

Setting Up An UpStage Linux Server For Windows Users

Documentation surrounding how to get Linux set up with all the required "packages" for UpStage. This documentation is aimed at those with technical knowledge who aren't familiar with Linux, and is based on the experience of using Debian Linux 3.1 (Sarge) as the existing server is running Debian Linux. The first section on dual boot is only relevant if you are not running a dedicated UpStage server.

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Dual boot

It is highly recommended that you familiarise yourself with what partitions are and how they work before continuing.

During development, it is useful to have the UpStage server and Linux running side by side. If you wish to dual boot Windows/Linux you need to install Windows first. You should either leave room for the Linux partition (preferred) or resize the windows partition later.

Resizing an NTFS partition

*Note that when performing this operation, there is a chance that data will be lost. You should do a **complete backup** before continuing.*

- Download a Knoppix ISO image (<http://www.knoppix.org> used version 3.7) & burn to CD-ROM.
- Boot from CD-ROM. If the computer will not boot from CD-ROM, you may need to change the boot order in the computer BIOS – set the computer to boot from CD-ROM before the hard disk.
- If you have an SATA drive, when prompted with the “boot:” message you may need to enter “linux26”. This starts the newer kernel which has support for new drivers including SATA. Otherwise just press Enter. A “no hard disk found” message from the QTParted program is generally indicative that the hard disk driver has not been loaded correctly.
- Wait for the Knoppix GUI to finish loading.
- Click on the “K” menu in the bottom left corner.
- Click the system menu.
- Click on the QTParted program which is a graphical, user friendly partition editor.

- Select a disk, select the partition to be resized.
- Right click with the mouse & choose resize.
- Select the new partition size.
- Commit your changes in the File-> Commit menu.
- If your keyboard and mouse stop responding, please be patient the operation may take a long time.
- Click on the “K” menu.
- Click on “Logout”
- Click on “Turn off computer”.
- Remove the CD-ROM when prompted.
- Start the computer again without the CD-ROM inserted to start Windows. You may get a message from CHKDSK that it is checking drives, this is expected.
- Windows should complete booting normally.
- Use the Windows explorer to check that all partitions are the expected size and all data is still present (Right click on each drive and then click Properties).

Installing Debian Linux

You should ideally install Linux on a computer with no operating system installed (blank hard disk). *There is a **risk that data will be lost**. You should do a **full backup** before attempting to install Linux.* There should be a blank hard disk, or non partitioned space available to install Linux as per the “Resizing an NTFS partition” instructions above.

- If your computer is on a network, ensure that the network cable is attached.
- Boot from CD-ROM
- If you have an SATA drive, you may need to Enter “linux26” when prompted with “boot:” message. This starts Linux with driver support for newer drivers including SATA drives. Otherwise, just press Enter.
- Select the language using the arrow keys (English). Press Enter
- Select the country using the arrow keys (New Zealand). Press Enter.
- Select the keyboard layout (American English).
- Debian will prompt for a host name. This is the name on the network Then press Enter.
- Debian will prompt for a domain name. Then press Enter.
- Debian will ask where to install. This step may not appear if installing on a blank disk rather than using dual boot. Press Enter.
- Debian will ask about the partitioning scheme - how many partitions should be created. (Used “All files in one partition”).
- Debian will display information about partitions and ask for confirmation. (Selected “Finish partitioning and write changes to disk”).
- Debian will ask for final confirmation. Use the left/right arrow keys to move to Yes and press Enter.
- Debian setup will continue.
- If you are installing to a computer with no operating system installed, this step will not appear. If you are doing a dual boot install Debian should inform you that it has found the Windows operating system and ask you to confirm that this is the

only operating system installed. Select Yes using Enter if Windows is the only other operating system installed.

- Debian setup should inform you that it is complete. Remove the CD-ROM and reboot. You may now wish to change the boot order in the BIOS so that the CD-ROM is not longer the first device checked when booting.

Continuing Setup

- If you run into big problems, the setup can be started from this point again. Switch to console CTRL + ALT + F1 log in as root and run base-config.
- The computer should now start up in Linux and you will receive a welcome message.
- Reply Yes to the question “Is the hardware clock set to GMT”.
- Select your time zone (Used Pacific / Auckland).
- Select a root password. This should not be easy to guess and should contain both letters and numbers.
- Enter a username for the user (Used upstageuser).
- Enter a name for the user account (Used upstageuser).
- Enter a password for the user account. This should be different from the root password and again should be a mixture of both letters and numbers.
- Select the access method for ATP (Used CD-ROM).
- Debian will now build a list of files from the set of CD-ROMS. Put the first CD-ROM in the drive when prompted and press Enter.
- Put every CD-ROM in the Debian set into the CD-ROM in turn when prompted. The message presented here is a little ambiguous, but you must put each CD-ROM in the drive and let Debian read it, in order to build a file index.
- If you do not have direct Internet access, you will receive a message stating that ATP cannot access this is expected.
- Insert the first CD-ROM again when prompted.
- Debian will ask what packages it needs to install. Select “Desktop Environment” and “Web Server” using the space bar and press enter.
- Select Vesa for the X-Windows graphics driver. This should work on most modern hardware (post 2001).
- Select Use the Kernel frame buffer when prompted.
- Select Yes to attempt mouse auto detection.
- Select Yes to attempt monitor auto detection.
- Computer should prompt to reboot when setup is complete.
- If you do not get a desktop display or get any error messages about XServer you can run the following as root to reconfigure the graphics card / monitor manually “dpkg-reconfigure xserver-xfree86”. You should set the maximum resolution to 1024x1280 here.

Installing Packages

You need to install the following packages using the Synaptic Package manager. Some packages are already installed. Some packages have dependencies which will be automatically installed when you select a parent package.

Start the package manager from the menu: *System Tools -> Synaptic Package Manager*. Enter the root password when prompted.

Steps used to search for packages:

1. Close the "Quick Introduction" window
2. Click "Search" in the menu
3. Enter a package name in the search window.
4. Right click and choose "Mark For Installation" to install or right click and choose "Mark For Removal" to uninstall.

Note: Green mark before the package means it is already installed.

Packages to install:

1. python (version 2.3.5-2)
2. twisted
 - Python2.3-Twisted (version 1.3.0-8)
 - Python2.3-Twisted-bin (version 1.3.0-8)
3. festival (version 1.4.3-16)
 - Festival-doc (version 1.4.2-2)
 - festvox-kallpc16k (version 1.4.0-5)
 - festvox-kdlpc16k (version 1.4.0-5)
 - festlex-cmu (version 1.4.0-6)
 - festlex-poslex (version 1.4.0-5)
4. netpbm (version 2:10.0)
5. gif2PNG (version 2.4.7-4)
6. tct (version 1.11-6.1)

Third party packages (below)

1. lame (version 3.96.1-1)
2. swftools (version 0.7.0)
3. festival voices

Lame

Download lame from <http://www.sourceforge.net/projects/lame> (Used version 3.96.1) and save in a temporary location (will be installed to `/usr/local/bin/lame`)

Start a terminal session as root.

Unzip lame

```
gunzip lame-3.96.1.tar.gz
```

Extract from the tar file

```
tar -xvf lame-3.96
```

Change to the directory that was created

```
cd lame-3.96.1
```

configure the environmental variables

```
./configure
```

Make and install the library

```
make install
```

Change back to the previous directory

```
cd ..
```

Create a link so that lame can be found by all programs

```
ln -s /usr/local/bin/lame /usr/bin/lame
ln -s /usr/local/lib/libmp3lame.so.0 /usr/lib/libmp3lame.so.0
```

SWFTools

Download from <http://www.swftools.org/> (Used version 0.7.0) and save in a temporary location.

Start Synaptics Package Manager and install the following headers/libraries needed for swftools-0.7.0

```
zlib1g-dev
libjpeg62-dev
t1lib-dev
libungif4-dev
libfreetype6-dev
libgdbmgl
```

Start a terminal session as root.

Extract from tar file

```
tar -xzf swftools-0.7.0.tar.gz
```

Change to the directory that was created

```
cd swftools-0.7.0
```

configure the environmental variables

```
./configure
```

Make and install the library

```
make install
```

Change back to the previous directory

```
cd ..
```

Voices for festival

UpStage uses voices from several different places. These need to be sourced and configured independantly. The voices used include

- en1_mbrola
- us1_mbrola
- us2_mbrola
- us3_mbrola
- kal_diphone
- ked_diphone
- don_diphone
- rab_diphone
- rsynth

Install rsynth sourced from <http://packages.debian.org>

```
dpkg -i rsynth_2.0-6_i386.deb
```

Install some native festival voices (diphone) sourced from <http://packages.debian.org>

```
dpkg -i festlex-oald_1.4.0-3_all.deb
```

```
dpkg -i festvox-ralpc16k_1.4.0-2_all.deb
```

```
dpkg -i festvox-don_1.4.0-4_all.deb
```

Install the mbrola binaries sourced from <http://www.cstr.ed.ac.uk/projects/festival/mbrola.html>

```
dpkg -i mbrola-es1_i386.deb
```

Save mbr301h.zip to a temporary directory, Unzip and copy it to /usr/bin/mbrola

```
unzip mbr301h.zip
```

```
cp mbrola-linux-i386 /usr/bin/mbrola
```

Install some voices for mbrola sourced from <http://tcts.fpms.ac.be/synthesis/mbrola.html>. Save all zip files in a temporary directory unzip and copy to /usr/share/mbrola:

```
unzip en1-980910.zip
```

```
unzip us1-980512.zip
```

```
unzip us2-980812.zip
```

```
unzip us3-990208.zip
```

```
cp -r * /usr/share/mbrola
```

```
rm /usr/share/mbrola/en1-980910.zip
```

```
rm /usr/share/mbrola/us1-980512.zip
```

```
rm /usr/share/mbrola/us2-980812.zip
```

```
rm /usr/share/mbrola/us3-990208.zip
```

Install festival wrappers for mbrola voices. Save files in a temporary directory sourced from

<http://www.cstr.ed.ac.uk/downloads/festival/1.95/>

```
tar -xzf festvox_en1.tar.gz
```

```
tar -xzf festvox_us1.tar.gz
```

```
tar -xzf festvox_us2.tar.gz
```

```
tar -xzf festvox_us3.tar.gz
```

```
cp -r festival/lib/voices/english/* /usr/share/festival/voices/english
```

Copy the mbrola voices into festival wrappers above

```
cp en1-980810.zip /usr/share/festival/voices/english/en1_mbrola
```

```
cp us1-980512.zip /usr/share/festival/voices/english/us1_mbrola
```

```
cp us2-980812.zip /usr/share/festival/voices/english/us2_mbrola
```

```
cp us3-990208.zip /usr/share/festival/voices/english/us3_mbrola
```

```
cd /usr/share/festival/voices/english/en1_mbrola
```

```
unzip en1-980910.zip
```

```
rm en1-980810.zip
```

```
cd ../us1_mbrola
```

```
unzip us1-980512.zip
```

```
rm us1-980512.zip
```

```
cd ../us2_mbrola
```

```
unzip us2-980812.zip
```

```
rm us2-980812.zip
```

```
cd ../us3_mbrola
```

```
unzip us3-990208.zip
```

```
rm us3-990208.zip
```

Test that the voices were installed correctly. Run festival.
`/usr/bin/festival`

All voices mentioned in the outline above should appear when the following command is entered into festival
`(voice.list)`

Select a new voice and say something using that voice. **UpStage does not need a sound card installed to operate. This command will only work if the computer has a sound card which has been configured** and sound is turned off under the desktop manager. Error messages about accessing `/dev/dsp` are indicative that sound is not configured. Ensure that you get sounds from the GNOME desktop, then turn desktop sounds off temporarily by deselecting Applications > Desktop Preferences > Sound > Enable Sound Server at Startup.

```
(voice_en1_mbrola)
(SayText "Say something")
```

Choose another voice and say something

```
(voice_us2_mbrola)
(SayText "Say something")
```

Macromedia flash player web browser plug in (for Linux Mozilla et al.) This is required only if you want to view UpStage web pages on the server (not likely unless you are doing development). Download from http://www.macromedia.com/shockwave/download/index.cgi?Pl_Prod_Version=ShockwaveFlash

Installing UpStage itself

Download from <http://www.sourceforge.net/projects/upstage> and save in a temporary location. Log in as root. You need to make a directory to put the upstage in and then set the permissions so that the upstage user has permissions to use the files.

```
cd /usr/bin
mkdir Upstage
chown upstageuser Upstage
cd Upstage
mv /home/upstageuser/Upstage-2004-09-28.tar .
chown upstageuser Upstage-2004-09-28.tar
exit
exit
```

Log in as upstageuser (NOT root)

```
cd /usr/bin/Upstage
tar -xvf Upstage-2004-09-28.tar
cd Upstage
mktap upstage
twistd -f upstage.tap
```

```
./go.sh
```

Finally, open a web browser on the server and point it at <http://localhost:8081/> the UpStage webpage should appear.