



IBM 146 GB 15,000 rpm and 300 GB 10,000 rpm 6Gbps SAS 2.5-inch SFF G2HS SEDs offer highest capacity and performance for storage for selected IBM System x servers

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At a glance

Data security is a growing market requirement for businesses of all sizes today. While many companies have invested heavily toward thwarting network-based attacks and other virtual threats, few effective safeguards have been readily available to protect against potentially costly exposures of proprietary data resulting from a hard drive "data at rest" being stolen, misplaced, retired, or redeployed.

When used in conjunction with our ServeRAID M5110, ServeRAID M1115 SAS/SATA controllers with optional ServeRAID M5000 Series Advance Feature Keys, the IBM® 6Gbps SAS 2.5-inch SFF Self-Encrypting Drives address these security concerns by combining 6Gbps SAS performance with hard-drive based Advanced Encryption Standard (AES) 128 disk encryption.

- 6Gbps hot-swap SAS for optimal performance and system availability
- 2.5-inch SFF 300 GB 10K and 146 GB 15K 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
- 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
- One-year warranty

Overview

New self-encrypting drives (SEDs) add high-capacity offerings to the System x® and BladeCenter® family:

- IBM 146 GB 15K 6Gbps SAS 2.5-inch SFF G2HS SED (90Y8944)
- IBM 300 GB 10K 6Gbps SAS 2.5-inch SFF G2HS SED (90Y8913)

The amount of confidential or propriety information that is gathered and stored by businesses continues to grow exponentially. As the threat of exposure of this data has increased over time, so have the government legislation and industry privacy requirements intended to safeguard this data. These provisions often mandate that corporations safeguard this information for an indefinite amount of time with penalties and other associated expenses attached should a security breach occur.

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, IBM is adding 6Gbps SAS 2.5-inch SFF Self-Encrypting Drives (SED).

Ideal for small and medium or distributed large enterprise businesses, IBM 146 GB 15K (90Y8944) and 300 GB 10K (90Y8913) 6Gbps SAS 2.5-inch SFF G2HS SEDs provide cost-effective advanced data security with AES 128 disk encryption. These new SED offerings also provide optimal 6Gbps hot-swap SAS capability for your high performance and availability System x environment. SED functionality and 6Gbps SAS performance of these new drives are enabled when used with our new 6Gbps System x servers and internal ServeRAID controllers with Advance Feature Keys for SED support.

When ServeRAID M1115 (81Y4448) or ServeRAID M5110 are installed, they offer internal RAID 0, 1, 5, 10, and 50 and the optional M5000 Series Advance Feature Key (46M0930) upgrade would be required for SED support as well as offering additional RAID 6 and 60 functionality. Intuitive Management is provided through the MegaRAID Management Suite (MSM), which offers a quick and simple configuration path to disk encryption and local security key management, and also provides a full suite of applications and tools that includes a full spectrum of online RAID management and preboot setup utilities.

Performance

146 GB, 300 GB performance characteristics include:

- Formatted capacity of 146,000 MB (146 GB)
- Formatted capacity of 300,000 MB (300 GB)
- 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 146 GB drive, and 93 MBps on the 300 GB drive
- Spindle speed of 15,000 rpm (146 GB) or 10,000 rpm (300 GB)
- Hot-swap capability
- SAS interface

Reliability

- SAS compliance enables these SEDs to connect directly to selected System x systems.
- S.M.A.R.T. 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.

Warranty: One-year, customer replaceable unit (CRU), limited warranty¹.

¹For 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 31, 2012:

- IBM 146GB 15K 6Gbps SAS 2.5-inch SFF G2HS SED (90Y8944)
- IBM 300GB 10K 6Gbps SAS 2.5-inch SFF G2HS SED (90Y8913)

Description

IBM 146 GB 15K SFF 6Gbps and 300 GB 10K SFF 6Gbps SAS 2.5-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 146 GB and 300 GB SEDs are supported for internal SED attachment in hot-swap SAS models of selected IBM System x and BladeCenter systems.

Key features and benefits include:

- 10,000 rpm and 15,000 rpm speed to optimize performance
- Outstanding reliability that enables operation in RAID environments without compromising application performance or availability
- A 2.5-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 146 GB drive, and 93 MBps on the 300 GB drive

With rigorous testing by IBM through the ServerProven program, you can maintain a high degree of confidence that your IBM storage subsystem is compatible and will function reliably.

Compatibility

- Support for popular network operating systems
- ServerProven testing: Verifies servers, SEDs
- IBM high-speed SAS/SATA cables
- Supported on System x and BladeCenter servers

Configurator support

- Configuration and Options Guide (COG)
- IBM Advanced Solutions Integration Tool (ASIT)

Product positioning

These high-performance 146 GB 15K 6Gbps and 300 GB 10K 6Gbps SAS 2.5-inch G2HS SED options are positioned at the top of IBM's SAS SED line based on the SAS/SATA technology.

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

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

Product number

Option (SEOs)

Description	SEO number
IBM 146GB 15K 6Gbps SAS 2.5" SFF G2HS SED	90Y8944
IBM 300GB 10K 6Gbps SAS 2.5" SFF G2HS SED	90Y8913

The following are newly announced features on the specified models of the IBM xSeries® 3331 machine type:

Description	MT	Model	Feature
IBM 300GB 10K 6Gbps SAS 2.5" SFF G2HS SED	3331	HC1	A2XF
IBM 146GB 15K 6Gbps SAS 2.5" SFF G2HS SED	3331	HC1	A2ZK

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=112-114>

Publications

Publications are shipped with the announced product.

The IBM Systems Information Center provides you with a single information center where you can access product documentation for IBM systems hardware, operating systems, and server software. Through 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 146 GB 15,000 rpm 6Gbps SAS 2.5-inch SFF SED

- Approximate height: 14.8 mm (0.583 in)
- Approximate width: 70.0 mm (2.76 in)
- Approximate depth: 100.5 mm (3.957 in)
- Approximate weight: 200 g (0.441 lb)

Shipping dimensions

- Approximate height: 39 mm (1.5 in)
- Approximate width: 115 mm (4.5 in)
- Approximate depth: 160 mm (6.3 in)
- Approximate weight: 1150 g (2.32 lb)

IBM 300 GB 10,000 rpm 6Gbps SAS 2.5-inch SFF SED

- Approximate height: 14.8 mm (0.583 in)
- Approximate width: 70.0 mm (2.76 in)
- Approximate depth: 100.5 mm (3.957 in)
- Approximate weight: 215 g (0.475 lb)

Shipping dimensions

- Approximate height: 39 mm (1.5 in)
- Approximate width: 115 mm (4.5 in)
- Approximate depth: 160 mm (6.3 in)
- Approximate weight: 1150 g (2.32 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)

Hardware requirements

None

Software requirements

The new IBM 146 GB 15K 6Gbps and 300 GB 10K 6Gbps SAS SEDs work with most system operating systems.

For further information, contact your IBM representative.

Compatibility

For latest compatibility information, visit

<http://www.ibm.com/servers/eserver/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

These high-performance 146 GB 15K 6Gbps and 300 GB 10K 6Gbps SAS 2.5-inch G2HS SED options products are designated as customer setup.

Customer installation instructions are shipped with each option part.

Cable orders

None

Installability

The IBM 146 GB and 300 GB SAS SEDs require about 20 minutes for installation.

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

Packaging

IBM 146GB 15K SFF and 300GB 10K SAS 2.5-inch SEDs

Product	Package description	Boxes
IBM 146 GB and 300 GB 6Gbps SAS 2.5-inch SFF G2HS SEDs	Option Unit Box	1

Contents:

Hard drive
Installation pub and warranty
Safety flyer

The 146 GB and 300 GB SAS SEDs are shipped as a single package. Other items are in zipped bags.

Retail only

Packaging dimensions/weight

- Single box (HxDxW): 133 mm (1.5 in) 63 mm (4.5 in) 174 mm (6.3 in)
- Package weight: 0.36 kg (2.32 lb)

Note: All measurements are approximate.

Supplies

For end users

IBM 146 GB 15K 6Gbps and 300 GB 10K rpm 6Gbps SAS 2.5-inch 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

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM

on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM . Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

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

Terms and conditions

Field installable feature

Yes

Warranty period

Optional features - One year

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 that 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 are the same as those for the machine in which it is installed.

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/>

Description			Part number
IBM 146GB 15K 6Gbps SAS 2.5" SFF G2HS SED			90Y8944
IBM 300GB 10K 6Gbps SAS 2.5" SFF G2HS SED			90Y8913
Field install only	Plant install only	MES removal	Cables required
N	N	N	N

The following are newly announced features on the specified models of the IBM xSeries 3331 machine type:

Description	Model Number	Feature Number	Initial/MES/Both/Support
IBM 300GB 10K 6Gbps SAS 2.5"	SFF G2HS HC1	SED A2XF	MES
IBM 146GB 15K 6Gbps SAS 2.5"	SFF G2HS HC1	SED A2ZK	MES

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