

## AmigaOne - Dual Booting from the Same Hard Drive

### Installing Debian Linux

Once you have fulfilled the pre-requisites, installed AmigaOS 4.0 and defined the Linux partitions, you are ready to install the Woody distribution of Debian Linux.

1. Turn on your AmigaOne and as soon as the U-Boot Initialisation screen appears, press <Esc>. As soon as U-Boot has checked the IDE and SiL devices, it will stop with a "J" prompt.
2. Insert the AmigaOne Installer CD in your CDROM drive.
3. At the prompt, type `ide reset` to force U-Boot to re-check all of the IDE and SiL devices and stop with a "J" prompt. Above that it will show all of the devices found, one of which will be the CDROM drive containing the CD you just inserted. Take note of the "Device #" down the left hand side next to the CDROM entry. You will need this device number in the next step.
4. You are now ready to boot from the CDROM where "#" is the device number from step 3.
  - If your CDROM is connected to the VIA 686 controller (standard), then at the prompt, type  
`diskboot 500000 #:0 0`
  - If your CDROM is connected to the SiL0680 controller, then at the prompt, type  
`diskboot 500000 #:0 1`
5. The CDROM will load for a short while as it boots Debian Woody from the CDROM.
6. If you have a Voodoo 3/4/5, ATI Radeon or ATI Rage 128 video card, you will be asked to "Choose The Language". Use the down arrow key to select `en` for English if that is the desired language and press <Enter>. If you do not have one of the above cards it assumes basic VGA and you will not get this option.
7. After selecting the language (assuming English was selected otherwise this screen is not displayed) you will be asked to "Choose Language Variant" and `English (United States)` will be highlighted. Select the variant you desire and press <Enter>.
8. You will be greeted with a welcome message. Press <Enter> to continue.
9. The installation of Debian is made up of a number of steps. Each step of the way, you can proceed to the next step, or you can step back, or take alternative choices. The most logical next step is always shown first.
10. `Next : Configure the Keyboard`  
Simply press <Enter> to configure the keyboard. Note that you can reconfigure the keyboard later by running "`dpkg-reconfigure console-data`" from a Shell. Select `qwerty/us` at the top the list, unless you have a non-US keyboard, and press <Enter>.
11. `Next : Initialize and Activate a Swap Partition`  
Press <Enter> to select this option. You are then asked if the partition (the swap partition you defined using Media Toolbox) should be scanned for bad blocks. Simply choose the `<No>` option, which will already be selected for you. Press <Enter> again when you're asked if you're sure you want to format it as the swap partition.
12. `Next : Initialize a Linux Partition`  
Press <Enter> to select that option. You will be asked if you want to use "Ext2" which is the traditional GNU/Linux filesystem, or "Ext3" which is the next generation of Ext2, which supports journaling, making it a lot more reliable. `Ext3` is the recommended choice. As with the initialising of the swap partition, you will be asked if you want to perform a bad block scan (select `<No>`, and if you are sure you want to initialise the Linux partition you defined using

Media Toolbox – select **<Yes>**. Some text describing the initialisation process will appear on screen as the partition is initialised. Once the initialisation is complete, you will be asked if you wish to mount the partition as your Root Filesystem. Take note of the partition name because you will need to specify that later in the install process when we refer to **dfs**. Select **<Yes>**.

13. **Next : Install Kernel and Driver Modules**

You are now up to the stage of installing the kernel driver modules to your hard drive. The AmigaOne Installer CD should still be in your CD-ROM drive, so press **<Enter>** to select this option. Next you will be asked which medium you want to install from, press **<Enter>** to select **cdrom**. If you have more than one CD-ROM drive, you will be asked which CD-ROM drive to look in, select the appropriate one, and press **<Enter>** to continue. A message will appear asking you to "Please place the first Debian CD-ROM in the CD-ROM drive" – ignore this message and press **<Enter>** to continue. You will now be asked if you want the installer to look for the modules on the CD ("list"), or to enter it manually. Select **list** (it will probably already be selected), and press **<Enter>** to continue. You will be asked to select the directory from a list of one item, simply press **<Enter>** again to proceed. Several screens will flash by and then you will be returned to the Installation Menu. The kernel modules have now been installed.

14. **Next : Configure Device Driver Modules**

You now have to select which modules (if any) you wish to use. Press **<Enter>** to select that option, and press **<Enter>** again when "Note about loaded drivers" appears. You now have a list where you can select any modules (drivers) that you would like your Linux system to load on boot up. If you do not wish to load any modules, simply press **<Enter>** to select **Exit**. Otherwise, scroll down with the cursor keys and select any modules that you would like, such as modules for your sound card, or modules for your network card. Remember that "module" is just another word for a hardware driver.

15. If you have a **Creative Sound Blaster Live** sound card, select **kernel/sound/pci/emu10k1** and then select **snd-emu10k1**. Accept **<Yes>** to the install message by pressing **<Enter>**, and when it asks you to "Enter Command-Line Arguments", simply press **<Enter>**, and then press **<Enter>** to continue when asked. You will then need to select **Exit** and press **<Enter>** to return to the module list.

16. If you have a **Creative Vibra/PCI128** sound card, select **kernel/sound/pci** and then select **ens1371**. Accept **<Yes>** to the install message by pressing **<Enter>**, and when it asks you to "Enter Command-Line Arguments", simply press **<Enter>**, and then press **<Enter>** to continue when asked. You will then need to select **Exit** and press **<Enter>** to return to the module list.

17. After loading the appropriate sound card module, select **kernel/sound/acore/oss** and then select **snd-pcm-oss** and repeat the steps above. There are also modules for other hardware that more advanced users may make use of. The step of configuring modules can be repeated in future at any time on your Debian Linux system, by entering "modconf" at a shell prompt. When you have completed the module configuration step, select **Exit** and press **<Enter>** to return to the Installation Menu.

18. **Next : Configure the Network**

Press **<Enter>** to select that option. You will be asked to choose a host name for your machine. Think of a unique, short name for your machine to use on the network. If you're not sure what to use, you could use **AmigaOne**. You will then be asked if you wish to use DHCP or BOOTP to automatically configure the interface. If you have a DHCP server available on your network, select **<Yes>**, otherwise select **<No>**. If you select not to use DHCP, you will then have to manually enter an IP address, subnet mask, name server IP address for the network, Domain Server name and DNS Server Address. (Windows machines with internet connection sharing, home routers, and cable modem internet, all typically offer DHCP services. If you are unsure of what to do, ask someone that is familiar with your network).

If you are not using a network at all, then after selecting to not use DHCP, you can enter any values that you please, but it is best to use the default IP address of "192.168.1.1", subnet

mask of "255.255.255.0" and no name server address (use backspace to delete the default value of "192.168.1.2"), no Domain Server Name and no DNS Server address. These can be changed in future if you connect your AmigaOne to a network.

19. **Next : Install the Base System**

Press <Enter> to select this option. Next you will be asked which medium you want to install from, press <Enter> to select **cdrom**. If you have more than one CD-ROM drive, you will be asked which CD-ROM drive to look in, select the appropriate one, and press <Enter> to continue. A message will appear asking you to "Please place the first Debian CD-ROM in the CD-ROM drive", so you should remove the "AmigaOne Installer CD", and insert the first Debian CD-ROM into your CD-ROM drive, and press <Enter> to continue. The CD will be scanned, and you will be asked to select where you want to install from. You will be given only one choice (which refers to the **finstmn** directory on the CD), press <Enter> again to proceed. The system will then begin installing the base system, with the process taking several minutes, depending on the speed of your CD-ROM drive, hard disk, and CPU.

20. The highlighted next step will be **Next : Make System Bootable**, but you must **NOT** run this step because it will attempt to write to a PPC Prep Boot partition that you have not defined, so at this point you need to break the installation process and setup the SLB configuration file for dual-booting instead.

21. Press the key combination <Alt><F2> to swap to the ash console. Note that if you are using a so-called intelligent keyboard that has an "F-Lock" this must be selected before the function keys will work.

22. It will then ask you to press Enter to activate the console, which you should do.

23. Issue the following commands at the prompt:

- **cd /target/boot/** (takes you to the /boot directory of the hard-disk's Linux partition).

- **ls -l** (list details for all of the files in the /boot directory).

```
# cd /target/boot/
# ls -l
total 3600
-rw-r--r--  1 root   root      604562 Nov  2 1904 System.map-2.4.26
-rw-r--r--  1 root   root      26710 Nov  2 1904 config-2.4.26
-rw-r--r--  1 root   root      1024 Nov  2 2001 first.b
-rw-r--r--  1 root   root      41680 Nov  2 2001 second.b
-rw-r--r--  1 root   root    1310441 Nov  2 1904 vmlinuz-2.4.26
# _
```

It seems that not all systems are created equal and a quick check is recommended before we start to prevent problems. The [article](#) on Intuition Base by William White expects to find a file called "kernel-2.4.26.img" but none of the installs we have looked at contain that file. The equivalent file, as shown above is "vmlinuz-2.4.26" which should be used instead, or if your install has the "kernel-2.4.26.img" file then use that, but for simplicity we shall refer to either file below as [kim](#).

- You now need to use a text editor called nano-tiny to create a file called "a1boot.conf" which is a boot configuration file that the Second Level Booter reads when building the SLB menu. This file should contain one line for the on-board VIA IDE configuration, and if you are planning to install a SiL680 card it should contain both lines. This means that if you have a SiL680 card and you need to fallback to the on-board VIA IDE for any reason, the configuration is there for you. If you are not planning to use a SiL680 card, leave the second line out - it can always be added later.

To create/edit the configuration file enter the following:

**nano-tiny a1boot.conf**

This will open the editor and position you at the first line of the file. If you are creating

the file for the first time it will simply appear as a blank screen.

Enter the **on-board VIA IDE controller** details as follows:

```
Linux /boot/kim root=/dev/rfs video=radeon:1024x768-8@70 l2cr=0x8000000
0 ide=nodma
```

- Replace *kim* with the Kernel Image file name identified above.
- Replace *rfs* with the device name for the root filesystem identified during the install process.
- Note that "l2cr" is an abbreviation of level 2 cache ram so the first character in an "e!" not a one.
- The "ide=nodma" parameter specifies that DMA is to be turned OFF.
- When you reach the end of the line it will automatically scroll down to the next line.
- Do not press <Enter> until the end of the line.

If required, enter the **SiL680 IDE controller** details as follows:

```
Linux-SiL680 /boot/kim root=/dev/rfs video=radeon:1024x768-8@70 l2cr=0x
80000000 ide=reverse hde=noprobe hdf=noprobe
```

- Replace *kim* with the Kernel Image file name identified above
- Replace *rfs* with the device name for the root filesystem identified during the install process
- Note that "l2cr" is an abbreviation of level 2 cache ram so the first character in an "e!" not a one.
- The VIA addresses IDE devices a thru d while the SiL680 addresses IDE devices e thru h. The "ide=reverse" parameter specifies that DMA is NOT to be turned OFF and also switches the order of addressing so that the SiL680 uses a thru d. This means that the Linux addresses can remain the same without impacting AmigaOS 4.0.
- The "hde=noprobe" and "hdf=noprobe" are required if there are no Linux devices connected to the onboard VIA controller to stop them being probed.
- When you reach the end of the line it will automatically scroll down to the next line
- Do not press <Enter> until the end of the line.

Once you have entered the controller details above, press the key combination **Ctrl X** followed by the **Y** key and then **<Enter>** to exit and save the file.

- Press the key combination **Alt F1** to return to the Installer Menu, where the screen will now appear "red". Use the "down" arrow to scroll down through the menu options until **Reboot the System** is highlighted and press <Enter>. You will then be advised that you should remove the CD from the drive before continuing. Select **<Yes>** and press <Enter>.
24. The installation process will then close any open files, unmount the partitions, and the machine should re-boot. If not, re-boot it manually by pressing the Reset button.
  25. Allow the U-Boot startup screens to timeout as usual until the SLB Menu appears. From this menu you must select "Linux" and press <Enter>.
  26. Linux should then start booting and resume the installation process as detailed in step 29 below.
  27. If the SLB selection doesn't work you may get an error message saying that that it was unable to find the kernel or you may just get a blank screen. This probably means that either you didn't complete the initial setup correctly, or that the some of the information in "a1boot.conf" is incorrect. If you suspect the former, you can simply rerun the Debian installation process, otherwise you will need to repeat just parts of it in order to fix the information, as follows:
    - Boot from the AmigaOne Debian installation CD in the normal way.
    - Continue until you reach the Debian GNU/Linux Installation Main Menu, where it will highlight the Next step as being "Configure the Keyboard".
    - Use the up/down arrows to highlight "Activate a Previously-Initialized Swap Partition" and press <Enter>.

- You should then get an "Are You Sure?" message about activating /dev/hdxn as a swap device to which you can reply "Yes". If you do not get this message then there is a problem with the Swap partition definition that you defined using Media Toolbox from AmigaOS 4.0, and you should abort this process.
  - A message will flash up on the screen which is quickly replaced by the Debian GNU/Linux Installation Main Menu again. This time "Initialize a Linux Partition" will be highlighted. Use the up/down arrows to select the Alternate line, which should read "Mount a Previously-Initialized Partition".
  - You should then get a "Mount as the Root Filesystem?" message about mounting your root filesystem using /dev/hdxn as the root filesystem, to which you can reply "Yes". Take note that the value is the same as what you coded for *rfs* in the a1boot.conf file. If you do not get this message then there is a problem with the Linux partition definition that you defined using Media Toolbox from AmigaOS 4.0, and you should abort this process.
  - A message will flash up on the screen which is quickly replaced by the Debian GNU/Linux Installation Main Menu again. This time "Configure the Network" will be highlighted. At this point you can press the key combination **<Alt><F2>** to swap to the ash console and repeat the steps described previously. Remember that *kim* and *rfs* must match exactly otherwise the process will not work.
28. If the SLB selection works and the Linux boot process starts to run but fails with a CRC error on the kernel file, it is most likely that you have specified the incorrect blocksize for the Linux partition. Reboot the system into the AmigaOS and use Media Toolbox to check the Linux partition and if it is not 512 then you must change it. You can then reboot and select Linux from the SLB menu again.
  29. Your AmigaOne should now boot from the hard drive and the first screen that you see should say **"Congratulations, you have successfully installed Debian!"**. Note that if you have chosen an 800x600 resolution the background to the screen may be distorted - this does not matter and can be put right later. You can rerun the base system configuration at any time by logging in as "root&" at a Shell and typing `/usr/sbin/base-config`. Press <Enter> to continue with the installation.
  30. The next screen **Time Zone Configuration** displays the hardware clock details and asks **"Is the hardware clock set to GMT?"**  
Select **<No>** and press <Enter>.  
**"What area do you live in?"**  
For New Zealand you must select **Pacific Ocean** and press <Enter>.  
It will then give you a list of places to choose - select **Auckland** and press <Enter>.
  31. The next screen **Password setup** discusses password rules and asks **"Shall I enable md5 passwords?"**.  
We recommend that you select **<Yes>** and press <Enter>.  
It then discusses shadow passwords and asks **"Shall I enable shadow passwords?"**  
We again recommend that you select **<Yes>** and press <Enter>.  
It then asks you to **"Enter a password for root"**.  
Type your root password (nothing will display on the screen) and press <Enter>.  
Next it asks **"Re-enter password to verify"** which you must do and press <Enter>.  
If you make a mistake and the two passwords are different you are asked to try again.  
It continues by asking **"Shall I create a normal user account now?"**.  
We recommend that you select **<Yes>** and press <Enter>.  
Enter the username for your account following the rules on the screen and press <Enter>.  
Next enter the full name for the new user you have just created and press <Enter>.  
Then enter a password and re-enter it just as you did for the root user above.
  32. The next screen **Debian System Configuration** discusses PCMCIA and asks **"Shall I remove the pcmcia packages?"**.  
We recommend that you select **<Yes>** and press <Enter>.  
It then asks **"Do you want to use a PPP connection to install the system?"**.  
Since you can only use CDs select **<No>** and press <Enter>.
  33. The next screen **Apt Configuration** discusses the Debian archive and asks you to choose the method apt should use to access the Debian archive. Make sure that the first Debian CD-ROM is in the CD-ROM drive and press <Enter> to select **cdrom**. If you have more than one CD-ROM drive, you will be asked which CD-ROM drive to look in, select the appropriate one, and press <Enter> to continue. It will scan the CD looking for packages and after a short period it will ask if you want to scan a another CD.

If you do not have other disks in the Woody distro or your next project is to update to

"Sarge" (recommended), select **<No>** and press <Enter>. However, if you have other disks for the Woody distro but you do not intend to update to "Sarge" yet, then select **<Yes>** and scan them all. Select **<No>** after the last one.

34. Next, **Apt Configuration** asks if you want to **add another apt source?** Since Debian Woody is no longer available on-line, select **<No>** and press <Enter>. Finally, it asks if you want to **use security updates from security.debian.org?** Again select **<No>** and press <Enter>.
35. **Debian System Configuration** resumes and asks if you want to **Run tasksel?** Select **<Yes>** and press <Enter>. A task selection screen will appear. Use the up and down arrow keys to move the cursor, and the space bar to select tasks to be installed. Select **"X window system"** and **"desktop environment"**. Use <Tab> to highlight **<Finish>** and press <Enter>.
36. **Debian System Configuration** continues and asks if you want to **Run dselect?**. Select **<No>** and press <Enter>.
37. At this point the Installer lists all of the packages it is about to install, with summary of upgrades, installs, deletes, etc, and the amount of disk space required. Type "Y" and press <Enter> to continue. It then asks you to insert the first Woody Install CD in the CD-ROM drive. It should already be there, so press <Enter>.
38. A **Configuring Binutils** screen warning about possible kernel link failure comes up next. Press <Enter> to continue.
39. Next, the **Configuring Less** screen asks **Add a mime handler for "application/\*"?**. Select **<No>** and press <Enter>.
40. On the **Configuring Locales** screen <Tab> to **<Ok>** and press <Enter>. On the next screen **Leave alone** should be highlighted. Press <Enter> to continue.
41. On the **Configuring Mfs-common** screen simply press <Enter>.
42. On the **Configuring Ssh** screen it asks if you want to **Allow SSH protocol 2 only.** Select **<Yes>** and press <Enter>, press <Enter> again at the next screen, for **suid** select **<Yes>** and press <Enter>, but for **sshd server** select **<No>** and press <Enter>.
43. A **Configuring Psfntmgr** screen then asks **Do you have a PostScript Printer?**. Select the appropriate answer and press <Enter>.
44. A **Paper Size Configuration** screen then asks **Which papersize should be the default?**. Select **a4** and press <Enter>.
45. A **Configuring Gdm** screen then asks you to **Select the desired default display manager.** Select **kdm** and press <Enter>.
46. A **Configuring Kdm** screen then explains some of the restricted functions which have been configured at this time. Press <Enter> to continue. Further information is then displayed about Kdm's dpi settings. Again press <Enter> to continue. Even more information about Kdm and TCP ports. Again press <Enter> to continue.
47. A **Configuring Mozilla-browser** screen asks **Do you want FreeType2 support on Mozilla?**. Select **<Yes>** and press <Enter>. Next it asks you to choose your **sound daemon's dsp wrapper**. Select **auto** and press <Enter>.
48. A **Configuring Xserver-common** screen asks if you want to **Manage X server wrapper configuration file with debconf?**.

Select **<Yes>** and press <Enter>.

49. A **Configuring Xserver-xfree86** screen asks if you want to **Manage XFree86 4.x server configuration file with debconf?**

Select **<Yes>** and press <Enter>.

It then asks you to **Select the desired X server driver** to suit your video card.

Choose **ati** for ATI Rage 128 or Radeon 7000-9000 cards

Choose **tdfx** for Voodoo 3/4/5 cards

Choose **fbdev** for any other card.

and press <Enter>.

PLEASE NOTE: Some ATI Radeon cards have been known to give problems using **ati**, in which case you should use **fbdev** instead, but you won't know until you find it doesn't work - see the end of this step for how to change it.

Once you have identified the driver type, you need to specify the location of your video card. Assuming it is an AGP card the address will be **PCI:1:0:0**. If is anything else, accept the default given and press <Enter>.

It will then ask if you want to **Use kernel framebuffer device interface?**

Select **<Yes>** and press <Enter>.

Accept **xfree86** as the X-Window keyboard rule set by pressing <Enter>.

Change the keyboard model to **pc104** for the USA (\$) keyboard or **pc105** for the international keyboard, and press <Enter>.

Unless you use a European keyboard, accept the default **us** layout, and press <Enter>.

Select the mouse port as **/dev/psaux** and press <Enter>.

Now select the type of mouse. Most mice will be **PS/2** but some mice with scroll wheels do not work well in this mode, and cause the cursor to lock up in the top right-hand corner of the screen. If you are using a mouse with a scroll wheel, we recommend that you use **ImPS/2** instead.

Next it asks **Is your monitor an LCD device?** If you select **<Yes>** it removes the "Simple" option from the next menu.

If you know the refresh rates (as suggested in the pre-requisites section) select **Advanced** and press <Enter>.

It will then ask you to **Enter your monitor's horizontal sync range**, i.e. **28-50** and press <Enter>.

It will then ask you to **Enter your monitor's vertical sync range**, i.e. **43-75** and press <Enter>.

It will then ask you to select the video resolutions that you would like X server to use. Use the up and down arrows move the cursor to the appropriate resolutions and press the space bar to select or de-select a resolution. Tab to **<Ok>** and press <Enter> when all resolutions have been selected.

You will then be asked to **Select your desired default color depth in bits.**

If there is no good reason why you shouldn't, we recommend you set it to **24** and press <Enter>.

If you later want to change any of the above settings, you can do that from a Shell, logged in as "root" by typing **"dpkg-reconfigure xserver-xfree86"**.

50. It will now spend several minutes again reading the CD-ROM and installing packages,

showing its progress on the screen as it does so.

At one point it will stop and ask whether you want the **American or British dictionary for ispell** to which you must reply with either 1 or 2 and press <Enter> - the default is "1".

A bit later it will stop again reported that errors were encountered during unpacking. This is OK. Press <Enter> to continue. The install process will continue and a short time later another screen is displayed saying that one or more packages failed to install and asking if you want to retry. Select **<No>** and press <Enter>.

Then it introduces the **exim** mail system before asking a number of questions. In any case comprehensive information on configuring exim is in the eximdoc package and in /usr/share/doc/exim/spec.txt. Press <Enter>  
The options are then displayed. Type "5" and press <Enter> to bypass mail configuration at this time.

51. You should now be at the end of the install process "Have fun!"..... Press <Enter> to complete the install. You will be returned to the command line "Login:" prompt. Log in as "root" using you root password and at the next prompt type "halt" to shut the system down cleanly. Switch off at the 'power down' prompt.

The next section describes [Post Linux Installation Processing for the Dual-Boot Environment](#).

**Disclaimer:** Amiga Auckland have prepared the above information for the use of its members based on our experiences and as such is subject to revision at any time. Amiga Auckland cannot guarantee any of the information and cannot be held accountable for any issues that may result from using it.