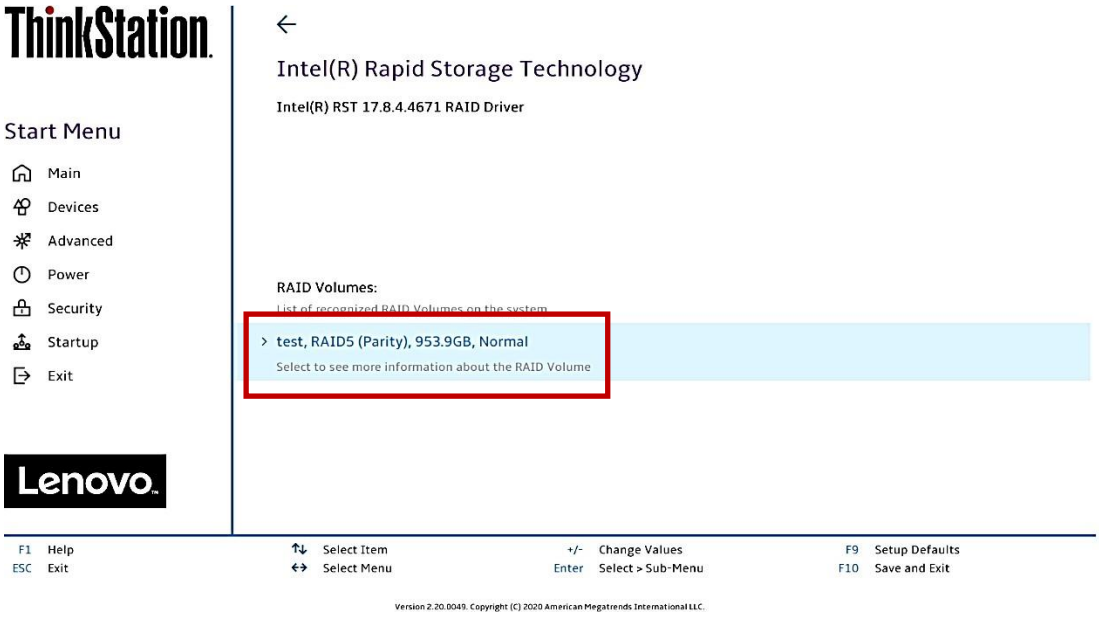




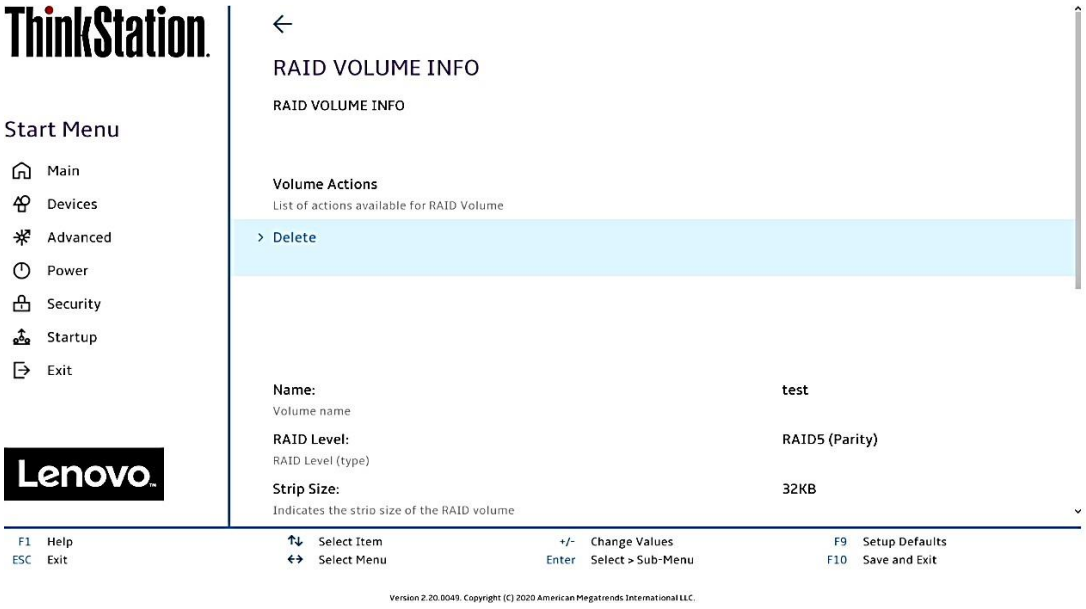
12. Select “Create Volume” at the bottom of the menu.



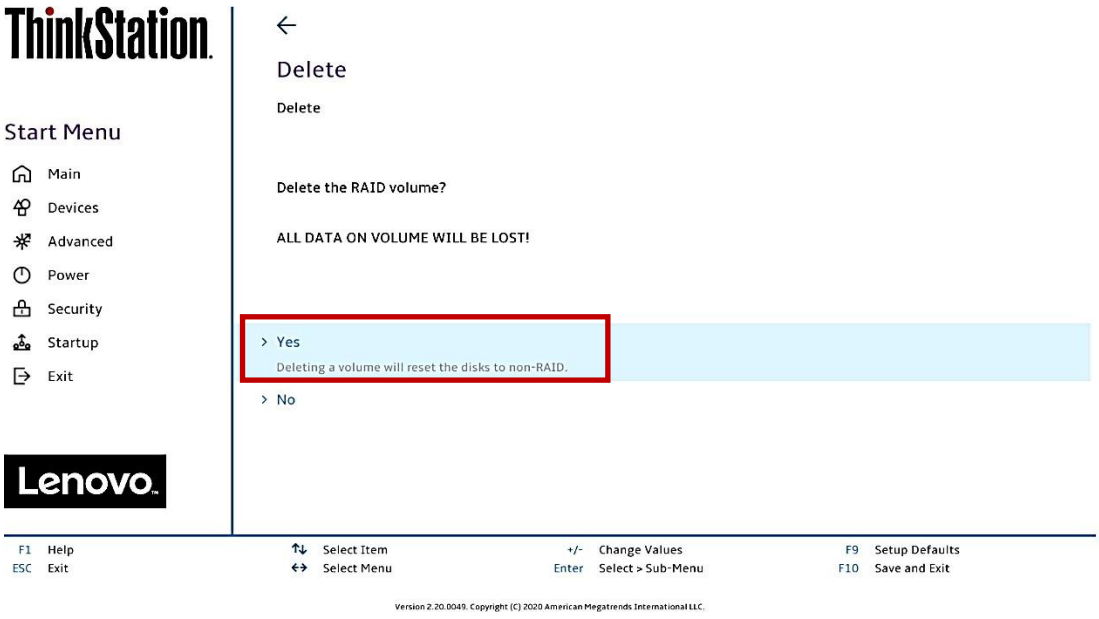
13. Verify the RAID volume was created at the very next screen.



14. To view information about the RAID array, select the RAID array on the previous step.



15. To delete the RAID array, select “Delete” from the “RAID VOLUME INFO” from the previous step and confirm by selecting “Yes” at the very next menu option.

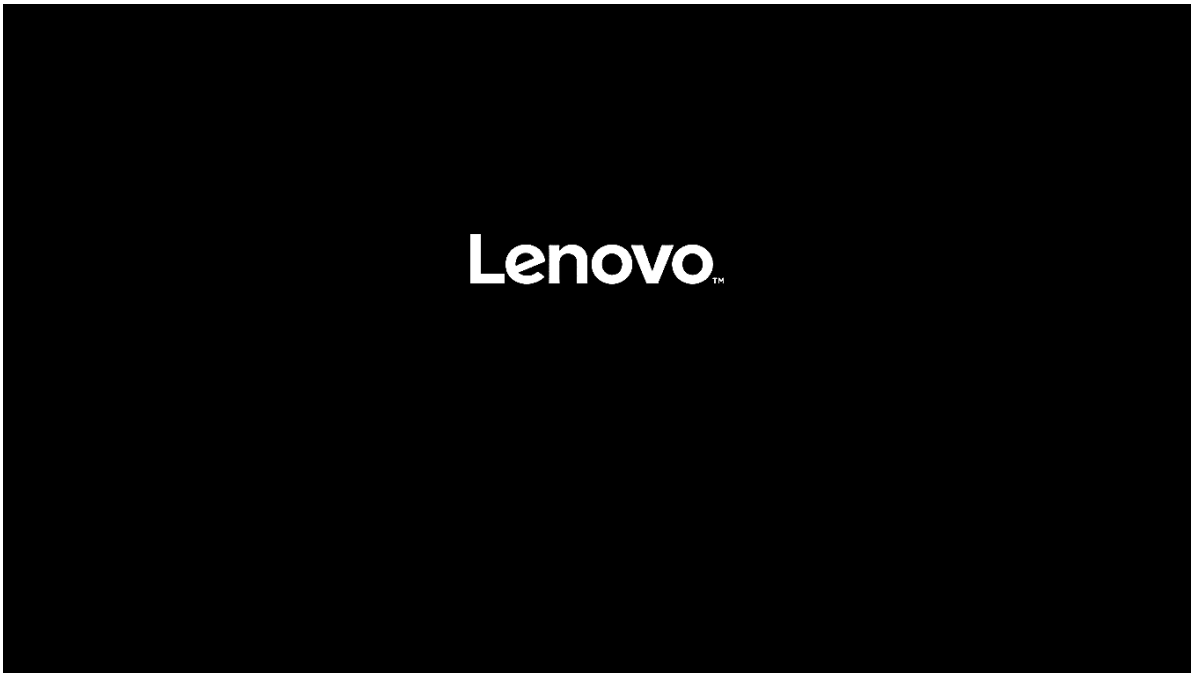


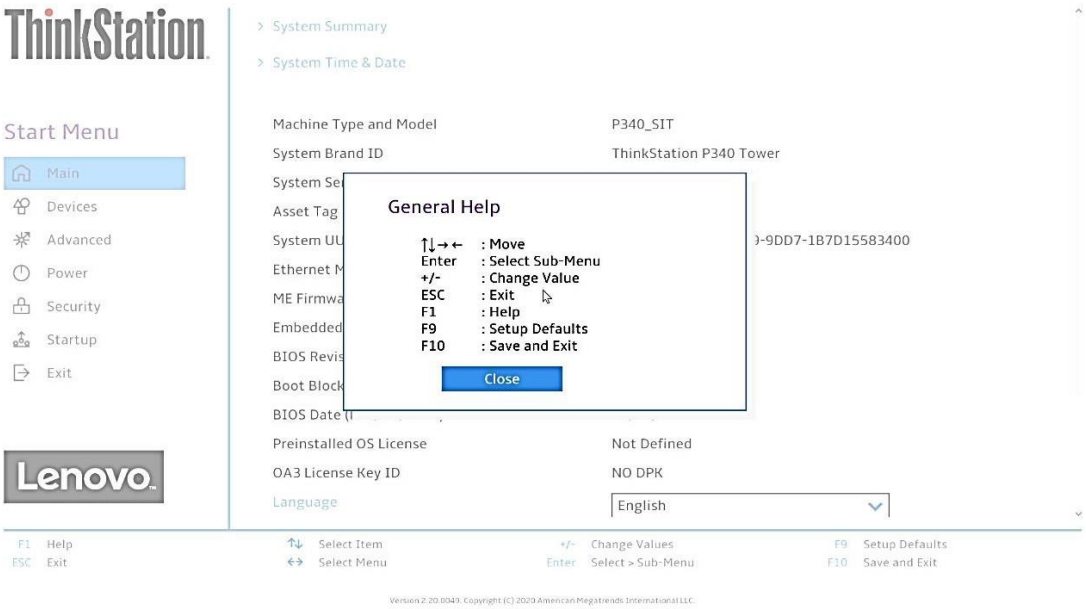
Note: The user may *not* see the RAID array show up in the BIOS boot sequence until after a bootable operating system has been installed on the RAID array.

Section 4 – Configuring SATA RAID for P340 Tower & SFF

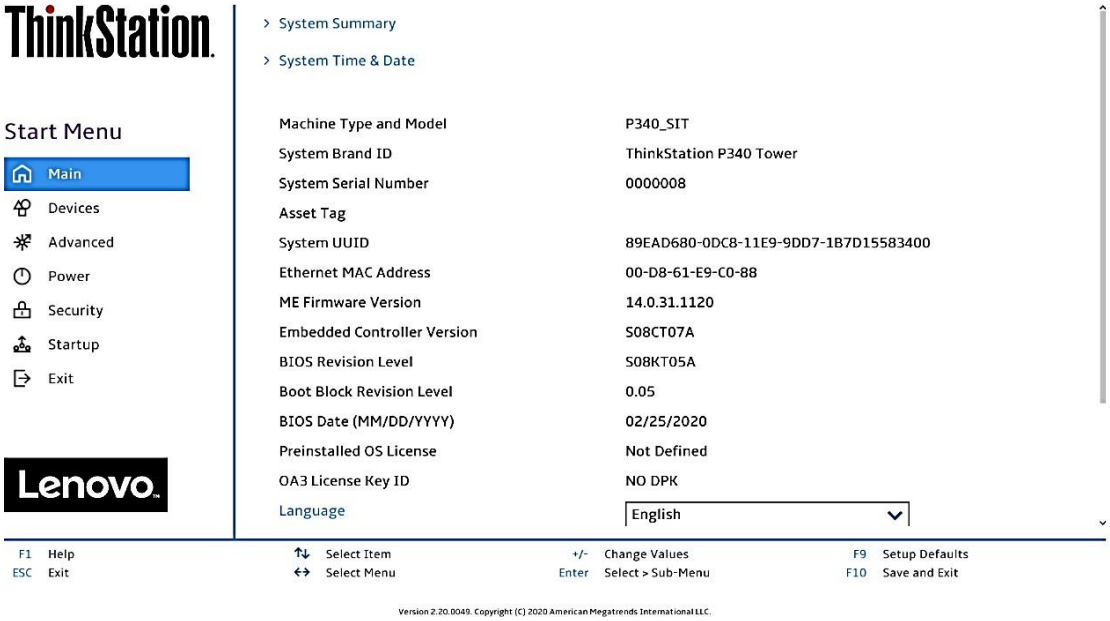
Please refer to the following steps to configure SATA RAID.

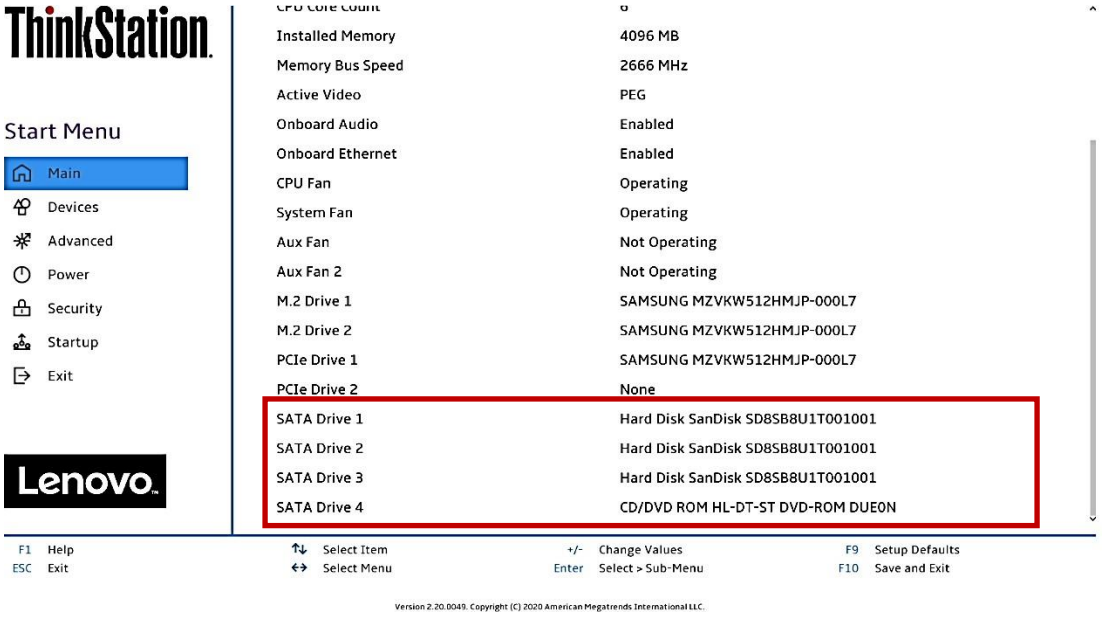
1. Boot into BIOS by pressing the function F1 key at the “Lenovo” splash screen.



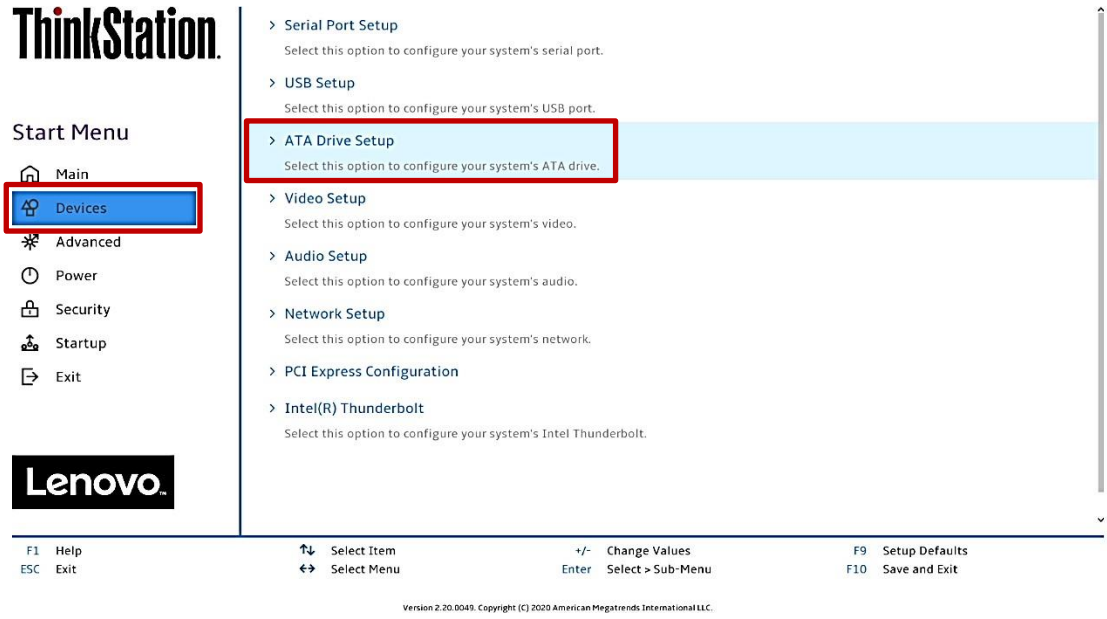


2. Select “System Summary” to verify BIOS is recognizing the SATA drives.

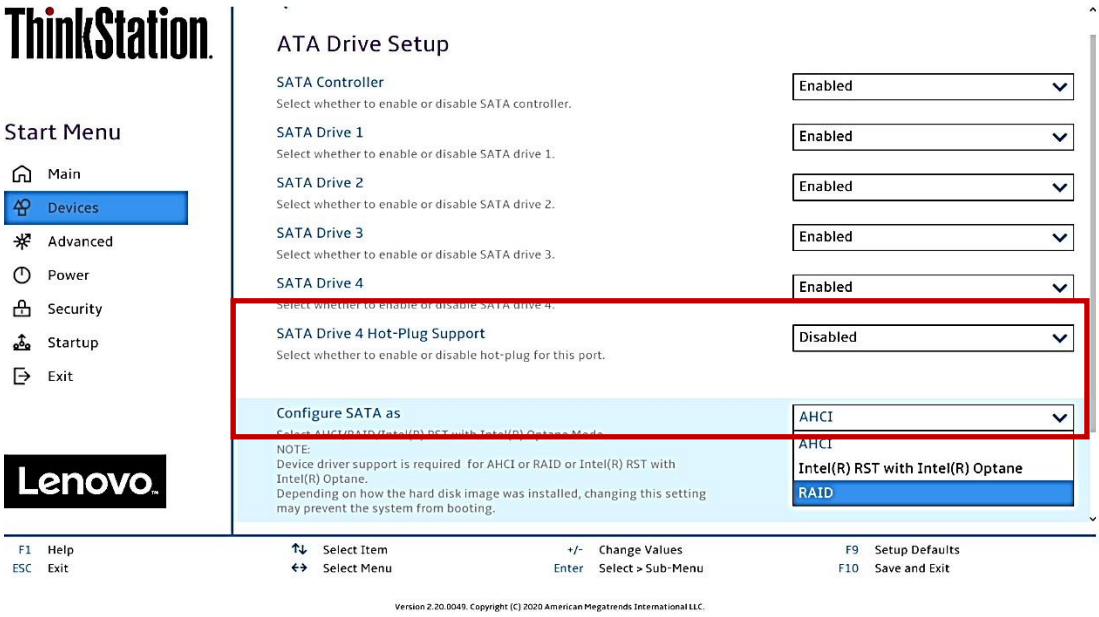




3. Select the “Devices” menu at the BIOS main screen setup utility and “ATA Drive Setup”.

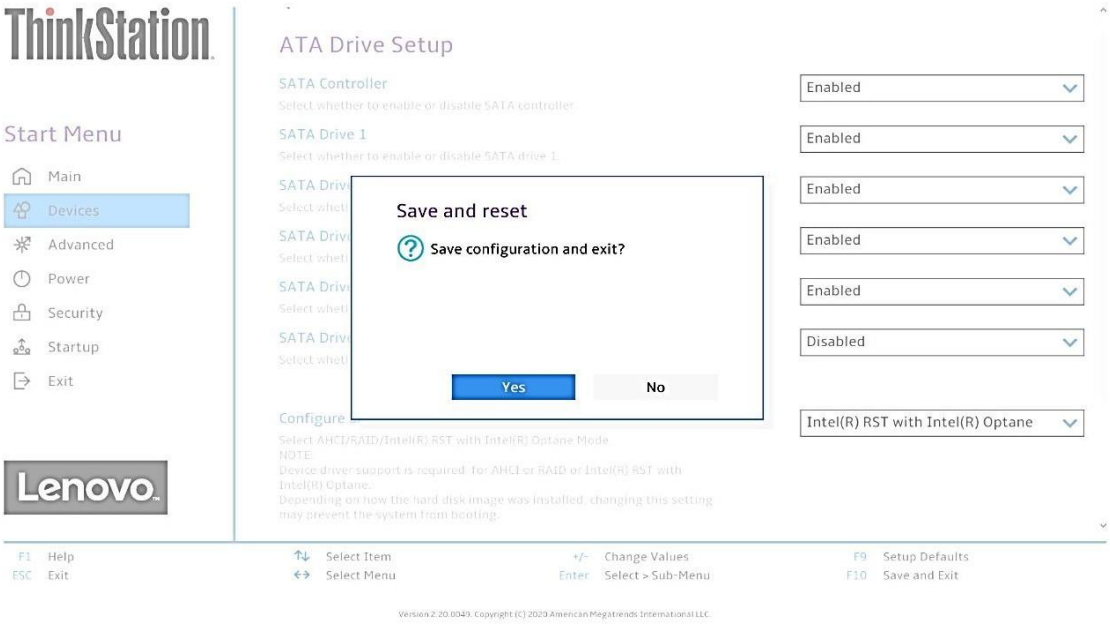


4. In the “ATA Drive Setup” menu, select “Configure SATA as” and change the option to “RAID”.

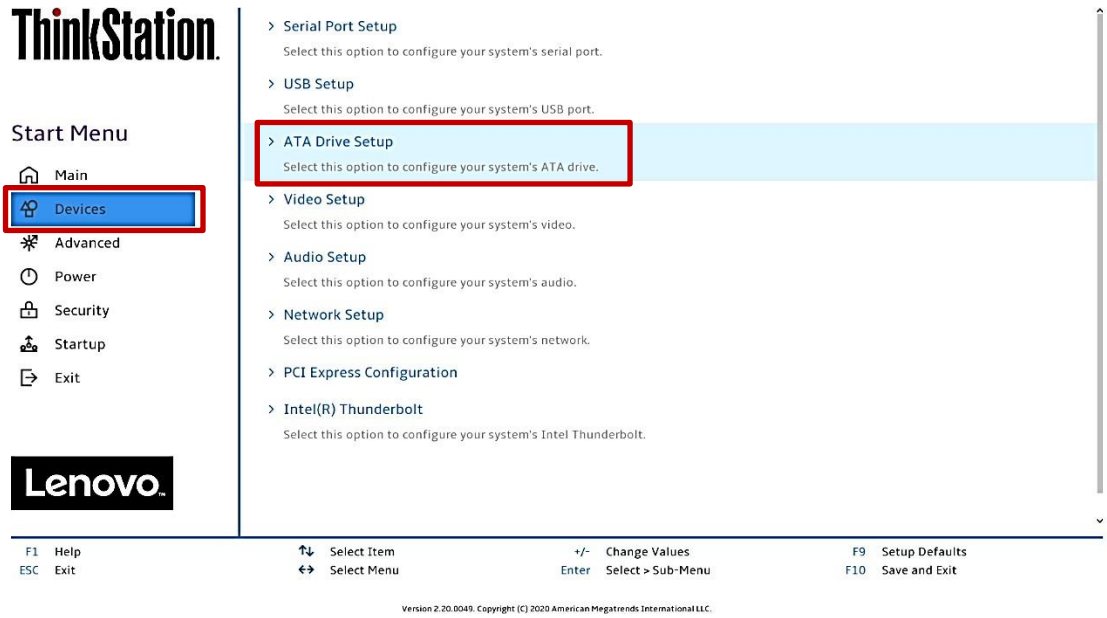


Note: In order to secure erase SATA drives, the ‘Configure SATA as’ option must be set to ‘AHCI’ mode.

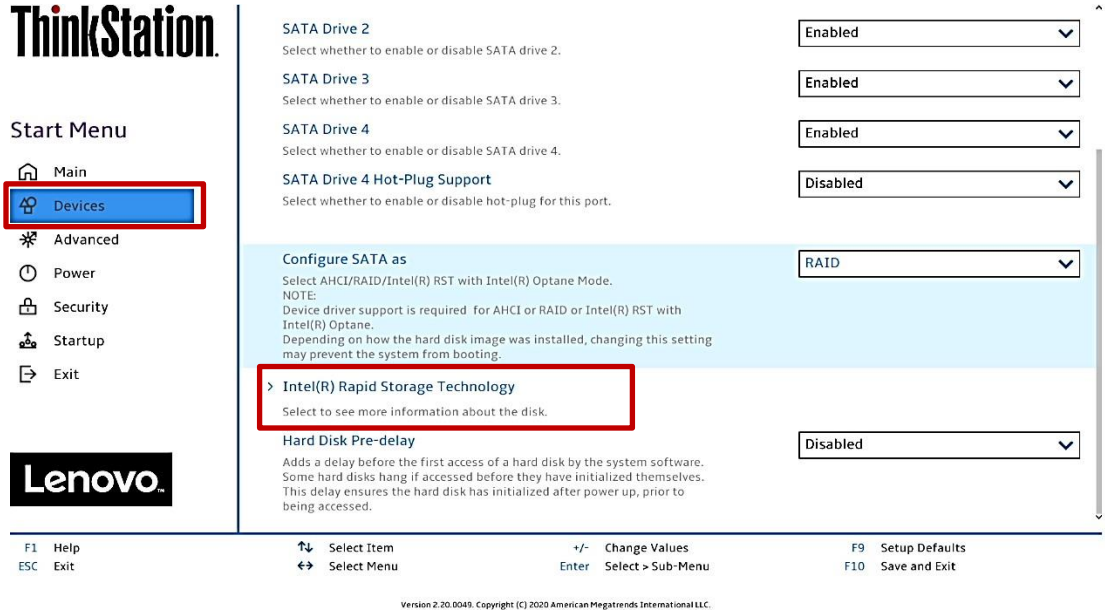
5. Press F10 to Save and Exit BIOS setup.



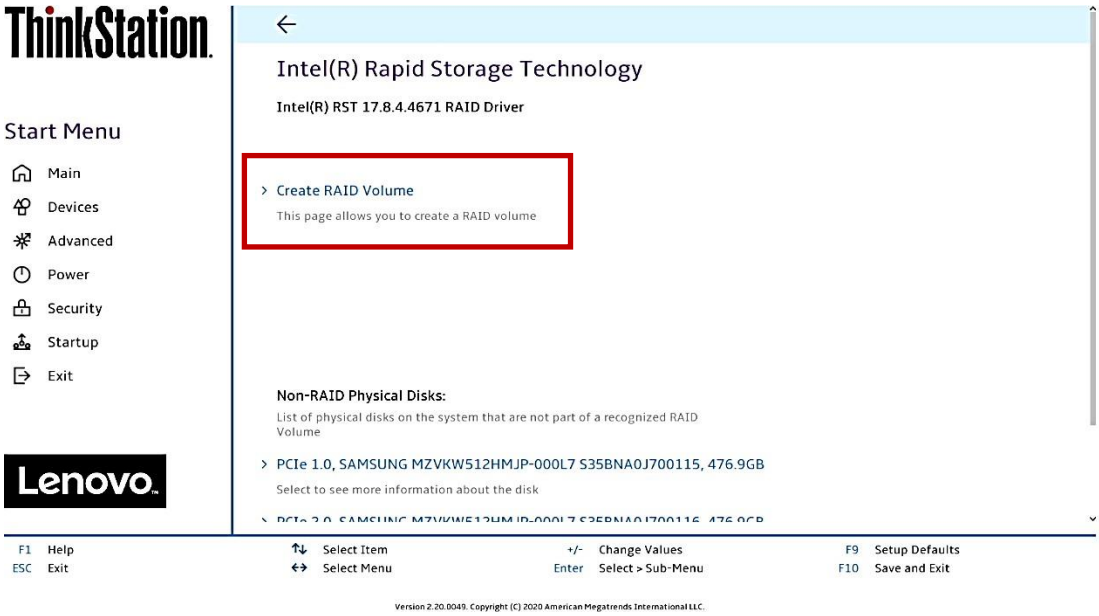
6. As the system reboots, press the function F1 key to go back into BIOS setup. Select the “Devices” menu at the BIOS main screen setup utility and “ATA Drive Setup”.



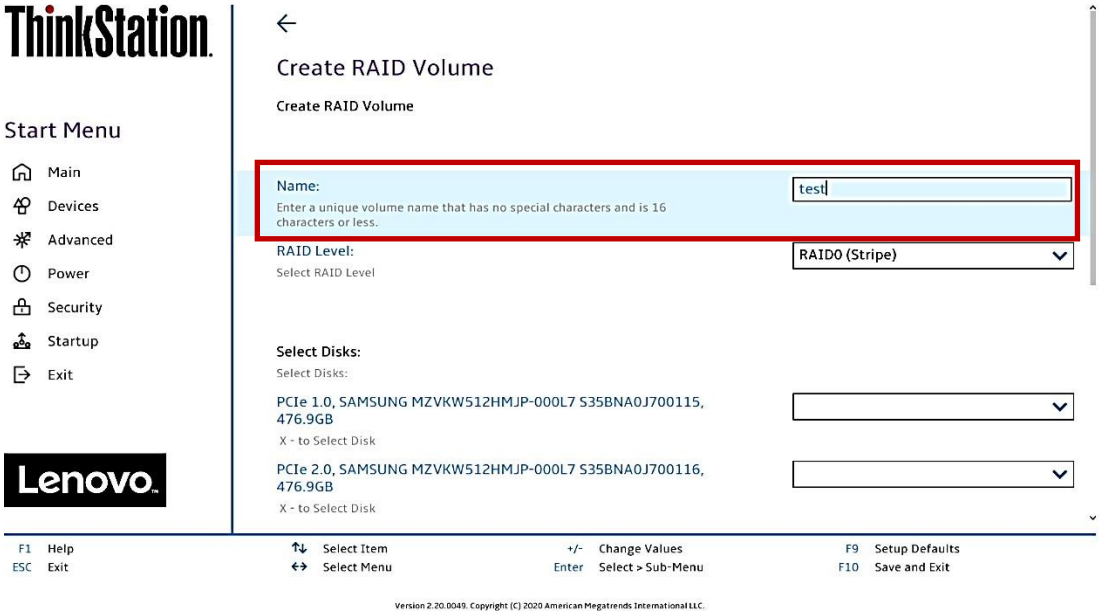
7. Select the “Intel ® Rapid Storage Technology” option.



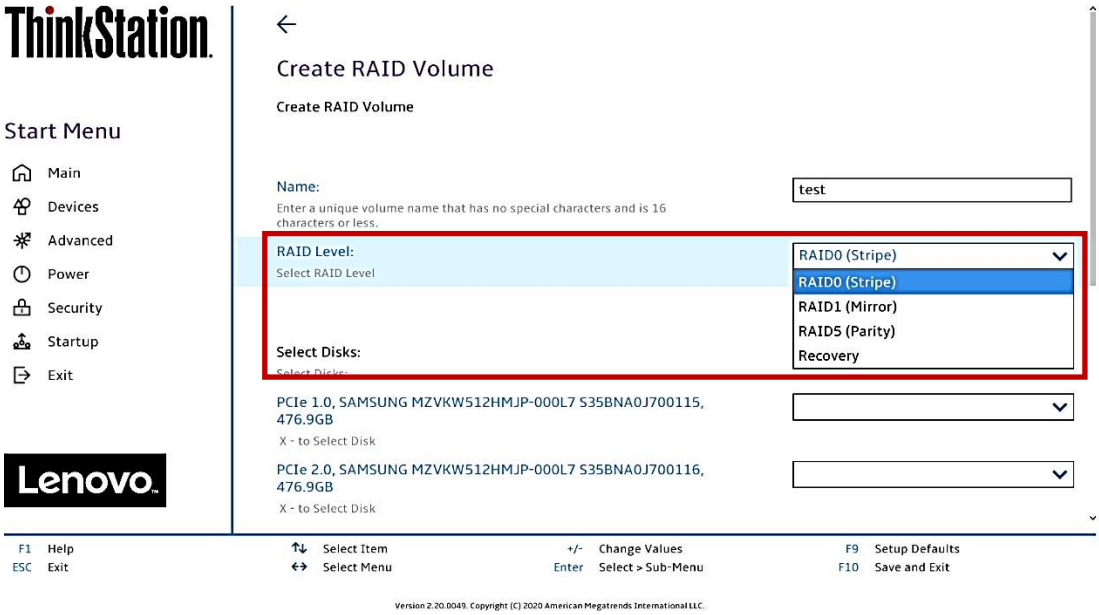
8. Select “Create RAID volume”.



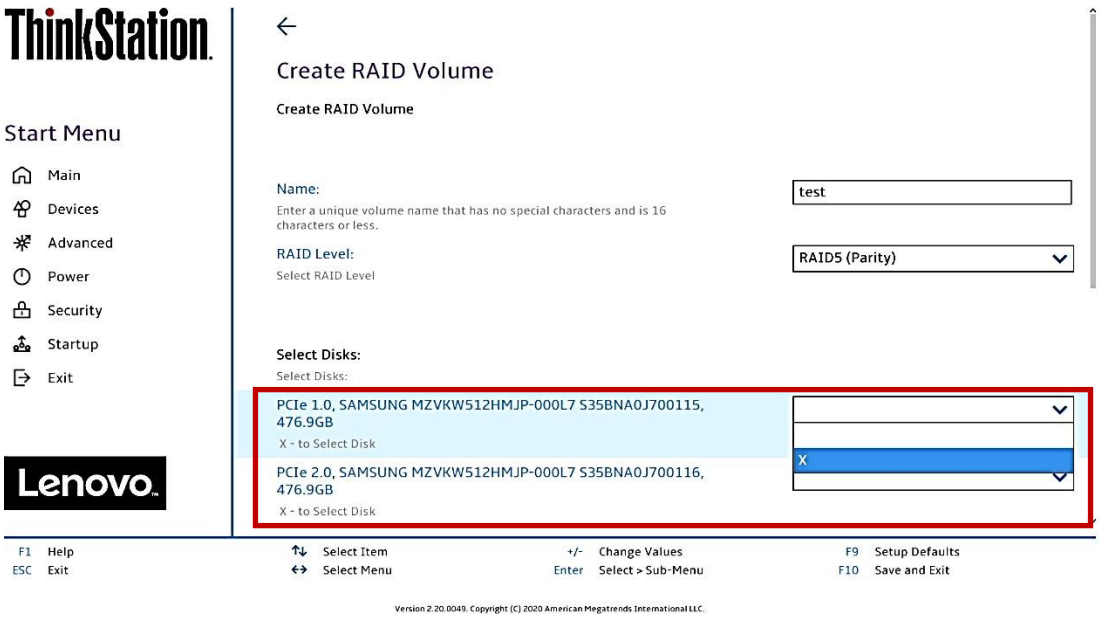
9. At the “Create RAID Volume” menu, select “Name:” and enter a unique RAID array name.
   ***Note**: In this example, the RAID array is named “test”.*

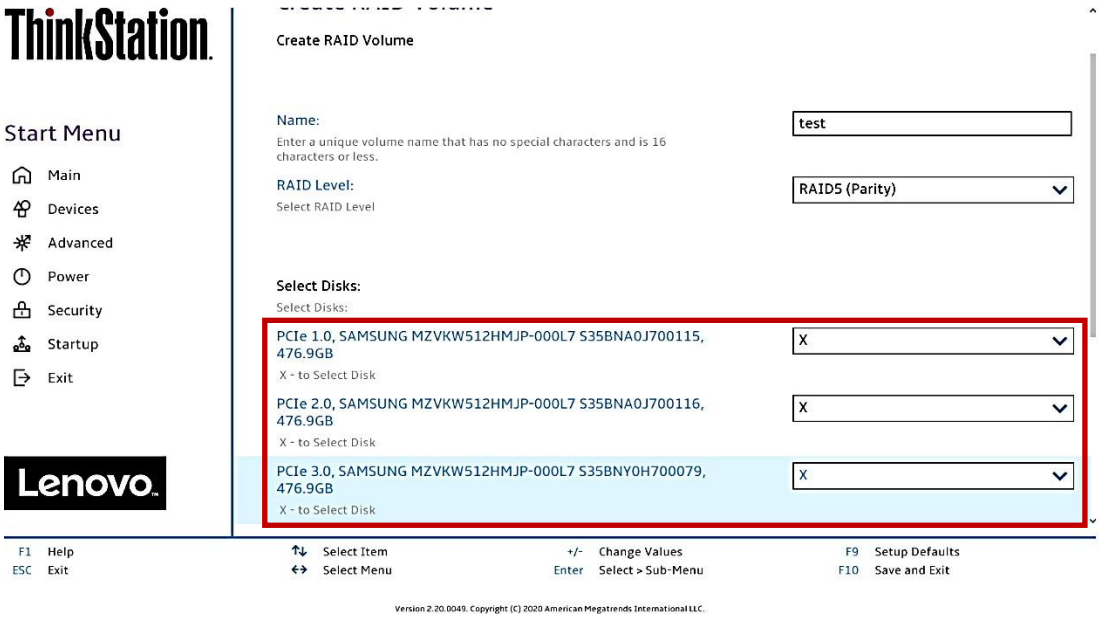


10. At the “Create RAID Volume” menu, select “RAID Level” and choose one of the options listed.
    ***Note**: Only the available RAID options will be listed here.*

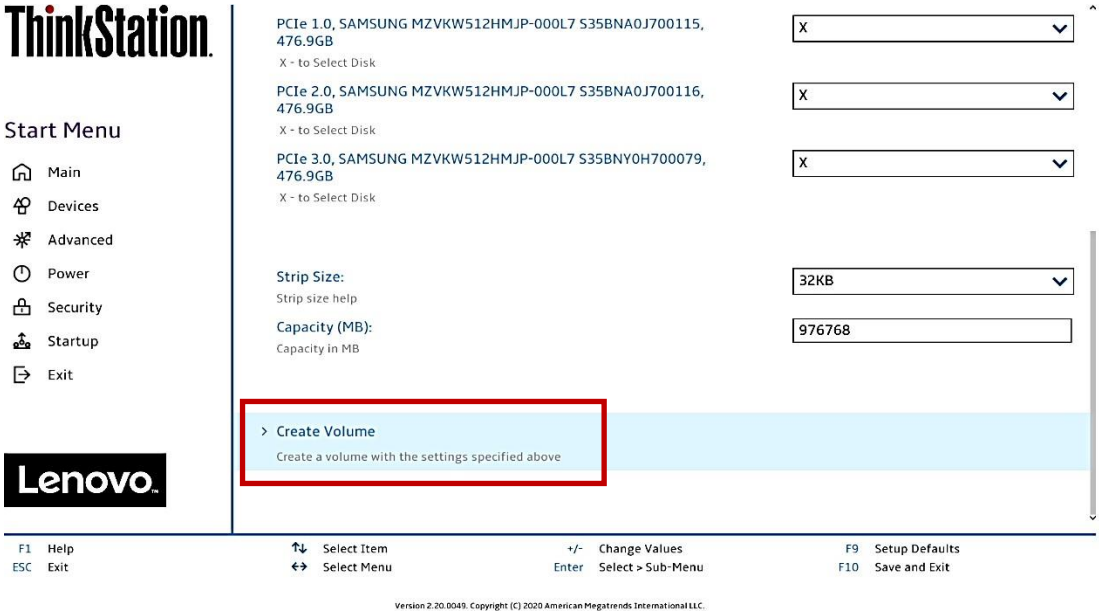


11. At the “Create RAID Volume” menu, select the dropdown menu box next to each drive and select the “X”. The dropdown to the right of the drive option should go from [ ] to [X].

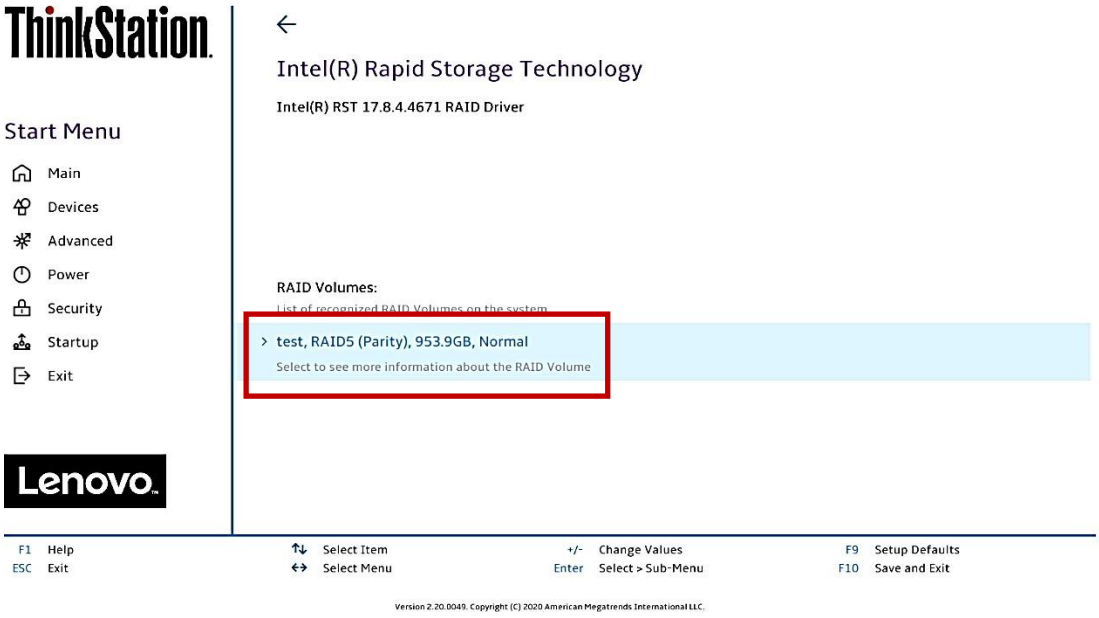




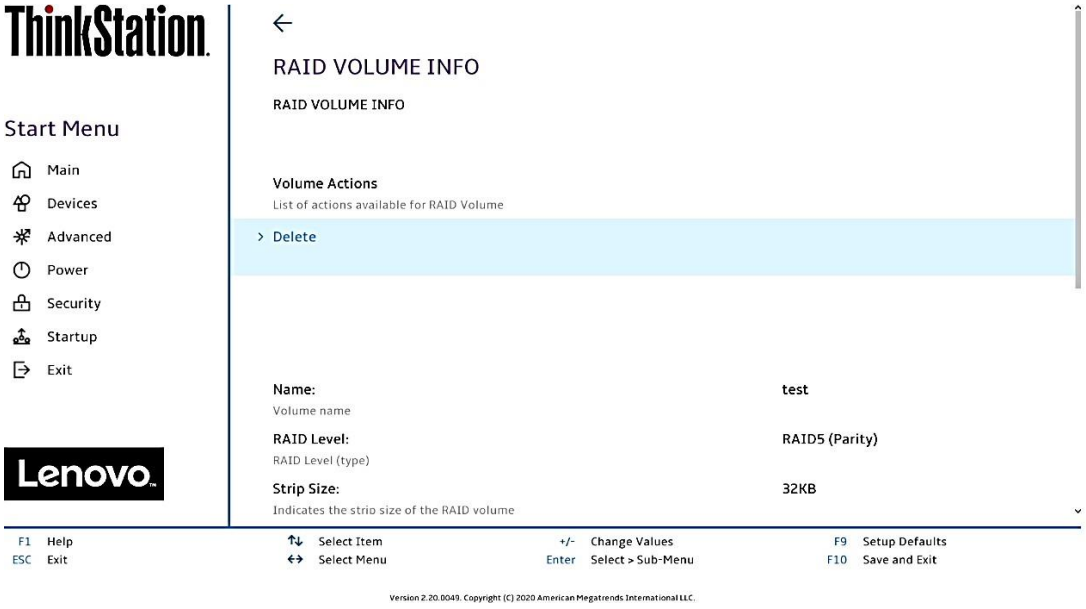
12. Select “Create Volume” at the bottom of the menu.



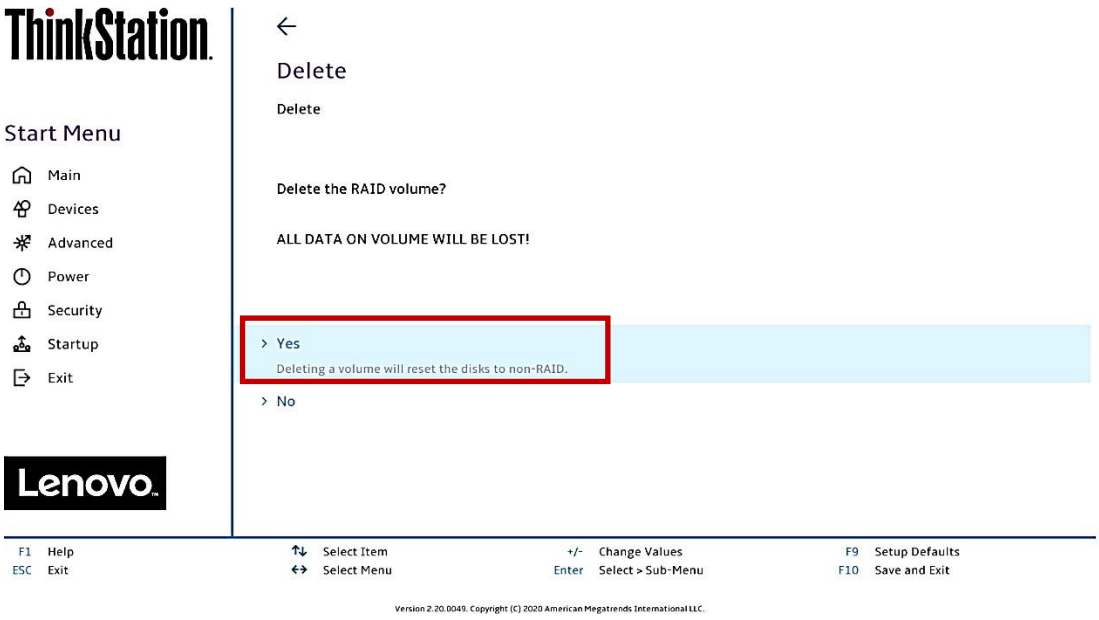
13. Verify the RAID volume was created at the very next screen.



14. To view information about the RAID array, select the RAID array on the previous step.



15. To delete the RAID array, select “Delete” from the “RAID VOLUME INFO” from the previous step and confirm by selecting “Yes” at the very next menu option.



Note: The user may *not* see the RAID array show up in the BIOS boot sequence until after a bootable operating system has been installed on the RAID array.

Section 5 – Revision History

Version	Date	Author	Changes/Updates
1.0	6/17/2020	Jason Moebs	Initial launch release