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Intel® Server Compute Blade SBX44 / Intel® Server Chassis SBCE

Tested Hardware and Operating System List

Revision History

Date	Revision Number	Modifications
February 2003	0.5	Initial Draft
March 2003	0.9	Updated with latest vendor roadmaps
May 2003	0.91	Incorporation of TME comments
July 2003	0.92	Updated SCSI drive list
Nov 2003	0.93	Revised USB Key Fob device list
Dec 2003	0.95	Updated to reflect latest device lists and OS changes
April 2004	0.96	Removed Hitachi SCSI drive from approved list
April 2004	1.0	Final Product Launch Version with Test results
June, 2004	1.1	Added WHQL submission numbers for Windows 2000 Advanced Server
Oct 2004	1.2	Added new IDE HDD, changed OS list.
Mar 2005	1.3	Updated BIOS/FW and OS list. Move IDM from 3.2 to 3.3. Added Brocade FC Switch Module.
June 2005	1.4	Updated BIOS/FW and OS list, added new SCSI HDD.
Sept 2005	1.5	Added OPM and CPM, updated IDE HDD
Nov 2005	1.6	Updated Supported OS, FW revisions and IDE HDD
Jan 2006	1.7	Updated FW revisions, SCSI/IDE HDD and floppy drive.
May 2006	1.8	Updated FW revisions.
July 2006	1.9	Add reference sell switches. Update IDE RAID configuration.
Nov 2006	2.0	Add Hitachi IDE HDD.
Jan 2007	2.1	Add new ethernet switch

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 SBX44 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 SBX44 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 SBX44 Server and Intel® Server Chassis SBCE server systems 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.

 ☜ 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* Linux* Advanced Server 2.1 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 SBX44 testing was performed using the Intel® Server Chassis SBCE.

2. Intel® Server Compute Blade SBX44 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 SBX44 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 #	Board Type	Part Number	BIOS Revision	CMM Firmware Revision	Diag Firmware Revision	BMC
1	SBX44		SBX44.86B.0001.P02	BREO58A	SBO113AUS	BMC 00.18
2	SBX44	C27810-012	SBX44.86B.0002.P04	BREO59F	SBO113AUS	BMC 00.22
3	SBX44	C27810-014	SBX44.86B.0005.P05	BREO73F	SBO113AUS	BMC 00.26
4	SBX44	C27810-014	SBX44.86B.0001.P06	BREO73I	SBO113AUS	BMC 00.28
5	SBX44	C27810-014	SBX44.86B.0004.P06	BREO82F	SBO113AUS	BMC 00.30
6	SBX44	C27810-014	SBX44.86B.0004.P06	BREO82H	SBO113AUS	BMC 00.32
7	SBX44	C27810-014	SBX44.86B.0006.P06	BREO85F	SBO113AUS	BMC 00.32
8	SBX44	C27810-014	SBX44.86B.0006.P06	BREO86G	SBO113AUS	BMC 00.32

3.   Supported Operating Systems

The following table provides a list of supported operating systems for the Intel® Server Compute Blade SBX44 / Intel® Server Chassis SBCE. Each of the listed operating systems was tested for compatibility with a base Intel® Server Compute Blade SBX44/ 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	Base Configuration Tested
Microsoft Windows* 2003 Enterprise Edition *(Priority 1 OS)* Testing done with the latest released Service Pack	Service packs 1
Red Hat Linux RHEL4, U1 (Priority 1 OS)*	Kernel 2.6.9-11.EL
SUSE Linux Enterprise Server 9 Service Pack 2 (Priority 2 OS)*	Kernel 2.6.5-7.191
Microsoft Windows 2000 Advanced Server (Priority 2 OS)* *Testing done with the latest released Service Pack*	Version 2495 with Service Pack 4
Red Hat Linux RHEL3, U5 (Priority 2 OS)*	Kernel 2.4.21-32.EL

3.1   Server Management Software Support

The following table provides information on the type and version of server management software which has been tested and is supported with each operating system on the Intel® Server Compute Blade SBX44.

Operating System	Server Management Software Package and version
Microsoft Windows* 2003 Enterprise Edition *(Priority 1 OS)*	IDM V3.3, ISM V5.6
Red Hat Linux RHEL3 (Priority 2 OS)*	IDM V3.3, ISM V5.6
Red Hat Linux Advanced Server 2.1 (Priority 2 OS)*	IDM V3.3, ISM V5.6
Microsoft Windows 2000 Advanced Server (Priority 2 OS)*	IDM V3.3, ISM V5.6

3.2   Operating System Certifications

Listed below are the operating systems that Intel will certify with the Intel® Server Compute Blade SBX44 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	Intel® Server Compute Blade SBX44 SID# 823930	OEM must request certification by Microsoft for their specific product. http://www.microsoft.com/hwdq/hcl/search.asp (Search on SBX44) http://developer.intel.com/design/servers/whql.htm
Red Hat* Linux RHEL3	Submitted	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. Reference: http://hardware.redhat.com/hcl/?pagename=hcl&view=certified&vendor=399&class=8#list
SuSE* Linux Enterprise Server 9	Intel Blade Server SBX44	Reference: http://developer.novell.com/yes/79587.htm
Microsoft Windows* 2000 Advanced Server	Intel® Server Compute Blade SBX44 SID# 838606	OEM must request certification by Microsoft for their specific product. http://www.microsoft.com/hwdq/hcl/search.asp (Search on SBX44) http://developer.intel.com/design/servers/whql.htm

4.   On-Board Components and Expansion Board

The following is a list of the on-board components included on the Intel® Server Compute Blade SBX44 Blade Server as well as the expansion boards that Intel supports in the Intel® Server Compute Blade SBX44/ Intel® Server Chassis SBCE server system.

On-board components, Intel® 82546GB and Intel® 82545GM on the blade server processor and I/O expansion board 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.

On-Board Components and Expansion BoardIntel® Server Compute Blade SBX44 / Intel® Server Chassis SBCE

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2003 Enterprise Edition	Red Hat Linux* AS2.1	Microsoft Windows* 2000 Advanced Server, SP4	Red Hat Linux* RHEL3	SUSE* Linux Enterprise Server 9
Onboard Components									
ATI	Radeon® 7000				2	1	2	2	2
Intel® - LAD	Intel® 82546GB	82546GB	1GbE		2	1	2	2	2
Intel® - LAD	Intel® 82545GM	82545GM	1GbE		2	1	2	2	2
SBSCSI (BSE) Onboard Components									
LSI Logic	53C1020		U320	Included in BSE	2	1	2	2	2
Expansion Board Onboard Components									
QLogic	SBFCM		2Gb FC	FC Mezzanine	2	1	2	2	2
Intel® - LAD	Intel® Blade Server Ethernet Expansion Card PLMC	PRO/1000 MB Dual Port Server Connection	1GbE	GbE Mezzanine	1	1	1	1	

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 Linux* AS2.1	Microsoft Windows* 2000 Advanced Server, SP2	Red Hat Linux* RHEL3	SUSE* Linux Enterprise Server 9
Storage FC Enclosures									
EMC		CX-400	2Gb FC	Cert by EMC	1	1	TBD	TBD	
Eurologic*		FC-2502	2Gb FC	RAID Enclosure	1	1	TBD	TBD	
Xyratex		RS-1600-FC	2Gb FC	RAID Enclosure (Compatibility Testing only)	2	2	2	2	2
Storage USB									
Lexar Media*	JumpDrive 64MB	PD064-231	USB	64MB storage	1	1	TBD	TBD	
IBM	USB Fob	22P9030	USB	64MB storage	1	1	TBD	TBD	
Storage NAS Enclosures									
Network Appliance		FAS960	GbE	Raid Enclosure	1	1	TBD	TBD	
Chassis Passthru Modules									
Intel	Intel® Blade Server Optical Passthru Module	SBCEOPM		Cable accessory SBCEOPMSC \SBCEOPMLC					
IBM	IBM eServer BladeCenter™ Copper Passthru Module	73P6100		Cable accessory 73P6101					
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	IXM5414	GbE	SBCE Gigabit Switch Module	1	1	1	1	1

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2003 Enterprise Edition	Red Hat Linux* AS2.1	Microsoft Windows* 2000 Advanced Server, SP2	Red Hat Linux* RHEL3	SUSE* Linux Enterprise Server 9
IBM	Nortel Networks* Layer 2/3 Copper Gigabit Ethernet Switch Module for IBM BladeCenter	32R1860	Gigabit Cu	Layer 2/3 Ethernet Switch					
IBM	Server Connectivity Module for IBM BladeCenter	39Y9324	Gigabit Cu	Layer 2 Ethernet Switch, require SBCECMM2 advanced management module in chassis					
Intel	Intel® Blade Server Ethernet Switch Module SBCEGBESW1	880176	Gb Ethernet	6 exthernal / uplink ports					
Intel	Intel® Blade Server Ethernet Switch Module SBCEGBESW10	880175	10Gb Ethernet and 1Gb Ethernet	6x 1GbE and 2x 10GbE external / uplink ports					
Chassis Switches – Fibre Channel									
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]
External Switches – Gigabit Ethernet									
D-Link	DGS Gigabit Over Copper Switch	DGS-1008TL	Gigabit Cu	(Compatibility Testing only)	2		2	2	2
D-Link	DGS Gigabit Over Copper Switch	DGS-1024T	Gigabit Cu	(Compatibility Testing only)	2				
HP	Procurve	J4898A-6001	Gigabit Cu	(Compatibility Testing only)	2		2	2	

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2003 Enterprise Edition	Red Hat Linux* AS2.1	Microsoft Windows* 2000 Advanced Server, SP2	Red Hat Linux* RHEL3	SUSE* Linux Enterprise Server 9
External Switches – FibreChannel									
Brocade	Silkworm	3200		Interoperable with the Intel ® Fibre Channel Switch SBCEFCSW. Tested by Qlogic.	n/a	n/a	n/a	n/a	
Brocade	Silkworm	3800			n/a	n/a	n/a	n/a	
Inrange		FC9000-64			n/a	n/a	n/a	n/a	
Inrange		FC9000-128			n/a	n/a	n/a	n/a	
McData	Sphereon	4500			n/a	n/a	n/a	n/a	
QLogic		SANbox2-8			n/a	n/a	n/a	n/a	
QLogic		SANbox2-16			n/a	n/a	n/a	n/a	
QLogic		SANbox2-64			n/a	n/a	n/a	n/a	
IDE HDD – 2.5"									
Hitachi	Travelstar E7K60	HTE726060M9AT00	ATA100	7200 RPM, 60GB					
Hitachi	Travelstar E7K100	HTE721010G9AT00	ATA100	7200RPM, 100G					
Hitachi	Travelstar E5K100	HTE541080M9AT00	ATA100	5400RPM, 80G					
Hitachi	Travelstar E5K100	HTE541010M9AT00	ATA100	5400RPM, 100G					
Fujitsu		MHT2060AS	ATA100	5400 RPM, 60GB					
Fujitsu	Zeus Enhanced, MHV2080AS	CA08531-B708	ATA100	5400 RPM, 80G					
Fujitsu	Zeus, MHV2100AH	CA06531-B140	ATA100	5400 RPM, 100G					
Seagate	Momentus	ST94813AB	ATA100	5400 RPM, 40GB					
Seagate	Momentus	ST910008 24AB	ATA100	5400 RPM, 100GB					
* The Seagate "AB" drives are not listed on Seagate websites, it can only be ordered by directly contacting Seagate or thru a Seagate distributor.									
** Fujitsu MHV2100AH 100GB drives require SBX44 with IO board C27692-401 or later if using IDE RAID and SLES9.									
FDD									

Manufacturer	Model Name	Model Number	Interface	Comments	Microsoft Windows* 2003 Enterprise Edition	Red Hat Linux* AS2.1	Microsoft Windows* 2000 Advanced Server, SP2	Red Hat Linux* RHEL3	SUSE* Linux Enterprise Server 9
TEAC	FD-05UB	USB, SL, 1.44MB	Floppy		1	1	1	1	
TEAC	FD-05UW 297	USB, SL, 1.44MB	Floppy						
CDROM									
TEAC	CD-224E	IDE, slimline, 24X			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 SBX44/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* 2003 Enterprise Edition
2	Red Hat Linux* AS2.1
3	Microsoft Windows* 2000 Advanced Server
4	Red Hat Linux* RHEL3
5	SUSE* Linux Enterprise Server 9

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
Fujitsu	MAS Series	MAS3735NC	U320	15K	73GB	1,2
Fujitsu	Map Series	MAP3147NC	U320	10K	146GB	1,2
Maxtor	Atlas 15K	8C073JO	U320	15k	73GB	1,2
Maxtor	Atlas 10K-IV	8B036JO	U320	10K	36GB	1,2
Maxtor	Atlas 10K-IV	8B073JO	U320	10K	73GB	1,2
Maxtor	Atlas 10K-IV	8B146JO	U320	10K	146GB	1,2
Maxtor	Atlas 10K-V	8J300J0	U320	10K	300GB	
Maxtor	Atlas 10K-V	8J147J0040	U320	10K	147GB	
Maxtor	Atlas 15K-II	8K147J0	U320	15K	147GB	
Seagate	Cheetah	ST373453LC	U320	15k	73GB	1,2
Seagate	Cheetah	ST336607LC	U320	10K	36GB	1,2
Seagate	Cheetah	ST3146807LC	U320	10K	147GB	1,2
Seagate	Cheetah	ST336607LC	U320	FOR	37GB	4,5
Seagate	Cheetah	ST318452FC	2Gb FC	15K	18.4GB	1,3,4,5

Manufacturer	Product Family	Model Number	Interface	RPM	Drive size (GB)	Tested Operating Systems
Seagate	Cheetah	ST3300007LC	U320	10K	300GB	1,4
Seagate	Cheetah	ST3146854LC	U320	15K	146GB	

7.   Installation Guidelines

Known issues encountered with OS installation will be documented here as they are discovered.

7.1   Operating System Installation Issue

Guideline 1:

How to install Red Hat Enterprise Linux 2.1 AS Update 3 on a Intel® Server Compute Blade SBX44 blade using Intel® Server SCSI Expansion SBSCSI (BSE) and associated SCSI disk.

1. At the Linux boot prompt type

2. linux noprobe

3. At the Devices screen
    a. Select Add Device
    b. Select SCSI
    c. Select LSI Logic Fusion MPT SCSI Driver (mptscsih) from the device list
    d. Select Done

Continue with normal installation until the Boot loader Configuration screen

4. At the boot loader configuration screen
    a. Check the box for /dev/sdb1 First section of boot partition

Continue with the normal installation until the Boot Disk Creation screen

5. At the "Boot Disk Creation" screen
    a. Use <ctrl><alt><F2> to go to the virtual terminal with shell
    b. chroot /mnt/sysimage   //change root
    c. cd /boot/grub   //change to the grub directory

6. Use vi to edit the following files
    a. vi grub.conf
    b. Change all occurrences of hd1 to hd0   //e.g. "root (hd1,0)" to "root (hd0,0)"
    c. Change all occurrences of sdb to sda   //e.g. sdb3 to sda3

7. vi device.map and
    a. change "(hd1)   /dev/sdb" to "(hd0)   /dev/sda"

8. vi /etc/fstab
    a. Change the swap partition from /dev/sdb2 to /dev/sda2

  Run grub and execute the following commands to install grub to the hard disk
  /sbin/grub   // grub prompt is "grub>"   root (hd0,0)

 You should see the following message:

Filesystem type is ext2fs, partition type 0x83

setup (hd0)

You should see the following messages:

Checking if "/boot/grub/stage1" exists... no
Checking if "/grub/stage1" exists... yes
Checking if "/grub/stage2" exists... yes
Checking if "/grub/e2fs_stage1_5" exists... yes
Running "embed /grub/e2fs_stage1_5 (hd0)"... 22 sectors are embedded.
 succeeded
Running "install /grub/stage1 d (hd0) (hd0)1+22 p (hd0,0)/grub/stage2
/grub/grub.conf"... succeeded
Done.

quit

Return to the graphical installation screen
    <ctrl><alt><F7>

Check the box to skip boot disk creation

Complete the normal installation

Guideline 2:

How to install Red Hat* Enterprise Linux 2.1 AS Update 3 on a Intel® Server Compute Blade
SBX44 blade using LSI* MegaIDE RAID.

Assumptions:
- Valid driver update disk for megaide driver.
- Functional PXE and DHCP server(s).

  1) Obtain the megaide driver update diskette (dud) for RHEL 2.1 update 3.

  2) On the PXE server, modify RHEL 2.1 Update 3 entry in /tftpboot/pxelinux.cfg/default as follows:

        a.   append dd ks=nfs:<ipaddress>:/<path-to-RHEL2.1-RPMS>/ks.cfg
             initrd=/<path>/initrd.img

Create a kickstart file similar to the one below. Modify the kickstart file as desired.

        Sample ks.cfg file:

        #Generated by Kickstart Configurator
        lang en_US
        langsupport en_US
        keyboard us
        #Probe for Mouse

```
timezone --utc America/New_York $6Vjyx0shZp1c2LKVVDo830
reboot --iscrypted $1$Ã¡IXPsÃ¯ Ã Ã
install
nfs --server 192.168.1.2 --dir /data/rh/i386/RedHat/AS2.1/q3
%packages
@Everything
```

Note:
- The IP address and NFS path where RPMS are located should reflect the actual IP address and NFS path.
- Modify the kickstart file as needed.

3) Insert the driver disk prepared in step 1 to media tray and make sure media tray is selected.

4) Continue with normal installation. User interaction during the install will depend on kickstart file.