



Advanced Simulation Technology inc.
500 A Huntmar Park Drive
Herndon, Virginia 20170 U.S.A.
Tel. (703)471-2104 • Fax. (703)471-2108
www.asti-usa.com

ASTi

Telestra v3.0 Cold Start Procedure

Document: DOC-01-TELS-CS-3

Product Name: Telestra

ASTi ASTi Telestra Cold Start Procedure

© Copyright ASTi 2008.

Restricted Rights: Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013.

This material may be reproduced by or for the U.S. Government pursuant to the copyright license under the clause at DFARS 252.227-7013 (1994).

ASTi

500 A Huntmar Park Drive

Herndon, VA 20170

Table of Contents

1.0. Overview	1
2.0. Requirements	1
3.0. Cold Start Procedure: 2U & 4U Telestra Systems	2
4.0. Instructions to Verify CD-ROM Contents	3
5.0. Hard Disk Operation	5
5.1. Configuring BIOS version RG84510A.86A.xxxx.Pxx or BF86510A.86A.xxxx.Pxx	5
5.2. Configuring BIOS version NT94510J.86A.xxxx.xxxx.xxxx.xxxx	7
5.3. Configuring the BIOS version Advantech AIMB-562 Award	8
6.0. Diskless Client Operation Only	9
Method 1: CDRom Boot	9
Method 2: Network Boot	9
6.1. Configuring BIOS version RG84510A.86A.xxxx.Pxx or BF86510A.86A.xxxx.Pxx for Diskless Operation	9
6.2. Configuring BIOS version NT94510J.86A.xxxx.xxxx.xxxx.xxxx for Diskless Operation	11
6.2.1. Over the Network	11
6.2.2. From the CD with the Hard Drive	11
6.2.3. From the CD without the Hard Drive	11
6.3. Configuring the BIOS version Advantech AIMB-562 Award for Diskless Operation	13
7.0. Installing Linux & Telestra Software	14
7.1. Software Installation for Versions 3.14 through 3.39-1	14
7.2. Software Installation for Versions 3.40-1 or later	15
8.0. Record/Debrief Partitioning Instructions	19
9.0. Diskless Client Server Configuration	22

ASTi Telestra Cold Start Procedure

1.0. Overview

The cold start procedure described in this document allows users to build Telestra systems from scratch. There are three main reasons for using the cold start procedure:

1. Installing the latest software version
2. Rebuilding a damaged hard disk
3. Creating spare hard disks

2.0. Requirements

This cold start procedure is only for use with 2U or 4U Telestra systems. You will need the ASTi Software CD.

Note that Telestra series 3.x software will not run on previous-generation Telestra systems with a 1U chassis. Please refer to ASTi Document number: DOC-01-TELS-CS-2 (rev. E) for 1U Telestra cold start instructions.



Remove all plastic packaging from the Telestra before proceeding with the Telestra Cold Start procedure.

3.0. Cold Start Procedure: 2U & 4U Telestra Systems

WARNING: This will COMPLETELY ERASE the contents of your hard drive.

Before beginning, be sure to download and backup critical Telestra files such as the Telestra Options file, Telestra Configuration file, and any State Machine modules. Also, make sure you have a hard drive properly inserted into the system, along with a connected monitor and keyboard.

Cold Start steps include:

1. Instructions to Verify CD-ROM Contents
2. Standard Hard Disk Operation: Configuring the BIOS, either:
 - RG84510A.86A.xxxx.Pxx
 - BF86510A.86A.xxxx.Pxx
 - NT94510J.86A.xxxx.xxxx.xxxx.xxxx
 - Advantech AIM B-562 Award
3. Diskless Client Operation: Configuring the BIOS, either:
 - RG84510A.86A.xxxx.Pxx
 - BF86510A.86A.xxxx.Pxx
 - NT94510J.86A.xxxx.xxxx.xxxx.xxxx
4. Installing Linux & Telestra Software
5. Record/Debrief Partitioning Instructions
6. Diskless Server Configuration

4.0. Instructions to Verify CD-ROM Contents

Telestra software releases between version 3.9-1 through 3.39 incorporate an MD5 checksum of the CD-ROM's contents, allowing customers to verify the integrity of the installation media. The verification will fail if any file on the CD is unreadable due to scratches, marks, etc.

To perform the check, users must have access to the sh shell and md5sum executable. *The ASTi Telestra system provides these resources by default, and is the recommended computer to use for media verification.*

If the check is to be performed using a different computer, however, some changes to the system may be required. *ASTi does not support the installation, configuration, or use of any of the packages or utilities listed here.*

- **Windows:** Users can install Cygwin (<http://www.cygwin.com/>) to gain Linux-like functionality on the Windows OS. This is an arduous process, and a step not to be taken lightly.
- **Non-ASTi GNU/Linux or other *NIX operating systems:** The GNU Core Utilities (coreutils) package must be installed on the system; the 'md5sum' executable is included therein. See <http://www.gnu.org/software/coreutils/> for more information. This may be included by default in your installation; enter "which md5sum" at the command-line to check.
- **Mac OS X 10.3 or later:** The preinstalled 'md5' executable will not work properly to verify the installation media. The GNU Core Utilities (coreutils) package must be installed on the system. This can be compiled from source or installed using a third-party porting application such as Darwinports (<http://darwinports.com/>). Either method requires the Apple XCode developers' tools be installed on the system. Certain changes to the verification script are also required; contact ASTi for more information.

The following instructions are written for disc verification using the Telestra system.

1. Power on the Telestra system, and allow it to fully boot from the hard drive (*not the installation CD!*).
2. Select **Development Mode** and login to the system, as the system loads press **CTRL-ALT-F2** to gain access to the command prompt.
 - 2a. At the command prompt you will have to login again.
 - 2b. Insert the **Telestra Software Install CD** into the CD-ROM drive.
3. At the command prompt, mount the CD; enter:

```
mount /cdrom
```
4. At the command prompt, move to the "cdrom" mount directory by entering:

```
cd /cdrom
```
5. Run the verification script. The verification script does not accept any command-line arguments. At the command prompt, enter:

```
sh ./verify-checksum.sh
```

6. The verification test will take **several minutes** to complete. When done, check the output of the script.

Example output of successful verification:

```
Original Check Sum:      d082a2ba405f05c0a0e3a45e2f4a89f7
Recalculated Check Sum: d082a2ba405f05c0a0e3a45e2f4a89f7
The Checksum Test PASSED.
```

Example output of verification failure:

```
Original Check Sum:      d082a2ba405f05c0a0e3a45e2f4a89f7
(multiple on-screen file IO errors not shown here)
Recalculated Check Sum:  e0921a3b04a5e06c9aae2a55f2e4b88f6
The Checksum Test FAILED.
```

7. Move out of the “cdrom” mount directory by entering:

```
cd
```

8. Unmount and eject the CD by entering:

```
eject
```

9. Eject the CD from Telestra's CD-ROM drive. ***Important: Failure to remove the CD after verification will result in complete erasure and reformatting of your hard disk the next time the Telestra system is booted.***

If the CD verification was successful, proceed with software installation. If CD verification failed, however, please contact ASTi immediately to receive new software installation media.

5.0. Hard Disk Operation

During initial system boot-up, pause the screen to view the version number of the BIOS. Please follow the configuration instructions that correspond to the systems correct BIOS version number.

5.1. Configuring BIOS version RG84510A.86A.xxxx.Pxx or BF86510A.86A.xxxx.Pxx

1. If you have not already done so, attach a monitor, keyboard and power cable to the Telestra platform.
2. Power on the Telestra and *immediately* press the **F2** key as the system starts.
 - 2a. The **BIOS Setup Utility** will open with a menu across the top reading:
Main, Advanced, Security, Power, Boot, Exit
3. Use the arrow keys to move to the **Exit** field, choose **Load Optimal Defaults** and select **OK**.
4. Use the arrow keys to move to the **Main** field.
 - 4.1. Select **System Time** and set the value to Greenwich Mean Time (GMT). GMT = Eastern Standard Time + 5 hours.
 - 4.2. Select **System Date** and change the value to the current date.
5. Use the arrow keys to move to the **Advanced** field.
 - 5.1. Select **Video Configuration** and set the **Frame Buffer Size** to 8MB or 16 MB, whichever largest value is available. Press **ESC** when done.
 - 5.2. Select **IDE Drive Configuration** (depending on the type of motherboard this may also read **Drive Configuration**) and set the **Hard Disk Pre-Delay** to 2 seconds. Press **ESC** when done.
 - 5.3. Select **USB Configuration** and set **High-Speed USB** to Enabled.
 - 5.4. Select **Legacy USB Support** and set the value to Disabled. Press **ESC** when done.
6. Use the arrow keys to move to the Power field.
 - 6.1. Select **After Power Failure** and choose Power ON.

7. Use the arrow keys to move to the **Boot** field.
 - 7.1. Select **Silent Boot** and choose Disabled.
 - 7.2. Select **Intel(R) Rapid BIOS Boot** and choose Disabled.
 - 7.3. Select **Boot Device Priority**
 - 7.3.a. Under **1st** choose ATAPI CD ROM or specific device designation.

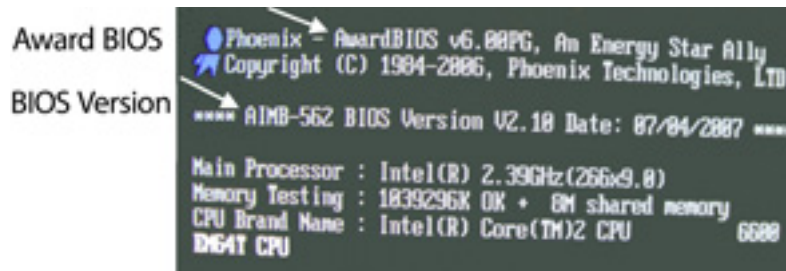
If it is not clear which device is the CD-ROM press **ESC**, highlight the **ATAPI CD-ROM Drives** and press **ENTER**. The device designation will be shown.
 - 7.3.b. Under **2nd** choose Hard Drive or specific device designation.

If it is not clear which device is the Hard Drive press **ESC**, highlight the **Hard Disk Drives** field and press **ENTER**. The device designation will be shown.
 - 7.3.c. Under **3rd** choose Disabled. Press **ESC** when done.
8. Use the arrow keys to move to the **Exit** field. Select **Exit Saving Changes** and press **Y**.

5.2. Configuring BIOS version NT94510J.86A.xxxx.xxxx.xxxx.xxxx

1. If you have not already done so, attach a monitor, keyboard and power cable to the Telestra platform.
2. Power on the Telestra and *repeatedly* press the *delete* key until the BIOS Configuration screen appears.
 - 2a. The System Setup will open with a menu across the top reading:
Main, Advanced, Security, Power, Boot, Exit
3. Use the arrow keys to move to the *Exit* field, choose *Load Optimal Defaults* and select *OK*.
 - 3.1 A screen will pop up asking *Load Defaults (Y/N)* press *Y*.
4. Use the arrow keys to move to the *Main* field.
 - 4.1. Select *System Time* and set the value to Greenwich Mean Time (GMT). GMT = Eastern Standard Time + 5 hours.
 - 4.2. Select *System Date* and change the value to the current date.
5. Use the arrow keys to move to the *Advanced* field.
 - 5.1. Use the arrow keys to select *Drive Configuration*.
 - 5.2. Set *Use Automatic Mode* to Enable.
 - 5.2.1. Set *ATA/IDE Mode* to Legacy. Press *ESC* when done.
 - 5.3. Select *USB Configuration*.
 - 5.3.1. Select *USB Legacy* and set the value to Disabled. Press *ESC* when done.
6. Use the arrow keys to move to the Power field.
 - 6.1. Select *After Power Failure* and choose Power ON.
7. Use the arrow keys to move to the *Boot* field.
 - 7.1. Select *USB Boot* and set to *Disabled*.
 - 7.2. Select *Boot Device Priority*.
 - 7.3. Press *ENTER* and follow the instructions in the bottom right corner until you see the following order: CD/DVD-ROM Drive
Hard Disk Drive
Ethernet
Floppy
8. Use the arrow keys to move to the *Exit* field. Select *Exit Saving Changes* and choose *Y*.

5.3. Configuring the BIOS version Advantech AIMB-562 Award



1. If you have not already done so, attach a monitor, keyboard and power cable to the Telestra.
2. Power on the Telestra and immediately press the *delete* key as the system starts to enter the BIOS Setup.
3. Select *Load Optimized Defaults*.
4. Select *Standard CMOS Features*.
 - 4a. Set Date and Time (+5 Hrs GMT)
 - 4b. Halt on No Errors
5. Navigate to the *Advanced BIOS Features* and set the following:
 - 5a. First Boot Device CDROM
 - 5b. Second Boot Device Hard Disk
 - 5c. Third Boot Device LAN
6. Select *Integrated Peripherals*
 - 6a. Select *OnChip IDE Device*
 - 6b. Set *On-Chip Serial ATA* to *SATA Only*
7. Navigate to the *Exit* field and select *Exit and Save*. After the prompt opens, select *OK*.

6.0. Diskless Client Operation Only

Currently, ASTi does not support Diskless Operation in ASTi software version 3.40-1 and later.

Method 1: CDROM Boot

If your Telestra is not equipped with a removable hard drive, the setting of a 2nd boot device may not be applicable. However, if your Telestra is equipped with a removable drive, and you are switching between diskless operation running from CD-ROM and disk-based operation running from the HDD, the BIOS may change automatically. You will need to reset your BIOS so that CDROM is set to the 1st boot device.

Method 2: Network Boot

Network Boot only works for the onboard Ethernet (Eth0).

6.1. Configuring BIOS version RG84510A.86A.xxxx.Pxx or BF86510A.86A.xxxx.Pxx for Diskless Operation

1. If you have not already done so, attach a monitor, keyboard and power cable to the Telestra platform.
2. Power on the Telestra and press the **F2** key as the system starts.
 - 2a. The Bios Setup Utility will open with a menu across the top reading:
Main, Advanced, Security, Power, Boot, Exit
3. Use the arrow keys to move to the **Exit** field, choose **Load Optimal Defaults** and select **OK**.
4. Use the arrow keys to move to the **Main** field.
 - 4.1. Select **System Time** and set the value to Greenwich Mean Time (GMT). GMT = Eastern Standard Time + 5 hours.
 - 4.2. Select **System Date** and change the value to the current date.
5. Use the arrow keys to move to the **Advanced** field.
 - 5.1. Select **Video Configuration** and set the **Frame Buffer Size** to 8MB or 16 MB, whichever largest value is available. Press **ESC** when done.
 - 5.2. Select **IDE Drive Configuration** (depending on the type of motherboard this may read **Drive Configuration**) and set the **Hard Disk Pre-Delay** to 2 seconds. Press **ESC** when done.
 - 5.3. Select **USB Configuration** and set **High-Speed USB** to Enabled.
 - 5.4. Select **Legacy USB Support** and set the value to Disabled. Press **ESC** when done.
6. Use the arrow keys to move to the Power field.
 - 6.1. Select **After Power Failure** and choose Power ON.

7. Use the arrow keys to move to the **Boot** field.
 - 7.1. Select **Silent Boot** and choose Disabled.
 - 7.2. Select **Intel(R) Rapid BIOS Boot** and choose Disabled.
 - 7.3. Select **PXE Boot to LAN** and choose Enabled.
8. Use the arrow keys to move to the **Exit** field. Select **Exit Saving Changes** and choose **OK**.
(If you do not save changes and reboot, the PXE boot device may not appear under the Boot Menu.)
9. While the system is rebooting press the **F2** key as the system starts.
10. Use the arrow keys to move to the **Boot** field.
 - 10.1. Select **Boot Device Priority**
 - 10.2. Select 1st Boot Device = (IBA FE Slot xxxx, IBA GE Slot xxxx, or xx yy Yukon PXE).

Note: At the time of this writing, these are the network boot devices. Yours may be different. Select 2nd and 3rd Boot Device = Disabled
11. Use the arrow keys to move to the **Exit** field. Select **Exit Saving Changes** and choose **OK**.

6.2. Configuring BIOS version NT94510J.86A.xxxx.xxxx.xxxx.xxxx for Diskless Operation

There are several options when booting up the Diskless Telestra,

1. Over the Network (no CD)
2. From the CD with the hard drive inserted
3. From the CD without the hard drive inserted

The configuration procedures will vary depending on your system setup.

6.2.1. Over the Network

When booting up off the network, make sure the CD or Hard drive are not inserted. Then follow the **Standard Hard Disk Operation** instructions in section:

5.2. Configuring BIOS version NT94510J.86A.xxxx.xxxx.xxxx.xxxx

6.2.2. From the CD with the Hard Drive

When booting off the CD and the hard drive is inserted, follow the **Standard Hard Disk Operation** instructions in section:

5.2. Configuring BIOS version NT94510J.86A.xxxx.xxxx.xxxx.xxxx

6.2.3. From the CD without the Hard Drive

When booting off the CD and there is not a hard drive, follow the steps below.

1. If you have not already done so, attach a monitor, keyboard and power cable to the Telestra platform.
2. Power on the Telestra and *repeatedly* press the *delete* key until the BIOS Configuration screen appears.
 - 2a. The System Setup will open with a menu across the top reading:
Main, Advanced, Security, Power, Boot, Exit
3. Use the arrow keys to move to the *Exit* field, choose **Load Optimal Defaults** and select **OK**.
 - 3.1 A screen will pop up asking **Load Defaults (Y/N)** press *Y*.
4. Use the arrow keys to move to the *Main* field.
 - 4.1. Select **System Time** and set the value to Greenwich Mean Time (GMT). GMT = Eastern Standard Time + 5 hours.
 - 4.2. Select **System Date** and change the value to the current date.

5. Use the arrow keys to move to the *Advanced* field.
 - 5.1. Use the arrow keys to select *Drive Configuration*.
 - 5.2. Set *Use Automatic Mode* to Disable.
 - 5.2.1. Set *ATA/IDE Mode* to Legacy.
 - 5.2.2. Set *Use Serial ATA* to Disable. Press *ESC* when done.
 - 5.3. Select *USB Configuration*.
 - 5.3.1. Select *USB Legacy* and set the value to Disabled. Press *ESC* when done.
6. Use the arrow keys to move to the Power field.
 - 6.1. Select *After Power Failure* and choose Power ON.
7. Use the arrow keys to move to the *Boot* field.
 - 7.1 Select *Boot Device Priority*.
 - 7.2. Press *ENTER* and follow the instructions in the bottom right corner until you see the following order:
 - CD/DVD-ROM Drive
 - Hard Disk Drive
 - Ethernet
 - Floppy
8. Use the arrow keys to move to the *Exit* field. Select *Exit Saving Changes* and choose *Y*.

6.3. Configuring the BIOS version Advantech AIMB-562 Award for Diskless Operation

The configuration instructions for this BIOS version are exactly the same as the non-Diskless instructions, see section **5.3. Configuring the BIOS version Advantech AIMB-562 Award**.

7.0. Installing Linux & Telestra Software

Note: If you are only performing a software installation, ensure the “Boot Priority” is set in accordance with the proper BIOS instructions previously outlined in this document. Otherwise, the Telestra system will not boot from the CD-ROM and automatically enter the installation routine.

7.1. Software Installation for Versions 3.14 through 3.39-1

This section applies to software version 3.14 through 3.39-1. Please allow approximately 15 minutes for installation.

1. Turn on the Telestra system via the power switch on the front of the chassis.
The system may or may not fully boot, and you may receive an error message.
2. Insert the CD labeled “**Telestra Software CD**” into the CD-ROM drive.
3. Reboot the system using the “**Reset**” button on the front of the chassis.
4. The system will begin to boot from the CD. A message will appear warning that all data will be erased from the hard disk. Press the **ENTER** key to begin installation.
The screen may go blank for about a minute as the X server (graphical interface) starts. This is normal, and the process should not be interrupted.
5. The Telestra Software Installer will load, and software installation will proceed without any further user action.
 - 5a. During loading the screen will first read “**Formatting/User File System...**”
 - 5b. Then the screen will read “**Transferring install image to hard drive...**” This may take a few minutes.
 - 5c. Last the screen will read “**Starting install process, this may take several minutes.**”
 - 5d. Then the status is shown as the installation proceeds.
6. The screen will read “Congratulations, the installation is complete” when installation is complete and the CD tray will slide open. Remove the CD from the tray.
7. Click the “**Exit**” button in the graphical interface if you have a mouse connected to the Telestra system. Otherwise, press the **ENTER** key to select “**Exit**”.

The Telestra system will then reboot and start from the hard disk.

7.2. Software Installation for Versions 3.40-1 or later

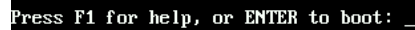
This section applies to software version 3.40-1 or later.

The software installation requires the following two CD-ROMs.

- Disk 1 - Debian CD
- Disk 2 - ASTi Software CD

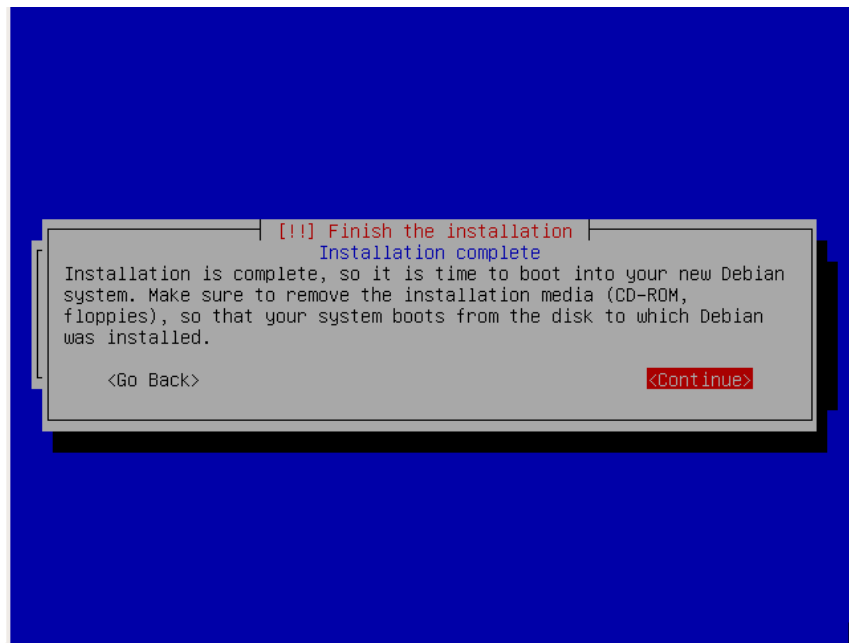
Please allow approximately 20 minutes for installation.

1. Insert the **Debian CD**.
2. Reboot the Telestra.
3. A blank gray screen appears, press *Enter* to boot.

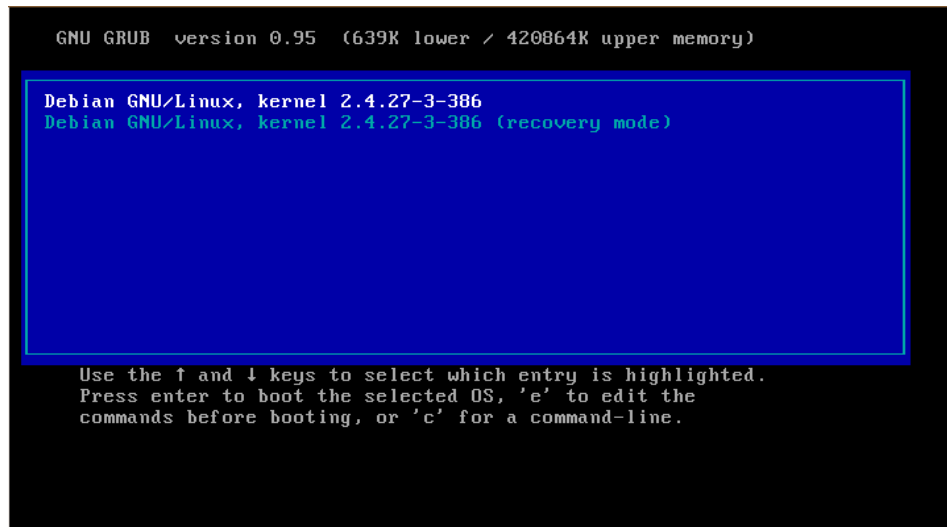


```
Press F1 for help, or ENTER to boot: _
```

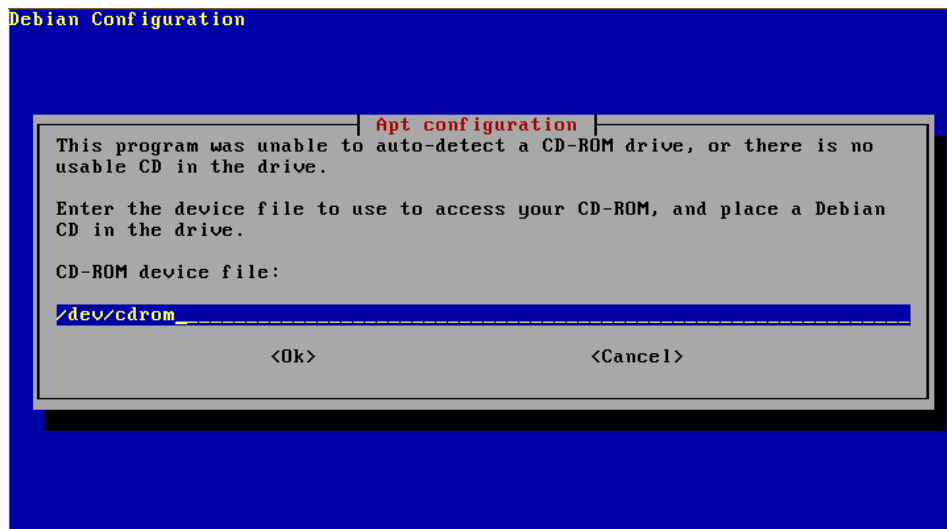
4. Wait 5-10 minutes.
5. Remove the **Debian CD** from the disk tray.
6. The 'Completion' screen will appear as shown below, press *Continue*.



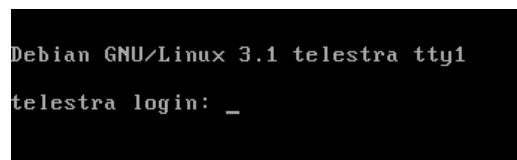
7. Wait for the system to reboot.



8. The 'Apt Configuration' screen will appear, stating it is searching for the CD.



9. Re-insert the **Debian CD** and press *Enter*.
10. Wait for the login prompt and the **Debian CD** to eject.



11. Remove the **Debian CD**.
12. Insert the **ASTi Software CD**.

13. Login as root.

Username: root Password: abcd1234

14. At the terminal prompt, type the following:

```
mount /dev/cdrom /media
```

and press *Enter*.

```
telestra:~#  
telestra:~#  
telestra:~#  
telestra:~# mount /dev/cdrom /media/  
mount: block device /dev/cdrom is write-protected, mounting read-only  
telestra:~# _
```

15. At the terminal prompt, type the following:

```
/media/install
```

```
telestra:~#  
telestra:~#  
telestra:~#  
telestra:~# mount /dev/cdrom /media/  
mount: block device /dev/cdrom is write-protected, mounting read-only  
telestra:~#  
telestra:~#  
telestra:~# /media/install _
```

16. The prompt will ask if you want to continue [Y/N] type *Y* and press *Enter*.

```
Setting up bind9-host (9.2.4-1sarge3) ...  
Setting up liblwres1 (9.2.4-1sarge3) ...  
  
Setting up dnstools (9.2.4-1sarge3) ...  
  
Setting up libmagic1 (4.12-1sarge2) ...  
  
Setting up file (4.12-1sarge2) ...  
Setting up libkrb53 (1.3.6-2sarge5) ...  
  
Setting up dhcp-client (2.0p15-19.1sarge3) ...  
  
Setting up read-edid (1.4.1-2) ...  
Setting up perl-modules (5.8.4-8sarge6) ...  
Setting up perl (5.8.4-8sarge6) ...  
  
Reading Package Lists... Done  
Building Dependency Tree  
Reading extended state information  
Initializing package states... Done  
Reading task descriptions... Done  
  
Attempting to install Telestra MBU E2, continue [Y/n]  
_
```

17. At the terminal prompt press *Enter* to continue.

```
Setting up kdebase-bin (3.3.2-1sarge3) ...
Setting up kdesktop (3.3.2-1sarge3) ...
Setting up kfind (3.3.2-1sarge3) ...

Setting up konqueror (3.3.2-1sarge3) ...

Setting up mbv-desktop (1.1-22623) ...
'/etc/X11/Xsession.d/99xfree86-common_start' -> '/etc/X11/Xsession.d/99xfree86-c
ommon_start.dpkg-old'
'/etc/X11/Xsession.d/99xfree86-common_start.asti' -> '/etc/X11/Xsession.d/99xfre
e86-common_start'

Setting up telestra-mbv (3.8-22623) ...

Setting up asti-meta-base (0.1-22623) ...
Setting up asti-meta-us (0.1-22623) ...
Setting up asti-meta-e2 (0.1-22623) ...
Reading Package Lists... Done
Building Dependency Tree
Reading extended state information
Initializing package states... Done
Reading task descriptions... Done
Press <enter> to continue...
```

18. At the terminal prompt type

eject

and press enter.

19. Remove the **ASTi Software CD** from the disk tray.

20. Type

reboot

The software installation is complete.

8.0. Record/Debrief Partitioning Instructions

The following steps provide formatting instructions for the secondary disk drive on Telestra Record and Debrief systems. Not all Record and Debrief Telestra systems have two hard drives; **these instructions apply only to those systems that are delivered with this option.**

1. Power on the Telestra system, and immediately press and hold the F2 key until the BIOS Setup Utility is displayed.
2. Use the arrow keys to navigate to the *Advanced* section, then arrow down to *Drive Configuration*; press Enter select.
3. Verify that the entries for *Primary Master* and *Primary Slave* display something other than “Not Detected.”
 - a. If they are undetected, there is a problem with the system. Power down the Telestra system, and ensure all drives are securely seated in their drive bays, and locked into place; verify the correct BIOS settings (for more information on BIOS settings see section 5.0. Hard Disk Operation) then, start over.
 - b. If the drives are detected properly, press the ESC key to return to the main page. Press the ESC key again to exit the Setup Utility. When asked “Discard changes and exit setup?”, highlight “OK” and press Enter.

The system will then continue to boot normally.

4. On the “GNU GRUB” kernel selection page, use the arrow keys to highlight *Recovery Mode*, and press Enter to continue booting, which may take a few seconds to complete.
 - a. While unlikely, if an “fsck failed” error is displayed, and you are asked to provide the root password, you may have a corrupt file system on the secondary hard drive. **Stop this procedure and contact ASTi immediately for assistance.**
5. Once the blue Telestra console page is displayed, press ALT+F2 to access a standard Linux login prompt.
6. Login as 'root' using the appropriate password. Contact ASTi if you do not know the root account password.
7. After login, at the Linux prompt, enter:

```
umount /dev/hdb1
```

If a message that says "umount: /dev/hdb1: not found" appears, this means that the partition does not already exist. This is not a problem, proceed to the next step.

8. After login, at the Linux prompt, enter:

```
fdisk /dev/hdb
```

This will launch the partition management program.

For systems with existing partitions on the slave drive only: At the "Command (m for help):" prompt, type "d" (without the quotes) and press Enter to delete the existing partition.

9. At the "Command (m for help):" prompt, type "n" (without the quotes) and press Enter to create a new partition.
10. At the next prompt, type "p" (without the quotes) and press Enter to mark the new partition as primary.
11. At the next prompt, type "1" (the number one, without the quotes) and press Enter to provide the primary partition number.
12. At the "first cylinder" prompt, press Enter to accept the default value, which will be displayed on-screen.
13. At the "last cylinder" prompt, press Enter again to accept the default value.
14. At the "Command (m for help):" prompt, type "w" (without the quotes) and press Enter to save the setup configuration and exit the fdisk utility. This will write the partitioning table to disk, and may take a few seconds to save.
15. To verify the partition setup, enter the following command (the dash is followed by a lowercase L, not the number 1):

```
fdisk -l /dev/hdb
```

Verify the displayed output, the end which should be similar to the sample shown here:

Device	Boot	Start	End	Blocks
/dev/hdb1		1	9729	78148161

NOTE: The above is for an 80GB PATA hard drive. The values may be different if a different disk size and/or a SATA drive is used.

16. Next, enter the following command (the character following 'hdb' is the number 1):

```
mkfs.ext2 /dev/hdb1
```

This will create the file system on the new partition. The screen may appear idle for a few seconds while the file system is being generated.

17. Once the Linux prompt returns to the screen, move to the "/etc" directory by entering:

```
cd /etc
```

18. Open the "fstab" file in a text editor (pico, emacs, vi, etc.).

19. Add the following line to the end of the “fstab” text file (the characters following 'hdb' and 'defaults' are the number one):

```
/dev/hdb1 /usr/local/asti/record ext2 defaults 1 2
```

These settings are separated by pressing the Tab key to insert blank space. Use existing lines in the “fstab” file as guides when adding this new line.

20. Save and close the “fstab” file.
21. Log out of the system by entering:

```
logout
```

22. Press ALT+F1 to return to Telestra's main console. Select “Reboot” or “Shut Down”. The next time the Telestra system is booted, the secondary hard drive will be ready for use.

9.0. Diskless Client Server Configuration

For Server Only:

The following procedure describes how a user will upload the necessary diskless client files to the Telestra server. These files will be used to either boot a client over the network or create a client boot CD.

There are 3 core files that must be loaded onto the server hard drive in order to manage diskless clients. They are:

- System Image
- Components Binary
- Options File

To upgrade one or more of the three core files, follow the required procedure below.

1. The Telestra server must be installed with an options file in order to function.
 - 1a. Verify that the options file contains all of the MAC addresses of every client it will serve.
 - 1b. Verify that the correct options file is installed on the server. The options file will be provided to you at the time of purchase. If unsure about the options file, please contact ASTi. For details on installing the options file, please refer to the Telestra Users Guide. (DOC-01-TELS-UG-3)
2. Once the options file is installed, the next step is to copy the client files from the PC to the Telestra server via RMS as follows:
 - a. Insert the **ASTi Telestra Software CD** into the CD drive of the Telestra.
 - b. From the PC, use RMS to access the Diskless Server Telestra.
 - c. Select **Remote Clients -> Edit Image Settings**
 - d. Select the checkbox for “**Update directly from ASTi Telestra Software CD**” and click **Update**. The System Image and Component files will then be installed onto the server.

An alternate to step 2 above is to insert the CD directly into the Diskless Server Telestra CD drive, and follow the procedure below.

Alternative to step 2 above:

- a. Insert the **ASTi Telestra Software CD** into the CD drive of the PC.
- b. From the PC, use RMS to access the Diskless Server Telestra.
- c. Select **Remote Clients -> Edit Image Settings**
- d. Upload the system image and components binary from the CD provided. This involves copying 2 files from the ASTi Client Software CD to the server.
 - i. Select **Upload** to be **System Image** in the Upload field and then browse for the system image (.tar file) on the CD provided. Click **Update** to upload the file to the Server.
 - ii. Select **Upload** to be **Components** in the Upload field and then browse for the components binary (.deb file) on the CD provided. Click **Update** to upload the file to the Server.