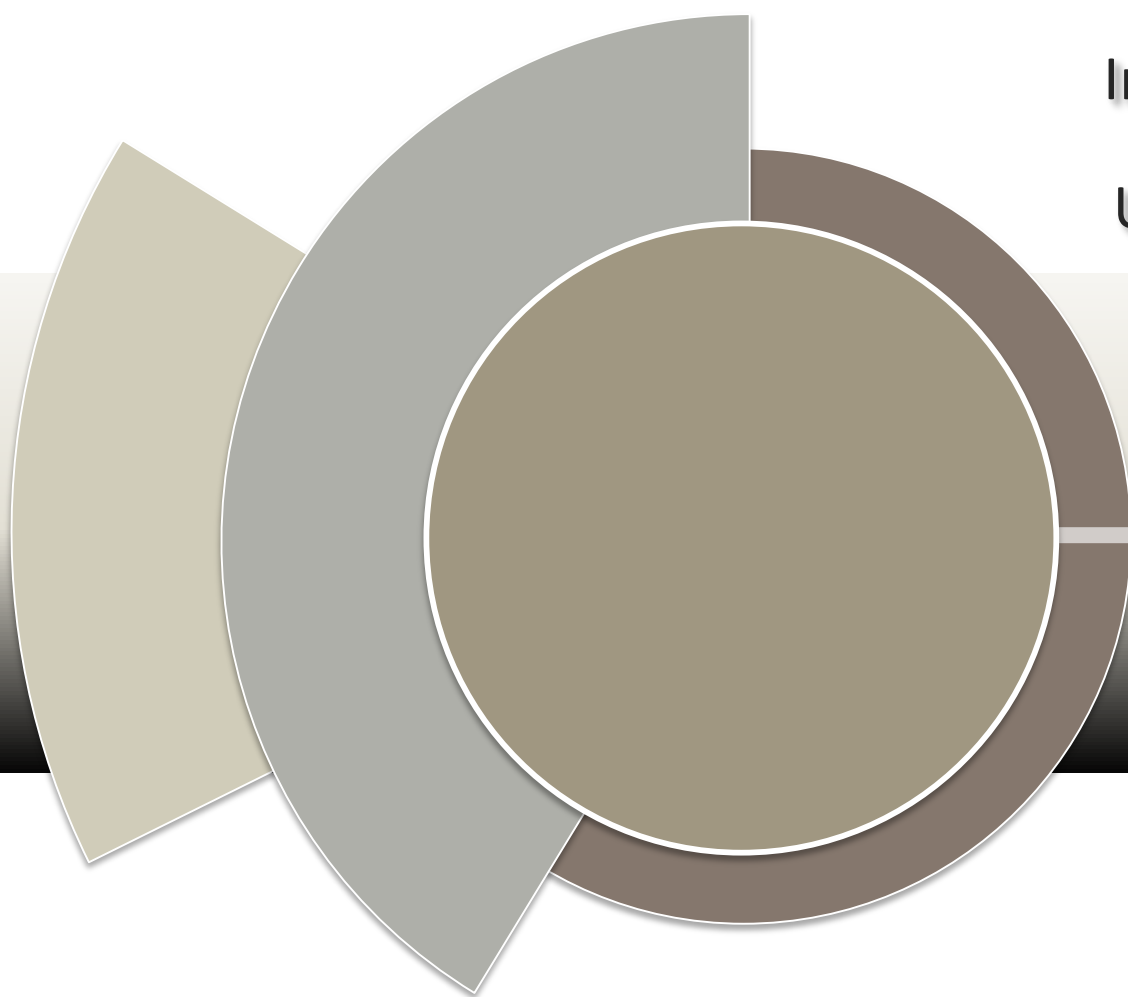


Install Pinet on Ubuntu Server





Install Pinet on Ubuntu Server

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Install Ubuntu Server

Firstly download Ubuntu server iso image

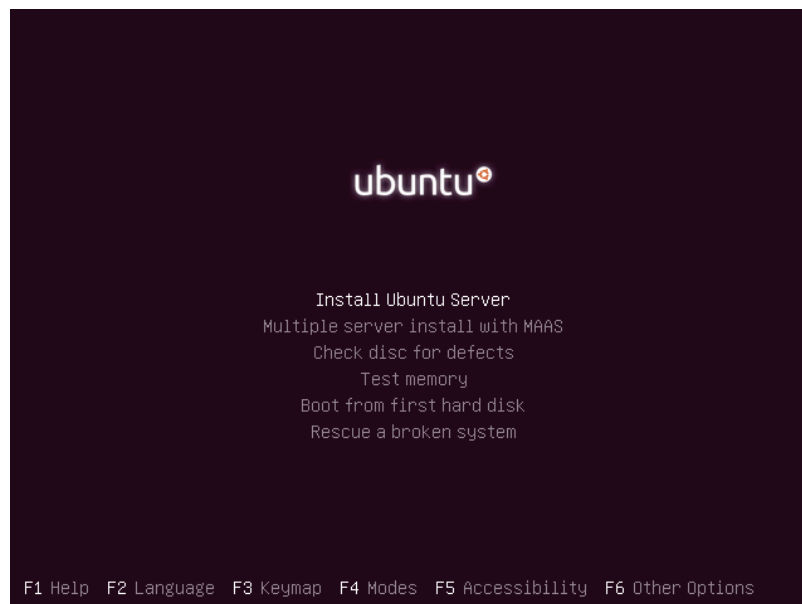
<http://www.ubuntu.com/download/alternative-downloads>

Im going to use 32bits iso because the computer I use is an old Pentium IV

Create a bootable CD/USB image. After system booting sequence choose your media bootable type from BIOS options (CD/DVD or USB drive). On the first prompt choose your **Language** and hit Enter

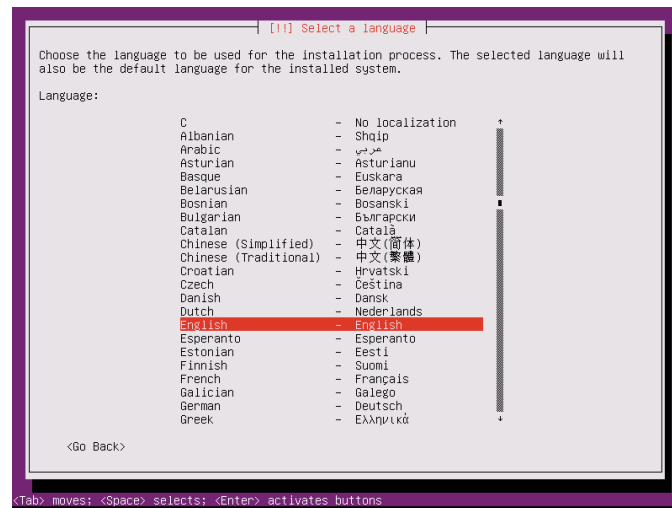


On next screen choose **Install Ubuntu Server** and hit Enter

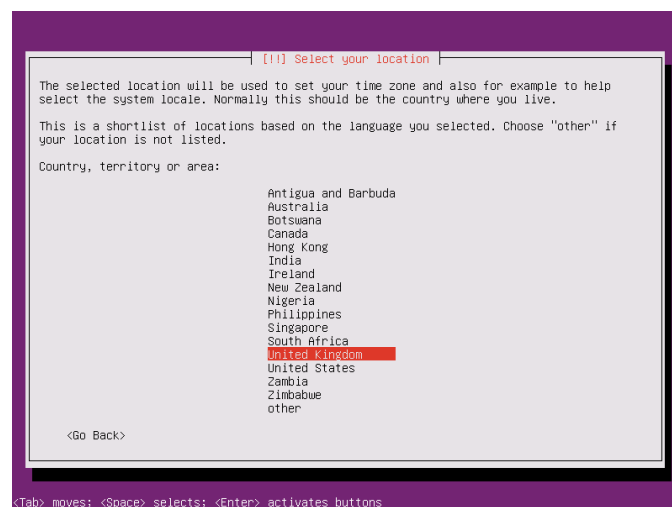




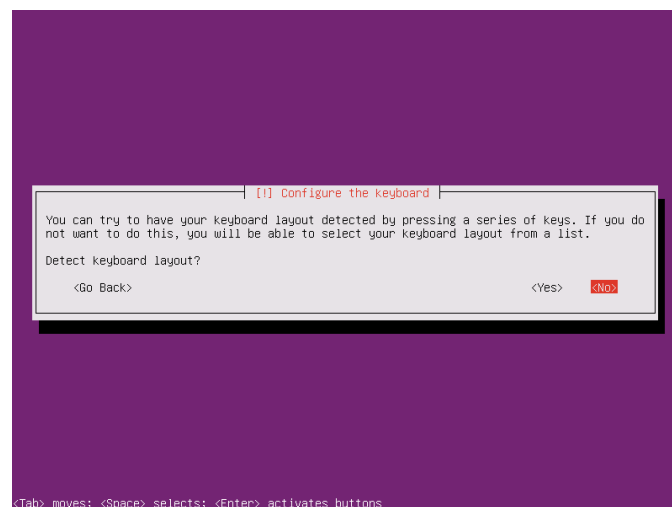
Next select your **System default Language** and also Installation process **Language**

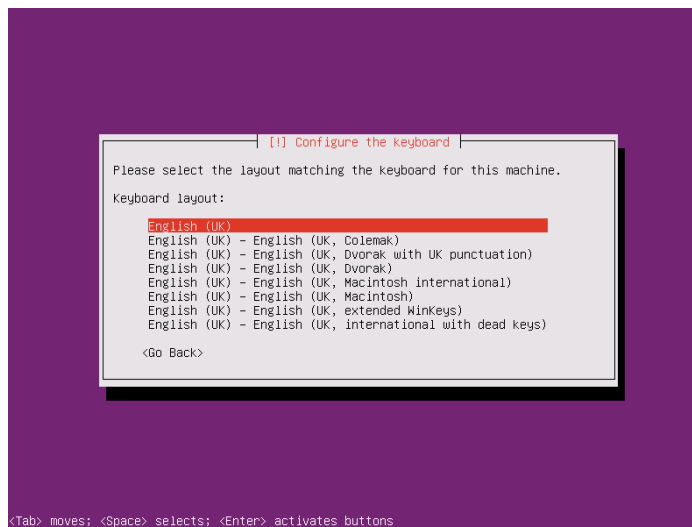
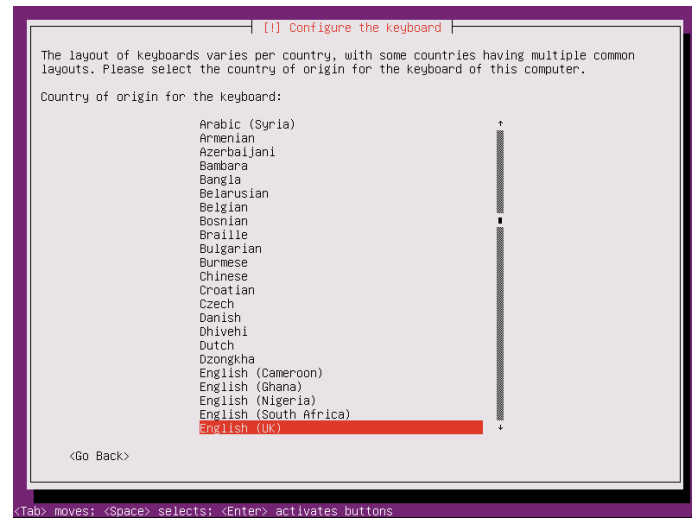


Select your **Country**

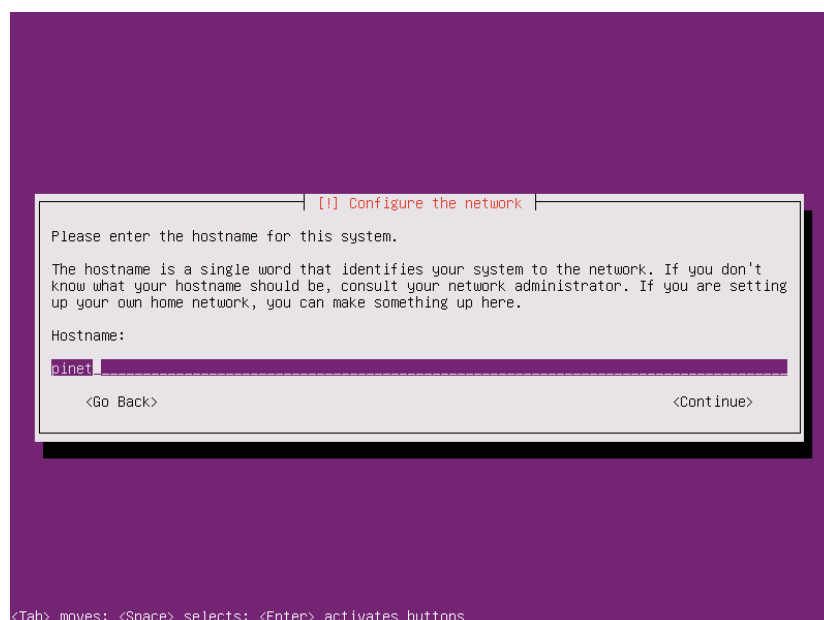


On next prompt configure your **Keyboard**, choose **No** and setup English as default language





Setup your system **hostname**





Now is time to setup your administrative user, enter your **full name**, **username** and **password** and hit **continue**

[[!]] Set up users and passwords

A user account will be created for you to use instead of the root account for non-administrative activities.

Please enter the real name of this user. This information will be used for instance as default origin for emails sent by this user as well as any program which displays or uses the user's real name. Your full name is a reasonable choice.

Full name for the new user:

david

<Go Back> <Continue>

<Tab> moves: <Space> selects: <Enter> activates buttons

[[!]] Set up users and passwords

Select a username for the new account. Your first name is a reasonable choice. The username should start with a lower-case letter, which can be followed by any combination of numbers and more lower-case letters.

Username for your account:

david

<Go Back> <Continue>

<Tab> moves: <Space> selects: <Enter> activates buttons

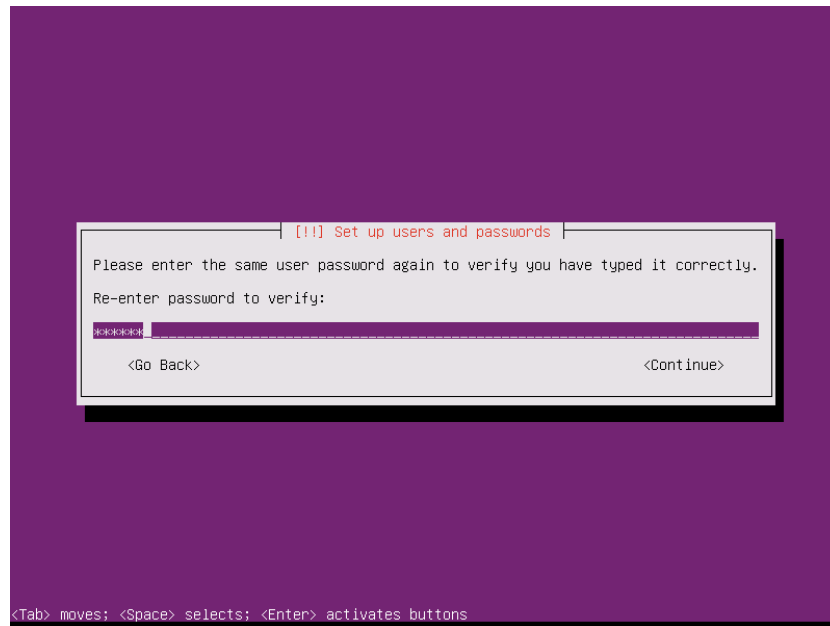
[[!]] Set up users and passwords

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

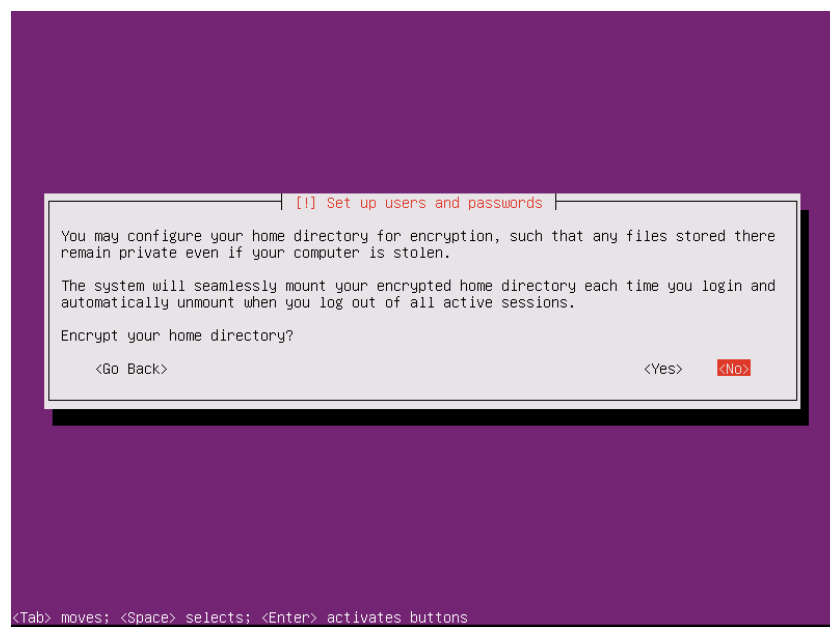
Choose a password for the new user:

<Go Back> <Continue>

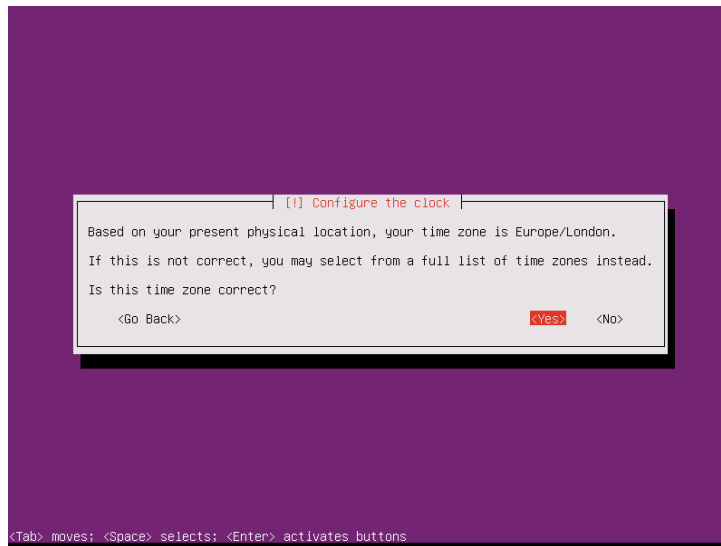
<Tab> moves: <Space> selects: <Enter> activates buttons



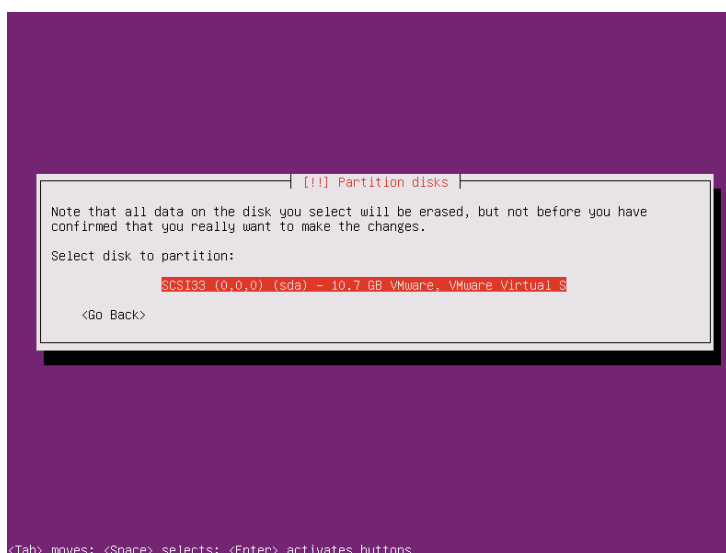
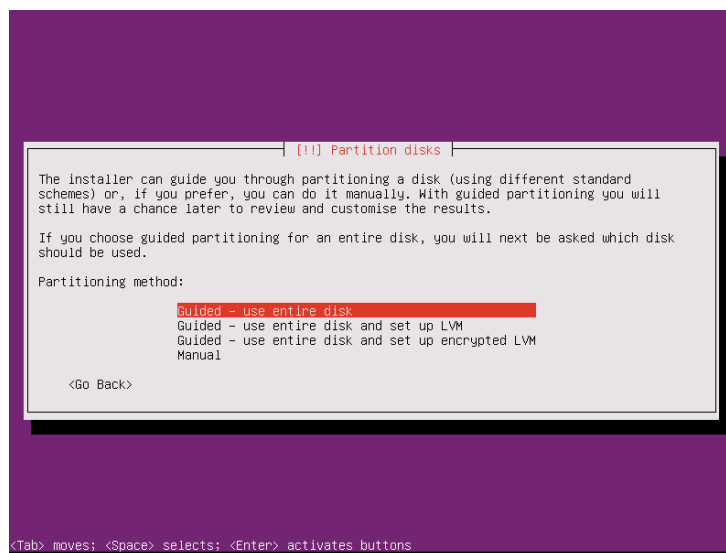
The next screen offers the option to secure all data by **Encrypting** home directory. If this is not the case choose **No** and hit **Enter**

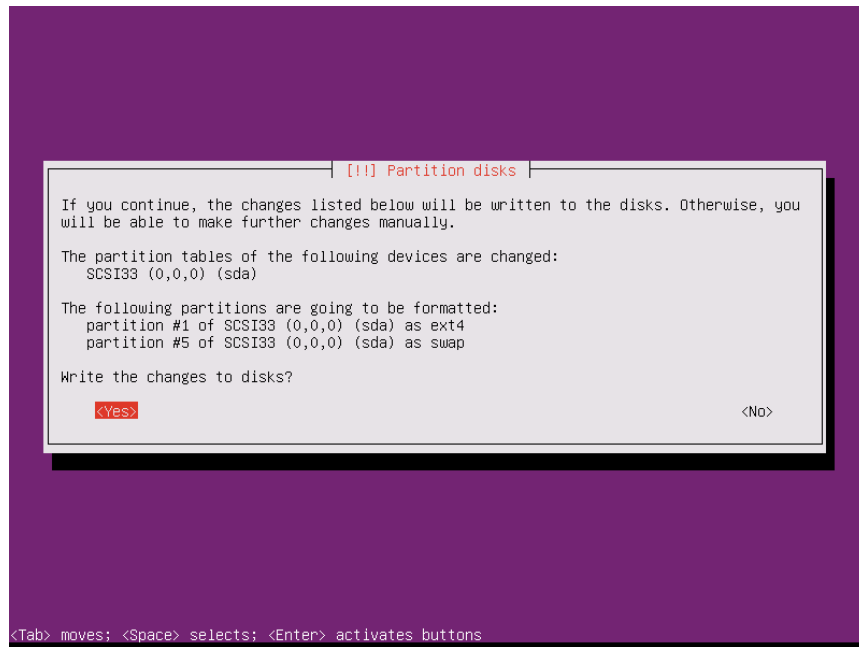


If while installer runs and your network interface card has Internet connectivity the installer will automatically detect your **Location** and setup your correct **time zone**. If the provided time is not correctly setup you have the option to choose it manually from a list else choose **Yes** and press **Enter**

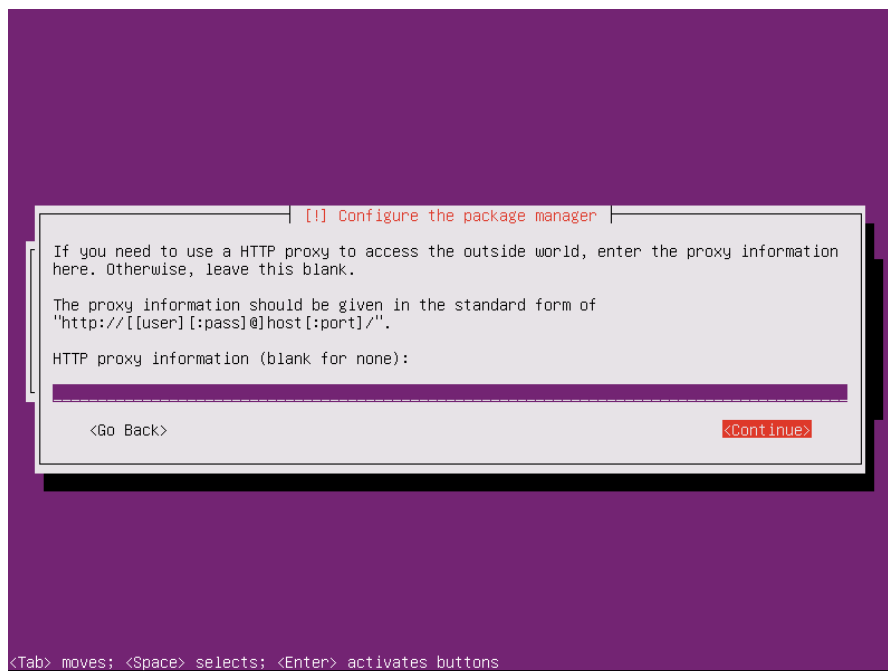


On next screen **Partition Disks** choose **Guided –use entire disk**, select your disk to partition and accept partition table





After all hard-disk partitions had been written to disk the installer starts copying data software to disk and then reaches **HTTP** proxy option. If you don't access Internet through a proxy leave it **blank** and **Continue**



Next the installer scans the CD image for software packages and reaches **Updates** options. Choose the option you like and press Enter



```
[!] Configuring tasksel

Applying updates on a frequent basis is an important part of keeping your system secure.

By default, updates need to be applied manually using package management tools.
Alternatively, you can choose to have this system automatically download and install
security updates, or you can choose to manage this system over the web as part of a group
of systems using Canonical's Landscape service.

How do you want to manage upgrades on this system?

    No automatic updates
    Install security updates automatically
    Manage system with Landscape

<Tab> moves; <Space> selects; <Enter> activates buttons
```

Now the base system is installed but the installer invokes **tasksel** package which helps you to install some server packs before finishing. For a better control over your server choose only **OpenSSH server** by pressing Space bar key while others will be installed and configured later and choose **Continue**

```
[!] Software selection

At the moment, only the core of the system is installed. To tune the system to your
needs, you can choose to install one or more of the following predefined collections of
software.

Choose software to install:

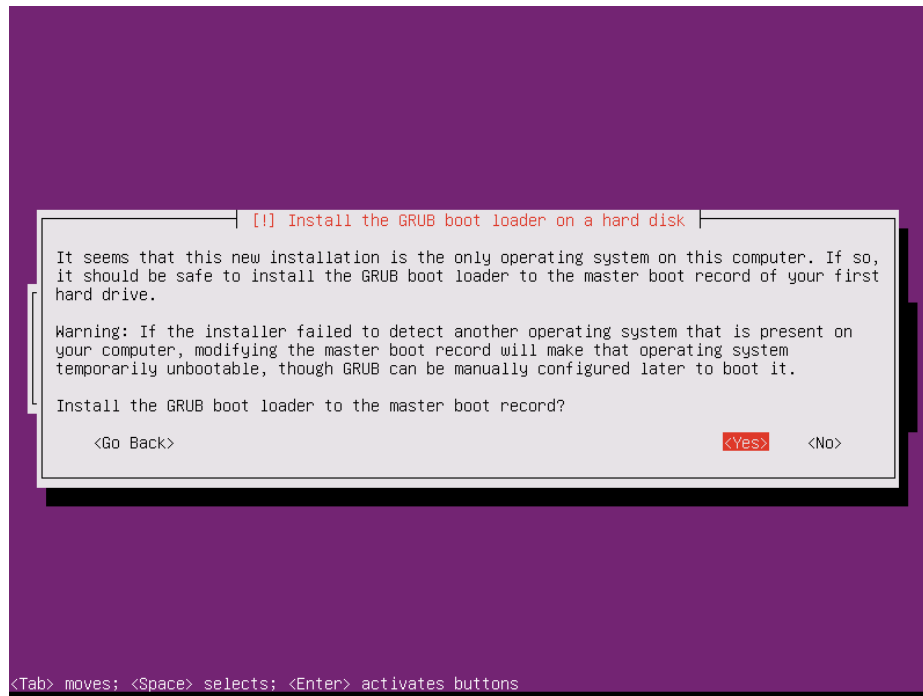
    [*] OpenSSH server
    [ ] DNS server
    [ ] LAMP server
    [ ] Mail server
    [ ] PostgreSQL database
    [ ] Print server
    [ ] Samba file server
    [ ] Tomcat Java server
    [ ] Virtual Machine host
    [ ] Manual package selection

    <Continue>

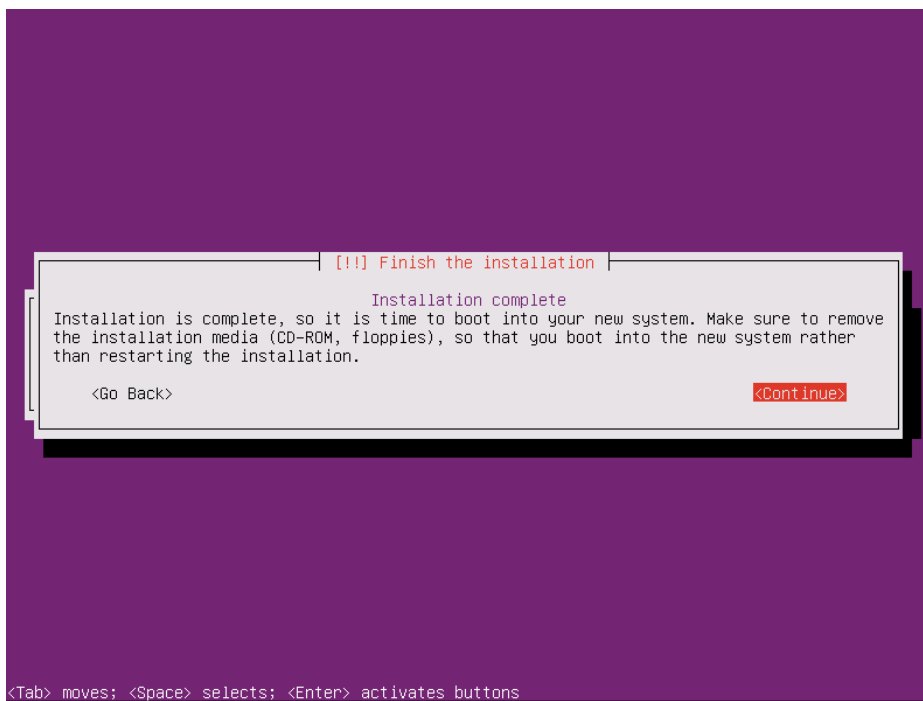
<Tab> moves; <Space> selects; <Enter> activates buttons
```



The selected packages are being installed while the last option is displayed on your monitor demanding to **Install GRUB to MRB**. Because the system can't boot on his self without **GRUB**, choose **Yes**



Once the **GRUB** boot loader is installed the installation process reaches it's end. Remove your media installation drive (CD/DVD,UDB) and hit **Continue** to **reboot**





Once the computer **reboot** we can use our **Ubuntu Server** just login into it

```
Ubuntu 14.04.1 LTS pinet tty1
pinet login: david
Password:
Welcome to Ubuntu 14.04.1 LTS (GNU/Linux 3.13.0-32-generic i686)

* Documentation:  https://help.ubuntu.com/

System information as of Thu Apr  7 13:00:30 BST 2016

System load: 0.0           Memory usage: 4%    Processes:      127
Usage of /:  11.1% of 8.73GB Swap usage:   0%    Users logged in: 0

Graph this data and manage this system at:
  https://landscape.canonical.com/

185 packages can be updated.
101 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

david@pinet:~$
```

Install Pinet on Ubuntu Sever

Once the machine reboots, login with your **credentials** you set up earlier

```
Ubuntu 14.04.1 LTS pinet tty1
pinet login: david
Password:
Welcome to Ubuntu 14.04.1 LTS (GNU/Linux 3.13.0-32-generic i686)

* Documentation:  https://help.ubuntu.com/

System information as of Thu Apr  7 13:00:30 BST 2016

System load: 0.0           Memory usage: 4%    Processes:      127
Usage of /:  11.1% of 8.73GB Swap usage:   0%    Users logged in: 0

Graph this data and manage this system at:
  https://landscape.canonical.com/

185 packages can be updated.
101 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

david@pinet:~$
```

Enter this command and hit enter

```
wget --content-disposition http://bit.ly/pinetbeta
```



This downloads the **PiNet script**. The main script is called **pinet**

```
david@pinet:~$ sudo wget --content-disposition http://bit.ly/pinetbeta
--2016-04-07 13:28:35-- http://bit.ly/pinetbeta
Resolving bit.ly (bit.ly)... 69.58.188.39, 69.58.188.40
Connecting to bit.ly (bit.ly)[69.58.188.39]:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://raw.githubusercontent.com/PiNet/PiNet/master/pinet [following]
--2016-04-07 13:28:36-- https://raw.githubusercontent.com/PiNet/PiNet/master/pinet
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.31.18.133
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)[185.31.18.133]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 107156 (105K) [text/plain]
Saving to: 'pinet'

100%[=====>] 107,156  --.-K/s  in 0.06s

2016-04-07 13:28:37 (1.66 MB/s) - 'pinet' saved [107156/107156]

david@pinet:~$ _
```

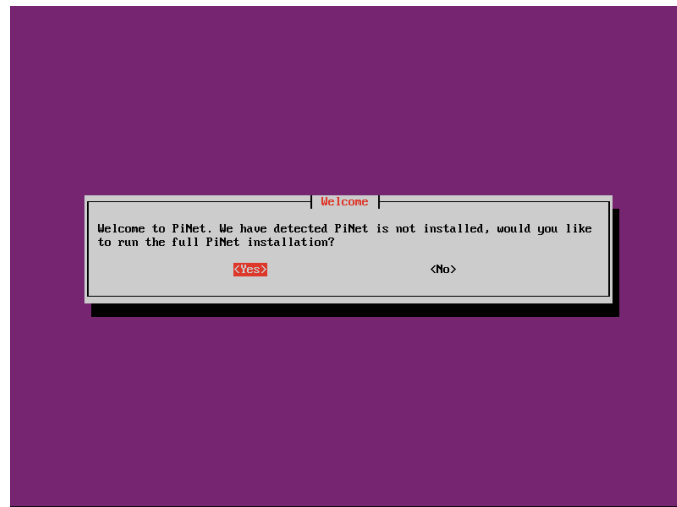
Once that completes, enter

```
sudo bash pinet
```

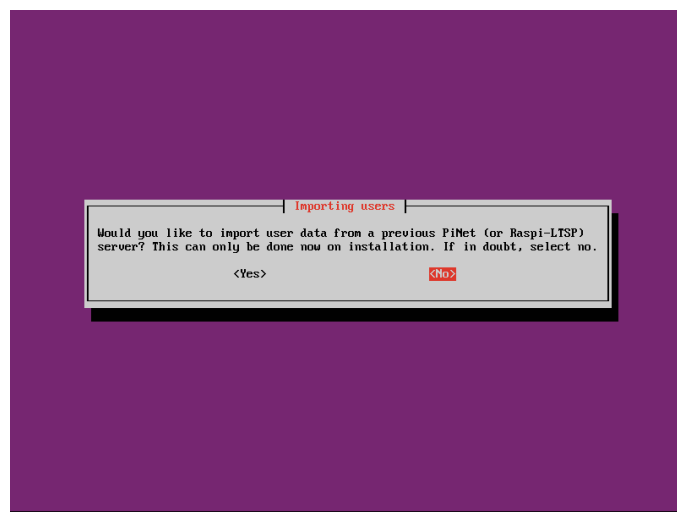
Which will launch **PiNet**

```
david@pinet:~$ sudo bash pinet
```

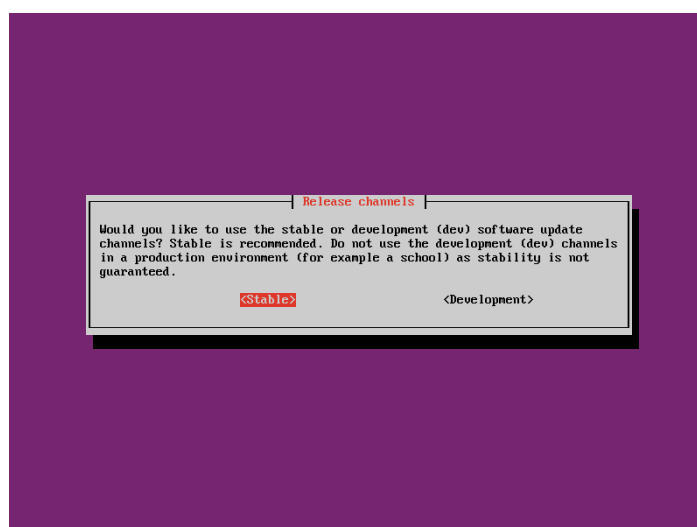
PiNet will offer to run a full install, select **Yes**



PiNet supports importing user data from an older PiNet server, select **No**

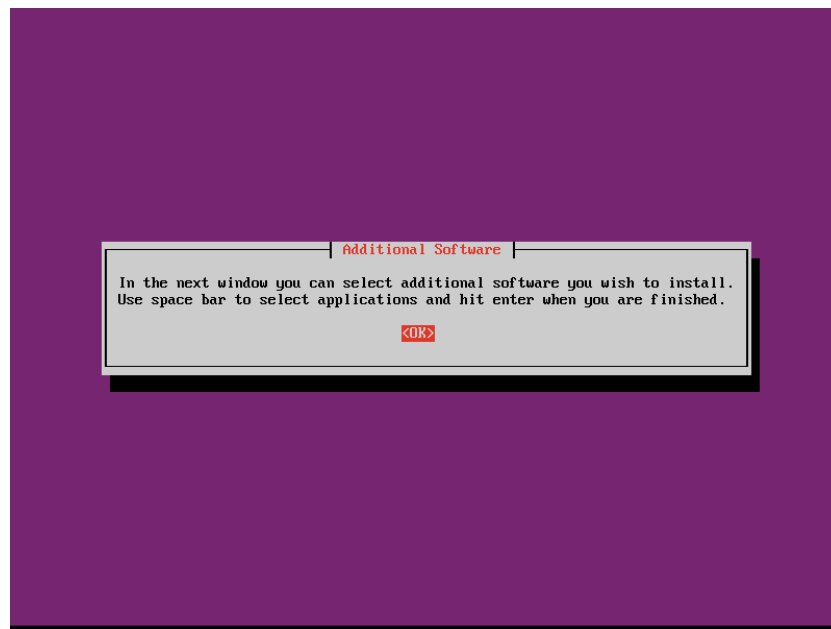


Select which **release channel** you wish to use. If using in a production environment, it is recommended you select **stable**

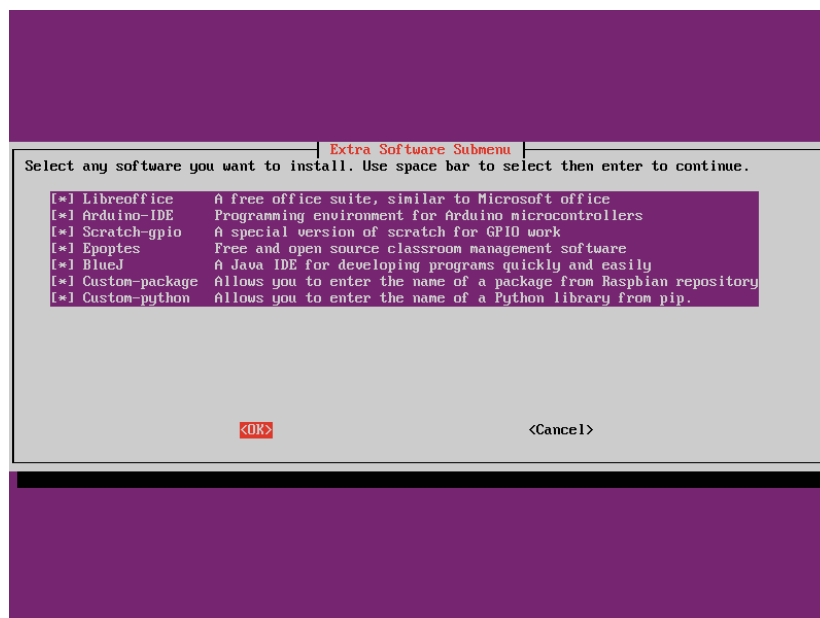




The extra software dialog will be displayed, here you can select any additional software you wish to install. Select **OK**



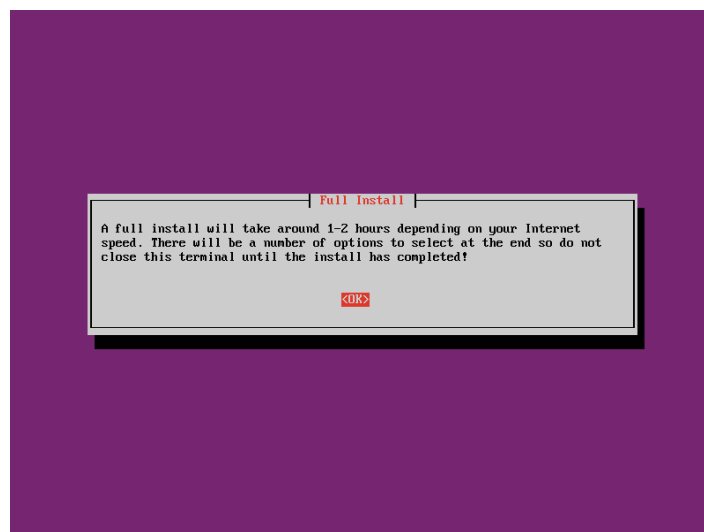
Select the software you wish to install and select **OK** again



Select **Yes** to confirm the software installation



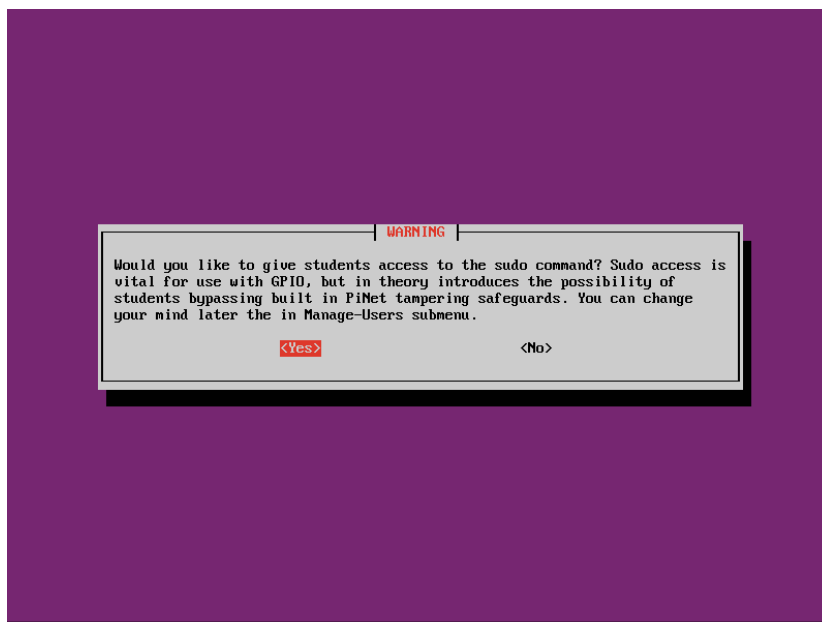
The install will take roughly 1-2 hours depending on processor speed and internet speed.
Select **OK** and it will **start the installation**



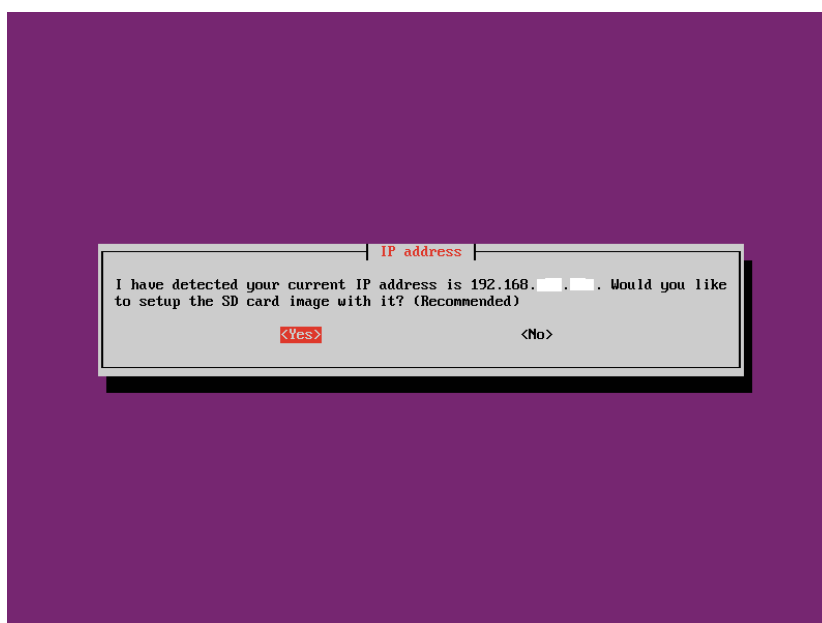
```
x11-xkb-utils xz12 zenity zenity-common
0 to upgrade, 388 to newly install, 0 to remove and 0 not to upgrade.
Need to get 90.6 MB of archives.
After this operation, 453 MB of additional disk space will be used.
Get:1 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libaa1 i386 1.4p5-41 [53.5 kB]
Get:2 http://gb.archive.ubuntu.com/ubuntu/ trusty-updates/main liblzo2-2 i386 2.06-1.2ubuntu1.1 [49.
9 kB]
Get:3 http://gb.archive.ubuntu.com/ubuntu/ trusty-updates/main libnettle4 i386 2.7.1-1ubuntu0.1 [105
kB]
Get:4 http://gb.archive.ubuntu.com/ubuntu/ trusty-updates/main libarchive13 i386 3.1.2-7ubuntu2.1 [2
74 kB]
Get:5 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libasound2-data all 1.0.27.2-3ubuntu7 [26.3 k
B]
Get:6 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libasound2 i386 1.0.27.2-3ubuntu7 [324 kB]
Get:7 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libsamplerate0 i386 0.1.8-7 [1938 kB]
Get:8 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libjack-jackd2-0 i386 1.9.9.5+20130622git7de1
5e7a-1ubuntu1 [189 kB]
Get:9 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libasyns0 i386 0.8-4ubuntu2 [11.6 kB]
Get:10 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libogg0 i386 1.3.1-1ubuntu1 [16.1 kB]
Get:11 http://gb.archive.ubuntu.com/ubuntu/ trusty-updates/main libflac8 i386 1.3.0-2ubuntu0.14.04.1
[183.6 kB]
Get:12 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libvorbis0a i386 1.3.2-1.3ubuntu1 [83.1 kB]
Get:13 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libvorbisenc2 i386 1.3.2-1.3ubuntu1 [66.9 kB]
Get:14 http://gb.archive.ubuntu.com/ubuntu/ trusty-updates/main libsndfile1 i386 1.0.25-7ubuntu2.1 [
144 kB]
Get:15 http://gb.archive.ubuntu.com/ubuntu/ trusty-updates/main libpulse0 i386 1:4.0-0ubuntu11.1 [21
1 kB]
Get:16 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libspeexdsp1 i386 1.2~rc1.1-1ubuntu1 [69.2 k
B]
Get:17 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libasound2-plugins i386 1.0.27-2ubuntu2 [62.
4 kB]
Get:18 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libatk1.0-data all 2.10.0-2ubuntu2 [13.7 kB]
Get:19 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libatk1.0-0 i386 2.10.0-2ubuntu2 [49.5 kB]
Get:20 http://gb.archive.ubuntu.com/ubuntu/ trusty/main libatspi2.0-0 i386 2.10.2-1.2.10.1-0ubuntu1
[51.6 kB]
3% [20 libatspi2.0-0 0 B/51.6 kB 0%]_
```



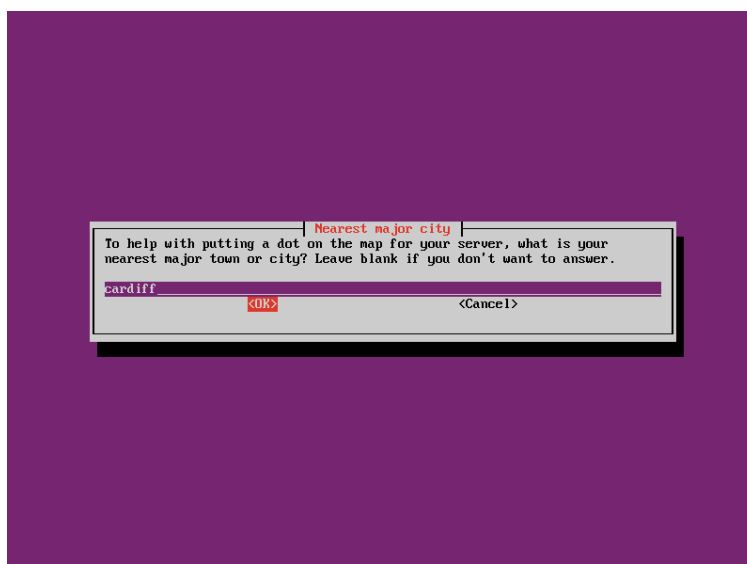
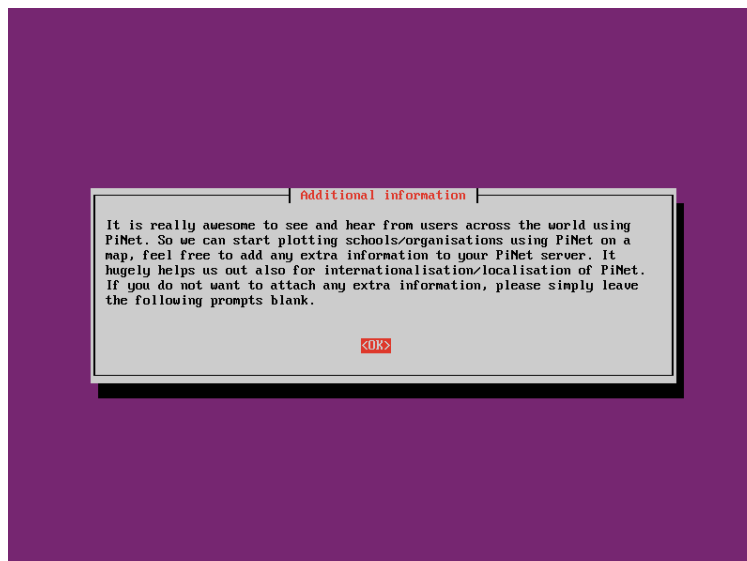
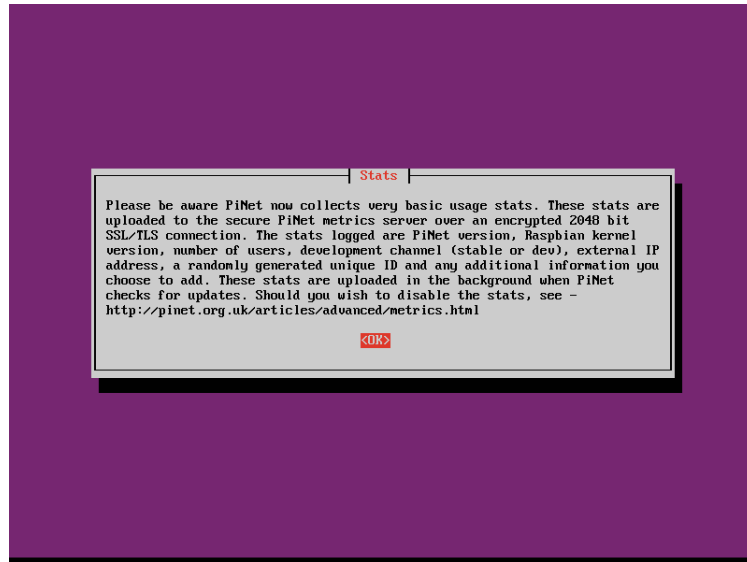

You must decide if you need students to have **Sudo access** on the Raspberry Pi. If you intend to work with the **GPIO** pins on the Raspberry Pi they will need it. You can really easily later enable or disable Sudo use in the **Manage-Users** submenu in the main software options. If in doubt, is recommended to enable it by selecting **Yes**



Ip address dialog box as you if you want to setup the SD card image with it, select **Yes**



Next windows ask you for information about your organization you can give details or leave it in blank, it's up to you select **OK**





Organisation type

What type of organisation are you setting PiNet up for? Leave on blank if you don't want to answer.

Blank
School
Non Commercial Organisation
Commercial Organisation
Raspberry Jan/Club

<OK> <Cancel>

School/organisation name

What is the name of your organisation? Leave blank if you don't want to answer.

<OK> <Cancel>

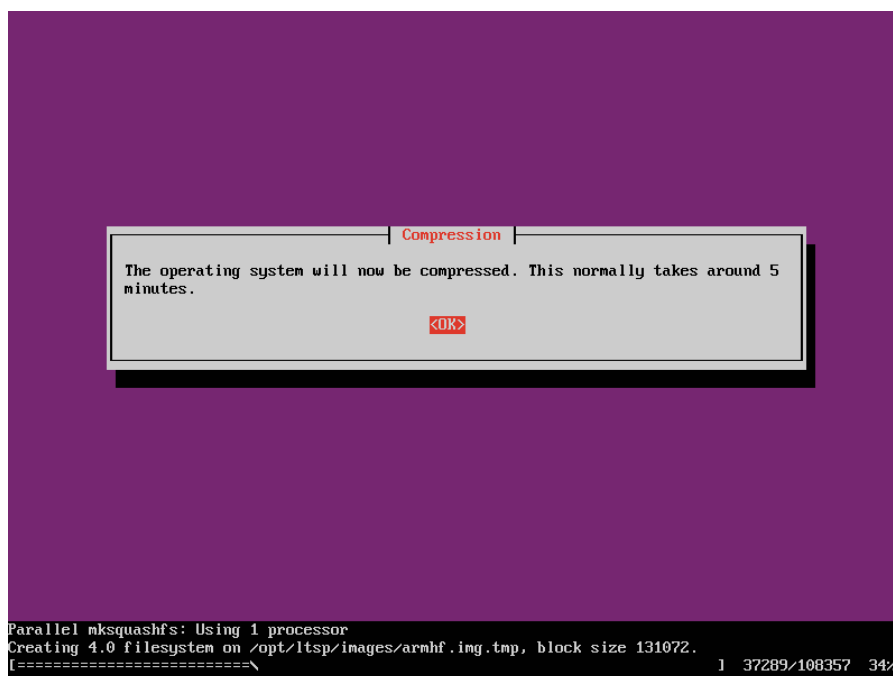
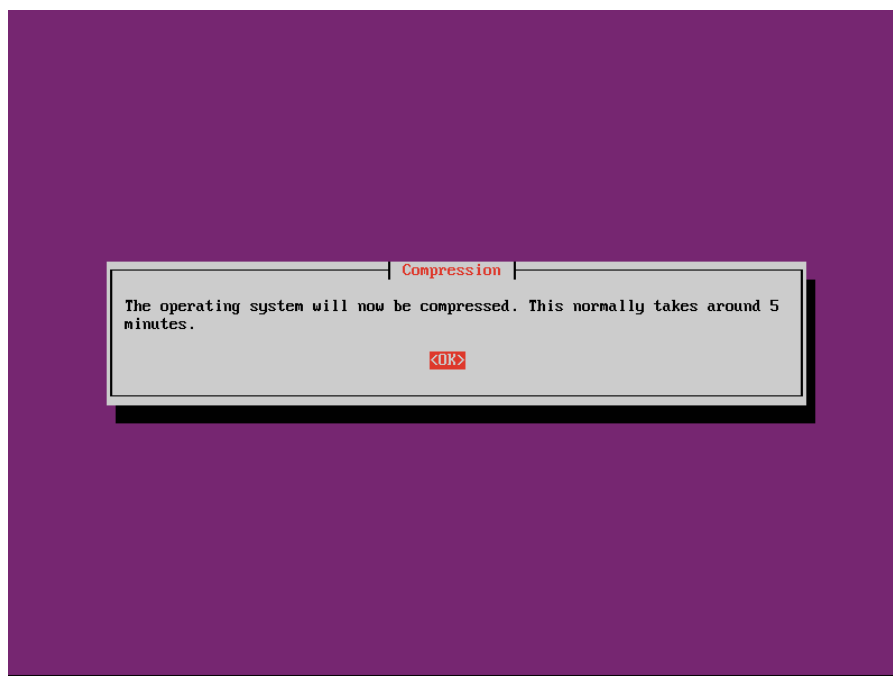
Additional information

Thanks for taking the time to read through (and if possible fill in) additional information. If you ever want to edit your information supplied, you can do so by selecting the "Other" menu and selecting "Edit-Information".

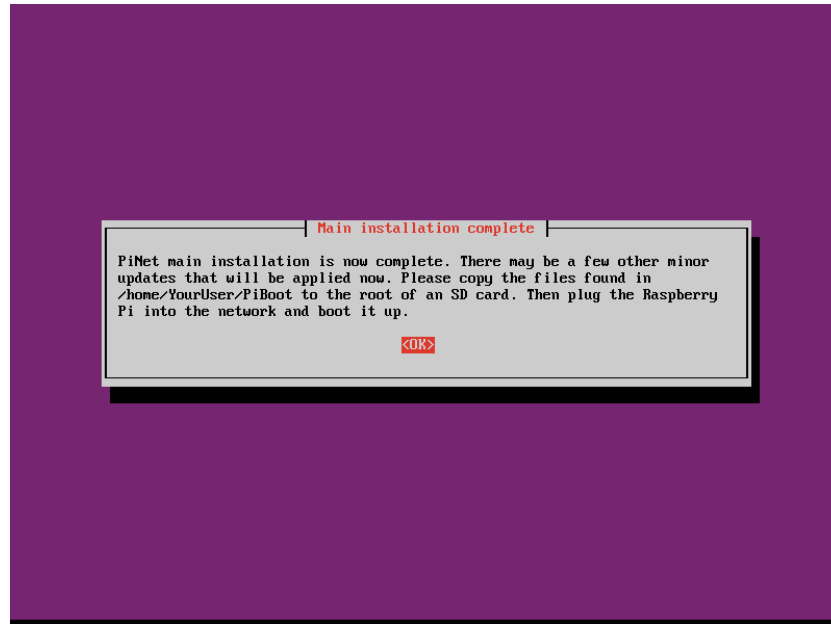
<OK>



The operating system will now **be compressed**. After every change made to the operating system, it must be recompressed which takes roughly 5 minutes normally, select **OK**



PiNet installation is now complete. The server has generated an **SD card image** which is located in **/home/YourUser/PiBoot**. You need to copy these files onto a blank formatted SD card and connect the Raspberry Pi to the network.



Starting the server and setup users and shared folders

To start **Pinet server** write

```
sudo bash pinet
```

```
Ubuntu 14.04.4 LTS pinet tty1
pinet login: david
Password:
Last login: Mon Apr 11 18:19:01 BST 2016 from ltsp198 on pts/0
Welcome to Ubuntu 14.04.4 LTS (GNU/Linux 3.13.0-32-generic i686)

 * Documentation:  https://help.ubuntu.com/

System information as of Tue Apr 12 11:32:46 BST 2016

System load: 0.0           Memory usage: 4%    Processes:      133
Usage of /:  52.8% of 14.64GB Swap usage:   0%    Users logged in: 0

Graph this data and manage this system at:
https://landscape.canonical.com/

david@pinet:~$ sudo bash pinet
Starting PiNet - Please wait
No PiNet software updates found
No kernel updates found
```

Pinet server main menu dialog



```
Pinet 1.1.4 Main Menu - 192.168.3.177
What would you like to do?
System-Status  Display status of key parts of your PiNet server
Install-Program Install a new program on the Raspberry Pi's
Manage-Users   Add new users, change passwords and delete users
Update-All     Run an automatic update on server and Raspbian
Backup-Menu    User files backup submenu
Shared-Folders Manage and create shared folders
Collect-work   Collects students work in a single folder
Update-SD      Update the SD card image. This includes IP address changes
Rebuild-OS     Rebuilds the LTSP Raspberry Pi image from scratch again
Epoptes-Menu   Epoptes classroom management submenu
Troubleshooter Having issues? Try running the troubleshooter
Other          Other options and utilities for management
Update-PiNet   Forces PiNet to update itself

<Select>      <Quit>
```

To add users select **Manage-Users** and in next dialog box **Add-user**

```
Pinet 1.1.4 Main Menu - 192.168.3.177
What would you like to do?
System-Status  Display status of key parts of your PiNet server
Install-Program Install a new program on the Raspberry Pi's
Manage-Users   Add new users, change passwords and delete users
Update-All     Run an automatic update on server and Raspbian
Backup-Menu    User files backup submenu
Shared-Folders Manage and create shared folders
Collect-work   Collects students work in a single folder
Update-SD      Update the SD card image. This includes IP address changes
Rebuild-OS     Rebuilds the LTSP Raspberry Pi image from scratch again
Epoptes-Menu   Epoptes classroom management submenu
Troubleshooter Having issues? Try running the troubleshooter
Other          Other options and utilities for management
Update-PiNet   Forces PiNet to update itself

<Select>      <Quit>
```

```
Manage-users Submenu
What would you like to do?
Add-user       Add a new Linux user
Remove-user    Remove a Linux user
Change-password Change password of a user
Display-users  List all the users on the system
Add-teacher    Add user to the staff permission group
Import-Users   Import usernames and passwords from a CSV file
Enable-Sudo    Enables the use of sudo for pupils. Used for GPIO access
Disable-Sudo   Disables the use of sudo for pupils
Group-check    Checks all users are in the correct system groups
Export-users    Export all user data for migrating to new PiNet server

<Select>      <Main Menu>
```

Choose **username**, **password** and if it's a **teacher** or a **pupil**



Enter new username | Username |

wendy

<OK> <Cancel>

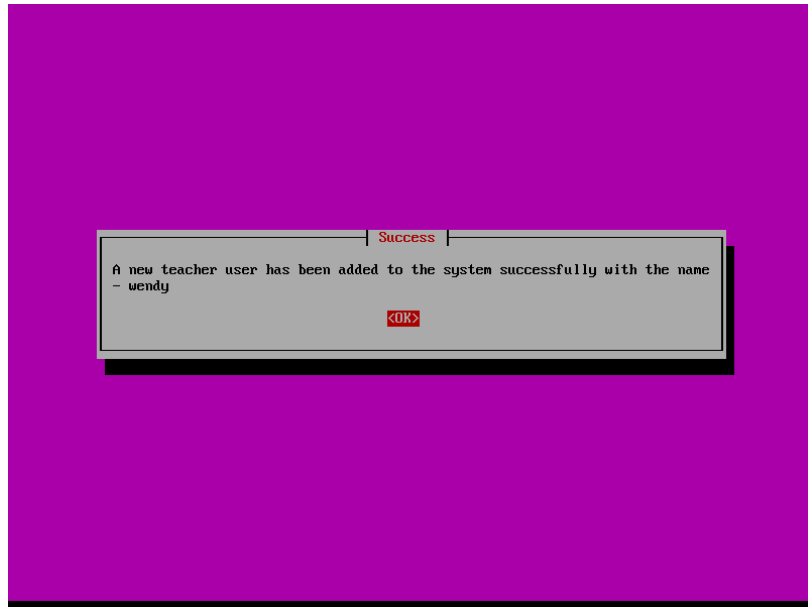
Enter new password | Password |

<OK> <Cancel>

Permission level |

Is wendy a pupil or a teacher? Teachers have a lot more permissions including write access to all shared folders, Epoptes teacher access and

<Pupil> <Teacher>



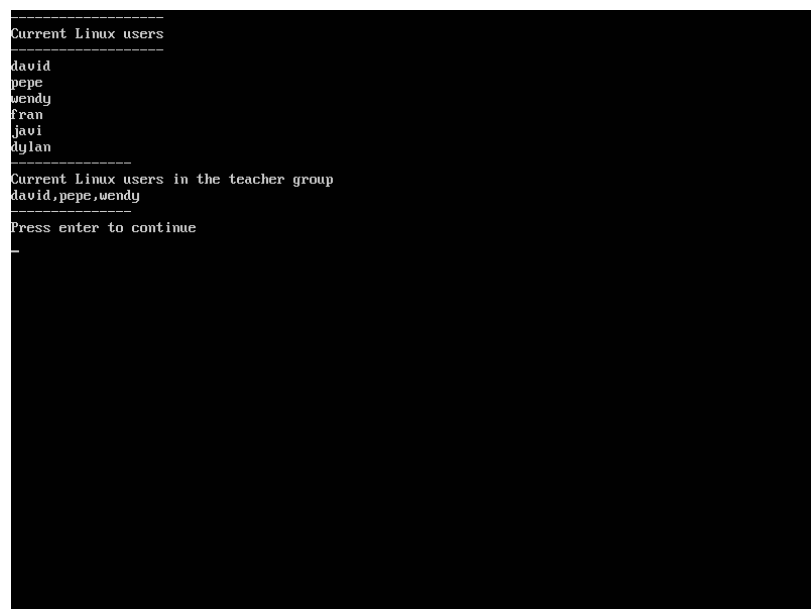
These are the users I've created

Teachers

- david
- wendy
- pepe

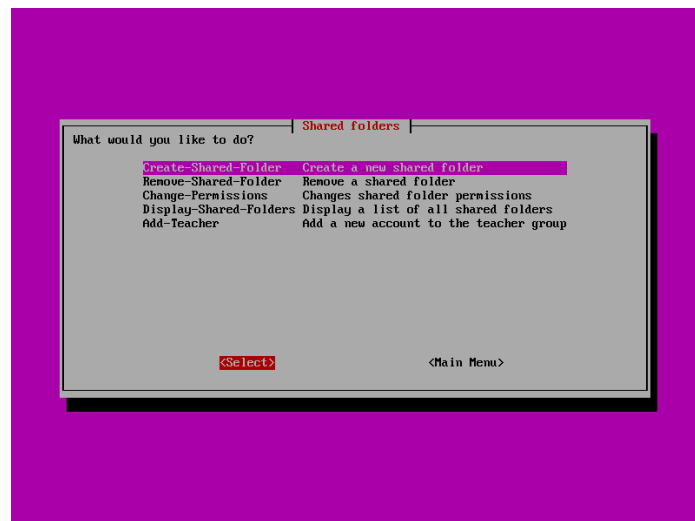
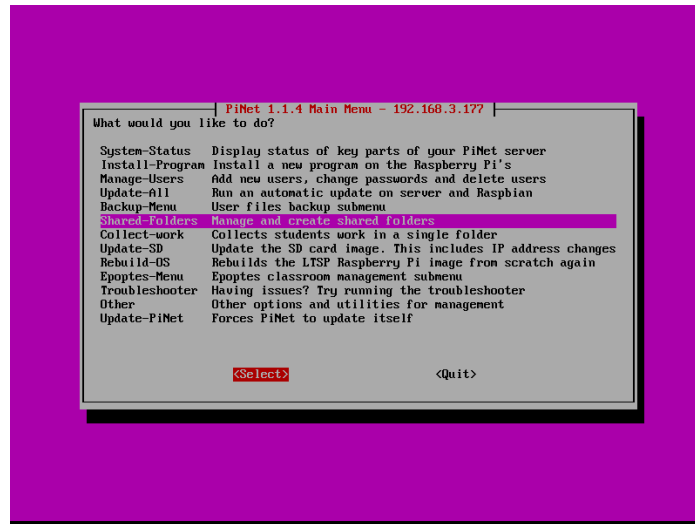
Pupils

- fran
- javi
- dylan

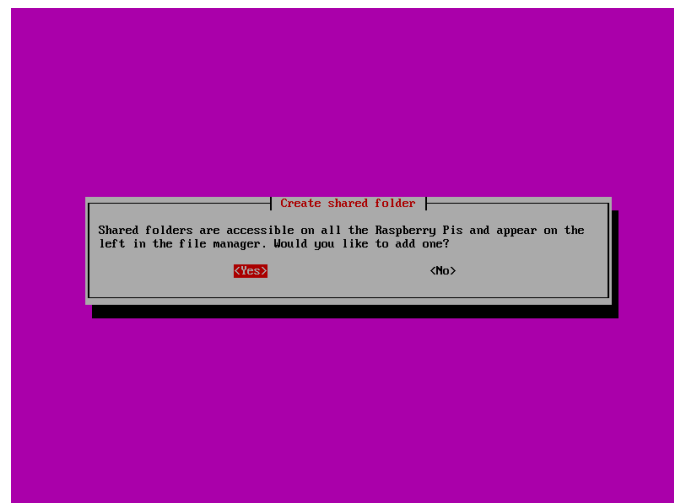


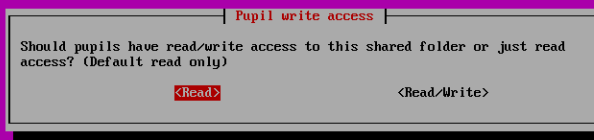


To add shared folders select **Shared-Folders** and in next dialog box **Create-Shared-Folder**



Choose if you want it to appear in the Rasperry PI file manager, the **name**, and **read** or **read/write** access for pupils







These are the **Shared Folders** I've created

Pupils read/write

- pupils

Pupils read

- giakonda

```
Current shared folders
-----
giakonda
pupils
Hit enter to continue
```

For more information about **Users** and **Shared Folders** management go to:

[Pinet website](#)

Copy boot files to a Sd Card and check that works

Firstly format your **SD Card** with any application tool like **Disks** or any other you like as **MRB/DOS and FAT32**

Now connect the **SD Card** to our **Ubuntu Server**

Use **fdisk** command to know the name of our **SD Card** partition

```
sudo fdisk -l
```

Find your device in the list. It is probably something like **/dev/sdb1** as mine one

Create a mount point



```
mkdir /tmp/pinet
```

Mount the drive

```
sudo mount /dev/sdb1 /tmp/pinet
```

```
david@pinet:~$ sudo fdisk -l

Disk /dev/sda: 17.2 GB, 17179869184 bytes
255 heads, 63 sectors/track, 2088 cylinders, total 33554432 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00027a80

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1  *          2048       31293439   15645696   83   Linux
/dev/sda2              31293440   33554431   1130496    5   Extended
/dev/sda5              31457280   33554431   1048576   82   Linux swap / Solaris

Disk /dev/sdb: 3874 MB, 3874488320 bytes
12 heads, 52 sectors/track, 12127 cylinders, total 7567360 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0xd61ea127

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1              2048       7567359     3782656    c   W95 FAT32 (LBA)

david@pinet:~$ mkdir /tmp/pinet
david@pinet:~$ sudo mount /dev/sdb1 /tmp/pinet
david@pinet:~$ _
```

Check if the Boot files are in **/home/Youruser/PiBoot** and if everything is ok copy them to the **SD Card** mount point with this command

```
Sudo cp -r /home/Youruser/PiBoot/* /tmp/pinet
```



```
david@pinet:~$ ls
Desktop  PiBoot  pinetSDImage.img  python_games
david@pinet:~$ cd PiBoot/
david@pinet:~/PiBoot$ ls
bcm2708-rpi-b.dtb      cmdline.txt          initrd.img-3.18.0-trunk-rpi  start_db.elf
bcm2708-rpi-b-plus.dtb config-Local.txt     initrd.img-3.18.0-trunk-rpi2 start.elf
bcm2708-rpi-cm.dtb    config-LTSP.txt     initrd.img-4.1.13+         start_x.elf
bcm2709-rpi-2-b.dtb   config.txt          initrd.img-4.1.13-v7+      version.txt
bootcode.bin          COPYING.linux       kernel7.img-4.1.13-v7+     vmlinuz-3.18.0-trunk-rpi
cmdline2.txt          fixup_cd.dat        kernel.img-4.1.13+         vmlinuz-3.18.0-trunk-rpi2
cmdlineLocalSD.txt    fixup.dat           LICENCE.broadcom
cmdlineNBD.txt        fixup_db.dat        overlays
cmdlineNFS.txt        fixup_x.dat         start_cd.elf
david@pinet:~/PiBoot$ sudo cp -r /home/david/PiBoot/* /tmp/pinet
david@pinet:~/PiBoot$
```

Check that the files has been copied to our **SD Card** with this commands

```
cd /tmp/pinet
ls
```

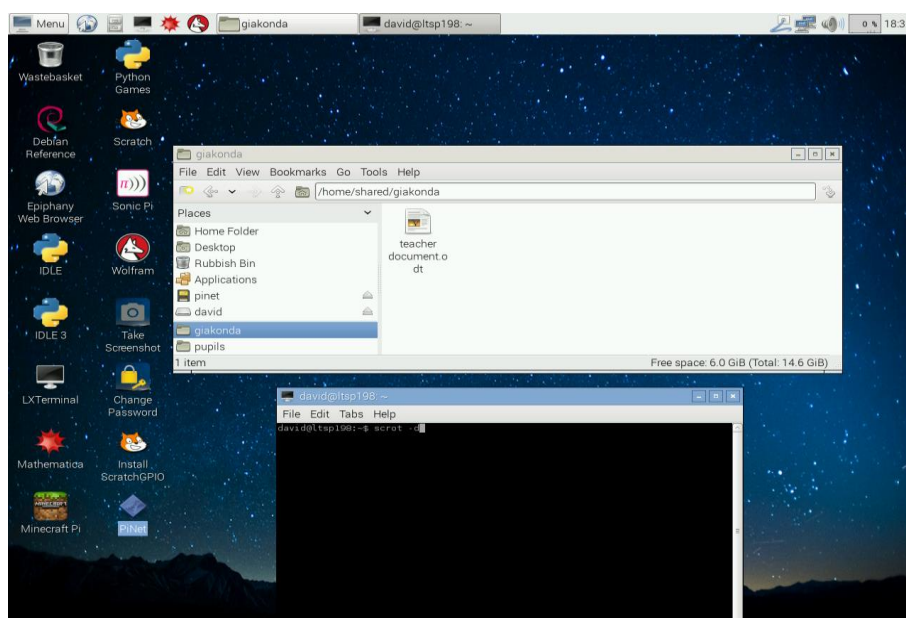
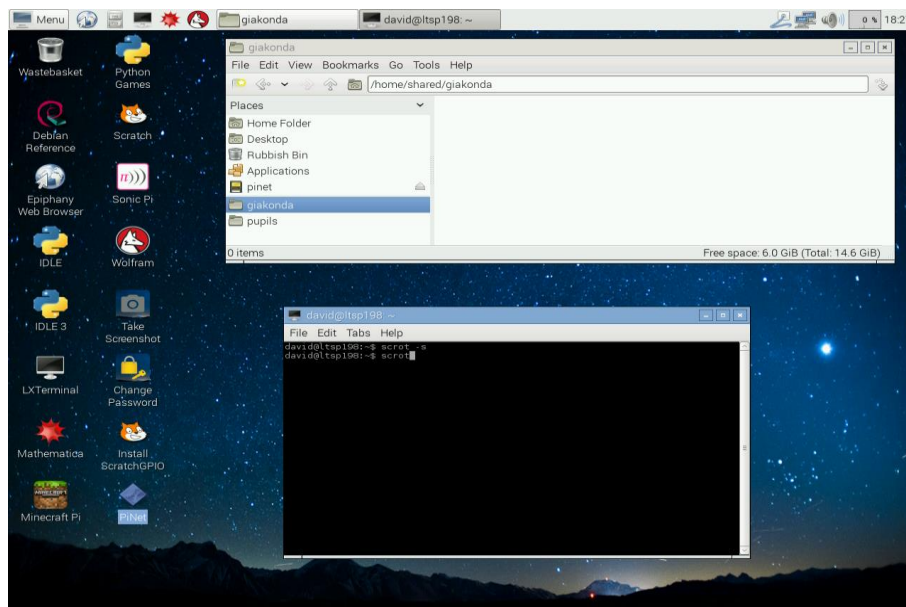
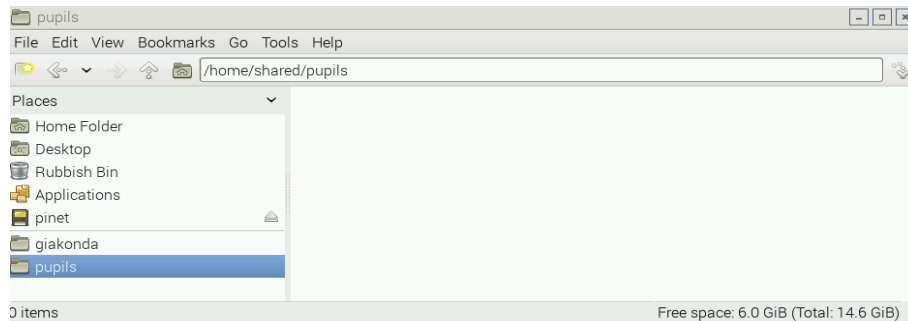
And unmount the **SD Card**

```
sudo umount /tmp/pinet
```

```
david@pinet:~$ sudo cp -r /home/david/PiBoot/* /tmp/pinet
david@pinet:~$ cd /tmp/pinet
david@pinet:/tmp/pinet$ ls
bcm2708-rpi-b.dtb      cmdline.txt          initrd.img-3.18.0-trunk-rpi  start_db.elf
bcm2708-rpi-b-plus.dtb config-Local.txt     initrd.img-3.18.0-trunk-rpi2 start.elf
bcm2708-rpi-cm.dtb    config-LTSP.txt     initrd.img-4.1.13+         start_x.elf
bcm2709-rpi-2-b.dtb   config.txt          initrd.img-4.1.13-v7+      version.txt
bootcode.bin          COPYING.linux       kernel7.img-4.1.13-v7+     vmlinuz-3.18.0-trunk-rpi
cmdline2.txt          fixup_cd.dat        kernel.img-4.1.13+         vmlinuz-3.18.0-trunk-rpi2
cmdlineLocalSD.txt    fixup.dat           LICENCE.broadcom
cmdlineNBD.txt        fixup_db.dat        overlays
cmdlineNFS.txt        fixup_x.dat         start_cd.elf
david@pinet:/tmp/pinet$ cd ..
david@pinet:/tmp$ sudo umount /tmp/pinet
david@pinet:/tmp$ ls
kernelCheckUpdate.sh  kernelVersion.txt  ltsptmp  pinet
david@pinet:/tmp$ cd pinet/
david@pinet:/tmp/pinet$ ls
david@pinet:/tmp/pinet$
```

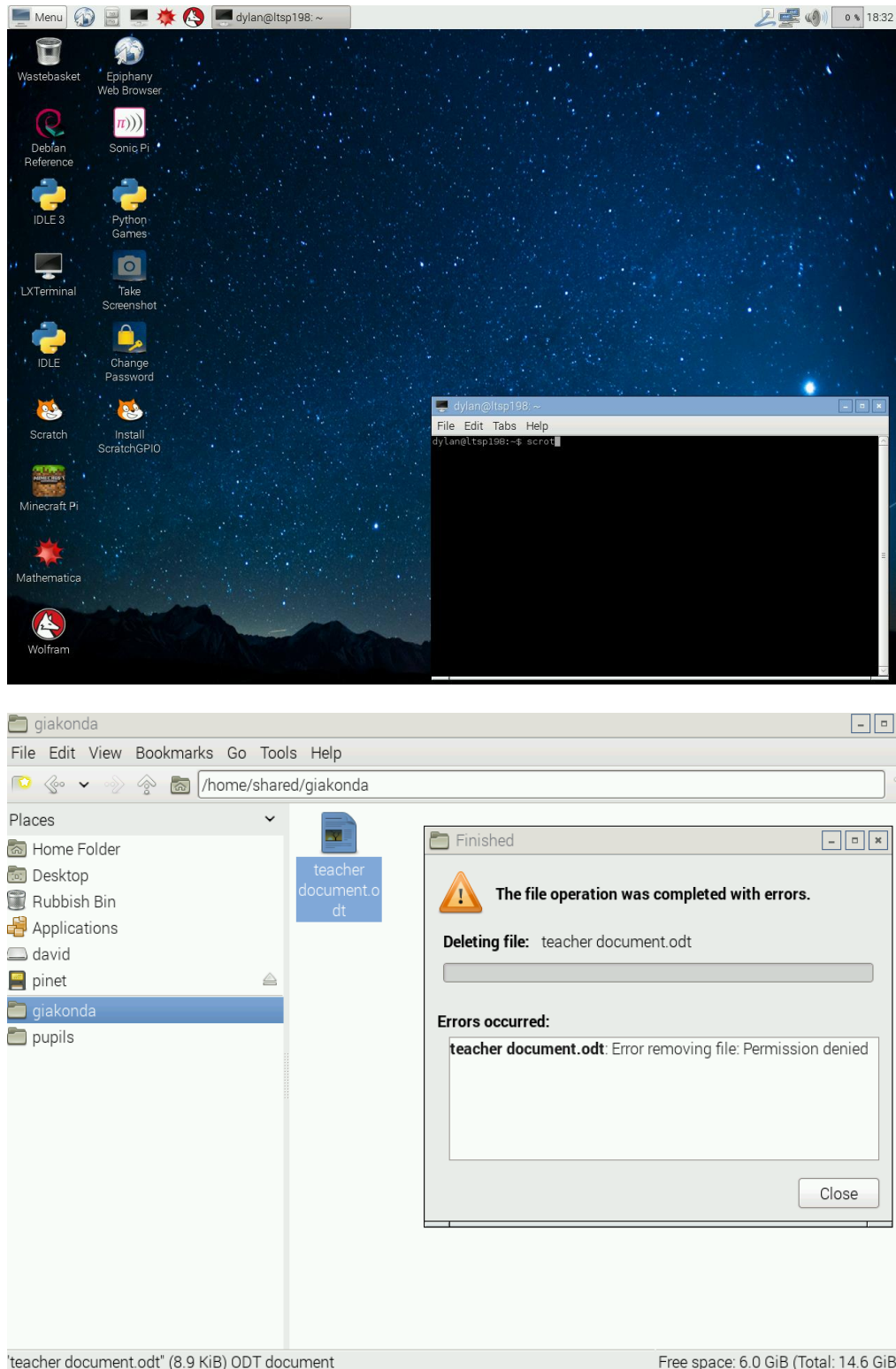


Now insert the **SD Card** in any **Raspberry PI** and check if works, firstly I login with **david (teacher user)** check that everything works and we have access to **Shared Folders (giakonda and pupils)** and create a file in **giakonda** (teachers have **read/write** permissions)





Now logoff and login again with any pupil, for example **dylan** (just **read** permissions in **giakonda** folder) and when I try to modify or erase the **teacher document.odt** server doesn't allow me to do it.



So everything is working **perfectly!!!**