intel.

Intel® Server Board SHG2

Tested Hardware and Operating System List

Revision 7.0

January, 2004

Enterprise Platforms and Services Marketing

Revision History

Date	Revision Number	Modifications
August 2001	1.0	Initial Draft
October 2002	2.0	Revised to incorporate additional adapters from updated PVL Test Report
November 2002	3.0	Incorporated new Tested Hardware & OS List template format
December 2002	4.0	Updated the Installation Guidelines section
March 2003	5.0	Updated document to add results from PVL test run with SHG2 BIOS Production Release 1.05, Build 31 and BMC firmware v. 19. Added Installation Guideline 6.11. Updated Installation Guideline 6.5.
June 2003	6.0	Removed "Beta" names from Adaptec Adaptor listing and updated Base System Configuration Pedigree information to current production board level. Added pointer to support web site and latest firmware revision levels.
January 2004	7.0	Added Hitachi Ultrastar 15K73 family of SCSI drives. Added "SD" & "IHVT" definitions to the Hard Disk Drive section. Updated format to latest template.

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Table of Contents

1.   Introduction

This document is intended to provide users of the Intel® server board SHG2 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 add-in cards, peripherals, and operating systems are tested or until the Intel server board SHG2 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 add-in cards and peripherals under the specified system configuration (System BIOS and firmware) and operating systems versions with which they were tested.

1.1   Test Overview

Testing performed on the Intel server board SHG2 is classified under two separate categories: Compatibility Testing and Stress Testing.

1.1.1   Basic Installation Testing

Basic installation testing is performed with each supported operating system. Basic installation testing validates that the server board can install the operating system and that the base hardware feature set is functional. A small set of peripherals is used for installation purposes only. No add-in adapter cards are tested. Testing includes network connectivity and running of proprietary and industry standard test suites.

⟹   The latest version of an 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.

1.1.1.1   Support Commitment for Basic Installation Testing

Intel commits to provide the following level of customer support for operating systems that receive only basic installation testing:

* Intel will provide and test operating system drivers for each of the server board's integrated controllers, provided that the controller vendor has a driver available upon request. Vendors will not be required by Intel to develop drivers for operating systems that they do not already support. This may limit the functionality of certain server board integrated controllers.
* Intel will support customer issues that involve installation and/or functionality of operating system with the server board's integrated controllers only if a driver has been made available.

- Intel will NOT provide support for issues related to use of any add-in adapters or peripherals installed in the server system when an operating system that received basic installation testing only is in use.
- 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.

1.1.2   Adapter / Peripheral Compatibility and Stress Testing

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

Base Platform: Each base platform will successfully install a given 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 server performs with a wide variety of adapters under the primary supported operating systems. 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 add-in adapters in all available slots, (depending on chassis used) for a minimum 72-hour test run without injecting errors. Each configuration passes an installation test, a Network/Disk Stress test, and tape backup test. Any fatal errors that occur will require a complete test restart.

1.1.2.1   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 these operating systems 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 provide and test operating system drivers for each onboard video, network, and storage controller.
- Intel will enable vendors to provide driver support for add-in adapters using these operating systems.

- 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 server system 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® server board *SHG2* testing was performed using the Intel® server chassis *SC5200.*

2.   Intel® Server Board SHG2 Base System Configurations

The following table lists the base configurations tested. Base configurations will change as new revisions of the Intel® server board SHG2 are released and/or new system BIOS and BMC firmware are cut onto the board in the factory. Each base configuration is assigned an identifier number that is referenced in the tables throughout this document. New base configurations are added with each new release of this document.

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

2.1   SHG2 Server Board Pedigree Summary

Base System Identifier #	Board Type	Part Number	BIOS Revision	BMC Firmware Revision	SC5200 HSC Firmware Revision	Notes
1	SHG2	A77226-501	Build 22	Ver 14	Ver 0.08	Pre Production
2	SHG2	A77226-502	Production Release 1.02, Build 22	Ver 14	Ver 0.08	Production Release
3	SHG2	A77226-503	Production Release 1.02, Build 22	Ver 14	Ver 0.10	Component Vendor Changes
4	SHG2	A77226-504	Production Release 1.03, Build 29	Ver 19	Ver 0.10	BIOS Update and Component Changes
5	SHG2	A77226-505	Production Release 1.03, Build 29	Ver 19	Ver 0.10	Video SRAM Updated Vendor
6	SHG2	A77226-506	Production Release 1.03, Build 29	Ver 19	Ver 0.10	NIC Component and FRU/SDR 5.0.5

*Note: A77226-507 PBA was never built and the ECO was cancelled. This ECO would have included the BIOS P09, BMC 22 and FRU/SDR 5.0.9.

2.2   SHG2 BIOS, BMC and FRU/SDR Posted on Support Web Site

Please check Intel's support web site, http://support.intel.com/support/motherboards/server/shg2/, for the most current SUP (System Update Package) package available. As of January 2004 the most recent Firmware versions available are:

BIOS 39 build P09	BMC version 22	FRU/SDR 5.0.9	HSC version 0.11

3.   Supported Operating Systems

The following table provides a list of supported operating systems for the Intel® server board **SHG2**. Each of the listed operating systems was tested for compatibility with Intel® server board **SHG2** base system configuration listed in Section 2 of this document. Operating systems are supported only with the specified base system configuration(s) with which they were tested.

The following table also indicates whether each operating system received Basic Installation testing, or Adapter / Peripheral Compatibility and Stress Testing. For information on the support commitments for Basic Installation Testing vs. Adapter / Peripheral Compatibility and Stress Testing, please reference Section 1 of this document.

Any variations to the standard operating system installation process are documented in the Installation Guidelines section of this document. If there are no installation guidelines noted in the following table, then the operating system installed as expected using manufacturer's installation instructions or Intel's best-known methods.

➩   Operating systems supported by Intel® Server Management software or LANDesk* Client Manager software may be different than the operating systems supported by the Intel Server Board SHG2. Please reference the Readme and User Guide documents that are included as part of each Intel Server Management and LANDesk* Client Manager distribution for operating systems that are supported by that release.

Operating System	Base Configuration Tested See Section 2.1
Microsoft Windows* 2000 Advanced Server, Service Pack 2	1, 2
Microsoft Windows* 2000 Advanced Server, Service Pack 3	3
Microsoft Windows NT* 4.0, Service Pack 6a	1
Red Hat Linux* 8.0	3
Red Hat Linux 7.3	1, 2
Red Hat Linux 7.2	1
Novell NetWare* 6.0, Service Pack 2	1, 2, 3 See IG #6.5 and #6.10
Novell NetWare 5.1, Service Pack 3	1
SCO OpenUnix* 8.0, MP 3	1, 2, 3
Turbo Linux* 7	1

3.1   Operating System Certifications

Listed below are the operating systems that Intel will certify SHG2 Server board. However, the customer is responsible for their own certification from the individual operating system vendors. In many cases, the customer may leverage their operating system certifications from Intel's testing. See the "Comments" section next to each operating system in the table below for additional information. Intel's certifications, pre-certification, and operating system testing may help reduce some of the risk in achieving customer certifications with the operating system vendors.

Operating System	Certification Listing	Comments
Microsoft Windows* 2000 Advanced Server	Intel® SHG2 Server SID# 617206, 658083	OEM must request certification by Microsoft for their specific product. http://www.microsoft.com/hwdq/hcl/search.asp (Search on SHG2) http://developer.intel.com/design/servers/whql.htm
Novell NetWare* 5.1 and 6.0	Intel® SHG2 Server	Novell checks Intel's test results, certifies (if appropriate), and posts the certificate on their web site. Customer can leverage the Intel certification, if customer product meets the operating system vendor standard. http://developer.novell.com/yes/67676.htm
Red Hat* Linux 7.3	Intel® SHG2 Server	Red Hat checks Intel's results, certifies (if appropriate), and posts the certificate on their web site. Customer can leverage the Intel certification, if customer product meets the operating system vendor standard. http://hardware.redhat.com/hcl/?pagename=hcl&view=certified&vendor=399&class=8#list
SCO OpenUnix* 8.0	Intel® SHG2 Server	SCO checks Intel's results, certifies (if appropriate), and posts the certificate on their web site. Customer can leverage the Intel certification, if customer product meets the operating system vendor standard. http://wdb1.caldera.com/chwp/owa/hch_model_display?f_company_id=191&f_category_id=1&f_model_id=83749&f_os_id=152&f_release_id=318&f_cert_value=CT&f_status=NEWER&f_search_os=152&f_mode=Public&f_search_screen_url=&f_type_name=Ports&f_model_det_value=CT
Turbo Linux* 7	Intel® SHG2 Server	Turbo Linux checks Intel's results, certifies (if appropriate), and posts the certificate on their web site. Customer can leverage the Intel certification, if customer product meets the operating system vendor standard. http://www.turbolinux.com/hcl/TTlist.html

4.   Adapters and Peripherals

Add-in adapter card and peripheral compatibility and stress testing will only be performed with the latest version of an operating system at the time the validation testing occurred. The following table shows the operating system and base configurations used to validate each device. The adapters are divided into categories based on their functionality. All integrated on-board devices are tested by default and are therefore not included in the following tables.

Note that not all adapter cards were tested under all operating systems. The following notation is used in the tested adapters and peripherals table below to indicate the support level that Intel provides for a particular adapter under a particular operating system:

Number (i.e. 1)	This adapter or peripheral has been tested and is supported under the specific configuration identified in the Base System Configurations Table in Section 2 of this document.
Number in brackets (i.e. [1])	This adapter or peripheral has been tested, but is NOT supported under the specific configuration identified in the Base System Configurations Table in Section 2 of this document.
NT	This adapter or peripheral has not been tested under this operating system and is not supported under this operating system.
ND	This adapter or peripheral has not been tested under this operating system due to limitations in IHV driver availability, and is not suported under this operating system.

Any variations to the standard adapter installation process or to expected adapter functionality are documented in the Installation Guidelines section of this document. If there are installation guidelines affecting a particular adapter and operating system combination, these are referenced in the following table. If there are no installation guidelines noted in the following table, then the adapter installed and functioned as expected using manufacturer's installation instructions or Intel's best-known methods.

⇒   Testing of adapters cards normally is performed with unused add-in adapters and onboard controller expansion ROMs disabled in BIOS Setup. Intel recommends that customers disable the option ROM for add-in controllers and/or the on-board controllers when not booting from the controller or needing to use its built in utilities.

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7

4.1   PCI RAID

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Adaptec	ASR-2110S	2110S	PCI-64/66		1,2,3	1,2,3	3	1,2	1,2,3	ND
Adaptec	ASR-3410S	3410S	PCI-64/66		1,2,3	1,2,3	3	1,2	1,2,3	ND
ICP-Vortex	GDT4523RZ	GDT4523RZ	PCI-32/66		1,2,3	1,2,3	3	1,2	1,2,3	1
ICP-Vortex	GDT8623RZ	GDT8623RZ	PCI-64/66		1,2,3	1,2,3	3	1,2	1,2,3	1
Intel®	SRCU31L		PCI-32/33		1,2,3 See IG #6.8	1,2,3 See IG #6.8	3	1,2 See IG #6.8	1,2,3 See IG #6.8	NT
Intel	SRCU32U		PCI-64/66		1,2,3	1,2,3	3	1,2	1,2,3	NT
Intel	SRCS14L		PCI-64/66		3	3	3		3	
Intel	SRCU42L		PCI-64/66		2,3 See IG #6.6	2,3 See IG #6.6	3	2 See IG #6.6	2,3 See IG #6.6	NT
LSI Logic	4714010232A	Enterprise 1600* (MegaRAID 471)	PCI-64/66		1,2,3	1,2,3	3	1,2	2,3	ND
LSI Logic	MegaRAID* 475	Express 500 (MegaRAID 475)	PCI-32/33		1,2,3	1,2,3	3	1,2	2,3	ND
LSI Logic	4932010232A	Elite* 1600 (MegaRAID 493)	PCI-64/66		2,3	2,3	3	2	2,3	NT
Mylex	A352-2	AcceleRAID* 352	PCI-64/33		2, 3	1,2,3	3	2 See IG #6.3	2,3	ND
Mylex	A170-1-32NB	AcceleRAID 170	PCI-32/33		1,2	1,2		2 See IG #6.3	2	ND

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Mylex	E2000-4-32BD	eXtremeRAID* 2000	PCI-64/33		2	2		2	2	NT
Promise	FastTrack* TX2000	FastTrack* TX2000	PCI-32/33		2,3	ND	3	2	2,3	NT

4.2   PCI SCSI

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Adaptec	ASC-29160N	ASC-29160N	PCI-32/33		1,2,3	1,2,3	3	1,2	1,2,3	NT
Adaptec	ASC-39160	ASC-39160	PCI-64/66		1,2,3	1,2,3	3	1,2	1,2,3	NT
Adaptec	ASC-39320	ASC-39320	PCI-X133	2 channel, U320 SCSI	3	3	3		3	
LSI Logic	LSI20160L	LSI20160L	PCI-32/33		2,3	2,3	3	2	2,3	NT
LSI Logic	LSI22903	LSI22903	PCI-64/66		1	1		1	1	NT
LSI Logic	LSI22320-R	LSI22320-R	PCI-X133	2 channel, U320 SCSI	3	3	3		3	

4.3   PCI MROMB

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Adaptec	ASR-2000S	2000S	PCI-64/66		1,2,3 See IG #6.11	1,2,3 See IG #6.11	3 See IG #6.11	1,2 See IG #6.11	2,3 See IG #6.11	NT
Intel	SRCMRU		PCI-64/66		1,2,3	1,2,3	3	2 See IG #6.2	2,3	NT
Intel	SRCZCR		PCI-64/66		3	3	3		3	

4.4   PCI Fiber Channel

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Emulex	LP9000-T1	LP9000			1	1		1	ND	NT

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Emulex	LP9002LP-F2	LP9002	PCI-64/66		2,3	2,3	3	2	2,3	NT
Emulex	LP9402DC-F2	LP9402	PCI-X133		1,2,3	2,3 See IG #6.1	ND	1,2	2,3	NT
QLogic	QLA2200/66	QLA2200/66	PCI-64/66		1,2,3	1,2,3	3	1,2	1,2,3	NT
QLogic	QLA2310	QLA2310	PCI-X66		1,2	1,2		1,2	ND	NT
QLogic	QLA2340	QLA2340	PCI-X133		1	1		1	ND	NT
QLogic	QLA2342	QLA2342	PCI-X133		2,3	2,3	3	2	ND	NT

4.5   PCI NIC

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
3COM	3C905C-TX-M	EtherLink* 10/100 PCI	PCI-32/33		1,2,3	1,2,3	3	2	1,2,3	NT
3COM	3C980C-TXM	EtherLink Server 10/100 PCI Managed	PCI-32/33		1,2,3	1,2,3	3	2	1,2,3	NT
3COM	3C996B-T	3C996B-T Gigabit Server Adapter	PCI-X133		1,2,3	1,2,3	3	2	2,3 See IG #6.4	NT
D-Link	DFE-530/TX+	DFE-530/TX+	PCI-32/33		1,2,3	1,2,3	3	1,2	ND	NT
Intel	PWLA8490MF	PRO/1000MF Gigabit Server Adapter	PCI-X133		2,3 See IG #6.9	2,3 See IG #6.9	3 See IG #6.9	2 See IG #6.9	2,3 See IG #6.9	NT
Intel	PWLA8490MT	PRO/1000MT Gigabit Server Adapter	PCI-X133		2,3 See IG #6.9	2,3 See IG #6.9	3 See IG #6.9	2 See IG #6.9	2,3 See IG #6.9	NT

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Intel	PWLA8492MF	PRO/1000MF Dual Port Gigabit Server Adapter	PCI-X133		3 See IG #6.9	3 See IG #6.9	3 See IG #6.9		3 See IG #6.9	
Intel	PWLA8492MT	PRO/1000MT Dual Port Gigabit Server Adapter	PCI-X133		3 See IG #6.9	3 See IG #6.9	3 See IG #6.9		3 See IG #6.9	
Intel	PILA8470D3	PRO/100+ S Server	PCI-32/33		1,2,3	1,2,3	3	1,2	1,2	NT
Intel	PILA8472D3	PRO/100 + Dual Port	PCI-64/66		1,2,3	1,2,3	3	1,2	1,2,3	NT
Intel	PWLA8490XT	PRO/1000XT Gigabit Server Adapter	PCI-X133		1,2,3 See IG #6.9	1,2,3 See IG #6.9	3	1,2 See IG #6.9	1,2,3 See IG #6.9	NT
Intel	PWLA8490XF	PRO/1000XF Gigabit Server Adapter	PCI-X133		1,2,3 See IG #6.9	1,2,3 See IG #6.9	3	1,2 See IG #6.9	1,2,3 See IG #6.9	NT
Intel	PWLA8490T	PRO/1000T	PCI-64/66		1,2,3	1,2,3	3	1,2	1,2,3	NT
Intel	PWLA8490SX	PRO/1000F	PCI-64/66		1,2	1,2,3	3	1,2	1,2,3	NT

4.6   Modems

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
3COM	3CP5610A	Performance Pro Modem	PCI-32/33		1	1		1	NT	NT
US Robotics	Courier	V.Everything	Serial		3					

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
4.7 USB/PS2 Devices										
Logitech	M-UB48	MiniWheel* Mouse	USB/PS2		1	1		1	NT	NT
Logitech	M-BE55	MiniWheel* Mouse	USB/PS2		2,3		3		NT	NT
Keytronic keyboard	PRO Pilot	PRO Pilot	PS2		1	1		1	NT	NT
Microsoft		Intellimouse*	USB/PS2		1,2,3	1	3	1	NT	NT
Microsoft	200516	Internet Keyboard Pro	USB/PS2		1,2,3	1	3	1	NT	NT
HP	8230e	CD-Writer	USB		1	NT		1	1	NT
Mitsumi	4802TU	4802TU	USB		1	NT		1	1	NT
Plextor	CD-RW 24x10x40	CD-RW 24x10x40	USB		1,3	NT		1	1	NT
Teac	CD210PU/KIT	CD210PU/KIT	USB		1,2,3	NT		1	1	NT
Iomega	ZIP*-USB	ZIP 250MB USB	USB		1,2,3	NT	3	1	1	NT
Iomega	CDRW9602EX	CD-RW 24x10x40	USB		2,3	NT		NT	NT	NT
Teac	CDWE24E	CDWE24E	USB		1	NT		1	1	NT
Teac	FD05PUB	FD05PUB	USB		1,2,3	NT	3	1	1	NT
Plextor	CD-RW 40x12x40U	PlexWriter* 40x12x40U	USB		2	NT	3	NT	NT	NT
Sony	PCGA-UFD5	VAIO* External USB Floppy	USB		2,3	NT	3	NT	NT	NT
Maxtor	X01USB2040	3000LE	USB		2	NT		NT	NT	NT

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7

4.8　CDROM Drives

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Plextor	PX-40TSUW	PX-40TSUW	SCSI-UW		1	1		1	1	1
Samsung	SC-152	SC-152	ATA33		1	1		1 See IG #6.7	1	1
Samsung	SN-124q	SN-124q	ATA33		1	1		1	1	1
Sony	CDU5211	CDU5211	IDE		3	3	3		3	
Teac	CD-540E	CD-540E	ATA		1	1	3	1	1	1

4.9　DVD Drives

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Hitachi	GD-8000	GD-8000	ATA33		1	1		1	1	1
Samsung	SD-616	SD-616	ATA33		1	1		1	1	1
Toshiba	SD-M1612	SD-M1612	ATA33		1	1		1	1	1
Pioneer	DVD-305S-A	DVD-305S-A	SCSI-N		1	1		1	1	1

4.10　Tape Drives

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
Quantum	SDLT-220	Super DLT	SCSI-U2		1	1		1	1	NT
Seagate	STD2401LW-S	Scorpion* 40 DDS4 DAT	SCSI-U2		1,3	1	3	1	1,3	NT
Sony	SDX-S500C/BM	AIT-2 Desktop	SCSI-U2		1,3	1,3	3	1	1,3	NT
Sony	PCBacker	SDT-9000	SCSI-2		3	3	3		3	
Sony	PCBacker II	SDT-11000/PB	SCSI-U2			3	3			

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2000 Advanced Server	Novell NetWare* 6.0, SP2	Red Hat Linux* 8.0	Red Hat Linux* 7.3	SCO OpenUnix* 8.0, MP3	Turbo Linux* 7
4.11 Removable Drives										
Fujitsu	MCJ3230AP	MCJ3230AP	ATA		1	1		1	NT	NT
Iomega	ZIP-IDE250	ZIP-IDE250	ATA		1	1		1	NT	NT
Teac	FD-235HF	FD-235HF	Floppy		1	1		1	NT	NT
Iomega	JAZ* 2GB INT	2GB JAZ internal SCSI	SCSI-N		1	1		1	NT	NT
4.12 KVM										
Avocent	1160ES	1160ES	PS/2		1	1		1	1	1

5.   Hard Disk Drives

The hard drives listed in the following table have been tested with the Intel® server board SHG2 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* 2000 Advanced Server
2	Novell NetWare* 6.0
3	Red Hat Linux* 7.3
4	SCO OpenUnix* 8.0
5	Turbo Linux* 7
6	Red Hat Linux 8.0

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.
Number in brackets (i.e. [1])	This hard drive has been tested, but is NOT 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 this server board, 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 this server board, 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 Operating Systems	Notes
SCSI Hard Drives							

Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Tested Operating Systems	Notes
Fujitsu	AL-7LE	MAN3367MC	U160	10,000	36GB	1,2,3,4,5	
Fujitsu	AL-7LE	MAN3184MC	U160	10,000	18GB	1,2,3,4,5	See IG#6.12
Fujitsu	AL-7LX	MAM3184MC	U160/SCA	15,000	18.4 GB	1,2,3,4	
Hitachi	DK30CJ	DK32CJ-18MC	U160/SCA	10,000	18.4 GB	2	
Hitachi	Ultrastar* 36Z15	IC35L018UCPR15	U160/SCA	15,000	18.4 GB	1,2,3,4	
Hitachi	Ultrastar 73LZX	IC35L036UCD210	U160/SCA	10,000	36.7 GB	1,2,3,4	
Hitachi	Ultrastar 73LZX	IC35L018UCD210	U160/SCA	10,000	18GB	1,2,3,4	See IG#6.12
Hitachi	Ultrastar 73LZX	IC35L009UCD210	U160/SCA	10,000	9GB	1,2,3,4	See IG#6.12
Hitachi	Ultrastar 15K73	HUS157373EL3800	U320/SCA	15,000	73 GB	1,2,6	IHVT
Hitachi	Ultrastar 15K73	HUS157336EL3800	U320/SCA	15,000	36 GB		IHVT, SD
Hitachi	Ultrastar 15K73	HUS157373EL3600	U320/68-pin	15,000	73 GB		IHVT, SD
Hitachi	Ultrastar 15K73	HUS157336EL3600	U320/68-pin	15,000	36 GB		IHVT, SD
Maxtor	Atlas* 10k III	KU073J8	U320/SCA	10,000	73 GB	1,2,3,4,5	
Maxtor	Atlas 10k III	KU036J8	U320/SCA	10,000	36GB	1,2,3,4,5	See IG#6.12 & 6.13
Maxtor	Atlas 10k III	KU018J2	U320/SCA	10,000	18GB	1,2,3,4,5	See IG#6.12 & 6.13
Maxtor	Atlas IV	KN09J011	U160/SCA	7200	9.1 GB	1,2,3,4,6	
Maxtor	Atlas IV	KN09L011	U160/wide	7200	9.1 GB	1,2,3,4,6	
Maxtor	Atlas V	XC09J2	U160/SCA	7200	9.1 GB	1,2,3,4	
Maxtor	Atlas V	XC09J011	U160/SCA	7200	9.1GB	1,2,6	
Maxtor	Atlas V	XC09L011	U160/wide	7200	9.1GB	2,6	
Maxtor	Atlas V	XC18J011	U160/SCA	7200	18.3GB	2,6	
Seagate	Barracuda* 18XL	ST39236LC	U160/SCA	7200	9.2 GB	1,2,3,4,6	
Seagate	Barracuda 9	ST19171FC	FC-AL	7200	9.1 GB	1,2,3,4,6	
Seagate	Barracuda 36ES	ST318437LC	U160/SCA	7200	18.4 GB	1	
Seagate	Cheetah 18LP	ST39103LC	Ultra2/SCA	10,000	9.1 GB	1,2,3,4,6	
Seagate	Cheetah 18LP	ST39103FC	FC-AL	10,000	9.1 GB	2	
Seagate	Cheetah 10K.6	ST336607LC	U320/SCA	10,000	36.7 GB	1	

Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Tested Operating Systems	Notes
Seagate	Cheetah 18XL	ST39204LC	U160/SCA	10,000	9.2 GB	1,2,3,4,6	
Seagate	Cheetah 36ES	ST318406LC	U160/SCA	10,000	18.4 GB	1,2,6	
Seagate	Cheetah 36ES	ST336706LC	U160/SCA	10,000	36.7 GB	1,2,3,4	
Seagate	Cheetah 9LP	ST34502LC	Ultra2/SCA	10,000	4.5 GB	1,2,3,4	
Seagate	Cheetah 9LP	ST39102FC	FC-AL	10,000	9.1 GB	1,2,3,4	
Seagate	Cheetah X15 36LP	ST318452FC	2Gb/s FC	15,000	18.4 GB	1,2,3,4,6	
Seagate	Cheetah X15 36LP	ST336752FC	2 Gb/s FC	15,000	36.7 GB	1,2,3,4,6	
Seagate	Cheetah X15 36LP	ST318452LC	U160/SCA	15,000	18.4 GB	1,2,3,4,5	
Seagate	Cheetah X15 36LP	ST336732LC	U320/SCA	15,000	36.7 GB	1,2,3,4,5,6	
Seagate	Cheetah* 36ES	ST318406LC	U160/SCA	10,000	18.4 GB	1,2,3,4	
Seagate	Cheetah 36LP	ST336704LW	U160/wide	10,000	36.4 GB	4	
Parallel ATA (PATA) Hard Drives							
Maxtor	DiamondMax D540X-4K	4K040H2	ATA/100	5400	40 GB	1,2,3,4,6	
Maxtor	DiamondMax Plus D740X	6L080J4	ATA/100	7200	80 GB	1,2,3,4,5	
Maxtor	DiamondMax Plus D740X	6L060J3	ATA/100	7200	60 GB	1,2,3,4,5	See IG#6.12
Maxtor	DiamondMax Plus D740X	6L040J2	ATA/100	7200	40 GB	1,2,3,4,5	See IG#6.12
Maxtor	DiamondMax Plus D740X	6L020J1	ATA/100	7200	20 GB	1,2,3,4,5	See IG#6.12
Maxtor	DiamondMax * VL 40	34098H4	ATA/100	5400	40 GB	1,2,3,4	
Maxtor	Fireball Plus AS	QMP40000AS-A	ATA/100	7200	40 GB	2	
Samsung	SpinPoint* SV20400	SV2042H	ATA100	5400	20.4 GB	1,2,3,4,6	
Samsung	SpinPoint P40	SP8004H	ATA/100	7200	80 GB	1,2,3,4,5	
Seagate	Barracuda* ATA IV	ST340016A	ATA/100	7200	40 GB	1,4,6	
Seagate	Barracuda* ATA IV	ST320011A	ATA/100	7200	20 GB	1,4,6	See IG#6.12
Seagate	U Series 6	ST380020A	ATA/100	5400	80 GB	1,2,3,4,5	

Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Tested Operating Systems	Notes
Seagate	U Series 6	ST360020A	ATA/100	5400	60 GB	1,2,3,4,5	See IG#6.12
Seagate	U Series 6	ST340810A	ATA/100	5400	40 GB	1,2,3,4,5	See IG#6.12
Seagate	U Series 6	ST330610A	ATA/100	5400	30 GB	1,2,3,4,5	See IG#6.12
Seagate	U Series 6	ST320410A	ATA/100	5400	20 GB	1,2,3,4,5	See IG#6.12
Western Digital	Caviar* WD800	WD800BB	ATA/100	7200	80 GB	1,2,3,4,5,6	
Serial ATA (SATA) Hard Drives							
Maxtor	DiamondMax Plus 9	6Y060M0	SATA/150	7200	60GB	1,2,4,6	

6.   Installation Guidelines

6.1   Novell NetWare* 6.0 Emulex* LP9402DC-F2 driver fails in bus 1 (PCI-X 100)

Issue: The Emulex* LP9402DC-F2 PCI fibre channel host adapter works as expected when in Intel® server board SHG2 PCI slot 6 (bus 2, standard PCI by default). However, when the adapter is installed in PCI slot 1 or 2 (bus 1, PCI-X 100), the driver fails to load. Both driver versions 2.00c and 2.02g fail. If acpidrv.psm is commented out in the C:\nwserver\startup.ncf file, the driver loads and the device functions as expected in bus 1.

Implication: The Emulex LP9402DC-F2 adapter cannot be used in PCI slots 1 or 2 under Novell NetWare* 6.0 with acpidrv.psm loaded.

Guideline: If acpidrv.psm is commented out in the C:\nwserver\startup.ncf file, the driver loads and the device functions as expected in bus 1.

Status: Intel is currently working with Emulex to investigate a fix for this issue.

6.2   Red Hat Linux* 7.3 segmentation fault with Intel® SRCMRU RAID controller installed

Issue: When using the normal installation of Red Hat Linux* 7.3 with the 2.4.18-3 kernel and an Intel SRCMRU RAID controller installed, the following issue is seen:

- A shutdown command results in a segmentation fault.
- It is not possible to use some tools such as storcon.
- Accessing the proc file system (via cat /proc/scsi/gdth/#, where "#" stands for the controller number, also results in a segmentation fault.

This issue occurs only when using Red Hat kernel version 2.4.18-3 installed with SMP support, and it is not server board or RAID controller specific.

Implication: The Red Hat Linux 7.3, 2.4.18-3 SMP kernel does not function properly with the Intel SRCMRU RAID controller.

Guideline: Red Hat Linux kernel version 2.4.18-5 resolves this issue. Red Hat Linux 8.0 with the latest service patches also resolves this issue.

Status: This issue has been resolved in Red Hat Linux kernel version 2.4.18-5 and in Red Hat Linux 8.0 with the latest service patches.

6.3   Red Hat Linux* 7.3 fails installation to a Mylex AcceleRAID* controlled RAID array

Issue: Red Hat Linux* 7.3 fails to boot after installation to a RAID array controlled by either a Mylex AcceleRAID* 170 or AcceleRAID 325 installed in the Intel Server Board SHG2. No errors appear during the installation of the operating system.

Implication: Red Hat Linux 7.3 will not boot to a Mylex AcceleRAID 170 or 352 RAID array.

Guideline: Use LILO instead of GRUB, or follow the Red Hat Advisory for an updated kernel: RHBA-2002:110-09, found at http://rhn.redhat.com/errata/RHBA-2002-110.html that states: "There was an interaction between the grub bootloader and the Mylex AcceleRAID/eXtremeRAID driver that caused the system to not find the root file system if it resided on this controller."

Status: This issue has been resolved in Red Hat Linux kernel version 2.4.18-5 and in Red Hat Linux 8.0 with the latest service patches.

6.4   3COM 3C996B-T NIC driver for SCO OpenUnix* 8 fails

Issue: 3COM 3C996B-T NIC driver versions 2.0.11 and 2.2.11 for SCO OpenUnix* 8 fail to load properly. The NIC is not detected correctly with netcfg following the driver package installation.

Implication: 3COM 3C996B-T NIC driver versions 2.0.11 and 2.2.11 for SCO OpenUnix 8 require a workaround to load.

Guideline: In file "/etc/inst/nd/mdi/bcme/3c996.bcfg" modify the following line:

```
BOARD_IDS="0x10b71000 0x10b71004 0x10b71007 0x10b71008"
```

By adding an entry for 0x14e41465, i.e:

```
BOARD_IDS="0x10b71000 0x10b71004 0x10b71007 0x10b71008 0x14e41645"
```

After applying this workaround the netcfg utility detects the device correctly. This issue has also been resolved in SCO OpenUnix 8 maintenance pack 3.

Status: This issue has been resolved in SCO OpenUnix 8 maintenance pack 3.

6.5   Novell NetWare* 6.0 hangs when downing when legacy USB is enabled

Issue: When the Legacy USB option is set to "Enabled" in the Intel server board SHG2
                BIOS Setup (the default setting is "Disabled"), Novell NetWare 6.0 with SP2
                hangs when downing the system at this point:

- Deactivating pool "SYS"
- Deactivating pool "VOL1"

Implication: The Intel server board SHG2 system running Novell NetWare 6.0 will hang when
                downing if the Legacy USB option is set to "Enabled" in the Intel server board
                SHG2 BIOS Setup.

Guideline: Make sure that the Legacy USB option remains set at the default "Disabled"
                option if Novell NetWare 6.0 is being utilized on an Intel server board SHG2
                system.

Status: This issue is fixed in SHG2 BIOS Production Release 1.08, Build 36 and later
                versions.

6.6   Intel® SRCU42L appears in the SHG2 BIOS setup boot menu when the controller BIOS is disabled

Issue: When the Intel® SCRU42L RAID controller is installed in the Intel server board
                SHG2, and the controller BIOS disabled using the controller's setup utility, the
                SCRU42L controller still appears in Intel server board SHG2 BIOS setup under
                Boot → Hard Drives as a bootable device.

Implication: The Intel SCRU42L RAID controller will still appear as a bootable device in the
                Intel server board SHG2 BIOS setup, even when the controller has been
                disabled using the controller's setup utility.

Guideline: None.

Status: Intel is currently investigating a fix for this issue.

6.7   Samsung SC-152 CDROM drive cannot be mounted unless DMA is disabled

Issue: The Samsung CD-152 CDROM drive cannot be mounted under Red Hat Linux* 7.3 unless Ultra DMA mode is set to disabled.

Implication: The Samsung CD-152 CDROM drive is not accessible unless Ultra DMA mode is set to disabled.

Guideline: Disable Ultra DMA mode in Intel server board SHG2 BIOS Setup.

Status: Red Hat considers Red Hat Linux 7.3 and 8.0 DMA support for CDROM drives to be unstable and recommends disabling DMA.

6.8   Intel® SCRU31L RAID controller does not complete POST with 6 GB of system memory installed

Issue: When the Intel® SCRU31L RAID controller is utilized in the Intel server board SHG2 system, and 6 GB of total system memory is installed, the Intel server board SHG2 system will not complete POST.

Implication: The Intel SCRU31L RAID controller cannot be used in the Intel server board SHG2 system when 6 GB of total system memory is installed.

Guideline: Use less than 6 GB of system memory in the Intel server board SHG2 system when the Intel SRCU31L RAID controller is installed.

Status: Intel SCRU31L RAID controller BIOS 7.03C and firmware 2.34.00-R030 have resolved this issue.

6.9   Intel® PRO/1000 MT, PRO/1000 MF, PRO/1000 XT, and PRO/1000 XF Gigabit Server Adapters do not operate correctly in SHG2 PCI slot 6 at PCI-X 133MHz

Issue: The Intel PRO/1000 MT, PRO/1000 MF, PRO/1000 XT, and PRO/1000 XF Gigabit Server Adapters do not operate correctly when installed in SHG2 server board PCI slot 6, when the PCI bus is configured to operate at PCI-X 133MHz. The current versions of these Intel Gigabit Server Adapters have only been tested and validated to run at PCI-X 100 MHz The NICs are not validated to run at PCI-X133MHz and are not supported in configurations where the adapter runs at PCI-X 133MHz on the SHG2.

Implication: The Intel PRO/1000 MT, PRO/1000 MF, PRO/1000 XT, and PRO/1000 XF Gigabit Server Adapters should not be utilized in SHG2 PCI slot 6 when the PCI bus is configured to operate at PCI-X 133MHz, as abnormal behavior may occur.

Guideline: These Gigabit Server Adapters may be utilized in SHG2 PCI slot 6, if the PCI-X bus is configured to operate at PCI-X 66MHz, or in PCI slots 1 or 2 at either 100MHz or 66MHz PCI bus speed.

Status: Intel plans to validate new versions of these adapters when the new versions are available in Q1 2003.

6.10   Novell NetWare* 6.0 does not support hyperthreading technology correctly

Issue: Novell NetWare 6.0 with Service Pack 2 does not support hyperthreading technology correctly. When the Hyperthreading Technology option is set to enabled in SHG2 BIOS Setup (this is the default option), the Novell NetWare 6.0 ACPIDRV.PSM module will fail to load, and therefore hyperthreading technology is not enabled by the operating system.

Implication: Hyperthreading technology is not correctly supported by Novell NetWare* 6.0.

Guideline: The PSM modules for NetWare 5.1 and NetWare 6.0, which can be downloaded from http://support.novell.com/servlet/tidfinder/2963755 contain a fix for this issue. Hyperthreading technology will operate correctly under Novell NetWare 6.0 when the PSM modules are installed.

Status: The PSM modules have resolved this issue for Novell NetWare 5.1 and NetWare 6.0.

6.11 Adaptec* ASR-2000S causes operating system not to boot when installed but not configured as the boot device

Issue: When the Adaptec ASR-2000S MROMB adapter is installed in the SHG2 server board, and either the onboard SCSI or IDE controllers, or another add-in SCSI or RAID controller is configured as the operating system boot device, the SHG2 server board will not complete operating system boot.

Implication
:   The Adaptec ASR-2000S MROMB adapter may cause the SHG2 server board not to boot to the operating system when it is installed but another controller is configured as the operating system boot device.

Guideline: The workaround for this issue is to enable Extended BIOS Data Area (EBDA) relocation in the adapter's option ROM. This is required by many RAID controllers due to the amount of BIOS data space consumed by these controllers. Enabling EBDA to be relocated to less restricted memory space will allow the adapter / system to function normally. This information is available on the Adaptec website on Storage Management:
http://www.adaptec.com/pdfs/user_guides/Storage_Management_User_Guide.pdf
.

EBDA Relocation

This setting determines the way that RAID controllers handle Extended BIOS Data Area (EBDA) relocation. You can enable this option to help avoid conflicts with other adapter cards if the controller is installed in a host system with other adapters that follow standard EBDA relocation rules.

Status: This issue may be resolved by enabling EBDA relocation in the Adaptec ASR-2000S option ROM.

6.12 Hard Disk Drive is Supported, but not Tested

Issue: This hard drive model/capacity has not been tested with this server board, but Intel will support it based on successful testing of a larger capacity hard drive from the same hard drive family.

Implication: 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.

Guideline: Customers should always test hard drives as part of the final system configuration prior to deployment.

Status: Given the fact that a larger capacity hard drive from the same drive family has successfully completed testing on this server board, this particular hard drive capacity point will not be tested.

6.13 Maxtor Atlas 10k III U160/U320 model numbers

Issue: The Maxtor Atlas 10K III SCSI drives were manufactured with two different series of part numbers.

Implication: The Atlas 10K III drives that were shipped with U160 firmware have part numbers that start with "KZ". Drives that shipped from the factory with U320 firmware have part numbers that start with "KU". The KZ drives also support U320 with a firmware upgrade. The KZ and KU models were both successfully tested with U320 firmware on this server board and both are supported.