

Smarter technology for all

Servicing the ThinkSystem 4450/5450/9450 RAID/HBA series adapters

ES42728

February 2025

Lenovo

Prerequisites

- [ES51757B - Introducing ThinkSystem tools](#)
- [ES41759C - ThinkSystem problem determination](#)

Objectives

After completing the course, you will be able to:

- Describe the features of the 4450/5450/9450 RAID/HBA adapters
- Identify the differences between RAID/HBA adapters
- Describe how to configure RAID adapters with different tools
- Describe the problem determination steps and explain how to troubleshoot issues with the RAID/HBA adapters

Product overview

Product description and front, rear, and inside views

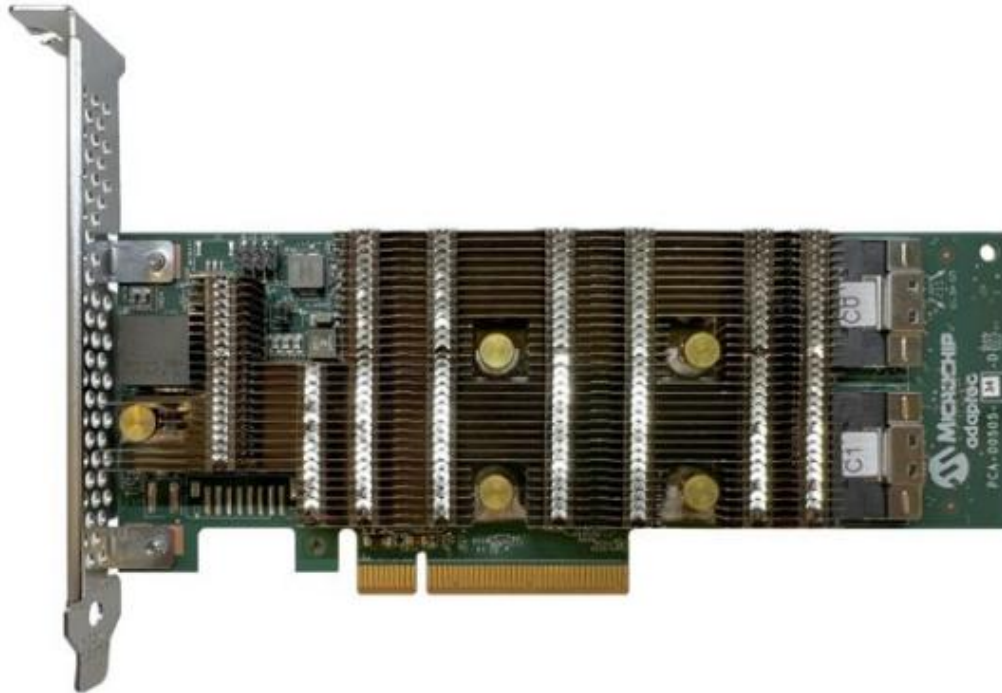
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Next generation of RAID/HBA adapters

In January 2025, Lenovo released the next generation of PCIe RAID/HBA adapters. The new adapters are as follows:

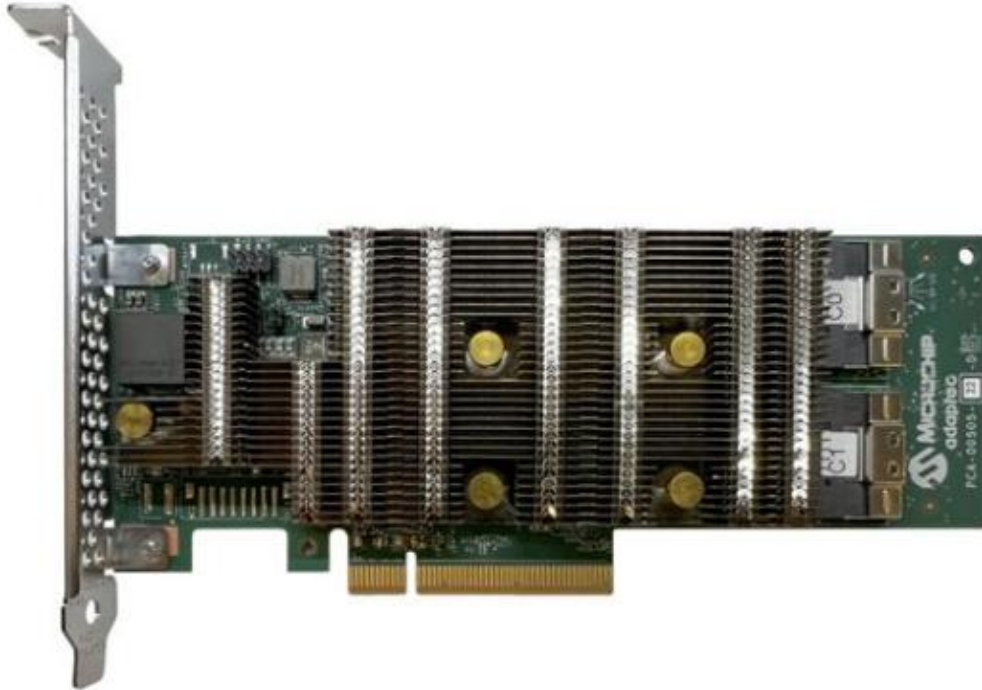
- ThinkSystem 4450-16i SAS/SATA PCIe Gen4 24Gb HBA
- ThinkSystem RAID 5450-16i PCIe Gen4 24Gb Adapter
- ThinkSystem RAID 9450-8i 4GB Flash PCIe Gen4 24Gb Adapter
- ThinkSystem RAID 9450-16i 8GB Flash PCIe Gen4 24Gb Adapter
- ThinkSystem RAID 9450-32i 8GB Flash PCIe Gen4 24Gb Adapter

ThinkSystem 4450-16i SAS/SATA PCIe Gen4 24Gb HBA



Features	Details
PCIe protocol	PCIe Gen 4 x8
RAID flash power module	Not supported
Form factor	Low profile HHHL (Half-Height Half-Length)
Storage interface	SATA HDD/SSD, 6 Gbps SAS HDD/SSD, 24 Gbps
Tri-mode	Not supported
Configuration	Supports HBA mode • No RAID • Supports up to 16 drives in native • Supports up to 238 drives with expander adapters

ThinkSystem RAID 5450-16i PCIe Gen4 24Gb Adapter



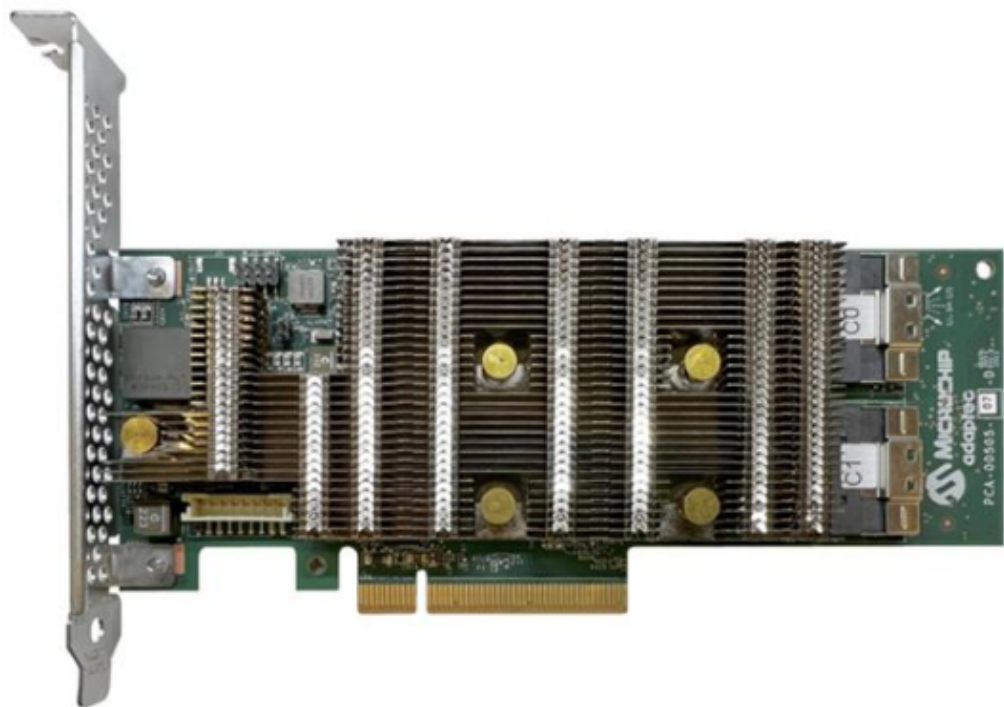
Features	Details
PCIe protocol	PCIe Gen 4 x8
RAID flash power module	Not supported
Form factor	Low profile HHL (Half-Height Half-Length)
Storage interface	SATA HDD/SSD, 6 Gbps SAS HDD/SSD, 24 Gbps
Tri-mode	Not supported
Configuration	Supports mixed RAID and HBA mode - RAID level: RAID 0/1/5/10 - Supports up to 16 drives in native - Supports up to 238 drives with expander adapters Note: RAID 50 is not supported
Bandwidth	13 GB/s

ThinkSystem RAID 9450-8i 4GB Flash PCIe Gen4 24Gb Adapter



Features	Details
PCIe protocol	PCIe Gen 4 x8
RAID flash power module	Supported
Form factor	Low profile, HHHL (Half-Height Half-Length)
Storage interface	• SATA HDD/SSD, 6 Gbps • SAS HDD/SSD, 24 Gbps • NVMe, 16 GT/s (planned) Note: Only the SAS/SATA configuration is currently available – support for the NVMe configuration is scheduled for April 2025
Tri-mode	Supported
Configuration	Supports mixed RAID and HBA mode • RAID Level: R0/R1/R5/R6/R10/R50/R60,R1/10 Tripple • Supports up to 8 drives in native • Supports up to 238 drives with expander adapters
Bandwidth	14.8 GB/s

ThinkSystem RAID 9450-16i 8GB Flash PCIe Gen4 24Gb Adapter



Features	Details
PCIe protocol	PCIe Gen 4 x8
RAID flash power module	Supported
Form factor	Low profile, HHHL (Half-Height Half-Length)
Storage interface	- SATA HDD/SSD, 6 Gbps - SAS HDD/SSD, 24 Gbps - NVMe, 16 GT/s (planned) Note: Only the SAS/SATA configuration is currently available – support for the NVMe configuration is scheduled for April 2025
Tri-mode	Supported
Configuration	Supports mixed RAID and HBA mode - RAID Level: RAID 0/1/5/6/10/50/60, RAID 1/10 Tripple - Supports up to 16 drives in native - Supports up to 238 drives with expander adapters
Bandwidth	14.8 GB/s

ThinkSystem RAID 9450-32i 8GB Flash PCIe Gen4 24Gb Adapter



Features	Details
PCIe protocol	PCIe Gen 4 x16
RAID flash power module	supported
Form factor	FHHL (Full-Height Half-Length)
Storage interface	- SATA HDD/SSD, 6 Gbps - SAS HDD/SSD, 24 Gbps - NVMe, 16 GT/s Note: Only the SAS/SATA configuration is currently available – support for the NVMe configuration is scheduled for April 2025
Tri-mode	Supported
Configuration	Supports mixed RAID and HBA mode - RAID Level: RAID 0/1/5/6/10/50/60, RAID 1/10 Tripple - Supports up to 32 drives in native - Supports up to 238 drives with expander adapters
Bandwidth	29.6 GB/s

ThinkSystem server support

For the latest list of servers that support the 4450/5450/9450 RAID/HBA series adapters, refer to the **Server support** section on this [Lenovo Press page](#).

Server support

The following tables list the ThinkSystem servers that are compatible. Each server supports specific storage configurations. Consult the server product guide for details.

Table 1. Server support (Part 1 of 4)

Part Number	Description	AMD V3				2S Intel V3/V4				4S 8S Intel V3		Multi Node V3/V4		1S V3				
		SR635 V3 (7D9H / 7D9C)	SR655 V3 (7D9F / 7D9E)	SR645 V3 (7D9D / 7D9C)	SR665 V3 (7D9B / 7D9A)	ST650 V3 (7D7B / 7D7A)	SR630 V3 (7D72 / 7D73)	SR650 V3 (7D75 / 7D76)	SR630 V4 (7D6B / 7D69)	SR850 V3 (7D97 / 7D96)	SR860 V3 (7D94 / 7D93)	SR950 V3 (7DC5 / 7DC4)	SD535 V3 (7DD8 / 7DD1)	SD530 V3 (7DDA / 7DD3)	SD550 V3 (7DD9 / 7DD2)	ST45 V3 (7DH4 / 7DH5)	ST50 V3 (7DF4 / 7DF3)	ST250 V3 (7DCF / 7DCE)
4Y37A97938	ThinkSystem 4450-16i SAS/SATA PCIe Gen4 24Gb HBA	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N
4Y37A97936	ThinkSystem RAID 5450-16i PCIe Gen4 24Gb Adapter	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N
4Y37A97935	ThinkSystem RAID 9450-8i 4GB Flash PCIe Gen4 24Gb Adapter	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N
4Y37A97937	ThinkSystem RAID 9450-16i 8GB Flash PCIe Gen4 24Gb Adapter	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N
4Y37A97940	ThinkSystem RAID 9450-32i 8GB Flash PCIe Gen4 24Gb Adapter	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N

Table 2. Server support (Part 2 of 4)

		GPU Rich					Edge				Super Computing					1S Intel V2			
		7Z22 / 7Z23)	7D9Q / 7D9R)	(7DHE)	(7DHC)	(7DJ5)	6 / 7D1X)	7DA9)	7DAM)	7DT)	7D8Y)	7DDJ)	7DKA)	7D9P)	3 (7DAZ)	7D7M)	3 (7D7L)	3 (7D7N)	7D8K / 7D8J)