

ServeRAID M1115 SAS/SATA Controller

Product Guide (withdrawn product)

The ServeRAID M1115 SAS/SATA Controller is a low-cost RAID 0/1/10 solution that can be upgraded to a cacheless RAID 5 with a Features-on-Demand license upgrade. The M1115 is a part of the ServeRAID M Series family that 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.

Figure 1 shows the ServeRAID M1115 Controller.



Figure 1. ServeRAID M1115 SAS/SATA Controller

Did you know?

The ServeRAID M1115 SAS/SATA Controller is an entry-level internal data storage solution that provides hardware RAID capabilities and advanced features, such as online capacity expansion and RAID-level migration. The optional RAID 5 upgrade and support for self-encrypting drives no longer require a hardware key, because the upgrade functionality is implemented through Features-on-Demand (FoD) software licenses. With increased demand for performance and advanced features, the M1115 provides a seamless migration path to the full-featured RAID controllers, such as the ServeRAID M5110. The information about existing arrays can be recognized and imported into the new controller without requiring any reconfiguration.

Part number information

Table 1 provides the ordering part numbers and feature codes.

Table 1. Ordering part numbers and feature codes

Description	Part number	Feature code
ServeRAID M1115 SAS/SATA Controller	81Y4448	A1MZ
ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade	81Y4542	A1X1

The ServeRAID M1115 option part number includes the following items:

- One ServeRAID M1115 adapter card
- Full-height (3U) bracket
- Low-profile (2U) bracket
- Documentation package

The ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade option part number includes the following items:

- M1100 Series upgrade authorization key
- Feature Activation Instructions

Features

The ServeRAID M1115 SAS/SATA Controller has the following standard features:

- Auto-resume on array rebuild or array reconstruction after loss of system power
Auto-resume uses non-volatile RAM (NVRAM) to save rebuild progress during a host reboot or power failure to automatically resume from the last checkpoint. Auto-resume ensures that data integrity is maintained through the process. The card supports a number of features that are able to be implemented without rebooting the server. Applications, such as email and web server, benefit from avoiding downtime during transition.
- Online Capacity Expansion
Online Capacity Expansion (OCE) allows the capacity of a virtual disk to be expanded by adding new physical disks or making use of unused space on existing disks, without requiring a reboot.
- Online RAID Level Migration
Online RAID Level Migration (also known as logical drive migration) provides the ability to migrate a virtual disk from any RAID level to any other RAID level without requiring a reboot. System availability and application functionality remain unaffected.
- Fast initialization for quick array setup
Fast initialization quickly writes zeroes to the first and last sectors of the virtual drive. This feature allows you to immediately start writing data to the virtual drive while the initialization is running in the background.
- Consistency check for background data integrity
Consistency check verifies that all stripes in a virtual disk with a redundant RAID level are consistent. The consistency check will mirror data when an inconsistent stripe is detected for a RAID 1 and will recreate the parity from the peer disks in the case of a RAID 5. Consistency checks can be scheduled to take place periodically.
- Extensive online configuration options and advanced monitoring and event notification
Management tools provide convenience for the configuration of logical volumes and alerting when errors have occurred or are about to occur.

- **Patrol read for media scanning and repairing**
Patrol read is a background sentry service designed to proactively discover and correct media defects (bad sectors) that arise normally as a disk drive ages. The service issues a series of verify commands, and if a bad block is discovered, the card's firmware uses RAID algorithms to recreate the missing data and remap the sector to a good sector. The task is interruptible based on controller activity and host operations. The firmware also provides an interface where the patrol read task can be initiated, set up for continuous operation, and terminated from a management application. Patrol read can be activated by manual command or automatically.
- **Global and dedicated Hot Spare with Revertible Hot Spare support**
A hot spare rebuilds data from all virtual disks within the disk group in which it is configured. ServeRAID provides the ability to define a physical disk as a hot spare to replace a failed drive. Hot spares can be configured as either global or dedicated. A global hot spare allows any physical drive to be designated as a hot spare. A dedicated hot spare allows the user to assign a hot spare drive to a particular array of the same drive type.
- **Single controller multipathing (failover) I/O load balancing**
The ServeRAID's firmware detects and uses multiple paths from the controllers to the SAS drives that are in enclosures. With redundant paths to the same port of a device, if one path fails, another path can be used to communicate between the controller and the drive. Using multiple paths with load balancing, instead of a single path, can increase reliability through redundancy.
- **WebBIOS and Human Interface Infrastructure (HII) configuration utilities for pre-boot array configuration and management**
WebBIOS and HII are utilities that allow you to configure drive groups and logical drives before installing or booting the operating system.
- **MegaRAID Storage Manager management software**
MegaRAID Storage Manager is an easy-to-use advanced RAID management application that is used across the entire family of ServeRAID M controllers. It allows you to configure, monitor, and maintain drive groups, virtual drives, and advanced features with an intuitive GUI, reducing administrative efforts and simplifying troubleshooting.

Note: RAID 10 and 50 drive groups do not support Online Capacity Expansion and Online RAID Level Migration. RAID 0, 1, and 5 drive groups do not support Online Capacity Expansion and Online RAID Level Migration if two or more virtual drives are defined on a single drive group.

The following features are optional and require the purchase of an additional upgrade:

- **RAID 5, 50 support with Zero Cache/RAID 5 Upgrade (81Y4542)**
- **MegaRAID SafeStore support for self-encrypting drive (SED) services**
MegaRAID SafeStore encryption services offer instant secure erase and local key management for self-encrypting drives. Instant secure erase permanently removes data when repurposing or decommissioning SEDs. SafeStore local key management provides the necessary management and protection of SEDs using a simple pass phrase, security key identifier, and security key file that can be set and applied to all SEDs assigned to a ServeRAID adapter. This feature removes the complexity of managing each SED's unique encryption key, and essentially, it relieves the administrator of most of the daily tasks of securing data. The SafeStore feature is a part of a RAID 5 upgrade (81Y4542).

Technical specifications

The ServeRAID M1115 SAS/SATA Controller has the following specifications:

- PCI Low Profile, Half-length - MD2 form factor
- Eight internal 6 Gbps SAS/SATA ports
- Two internal Mini-SAS connectors (SFF-8087)
- Up to 6 Gbps throughput per port
- 533 MHz IBM PowerPC® processor with LSI SAS2008 6 Gbps RAID on Chip (ROC) controller
- PCI Express 2.0 x8 host interface
- Support for RAID levels 0, 1, and 10 standard; support for RAID 5, 50 with optional upgrade
- Zero Controller Cache, no battery/flash backup
- Support for SAS and SATA hard disk drives (HDDs) and solid-state drives (SSDs)
- Support for simple swap and hot swap drives
- Support for intermixing SAS and SATA HDDs and SSDs. Mixing different types of drives in the same array (drive group) not recommended
- Connection to up to 32 internal drives, depending on the server model (Up to 16 physical drives, including hot spares, can be used in RAID configurations. The drives beyond the limit of 16 are used as stand-alone HDDs in a non-RAID environment.)
- Optional support for self-encrypting drives (SEDs) with MegaRAID SafeStore
- Support for up to 16 virtual drives, up to 16 drive groups, up to 16 virtual drives per one drive group, and up to 16 physical drives per one drive group
- Support for virtual drive sizes up to 64 TB
- Configurable stripe size up to 64 KB
- Compliant with Disk Data Format (DDF) configuration on disk (COD)
- S.M.A.R.T. support
- MegaRAID Storage Manager management software

Feature upgrade matrix

The ServeRAID M1115 SAS/SATA Controller provides support for RAID 0, 1, and 10 as standard, ready to use or "out-of-the-box" capabilities. An optional feature upgrade is available to expand standard capabilities with RAID 5, 50 and self-encrypting drives. This Feature-on-Demand (FoD) upgrade is a software license. The following table lists the available upgrade and its capabilities.

Table 2. ServeRAID M1115 optional upgrade and its features

		Feature		RAID 5, 50	SED
Option description	Part Number	Type			
ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade	81Y4542	FoD		Yes	Yes

Server support

The ServeRAID M1115 adapter card is supported on the System x, iDataPlex, and NeXtScale servers that are listed in the following table.

No 12 Gb SAS/SATA support: M1115 controller does not support 12 Gb SAS/SATA internal storage expansion options.

Support for System x and dense servers with Xeon E5/E7 v4 and E3 v5 processors

Table 3. Support for System x and dense servers with Xeon E5/E7 v4 and E3 v5 processors

Part number	Description	x3250 M6 (3943)	x3250 M6 (3633)	x3550 M5 (8869)	x3650 M5 (8871)	x3850 X6/x3950 X6 (6241, E7 v4)	nx360 M5 (5465, E5-2600 v4)	sd350 (5493)
81Y4448	ServeRAID M1115 SAS/SATA Controller	N	N	N	N	N	N	N
81Y4542	ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade	N	N	N	N	N	N	N

Support for servers with Intel Xeon v3 processors

Table 4. Support for servers with Intel Xeon v3 processors

Part number	Description	x3100 M5 (5457)	x3250 M5 (5458)	x3500 M5 (5464)	x3550 M5 (5463)	x3650 M5 (5462)	x3850 X6/x3950 X6 (6241, E7 v3)	nx360 M5 (5465)
81Y4448	ServeRAID M1115 SAS/SATA Controller	Y	Y	N	N	N	N	N
81Y4542	ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade	Y	Y	N	N	N	N	N

Support for servers with Intel Xeon v2 processors

Table 5. Support for servers with Intel Xeon v2 processors

Part number	Description	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 (7915, E5-2600 v2)	x3650 M4 BD (5466)	x3650 M4 HD (5460)	x3750 M4 (8752)	x3750 M4 (8753)	x3850 X6/x3950 X6 (3837)	x3850 X6/x3950 X6 (6241, E7 v2)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)
81Y4448	ServeRAID M1115 SAS/SATA Controller	Y	Y	Y	Y	N	Y	N	N	N	N	N	Y	Y
81Y4542	ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade	Y	Y	Y	Y	N	Y	N	N	N	N	N	Y	Y

Support for servers with Intel Xeon v1 processors

Table 6. Support for servers with Intel Xeon v1 processors

Part number	Description	x3100 M4 (2582)	x3250 M4 (2583)	x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3650 M4 (7915, E5-2600)	x3690 X5 (7147)	x3750 M4 (8722)	x3850 X5 (7143)	dx360 M4 (7912, E5-2600)
81Y4448	ServeRAID M1115 SAS/SATA Controller	N	N	Y	Y	Y	Y	Y	N	N	Y	N	Y
81Y4542	ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade	N	N	Y	Y	Y	Y	Y	N	N	Y	N	Y

See the ServerProven website for the latest information about the servers that support the adapter:
<http://www.lenovo.com/us/en/serverproven/xseries/controllers/matrix.shtml>

Drive support

The ServeRAID M1115 SAS/SATA Controller supports the drives that are supported in the servers listed in the following tables. The maximum number of drives that can be connected to the RAID controller is limited by the maximum number of internal drive bays for a supported server.

- Table 6: [1.8-inch SSDs](#)
- Table 7: [2.5-inch hot-swap 6 Gb SAS/SATA HDDs](#)
- Table 8: [2.5-inch hot-swap 6 Gb SAS/SATA SSDs](#)
- Table 9: [3.5-inch hot-swap 6 Gb SAS/SATA HDDs](#)
- Table 10: [3.5-inch hot-swap 6 Gb SAS/SATA SSDs](#)
- Table 11: [3.5-inch simple-swap 6 Gb SAS/SATA HDDs](#)
- Table 12: [2.5-inch internal 6 Gb HDDs for NeXtScale](#)
- Table 13: [3.5-inch internal 6 Gb HDDs for NeXtScale](#)
- Table 14: [2.5-inch internal 6 Gb SSDs for NeXtScale](#)

Table 7. 1.8-inch SSDs

		Intel Xeon						Intel Xeon v2						v3			
Part number	Description	x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3750 M4 (8722)	dx360 M4 (7912, E5-2600)	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 BD (5466)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)	x3100 M5 (5457)	x3250 M5 (5458)
		1.8-inch hot-swap SSDs - 6 Gb SATA - Enterprise Mainstream (3-5 DWPD)															
00AJ335	120GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N
00AJ340	240GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N
00AJ345	480GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N
00AJ350	800GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N
1.8-inch hot-swap SSDs - 6 Gb SATA - Enterprise Entry (<3 DWPD)																	
00AJ050	S3500 400GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N

Table 8. 2.5-inch hot-swap 6 Gb SAS/SATA HDDs

		Intel Xeon						Intel Xeon v2						v3			
Part number	Description	x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3750 M4 (8722)	dx360 M4 (7912, E5-2600)	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 BD (5466)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)	x3100 M5 (5457)	x3250 M5 (5458)
2.5-inch hot-swap HDDs - 6 Gb SAS 10K																	
90Y8877	300GB 10K 6Gbps SAS 2.5" SFF G2HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
90Y8872	600GB 10K 6Gbps SAS 2.5" SFF G2HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
81Y9650	900GB 10K 6Gbps SAS 2.5" SFF HS HDD	Y	Y	Y	Y	N	Y	N	Y	N	Y	N	N	N	N	Y	Y
00AD075	1.2TB 10K 6Gbps SAS 2.5" G2HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	N
00NA441	1.8TB 10K 6Gbps SAS 2.5" G2HS 512e HDD	N	Y	N	Y	N	N	N	Y	N	Y	N	N	N	N	N	Y
2.5-inch hot-swap HDDs - 6 Gb SAS 15K																	
90Y8926	146GB 15K 6Gbps SAS 2.5" SFF G2HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
81Y9670	300GB 15K 6Gbps SAS 2.5" G2HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
00AJ300	600GB 15K 6Gbps SAS 2.5" G2HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	N	Y
2.5-inch hot-swap HDDs - 6 Gb NL SAS																	
90Y8953	500GB 7.2K 6Gbps NL SAS 2.5" SFF G2HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
81Y9690	1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
2.5-inch hot-swap HDDs - 6 Gb NL SATA																	
81Y9726	500GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
81Y9730	1TB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
2.5-inch hot-swap SED HDDs - 6 Gb SAS 10K																	
90Y8913	300GB 10K 6Gbps SAS 2.5" SFF G2HS SED	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	N	N
90Y8908	600GB 10K 6Gbps SAS 2.5" SFF G2HS SED	Y	Y	N	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
81Y9662	900GB 10K 6Gbps SAS 2.5" SFF G2HS SED	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y

Table 9. 2.5-inch hot-swap 6 Gb SAS/SATA SSDs

		Intel Xeon						Intel Xeon v2						v3			
Part number	Description																
		x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3750 M4 (8722)	dx360 M4 (7912, E5-2600)	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 BD (5466)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)	x3100 M5 (5457)	x3250 M5 (5458)
2.5-inch hot-swap SSDs - 6 Gb SAS - Enterprise Performance (10+ DWPD)																	
49Y6129	200GB SAS 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	N
49Y6134	400GB SAS 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	N
49Y6139	800GB SAS 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	N
49Y6195	1.6TB SAS 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	N	Y	N	Y	N	Y	N	N	N	N	N	N
2.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Mainstream (3-5 DWPD)																	
00AJ355	120GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
00AJ360	240GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
00AJ365	480GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
00AJ370	800GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y
2.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Entry (<3 DWPD)																	
00AJ000	S3500 120GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	N
00AJ005	S3500 240GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	N
00AJ010	S3500 480GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	N
00AJ015	S3500 800GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	N
00YC365	120GB Enterprise Entry SATA HS 2.5" SSD	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	Y
00YC370	240GB Enterprise Entry SATA HS 2.5" SSD	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	Y
00YC375	480GB Enterprise Entry SATA HS 2.5" SSD	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	Y
00YC380	960GB Enterprise Entry SATA HS 2.5" SSD	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	Y

Table 10. 3.5-inch hot-swap 6 Gb SAS/SATA HDDs

		Intel Xeon						Intel Xeon v2						v3			
Part number	Description	x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3750 M4 (8722)	dx360 M4 (7912, E5-2600)	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 BD (5466)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)	x3100 M5 (5457)	x3250 M5 (5458)
3.5-inch hot-swap HDDs - 6 Gb SAS 15K																	
49Y6092	300GB 15K 6Gbps SAS 3.5" G2HS HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y
49Y6102	600GB 15K 6Gbps SAS 3.5" G2HS HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y
3.5-inch hot-swap HDDs - 6 Gb NL SAS																	
90Y8567	1TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	N	N
90Y8572	2TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	N	N
49Y6210	4TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	Y	Y	Y	Y	Y	N	N	Y	N	Y	Y	Y	N	N	N	N
00ML213	6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y
3.5-inch hot-swap HDDs - 6 Gb NL SATA																	
81Y9786	500GB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y
81Y9790	1TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y
81Y9794	2TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y
00FN113	2TB 7.2K 6Gbps NL SATA 3.5" G2HS 512e HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y
00FN143	4TB 7.2K 6Gbps NL SATA 3.5" G2HS 512e HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y
00FN173	6TB 7.2K 6Gbps NL SATA 3.5" G2HS 512e HDD	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y

6 Gb SAS/SATA SSDs

Part number	Description	Intel Xeon								Intel Xeon v2							
		x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3750 M4 (8722)	dx360 M4 (7912, E5-2600)	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 BD (5466)	dx360 M4 (E5-2600)	nx360 M4 (5455)	x3100 M5 (5457)	x3250 M5 (5458)
3.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Performance (10+ DWPD)																	
00YC340	Intel S3710 400GB Enterprise Performance SATA HS 3.5" SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y
00YC345	Intel S3710 800GB Enterprise Performance SATA HS 3.5" SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y
3.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Mainstream (3-5 DWPD)																	
00AJ435	120GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	Y	N	N	N	N	N	Y	Y	N	N	N	N
00AJ445	480GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	Y	N	N	N	N	N	Y	Y	N	N	N	N
3.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Entry (<3 DWPD)																	
00WG770	Intel S3510 120GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N
00WG775	Intel S3510 240GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N
00WG780	Intel S3510 480GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N
00YC420	960GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	Y	Y

Table 12. 3.5-inch simple-swap 6 Gb SAS/SATA HDDs

		Intel Xeon						Intel Xeon v2						v3			
Part number	Description	x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3750 M4 (8722)	dx360 M4 (7912, E5-2600)	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 BD (5466)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)	x3100 M5 (5457)	x3250 M5 (5458)
3.5-inch simple-swap HDDs - 6 Gb NL SATA																	
81Y9802	500GB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y
81Y9806	1TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y
81Y9810	2TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y

Table 13. 2.5-inch internal 6 Gb HDDs for NeXtScale

		Intel Xeon							Intel Xeon v2							v3		
Part number	Description																	
		x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3750 M4 (8722)	dx360 M4 (7912, E5-2600)	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 BD (5466)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)	x3100 M5 (5457)	x3250 M5 (5458)	
2.5-inch NeXtScale HDDs - 6 Gb SATA HDDs																		
00AD035	500GB 7.2K 6Gbps SATA 2.5" HDD for NeXtScale System	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N
00AD040	1TB 7.2K 6Gbps SATA 2.5" HDD for NeXtScale System	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N

Table 14. 3.5-inch internal 6 Gb HDDs for NeXtScale

		Intel Xeon							Intel Xeon v2							v3	
Part number	Description																
		x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3750 M4 (8722)	dx360 M4 (7912, E5-2600)	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 BD (5466)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)	x3100 M5 (5457)	x3250 M5 (5458)
3.5-inch NeXtScale HDDs - 6 Gb NL SATA and SATA																	
00FN123	2TB 7.2K 6Gbps NL SATA 3.5" 512e HDD for NextScale System	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N
00FN183	6TB 7.2K 6Gbps NL SATA 3.5" 512e HDD for NextScale System	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N
00AD010	1TB 7.2K 6Gbps SATA 3.5" HDD for NeXtScale System	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N
00AD025	4TB 7.2K 6Gbps SATA 3.5" HDD for NeXtScale System	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N

Table 15. 2.5-inch internal 6 Gb SSDs for NeXtScale

		Intel Xeon							Intel Xeon v2							v3	
Part number	Description	x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3750 M4 (8722)	dx360 M4 (7912, E5-2600)	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 BD (5466)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)	x3100 M5 (5457)	x3250 M5 (5458)
2.5-inch NeXtScale SSDs - 6 Gb SATA - Enterprise Entry (<3 DWPD)																	
00FN020	120GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N

See the ServerProven® website for the latest information about the System x servers that support drives:
<http://ibm.com/servers/eserver/serverproven/compat/us/>

Operating system support

The ServeRAID M1115 SAS/SATA Controller supports the following operating systems:

- Microsoft Windows Server 2008, Datacenter x64 Edition
- Microsoft Windows Server 2008, Datacenter x86 Edition
- Microsoft Windows Server 2008, Enterprise x64 Edition
- Microsoft Windows Server 2008, Enterprise x86 Edition
- Microsoft Windows Server 2008, Standard x64 Edition
- Microsoft Windows Server 2008, Standard x86 Edition
- Microsoft Windows Server 2008, Web x64 Edition
- Microsoft Windows Server 2008, Web x86 Edition
- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2012
- Microsoft Windows Server 2012 R2
- Red Hat Enterprise Linux 5 Server Edition
- Red Hat Enterprise Linux 5 Server with Xen x64 Edition
- Red Hat Enterprise Linux 5 Server x64 Edition
- Red Hat Enterprise Linux 6 Server Edition
- Red Hat Enterprise Linux 6 Server x64 Edition
- SUSE LINUX Enterprise Server 10 for AMD64/EM64T
- SUSE LINUX Enterprise Server 10 for x86
- SUSE LINUX Enterprise Server 11 for AMD64/EM64T
- SUSE LINUX Enterprise Server 11 for x86
- SUSE LINUX Enterprise Server 11 with Xen for AMD64/EM64T
- VMware ESX 4.1
- VMware ESXi 4.1
- VMware vSphere 5.0 (ESXi)
- VMware vSphere 5.1 (ESXi)
- VMware vSphere 5.5 (ESXi)

See the ServerProven® website for the latest information about the specific versions and service levels supported and any other prerequisites:

<http://www.lenovo.com/us/en/serverproven/xseries/controllers/matrix.shtml>

Warranty

The ServeRAID M1115 SAS/SATA Controller carries a 1-year limited warranty. When installed in a supported server, the adapter assumes the system's base warranty and any warranty service upgrade purchased for the system.

Physical specifications

The ServeRAID M1115 SAS/SATA Controller has the following physical specifications:

Dimensions (approximate):

- Height: 15 mm (0.6 in.)
- Width: 69 mm (2.7 in.)
- Depth: 168 mm (6.6 in.)
- Weight: 77 g (0.2 lb.)

Shipping dimensions (approximate):

- Height: 51 mm (2.0 in.)
- Width: 143.0 mm (5.6 in.)
- Depth: 238 mm (9.4 in.)
- Weight: 222 g (0.5 lb.)

Operating environment

The ServeRAID M1115 SAS/SATA Controller is supported in the following environment:

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

Agency approvals

The adapter conforms to the following regulations:

- 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

Related publications and links

For more information, see the following documents:

- US Announcement Letter:
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS112-048>
- System x RAID products home page:
<https://www3.lenovo.com/us/en/data-center/servers/server-options/system-x-options/server-storage/raid-controllers-and-storage-adapters/raid-controllers/c/raid-controllers>
- ServeRAID M1115 User's Guide:
<https://support.lenovo.com/us/en/docs/UM104003>
- ServeRAID M1115 Quick Installation Guide:
<https://support.lenovo.com/us/en/docs/UM104004>

Related product families

Product families related to this document are the following:

- [RAID Adapters](#)

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