IBM BladeCenter S SAS RAID Controller Module supports SAS expansion, availability and connectivity, plus a new 750GB NL SAS HD for BladeCenter S

At a glance

IBM® BladeCenter® S SAS RAID Controller Module

The IBM BladeCenter S SAS RAID Controller Module provides the following functionality:

- Support for the BladeCenter S chassis
- Integrated SAS switch and RAID Controller in a legacy switch form factor
- Redundant configuration (dual RAID controller, dual-switch and dual-battery backup) to help support high availability
- Supports two disk storage modules (DSM) with up to 12 x 3.5 in SAS drives
- Two internal 4X SAS 3.0 Gbps connectivity to DSMs and six 1X SAS Gbps connectivity to hosts

IBM 750GB 7200 NL SAS HS 3.5" HDD

The new 750 GB SAS HDD offering for IBM BladeCenter S includes high capacity options that help provide a larger selection of choices to satisfy a wide range of applications. This new drive is positioned at the top of the BladeCenter S SAS HDD line.

Key features and benefits include:

- Up to 7,200 rpm speed to help optimize performance
- More capacity to support large application installation on local HDD

For technical support:

- Call the IBM Support Center at 800-IBM-SERV (426-7378)

    or
- Request technical information via the Web site at

    http://www.ibm.com/pc/support

Overview

IBM BladeCenter S SAS RAID Controller Module

The IBM BladeCenter S SAS RAID Controller Module integrates SAS switching and RAID controller function in a legacy switch form factor, and includes the following features:

- Redundant configuration (dual RAID Controller, dual-switch and dual-BBU)
- RAID 0, 1, 0+1, and 5

- Supports two disk storage modules (DSM) with up to 12 x 3.5 in SAS drives and NL SAS drives
- SAS boot and shared storage in IBM BladeCenter S chassis
- Six local processor blade support in IBM BladeCenter S chassis
- Two internal 4X SAS 3.0 Gbps to 2 DSM systems; 6 internal 1X SAS 3.0 Gbps host connectivity to 6 blade slots
- Customer hot-swappable components
- Managed by IBM Storage Configuration Manager (SCM), IBM's storage management application component for server and storage management integration.
- The IBM BladeCenter Start Now Advisor chassis setup tool that ships with BladeCenter-S will be upgraded with RSSM and be available as a download at the same time.

IBM 750GB 7200 NL SAS HS 3.5" HDD

The new IBM 750GB 7200 NL SAS HS 3.5" HDD offering for IBM BladeCenter S includes high capacity options that help provide a larger selection of choices to satisfy a wide range of applications. This new drive is positioned at the top of the BladeCenter S SAS HDD line.

Key features and benefits include:

- Up to 7,200 rpm speed to help optimize performance
- More capacity, up to 750 GB capacity, to support large application installations on local HDD
- Up to 7,200-rpm HDDs -- Delivers SAS device reliability and large capacity performance in the IBM HDD family
- 3.5-inch, slim-line form factor -- Helps optimize storage capacity
- S.M.A.R.T. Technology -- Through use of built-in software utilities, can alert you of certain impending drive failures, so replacements can be made available before a failure occurs

IBM BladeCenter S SAS RAID Controller Module competitive advantages:
- BladeCenter is a leader the industry, delivering integrated storage solutions to the blade server environment. Integrated storage solution helps ease deployment, simplify the datacenter, reduce cabling, and lower costs.
- Each BladeCenter server provides redundant connections to the storage system. Customers can configure their blade servers with dual-port host bus adapters. No other tier one blade server vendor delivers this dual-port capability, which now includes the addition of the SAS expansion card.
- Through integration, BladeCenter eliminates the cables from the server to the I/O module. This not only reduces the opportunity for misconfiguration, it helps to lower the expense for cables and to reduce potential points of failure, while helping increase storage availability.
- IBM Storage Configuration Manager provides an upwardly compatible path for server and storage integrated management with IBM Director. This helps reduce overall TCO through unified systems management applications.

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.

Refer to the ServerProven® Web site for a list of BladeCenter supported devices, including Blade Servers, Blade Switches, and Daughter Cards.

Key prerequisites

- BladeCenter S chassis
- SCM release 1.20.0 is required to support RSSM

Planned availability date

October 24, 2008

Product positioning

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

The MES entries for MT 8886 BladeCenter S:

```
Description                                 MT    Model   Feature

IBM BladeCenter S SAS RAID Controller Module  8886  AC1     3734
IBM BladeCenter RAID Battery Backup Module    8886  AC1     5476
IBM 750GB 7200 NL SAS HS 3.5" HDD             8886  AC1     1084
```

Product-specific information

Product name

- IBM BladeCenter S SAS RAID Controller Module (43W3584)

- IBM 750GB 7200 NL SAS HS 3.5" HDD (42D0546)

Product-specific overview

The RAID Controller and SAS Switch Module and IBM BladeCenter RAID Battery Backup Module integrates SAS switching and RAID controller function in a legacy switch form factor, and includes the following features:

- Redundant configuration (dual RAID controllers, dual-switch and dual-BBU)

- RAID 0, 1, 0+1, and 5

- Supports two Disk Storage modules (DSM) with up to 12 x 3.5 in SAS drives and NL SAS drives

- SAS Boot and reliable shared storage in IBM BladeCenter S chassis

- Six local processor blade support in IBM BladeCenter S chassis

- Two internal 4X SAS 3 Gbit to two DSS systems; six internal 1X SAS 3.0 Gbps host connectivity to six blade slots

- Customer hot-swappable components

- Managed by IBM Storage Configuration Manager (SCM), IBM's storage management application component for server and storage management integration.

- The IBM BladeCenter Start Now Advisor chassis setup tool that ships with BladeCenter-S will be upgraded with RSSM and be available as a download at the same time.

The new IBM 750GB 7200 NL SAS HS 3.5" HDD offering for IBM BladeCenter HC10S includes high capacity options that help provide a larger selection of choices to satisfy a wide range of applications.

Note: The information in IBM Announcement Letters is provided a- is, without warranty of any kind, and is subject to change without notice.

Product-specific at a glance

IBM BladeCenter S SAS RAID Controller Module

The IBM BladeCenter S SAS RAID Controller Module provides the following functionality:

- Support for the BladeCenter S chassis
- Integrated SAS switch and RAID controller in a legacy switch form factor
- Redundant configuration (dual-switch and dual-BBU) for high availability
- Supports two disk storage modules (DSM) with up to 12 x 3.5 in SAS drives
- Two internal 4X SAS 3.0 Gbps connectivity and six 1X SAS 3.0 Gbps host connectivity

IBM 750GB 7200 NL SAS HS 3.5" HDD

The IBM 750GB 7200 NL SAS HS 3.5" HDD provides the following functionality:

- Up to 750 GB SAS HDD capacity
- Up to 7,200-rpm HDDs -- Delivers SAS device reliability and large capacity performance in the IBM HDD family
- 3.5-inch, slim-line form factor -- helps optimize storage capacity
- S.M.A.R.T. Technology -- Through use of built-in utilities, can alert you of certain impending drive failures, so replacements can be made before a drive fails

Product positioning

IBM BladeCenter is the industry's premier tier one server portfolio, and has been helping clients simplify IT, making it easier to deploy, own, and manage servers, storage, and IO. Today, IBM extends that promise by announcing the BladeCenter SAS RAID Controller Module. Quite simply, the RAID Controller Module can enable the benefits of a SAN, right inside the BladeCenter S chassis.

The IBM BladeCenter S SAS RAID Controller Module is an innovative approach to efficient IT. Rather than manage RAID at several adapters, the SAS RAID Controller consolidates this function at the switch level, simplifying management and minimizing costs. Combine this with the ability to deliver RAID 0, 1, 0+1, and 5 while also allowing shared storage for up to six blade servers, the SAS RAID Controller Module is the only slide-in way to get your SAN up and running in no time.

IBM BladeCenter continues to lead the industry in delivering levels of function and integration not seen on any other blade offering in the industry today. These new BladeCenter options provide additional capabilities and function allowing customers to meet the needs of today's enterprise server applications and next-generation network and storage applications.

Announcement and availability dates

```
                              Planned
             Announce         availability
             date             date

             September 9, 2008   October 24, 2008
```

Technical information

Performance specifications - Switch Connectivity

The IBM BladeCenter SAS Connectivity Modules enable connectivity to the IBM BladeCenter disk boot system SAS fabric and to 3 Gbps SAS fabric and including the following key switch features:

- Six internal 1X SAS 3Gbps host connectivity to six blade slots - One x 3Gbps from RAID SAS Switch to each blade
- Two internal 4X SAS 3.0 Gbps to two DSMs, one connection to each DSM
- 1.0 Gbps Ethernet for RAID management
- 4.0 Gbps connection between RAID controllers for cache mirroring
- 10/100 Ethernet for switch management - between RAID SAS switch and AMM for configuration

The IBM BladeCenter S SAS RAID Controller Module enables a SAS connection from blade server to the SAS connectivity module.

Key attributes/features are:

- Integrated SAS Switch and RAID Controller in a legacy switch form factor
- Redundant RAID Controller with failover/fallback - internal only
- RAID 0, 1, 0+1, and 5
- Supports up to two Disk Storage Modules with up to 12 x 3.5 in SAS drives and NL SAS drives
- SAS boot and reliable shared storage in BladeCenter S chassis

IBM BladeCenter S SAS RAID Controller Module management:

The IBM BladeCenter S SAS RAID Controller module is the latest product to be managed using IBM's Storage Configuration Manager. Storage Configuration Manager is IBM's unified management interface for storage products. The Graphic User Interface is available through commonly installed internet browsers and provides common functions across products thus reducing the need to learn a new management application for each product. Storage Configuration Manager is additionally upwardly compatible with IBM Director - IBM's platform management application for server and storage products. Storage Configuration Manager is also currently available for IBM BladeCenter SAS Connectivity modules and Internal RAID Controllers for Blade Servers and System x™ Servers.

SCM is contained in the shipment group and can also be downloaded from

https://www-304.ibm.com/systems/support/supportsite.wss/docdisplay?lndoci d=MIGR-5502070&brandind=5000008

*Performance specifications - 750GB NL SAS HD *

750 GB HD Performance
- Formatted capacity: 750,000 MB
- Spindle speed: 7,200 rpm
- Typical average read seek time: 7.4 ms
- Data transfer rate (maximum bursting): 116 MB/s
- Average latency: 4.16 ms

Reliability
- S.M.A.R.T. Technology allows built-in utilities 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.
- The HDD includes a one-year, limited warranty.

Note: When referring to hard drive capacity, GB stands for 1,000,000,000 bytes. Total user-accessible capacity may vary depending on operating environments.

Physical specifications
SAS Connectivity Module

```
Approximate height: 184.1 mm (7.25 in)
Approximate width:  133.3 mm (5.25 in)
Approximate depth:   25.4 mm (1.0 in)
```

Operating environment

- Temperature: 10° to 35° C (50° to 95° F)

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

Agency approvals

- UL 60950-1, 1st Edition

- CSA C22.2 No 60950-1-03, 1st Edition

- C-Tick

- CISPR 22 Class A

- VCCI Class 2

- FCC Class A

- CE-Mark

- EN 55022/55024 1998

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

IBM Systems

The IBM SAS connectivity module, part number 43W3584, is supported on the following IBM platforms:

```
System name – BladeCenter S
Machine type – 8886
```

Non-IBM Systems

The IBM SAS connectivity module is supported on the following non-IBM platforms:

```
System name – None
```

Software requirements

- Microsoft® Windows® Server 2008

- Microsoft Windows Server 2003, SE and EE

- Microsoft Windows Server 2003, SE and EE x64 Ed

- Red Hat Linux® 5 AS/ES x86/AMD64/EM64T

- SUSE Linux Enterprise Server 10 for x86/AMD64/EM64T

- VMWare ESX Server 3.5.2

Compatibility

Use with BladeCenter Blade Server systems. Refer to the ServerProven list.

Note: Some configurations may not be compatible.

Limitations

None

Planning information

- Additional Cable Orders Required: No
- Approximate Installation Time: 10 min.

```
Cable
description
```

```
None
```

Packaging

One box

- Single box (HxDxW): 103 mm (4.06 in.) x 340 mm (13.38 in.) x 103 mm (4.06 in.)
- Weight: 4.0 lb

Shipment group

- RAID Controller and SAS Switch Module
- IBM BladeCenter RAID Battery Backup Module
- IBM Storage Configuration Manager CD
- Quick install guide
- Support CD
- Safety flyer

Security, auditability, and control

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

Terms and conditions

IBM direct terms and conditions

Features and options only

```
Field Installable                      Yes
Customer Setup                         Yes
Warranty Period                        1 year*
Service Type (CCE/CCR/CRU)             CRU**
Maintenance Agreement                  No
Optional Upgrade                       No
Licensed Programs                      No
```

** CRU Service

IBM provides a replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request. A CRU is designated as being either a Tier 1 or a Tier 2 CRU. Installation of a Tier 1 CRU is your responsibility. If IBM installs a Tier 1 CRU, at your request, you will be charged for the installation. You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge under the type of warranty service specified below, On-site Service.

Based upon availability, a CRU will be shipped for next business day delivery. IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, (1) return instructions and a container are shipped with the replacement CRU, and (2) you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

The following have been designated as a Tier 1 CRU:

- IBM BladeCenter S SAS RAID Controller Module
- IBM 750GB 7200 NL SAS HS 3.5" HDD

Licensed Machine Code

IBM machine code is licensed for use by a customer on the IBM machine for which it was provided by IBM under the terms and conditions of the IBM License Agreement for Machine Code, to enable the machine to function in accordance with its specifications, and only for the capacity authorized by IBM and acquired by the customer. You can obtain the agreement or by contacting your IBM representative or visiting

http://www-304.ibm.com/systems/support/machine_warranties/machine_code.html

Features using LMC:

- 43W3584 - IBM BladeCenter S SAS RAID Controller Module
- 42D0546 - IBM 750GB 7200 NL SAS HS 3.5" HDD

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.

* Note: The IBM BladeCenter RAID Battery Backup Module has been designated as a consumable or supply item and, therefore, is not covered by this warranty.

All other terms and conditions are the same as those applicable to the IBM machine type in which the feature is installed.

*Warranty: One year, customer replaceable unit (CRU), limited warranty. To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or call IBM. This one year warranty applies to the:

- IBM BladeCenter S SAS RAID Controller Module and
- IBM 750GB 7200 NL SAS HS 3.5" HDD

In the United States, call 800-IBM-SERV (426-7378), or write to:

Warranty Information
P.O. Box 12195
RTP, NC, 27709
Attn: Dept JDJA/B203

Help and service information - Features and options

During the warranty period, support for a warranty related issue can be obtained by accessing IBM's online services (requires internet access account, not included) or calling the IBM Support Center at 800-IBM-SERV (426-7378) , 24 hours a day, 7 days a week, to answer any questions regarding your new IBM option. Response time will vary depending on the number and nature of calls received. If you need warranty service, return or exchange is available. In addition, if your IBM option is installed in an IBM computer, you may be entitled to service at your location. For general questions related to the use of your options, fee-based support is available. Your technical support representative can help you determine the best alternative.

Accessing IBM online services

- IBM Web site at

http://www.ibm.com/pc

Placing the call to IBM

Use one of the following numbers when calling IBM for technical support:

- Within the United States, call the IBM Support Center at 800-IBM-SERV (426-7378).
- Within Canada
  - For support, call HelpPC at 800-565-3344.
  - For more information or to place an order, call 800-465-7999.
- Outside the United States and Canada, contact your IBM HelpWare® number, your place of purchase, or your local IBM office.

Prices

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

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

Description	Part number	Pkg qty
IBM BladeCenter S SAS RAID Controller Module	43W3584	1
IBM 750GB 7200 NL SAS HS 3.5" HDD	42D0546	1

IBM Description	SEO Number
IBM BladeCenter S SAS RAID Controller Module	43W3584
IBM 750GB 7200 NL SAS HS 3.5" HDD	42D0546

The following are newly announced features for IBM BladeCenter Systems:

The MES entries for machine type 8886 BladeCenter S:

Description	MT	Model	Feature
IBM BladeCenter S SAS RAID Controller Module	8886	AC1	3734
IBM Bladecenter RAID Battery Backup Module	8886	AC1	5476
IBM 750GB 7200 NL SAS HS 3.5" HDD	8886	AC1	1084

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