IBM 50 GB SATA 3.5-inch SFF HS High IOPS SSD and 2.5-inch SFF HS and SFF NHS High IOPS SSDs, offering high-performance SATA storage devices

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At a glance

These new 2.5-inch and 3.5-inch form-factor drives provide solid state technology for BladeCenter® and System x® servers.

Benefits include:

• Larger, up to 50 GB capacity for the single drive, delivering high-performance IOPS and thereby relieving storage I/O bottlenecks
• Help in reducing potential points of failure internal to the blade and System x server by delivering solid state reliability and environmental robustness in the IBM® storage family
• 2.5-inch and 3.5-inch form factors that fit into conventional disk drive bays
• Energy saving with as little as 2.1 W of power consumption per drive
• S.M.A.R.T. Technology which, through the use of software utilities, can alert you of certain impending drive failures
• Availability in non-hot-swap and hot-swap versions

Overview

These new drives bring solid state high-performance, reliability, and low-power capabilities to BladeCenter and System x storage. This new option 2.1-watt 50 GB SSD drive will be available as a single 2.5-inch NHS drive for BladeCenter, 2.5-inch HS High IOPS for System x, and 2.5-inch Slim-HS High IOPS SSD and 3.5-inch HS High IOPS SSD for both System x and BladeCenter.

Key features and benefits include:

• Low power requirements: Using as little as 2.1 watts of power per drive, the client can help better manage the power envelope of the datacenter.
• Uptime is up to three times that of conventional hard drives without compromising application performance or availability.
• Durability helps withstand challenging environmental conditions.
• These drives are ideal for delivering high-performance Input/Output Operations per Second (IOPS). This allows users to help increase the performance of their I/O subsystems at a cost equal to or less than adding traditional storage systems.
• IBM 50 GB SATA 2.5” NHS SFF High IOPS SSD (43W7706) is supported through internal direct attachment to BladeCenter servers.

Performance
50 GB\(^1\) performance characteristics include:

- Formatted capacity: Up to 50,000 MB
- Drive to host interface that supports 1.5 Gb/s burst rate
- Internal transfer read rate: Up to 80 MB/s
- Internal transfer write rate: Up to 50 MB/s
- Combination 67% Read/33% Write transaction processing rate: up to 2600 IOPS
- This drive is ideal for delivering high-performance IOPS and thereby relieving storage bottlenecks.

**Reliability**

- The absence of moving parts reduces potential failure points in the blade server.
- SATA compliance enables the drive to connect directly into BladeCenter.
- 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\(^2\) program instills confidence that your storage subsystem\(^2\) is compatible and will function reliably.

**Warranty:** One year, customer replaceable unit (CRU), limited warranty\(^3\)

\(^1\) When referring to SSD or tape backup capacity, GB stands for 1,000,000,000 bytes and TB stands for 1,000,000,000,000 bytes. User capacity may vary depending on operating environments.

\(^2\) IBM makes no representation regarding third-party products or services including those designated as ServerProven.

\(^3\) For information on the IBM Statement of Limited Warranty, contact your IBM representative or reseller. Copies are available upon request.

**Key prerequisites**

**Supported on:**

- IBM System x servers with a 3.5-inch or 2.5-inch bay
- IBM BladeCenter servers with a 2.5-inch bay

**Planned availability date**

March 31, 2009

**Description**

SATA SSD drives are supported with major operating systems, including Microsoft\(^\circledR\) Windows\(^\circledR\) and Linux\(^\circledR\).

Up to 50 GB\(^1\) capacity for the single drive delivers high-performance Input/Output Operations per Second (IOPS), thereby relieving storage IO bottlenecks.

**Investment protection and ease of use**

- The absence of moving parts reduces potential failure points in the server.
• SATA compliance enables the IBM 50 GB SATA 2.5-inch SFF NHS SSD to connect directly into BladeCenter.
• As little as 2.1 W power consumption per drive helps save energy.
• 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.

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

Note: IBM makes no representation or warranty regarding third-party products, including those designated as ServerProven.

Compatibility

• Support for popular network operating systems
• ServerProven testing: Verifies servers, HDDs
• IBM high-speed SAS and SATA cables
• SATA compliance enables the IBM 50 GB SATA 2.5-inch SFF NHS SSD to connect directly into BladeCenter. BladeCenters supported include:
  – IBM BladeCenter HS21 (8853)
  – IBM BladeCenter LS22 (7901)
  – IBM BladeCenter LS42 (7902)
  – IBM BladeCenter HS21 XM (7995)
  – IBM BladeCenter HS12 (8014)
• SATA compliance enables the IBM 50 GB SATA 2.5-inch HS SSD and 3.5-inch HS SSD to attach to System x supported systems.
  – x3850 M2/x3950 M2 (7233, 7241)
  – x3755 (8877, 7163)
  – x3655 (7943)
  – x3650 (7979)
  – x3650 (7980)
  – x3550 (7978)
  – x3500 (7977)
  – x3455 (7940, 7941)
  – x3400 (7973, 7974, 4192, 4193)
  – x3250 M2 (4190, 4191, 4194)
  – x3200 (4367, 4368)

Product number

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<td>IBM 50 GB SATA 2.5&quot; SFF NHS High IOPS SSD</td>
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<td>IBM 50 GB SATA 2.5&quot; SFF HS High IOPS SSD</td>
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Terms and conditions

This product is available from IBM under the terms and conditions for purchase.
Warranty and service

• The warranty period is one year.
• HelpWare®: Contact your IBM HelpWare number, your place of purchase, or your local IBM office.

43W7698, 43W7706 - 50 GB SATA 3.5" and 2.5" SFF High IOPS SSD Drives

Product name

• IBM 50 GB SATA 3.5" HS High IOPS SSD (43W7698)
• IBM 50 GB SATA 2.5" SFF NHS High IOPS SSD (43W7706)
• IBM 50 GB SATA 2.5" SFF HS High IOPS SSD (43W7722)
• IBM 50 GB SATA 2.5" SFF Slim-HS High IOPS SSD (43W7714)

Technical information

Performance specifications

50 GB SATA SSD

• Formatted capacity: 50,000 MB
• Drive to host interface that supports SATA-1.0a, 1.5 Gb/s burst rate
• Internal transfer read rate: 80 MB/s
• Internal transfer write rate: 50 MB/s
• Hot-swap capability or non-hot-swap on SFF
• SATA interface
• Combination 67% Read/33% Write transaction processing rate: Up to 2600 IOPS
• 2.5-inch and 3.5-inch form size

Physical specifications

50 GB SATA High IOPS Solid State Drive

• Height: 9.5 mm (.37 in)
• Width: 69.8 mm (2.76 in)
• Depth: 100.2 mm (3.94 in)
• Weight: <.45 kg (< 1 lb)

Note: All measurements are approximate.

Operating environment

Temperature: 0 to 70 degrees C (32 to 158 F) at -304 to 24,380 m (-1000 to 80,000 ft)

Relative humidity: 5% to 90%, noncondensing

Agency approvals

• UL
• CSA
• TUV
• CE Mark
• C-Tick Mark
• IEC
• Taiwan (BSMI Certification)
• Korea EMI
Energy Star compliance
Is this product Energy Star Compliant? No

Note: The Energy Star emblem does not represent EPA endorsement of any product or service.

Hardware requirements
The 43W7698, 43W7714, and 43W7722 SSDs are supported on the following IBM platforms:

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Software requirements
Support for all major operating systems:

- Microsoft Windows
- Linux Red Hat
- VMware
- SUSE Linux

Compatibility
For latest compatibility information, visit


Note: Some configurations may not be compatible.

Limitations
Requires a SAS/SATA controller

Planning information

Additional cable orders required: No

Approximate installation time: 20 minutes
Packaging
One box

Shipment group
• SSD
• Installation publication and warranty
• Safety flyer

Packaging dimensions and weight
• Height: 18.8 mm (.50 in)
• Width: 80.0 mm (3.15 in)
• Depth: 105.5 mm (4.1 in)
• Weight: 908 gms (2.0 lb)

Note: All measurements are approximate.

Security, auditability, and control
This product uses the security and auditability features of the host hardware, software, and application software.

Terms and conditions

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Note: Programs included with this product are licensed under the terms and conditions of the License Agreements that are shipped with the feature or option. All other terms and conditions are the same as those applicable to the INM machine type in which the feature is installed.

* To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or call IBM.

** This optional feature is designed as Customer Replacement Unit (CRU).

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IBM may release changes to the Machine Code. IBM plans to make the Machine Code changes available for download from the IBM System x technical support Web site

http://www-304.ibm.com/systems/support/
If the machine does not function as warranted and your problem can be resolved through your application of downloadable Machine Code, you are responsible for downloading and installing these designated Machine Code changes as IBM specifies. If you would prefer, you may request IBM to install downloadable Machine Code changes; however, you may be charged for that service.

HelpWare

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Announcement countries

All European, Middle Eastern, and African countries.

Prices

For all local charges, contact your sales representative.

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