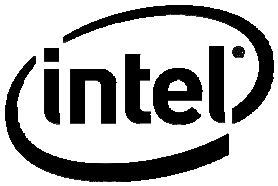

Intel® Storage Server SSR212MC2

Tested Hardware and Operating System List (THOL)

Revision 1.7

Enterprise Products and Services Division

Revision History

Date	Revision Number	Modifications
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 10Gb NIC, added InfiniBand Adapter, added SATA Boot drives, added JBOD.
October 24, 2007	1.3	Added three RAID cards.
November 29, 2007	1.4	Added 7 new Hitachi Hard Disk Drives.
February 14, 2008	1.5	Added Single & Dual port 10Gb NIC's.
July 17, 2008	1.6	Added FW revisions, added Intel RMM2.
July 30, 2008	1.65	Corrected product code on title page, corrected EM FW revision.
August 12, 2008	1.7	Added two new 3.5" HDD's. Added two new 2.5" HDD's (indicated in **BOLD**).

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Table of Contents

1. Introduction

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 will continue to be 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 will present updated information as well as continue to provide the information from previous releases.

Intel will only provide 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, successfully run a disk stress test, and successfully 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, a Network/Disk Stress test. Any fatal errors that occur will 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 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 it's 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 that is 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

2. Supported Operating Systems

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 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

Several 3rd party independent software vendors (ISV's) have performed their own software application validation. Please contact the ISV's directly for product information and support. The current list of ISV's can be found on support.intel.com

4. Supported Client Systems

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 will only be performed with operating systems as indicated Chapter 2 of this document.

Manufacturer	Model Name	Model Number	Interface	Comments	NOTES/ OS
5.1 SAS RAID Host Bus Adapter					
Intel	Intel® RAID Controller	SRCSAS144E	PCI-Ex 8x	4 internal ports, 4 external.	SSR212MC-R SKU / OS's 1-9
Intel	Intel® RAID Controller	SRCSASJV	PCI-Ex 8x	8 internal ports , 8 external, or 4 each.	SSR212MC SKU / cable FMCSASCBL is required / OS 6
Intel	Intel® RAID Controller	SRCSASRB	PCI-Ex 4x	8 internal ports.	SSR212MC SKU / cable FMCSASCBL is required / OS 1, 6
Adaptec	RAID	3405	PCI-Ex 4x	4 internal ports. Storview® Enclosure Management GUI Software is not compatible with this RAID card.	SSR212MC SKU / cable FMCSASCBL is required / OS 6
5.2 Fibre Channel Host Bus Adapter					
Emulex		LPe11002	PCI-e x8	4 Gb, Dual port	Initiator Mode only / 1, 6
5.3 Infiniband Host Bus Adapter					
Mellanox	InfiniHost III Lx	MHGS18-XTC	PCI-e x8	20 Gb, single port	SRP Initiator Mode only / 6
5.4 PCI NIC					
Intel	Intel® 10 GB XF SR Server Adapter	EXPX9502AFXSR	PCI-e 8x	10 Gb, Dual port, fiber	1

Intel	Intel® 10 GB XF SR Server Adapter	EXPX9501AFXSR	PCI-e 8x	10 Gb, Single port, fiber	SD
Intel	Intel PRO/1000 PT Quad Port Low Profile Server Adapter	EXPI9404PT	PCI-e 4x	1 Gb, Quad port, copper	1, 6
Intel	Intel PRO/1000 PT Dual Port Server Adapter	EXPI9402PT	PCI-e 4x	1 Gb, Dual port, copper	1, 6
Intel	Intel PRO/1000 PT Single Port Server Adapter	EXPI9400PT	PCI-e 1x	1 Gb, Single port, copper	1, 6
5.5 Disk On Module (DOM)					
PQI	Standard DOM	DJ0010G44RK0	ATA	1GB	6
PQI	High Speed DOM	DJ0010G22RN0	ATA	1GB	6
PQI	Turbo DOM	DJ0010G88RN0	ATA	1GB	6
PQI	SATA DOM	DV0010G86RN0	SATA	1GB	6
PQI	USB DOM	DM0010G80RN0	USB	1GB	6
5.6 USB CD/DVD Drives					
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
5.7 USB Floppy Drives					
Sony		PCGA-UFD5	USB 2.0	External 3 ½" Floppy drive	1-9
TEAC		FD-05PUW	USB 2.0	External 3 ½" Floppy drive	1-9
5.8 USB Flash Drive (Key)					
Lexar		JD1GB-80-501	USB 2.0	1GB USB Flash Drive	1-9
Lexar		JDSP512-04-500E	USB 2.0	512 MB USB Flash Drive	1-9

5.9 USB Hub

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

5.10 Keyboard

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/PS2		1-9

5.11 Mouse

LabTec Optical	Optical Mouse	851980-0000	PS/2 & USB		1-9
Logictech	Optical Mouse	831520-0000	PS/2 & USB		1-9
Microsoft	Intellimouse Optical	X800898-102	PS/2 & USB		1-9

5.12 Keyboard, Video and Mouse (KVM) Switch

Apex		Outlook 180DX	PS/2		1-9
AutoView		AutoView 2020	PS/2		1-9

5.13 Remote Management Module

Intel	Intel® Remote Management Module 2	Intel® RMM2	10/100 Out of Band (OOB) Management LAN channel		1,6

6. Hard Disk Drives

The hard drives listed in the following table have been 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 OS 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 (i.e. 1)	This hard drive has been 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 has not been tested with the 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 has been 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 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)	Tested firmware revision	Notes/OS Tested
3.5" Serial Attached SCSI (SAS) Hard Drives (Data)							a
Fujitsu	N/A	MAX3147RC	SAS-3.0 Gb	15K	147	A104	Does not show drive info in Storview / 1-9
Fujitsu	N/A	MAX3073RC	SAS-3.0 Gb	15K	73		SD
Fujitsu	N/A	MAX3036RC	SAS-3.0 Gb	15K	36		SD
Hitachi	**UltraStar 15K450**	**HUS154545VLS300**	**SAS-3.0 Gb**	**15K**	**450**	**520**	**1-9, IHVT**
Hitachi	**UltraStar 15K450**	**HUS154530VLS300**	**SAS-3.0 Gb**	**15K**	**300**	**520**	**1-9, IHVT**
Hitachi	UltraStar 15K300	HUS153030VLS300	SAS-3.0 Gb	15K	300	A210	1-9, IHVT
Hitachi	UltraStar 15K300	HUS153014VLS300	SAS-3.0 Gb	15K	147	A210	1-9, IHVT
Hitachi	UltraStar 15K300	HUS153073VLS300	SAS-3.0 Gb	15K	73	A210	SD, IHVT
Hitachi	UltraStar 15k	HUS151414VLS30	SAS-3.0 Gb	15K	147	A420	1-9
Hitachi	UltraStar 15k	HUS151473VLS30	SAS-3.0 Gb	15K	73		SD
Hitachi	UltraStar 15k	HUS151436VLS30	SAS-3.0 Gb	15K	36		SD
Seagate	Cheetah 15K.5	ST3300655SS	SAS-3.0 Gb	15K	300	0001	1-9
Seagate	Cheetah 15K.5	ST3146855SS	SAS-3.0 Gb	15K	147		SD
Seagate	Cheetah 15K.5	ST373455SS	SAS-3.0 Gb	15K	73		SD
3.5" Serial ATA (SATA, 3.0 Gb/s) Hard Drives (Data)							a
Hitachi	UltraStar A7K1000	HUA721010KLA330	SATA-3.0 Gb	7200	1000	70M	1-9, IHVT
Hitachi	UltraStar A7K1000	HUA721075KLA330	SATA-3.0 Gb	7200	750	70M	1-9, IHVT
Hitachi	UltraStar A7K1000	HUA721050KLA330	SATA-3.0 Gb	7200	500	70M	SD, IHVT
Hitachi	DeskStar E7K500	HDS725050KLA360	SATA-3.0 Gb	7200	500	D1A	1-9, IHVT
Hitachi	DeskStar 7K500	HDS725050KLA360	SATA-3.0 Gb	7200	500	K2ACCD1A	1-9
Seagate	Barracuda	ST3750640NS	SATA-3.0 Gb	7200	750	3.AEE	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	07.0	1-9
Western Digital	WD RE	WD3200YS	SATA-3.0 Gb	7200	320	21.00M21	1-9
Western Digital	WD RE	WD2500YS	SATA-3.0 Gb	7200	250		SD
Western Digital	WD RE	WD1600YS	SATA-3.0 Gb	7200	160		SD

NOTES:

a. Requires specific Hard Disk Drive Firmware revision listed in table, or later.

Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Tested firmware revision	Notes/OS Tested
2.5" Serial Attached SCSI (SAS) Hard Drives (Boot)							a
Hitachi	**UltraStar 10K147**	**HUC101414CSS300**	**SAS-3.0 Gb**	**10K**	**147**	**520**	**1-9, IHVT**
Hitachi	**UltraStar 10K147**	**HUC101473CSS300**	**SAS-3.0 Gb**	**10K**	**73**	**520**	**1-9, IHVT**
Seagate	Savvio 10K.2	ST9145802SS	SAS-3.0 Gb	10K	146	0002	1-9
Seagate	Savvio 10K.2	ST973402SS	SAS-3.0 Gb	10K	73	F901	1-9
Seagate	Savvio 10K.1	ST973401SS	SAS-3.0 Gb	10K	73	0003	1-9
Seagate	Savvio 10K.1	ST936701SS	SAS-3.0 Gb	10K	36		SD
Fujitsu	N/A	MAV2073RC	SAS-3.0 Gb	10K	73	0103	1-9
Fujitsu	N/A	MAV2036RC	SAS-3.0 Gb	10K	36		SD
2.5" Serial ATA (SATA, 1.5 Gb/s) Hard Drives (Boot)							a
Fujitsu	N/A	MHW2160BH	SATA-1.5 Gb	7200	160	001C	1-9
Hitachi	TravelStar E7K100	HTE721010G9SA00	SATA-1.5 Gb	7200	100	0002	1-9
Seagate	Momentus 7200.1	ST910021AS	SATA-1.5 Gb	7200	100	3.04	1-9

NOTES:

a. Requires specific Hard Disk Drive Firmware revision listed in table, or later.

7. External JBOD's

The external expansion JBOD's listed in the following table have been 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) Contact JBOD manufacturer for a list of supported hard drives and accessories.
2) JBOD's are only tested with the SSR212MC2R SKU (with Intel® SRCSAS144E RAID Controller).
3) Storview* enclosure management software functionality and features are NOT supported by this device.