



# ➞ Lenovo XClarity Controller and ThinkSystem storage subsystem

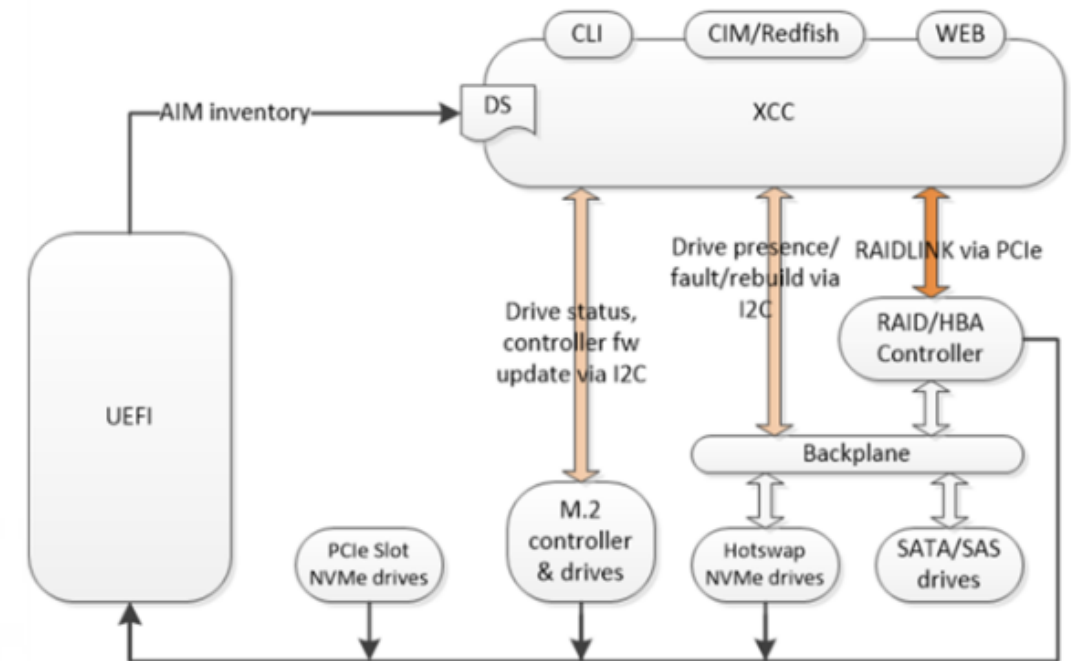
What LXCC can do on the ThinkSystem storage subsystem



## LXCC storage subsystem diagram

LXCC is the baseboard management controller (BMC) for all ThinkSystem systems. LXCC replaces IMM as the system management tool and inherits all of IMM's management capabilities, but in a different graphical interface. The diagram shows how the LXCC communicates with storage controller, backplane, and drives. LXCC offers the following storage subsystem functions:

- Storage inventory
- RAID setup
- Storage controller firmware update
- Controller events



# Storage inventory

Log in to the LXCC Web UI and select **Inventory**. The following areas list the storage subsystem information:

- **PCI Adapters**
  - All PCI adapters including M.2, RAID/HBA and NVMe controller are listed here. Click expander button “>” and detailed information appears.
- **Storage Devices**
  - All storage devices including M.2 SSD, NVMe SSD, SATA/SAS HDD, and drives in the external enclosure are listed here.
- **Array configuration**
  - Shows the array configuration

PCI Adapters

Slot	Device Name	Device Type	Card Interface	PCI Number	
Onboard	Adapter 55-00-00	Ethernet	Onboard	N/A	>
Onboard	Adapter 55-00-00	GPU	Onboard	N/A	>
Onboard	Adapter 55-07-00	SATA Controller	Onboard	N/A	>
Onboard	Adapter 55-11-00	SATA Controller	Onboard	N/A	>
1	Transcend RAID 550-B-228 Flash	RAID Controller	PCI-E x8	0100007	>
3	Transcend RAID 770-B-108 Cache	RAID Controller	PCI-E x8	0100008	>
4	Adapter 55-00-00	NVMe Controller	PCI-E Gen 3 x16	N/A	>
5	Adapter 55-07-00 with Missing Expansion Kit	SATA Controller	PCI-E x2	0100012	>
6	Intel, 3.84TB Enterprise Flash-based NVMe PCI-E 3.0 x8 Adapter	NVMe Controller	PCI-E x8	0100002	>

Storage Device

Bay	Type	Serial Number	Part Number	WWN Number	
M.2 drives	M2 - 0	120GB M.2 SATA SSD	W500000	500000000	00000000 >
	M2 - 1	120GB M.2 SATA SSD	W500000	500000000	00000000 >
NVMe drive on PCI slot	PCI-E	3.84TB NVMe SSD	W500000, 2048000000000000	500000000	00000000 >
SATA/SAS drives	Drive 0	600GB 10K 480px SAS 3.5" HDD	PC100000	4000000	4000000 >
	Drive 1	600GB 10K 480px SAS 3.5" HDD	PC100000	4000000	4000000 >
Hotswap NVMe drives	Drive 23	1.6TB NVMe SSD	W500000, 2048000000000000	500000000	00000000 >
	Drive 24	1.6TB NVMe SSD	W500000, 2048000000000000	500000000	00000000 >
Drives in external enclosure	01 - Drive 0	2.0TB 7.2K 120px SAS 3.5" HDD	2C100000	500000000	00000000 >
	01 - Drive 1	4.0TB 7.2K 120px SAS 3.5" HDD	2C100000	500000000	00000000 >
	01 - Drive 2	4.0TB 7.2K 120px SAS 3.5" HDD	2C100000	500000000	00000000 >
	01 - Drive 3	4.0TB 7.2K 120px SAS 3.5" HDD	2C100000	500000000	00000000 >

Array Configuration: 4 Virtual Disks, 2011.961GB

Name	Physical Drives	RAID Level	Capacity
VD_1	Drive0, Drive1, Drive3	RAID 1	55.786GB
VD_2	Drive0, Drive1, Drive3	RAID 1	50.207GB
VD_3	Drive0, Drive1, Drive3	RAID 1	45.187GB
VD_4	Drive4, Drive7	RAID 0	1860.781GB



## RAID setup in LXCC

Log in to the LXCC Web UI and select **Server Configuration** → **RAID Setup**. The RAID wizard appears. RAID setup is not applicable while the system is powered off or has not completed the POST process.

Select **Enable edit mode** and the virtual disks become editable and removable.

Properties including Read Policy, Write Policy, and I/O Policy are read-only if the controller does not have cache.

XClarity Controller

- Home
- Events
- Inventory
- Utilization
- Remote Console
- Firmware Update
- Server Configuration <sup>1</sup>
  - Adapters
  - Boot Options
  - Power Policy
  - RAID Setup <sup>2</sup>
  - Server Properties

Array Configuration Storage Inventory

Please wait while the RAID adapter is being initialized. Array configuration and drives information will be available when the system completes the boot process.

ThinkSystem SR650 System name: SR650-1

Array Configuration Storage Inventory

The controllers and virtual disks are in read-only mode while OS is running. [Enable edit mode](#)

Controller 1: ThinkSystem RAID 930-8i 2GB Flash (1 virtual disk created)

Virtual Disk 1 Name: VDName

Optimal

5587.935GB

Disk Array 0, RAID 0

# Physical disk inventory

Select **Storage Inventory** and what displays is the physical disks categorized by disk array and controller.

Array Configuration

**Storage Inventory**

?

▲ In edit mode. [Change to read-only mode](#)

Controller 1: ThinkSystem RAID 930-8i 2GB Flash (PCI Slot 1)

Disk Array 0: RAID 5, 4 Drives

Disk Drive	Drive State	Type	Serial No.	Part No.	FRU Part No.	Actions
Drive 0	Online	600GB 10K 6Gbps SAS 2.5" HDD	PZJ8VDAD	49Y2026	49Y2023	▼
Drive 2	Online	300GB 10K 6Gbps SAS 2.5" HDD	PWJEGR6D	42D0631	42D0628	▼
Drive 3	Online	900GB 10K 6Gbps SAS 2.5" HDD	KPH01VJF	81Y3804	81Y9647	▼
Drive 1	Dedicated Hot Spare	600GB 10K 6Gbps SAS 2.5" HDD	PZJ1K6DD	49Y2026	49Y2023	▼









Non-RAID disk drives : 4 Drives

[→](#) Convert JBOD to Ready to Configure

Disk Drive	Drive State	Type	Serial No.	Part No.	FRU Part No.	Actions
Drive 4	Unconfigured Good	1.0TB 7.2K 6Gbps SATA 2.5" HDD	S4702NYP	LE		▼
Drive 5	Unconfigured Good	1.0TB 7.2K 6Gbps SATA 2.5" HDD	S4703D4K	LE		▼
Drive 6	JBOD	1.0TB 7.2K 6Gbps SATA 2.5" HDD	S4703D1N	LE		▼
Drive 7	JBOD	1.0TB 7.2K 6Gbps SATA 2.5" HDD	S4703D4N	LE		▼

## Physical disk actions

Click the **Actions** icon next to the drive item to select and perform an action for the selected drive.

FRU Part No.	Actions
49Y2023	 
42D0628	 
81Y9647	 
49Y2023	 



- Assign hot spare
- Remove hot spare
- Make disk drive **offline**
- Make disk drive **online**
- Make disk drive as **reusable**
- Make disk drive as **missing**
- Make drive good to JBOD
- Make drive unconfigured good
- Make drive unconfigured bad
- Make disk drive as **prepare for removal**
- Guide for disk drive removal ...











# Convert multiple JBOD disks to unconfigured good

Select **Convert JBOD to Ready to Configure** in the **Non-RAID disk drives** area, and then a pop-up menu lists the JBOD drives that you can choose from to convert to “Ready to Configure” state.

Non-RAID disk drives : 4 Drives

 Convert JBOD to Ready to Configure

Disk Drive	Drive State	Type	Serial No.	Part No.	FRU Part No.	Actions
Drive 4	Unconfigured Good	1.0TB 7.2K 6Gbps SATA 2.5" HDD	S4702NYP	LE		 
Drive 5	Unconfigured Good	1.0TB 7.2K 6Gbps SATA 2.5" HDD	S4703D4K	LE		 
Drive 6	JBOD	1.0TB 7.2K 6Gbps SATA 2.5" HDD	S4703D1N	LE		 
Drive 7	JBOD	1.0TB 7.2K 6Gbps SATA 2.5" HDD	S4703D4N	LE		 



## Convert JBOD to Ready to Configure

Select the JBOD disk drives that you want to convert to Ready to Configure state:

<input type="checkbox"/>	Disk Drive	Type	RAID State
<input type="checkbox"/>	Drive 6	1.0TB 7.2K 6Gbps SATA 2.5" HDD	JBOD
<input type="checkbox"/>	Drive 7	1.0TB 7.2K 6Gbps SATA 2.5" HDD	JBOD

Apply

Cancel

Online

600GB 10K 6Gbps SAS 2.5" HDD

PZJ8VDAD

49Y2026

49Y2023

# Controller firmware update

The M.2, hardware RAID, and HBA controller firmware can be updated through LXCC Web.

Adapter Firmware

Update Firmware?














This page only lists firmware that can be updated via BMC. For adapters that are not listed here, Lenovo xClarity Essential can be used to update the firmware.

Slot No.	Device Name	Status	Version	Manufacturer	Release Date
1	ThinkSystem RAID 930-8i 2GB Flash	Active	50.0.1-0369	AVAGO Technologies	2017/05/12
3	ThinkSystem RAID 730-8i 1GB Cache	Active	24.18.0-0045	AVAGO Technologies	2017/02/09
4	Emulex OCE14104B-NX PCIe 10Gb 4-Port SFP+ Ethernet Adapter	Active	11.2.1193.54	Emulex Corporation	2017/05/14
6	ThinkSystem M.2 with Mirroring Enablement Kit	Active	2.3.10.1082	Marvell	2017/04/21



# Controller events

Log in to the LXCC Web UI and select **Events**. The warning/critical/fatal/dead events (total 72 events) read from controller will log in the **Audit Log** tab.

Event Log <b>Audit Log</b> Maintenance History Alert Recipients ?				
Customize Table Clear Logs Refresh Type:    All Event Sources ▾ All Dates ▾ 				
Severity	Source	Common ID	Message	Date
	System	FOXSPSE4001I	Remote Login Successful. Login ID: USERID from webguis at IP address 10.103.125.202.	June 8, 2017 5:39:20 PM
	System	FOXSPSE4032I	Login ID: USERID from webguis at IP address 10.96.200.243 has logged off.	June 8, 2017 5:11:08 PM
	System	FOXSPSE4032I	Login ID: USERID from webguis at IP address 10.103.199.112 has logged off.	June 8, 2017 4:48:28 PM
	System	FOXSPSE4001I	Remote Login Successful. Login ID: USERID from webguis at IP address 10.103.199.112.	June 8, 2017 4:35:46 PM
	System	FOXSPSE4002I	Security: Userid: USERID had 2 login failures from WEB client at IP address 10.103.199.112.	June 8, 2017 4:35:25 PM
	System	FOXSPSE4002I	Security: Userid: USERID had 1 login failures from WEB client at IP address 10.103.199.112.	June 8, 2017 4:34:55 PM
	<a href="#">System</a>	<a href="#">FOXSPSEM4023I</a>	<a href="#">One or more virtual drive are in abnormal status that may cause unavailable virtual drive. Please check the event log...</a>	<a href="#">June 8, 2017 3:55:54 PM</a>
	<a href="#">System</a>	<a href="#">FOXSPSEM4023I</a>	<a href="#">One or more virtual drive are in abnormal status that may cause unavailable virtual drive. Please check the event log...</a>	<a href="#">June 8, 2017 3:43:35 PM</a>
	System	FOXSPSE4001I	Remote Login Successful. Login ID: USERID from webguis at IP address 10.96.200.243.	June 8, 2017 3:02:10 PM