ServeRAID M5115 SAS/SATA Controller and associated solutions offer enterprise-grade RAID solution for next-generation IBM Flex System enhancing use of both SAS and SATA media

At a glance

ServeRAID M5115 SAS/SATA Controller family of products for IBM® Flex System can provide state-of-the-art RAID solutions with all the benefits that enterprise-grade RAID demands.

- Portfolio richness

    - A comprehensive portfolio of products ranging from entry RAID to enterprise-class flash-based controllers.
    - Premium features such as support for SED and performance optimization for SSDs delivered through Features-on-Demand (FoD)

- Consistency

    - All products continue to be managed by market-leading MegaRAID management umbrella, enabling clients to significantly reduce their qualification time, personnel training, and management overhead

- Flexibility

    - An entire portfolio consisting of building blocks provides clients with capability to design around a bottoms-up approach catering to a wide array of storage requirements
    - Over three times the granularity in offerings configurability to optimize client implementations

- Performance

    - Optimized for high-performance SSDs with integration of dual-core chip architecture, DDR3 and PCIe Gen 3 technologies

Overview

ServeRAID M5115 SAS/SATA Controller for IBM Flex System

The IBM ServeRAID M5115 family of products offers a complete server storage solution consisting of RAID controllers, cache/flash modules, energy packs, and software feature upgrades in an ultra flexible offerings structure.

These products are optimized to deliver performance demanded by the ever-growing I/O requirements of today's enterprises. They integrate popular disk media such as

SAS and SATA HDDs and emerging solid-state disks into an organization's storage infrastructure.

The portfolio is designed around a base RAID adapter with a set of upgrades that are rich with features, designed to minimize parts-on-the-floor, optimized for storage performance, and consistent with existing industry-leading ServeRAID products.

ServeRAID M5115 SAS/SATA Controller for IBM Flex System is capable of delivering several focused-solutions depending on business needs, offering basic HDD connectivity, support for 1.8-inch SSDs, a high-performance solution or an extra layer of redundancy with RAID 6. These solutions are realized by pairing M5115 with one or more available hardware kits and Feature-on-Demand license upgrades.

Providing that additional peace of mind, the ServeRAID M-Series portfolio is covered under IBM warranty. All adapters and upgrade modules carry a one-year limited warranty or, when installed in a IBM Flex System, assume the system's base warranty and any IBM ServicePac® upgrade.

M5115 Controller and upgrades

RAID controller:

- ServeRAID M5115 SAS/SATA Controller for IBM Flex System (90Y4390)

These controllers offer:

- Up to 6 Gbps per port
- RAID levels 0, 1, 10, 5, 50
- x8 lane PCI Express® 3.0
- LSI SAS2208 Dual-core RAID on Chip (ROC)
- 1 GB 1333MHz DDRIII SDRAM
- Flash-backed-cache-offload
- Support for SED enabled HDDs
- Compliant with Disk Data Format (DDF)
- S.M.A.R.T. support

Hardware kits

ServeRAID M5100 Series Enablement Kit for IBM Flex System x240 (90Y4342)

- Support for 2.5-inch HDDs

ServeRAID M5100 Series IBM Flex System Flash Kit for x240 (90Y4341)

- Support for IBM eXFlash

ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240 (90Y4391)

- Support for embedded SSDs

Feature-on-Demand upgrades

ServeRAID M5100 Series RAID 6 Upgrade for IBM Flex System (90Y4410)

- RAID levels 6, 60

ServeRAID M5100 Series Performance Upgrade for IBM Flex System (90Y4412)

- Performance optimization for solid-state media

ServeRAID M5100 Series SSD Caching Enabler for IBM Flex System (90Y4447)

- Enabling Read/Write caching when used in mixed environments of HDDs and SSDs

Warranty

The ServeRAID options offer a one-year limited warranty[1].

[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.

Feature exchange

None

Key prerequisites

An M5115 solution requires an M5115 controller and either an Enablement Kit or a Flash Kit.

Planned availability date

June 22, 2012

Description

ServeRAID M5115 SAS/SATA Controller for IBM Flex System (90Y4390)

- Is a stand-alone RAID controller with support for RAID 0,1,10, 5, and 50 in a x8 lane PCI Express 3.0
- Requires one or more of hardware kits to operate

ServeRAID M5100 Series Enablement Kit for IBM Flex System x240 (90Y4342)

- Enables support for HDDs
- Requires ServeRAID M5115 SAS/SATA Controller for IBM Flex System (90Y4390)

ServeRAID M5100 Series IBM Flex System Flash Kit for x240 (90Y4341)

- Enables eXFlash support
- Requires ServeRAID M5115 SAS/SATA Controller for IBM Flex System (90Y4390)

ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240 (90Y4391)

- Enables support for embedded SSDs
- Requires ServeRAID M5115 SAS/SATA Controller for IBM Flex System (90Y4390)

ServeRAID M5100 Series RAID 6 Upgrade for IBM Flex System (90Y4411)

- Enables RAID 6, 60
- Requires ServeRAID M5115 SAS/SATA Controller for IBM Flex System (90Y4390) and one or more of hardware kits

ServeRAID M5100 Series Performance Upgrade for IBM Flex System (90Y4412)

- Enables additional performance when used in SSD environments
- Requires ServeRAID M5115 SAS/SATA Controller for IBM Flex System (90Y4390) and one or more of hardware kits

Features:

- Investment protection
- Ease of use
- Compatibility

Compatibility

- Support for popular network operating systems
- ServerProven® testing, which verifies that servers, HDDs, and the controllers will function properly

Configurator support

- IBM Web Configurator (R2)
- Configuration and Options Guide (COG)
- Standalone Solutions Configuration Tool (SSCT)
- x-config

Product positioning

None

Product number

Option Offerings (SEOs)

Description	SEO number
ServeRAID M5115 SAS/SATA Controller for IBM Flex System	90Y4390
ServeRAID M5100 Series Enablement Kit for IBM Flex System x240	90Y4342
ServeRAID M5100 Series IBM Flex System Flash Kit for x240	90Y4341
ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240	90Y4391
ServeRAID M5100 Series RAID 6 Upgrade for IBM Flex System	90Y4410
ServeRAID M5100 Series Performance Upgrade for IBM Flex System	90Y4412
ServeRAID M5100 Series SSD Caching Enabler for IBM Flex System	90Y4447

The following are newly announced features on the specified models of the IBM xSeries® 8737 machine type:

Description	MT	Model	Feature
ServeRAID M5100 Series Left Side Air Baffle for IBM Flex System x240	8737	AC1 MC1	A2Y0

The following are features already announced for the 3331, 8737 machine types:

Description	MT	Model	Feature
ServeRAID M5115 SAS/SATA Controller for IBM Flex System	3331	HC1	A2XW
ServeRAID M5115 SAS/SATA Controller for IBM Flex System	8737	AC1 MC1	
ServeRAID M5100 Series Enablement Kit for IBM Flex System x240	3331	HC1	A2XX
ServeRAID M5100 Series Enablement Kit for IBM Flex System x240	8737	AC1 MC1	
ServeRAID M5100 Series IBM Flex System Flash Kit for x240	3331	HC1	A2XY
ServeRAID M5100 Series IBM Flex System Flash Kit for x240	8737	AC1 MC1	
ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240	3331	HC1	A2XZ
ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240	8737	AC1 MC1	
ServeRAID M5100 Series RAID 6 Upgrade for IBM Flex System	3331	HC1	A2Y1
ServeRAID M5100 Series RAID 6 Upgrade for IBM Flex System	8737	AC1 MC1	
ServeRAID M5100 Series Performance Upgrade for IBM Flex System	3331	HC1	A2Y2
ServeRAID M5100 Series Performance Upgrade for IBM Flex System	8737	AC1 MC1	
ServeRAID M5100 Series SSD Caching Enabler for IBM Flex System	3331	HC1	A36G
ServeRAID M5100 Series SSD Caching Enabler for IBM Flex System	8737	AC1 MC1	

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=112-079

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'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

ServeRAID M5115 SAS/SATA Controller (90Y4390)

- Approximate height: 38 mm (1.5 in)
- Approximate width: 96 mm (3.75 in)
- Approximate depth: 120 mm (4.75 in)
- Approximate weight: 142 g (0.365 lb)

Shipping dimensions

- Approximate height: 128 mm (5.0 in)
- Approximate width: 128 mm (5.0 in)
- Approximate depth: 128 mm (5.0 in)
- Approximate weight: 908 g (2.0 lb)

ServeRAID M5100 Series Enablement Kit for IBM Flex System x240 (90Y4342)

- Approximate height: 77 mm (3.0 in)
- Approximate width: 101.5 mm (4.0 in)
- Approximate depth: 255 mm (10 in)
- Approximate weight: 66.3 g(0.30 lb)

Shipping dimensions

- Approximate height: 304.8 mm (12.0 in)
- Approximate width: 177.8 mm (7.0 in)
- Approximate depth: 76.2 mm (3.0 in)
- Approximate weight: 200 g (0.40 lb)

ServeRAID M5100 Series IBM Flex System Flash Kit for x240 (90Y4341)

- Approximate height: 76.24 mm (3.0 in)
- Approximate width: 152.4 mm (6.0 in)
- Approximate depth: 254.0 mm (10.0 in)
- Approximate weight: 227.0 g (0.50 lb)

Shipping dimensions

- Approximate height: 304.8 mm (12.0 in)
- Approximate width: 177.8 mm (7.0 in)
- Approximate depth: 76.2 mm (3.0 in)
- Approximate weight: 341 g (0.7 lb)

ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240 (90Y4391)

- Approximate height: 76.24 mm (3.0 in)
- Approximate width: 330.2 mm (13.0 in)
- Approximate depth: 203.2 mm (8.0 in)
- Approximate weight: 681 g (1.5 lb)

Shipping dimensions

- Approximate height: 381.0 mm (15.0 in)
- Approximate width: 101.6 mm (4.0 in)
- Approximate depth: 76.2 mm (3.0 in)
- Approximate weight: 227 g (0.5 lb)

Standards

None

Operating environment

- Temperature:
  - 10°C to 35°C (50°F to 95°F) at 0 to 914 m (0 to 3,000 ft)
  - 10°C to 32°C (50°F to 90°F) at 914 to 2,133 m (3,000 to 7,000 ft)
- Relative humidity: 20% to 80% (noncondensing)
- Maximum altitude: 2,133 m (7,000 ft)

Hardware requirements

The controller must be installed in selected IBM Flex System server:

- x240

Agency approvals

- EN55022
- EN55024
- EN60950 / CE
- EN 61000-3-2
- EN 61000-3-3
- IEC 950 CB Scheme
- FCC Part 15 Class A, and Class B
- UL 1950
- CSA C22.2 950-95
- VCCI
- NZ AS3548 / C-tick
- RRL for MIC (KCC)
- BSMI
- UL 94-/V

Software requirements

The IBM ServeRAID M5115 SAS/SATA family of products and options are supported on the following major operating systems:

- Microsoft™ Windows™ Server 2008
- Red Hat Enterprise Linux™ 5
- Red Hat Enterprise Linux 6
- SUSE Linux Enterprise Server 10
- SUSE Linux Enterprise Server 11
- VMware 4.0
- VMware 4.1
- VSphere 5.0

Compatibility

For latest compatibility information, visit

http://www.ibm.com/servers/eserver/serverproven/compat/us/

Note: Some configurations may not be compatible.

Limitations

Solid-state memory cells have an intrinsic, finite number of write cycles that each cell can incur. As a result each solid state device has a maximum amount of write cycles it can be subjected to, documented as Total Bytes Written (TBW). IBM is not responsible for replacement of hardware that has reached the maximum guaranteed number of write cycles. This limit may be revealed as the device failing to communicate to system generated commands or become incapable of being written to.

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 IBM ServeRAID M5115 SAS/SATA family of products are designed as a customer setup. Customer installation instructions are shipped with each option part.

Cable orders

None

Installability

The IBM ServeRAID M5115 SAS/SATA controller requires about 20 minutes for installation.

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

Packaging

ServeRAID M5115 SAS/SATA Controller and M5100 Options

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Product                 Package description             Boxes

ServeRAID M5115            Option Unit Box                1
SAS/SATA Controller
for IBM Flex System

                        Contents:

                        ServeRAID M5115 controller
                        ServeRAID M Documentation CD
                        Important Notices Flyer
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The ServeRAID M5115 Controller is shipped as a single package. Other items are in zipped bags.

ServeRAID M5115 SAS/SATA Controller for IBM Flex System

- ServeRAID M5115 controller
- Warranty Information
- ServeRAID M Documentation CD
- Important Notices Flyer

ServeRAID M5100 Series Enablement Kit for IBM Flex System x240 (90Y4342)

- Air baffle
- 2.5-inch backplane
- PowerModule
- PowerModule cable
- Flex cable
- Important Notices Flyer
- Warranty Information
- ServeRAID M Documentation CD

ServeRAID M5100 Series IBM Flex System Flash Kit for x240 (90Y4341)

- 1.8-inch backplane
- Flex cable
- Drive caddies
- Bezel
- Important Notices Flyer
- Warranty Information
- ServeRAID M Documentation CD

ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240 (90Y4391)

- Two air baffles
- Flex cable
- Important Notices Flyer
- Warranty Information
- ServeRAID M Documentation CD

ServeRAID M5100 Series RAID 6 Upgrade for IBM Flex System (90Y4410)

- M5100 Series upgrade activation key

ServeRAID M5100 Series Performance Upgrade for IBM Flex System x240 (90Y4412)

- M5100 Series upgrade activation key

ServeRAID M5100 Series SSD Caching Enabler for IBM Flex System x240 (90Y4447)

- M5100 Series upgrade activation key

Note: All measurements are approximate.

Supplies

For users: ServeRAID M5115 SAS/SATA family of products can be purchased through dealers around the world.

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 features

Yes

Warranty period

One year.

ServeRAID options offer a one year limited warranty[1].

- Warranty period: 1 yr.
- Service type (IOR/IOE/CCE/CCR): CRU
- Maintenance agreement: No
- Optional upgrade: No

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.

[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.

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	SEO number
ServeRAID M5115 SAS/SATA Controller for IBM Flex System	90Y4390
ServeRAID M5100 Series Enablement Kit for IBM Flex System x240	90Y4342
ServeRAID M5100 Series IBM Flex System Flash Kit for x240	90Y4341
ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240	90Y4391
ServeRAID M5100 Series RAID 6 Upgrade for IBM Flex System	90Y4410
ServeRAID M5100 Series Performance Upgrade for IBM Flex System	90Y4412
ServeRAID M5100 Series SSD Caching Enabler for IBM Flex System	90Y4447

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

Description	Model Number	Feature Number	Initial/ MES/ Both/ Support
ServeRAID M5115 SAS/SATA Controller for IBM Flex System			
	HC1	A2XW	MES
ServeRAID M5100 Series Enablement Kit for IBM Flex System x240			
	HC1	A2XX	MES
ServeRAID M5100 Series IBM Flex System Flash Kit for x240			
	HC1	A2XY	MES
ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240			
	HC1	A2XZ	MES
ServeRAID M5100 Series RAID 6 Upgrade for IBM Flex System			
	HC1	A2Y1	MES
ServeRAID M5100 Series Performance Upgrade for IBM Flex System			
	HC1	A2Y2	MES
ServeRAID M5100 Series SSD Caching Enabler for IBM Flex System			
	HC1	A36G	Initial

The following are newly announced features on the specified models of the IBM xSeries 8737 machine type:

Description	Model Number	Feature Number	Initial/ MES/ Both/ Support
ServeRAID M5100 Series Left Side Air Baffle for IBM Flex System x240			
	AC1	A2Y0	Initial
	MC1		Initial

The following are features already announced for the 8737 machine type:

Description	Model Number	Feature Number	Initial/ MES/ Both/ Support
ServeRAID M5115 SAS/SATA Controller for IBM Flex System			
	AC1	A2XW	Initial
	MC1		Initial
ServeRAID M5100 Series Enablement Kit for IBM Flex System x240			
	AC1	A2XX	Initial
	MC1		Initial
ServeRAID M5100 Series IBM Flex System Flash Kit for x240			
	AC1	A2XY	Initial
	MC1		Initial
ServeRAID M5100 Series SSD Expansion Kit for IBM Flex System x240			
	AC1	A2XZ	Initial
	MC1		Initial
ServeRAID M5100 Series RAID 6 Upgrade for IBM Flex System			
	AC1	A2Y1	Initial
	MC1		Initial
ServeRAID M5100 Series Performance Upgrade for			

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IBM Flex System
                                        AC1     A2Y2            Initial
                                        MC1                     Initial
ServeRAID M5100 Series SSD Caching Enabler for IBM
Flex System
                                        AC1     A36G            Initial
                                        MC1                     Initial
```

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   http://www.ibm.com/legal/us/en/

For the most current information regarding IBM products, consult your IBM representative or reseller, or visit the IBM worldwide contacts page

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

Corrections

(Corrected on May 15, 2012)
Corrected the ServeRAID M5100 Flash kit for x240 feature name listed throughout announcement.