



New IBM System x 3.5-inch 7.2K 6 Gbps and 12 Gbps 512e NL SAS G2HS HDDs and SEDs offer highest-density options for optimizing storage and data management for IBM System x configurations

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At a glance

IBM® 2 TB, 4 TB, and 6 TB 7,200 rpm 6 Gbps and 12 Gbps 3.5-inch hot-swap NL SAS hard disk drives (HDDs) and self-encrypting drives (SEDs) can provide the performance required for extensive storage capacity while providing the flexibility of hot-swap. These new drives are 512 emulation (512e), a type of Advanced Format drive, which is a new technology for increasing drive capacities while maintaining data integrity. All NL SAS drives are RoHS compliant.

HDD features include:

- 7,200 rpm HDDs deliver NL SAS HDD reliability and largest capacity performance in the IBM HDD family.
- NL SAS drive-to-host interface supports up to 12.0 Gbps burst rate, which can be achieved when the drive is used on a System x® server with 12 Gbps devices and infrastructure.
- 3.5-inch, slim-line form factor optimizes storage capacity.
- Software utilities allow for 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.
- Hot-swap versions of the IBM NL SAS 3.5-inch HDDs are available.
- One-year warranty is included.
- For optimal performance with 512e drives, the host system software stack must be 512e aware. Note: For more information, reference IBM's Advanced Format Redpaper™ at

<http://www.redbooks.ibm.com/abstracts/redp5119.html>

SED features include:

- Drive-level AES 256 encryption
- Safeguard against costly security breaches and exposure of proprietary data if a hard drive is stolen or lost
- Rich security options to help ensure compliancy with data security, information disclosure, and privacy regulations for data at rest
- 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
- Compatible with Security Key Lifecycle Manager (SKLM) for System x, which offers centralized, automated, and simple encryption key management of SEDs in local and distributed System x environments

Overview

As the newest additions to the IBM System x family of 3.5-inch NL SAS HDDs and NL SAS SEDs, the 7,200 rpm, 6 Gbps and 12 Gbps 3.5-inch hot-swap drives offer the highest-density drive options and provide a broad selection of choices to satisfy a wide range of applications. The drives are 512 emulation (512e) HDDs and SEDs, a type of Advanced Format drive that is a new technology for increasing drive capacities while maintaining data integrity. These new drives are positioned at the top of the IBM NL SAS HDD line.

The new 7,200 rpm 6 Gbps and 12 Gbps NL SAS drives are offered in a 3.5-inch form factor. The NL SAS drives are available as hot-swap versions.

The SED is designed to reduce the vulnerability of data at rest to potentially costly exposures of proprietary data resulting from hard drives being stolen, misplaced, or improperly disposed.

Key features and benefits include:

- Increased bandwidth. NL SAS HDD/SEDs support 12 Gbps link rates.
- Higher density. 512e NL SAS drives meet client requirements for larger capacities - up to 6 TB.
- RoHS compliance. 7,200 rpm 3.5-inch NL SAS HDDs drives are RoHS compliant.
- Reliability. Outstanding reliability enables operation in RAID environments without compromising application performance or availability.
- Security. The self-encrypting drives include drive-level AES 256 encryption. These drives are compatible with Security Key Lifecycle Manager (SKLM) for System x, which offers centralized, automated and simple encryption key management of SEDs in local and distributed System x environments.

You can increase your storage and data management effectiveness when you install these new high-density SAS drives in your IBM System x configurations.

Performance characteristics for the 2 TB, 4 TB, and 6 TB drives include:

- Formatted capacity of 2,000,000 MB, 4,000,000 MB, and 6,000,000 MB.
- Drive-to-host interface that supports up to 12.0 Gbps burst rate in NL SAS drives. 12.0 Gbps burst rate NL SAS performance is possible when used on a System x server with 12 Gbps devices and infrastructure.
- Drive media to buffer interface that supports sustained interface data transfers of up to 194 MB per second average.
- Spindle speed of 7,200 rpm.
- Hot-swap capability for NL SAS drives.
- SAS interface.

For optimal performance with 512e drives, the host system software stack must be 512e aware. For more information, reference IBM's Advanced Format Redpaper at

<http://www.redbooks.ibm.com/abstracts/redp5119.html>

Reliability

- NL SAS compliance enables these HDDs and 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 subsystem² is compatible and will function reliably.
- These HDD and SED drives include a one-year, limited warranty¹.

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

http://www-947.ibm.com/systems/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.

² Refer to following for supported products

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

Key prerequisites

IBM System x system with SAS capability. For optimal 12 Gbps NL SAS performance, an IBM System x system with 12 Gbps devices and infrastructure is required.

Planned availability date

October 24, 2014

- IBM 2TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD (00ML203)
- IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD (00ML208)
- IBM 6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD (00ML213)
- IBM 2TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED (00ML218)
- IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED (00ML223)
- IBM 6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED (00ML228)
- IBM 2TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD (00FN188)
- IBM 4TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD (00FN208)
- IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD (00FN228)
- IBM 2TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED (00FN238)
- IBM 4TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED (00FN248)
- IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED (00FN258)

Description

IBM 2 TB, 4 TB, and 6 TB 7,200 rpm 6 Gbps and 12 Gbps NL SAS 3.5-inch hot-swap HDDs and SEDs

These new 7,200 rpm HDDs provide 3.5-inch form factor options that can be used as hot-swap drives. The new HDD offerings for the IBM System x family of 3.5-inch SAS HDDs are the highest performing options and provide 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 capacity.

Some OS limitations have been found to exist when using drives with capacities greater than 2.2 TB in JBOD (just a bunch of disks) configurations on 6 Gbps controllers. With earlier release versions of some OSs, the boot drive must be 2 TB, or smaller. However, those used as data drives may utilize the larger-capacity drives.

For optimal performance with 512e drives, the host system software stack must be 512e aware. For more information, reference IBM's Advanced Format Redpaper at

<http://www.redbooks.ibm.com/abstracts/redp5119.html>

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, NL form factor that allows maximum installations in supported System x systems

Configurator support

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

Product positioning

These high-performance 7,200 rpm 6 Gbps and 12 Gbps NL SAS options are positioned at the top of the IBM SAS HDD line. The SAS drives are available in a hot-swap version.

These HDDs and SEDs 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	Feat	SEO	Part number
IBM 2TB 7.2K 6Gbps NL SAS 3.5-inch G2HS 512e HDD	3331	HC1	AS76	00ML203	00ML203
IBM 4TB 7.2K 6Gbps NL SAS 3.5-inch G2HS 512e HDD	3331	HC1	AS77	00ML208	00ML208
IBM 6TB 7.2K 6Gbps NL SAS 3.5-inch G2HS 512e HDD	3331	HC1	AS78	00ML213	00ML213
IBM 2TB 7.2K 6Gbps NL SAS 3.5-inch G2HS 512e SED	3331	HC1	AS79	00ML218	00ML218
IBM 4TB 7.2K 6Gbps NL SAS 3.5-inch G2HS 512e SED	3331	HC1	AS7A	00ML223	00ML223
IBM 6TB 7.2K 6Gbps NL SAS 3.5-inch G2HS 512e SED	3331	HC1	AS7B	00ML228	00ML228
IBM 2TB 7.2K 12Gbps NL SAS 3.5-inch G2HS 512e HDD	3331	HC1	A5VP	00FN188	00FN188
IBM 4TB 7.2K 12Gbps NL SAS 3.5-inch G2HS 512e HDD	3331	HC1	A5VQ	00FN208	00FN208
IBM 6TB 7.2K 12Gbps NL SAS 3.5-inch G2HS 512e HDD	3331	HC1	A5VR	00FN228	00FN228
IBM 2TB 7.2K 12Gbps NL SAS 3.5-inch G2HS 512e SED	3331	HC1	A5VS	00FN238	00FN238
IBM 4TB 7.2K 12Gbps NL SAS 3.5-inch G2HS 512e SED	3331	HC1	A5VT	00FN248	00FN248

IBM 6TB 7.2K 12Gbps NL SAS 3.5-inch 3331 HC1 A5VU 00FN258 00FN258
G2HS 512e SED

The following are features already announced for the 3331, 3837, 5457, 5458, 5460, 7158, 7160, 7382, 7383, 7914, 7915, 8722, and 8752 machine types:

Description	MT	Model	Feature
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	3837	AC1 AC2 AC3 AC4 AC5 AC6 AC7 MC1 MC2	A5U1
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	5457	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	5458	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	5460	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	7158	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	7160	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	7382	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	7383	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	7914	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	7915	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	8722	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	8752	AC1 MC1	
IBM 2TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	3331	HC1	A5VP
IBM 4TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	3331	HC1	A5VQ
IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	3331	HC1	A5VR
IBM 2TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED	3331	HC1	A5VS
IBM 4TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED	3331	HC1	A5VT
IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED	3331	HC1	A5VU
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	3837	AC1 AC2 AC3 AC4 AC5 AC6 AC7 MC1 MC2	AS6C
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	5457	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	5458	AC1	

IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	5460	MC1 AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	7158	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	7160	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	7382	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	7383	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	7914	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	7915	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	8722	AC1 MC1	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	8752	AC1 MC1	
IBM 2TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	3331	HC1	AS76
IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	3331	HC1	AS77
IBM 6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	3331	HC1	AS78
IBM 2TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED	3331	HC1	AS79
IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED	3331	HC1	AS7A
IBM 6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED	3331	HC1	AS7B

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=114-150>

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>

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's 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'll 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 2 TB, 4 TB, and 6 TB 7.2K 6 Gbps and 12 Gbps NL SAS 3.5-inch 512e hot-swap HDDs and SEDs
- Approximate height: 26.1 mm (1.03 in.)
- Approximate width: 101.6 mm (4.0 in.)
- Approximate depth: 147.0 mm (5.8 in.)
- Approximate weight: 610 g (1.34 lb) - 2TB, 680 g (1.50 lb) - 4TB, 780 g (1.72 lb) - 6TB

Shipping dimensions

- Approximate height: 95.3 mm (3.75 in.)
- Approximate width: 194 mm (7.64 in.)
- Approximate depth: 257 mm (10.12 in.)
- Approximate weight: 1780 g (3.92 lb) - 2TB, 1850 g (4.07 lb) - 4TB, 1950 g (4.30 lb) - 6TB

Hardware requirements

The HDDs and SEDs must be installed in selected System x servers.

Note: Some OS limitations have been found to exist when using drives with capacities greater than 2.2 TB in JBOD configurations on 6 Gbps controllers. With earlier release versions of some OSs, the boot drive must be 2 TB or smaller. However, those used as data drives may utilize the 2 TB, 4 TB, and 6 TB capacities.

Agency approvals

- UL
- CSA
- TUV
- CE Mark
- C-Tick Mark
- Taiwan (BSMI Certification)
- Korea EMI

Standards

None.

Operating environment

- Temperature: 5° to 55°C (41° to 131°F) at -300 m to 3,048 m (-1000 ft to 10,000 ft)
- Relative humidity: 5% to 90% (noncondensing)
- Maximum altitude: 3,048 m (10,000 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

The new IBM 7,200 rpm NL SAS 3.5-inch 512e HDDs and SEDs work with most operating systems.

Some OS limitations have been found to exist when using drives with capacities greater than 2.2 TB in JBOD configurations on 6 Gbps controllers. With earlier release versions of some OSs, the boot drive must be 2 TB, or smaller. However, the larger-size drives may be utilized for data storage capacity.

For optimal performance with 512e drives, the host system software stack must be 512e aware. For more information, reference IBM's Advanced Format Redpaper at

<http://www.redbooks.ibm.com/abstracts/redp5119.html>

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

Some OS limitations have been found to exist when using drives with capacities greater than 2.2 TB in JBOD (just a bunch of disks) configurations on 6 Gbps controllers. With earlier release versions of some OSs, the boot drive will have to be 2 TB, or smaller. However, those used as data drives may utilize the larger-capacity drives.

For optimal performance with 512e drives, the host system software stack must be 512e aware. For more information, reference IBM's Advanced Format Redpaper at

<http://www.redbooks.ibm.com/abstracts/redp5119.html>

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 new IBM 7,200 NL SAS 3.5-inch hot-swap 512e HDDs and SEDs products are designated as customer setup. Customer installation instructions are included in the system publications.

Cable orders

None.

Installability

IBM 2 TB, 4TB, and 6 TB SAS NL 3.5-inch HDDs and SEDs are available as hot-swap and are customer installable. Installation takes approximately 20 minutes.

Installation includes unpacking, setting up, and powering on.

Packaging

IBM 2TB, 4TB, 6TB 7.2K NL SAS 3.5-inch HDDs and SEDs

Product	Package description	Boxes
IBM 7,200 rpm NL SAS 3.5-inch HS 512e HDDs and SEDs	Option Unit Box	1

Contents:

Hard drive
Warranty
Safety flyer

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

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 24x7 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 their systems, 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

Terms and conditions features section

MES discount applicable

No.

Field installable feature

Yes.

Warranty period

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.

Optional features warranty period

One year.

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 2TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	00ML203
IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	00ML208
IBM 6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	00ML213
IBM 2TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED	00ML218
IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED	00ML223
IBM 6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED	00ML228
IBM 2TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	00FN188
IBM 4TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	00FN208
IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	00FN228
IBM 2TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED	00FN238
IBM 4TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED	00FN248
IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED	00FN258

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

If field installed on a purchased machine, parts removed or replaced become the property of IBM and must be returned.

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

Description	Model Number	Feature Numbers	Purchase Price	Initial/MES/Both/Support	RP CSU MES
IBM 2TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	HC1	A5VP		MES	
IBM 4TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	HC1	A5VQ		MES	

IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	HC1 A5VR	MES
IBM 2TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED	HC1 A5VS	MES
IBM 4TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED	HC1 A5VT	MES
IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e SED	HC1 A5VU	MES
IBM 2TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	HC1 AS76	MES
IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	HC1 AS77	MES
IBM 6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	HC1 AS78	MES
IBM 2TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED	HC1 AS79	MES
IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED	HC1 AS7A	MES
IBM 6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e SED	HC1 AS7B	MES

The following are features already announced for the 3837 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	AC1	A5U1	Initial	
	AC2		Initial	
	AC3		Initial	
	AC4		Initial	
	AC5		Initial	
	AC6		Initial	
	AC7		Initial	
	MC1		Initial	
	MC2		Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	AC1	AS6C	Initial	
	AC2		Initial	
	AC3		Initial	
	AC4		Initial	
	AC5		Initial	
	AC6		Initial	
	AC7		Initial	
	MC1		Initial	
	MC2		Initial	

The following are features already announced for the 5457 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	AC1	A5U1	Initial	
	MC1		Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	AC1	AS6C	Initial	
	MC1		Initial	

The following are features already announced for the 5458 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	AC1 MC1	A5U1	Initial Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	AC1 MC1	AS6C	Initial Initial	

The following are features already announced for the 5460 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	AC1 MC1	A5U1	Initial Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3yr S&S	AC1 MC1	AS6C	Initial Initial	

The following are features already announced for the 7158 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	AC1 MC1	A5U1	Initial Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	AC1 MC1	AS6C	Initial Initial	

The following are features already announced for the 7160 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	AC1 MC1	A5U1	Initial Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	AC1 MC1	AS6C	Initial Initial	

The following are features already announced for the 7382 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr				

S&S

	AC1	A5U1	Initial
	MC1		Initial
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr			
S&S	AC1	AS6C	Initial
	MC1		Initial

The following are features already announced for the 7383 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr				
S&S	AC1	A5U1	Initial	
	MC1		Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr				
S&S	AC1	AS6C	Initial	
	MC1		Initial	

The following are features already announced for the 7914 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr				
S&S	AC1	A5U1	Initial	
	MC1		Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr				
S&S	AC1	AS6C	Initial	
	MC1		Initial	

The following are features already announced for the 7915 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr				
S&S	AC1	A5U1	Initial	
	MC1		Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr				
S&S	AC1	AS6C	Initial	
	MC1		Initial	

The following are features already announced for the 8722 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr				
S&S	AC1	A5U1	Initial	
	MC1		Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr				
S&S	AC1	AS6C	Initial	
	MC1		Initial	

The following are features already announced for the 8752 machine type:

Description	Model number	Feature number	Initial/ MES/ Both		RP CSU MES
			support		
IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	AC1 MC1	A5U1	Initial	Initial	
IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	AC1 MC1	AS6C	Initial	Initial	

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