

Lenovo system tools support and RAID setup

LXCC, LXPM, OneCLI, LXCA, BoMC

The Lenovo logo is positioned vertically on the right side of the slide. It consists of the word "Lenovo" in white, sans-serif font, set against a rectangular background with a vertical color gradient from green at the top to blue at the bottom.

Lenovo

Lenovo system tools support limitations

Lenovo system tools can support the new Lenovo RAID/HBA adapters, but there are limitations.

Scroll down for more information

Function	LXCC	LXPM	UEFI HII	OneCLI	LXCA	BoMC
Adapter FRU inventory details	Supported	Supported	Supported	Supported	Supported	Not supported
Disk inventory details	Supported	Supported	Supported	Supported	Supported	Not supported
RAID configuration	Currently not supported	Supported (however, RAID 1 ADM, RAID 10 ADM and hot-spare configuration are currently not supported)	Supported	Supported	Currently not supported	Not supported
Firmware update	Supported	Not supported	Supported	Supported	Supported	Supported
Monitoring / Events / Log capture	Supported (but capture of	Not supported	Supported	Supported	Supported (but capture of	Not supported

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Monitoring / Events / Log capture	Supported (but capture of controller firmware logs is not available)	Not supported	Supported	Supported	Supported (but capture of controller firmware logs is not available)	Not supported

RAID setup with different tools


RAID setup on the new Lenovo RAID/HBA adapters can be done using different tools:

- LXPM
 - The same concept and method used with previous adapters, but the picture presentation is slightly different
- UEFI Human Interface Infrastructure (HII)
 - The same concept and method used with previous adapters, but the picture presentation is slightly different
- OneCLI
 - Refer to [Information Center](#) for detailed instructions

RAID setup in LXPM

Note: LXPM does not currently support RAID1 Triple, RAID10 Triple, and hot-spare creation. If you need these configurations, use the UEFI HII method instead.

Click each number in turn to see the procedure.

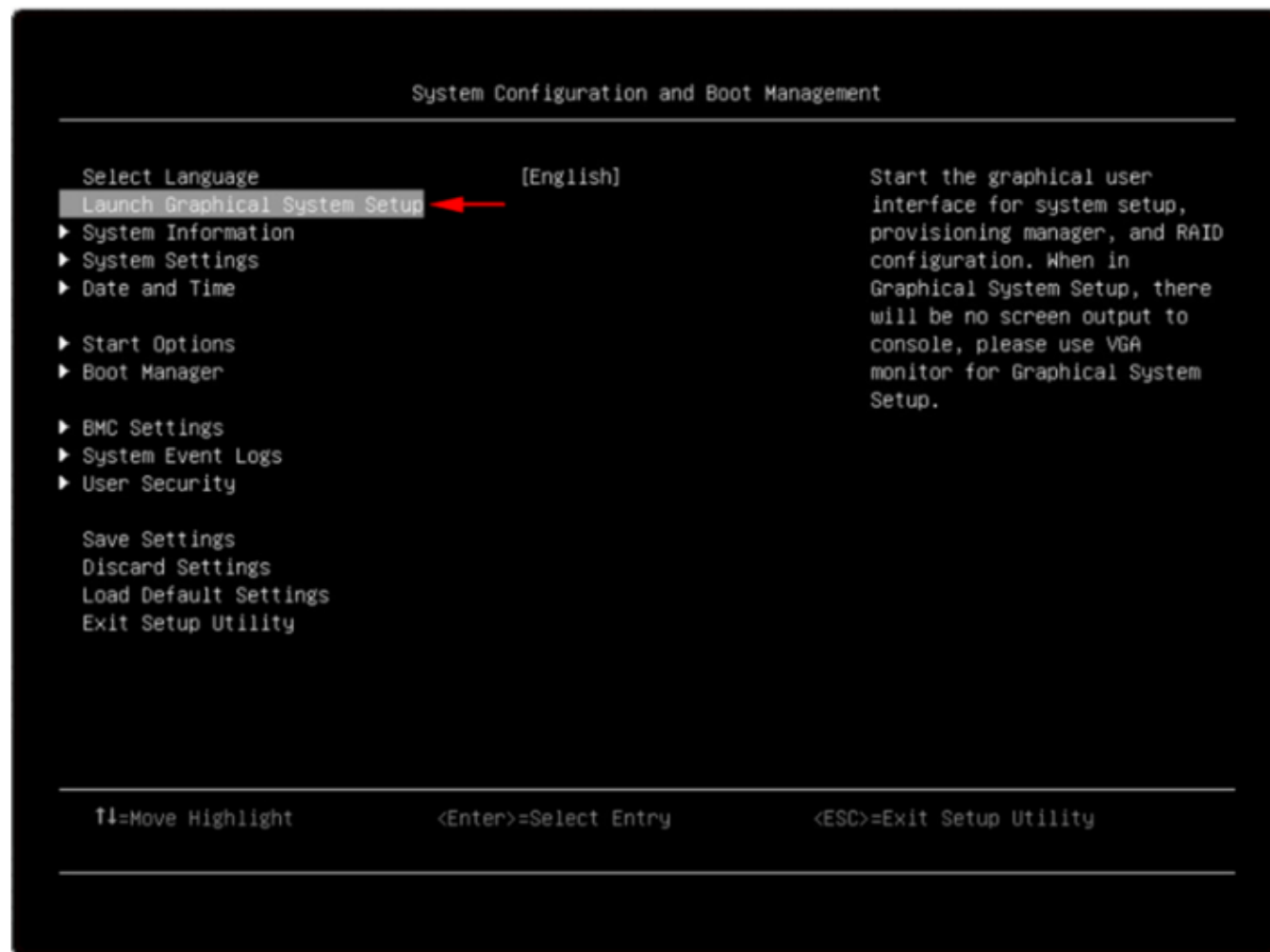


Step



RAID setup in LXPM

- Boot the system to the F1 System Setup menu.
- Select **Launch Graphical System Setup**.

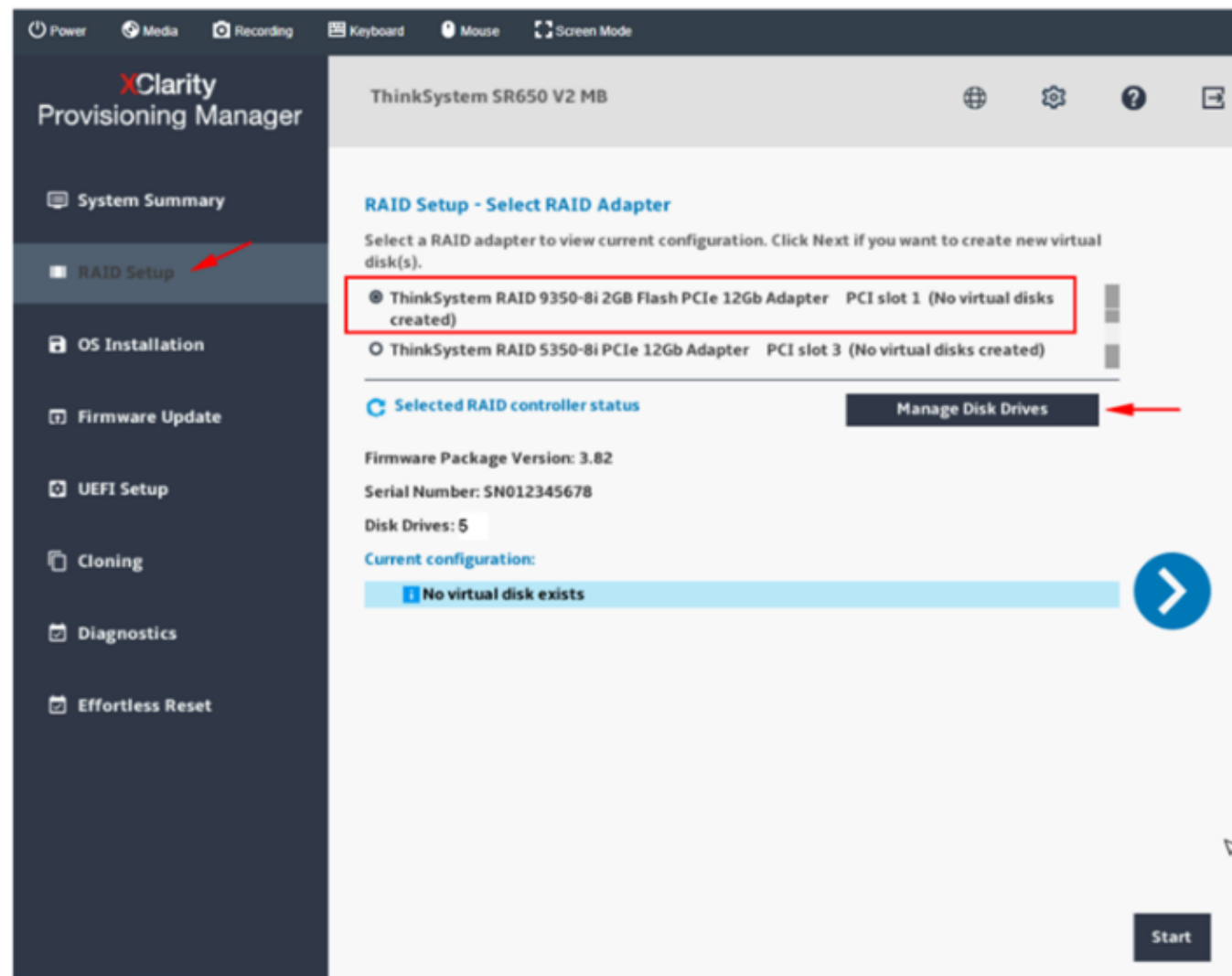


Step



RAID setup in LXPM

- Select **RAID Setup** from the left panel.
- Select a RAID adapter – in this example, **ThinkSystem RAID 9350-8i 2GB** has been selected.
- Select **Manage Disk Drives**.



Step



RAID setup in LXP

- Check the state of the drives you would like to use. It must be **UGood**, as you cannot create a RAID configuration if the drive status is **HBA**.
- Click the > button.

Note: Make sure the Controller Port Mode is set to Mixed or RAID mode in UEFI. You cannot set up RAID if the port mode is set to HBA. Refer to the [RAID setup in UEFI HII](#) section in this course for more information.

Drive	State	Size	Model	Actions
0:20	UGood	223 GB	ATA	Select ▾
0:21	UGood	223 GB	ATA	Select ▾
1:17	UGood	223 GB	ATA	Select ▾
1:18	UGood	223 GB	ATA	Select ▾
1:19	UGood	223 GB	ATA	Select ▾

Drive	State	Size
0:20	HBA	223 GB
0:21	Invalid State	223 GB
1:17	HBA	223 GB
1:18	HBA	223 GB
1:19	HBA	223 GB

Step



RAID setup in LXP

- You can select **Simple configuration** or **Advanced configuration**. In this example, **Advanced configuration** has been selected.
- Click the > button.

Attention: Simple configuration does not support a mix of different disk drive types.

RAID Setup - Select RAID configuration type

Selected RAID adapter : ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter

Warning: Simple configuration does not support mixed types of disk drives!

ThinkSystem SR650 V2 MB

RAID Setup - Select RAID configuration type

Selected RAID adapter : ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter

☐ Simple configuration
Upon choosing a RAID level with optional hot spare, a disk array and a virtual disk will be created. The maximum number of disk drives permitted by the selected RAID level will be used.

☒ **Advanced configuration**
Support all the capabilities of the RAID adapter.

Create new disk array and virtual disk

Create new disk array and virtual disk

< >

Step



RAID setup in LXPm

- Select a RAID Level and the drives you would like to use.
In this example, RAID 1 and the first two drives have been selected.
- Click the > button.

RAID Setup - Select RAID Level and Select Drives

Create disk array by specifying the RAID level and disk drive.

Set RAID Level :

RAID 0 1 to 128 disk drives are needed for RAID 0.

RAID 0
RAID 1
RAID 10
RAID 5
RAID 6

		Type	State	Capacity	Role
<input type="checkbox"/>	0:20	SATA/SSD	UGood	223 GB	Member
<input type="checkbox"/>	0:21	SATA/SSD	UGood	223 GB	Member
<input type="checkbox"/>	1:17	SATA/SSD	UGood	223 GB	Member
<input type="checkbox"/>	1:18	SATA/SSD	UGood	223 GB	Member
<input type="checkbox"/>	1:19	SATA/SSD	UGood	223 GB	Member

< >

Step

1 2 3 4 5 6 7 8 9 10 11 12



RAID setup in LXPM

- Select **+ Create Virtual Disk**.



Step



RAID setup in LXPM

- Enter a name for the virtual disk, and adjust the other options to match the environment.
- Click **Create** to exit the menu.

Create Virtual Disk

Set properties of the selected virtual disk

Virtual Disk Name:

Volume0

Virtual Disk Capacity:

223

GB

223 GB MAX

Strip Size:

256K

Create

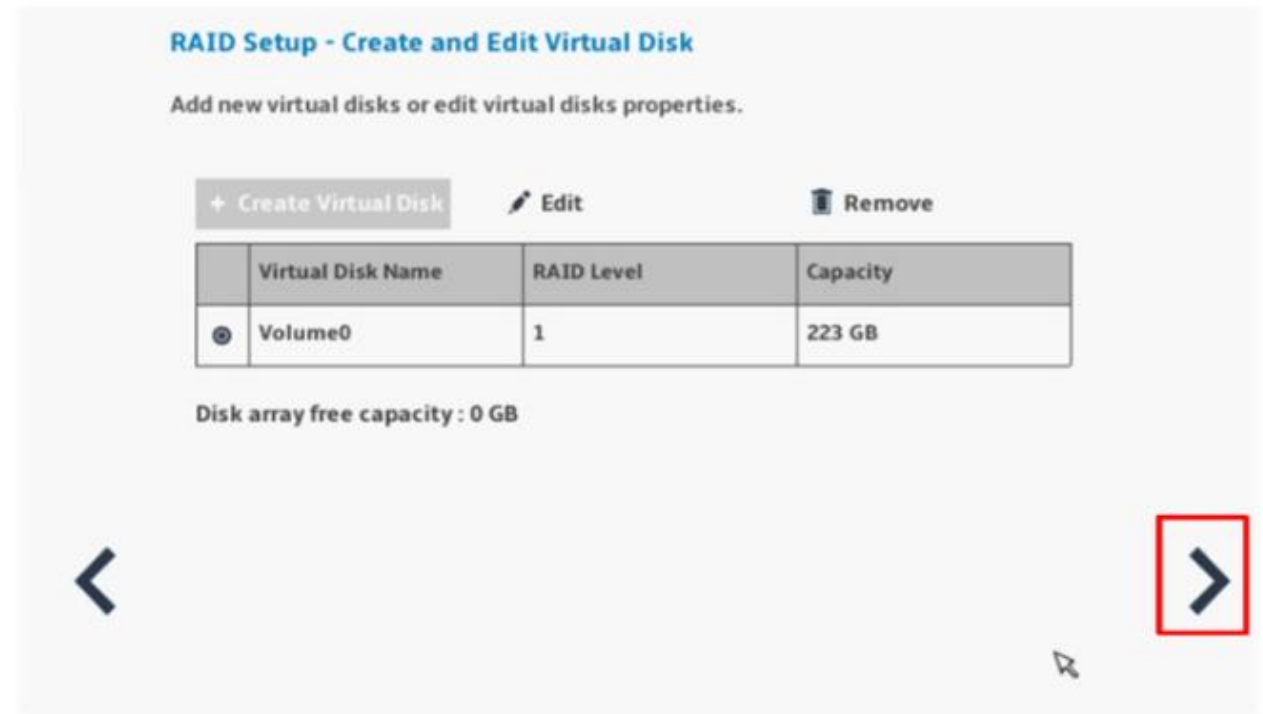
Cancel

Step



RAID setup in LXP

- Click the > button.

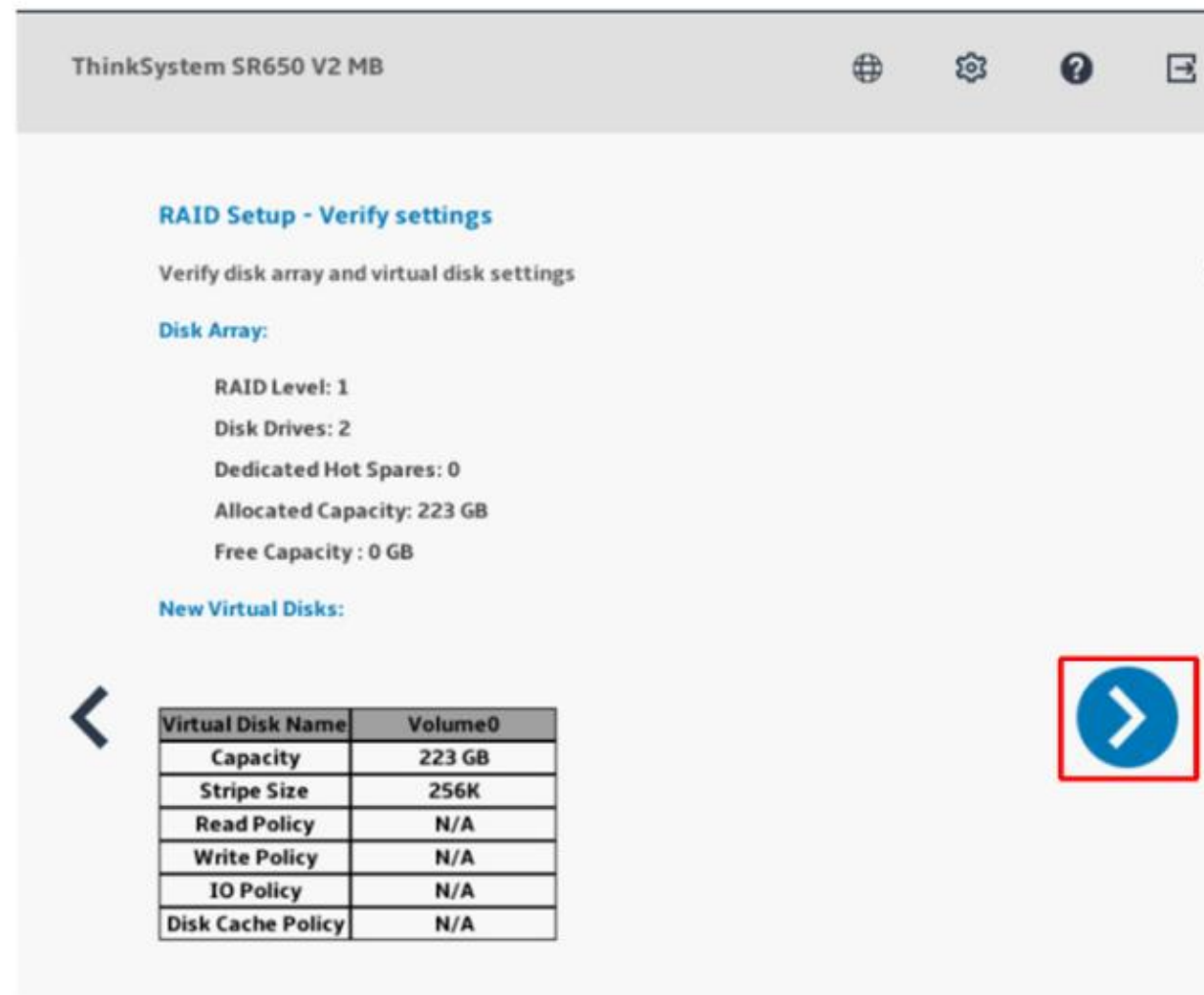


Step



RAID setup in LXPM

Review the configuration, and then click the > button.

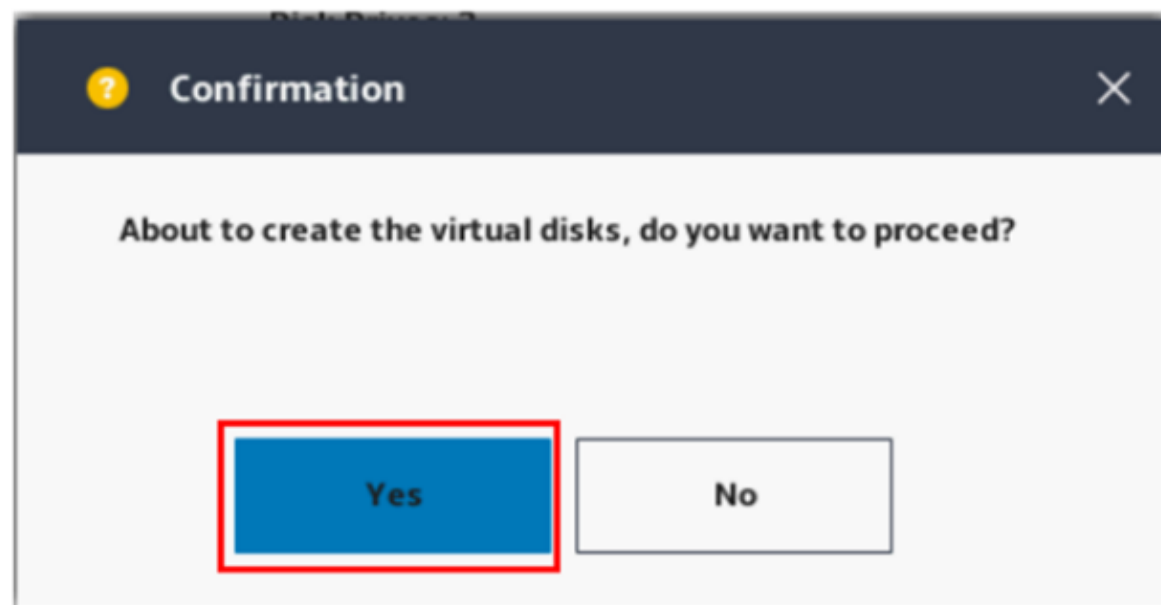


Step



RAID setup in LXPM

A pop-up box will be displayed with a message stating that the virtual disks are about to be created. Click **Yes** to proceed.



Step



RAID setup in LXPM

- Whether Simple configuration or Advanced configuration was selected in step 4, the screenshot shown on the right will be displayed after the RAID setup has been confirmed.
- Click the > button.



Step



RAID setup in LXPM

The original **RAID Setup** screen will be displayed with the newly created virtual disk.

ThinkSystem SR650 V2 MB

RAID Setup - Select RAID Adapter

Select a RAID adapter to view current configuration. Click Next if you want to create new virtual disk(s).

☒ ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter PCI slot 1 (1 virtual disk created)

☐ ThinkSystem RAID 5350-8i PCIe 12Gb Adapter PCI slot 3 (No virtual disks created)

[Selected RAID controller status](#) [Manage Disk Drives](#)

Firmware Package Version: 3.82

Serial Number: SN012345678

Disk Drives: 4

Current configuration:

[Remove](#)

	Name	Virtual Disk State	Capacity
<input checked="" type="radio"/>	Array0	RAID 1	447 GB (0 GB free)
<input type="radio"/>	VD0: Volume0	Rebuild	223 GB

Step



RAID setup in UEFI HII

The procedure used to set up RAID in the HII utility is almost the same as that used with previous ThinkSystem servers.

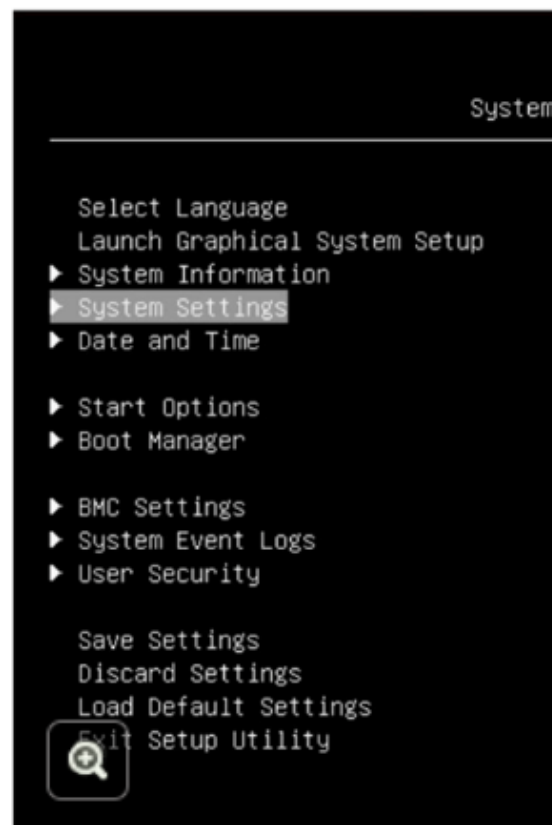
Click each number in turn to see the procedure.

Step



RAID setup in UEFI HII

1. Press **F1** during the system startup to open the UEFI setup menu, and then select **System Settings**.
 - Or select **UEFI Setup** in LXPM, and then select **System Settings**.
2. Select **Storage**.



Step



RAID setup in UEFI HII

The supported storage controllers will be displayed. In this example, **9350-8i 2GB Flash** has been selected.



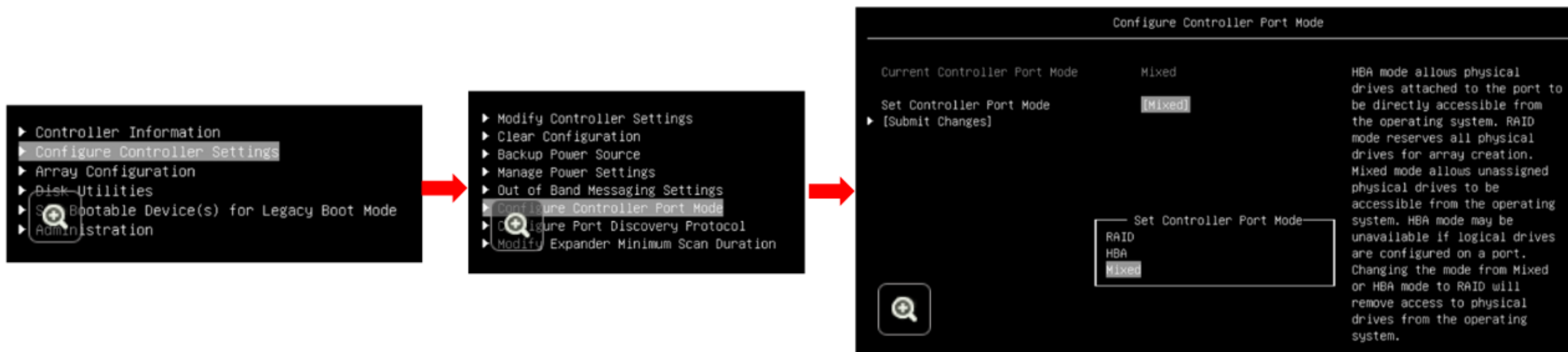
Step



RAID setup in UEFI HII

Select **Configure Controller Settings** → **Configure Controller Port Mode** → **Set Controller Port Mode**.

Make sure the **Controller Port Mode** is set to **Mixed** or **RAID**; you cannot set up RAID if the port mode is set to **HBA**.

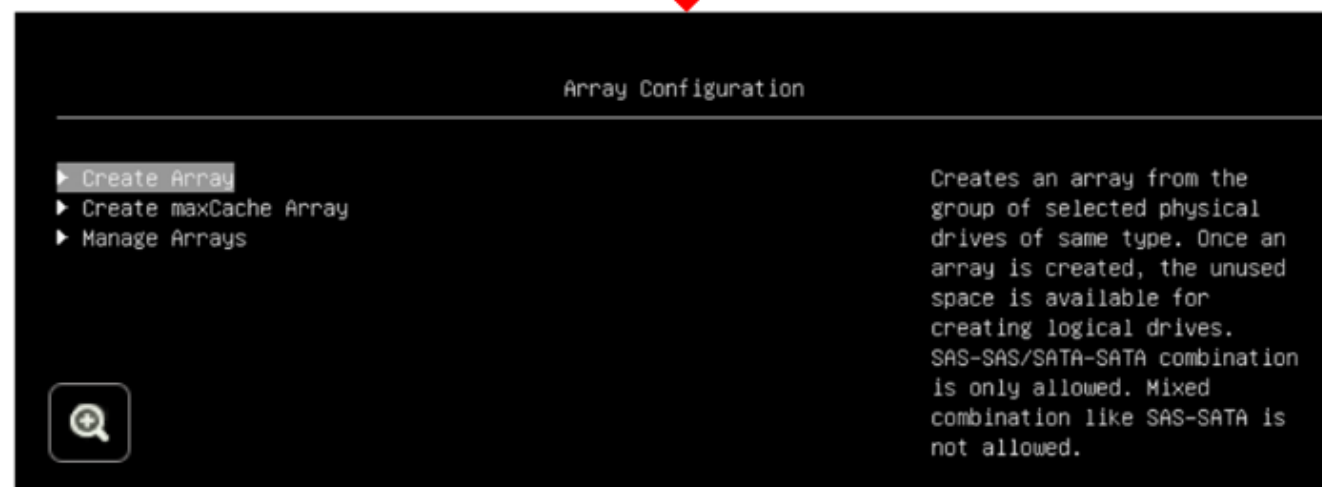
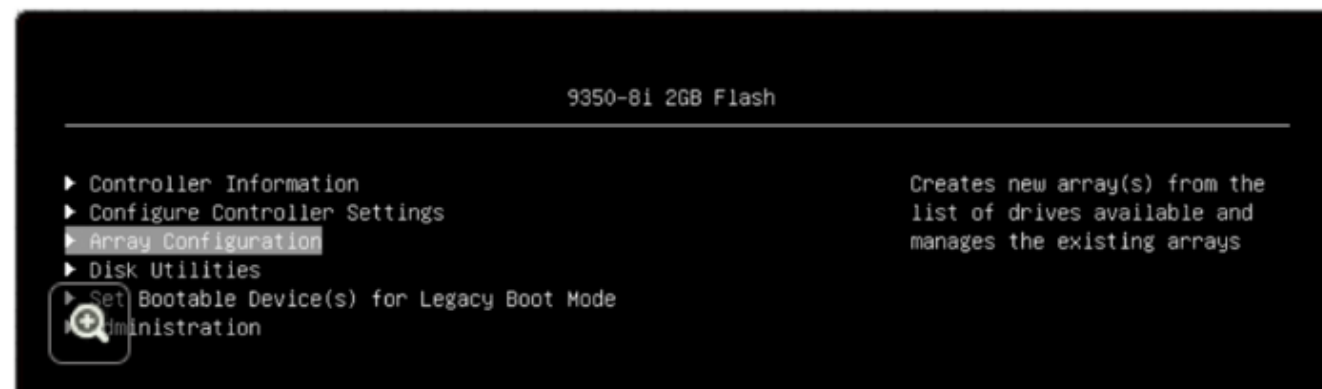


Step



RAID setup in UEFI HII

- Go back to the **9350-8i 2GB Flash** page, and then select **Array Configuration**.
- Select **Create Array**.



Step




RAID setup in UEFI HII

- Select the necessary number of drives needed to create the RAID configuration.
 - There are four drives attached to the 9350-8i adapter, and in this example, three drives have been selected.
- Select **Proceed to next Form**.

Create Array

Port:CN0 Box:3 Bay:20 Size:240 GB	[X]	Size:223.5 GiB(240 GB)
SATA-SSD ATA		Port:CN1 Box:3 Bay:18 Device
MTFDDAK240TDS-1AW12A		Type:SATA-SSD Logical Sector
Port:CN0 Box:3 Bay:21 Size:240 GB	[X]	Size:512 Model:ATA
SATA-SSD ATA		MTFDDAK240TDS-1AW12A Serial
MTFDDAK240TDS-1AW12A		Number:243E038B Negotiated
Port:CN1 Box:3 Bay:18 Size:240 GB	[X]	Link Rate:6.0 Gbps
SATA-SSD ATA		
MTFDDAK240TDS-1AW12A		
Port:CN1 Box:3 Bay:19 Size:240 GB	[]	
SATA-SSD ATA		
MTFDDAK240TDS-1AW12A		
▶ [Proceed to next Form]		

↑↓=Move Highlight <Enter>=Select Entry <ESC>=Backwards

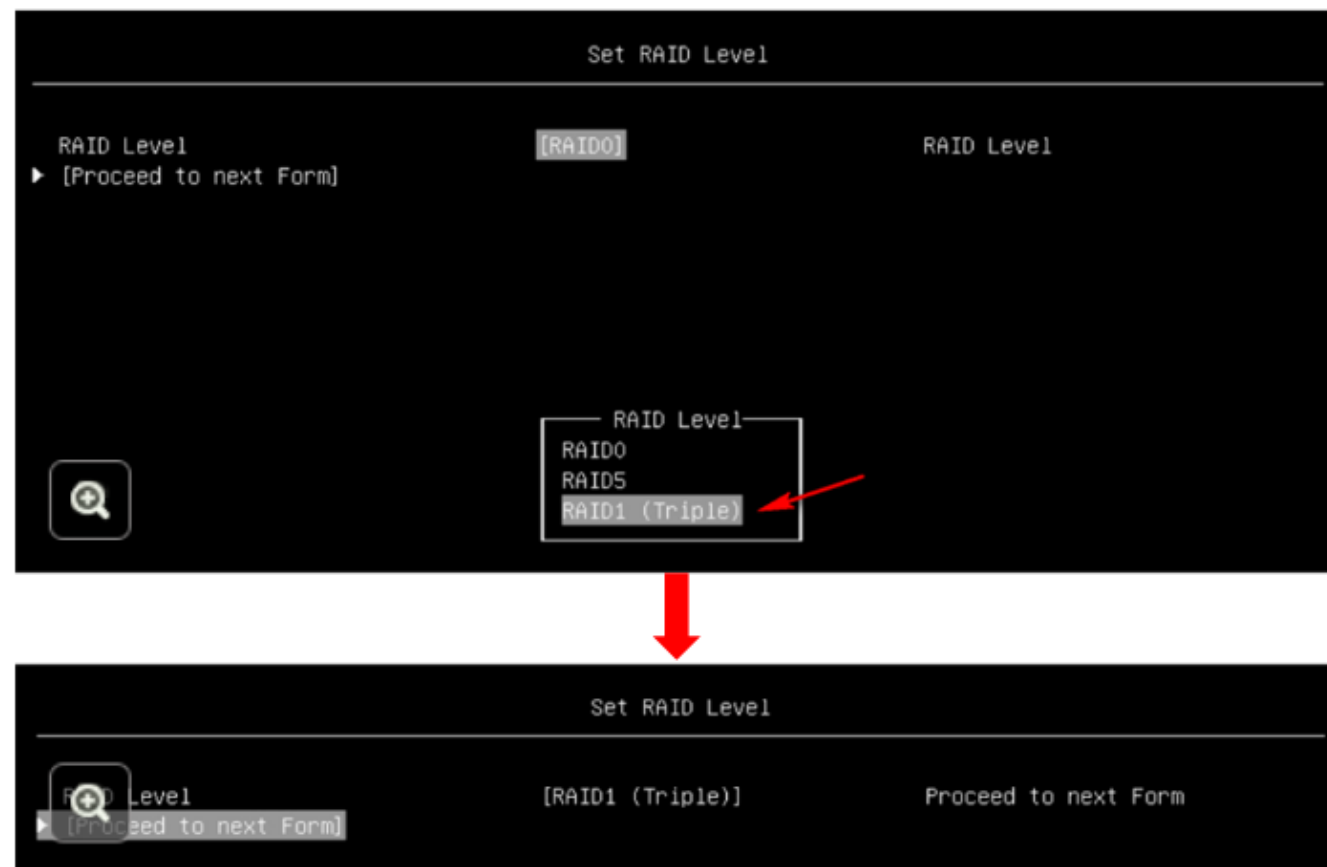


Step

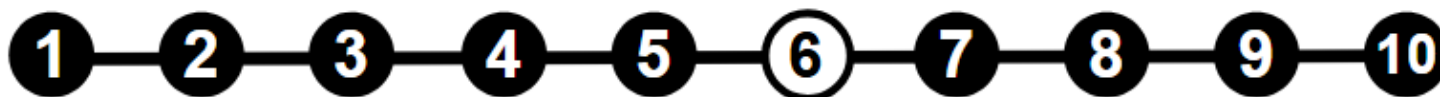


RAID setup in UEFI HII

- Select a RAID level. In this example, **RAID1 (Triple)** has been selected.
- Select **Proceed to next Form**.

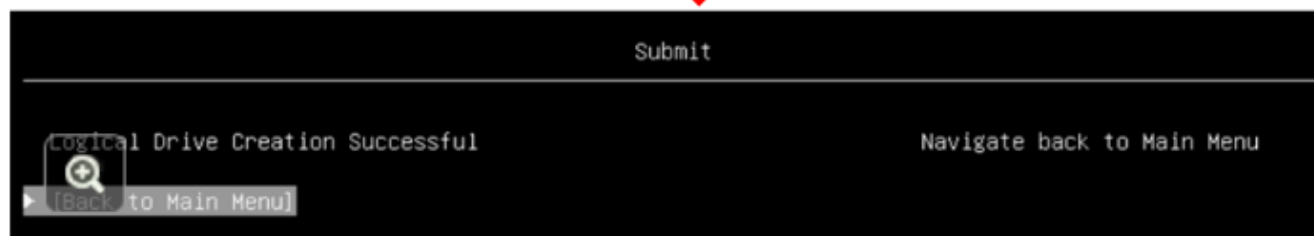
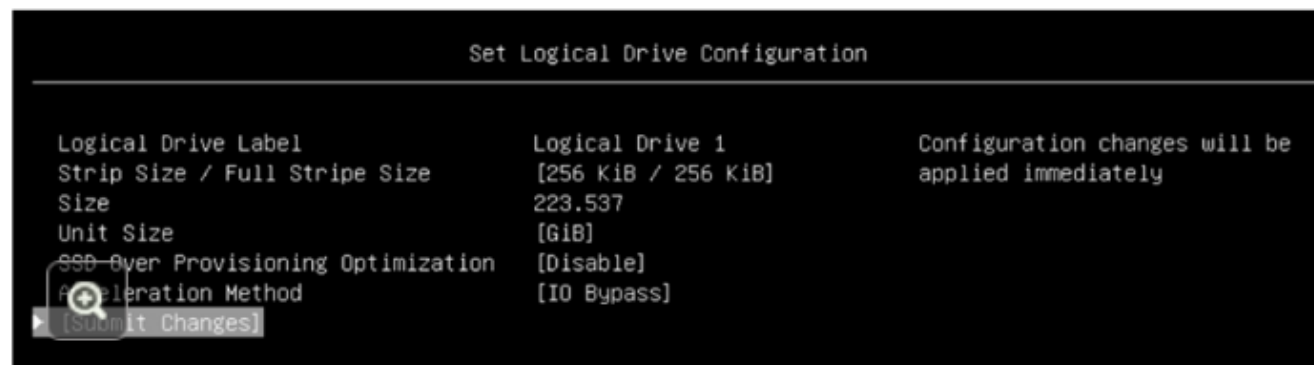


Step



RAID setup in UEFI HII

- Select **Submit Changes**.
- The **Logical Drive Creation Successful** information will then be displayed.
- Select **Navigate back to Main Menu**.
- The RAID creation procedure is complete. Go to the next step if you need to configure a hot-spare drive.



Step



RAID setup in UEFI HII

- Select **Array Configuration** on the **9350-8i 2GB Flash** page.
- Select **Manage Arrays**.



Step



RAID setup in UEFI HII

- Select **Array A**, which has just been created.
- Select **Manage Spare Drives**.
- There are two spare drive configuration options.
 - In this example, **Assign Auto Replace Spare** has been selected.

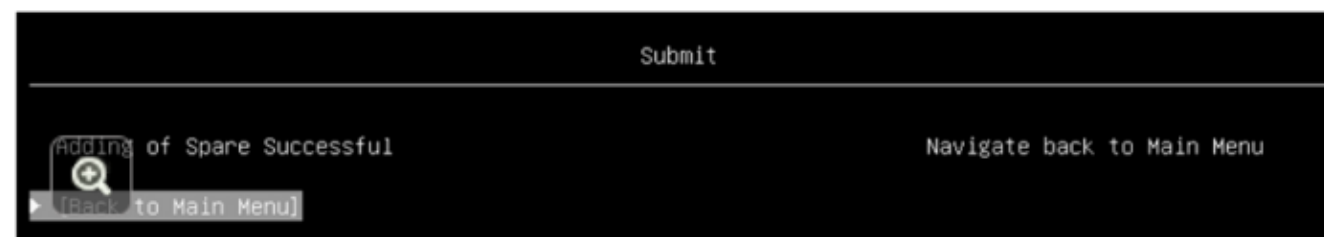
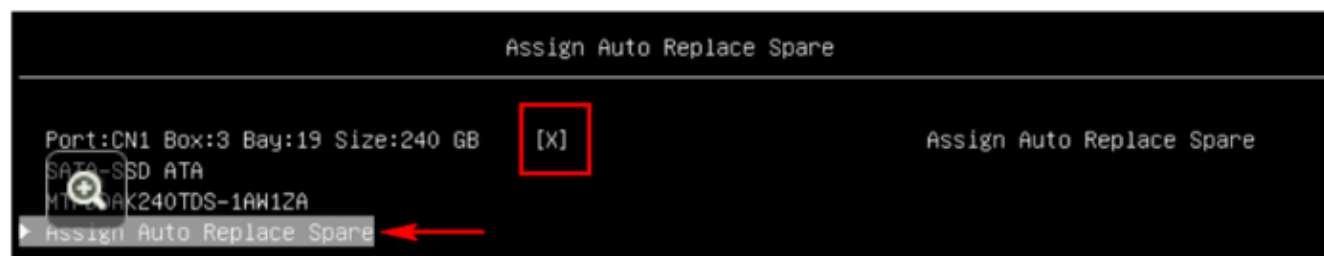


Step



RAID setup in UEFI HII

- Select a drive to be assigned as a spare drive.
 - In this example, only one drive is available.
- Select **Assign Auto Replace Spare**.
- The **Adding of Spare Successful** information will be displayed. The procedure is now complete.



Step 1—2—3—4—5—6—7—8—9—10

