



IBM System x 4 TB NL SAS HS HDDs and 2 TB and 4 TB NL SAS SEDs offer largest capacity SAS options for optimizing storage and data management for IBM System x servers

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At a glance

IBM® 4 TB NL SAS 3.5-inch HDDs and the 2 TB and 4 TB NL SAS 3.5-inch SEDs are available as hot-swap drives. They are RoHS compliant.

IBM 4 TB 7,200 rpm 6 Gbps 3.5-inch hot-swap SAS HDDs can provide the performance required for extensive storage capacity while providing the flexibility of hot-swapping.

The HDD features include:

- 7,200 rpm HDDs to deliver SAS device reliability and large capacity performance in the IBM HDD family.
- 3.5-inch, slim-line form factor to optimize storage capacity.
- Through use of software utilities, Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T.) to alert you of certain impending drive failures so that replacements can be made.
- HDD options are hot-swap drives.
- One-year warranty included.

Features of the IBM 2 TB and 4 TB 7,200 rpm 3.5-inch hot-swap SAS SEDs include:

- 6 Gbps hot-swap SAS for optimal performance and system availability
- 3.5-inch 2 TB and 4 TB 7,200 rpm SED offerings
- Drive-level AES 128 encryption
- A safeguard against costly security breaches and exposure of proprietary data if a hard drive is stolen or lost
- Rich security options to help to ensure compliancy with data security, information disclosure, and privacy regulations for data at rest
- The ability to securely erase data for disk disposition, redeployment, or service calls
- Encryption functionality (supported when used in conjunction with supported ServeRAID controllers and optional Advance Feature Keys)
- MegaRAID Management Suite (MSM), which offers a quick and simple configuration path to disk encryption and also assists with local key management

IBM 4 TB 7.2K 6 Gbps NL SAS 3.5-inch HS HDD (49Y6205) and IBM 4 TB 7.2K 6 Gbps NL SAS 3.5-inch G2HS HDD (49Y6210)

- Are RoHS compliant
- Meet client requirements for large capacities and increased speeds in larger form factor
- Offer speeds up to 7,200 rpm to help optimize performance
- Provide outstanding reliability to enable operation in RAID environments without compromising application performance or availability

You can increase your storage and data management effectiveness when you install these new high-performance SAS HDDs in your IBM System x® or BladeCenter® S configurations.

IBM 2 TB 7,200 rpm 6 Gbps SAS 3.5-inch G2HS SED (00W1533) and IBM 4 TB 7,200 rpm 6 Gbps SAS 3.5-inch G2HS SED (00W1543)

New self-encrypting drives (SEDs) add high-capacity offerings to the System x family.

These SEDs are designed to reduce the vulnerability of data at rest to potentially costly exposures of proprietary data resulting from hard drives being stolen, misplaced, or even improperly disposed.

Ideal for small and medium or distributed large enterprise businesses, IBM 2 TB and 4 TB SAS 3.5-inch HS SEDs provide cost-effective advanced data security with AES 128 disk encryption. These new SED offerings also provide optimal 6 Gbps hot-swap SAS capability for your high-performance and high-availability System x environment. The SED functionality and 6 Gbps SAS performance of these new drives are enabled when used with new IBM 6 Gbps System x servers and internal ServeRAID controllers with Advance Feature Keys for SED support.

Performance

4 TB HDD, 2 TB SED, and 4 TB SED performance characteristics include:

- Formatted capacity of 2,000,000 MB (2 TB)
- Formatted capacity of 4,000,000 MB (4 TB)
- Drive-to-host interface that supports up to 6.0 Gbps burst rate
- Drive media to buffer interface that supports sustained interface data transfers of up to 151 Mbps average on the 2 TB drive and the 4 TB drive
- Spindle speed of 7,200 rpm
- Hot-swap capability
- SAS interface

Reliability

- SAS compliance enables these HDDs and SEDs to connect directly to selected System x systems.
- S.M.A.R.T. technology allows software utilities to alert you of certain impending drive failures so replacements can be made before a problem occurs.
- Rigorous testing through the ServerProven® program instills confidence that your storage subsystem is compatible and will function reliably.
- One-year, limited warranty¹ is included with the HDDs and SEDs.

¹ For information on the IBM Statement of Limited Warranty, visit

http://www.ibm.com/servers/support/machine_warranties/

Alternatively, this information is available through your IBM representative or reseller. Copies are available upon request.

With respect to on-site service, IBM sends a technician after attempting to diagnose and resolve the problem remotely.

Feature exchange

None

Key prerequisites

IBM System x system with SAS capability.

Planned availability date

May 28, 2013

Description

IBM 4 TB 7,200 rpm 6 Gbps 3.5-inch hot-swap SAS HDDs

These new IBM System x 7,200 rpm hot-swap HDDs provide 3.5-inch form factor options, higher-performance SAS options, and a wider selection of choices to satisfy a range of applications. These new drives are positioned at the top of the IBM SAS HDD line based on increased performance.

Key features and benefits include:

- 7,200 rpm speed to optimize performance.
- Outstanding reliability that enables operation in RAID environments without compromising application performance or availability.
- 3.5-inch-wide form factor that allows maximum for installation optimization in supported System x systems or BladeCenter S systems.

IBM 4 TB 7,200 rpm NL SAS HS 6 Gbps HDDs and 2 TB and 4 TB 7,200 rpm HS 6 Gbps SAS 3.5-inch G2HS SEDs

SAS hard drives (SEDs) are supported with major operating systems, including Microsoft[™] Windows[™] and Linux[™].

Investment protection and ease of use

The 4 TB HDDs, 2 TB SED, and 4 TB SED are supported for internal SED attachment in hot-swap SAS models of selected IBM System x or BladeCenter S systems.

Key features and benefits include:

- 7,200 rpm speed to optimize performance
- Outstanding reliability that enables operation in RAID environments without compromising application performance or availability
- A 3.5-inch wide form factor that allows maximum installations in supported System x systems
- Drive media to buffer interface that supports sustained interface data transfers of up to 151 Mbps average on the 2 TB drive and the 4 TB drive

Product positioning

These high-performance 7,200 rpm 6 Gbps NL SAS HDD and SED options are positioned at the top of the IBM SAS HDD line. These SAS drives are available in a hot-swap version.

These HDDs support entry-level server and workstation applications, such as:

- Transaction processing
- Data mining
- Data warehousing
- Professional video and graphics

Product number

The following are features already announced for the 3331 machine type:

Description	Type	Model	Feature	SEO	Part Number
IBM 4 TB 7.2K 6Gbps NL SAS 3.5-inch HS HDD	3331	HC1	A4AG	49Y6205	49Y6205
IBM 4 TB 7.2K 6Gbps NL SAS 3.5-inch G2HS HDD	3331	HC1	A4AF	49Y6210	49Y6210
IBM 2 TB 7.2K 6Gbps NL SAS 3.5-inch G2HS SED	3331	HC1	A4AH	00W1533	00W1533
IBM 4 TB 7.2K 6Gbps NL SAS 3.5-inch G2HS SED	3331	HC1	A4AJ	00W1543	00W1543

The following are features already announced for the 3331 machine type:

Description	MT	Model	Feature
IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	3331	HC1	A4AF
IBM 4TB 7.2K 6Gbps NL SAS 3.5" HS HDD	3331	HC1	A4AG
IBM 2TB 7.2K 6Gbps NL SAS 3.5" G2HS SED	3331	HC1	A4AH
IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS SED	3331	HC1	A4AJ

Model conversions

None

Feature conversions

None

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM , you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=113-077>

Publications

Publications are shipped with the announced product.

In a consistent framework, you can efficiently find information and personalize your access. The IBM Systems Information Center is at

<http://publib14.boulder.ibm.com/infocenter/systems>

IBM Publications Center Portal

<http://www.ibm.com/shop/publications/order>

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided, as well as payment options via credit card. A large number of publications are available online in various file formats, which can currently be downloaded free of charge.

Displayable softcopy publications: None

Source file publications: None

Services

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an on-demand business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or visit

<http://www.ibm.com/services/>

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

<http://www.ibm.com/services/continuity>

For details on education offerings related to specific products, visit

<http://www.ibm.com/services/learning/index.html>

Select your country, and then select the product as the category.

System x and BladeCenter support services

Recommended core technical support

When you buy IBM System x technology, include the support services you need -- to help keep both your hardware and software working for you, day after day, at peak performance. It is your first step toward helping to protect your investment and sustain high levels of system availability. We offer service-level and response-time options to fit your business needs. And we will help you get started with a core support package that includes:

- **Continuous system monitoring**

Electronic monitoring that helps speed up problem-solving with automated, early detection of potential problems and system errors.

- **Hardware maintenance**

World-class remote and on-site hardware problem determination and repair services.

- **Software technical support**

Access to help line calls for fast, accurate answers to your questions during installation and throughout ongoing operations.

For more information, visit

<http://www.ibm.com/servers/eserver/xseries/services.html>

Technical information

Specified operating environment

Physical specifications

IBM 4 TB 7,200 rpm 6 Gbps NL SAS 3.5-inch HS and G2HS HDDs

- Approximate height: 26.2 mm (1.0 in)
- Approximate width: 101.6 mm (4.0 in)
- Approximate depth: 147.0 mm (5.8 in)
- Approximate weight: 690 g (1.540 lb)

Shipping dimensions

- Approximate height: 146 mm (5.8 in)
- Approximate width: 203 mm (8.0 in)
- Approximate depth: 244 mm (9.6 in)
- Approximate weight: 1740 g (3.88 lb)

IBM 2 TB and 4 TB 7,200 rpm 6 Gbps NL SAS 3.5-inch G2HS SEDs

- Approximate height: 26.2 mm (1.0 in)
- Approximate width: 101.6 mm (4.0 in)
- Approximate depth: 147.0 mm (5.8 in)
- Approximate weight: 690 g (1.540 lb)

Shipping dimensions

- Approximate height: 146 mm (5.8 in)
- Approximate width: 203 mm (8.0 in)
- Approximate depth: 244 mm (9.6 in)
- Approximate weight: 1740 g (3.88 lb)

Hardware requirements

The HDDs must be installed in selected System x servers.

Agency approvals

- UL
- CSA
- TUV
- CE Mark
- C-Tick Mark
- IEC

- Taiwan (BSMI Certification)
- Korea EMI

Standards

None

Operating environment

- Temperature: 5°C to 60°C (41°F to 140°F) at -60.96 m to 3,048 m (-200 ft to 10,000 ft)
- Relative humidity: 5% to 90% (noncondensing)
- Maximum altitude: 2,133 m (7,000 ft)

Homologation

This product is not certified for direct connection by any means whatsoever to interfaces of public telecommunications networks. Certification may be required by law prior to making any such connection. Contact an IBM representative or reseller for any questions.

Hardware requirements

None

Software requirements

IBM 4 TB 7,200 rpm 6 Gbps NL SAS 3.5-inch HDDs come as hot-swap drives. They are RoHS compliant and are supported with most system operating systems.

The new IBM 2 TB and 4 TB 7,200 rpm 6 Gbps NL SAS 3.5-inch SEDs are supported on most operating systems.

For further information, contact your IBM representative.

Compatibility

For latest compatibility information, visit

<http://www-03.ibm.com/systems/info/x86servers/serverproven/compat/us/>

Note: Some configurations may not be compatible.

Limitations

None

User group requirements

This announcement satisfies or partially satisfies the requirements from one or more of the worldwide user group communities. Groups include COMMON, COMMON Europe, Guide Share Europe (GSE), InterAction (Australia/New Zealand), Japan Guide Share (JGS), and SHARE Inc.

Planning information

Customer responsibilities

The IBM 4 TB NL SAS 3.5-inch HDDs, and 2 TB and 4 TB NL SAS 3.5-inch SEDs are available as hot-swap drives and are RoHS compliant.

These new IBM drives are designated as customer setup. Customer installation instructions are shipped with each option part.

Cable orders

None

Installability

IBM 4 TB 7,200 rpm 6 Gbps NL SAS 3.5-inch HDDs are available as hot-swap drives and are customer installable.

IBM 2 TB and 4 TB NL SAS SED drives are also customer installable.

Installation takes approximately 20 minutes.

Installation includes unpacking, attaching customer-provided power cord, setting up, and powering on.

Packaging

IBM 4 TB 7,200 rpm SAS 6 Gbps HDDs and 2 TB, 4 TB 7,200 rpm SAS 6 Gbps SEDs

Product	Package description	Boxes
IBM 4 TB 7,200 rpm 6 Gbps NL SAS 3.5-inch HS and G2HS HDDs	Option Unit Box	1
IBM 2 TB, 4 TB 7,200 rpm 6 Gbps NL SAS 3.5-inch G2HS SEDs		

Contents:

Harddrive
Installation pub and warranty
Safety flyer

All the SAS HDDs and SEDs are shipped as a single package. Other items are in zipped bags.

Supplies

For end users: All the SAS HDDs and SEDs can be purchased through dealers.

Security, auditability, and control

It is a customer's responsibility to ensure that the server is secure to prevent sensitive data from being removed.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

IBM Electronic Services

Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support all at no additional cost to you.

Now integrated into the base operating system of AIX® 5.3, AIX 6.1, and AIX 7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM , which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type "smitty esa_main", and select "Configure Electronic Service Agent ." In addition, ESA now includes a powerful web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent , refer to

<http://www.ibm.com/support/electronic>

The IBM Electronic Support portal is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

Benefits

Increased uptime: The Electronic Service Agent tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the "symptoms," diagnosing the error, and manually calling IBM Support to open a problem record. Its 24 x 7 monitoring and reporting mean no more dependence on human intervention or off-hours customer personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM . The Electronic Service Agent tool securely transmits either via the Internet (HTTPS or VPN) or modem, and can be configured to communicate securely through gateways to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system. System inventory information is stored in a secure database, which is protected behind IBM firewalls. It is viewable only by the customer and IBM . The customer's business applications or business data is never transmitted to IBM .

More accurate reporting: Since system information and error logs are automatically uploaded to the IBM Support center in conjunction with the service request, customers are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM , problem error data is run through a data knowledge management system and knowledge articles are appended to the problem record.

Customized support: Using the IBM ID entered during activation, customers can view system and support information in the "My Systems" and "Premium Search" sections of the Electronic Support website at

<http://www.ibm.com/support/electronic>

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent . Reports are available for any system associated with the customer's IBM ID. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium Search and the Electronic Service Agent information that has been collected from your system, customers are able to see search results that apply specifically to their systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or visit

<http://www.ibm.com/support/electronic>

Terms and conditions

Field installable features

Yes

Warranty period

One year.

All the SAS 7,200 rpm 6 Gbps 3.5-inch hot-swap HDDs and SEDs offer a 1-year limited warranty¹.

- Warranty period: 1 year
- Service type (IOR/IOE/CCE/CCR): CRU
- Maintenance agreement: No
- Optional upgrade: No

An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. An IBM part or feature which replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty effective on its date of installation. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature is the same as the machine it is installed in.

¹ For information on the IBM Statement of Limited Warranty, visit

http://www.ibm.com/servers/support/machine_warranties/

Alternatively, this information is available through your IBM representative or reseller. Copies are available upon request.

With respect to on-site service, IBM sends a technician after attempting to diagnose and resolve the problem remotely.

Customer setup

Yes

Machine code

No license terms apply.

Prices

For current prices, contact IBM at 888-Shop-IBM (746-7426) or visit

<http://www-03.ibm.com/systems/x/>

To locate the web price, search on the feature number in the Search field.

Description	Part number
IBM 4 TB 7.2K 6Gbps NL SAS HS HDD	49Y6205
IBM 4 TB 7.2K 6Gbps NL SAS G2HS HDD	49Y6210
IBM 2 TB 7.2K 6Gbps NL SAS G2HS SED	00w1533
IBM 4 TB 7.2K 6Gbps NL SAS H2HS SED	00w1543

Field install only	Plant install only	MES removal	Cables required
N	N	N	N

The following are features already announced for the 3331 machine type:

Description	Model Number	Feature Number	Initial/ MES/ Both/ Support
IBM 4TB 7.2K 6Gbps NL SAS 3.5'' G2HS HDD	HC1	A4AF	MES
IBM 4TB 7.2K 6Gbps NL SAS 3.5'' HS HDD	HC1	A4AG	MES
IBM 2TB 7.2K 6Gbps NL SAS 3.5'' G2HS SED	HC1	A4AH	MES
IBM 4TB 7.2K 6Gbps NL SAS 3.5'' G2HS SED	HC1	A4AJ	MES

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<http://www.ibm.com/legal/us/en/>

For the most current information regarding IBM products, consult your IBM representative or reseller, or visit the IBM worldwide contacts page

<http://www.ibm.com/planetwide/us/>