Intel® Storage System SSR212MA

Tested Hardware and Operating System List (THOL)

Revision 1.9

February, 2007

Storage Group Technical Marketing

Revision History

Date	Revision Number	Modifications
July, 2005	0.1	Initial Draft
September, 2005	0.75	Review copy.
November, 2005	0.95	Preliminary copy.
December, 2005	1.0	Release copy.
January, 2006	1.1	Corrected Adaptec* HBA model number.
January 26, 2006	1.2	Updated Hitachi FW version requirement.
February 6, 2006	1.3	Added supported version of iSCSI initiator, updated supported versions of SAN SW, FRU/SDR and Client Console.
March 1, 2006	1.4	Added HDD FW revisions supported, removed Maxtor 500GB HDD, added iSCSI initiator versions, added RedHat client OS version.
April 11, 2006	1.5	Removed Western Digital Hard Disk Drives.
May 22, 2006	1.6	Removed Intel® PRO/1000MT Quad Port Gigabit Server Adapter.
June 22, 2006	1.7	Added five new Hard Disk Drives. Added Dell Network Switch.
December, 2006	1.8	Added 2 new tested HDDs, 4 Similar HDDs, and SAN software 6.5 upgrade.
February, 2007	1.9	Added 2 new tested HDDs, 2 Similar HDDs, and SAN software 6.6 upgrade.

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Table of Contents

1. Introduction

This document is intended to provide users of the Intel® Storage System SSR212MA with a guide to the different client operating systems, adapter cards, and peripherals tested by Intel on this platform.

This document will continue to be updated as new adapters, peripherals, and client operating systems are tested or until the Intel® Storage System SSR212MA 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 client operating systems versions with which they were tested.

1.1 Test Overview

Testing performed on the Intel® Storage System SSR212MA is classified as Adapter / Peripheral Compatibility and Stress Testing.

The latest version of the embedded 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 embedded operating system 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 embedded 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 embedded 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 client operating systems that receive Adapter / Peripheral Compatibility and Stress testing:

- Intel will provide support for customer issues with the embedded 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 embedded operating system.
- Support is defined as assistance in root causing issues, and determining a customer acceptable resolution to the issue associated with the client 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 embedded operating systems, client 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 client 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 embedded SAN 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 SSR212MA 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 System SSR212MA testing was performed using it's 2U rail mount chassis.

Intel® Storage System SSR212MA System Configuration

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.

SE7501JR2 BIOS Revision	SE7501JR2 BMC/IMM Firmware Revision	SE7501JR2 mBMC Firmware Revision	SE7501JR2 FRU/SDR	Backplane Firmware	SRCS28X Firmware Revision	SAN Software
7.40	0.48	2.40	0.0.6	2.00	814G	6.3.41.2612 6.3.43.2607 (SP1) 6.5.00.2634 6.6.00.2699

Windows* Storage System Console (Client)	Linux* Storage System Console (Client)	Windows* iSCSI initiator (Client)	Linux* iSCSI initiator (Client)
6.3.41.0005 6.3.41.0009 6.3.42.2605 6.5.00.0034 6.6.00.0099	6.3.41.0005 6.3.41.0009 6.3.42.2605 6.5.00.0034 6.6.00.0099	2.01 2.02	RHEL: Open Source 3.6.1, 3.6.2, 3.6.3, 3.6.4, 4.0.1.11(2.6 kernel) SuSE: Open Source 1.0-604(2.6 kernel)

2. Supported Client Operating Systems

The following table provides a list of supported client operating systems compatible with the Intel® Storage System SSR212MA. Each of the listed client operating systems was tested for compatibility with Intel® Storage System SSR212MA system configuration listed in Section 2 of this document. Client operating systems are supported only with the specified client system with which they were tested.

Operating System	Base System Configuration Tested & Type of Testing	Notes
Microsoft* Windows* Server 2003 Enterprise Edition, SP1.	Configuration 1 – Compatibility & Stress	iSCSI drivers in IP(ethernet) networked configurations (direct connect & switched).
Microsoft Windows 2000 Server, Service Pack 4.	Configuration 1 – Compatibility & Stress	iSCSI drivers in IP(ethernet) networked configurations (direct connect & switched).
Red Hat* Enterprise Linux* AS 3.0, update 3, update 6.	Configuration 1 – Compatibility & Stress	iSCSI drivers in IP(ethernet) networked configurations (direct connect & switched).
Red Hat* Enterprise Linux* AS 4.0, update 2.	Configuration 1 – Compatibility & Stress	iSCSI drivers in IP(ethernet) networked configurations (direct connect & switched).
SuSe* Enterprise Server 9.0.	Configuration 1 – Compatibility & Stress	iSCSI drivers in IP(ethernet) networked configurations (direct connect & switched).
VMWare ESX 3.0	Configuration 1 – Compatibility & Stress	iSCSI drivers in IP(ethernet) networked configurations (direct connect & switched).

3. Supported Client Systems

The following table provides a list of supported client systems* compatible with the Intel® Storage System SSR212MA

* based on the Intel server board listed below.

Manufacturer	Model	Notes
Intel	SE7501HG2	
Intel	SE7210TP1-E	
Intel	SE7505VB2	
Intel	SE7501WV2	
Intel	SE7221BK1-E	2
Intel	SE7525GP2	
Intel	SE7520JR2	1
Intel	SE7320SP2	
Intel	SE7320VP2	
Intel	S5000PAL	

NOTE:

1) **Tested with and without Qlogic* 4010C TCP/IP Off load Engine (TOE) add-in card.**
2) **Tested with and without Adaptec* 7211C TCP/IP Off load Engine (TOE) add-in card.**

3) Adapters and Peripherals

Add-in adapter card and peripheral compatibility and stress testing will only be performed with the shipping version of the SAN operating system, as indicated Chapter 2 of this document.

Manufacturer	Model Name	Model Number	Interface	Comments	
3.1 PCI SATA HBA					
Intel	Intel RAID Controller	SRCS28X	PCI-X133	Pre-installed in SSR212MA PCI slots 2 & 3.	
3.2 PCI NIC					
Intel	PRO/1000MT Single Port Gigabit Server Adapter	PWLA8490MT	PCI-X133	Should be installed in SSR212MA PCI slot 1 only.	
Intel	PRO/1000MT Dual Port Gigabit Server Adapter	PWLA8492MT	PCI-X133	Should be installed in SSR212MA PCI slot 1 only.	
3.3 Disk On Module™ (DOM)					
Power Quotient International Co, Ltd (PQI)*	512 MB	DJ0512M44NG0	IDE	Pre-installed in SE7501JR2 IDE connector.	

4. Hard Disk Drives

The hard drives listed in the following table have been tested with the Intel® Storage System SSR212MA 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	Intel® SAN Software, release 6.3.41.2612
2	Intel® SAN Software, release 6.3.43.2607 (SP1)
3	Intel® SAN Software, release 6.5.00.2634
4	Intel® SAN Software, release 6.6.00.2699

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 SAN 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 SSR212MA, 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 SSR212MA, 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).

New hard disk drives added to this 1.9 revision shown in **bold** below.

Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Tested firmware revision	OS/Notes
3.0 Gb/s Serial ATA (SATA) Hard Drives							a
Hitachi	Deskstar 7K500	HDS725050KLA360	3 Gbps	7200	500	B0A	1,2, 3,4,b
Hitachi	**Deskstar 7K500**	**HDS725050VLA360**	**3 Gbps**	**7200**	**500**	**V560A52A**	**4, b**
Maxtor	Maxline Pro 500	7H500F0	3 Gbps	7200	500	HA431DD0	2, 3,4 b
Seagate	NL35.2	ST3500841NS	3 Gbps	7200	500	3.AEH	2, b
Seagate	NL35.2	ST3500641NS	3 Gbps	7200	500	3.AEH	2,3,4,b
Seagate	NL35.2	ST3250824NS	3 Gbps	7200	250	3.03	SD, b
Seagate	NL35.2	ST3250624NS	3 Gbps	7200	250	3.03	SD, b
Seagate	NL35.2	ST3400833NS	3 Gbps	7200	400	3.03	SD, b
Seagate	NL35.2	ST3400633NS	3 Gbps	7200	400	3.03	SD, b
Seagate	**Barracuda 7200.8**	**ST3750640NS**	**3 Gbps**	**7200**	**750**	**3.AEH**	**4, b**
Seagate	**Barracuda 7200.8**	**ST3400620NS**	**3 Gbps**	**7200**	**400**	**3.AEH**	**4, SD, b**
Seagate	**Barracuda 7200.8**	**ST3500630NS**	**3 Gbps**	**7200**	**500**	**3.AEH**	**4, SD, b**
Western Digital	WD RE2	WD5000YS	3 Gbps	7200	500	07.0	2, 3,4, b
Western Digital	WD RE	WD3200YS	3 Gbps	7200	320	21.00M21	3, 4, b
Western Digital	WD RE	WD2500YS	3 Gbps	7200	250	20.06C03	3, 4, b
Western Digital	**WD RE**	**WD1600YS**	**3 Gbps**	**7200**	**160**	**N/A**	**SD**
1.5 Gb/s Serial ATA (SATA) Hard Drives							
Seagate	Barracuda 7200.8	ST3400832AS	1.5 Gbps	7200	400	3.03	1, b
Seagate	Barracuda 7200.8	ST3300831AS	1.5 Gbps	7200	300	3.03	SD, b
Seagate	Barracuda 7200.8	ST3250823AS	1.5 Gbps	7200	250	3.03	SD, b
Seagate	NL35.1	ST3400832NS	1.5 Gbps	7200	400	5.0	2,3,b
Seagate	NL35.1	ST3400632NS	1.5 Gbps	7200	400	5.0	1, b
Seagate	NL35.1	ST3250823NS	1.5 Gbps	7200	250	5.0	SD, b
Western Digital	WD Raptor	WD1500ADFD	1.5 Gbps	10K	150	20.07P20	3, 4, b

NOTES:

a) All drives must support Staggered Spin Up and LED Activity via pin 11.

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

5. Network Switches

The network switches listed in the following table have been tested with the Intel® Storage System SSR212MA by Intel in its validation labs.

Manufacturer	Model Name	Type	Notes
Asante	IntraCore 36480	10/100/1000 Ethernet	
Dell	PowerConnect 5324	10/100/1000 Ethernet	
3COM	Superstack 3 4900	10/100/1000 Ethernet	