IBM 73 GB, 146 GB 15K rpm and 146 GB, 300 GB 10K rpm SAS 2.5-inch NHS, HS and Slim-HS HDDs provide high capacity and performance for storage in selected System x and BladeCenter systems

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At a glance

IBM® System x® and BladeCenter® introduces new 73 GB and 146 GB 15K rpm and 146 GB and 300 GB 10K rpm SAS 2.5-inch NHS, HS and Slim-HS HDDs. These new HDDs will operate at up to 6 Gbps speeds.

The IBM 73 GB and 146 GB 15K rpm and 146 GB and 300 GB 10K rpm SAS 2.5-inch NHS, HS and Slim-HS HDDs are the newest storage solutions for servers that need high-storage capacity for data backup and mission-critical applications.

Overview

The IBM 73 GB, 146 GB 15K rpm and 146 GB, 300 GB 10K rpm SAS 2.5-inch NHS, HS and Slim-HS HDDs provide 2.5-inch form factor options that can be used as hot-swap or non-hot-swap drives. The addition of a 146 GB 15K rpm offering to the System x and BladeCenter blade family of 2.5-inch SAS HDDs makes it the highest-performing SFF option. The addition of the 300 GB 10K HDD introduces a new capacity point for this class device. These additions bring a wider selection of choice to satisfy the range of System x and BladeCenter applications. These new drives are positioned at the top of our SAS SFF HDD line based on increased performance and capacity.

Key features and benefits include:

• Up to 10,000 rpm or 15,000 rpm speeds to help optimize performance
• Superior reliability that enables operation in RAID environments without compromising application performance or availability

Performance

New HDD performance characteristics include:

• Formatted capacity: 73,000 MB to 300,000 MB drives
• Drive to host interface that supports up to 6.0 Gb/s burst rate
• Drive media to buffer interface that supports sustained interface data transfers of up to 124 MB/s average (10K), 152 MB/s average (15K)
• Spindle speed of 10,000 rpm or 15,000 rpm; drive dependent
• Average latency of 3.0 ms (10K) and 2.9 ms (15K)
• Average seek on reads of less than 4.0 ms (10K) and 2.9 ms (15K)
• Either hot-swap capability or non-hot-swap
• SAS interface

Reliability

• SAS compliance enables HDDs to connect directly into System x or BladeCenter systems.
• S.M.A.R.T. Technology allows software utilities to alert you of 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 warranty

1 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 and BladeCenter systems with a 2.5-inch bay

Planned availability date

March 31, 2009

Description

SAS hard drives are supported with all major operating systems, including Microsoft® Windows® and Linux®.

Investment protection and ease of use

The 73 GB, 146 GB, and the 300 GB HDDs are supported for internal HDD attachment in hot-swap and non hot-swap SAS models of selected IBM System x and BladeCenter systems.

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, HDDs
• IBM high-speed SAS/SATA cables
• Supported on System x and BladeCenter servers

Additional information

All offers are subject to availability. IBM reserves the right to alter product offerings and specifications at any time without notice. IBM is not responsible for photographic or typographic errors.

IBM makes no representation or warranty regarding third-party products or services.
## Product number

<table>
<thead>
<tr>
<th>Description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM 146 GB 10K 6 Gbps SAS 2.5” SFF Slim-HS HDD</td>
<td>42D0632</td>
</tr>
<tr>
<td>IBM 300 GB 10K 6 Gbps SAS 2.5” SFF Slim-HS HDD</td>
<td>42D0637</td>
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<td>IBM 300 GB 10K 6 Gbps SAS 2.5” SFF HS HDD</td>
<td>42D0612</td>
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<td>IBM 300 GB 10K 6 Gbps SAS 2.5” SFF NHS HDD</td>
<td>42D0627</td>
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<td>IBM 73 GB 15K 6 Gbps SAS 2.5” SFF Slim-HS HDD</td>
<td>42D0672</td>
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<td>IBM 146 GB 15K 6 Gbps SAS 2.5” SFF Slim-HS HDD</td>
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<td>IBM 146 GB 15K 6 Gbps SAS 2.5” SFF HS HDD</td>
<td>42D0652</td>
</tr>
<tr>
<td>IBM 146 GB 15K 6 Gbps SAS 2.5” SFF NHS HDD</td>
<td>42D0667</td>
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</table>

## Product-specific information

**Product name**

- IBM 146 GB 10K 6 Gbps SAS 2.5-inch SFF Slim-HS HDD (42D0632)
- IBM 300 GB 10K 6 Gbps SAS 2.5-inch SFF Slim-HS HDD (42D0637)
- IBM 300 GB 10K 6 Gbps SAS 2.5-inch SFF HS HDD (42D0612)
- IBM 300 GB 10K 6 Gbps SAS 2.5-inch SFF NHS HDD (42D0627)
- IBM 73 GB 15K 6 Gbps SAS 2.5-inch SFF Slim-HS HDD (42D0672)
- IBM 146 GB 15K 6 Gbps SAS 2.5-inch SFF Slim-HS HDD (42D0677)
- IBM 146 GB 15K 6 Gbps SAS 2.5-inch SFF HS HDD (42D0652)
- IBM 146 GB 15K 6 Gbps SAS 2.5-inch SFF NHS HDD (42D0667)

## Technical information

**Performance specifications**

**73 GB SAS 15K HDD**

- Formatted capacity: 73,000 MB
- Spindle speed: 15,000 rpm
- Typical average read seek time: 2.9 ms
- Data transfer rate (maximum bursting): Up to 6 Gb/s
- Average latency: 2.0 ms
- Hot-swap capability
- SAS interface
- 2.5-inch SFF form size

**146 GB SAS 10K HDD**

- Formatted capacity: 146,000 MB
- Spindle speed: 10,000 rpm
- Typical average read seek time: 4.0 ms
- Data transfer rate (maximum bursting): Up to 6 Gb/s
- Average latency: 3.0 ms
- Hot-swap capability
- SAS interface
- 2.5-inch SFF form size
146 GB SAS 15K HDD

- Formatted capacity: 146,000 MB
- Spindle speed: 15,000 rpm
- Typical average read seek time: 2.9 ms
- Data transfer rate (maximum bursting): Up to 6 Gb/s
- Average latency: 2.0 ms
- Hot-swap or non hot-swap capability
- SAS interface
- 2.5-inch SFF form size

300 GB SAS 10K HDD

- Formatted capacity: 300,000 MB
- Spindle speed: 10,000 rpm
- Typical average read seek time: 4.0 ms
- Data transfer rate (maximum bursting): Up to 6 Gb/s
- Average latency: 3.0 ms
- Hot-swap or non hot-swap capability
- SAS interface
- 2.5-inch SFF form size
- Highest capacity SAS HDD

Physical specifications

SAS HDDs
10K
- Height: 14.8 mm (.583 in)
- Width: 70.0 mm (2.76 in)
- Depth: 100.5 mm (3.957 in)
- Weight: 227 gms (.50 lb)

15K
- Height: 14.5 mm (.5708 in)
- Width: 70.0 mm (2.76 in)
- Depth: 100.45 mm (3.9547 in)
- Weight: 201 gms (.444 lb)

Note: All measurements are approximate.

Operating environment

Temperature:
- 10° to 35° C (50° to 95° F) at 0 to 914 m (0 to 3000 ft)
- 10° to 32° C (50° to 90° F) at 914 m to 2,133 (3,000 to 7,000 ft)

Relative humidity:
- 8% to 80%, non-condensing

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 73 GB, 146 GB, and 300 GB HDDs are supported on the following IBM platforms.

<table>
<thead>
<tr>
<th>System name</th>
<th>Machine type</th>
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</thead>
<tbody>
<tr>
<td>System x</td>
<td>All SAS models</td>
</tr>
<tr>
<td>BladeCenter</td>
<td>All SAS models</td>
</tr>
</tbody>
</table>

**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**
• HDD
• Installation publication and warranty
• Safety flyer

**Packaging dimensions and weight**
• Height: 26.1 mm (1.03 in)
• Width: 114 mm (4.5 in)
• Depth: 152 mm (6.0 in)
• Weight: 454 gms (2.3 lb)

Note: All measurements are approximate.

Security, auditability, and control

This product uses the security and auditability features of the host hardware, software, and applications software.

Terms and conditions

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

Features and options only

<table>
<thead>
<tr>
<th>Feature</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Field installable</td>
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<tr>
<td>Customer setup</td>
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<tr>
<td>Warranty period*</td>
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<tr>
<td>Service type (CCE/CCR/CRU)</td>
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<td>Maintenance agreement</td>
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<td>Optional upgrade</td>
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<tr>
<td>Licensed programs</td>
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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 IBM 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.

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Service comes with delivery of every IBM system in all European countries.

Warranty and service

• Warranty period: One year
• HelpWare®: Contact your IBM HelpWare number, your place of purchase, or your local IBM office.
Prices

For all local charges, contact your sales representative.

Announcement countries

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