

# AMD Geode™ SP4SC40 System Platform

## Restoring a Linux Hard Disk

### Using MKCDREC Software



## 1.0 Scope

This document discusses the procedure for restoring a complete Linux image using the bootable CD included in the AMD Geode™ SP4SC40 system platform kit. The Linux software used to create the bootable CD image is called MKCDREC. The software is "free-ware" and more information on MKCDREC can be found at the web site: <http://mkcdrec.indyramp.net>. The purpose of the Linux image is to verify that the SP4SC40 platform and plug-in cards included in the kit are functional.

## 2.0 Procedure

### 2.1 Verify the Boot Order of Drives

Follow the procedures for setting up the SP4SC40 as described in Sections 2.1 and 2.2 of the AMD Geode™ SP4SC40 System Platform User's Guide. The hard drive must be at least 4.3 GB. The LPC (Low Pin Count) card and floppy drive should not be installed, and the boot order of drives should be left at the default state:

- 1) Floppy drive (Should not be installed)
- 2) CD-ROM drive (Installed in Primary IDE as Slave)
- 3) Hard drive (4.3 GB minimum, installed on Primary IDE as Master)

The boot order can be verified by pressing F1 during the boot process, then press C (Motherboard Device Configuration), then press A (Drive Configuration) to view the boot order sequence. If the drives are not set to this order, do so at this time. The menu items are intuitive and easy to set. See Section 4.4 Configuring Boot Order of Drives in the AMD Geode™ SP4SC40 System Platform User's Guide for complete instructions.

### 2.2 Restore the Hard Drive

Note that this procedure completely reformats the hard drive and all previous data will be lost. Plug in the ATX power supply and turn on the SP4SC40 platform by pressing the On/Off button (SW1). Once power is applied, press the open/close button on the CD-ROM drive to load the Linux CD. If this is done quickly, the CD may spin-up and be ready to boot when the BIOS is ready. If the CD-ROM drive is not ready, a message such as "Boot device not present - Halting" will appear on the screen. In this case press the Reset button (SW2) and the platform will reboot. The CD-ROM will be ready to boot this time.

The CD will boot the MKCDREC software and load the kernel. Ignore all messages until the following command line appears:

```
I have no name!@localhost:/ #
```

Follow the instructions shown below. Some non-important output messages are ignored. (<) designates enter commands. Press the Enter key after typing each command:

```
< cd /etc/recovery
```

```
< ./clone-dsk.sh
```

Press [Enter] to continue or [CTRL-C] to abort:

```
< Enter
```

```
mkCDrec_v0.6.1 - Source disk to restore
```

```
Enter your selection:
```

```
/dev/hda (size: 39088896 Kb)
```

```
Please choose from the above list [1-1]:
```

```
< 1
```

```
Is disk /dev/hda already formatted (manually)? [Y/n]
```

```
< n
```

```
Swap partition /dev/hda3 has size 141 Mb.
```

```
You can change the size of this partition if required.
```

```
1) 70 Mb
```

```
2) 105 Mb
```

```
3) 141 Mb
```

```
4) 176 Mb
```

```
5) 211 Mb
```

```
Please choose from the above list [1-5]:
```

```
< 3
```

```
hda: hda1 hda2 (hda5 hda6 hda7)
```

```
Do you want to reformat /dev/hda? [Y/n]?
```

```
< Y
```

```
The disk has been reformatted, and will now start the mkfs.
```

```
Start mkfs process of disk /dev/hda? [Y/n]?
```

```
< Y
```

Initialize the swap partition? [Y/n]?

< Y

Shall I label the partitions (LABEL)? [Y/n]?

< Y

Shall I restore all partitions? [Y/n]?

< Y

Files are now copied from the CD-ROM to the hard drive (approximately 15 minutes).

Shall I adapt lilo.conf and /etc/fstab for you + lilo the disk? [Y/n]?

< Y

Source disk has been successfully cloned.

## 2.3 Reboot to Linux and Verify Platform Functions

Remove the CD and reboot the system by pressing the Reset button (SW2). The system should now boot from the hard drive, and the following is displayed:

Red Hat Linux release 7.2 (Enigma)

Kernel 2.4.17 on an i586

localhost login:

< root

[root@localhost root]#

< startx

The Xwindows program now runs with the Gnome GUI. It verifies the video graphics driver and video card. The display resolution is 1024x768x24-bit color. Note that the red UDMA LED (CR3) on the SP4SC40 board blinks during hard drive activity. This verifies the UDMA feature. Without UDMA, overall performance is much slower and the red LED does not blink.

To verify the various audio functions make the following connections:

- Plug a 4-pin audio cable from the CD-ROM drive into connector J12, CD Audio In.
- Plug a stereo microphone into J5, Mic In.
- Connect left and right speakers to J2, Audio Out. The speakers should be powered.

To verify that a music CD will play, open the CD-ROM tray and insert a music CD, then close the tray. The CD player should automatically start and the control GUI appears in the window. Use the mouse to control the CD player, (i.e., Pause, Stop, Fast Forward, Rewind, etc.). The CD player and other audio applications are run by clicking on the Gnome "foot" in the lower-left corner of the display, then click on Programs – Multimedia. The microphone should be working and can be verified by speaking into it and listening to the amplified sound from the speakers. The Audio Mixer program can be used to change the sound volume, CD-audio, and microphone levels.

To verify the Ethernet card and driver are working, use Netscape Navigator to access the internet. First run Programs – System – Network Configuration to set up the network. Due to the variety of network configurations, specific instructions are not given in this document. Contact your System Administrator for the correct network settings. Netscape can be run by clicking on the red Netscape icon in the panel at the bottom of the screen.

The Xwindows/Gnome user interface provides a variety of other features that are not discussed in this document. The user is encouraged to experiment with these programs and features. Note that if any files or features of the Linux image are accidentally deleted or corrupted, the Linux CD can be used to restore the original image. Note again that any changes or additions made to the original image will be lost.

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