



Lenovo ThinkSystem 430-8i and 430-16i Internal SAS HBAs

Product Guide

The Lenovo ThinkSystem 430-8i and 430-16i SAS/SATA 12Gb HBA are high performance host bus adapters for internal storage connectivity in ThinkSystem servers. They integrate the latest enhancements SAS technology and offer eight or 16 lanes of 12 Gbps SAS. With a low-profile form-factor design, these adapters offers two or four x4 internal mini-SAS HD connectors.

The following figure shows the ThinkSystem 430-16i SAS/SATA 12Gb HBA.

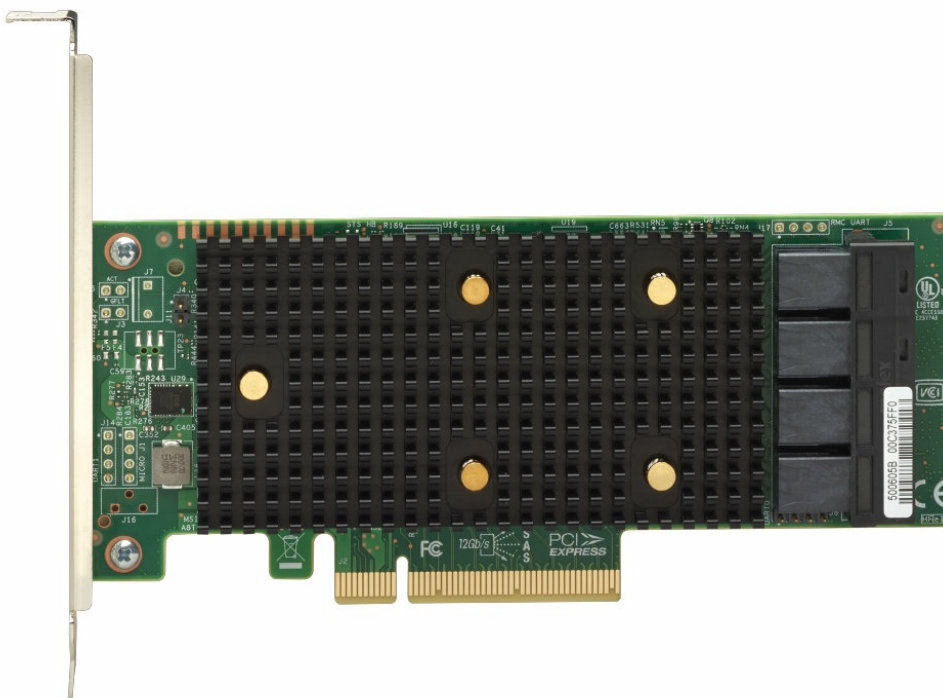


Figure 1. ThinkSystem 430-16i SAS/SATA 12Gb HBA

Did you know?

The 430-8i and 430-16i internal HBAs offer improved performance over the previous generation N2215 HBA for System x servers, with a faster processor and more memory.

Rigorous testing of the ThinkSystem HBAs by Lenovo through the ServerProven program ensures a high degree of confidence in storage subsystem compatibility and reliability. Providing an additional peace of mind, the controller is covered under Lenovo warranty.

Part number information

The following table lists the part numbers and feature codes.

Table 1. Ordering information

Part number	Feature code	Description
7Y37A01088	AUNL	ThinkSystem 430-8i SAS/SATA 12Gb HBA
7Y37A01089	AUNM	ThinkSystem 430-16i SAS/SATA 12Gb HBA
4C57A16217	B0SS	ThinkSystem 430-8i SAS/SATA 12Gb Dense HBA

The option part numbers includes the following items:

- Adapter with a full-height (3U) bracket attached
- Low-profile (2U) bracket
- Documentation flyer

The following figure shows the ThinkSystem 430-8i SAS/SATA 12Gb HBA.

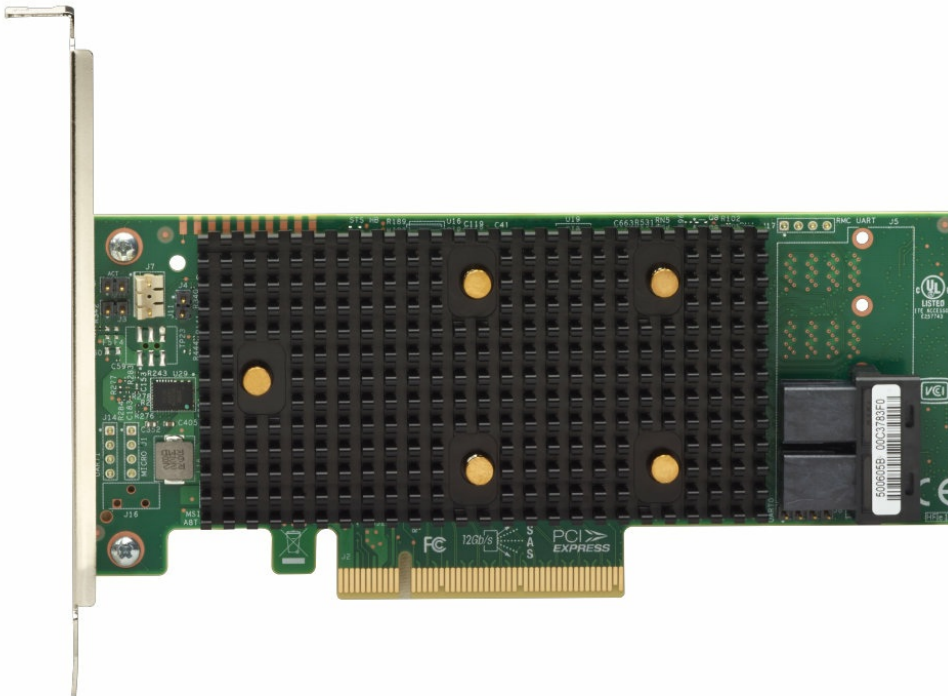


Figure 2. ThinkSystem 430-8i SAS/SATA 12Gb HBA

Features and specifications

The 430 internal HBAs have the following features and specifications:

- PCIe 3.0 x8 host interface
- 12 Gbps SAS/SATA host bus adapter, based on the Broadcom SAS3408 and SAS3416 IOC design
- PCI low profile, half-length form factor

- 8 or 16 internal 12 Gbps SAS/SATA ports
 - 430-8i support connectivity to 8 internal drives
 - 430-16i support connectivity to 16 internal drives
- Up to 12 Gbps throughput per port
 - Supports 12, 6, or 3 Gbps SAS speeds
 - Supports 6 or 3 Gbps SATA speeds
- Two internal x4 HD Mini-SAS connectors (SFF-8643)
- Non-RAID (JBOD mode) support for SAS and SATA HDDs and SSDs (RAID not supported)
- Support internal SAS tape drives
- Optimized for SSD performance
- High performance architecture with very deep queue depth
- Advanced power management support
- Support for SSP, SMP, STP, and SATA protocols
- End-to-End CRC with Advanced Error Reporting
- Spread Spectrum Clocking for EMI reductions
- Supports 512e, 512n and 4K (when available) formatted drives
- Compliant with Disk Data Format (DDF) configuration on disk (CoD).
- S.M.A.R.T. support.
- Configuration through
 - XClarity Provisioning Manager UEFI interface
 - XClarity Controller web interface
 - XClarity Administrator Configuration Patterns
 - StorCLI command-line interface
 - LSI Storage Authority (LSA) GUI interface
 - UEFI Human Interface Infrastructure (HII)

The following figure shows the ThinkSystem 430-8i SAS/SATA 12Gb Dense HBA.

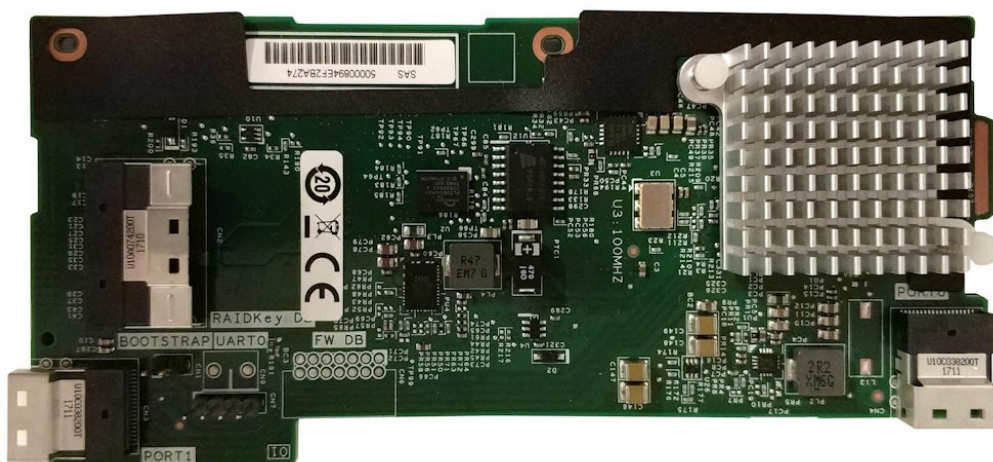


Figure 3. ThinkSystem 430-8i SAS/SATA 12Gb Dense HBA

The specifications of the adapters are listed in the following table.

Table 2. Specifications

Feature	430-8i	430-8i Dense	430-16i
Form factor	PCIe low profile	Custom	PCIe low profile
Controller chip	LSI SAS3408	LSI SAS3408	LSI SAS3416
Host interface	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8
Port interface	12 Gb SAS	12 Gb SAS	12 Gb SAS
Number of ports	8	8	16
Port connectors	2x Mini-SAS HD x4 (SFF-8643)	2x SlimSAS x4	4x Mini-SAS HD x4 (SFF-8643)
Drive interface	SAS, SATA	SAS, SATA	SAS, SATA
Drive type	HDD, SSD, SED*	HDD, SSD, SED*	HDD, SSD, SED*
Maximum devices	8	8	16
RAID levels	No RAID	No RAID	No RAID
JBOD mode	Yes	Yes	Yes
Cache	No	No	No
SED support	Yes*	Yes*	Yes*

** SED support is by using software on the server (SED commands are passed through the HBA to the drives).

Server support

The following table lists the ThinkSystem servers that are compatible.

Table 3. ThinkSystem server support

Part number	Description	1S Rack & Tower			2S Rack & Tower								4S Rack			Dense/ Blade				
		ST50 (7Y48/7Y50)	ST250 (7Y45/7Y46)	SR150 (7Y54)	SR250 (7Y51/7Y52)	ST550 (7X09/7X10)	SR530 (7X07/7X08)	SR550 (7X03/7X04)	SR570 (7Y02/7Y03)	SR590 (7X98/7X99)	SR630 (7X01/7X02)	SR650 (7X05/7X06)	SR670 (7Y36/7Y37/7Y38)	SR850 (7X18/7X19)	SR860 (7X69/7X70)	SR950 (7X11/12/13)	SD530 (7X21)	SD650 (7X58)	SN550 (7X16)	SN850 (7X15)
7Y37A01088	ThinkSystem 430-8i SAS/SATA 12Gb HBA	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N
7Y37A01089	ThinkSystem 430-16i SAS/SATA 12Gb HBA	N	Y	N	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N
4C57A16217	ThinkSystem SD530 430-8i SAS/SATA 12Gb Dense HBA Kit	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N

Operating system support

The HBAs support the following operating systems:

- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Microsoft Windows Server version 1709
- Microsoft Windows Server version 1803
- Red Hat Enterprise Linux 6.10
- Red Hat Enterprise Linux 6.9
- Red Hat Enterprise Linux 7.3
- Red Hat Enterprise Linux 7.4
- Red Hat Enterprise Linux 7.5
- SUSE Linux Enterprise Server 11 SP4
- SUSE Linux Enterprise Server 11 SP4 with Xen
- SUSE Linux Enterprise Server 12 SP2
- SUSE Linux Enterprise Server 12 SP2 with Xen
- SUSE Linux Enterprise Server 12 SP3
- SUSE Linux Enterprise Server 12 SP3 with Xen
- SUSE Linux Enterprise Server 15
- SUSE Linux Enterprise Server 15 with XEN
- VMware vSphere Hypervisor (ESXi) 6.0 U3
- VMware vSphere Hypervisor (ESXi) 6.5
- VMware vSphere Hypervisor (ESXi) 6.5 U1
- VMware vSphere Hypervisor (ESXi) 6.5 U2
- VMware vSphere Hypervisor (ESXi) 6.7
- VMware vSphere Hypervisor (ESXi) 6.7 U1

For more information about the specific versions and service levels that are supported and any other prerequisites, see the ServerProven website: <http://www.lenovo.com/us/en/serverproven>

Warranty

The adapters carry a 1-year limited warranty. When installed in a supported ThinkSystem server, the adapters assume the server's base warranty and any warranty service upgrade.

Operating environment

The adapters are supported in the following environment:

- Operating:
 - Temperature: 10°C to 55°C (50°F to 131°F)
 - Relative humidity: 20% to 90% (non-condensing)
- Storage
 - Temperature with package: -40°C to 70°C (-40°F to 158°F)
 - Relative humidity: 5% to 95% (non-condensing)

Agency approvals

The adapters have the following agency approvals:

- FCC Part 15 Class A
- Australia/New Zealand (AS/NZS CISPR 22)
- Canada (ICES-003 Class B)
- Europe (EN55022/EN55024)
- Japan (VCCI V-3)
- Korea (RRA no 2013-24 & 25)
- RoHS compliant
- EN/IEC/UL 60950
- Taiwan (CNS 13438)
- USA (FCC 47 CFR part 15 Subpart B class B)
- WEEE

Related publications and links

For more information, see the following websites:

- Lenovo ThinkSystem product publications:
<http://thinksystem.lenovofiles.com/help/index.jsp>
- ServerProven hardware compatibility:
<http://www.lenovo.com/us/en/serverproven>

Related product families

Product families related to this document are the following:

- [Host Bus Adapters](#)

Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service. Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc.
1009 Think Place - Building One
Morrisville, NC 27560
U.S.A.
Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary. Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk. Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

© Copyright Lenovo 2018. All rights reserved.

This document, LP0649, was created or updated on November 5, 2018.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:
<http://lenovopress.com/LP0649>
- Send your comments in an e-mail to:
comments@lenovopress.com

This document is available online at <http://lenovopress.com/LP0649>.

Trademarks

Lenovo and the Lenovo logo are trademarks or registered trademarks of Lenovo in the United States, other countries, or both. A current list of Lenovo trademarks is available on the Web at <https://www.lenovo.com/us/en/legal/copytrade/>.

The following terms are trademarks of Lenovo in the United States, other countries, or both:

Lenovo®

ServerProven®

System x®

ThinkSystem

The following terms are trademarks of other companies:

Linux® is a trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft®, Windows Server®, and Windows® are trademarks of Microsoft Corporation in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.