Intel® Server Compute Blade SBX82 / Intel® Server Chassis SBCE

Tested Hardware and Operating System List

Revision 2.0

February, 2007

Enterprise Platforms and Services Marketing

Revision History

Date	Revision Number	Modifications
Sept 2004	0.5	Initial Release
Dec 2004	1.0	Updates to OS Testing and Certifications
Dec 2004	1.1	Updates to External Switch Validation, Section 5.5
Mar 2005	1.2	Updates to BIOS\FW configuration
Jun 2005	1.3	Updates to BIOS\FW configuration, SCSI Expansion Module
Sept 2005	1.4	Updates to BIOS\FW OPM and CPM
Nov 2005	1.5	Updated Supported OS, FW revisions.
Jan 2006	1.6	Updated Supported OS, FW revisions.
May 2006	1.7	Updated FW revisions and storage.
July 2006	1.8	Add reference sell switches.
Jan 2007	1.9	Add new ethernet switches and iSCSI HBA, update BIOS and FW revision.
Feb 2007	2.0	Updated supported OS.

Disclaimers

Table of Contents

1. Introduction

The Tested Hardware and Operating System List (THOL) is intended to provide users of the Intel® Server Compute Blade SBX82 Server and the Intel® Server Chassis SBCE server system with a guide to the different operating systems, expansion cards, and peripherals tested on this platform.

This document will continue to be updated as new expansion cards, peripherals, and operating systems are tested or until the Intel® Server Compute Blade SBX82 and Intel® Server Chassis SBCE are 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 to those cards and peripherals under the specified system configuration (System BIOS and firmware) and operating systems and versions to which they were tested.

1.1 Test Overview

Testing performed on the Intel® Server Compute Blade SBX82 Server and Intel® Server Chassis SBCE server system are classified under two separate categories: Compatibility Testing and Stress Testing.

1.1.1 Compatibility Testing

Basic compatibility testing is performed with each supported operating system. Basic compatibility testing validates the blade server can be used to install the operating system and that the base hardware feature set is functional. A small set of peripherals is used for installation purposes only. Testing may include network connectivity and running of proprietary and industry standard test suites.

Extended compatibility testing will occur on only the latest versions of a supported operating system. Extended compatibility testing will test for functionality of a variety of peripherals. Test applications used will consist of both proprietary as well as industry standard test suites.

Note: 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 compatibility test process.

1.1.2 Stress Testing

Stress testing is performed only on the most current release of a supported operating system at the time of a given validation run. The stress test process consists of three areas: Base platform, expanded configuration, and Endurance.

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.

Expanded Configuration: This testing uses configurations and test suites to gain an accurate view of how the server performs under varying complex configurations while interacting with network clients. Each configuration is tested for at least 12 hours.

Endurance Test: This test sequence uses full configurations for a minimum 72-hour test run without injecting errors. Two servers operating under Windows* 2003 Enterprise Edition and RedHat* Enterprise Linux* 3 Advanced Server are tested in parallel. 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.

1.2 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 Compute Blade SBX82 testing was performed using the Intel® Server Chassis SBCE.

2. Intel® Server Compute Blade SBX82 Server Base System Configurations

The following table lists the base configurations tested. Base configurations will change as new revisions of the Intel® Server Compute Blade SBX82 Blade Server are released and/or new system BIOS or 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.

Base System Identifier #	Server Type	Part Number	BIOS Revision	CMM Firmware Revision	Diag Firmware Revision	BMC
1	SBX82	C76430-002	BWEO08AUS	BREO73E	BWOT03AUS	BWBT10A
2	SBX82	C76430-002	BWEO09BUS	BREO73F	BWOT05AUS	BWBT11AUS
3	SBX82	C76430-002	BWEO15BUS	BREO73I	BWOT08AUS	BWBT14AUS
4	SBX82	C76430-002	BWEO16BUS	BREO73I	BWOT08AUS	BWBT17AUS
5	SBX82	C76430-002	BWEO17CUS	BREO82H	BWOT15AUS	BWBT22E
6	SBX82	C76430-002	BWEO22AUS	BREO85F	BWOT15AUS	BWBT24A
7	SBX82	C76430-002	BWEO25A	BREO86G	BWOT15AUS	BWBT25A

3. Supported Operating Systems

The following table provides a list of supported operating systems for the Intel® Server Compute Blade SBX82 / Intel® Server Chassis SBCE. Each of the listed operating systems was tested for compatibility with a base Intel® Server Compute Blade SBX82/ Intel® Server Chassis SBCE configuration. Operating system compatibility testing verifies that the operating system will install and function with all on-board devices.

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 System (32-Bit)	Base Configuration Tested
Microsoft Windows* 2003 R2 Enterprise Edition	R2
Red Hat Linux* Enterprise Linux 4.0 Advanced Server (Update 1)	Kernel 2.6.9-11.EL
Red Hat Linux* Enterprise Linux 3.0 Advanced Server (Update 5)	Kernel 2.4.21-32.EL
SUSE® LINUX Enterprise Server 9 Service Pack 2	Kernel 2.6.5-7.191
Operating System (64-bit)	**Base Configuration Tested**
Microsoft Windows* 2003 R2 Enterprise x64 Edition	R2
Red Hat Linux* Enterprise Linux 4.0 Advanced Server (Update 1)	Kernel 2.6.9-11.EL
Red Hat Linux* Enterprise Linux 3.0 Advanced Server (Update 5)	Kernel 2.4.21-32.EL
SUSE® LINUX Enterprise Server 9 Service Pack 2	Kernel 2.6.5-7.191

3.1 Operating System Certifications

Listed below are the operating systems that Intel will certify Intel® Server Compute Blade SBX82 blade server. 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* 2003 Enterprise Edition Testing done with the latest released Service Pack (32-bit OS)	Intel® SBX82Blade Server SID# 907837	OEM must request certification by Microsoft for their specific product. http://www.microsoft.com/hwdq/hcl/search.asp (Search on SBX82) http://developer.intel.com/design/servers/whql.htm
Red Hat Linux Enterprise Linux 3.0 Advanced Server* (32-bit OS)	Intel® SBX82 Blade 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
SUSE® LINUX Enterprise Server 9 (32-bit OS)	Intel® SBX82 Blade Server	Reference: http://developer.novell.com/yes/79608.htm
Red Hat Linux Enterprise Linux 3.0 Advanced Server* (64-bit OS)	Intel® SBX82 Blade 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 **Note**: Will complete after RH Update 4 release
SUSE® LINUX Enterprise Server 9 (64-bit OS)	Intel® SBX82 Blade Server	**Note :** Certification not planned

4. On-Board Components and Expansion Options

The following is a list of the on-board components included on the Intel® Server Compute Blade SBX82 Blade Server as well as the expansion boards that Intel supports in the Intel® Server Compute Blade SBX82/Intel® Server Chassis SBCE server system.

On-board components will be compatibility and stress tested with the latest version of an operating system at the time validation testing occurs. The following table shows the operating system and base configurations used to validate each device.

Note that testing of the components is very complex, as the blade servers that contain these components must be tested in different blade slots within the Intel® Server Chassis SBCE, using different operating systems, using various expansion boards in combination with different blade server types, etc.

The following notation is used in the tested on-board components and expansion boards table below to indicate the support level that Intel provides for a particular component under a particular operating system:

Number (i.e. 1)	This on-board component or expansion board 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 on-board component or expansion board 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 on-board component or expansion board has not been tested under this operating system and is not supported under this operating system.
ND	This on-board component or expansion board has not been tested under this operating system due to limitations in IHV driver availability, and is not suported under this operating system.

If there are installation guidelines affecting a particular on-board component and operating system combination, these are referenced in the following table.

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows 2003 Enterprise Edition	Red Hat Enterprise Linux 3 AS	SUSE® LINUX Enterprise Server 9	Red Hat Enterprise Linux 3 AS (64-bit)	SUSE® LINUX Enterprise Server 9 (64-bit)
4.1 Intel® Server Compute Blade SBX82 Onboard Components									
ATI	Radeon® 7000M			Video chip	1	1	1	1	1
Broadcom	BCM 5704S		1GbE	Dual channel controller	1	1	1	1	1
LSI Logic	53C1020		U320	SCSI Controller	1	1	1	1	1
4.2 Intel® Blade Server Expansion Components									
Q-Logic	Intel® Blade Server Fibre Channel Expansion Card	SBEFCM	2Gb FC	Fiber Channel Mezzanine (Small Form Factor)	1	1	1	1	1
IBM	Intel® Blade Server Ethernet Expansion Card	SBEGBE	1GbE	Gigabit Ethernet Expansion Card (Small Form Factor)	1	1	1	1	1
IBM	1Gb iSCSI Host Bus Adapter	32R1923	PCI-X 133	Two independent iSCSI ports	1	1	1	1	1
Intel	Intel® Blade Server SCSI Expansion Module	SBESCSI			1	1	1	1	
Intel	Intel® 4Gb FC Expansion card	SBEFCM4	4Gb FC	4Gb Fiber Channel Mezzanine (Small Form Factor)					

5. Peripherals

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.

Note that none of these items will be fully qualified. As such, Intel cannot guarantee their functionality.

The following notation is used in the peripherals table below to indicate the support level that Intel provides for a particular peripheral under a particular operating system:

Number (i.e. 1)	This 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 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 peripheral has not been tested under this operating system and is not supported under this operating system.
ND	This peripheral has not been tested under this operating system due to limitations in IHV driver availability, and is not suported under this operating system.

If there are installation guidelines affecting a particular peripheral and operating system combination, these are referenced in the following table.

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows 2003 Enterprise Edition	Red Hat Enterprise Linux 3 AS	SUSE® LINUX Enterprise Server 9	Red Hat Enterprise Linux 3 AS (64-bit)	SUSE® LINUX Enterprise Server 9 (64-bit)
5.1 Storage FC Enclosures									
EMC	CX Series	CX-100, 300, 500, 600, 700	2Gb FC		1	[1]	[1]	[1]	[1]
5.2 Storage iSCSI Enclosures									
Intel	Intel Storage System SSR212MA	SSR212MA	iSCSI		6		6		

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows 2003 Enterprise Edition	Red Hat Enterprise Linux 3 AS	SUSE® LINUX Enterprise Server 9	Red Hat Enterprise Linux 3 AS (64-bit)	SUSE® LINUX Enterprise Server 9 (64-bit)
5.3 Storage USB									
Lexar Media*	JumpDrive 64MB	PD064-231	USB	64MB storage	1	1	1	[1]	[1]
IBM	USB Fob	22P9030	USB	64MB storage	1	1	1	[1]	[1]
Iomega			USB	128MB storage	1	1	1	[1]	[1]
5.4 Chassis Switches - Gigabit Ethernet									
IBM	Intel® Blade Server Ethernet Switch Module	SBCEGBESW	GbE	SBCE Gigabit Switch Module	1	1	1	1	1
Intel	Intel® Blade Server Ethernet Switch Module	IXM5414E	GbE	SBCE Gigabit Switch Module	1	1	1	1	1
IBM	Nortel Networks* Layer 2/3 Copper Gigabit Ethernet Switch Module for IBM BladeCenter	32R1860	GbE	Layer 2/3 Ethernet Switch					
IBM	Server Connectivity Module for IBM* BladeCenter	39Y9324	GbE	Layer 2 Ethernet Switch ,require advanced management modle SBCECMM2 in the chassis					
Intel	Intel® Blade Server Ethernet Switch Module SBCEGBESW1	SBCEGBESW1	Gb Ethernet	6 exthernal / uplink ports					
Intel	Intel® Blade Server Ethernet Switch Module SBCEGBESW10	SBCEGBESW10	10Gb Ethernet and 1Gb Ethernet	6x 1GbE and 2x 10GbE external / uplink ports					

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows 2003 Enterprise Edition	Red Hat Enterprise Linux 3 AS	SUSE® LINUX Enterprise Server 9	Red Hat Enterprise Linux 3 AS (64-bit)	SUSE® LINUX Enterprise Server 9 (64-bit)
5.5 Chassis Passthru Module									
Intel	Intel® Blade Server Optical Passthru Module	SBCEOPM		Cable accessory SBCEOPMSC\SBCEOPMLC					
IBM	IBM eServer BladeCenter™ Copper Passthru Module	73P6100		Cable accessory 73P6101					
5.6 Chassis Switches – FibreChannel									
Q-Logic	Intel® Blade Server Fibre Channel Switch Module	SBCEFCSW	2Gb FC	SBCE FC Switch Module	1	1	1	1	1
Brocade	Brocade* Enterprise and Entry Fibre Channel Switch Module	SBCEBFCSW and SBCEBFCESW	2Gb FC	SBCE FC Switch Module	[1]	[1]	[1]	[1]	[1]
Brocade	Brocade* 4Gb SAN Switch Module	SBCEBFCSW4	4Gb FC	SBCE FC Switch Module					
5.7 External Switches – FibreChannel (Interop)									
Brocade	Silkworm	3250		Interoperable with the Intel ® Fibre Channel Switch SBCEFCSW. Tested by Qlogic.	NA	NA	NA	NA	NA
Brocade	Silkworm	3850			NA	NA	NA	NA	NA
Inrange		FC9000-64		Interoperable with the Intel ® Fibre Channel Switch SBCEFCSW. Tested by Qlogic.	NA	NA	NA	NA	NA
Inrange		FC9000-128			NA	NA	NA	NA	NA
McData	Sphereon	4500			NA	NA	NA	NA	NA
QLogic		SANbox2-8			NA	NA	NA	NA	NA
QLogic		SANbox2-16			NA	NA	NA	NA	NA
QLogic		SANbox2-64			NA	NA	NA	NA	NA

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows 2003 Enterprise Edition	Red Hat Enterprise Linux 3 AS	SUSE® LINUX Enterprise Server 9	Red Hat Enterprise Linux 3 AS (64-bit)	SUSE® LINUX Enterprise Server 9 (64-bit)
5.8 SCSI HDD's - 2.5"									
Seagate	AB36SCSIHDKIT	36GB	U320		1	1	[1]	[1]	[1]
Seagate	AB73SCSIHDKIT	73GB	U320		1	1	[1]	[1]	[1]
5.9 FDD (SBCE Chassis)									
TEAC	FD-05UB	USB, SL, 1.44MB	Floppy		1	1	1	1	1
5.10 CDROM (SBCE Chassis)									
TEAC	CD-224E	IDE, slimline, 24X			1	1	1	1	1
LG	CRN-8245B	IDE, slimline, 24X							

6. Hard Disk Drives

The hard drives listed in the following table have been tested with the Intel® Server Compute Blade SBX82/SBCE blade server system 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
2	Red Hat Enterprise Linux 3 Advanced Server
3	SUSE® LINUX Enterprise Server 9
4	Red Hat Enterprise Linux 3 Advanced Server **(64-bit)**
5	SUSE® LINUX Enterprise Server 9 **(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.
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.

Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Tested Operating Systems
Seagate	Cheetah	ST3300007LC	U320	10K	300GB	1,2
Seagate	Cheetah	ST3146854LC	U320	15K	146GB	1,2
Maxtor	Atlas 10K-V	8D300J0	U320	10K	300GB	1,2
Maxtor	Atlas 15K-II	8E147J0	U320	15K	147GB	1,2
Fujitsu	AL9-LE	MA3300NC	U320	10K	300GB	1,2
Fujitsu	AL9-LX	MAS3147NC	U320	15K	147GB	1,2
Hitachi	Python-A	OK2474	U320	10K	300GB	1,2

The following hard drives are within the same family as the tested hard drives and are compatible. They have not been tested under any operating systems. It is the responsibility of the vendor to verify the drive functionality under any supported operating system.

Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Tested Operating Systems
Seagate	Cheetah	ST373207LC	U320	10K	73GB	NT
Seagate	Cheetah	ST314607LC	U320	10K	146GB	NT
Seagate	Cheetah	ST336754LC	U320	15K	36GB	NT
Seagate	Cheetah	ST373454LC	U320	15K	73GB	NT
Maxtor	Atlas 10K-V	AD073J0	U320	10K	73GB	NT
Maxtor	Atlas 10K-V	8D147J0	U320	10K	147GB	NT
Maxtor	Atlas 15K-II	8E036J0	U320	15K	36GB	NT
Maxtor	Atlas 15K-II	8E073J0	U320	15K	73GB	NT
Fujitsu	AL9-LE	MAT3735NC	U320	10K	73GB	NT
Fujitsu	AL9-LE	MAT3147NC	U320	10K	147GB	NT
Fujitsu	AL9-LX	MAU3367NC	U320	15K	36GB	NT
Fujitsu	AL9-LX	MAU3735NC	U320	15K	73GB	NT
Hitachi	Python-A	OK2477	U320	10K	36GB	NT
Hitachi	Python-A	OK2476	U320	10K	73GB	NT
Hitachi	Python-A	OK2475	U320	10K	147GB	NT