



# **Intel<sup>®</sup> Storage Server SSR212MC2**

## ***Tested Hardware and Operating System List (THOL)***

**Revision 2.1**

**March 2009**

**Enterprise Products and Services Division**

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## Revision History

<b>Date</b>	<b>Revision Number</b>	<b>Modifications</b>
April 24, 2007	1.0	Release copy.
May 21, 2007	1.1	Updated to correct versions of FRU/SDR and EM Card FW.
July 18, 2007	1.2	Removed 10 Gb NIC, added InfiniBand Adapter, SATA Boot drives, and JBOD.
October 24, 2007	1.3	Added three RAID cards.
November 29, 2007	1.4	Added seven new Hitachi Hard Disk Drives.
February 14, 2008	1.5	Added Single & Dual port 10 Gb NICs.
July 17, 2008	1.6	Added FW revisions and Intel RMM2.
July 30, 2008	1.65	Corrected product code on title page and EM FW revision.
August 12, 2008	1.7	Added two new 3.5-inch HDDs. Added two new 2.5-inch HDDs.
December 04, 2008	1.8	Added one new 2.5-inch SSD and updated to correct versions of FRU/SDR and EM Card FW.
January 21, 2009	1.9	Corrected one HDD model number on section 6.
February 04, 2009	2.0	Added one new 3.5-inch HDD.
March 17, 2009	2.1	Added notes for supporting Intel® Remote Management Module 2.

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# 1. Introduction

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This document is intended to provide users of the Intel® Storage Server SSR212MC2 with a guide to the different operating systems, adapter cards, and peripherals tested by Intel on this platform.

This document is updated as new adapters, peripherals, and operating systems are tested or until the Intel® Storage Server SSR212MC2 is no longer in production. Each new release of the document presents updated information and continues to provide the information from previous releases.

Intel only provides support for those adapters and peripherals under the specified system configuration (System BIOS and Firmware revisions) and operating systems versions with which they were tested.

## 1.1 Test Overview

Testing performed on the Intel® Storage Server SSR212MC2 is classified as Adapter / Peripheral Compatibility and Stress Testing.



The latest version of the operating system signifies the latest supported version at the time of the actual test run. Each new release of this document may have a newly supported release of a given operating system. Previous releases of a supported operating system may not be tested beyond the basic installation test process.

### 1.1.1 Adapter / Peripheral Compatibility and Stress Testing

Adapter / Peripheral Compatibility and Stress testing is performed only on the most current release of the supported operating systems at the time of a given validation run. The Adapter / Peripheral Compatibility and Stress testing process consists of three areas: Platform, Adapter Compatibility, and Stress.

**Platform:** Each platform will successfully install the operating system, run a disk stress test, and run a network stress test.

**Adapter Compatibility:** Adapter compatibility validation (CV) testing uses test suites to gain an accurate view of how the platform performs with adapters under the operating system. These tests are designed to show hardware compatibility between the cards and the server platform and include functional testing only. No heavy stressing of the systems or the cards is performed for CV testing.

**Stress Testing:** This test sequence uses configurations that include Ethernet add-in adapters in the one available slot or a minimum 24-hour test run without injecting errors. Each configuration passes an installation test and a Network/Disk Stress test. Any fatal errors that occur require a complete test restart.

### 1.1.1.1 Support Commitment for Adapter / Peripheral Compatibility and Stress Testing

Intel commits to provide the following level of customer support for operating systems that receive Adapter / Peripheral Compatibility and Stress testing:

- Intel will provide support for customer issues with the operating system involving installation and/or functionality of the server board with or without the adapters and peripherals listed in this document as having been tested under the particular operating system.
- Support is defined as assistance in root causing issues, and determining a customer acceptable resolution to the issue associated with the operating system. The resolution may include, but is not limited to, on-board controller driver changes, engaging the vendor for resolution, BIOS changes, firmware changes, or determining a customer acceptable workaround for the issue.
- Intel will go through some of the steps to achieve certification to ensure its customers do not run across any problems, but the actual certification is the responsibility of the individual customer.



For operating systems, adapter cards, and peripherals not listed in this document, there is no support commitment. Intel will consider support requests on a case-by-case basis.

## 1.2 Pass/Fail Test Criteria

For each operating system, adapter, and peripheral configuration, a test passes if specific criteria are met. Specific configurations may have had particular characteristics that were addressed on a case-by-case basis. In general, a configuration passes testing if the following conditions are met:

- The operating system installed without error.
- Manufacturer's installation instructions or Intel's best-known methods were used for the operating system installation.
- No extraordinary workarounds were required during the operating system installation.
- The Intel® Storage Server SSR212MC2 behaved as expected during and after the operating system installation.
- Application software installed and executed normally.
- Hardware compatibility tests ran to completion without error.
- Test software suites executed successfully.
- Test and data files were created in the correct directories without error.
- Files copied from client to server and back compare to the original with zero errors reported.
- Clients remain connected to the server system.
- Industry standard test suites run to completion with zero errors reported.

All Intel® Storage Server SSR212MC2 testing was performed using its 2U rail mount chassis.

## Intel® Storage Server SSR212MC2 System Configuration 1

The following table lists the base system configuration tested. Each base system configuration is assigned an identifier number referenced in the tables throughout this document. New base system configurations are added with each new release of this document.



Intel will only provide support for adapters and peripherals under the specified system configuration and operating system versions with which they were tested.

Product Codes	S5000PSL BIOS Revision	S5000PSL BMC Firmware Revision	S5000PSL FRU/SDR	EM Card Firmware	SRCSAS144E Firmware Revision (SSR212MC2RBR only)
SSR212MC2 SSR212MC2R	74	0.58	XYSL42	1.0.0-30	1.03.00-0211
SSR212MC2BR SSR212MC2RBR	82	0.61	XYSL45	1.0.0-45	1.03.00-0211
SSR212MC2BR SSR212MC2RBR	82	0.61	XYSL45	1.0.3-55	1.12.00-0310
SSR212MC2BR SSR212MC2RBR	88	0.63	XYSL46	1.0.4-60	1.12.00-0394
SSR212MC2BR SSR212MC2RBR	94	0.64	XYSL46	1.0.4-60	1.12.170-0471

## 2. Supported Operating Systems

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The following table provides a list of supported operating systems compatible with the Intel® Storage Server SSR212MC2. Each of the listed operating systems was tested for compatibility with the Intel® Storage Server SSR212MC2 system configuration listed in Section 1 of this document.

Identifier number	Operating System	Base System Configuration Tested & Type of Testing
1	Microsoft Windows* Server 2003 Enterprise Edition, R2.	Configuration 1 – Compatibility & Stress
2	Microsoft Windows* Server 2003 Enterprise Edition, R2 EM64T.	Configuration 1 – Compatibility & Stress
3	Microsoft Windows* Storage Server 2003, R2.	Configuration 1 – Compatibility & Stress
4	Microsoft Windows* Storage Server 2003, R2 EM64T.	Configuration 1 – Compatibility & Stress
5	Microsoft Windows* Unified Data Storage Server	Configuration 1 – Compatibility & Stress
6	Red Hat Enterprise Linux* AS 4, Update 4.	Configuration 1 – Compatibility & Stress
7	Red Hat Enterprise Linux* AS 4, Update 4 EM64T.	Configuration 1 – Compatibility & Stress
8	SuSE* Linux Enterprise Server 10.0.	Configuration 1 – Compatibility & Stress
9	SuSE* Linux Enterprise Server 10.0 64-bit	Configuration 1 – Compatibility & Stress



### **3. Supported Software Applications**

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Several 3<sup>rd</sup> party independent software vendors (ISV's) have performed their own software application validation. For product information and support, please contact the ISVs directly. You can find the current list of ISVs on <http://support.intel.com>.

## 4. Supported Client Systems

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The following table provides a list of supported client systems\* compatible with the Intel® Storage Server SSR212MC2

\* Based on the Intel server board or system listed below.

Manuf	Model	Notes
Intel	S5000PAL (Alcolu)	
Intel	SE7520JR2 (Jarrell)	
Intel	SE7320VP2 (Volcano Peak)	
Intel	SE7501WV2 (Westville)	

## 5. Adapters and Peripherals

Add-in adapter card and peripheral compatibility and stress testing are only performed with operating systems as indicated in Chapter 2 of this document.

Manufacturer	Model Name	Model Number	Interface	Comments	Notes/ Operating System
<b>5.1 SAS RAID Host Bus Adapter</b>					
Intel	Intel® RAID Controller	SRCSAS144E	PCI Express* 8x	4 internal ports, 4 external.	SSR212MC-R SKU / Operating Systems 1-9
Intel	Intel® RAID Controller	SRCSASJV	PCI Express* 8x	8 internal ports , 8 external, or 4 each.	SSR212MC SKU / cable FMCSASCBL is required / Operating System 6
Intel	Intel® RAID Controller	SRCSASRB	PCI Express* 4x	8 internal ports.	SSR212MC SKU / cable FMCSASCBL is required / Operating System 1, 6
Adaptec	RAID	3405	PCI Express* 4x	4 internal ports. Storview® Enclosure Management GUI Software is not compatible with this RAID card.	SSR212MC SKU / cable FMCSASCBL is required / Operating System 6
<b>5.2 Fibre Channel Host Bus Adapter</b>					
Emulex		LPe11002	PCI-e x8	4 Gb, Dual port	Initiator Mode only / 1, 6
<b>5.3 Infiniband Host Bus Adapter</b>					
Mellanox	InfiniHost III Lx	MHGS18-XTC	PCI-e x8	20 Gb, single port	SRP Initiator Mode only / 6

<b>5.4 PCI NIC</b>					
Intel	Intel® 10 GB XF SR Server Adapter	EXPX9502AFXSR	PCI Express* 8x	10 Gb, Dual port, fiber	1
Intel	Intel® 10 GB XF SR Server Adapter	EXPX9501AFXSR	PCI Express* 8x	10 Gb, Single port, fiber	SD
Intel	Intel® PRO/1000 PT Quad Port Low Profile Server Adapter	EXPI9404PT	PCI Express* 4x	1 Gb, Quad port, copper	1, 6
Intel	Intel® PRO/1000 PT Dual Port Server Adapter	EXPI9402PT	PCI Express* 4x	1 Gb, Dual port, copper	1, 6
Intel	Intel® PRO/1000 PT Single Port Server Adapter	EXPI9400PT	PCI Express* 1x	1 Gb, Single port, copper	1, 6
<b>5.5 Disk On Module (DOM)</b>					
PQI	Standard DOM	DJ0010G44RK0	ATA	1 GB	6
PQI	High Speed DOM	DJ0010G22RN0	ATA	1 GB	6
PQI	Turbo DOM	DJ0010G88RN0	ATA	1 GB	6
PQI	SATA DOM	DV0010G86RN0	SATA	1 GB	6
PQI	USB DOM	DM0010G80RN0	USB	1 GB	6
<b>5.6 USB CD/DVD Drives</b>					
TEAC	External CD-ROM	CDWE552	USB 2.0		1-9
Plextor	External USB CD-RW/DVD-RW drive	PX-740UF	USB 2.0		1-9
<b>5.7 USB Floppy Drives</b>					
Sony		PCGA-UFD5	USB 2.0	External 3.5-inch Floppy drive	1-9
TEAC		FD-05PUW	USB 2.0	External 3.5-inch Floppy drive	1-9
<b>5.8 USB Flash Drive (Key)</b>					
Lexar		JD1GB-80-501	USB 2.0	1 GB USB Flash Drive	1-9

Lexar		JDSP512-04-500E	USB 2.0	512 MB USB Flash Drive	1-9
<b>5.9 USB Hub</b>					
Belkin	Hub	F5U234	USB 2.0	4 port	1-9
IoGear	Hub	GUH274	USB 2.0	4 port	1-9
Dlink	Hub	DUB-H7	USB 2.0	7 port	1-9
<b>5.10 Keyboard</b>					
Dell QuietKey	Keyboard	SK-1000REW	PS/2		1-9
Keytronic	PRO Pilot Keyboard	E03601QUSASI-C	PS/2		1-9
Belkin	USB Keyboard	F8E206_USB	USB/PS/2		1-9
<b>5.11 Mouse</b>					
LabTec Optical	Optical Mouse	851980-0000	PS/2 & USB		1-9
Logitech	Optical Mouse	831520-0000	PS/2 & USB		1-9
Microsoft	Intellimouse Optical	X800898-102	PS/2 & USB		1-9
<b>5.12 Keyboard, Video and Mouse (KVM) Switch</b>					
Apex		Outlook 180DX	PS/2		1-9
AutoView		AutoView 2020	PS/2		1-9
<b>5.13 Remote Management Module</b>					
Intel	Intel® Remote Management Module 2	Intel® RMM2	10/100 Out of Band (OOB) Management LAN channel		1,6 <sup>a</sup>

**Notes:**

<sup>a</sup> When using the RMM2 remote control function on the Intel® Storage Server SSR212MC2, you should disable the IPMI polling, which prevents sensor data and SEL log display using RMM2. RMM2 supports disabling the IPMI polling feature with firmware build 6717, v4.2.2 or later. For the latest RMM2 firmware, go to <http://support.intel.com>. To turn off IPMI polling, refer to the firmware release notes to set the SDR and SEL cache polling interval to 0 in the RMM2 web console.

## 6. Hard Disk Drives

The hard drives listed in the following table were tested with the Intel® Storage Server SSR212MC2 by Intel in its validation labs and/or by individual drive vendors. The following operating system identifiers are used in the table to specify which operating system each drive was tested under.

Identifier number	Operating System
1	Microsoft Windows* Server 2003 Enterprise Edition, R2.
2	Microsoft Windows* Server 2003 Enterprise Edition, R2 EM64T.
3	Microsoft Windows* Storage Server 2003, R2.
4	Microsoft Windows* Storage Server 2003, R2 EM64T.
5	Microsoft Windows* Unified Data Storage Server
6	Red Hat Enterprise Linux* AS 4, Update 4.
7	Red Hat Enterprise Linux* AS 4, Update 4 EM64T.
8	SuSE* Linux Enterprise Server 10.0.
9	SuSE* Linux Enterprise Server 10.0 64-bit

Note that not all hard drives were tested under all operating systems. The following notation is used in the tested hard drives table below to indicate the support level that Intel provides for a particular hard drive with a particular operating system:

Number (for example, 1)	This hard drive was tested and is supported under the operating system identified by the operating system identification number.
SD (Similar Drive)	The hard disk drive is supported but not tested. This hard drive model/capacity was not tested with the Intel® Storage Server SSR212MC2, but Intel will support it based on successful testing of a larger capacity hard drive from the same hard drive family. Intel has high confidence that this hard drive will function correctly with the server board. This drive uses the exact same firmware and drivers as a larger capacity hard drive that was successfully tested with this server board. The only difference between this drive and the one that was used in testing is the storage capacity. Intel provides the same level of support for all hard drives listed in this document, regardless of whether the drive was tested or not. Customers should always test hard drives as part of the final system configuration prior to deployment. Given the fact that a larger capacity hard drive from the same drive family has successfully completed testing on the Intel® Storage Server SSR212MC2, this particular hard drive capacity point will not be tested.
IHVT (IHV Tested)	The hard disk drive was tested according to Intel-approved guidelines and test procedures by the Independent Hardware Vendor (IHV) that manufactured the drive. Intel provides the same level of support for all hard drives listed in this document, regardless of whether the drive was tested in an Intel lab or not. IHV test reports remain the property of the IHV (Intel cannot provide copies of these reports).

Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Notes/OS Tested
<b>3.5" Serial Attached SCSI (SAS) Hard Drives (Data)</b>						
Fujitsu	N/A	MAX3147RC	SAS-3.0 Gb	15 K	147	Does not show drive info in Storview / 1-9
Fujitsu	N/A	MAX3073RC	SAS-3.0 Gb	15 K	73	SD
Fujitsu	N/A	MAX3036RC	SAS-3.0 Gb	15 K	36	SD
Hitachi	UltraStar 15K450	HUS154545VLS300	SAS-3.0 Gb	15 K	450	1-9, IHVT
Hitachi	UltraStar 15K450	HUS154530VLS300	SAS-3.0 Gb	15 K	300	1-9, IHVT
Hitachi	UltraStar 15K300	HUS153030VLS300	SAS-3.0 Gb	15 K	300	1-9, IHVT
Hitachi	UltraStar 15K300	HUS153014VLS300	SAS-3.0 Gb	15 K	147	1-9, IHVT
Hitachi	UltraStar 15K300	HUS153073VLS300	SAS-3.0 Gb	15 K	73	SD, IHVT
Hitachi	UltraStar 15k	HUS151414VLS30	SAS-3.0 Gb	15 K	147	1-9
Hitachi	UltraStar 15k	HUS151473VLS30	SAS-3.0 Gb	15 K	73	SD
Hitachi	UltraStar 15k	HUS151436VLS30	SAS-3.0 Gb	15 K	36	SD
Seagate	Cheetah 15K.5	ST3300655SS	SAS-3.0 Gb	15 K	300	1-9
Seagate	Cheetah 15K.5	ST3146855SS	SAS-3.0 Gb	15 K	147	SD
Seagate	Cheetah 15K.5	ST373455SS	SAS-3.0 Gb	15 K	73	SD
<b>3.5" Serial ATA (SATA, 3.0 Gb/s) Hard Drives (Data)</b>						
Hitachi	UltraStar A7K1000	HUA721010KLA330	SATA-3.0 Gb	7200	1000	1-9, IHVT
Hitachi	UltraStar A7K1000	HUA721075KLA330	SATA-3.0 Gb	7200	750	1-9, IHVT
Hitachi	UltraStar A7K1000	HUA721050KLA330	SATA-3.0 Gb	7200	500	SD, IHVT
Hitachi	DeskStar E7K1000	HDE721010SLA330	SATA-3.0 Gb	7200	1000	SD, IHVT
Hitachi	DeskStar E7K500	HDS725050KLA360	SATA-3.0 Gb	7200	500	1-9, IHVT
Hitachi	DeskStar 7K500	HDS725050KLA360	SATA-3.0 Gb	7200	500	1-9
Seagate	Barracuda	ST3750640NS	SATA-3.0 Gb	7200	750	1-9
Seagate	Barracuda	ST3500630NS	SATA-3.0 Gb	7200	500	SD
Seagate	Barracuda	ST3400630NS	SATA-3.0 Gb	7200	400	SD
Seagate	Barracuda	ST3250610NS	SATA-3.0 Gb	7200	250	SD
Western Digital	WD RE2	WD5000YS	SATA-3.0 Gb	7200	500	1-9
Western Digital	WD RE	WD3200YS	SATA-3.0 Gb	7200	320	1-9
Western Digital	WD RE	WD2500YS	SATA-3.0 Gb	7200	250	SD

**Hard Disk Drives****Intel® Storage Server SSR212MC2**

<b>Manufacturer</b>	<b>Product Family</b>	<b>Model Number</b>	<b>Interface</b>	<b>RPM</b>	<b>Drive size (GB)</b>	<b>Notes/OS Tested</b>
Western Digital	WD RE	WD1600YS	SATA-3.0 Gb	7200	160	SD



Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Notes/OS Tested
<b>2.5" Serial Attached SCSI (SAS) Hard Drives (Boot)</b>						
Hitachi	UltraStar 10K147	HUC101414CSS300	SAS-3.0 Gb	10K	147	1-9, IHVT
Hitachi	UltraStar 10K147	HUC101473CSS300	SAS-3.0 Gb	10K	73	1-9, IHVT
Seagate	Savvio 10K.2	ST9146802SS	SAS-3.0 Gb	10K	146	1-9
Seagate	Savvio 10K.2	ST973402SS	SAS-3.0 Gb	10K	73	1-9
Seagate	Savvio 10K.1	ST973401SS	SAS-3.0 Gb	10K	73	1-9
Seagate	Savvio 10K.1	ST936701SS	SAS-3.0 Gb	10K	36	SD
Fujitsu	N/A	MAV2073RC	SAS-3.0 Gb	10K	73	1-9
Fujitsu	N/A	MAV2036RC	SAS-3.0 Gb	10K	36	SD
<b>2.5" Serial ATA (SATA, 1.5 Gb/s) Hard Drives (Boot)</b>						
Fujitsu	N/A	MHW2160BH	SATA-1.5 Gb	7200	160	1-9
Hitachi	TravelStar E7K100	HTE721010G9SA00	SATA-1.5 Gb	7200	100	1-9
Seagate	Momentum 7200.1	ST910021AS	SATA-1.5 Gb	7200	100	1-9
<b>2.5" Solid-State Drive (SSD, 3Gb/s) (Boot)</b>						
Intel	X25-E Extreme SATA	SSDSA2SE032G1	SATA-3.0 Gb	NA	32	SD, a

**Notes:**

a. A Solid-state drive (SSD) is only recommended as an operating system boot drive.

## 7. External JBODs

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The external expansion JBODs listed in the following table were tested with the Intel® Storage Server SSR212MC2 by Intel in its validation labs.

Manufacturer	Model Name	Type	Notes
Xyratex	RS-1603-E3-EBD-1	3U, 16 SAS drive, single controller.	1, 2
Xyratex	RS-1603-E3-EBD-2	3U, 16 SAS drive, dual controller.	1, 2
Promise	VTrak J300S	2U, 12 SAS/SATA drives.	1, 2, 3

Notes:

- 1) For a list of supported hard drives and accessories, contact the JBOD manufacturer.
- 2) JBODs are only tested with the Intel® Storage Server SSR212MC2R SKU (with the Intel® SRCAS144E RAID Controller).
- 3) Storview\* enclosure management software functionality and features are NOT supported by this device.