

Cairo University
Faculty of Engineering
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4th year



Ubuntu installing manual
Version 11.04 and how to update to new versions

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Download Ubuntu

Download the ISO file:-

→A variety of download of options are provided on the Ubuntu web site which is accessible at <http://www.ubuntu.com/download> . Firstly, Ubuntu is provided in Desktop and Server editions.

- Choose “Ubuntu Desktop”
- Choose the Ubuntu Version you want. And 32-bit or 64-bit.
- If your computer has not 64-bit hardware you must choose 32-bit edition.
- Click on the button you choose its version

→A download window should appear now.

After download complete you should have an ISO file.

Hint 1: There is another option to download Ubuntu. If you want to use Method 3 to install it. “Installing Ubuntu 11.04 on a Windows Disk with Wubi” this can be downloaded by click on “Get the Windows installer” button at the previous link.

Hint 2: Any of the previous 2 choices will lead you to another page offer you some additional options (not free). If it appears click on “Not now, take me to the download” link below.

Burn the ISO file to a CDROM or DVD:-

This can be done with Nero software or any other burning software you know.

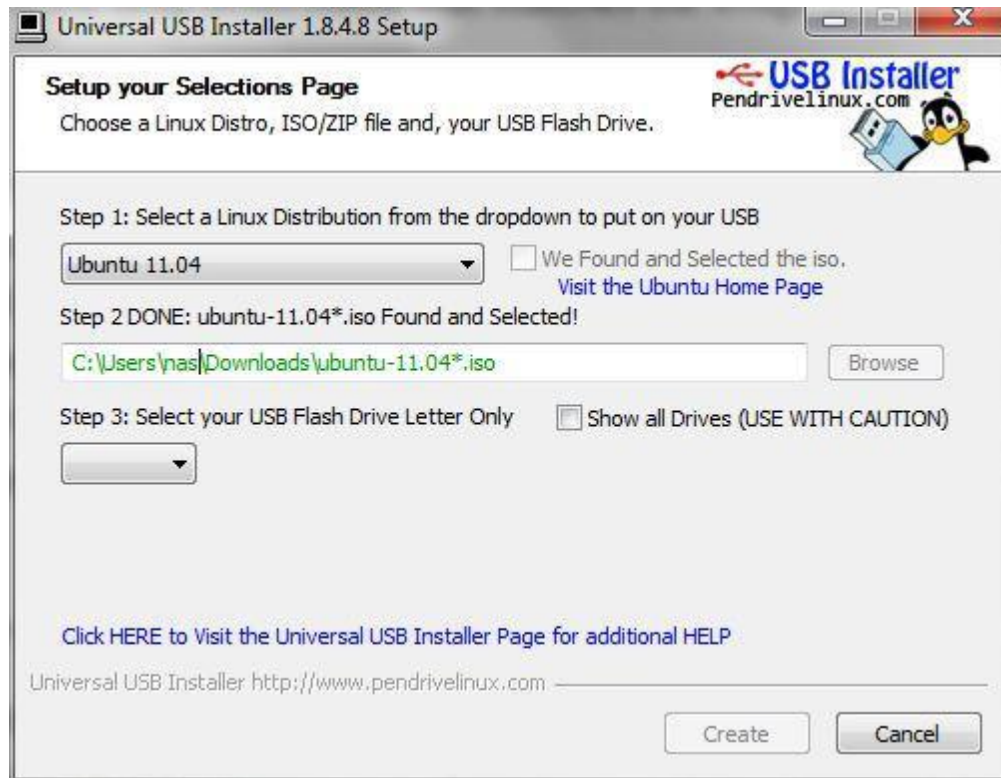
Writing the Ubuntu Image to a USB Flash Drive:-

In order to write the Ubuntu image to a USB drive, the Pendrive Linux Universal USB Installer is required. This tool is currently only available for Windows XP, Windows Vista and Windows 7 and can be downloaded from the Pendrive Linux web site at:

<http://www.pendrivelinux.com/universal-usb-installer-easy-as-1-2-3/>

Once the Pendrive installer has been downloaded and launched, and the license agreement accepted, the main screen should appear. From within this window, select the version of Ubuntu from the drop down menu that matches the image previously downloaded:

After selecting the Ubuntu distribution, the tool will scan the system in an attempt to locate the downloaded Ubuntu installation ISO image.



If the scan is successful the “Step 2” section of the dialog will indicate “DONE” and the text box will be pre-populated with the path to the corresponding ISO image file.

If the tool is unable to locate the image, use the *Browse* button to navigate to the location of the Ubuntu 11.04 ISO image.

Insert a USB flash drive (at least 2GB is recommended) into a spare USB port of the computer and then select the corresponding drive letter from the menu located in Step 3.

If the USB device is not listed, try enabling the *Show all Drives* option. Once the target drive has been selected, choose the option to format the USB drive as part of the image creation process (the assumption is made here that any data already on the drive is expendable).

Finally, select the amount of space on the USB drive to be allocated to store any user files created from within the running Ubuntu system. The amount of persistent storage space to allocate will depend on the capacity of the USB drive and the amount of data you feel you will be likely to need to store on the drive whilst using Ubuntu from this boot device.

Clicking the *Create* button will begin the process of writing the image to the USB drive.

Once the Ubuntu ISO image is either burned to a CDROM or written to a flash drive it is time to move on to the next step.

Methods of installation

➔ You may now want to select the method you prefer to install Ubuntu. You have 3 choices.

Method 1: Performing a Clean Ubuntu 11.04 Installation

If you are installing Ubuntu on a clean hard disk drive, or plan to overwrite the existing Windows or other operating system installation on the drive then installing Ubuntu is straightforward. Simply follow the steps in Performing a Clean Ubuntu 11.04 Installation to install Ubuntu on the entire disk drive.

Method 2: Installing Ubuntu 11.04 on a Windows System (Dual booting)

If you already have Windows installed on your PC you can install Ubuntu onto the same disk drive and boot from either operating system (a configuration known as *dual booting*). During the installation process Ubuntu will resize the Windows partition on your hard disk to make room for the Ubuntu installation (you will be asked how much of your disk drive you wish to use for Linux) and set up a special boot manager that will allow you to choose whether to boot Linux or Windows each time you power up your system. All of this is non-destructive, in that your Windows partition and all the applications and data therein will be kept intact. All that will happen is that the Windows part of the disk will be smaller than it was originally.

Another useful feature of a Windows/Ubuntu dual-boot configuration is that your Windows logical drives (C:, D: etc) will be accessible from Ubuntu, so you will be able to access your Windows data files from Linux. This means, for example, that you will be able to access your Microsoft Word and Excel files using the Linux version of LibreOffice included with Ubuntu.

For detailed steps on creating a Windows/Ubuntu dual boot environment see Installing Ubuntu 11.04 on a Windows System (Dual booting).

Method 3: Installing Ubuntu 11.04 on a Windows Disk with Wubi

Ubuntu also provides the ability to install Ubuntu onto the file system of an existing Windows installation. This is similar to the dual booting approach outlined above with the exception that the hard disk does not need to be repartitioned to create Linux partitions for the Ubuntu installation. Instead, all the files which make up Ubuntu are installed in a new folder on the Windows disk just like any other files. All that is required is enough disk space on a Windows disk drive to accommodate the Ubuntu installation (around 8GB is recommended).

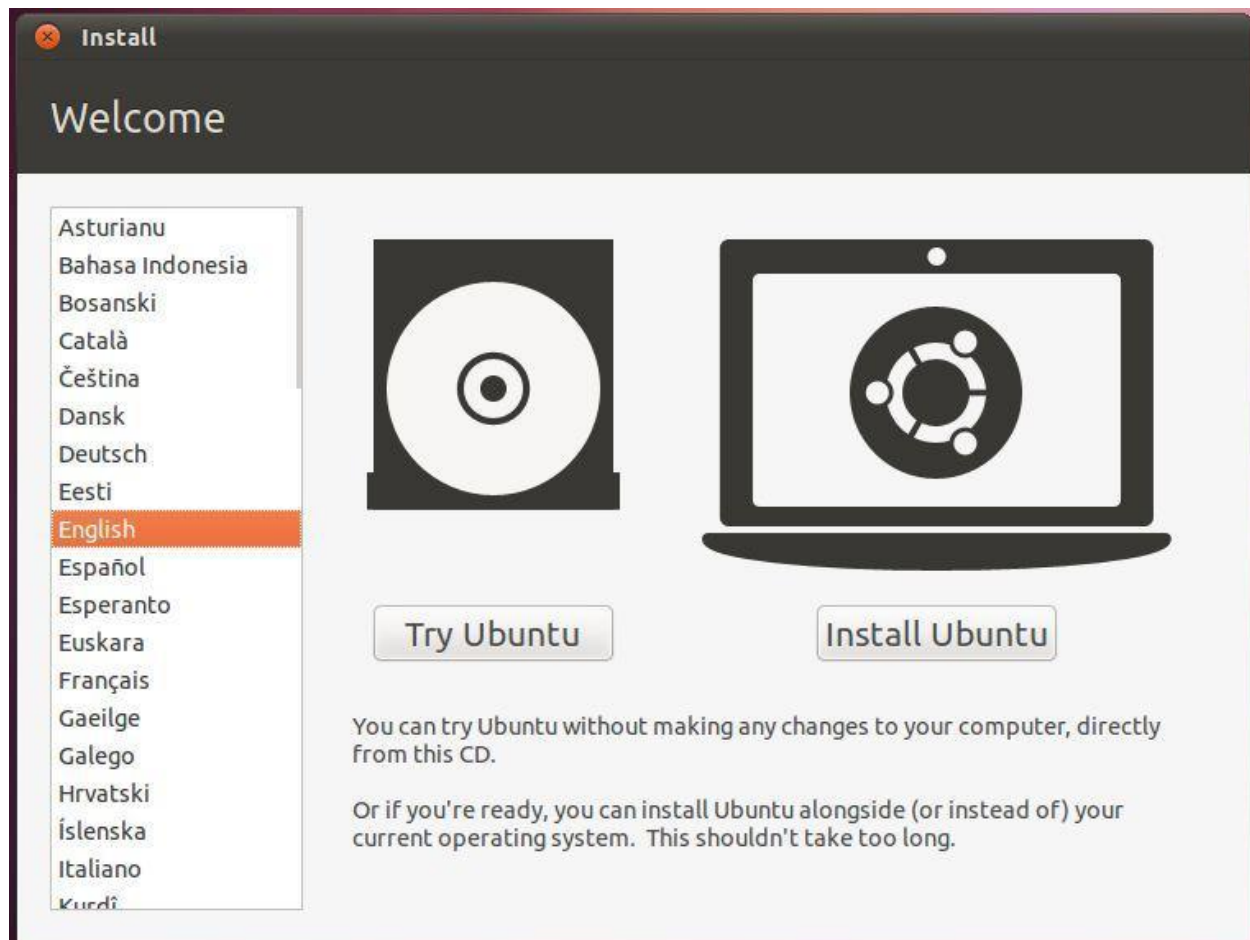
This type of installation is achieved using technology called the Ubuntu Windows Installer, or *Wubi* for short. The process involves downloading and running the Wubi installation executable, selecting a target disk drive, providing a user name and password for accessing the Ubuntu

installation and clicking an *Install* button. Wubi will then download the Ubuntu distribution and perform the installation into a folder on the chosen Windows disk drive. When the system is subsequently rebooted, the user is given the option to boot either Windows or Ubuntu.

Refer to Installing Ubuntu 11.04 on a Windows Disk with Wubi for more details on this installation option.

Method 1: Performing a Clean Ubuntu 11.04 Installation

To start the installation, place the Ubuntu CD into the CD-ROM or DVD drive or insert the USB flash drive and reboot your computer system. If the system loads the old operating system, or indicates that it cannot find an operating system to load you will need to change the boot order in the system BIOS. To do this reboot again. Early in the boot process the BIOS will display a message indicating which key should be pressed to enter Setup. Press the key indicated so that the BIOS Setup menu appears. Navigate the menu system until you find the setting indicating the boot order used by the BIOS. Change the order so that either the drive containing the Ubuntu CDRom or the USB flash drive device is listed before the hard disk drive, then exit and save the settings. Reboot once more and you should find that Ubuntu loads. Once Ubuntu has loaded you will be presented with the following screen:

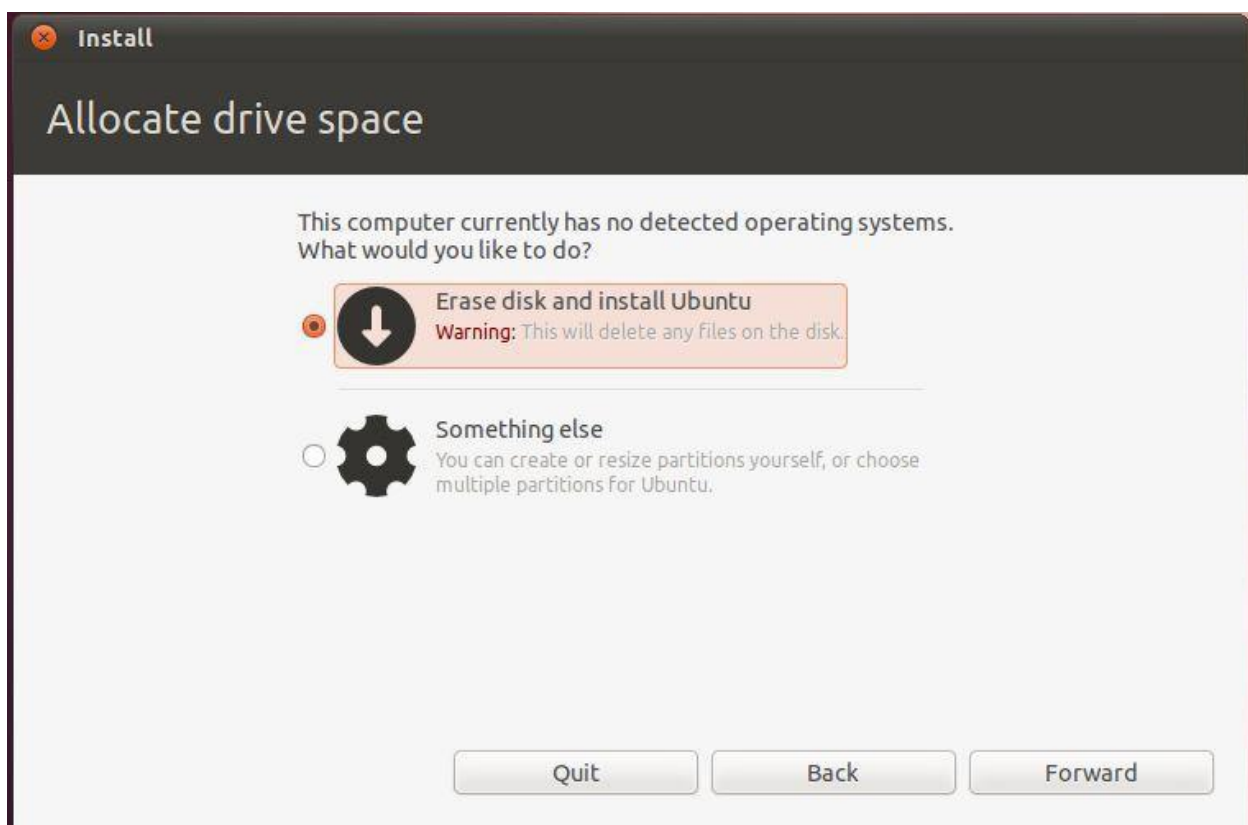


To begin the installation, click on the "Install Ubuntu" button. The installer makes recommendations relating the hardware of the system and then asks a couple of questions relating to the installation process. The first question provides the option to update the software packages that comprise the Ubuntu distribution during the installation. Ubuntu, as with most actively supported operating systems, continues to be updated with bug fixes and security patches long after it has been released

to the public. If this option is selected, the installer will download any updates issued since the Ubuntu installation image was released and applies them to the system during installation. If you choose not to perform this update during the installation process these updates may still be applied at any time after the installation completes.

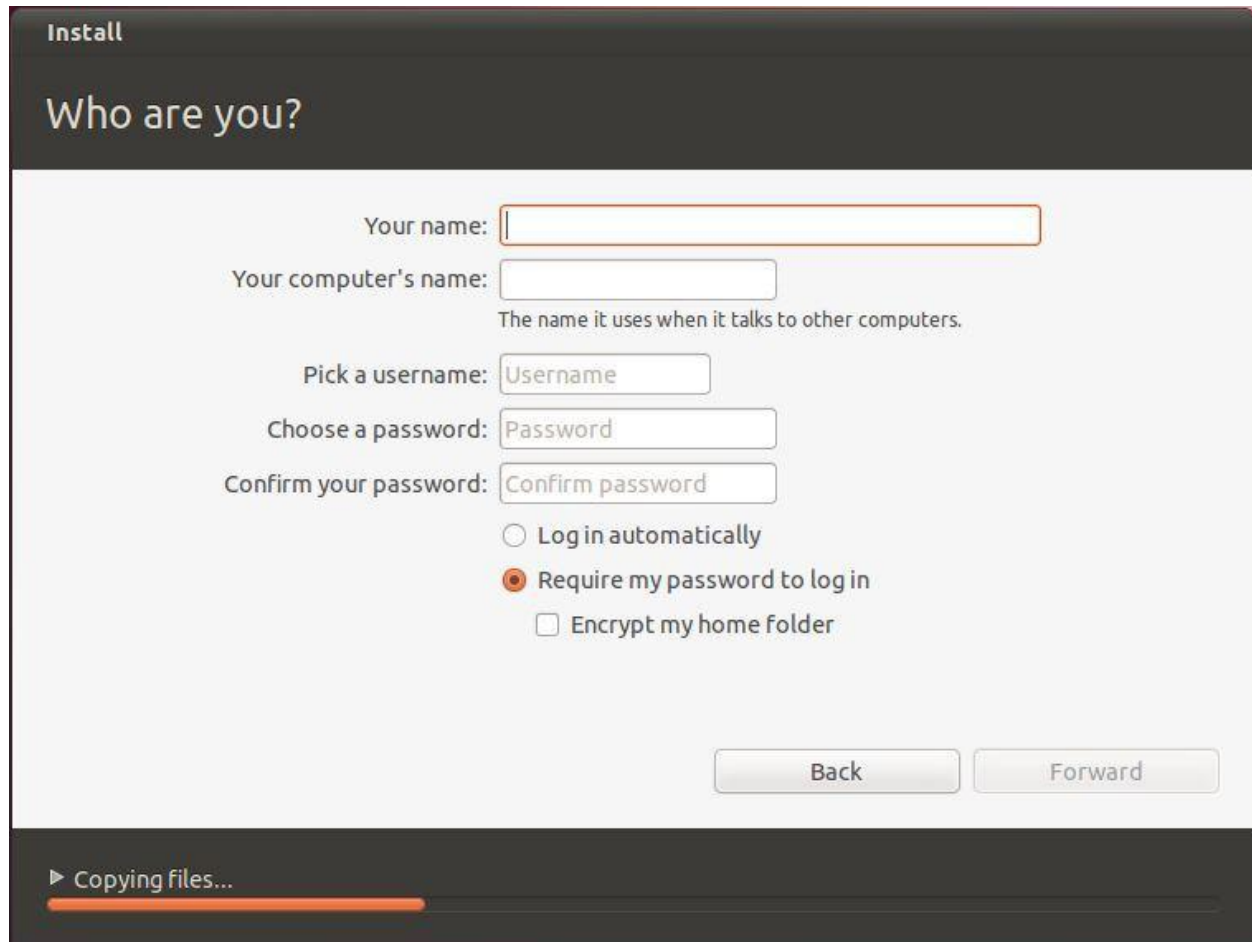
The second option provides the choice of whether to install 3rd party non-open source software to support the playback of MP3 files on the system. Some users object fervently to using any software which is not published under a public license. If you are one of those people then do not select this option. If, on the other hand, you just want the best experience from your Ubuntu installation then this option is recommended.

Having made appropriate selections, click the *Forward* button to proceed to the disk allocation screen. Assuming that this is a new disk on which an existing operating system is not present, the installer will provide the option to erase the entire disk and use it for Ubuntu (in which case the installer will calculate and implement a typical and recommended partition layout), or to manually configure the partition layout:



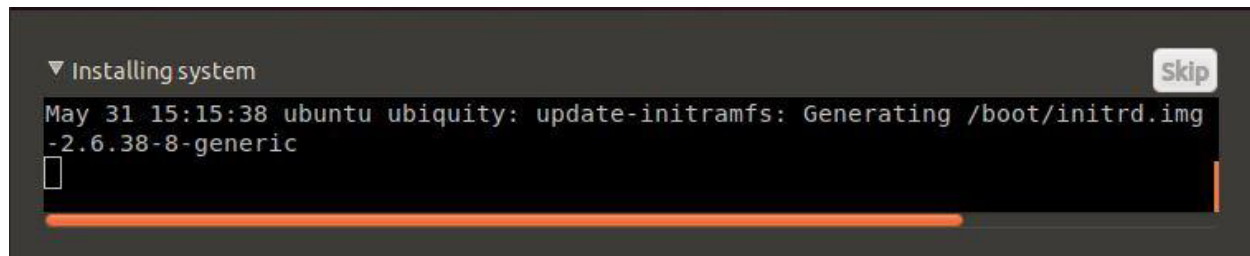
For the purposes of this chapter, and assuming any data on the disk is expendable, simply select the option to erase the entire disk then click on the *Forward* button to proceed. The installer will then display a graphical layout indicating the area of the disk that will be used to accommodate the Ubuntu installation. Review this information and click on *Install Now* to begin the installation.

Whilst the installation is in progress, the installer will ask for information about your geographical location in order to configure time zone settings, your keyboard language configuration, and a user name and password for the first account on the system. The account configuration screen also provides the option to encrypt your home folder to increase the security of your files and data:

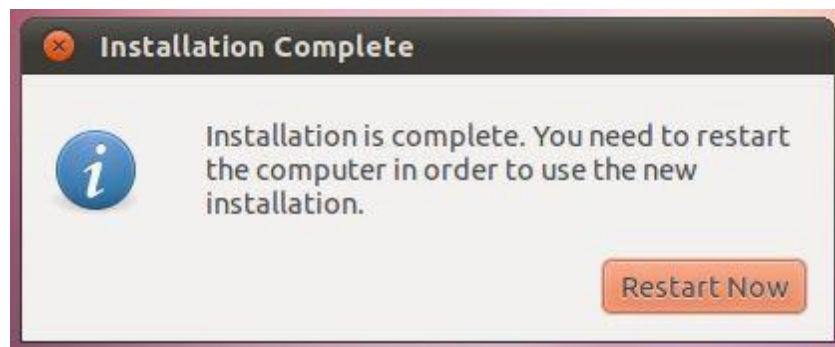
The image shows a screenshot of the Ubuntu installer window titled "Install". The main heading is "Who are you?". Below this, there are several input fields and options. The first is "Your name:" followed by a text box. The second is "Your computer's name:" followed by a text box and a subtitle "The name it uses when it talks to other computers.". The third is "Pick a username:" followed by a text box containing the placeholder "Username". The fourth is "Choose a password:" followed by a text box containing the placeholder "Password". The fifth is "Confirm your password:" followed by a text box containing the placeholder "Confirm password". Below these are three radio button options: "Log in automatically", "Require my password to log in" (which is selected), and "Encrypt my home folder" (which is a checkbox). At the bottom right are "Back" and "Forward" buttons. At the bottom left, there is a progress bar with the label "▶ Copying files..." and an orange bar indicating progress.

The option is also provided to dictate whether the password must be specified each time the user wishes to log into the system. By default, each time Ubuntu starts a login screen will be presented seeking username and password credentials. If you are the sole user of the system and would like to bypass this screen and be logged in automatically each time the system boots, be sure to set the *Log in automatically* checkbox before proceeding.

Once all the questions have been answered, the installer will simply proceed with the installation. Depending on the speed of your system, and whether or not you opted to download updates during the installation, this process can take some time. Unless you feel compelled to sit and watch the progress bar now is good time to find something else to do for a while. For a more detailed view of the steps being performed by the installer, click on the status title located above the progress bar:



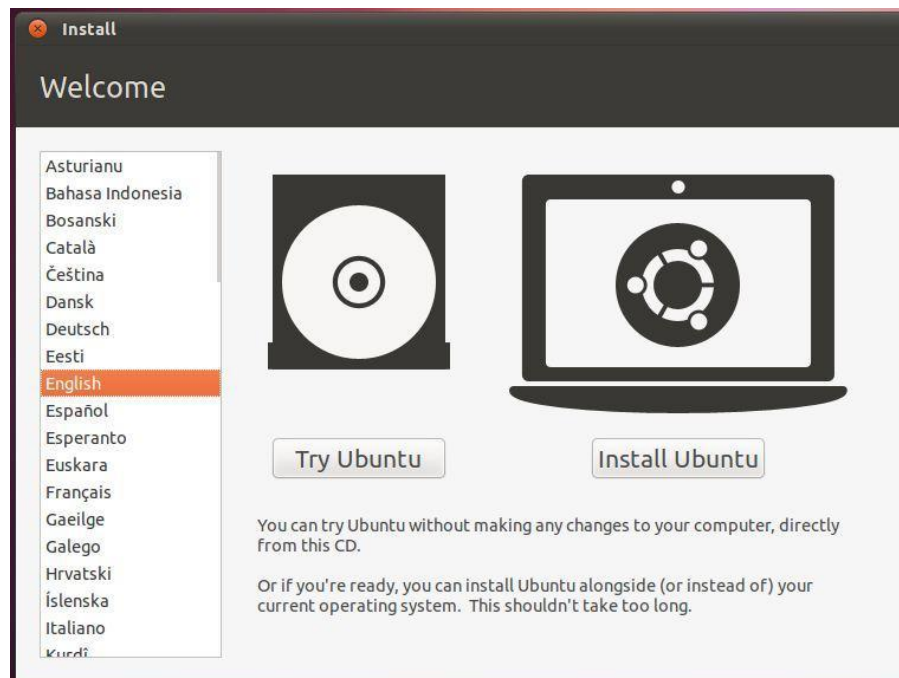
When the installation is complete, a dialog will appear to inform you the system is ready to be restarted.



When you are ready to reboot, press the *Restart Now* button. The installer may prompt you to remove the installation media and the system will take a few moments to shut down. At this point remove the CDROM or USB flash drive (depending on which you used to perform the installation) and press the *Enter* key to proceed.

Method 2: Installing Ubuntu 11.04 on a Windows System (Dual booting)

To start the installation, place the Ubuntu CD into the CD-ROM or DVD drive, or insert the USB flash drive and reboot your computer system. If the system loads Windows again you will need to change the boot order in your system BIOS so that the CD or DVD drive or USB device is checked for bootable media before the primary hard disk drive. To do this reboot again. Early in the boot process the BIOS will display a message indicating which key should be pressed to enter Setup mode. Press the key indicated so that the BIOS Setup menu appears. Navigate the menu system until you find the setting that indicates the boot order used by the BIOS. Change the order so that the drive containing the Ubuntu CDRom or USB drive is listed before the hard disk drive, then exit and save the settings. Reboot once more and you should find that Ubuntu loads. Once Ubuntu has loaded you will be presented with the following screen:

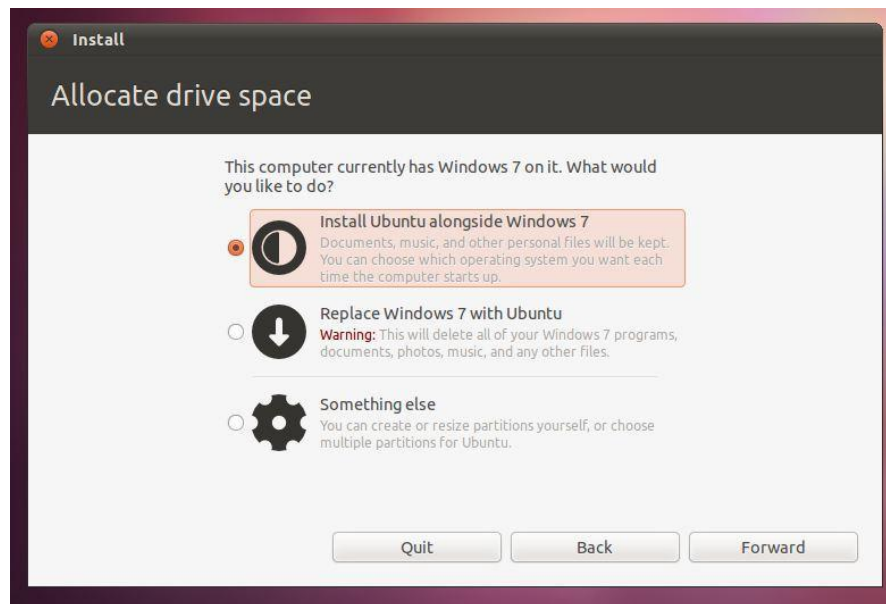


To begin the installation, click on the "Install Ubuntu" button. The installer will ask a couple of questions relating to the installation process. One option provides the choice of whether to install 3rd party non-open source software to support the playback of MP3 files on the system. If you don't feel strongly about using software that is not openly licensed and you just want the best experience from your Ubuntu installation then this option is recommended.

Secondly, an option is provided to update the software packages that comprise the Ubuntu distribution during the installation. Ubuntu, just like most other operating systems, continues to be updated with bug fixes and security patches long after it has been released to the public. If this option is selected, the installer will download any updates issued since the Ubuntu installation image was released and applies them to the system. If you choose not to perform this update

during the installation process these updates can still be applied at any time after the installation completes.

Having made appropriate selections, click the *Forward* button to proceed to the disk allocation screen. At this point, the installer will have detected the presence of an existing operating system on the target disk drive and will provide a number of options in terms of how the disk should be used to accommodate the Ubuntu installation:



Given that it is our intention to configure a dual boot system, the option to *Install Ubuntu alongside Windows* is the desired choice. With this option selected, click the *Forward* button to proceed. The subsequent screen allows the amount of disk space allocated to each operating system (in this case Windows and Ubuntu) to be configured:

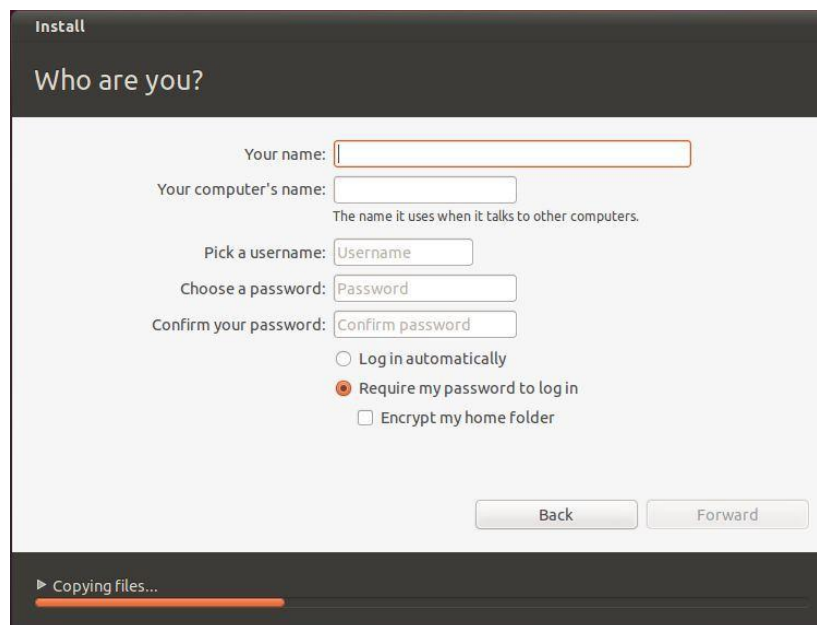


At this point it is necessary to decide how much of your Windows partition you wish to donate to the Ubuntu installation. Move the slider (positioned between the Windows and Ubuntu partitions in the diagram) until the Ubuntu partition allocation is a size you are comfortable with. As mentioned previously, at least 8 GB should be allocated to Ubuntu if possible.

When you have selected the size of the Ubuntu partition, click the *Install Now* button to proceed with the installation. When the warning dialog appears read it carefully and click *Continue* if you are sure you wish to proceed.

Configuring Time Zone, User and Keyboard Information:

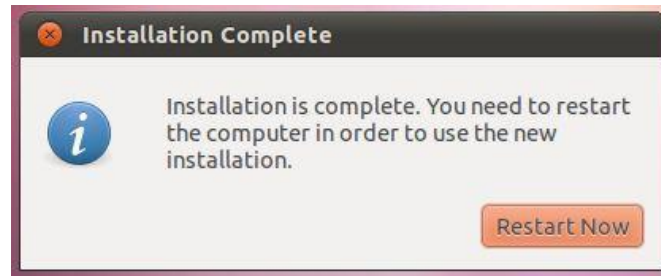
Whilst the installation is in progress, the installer will ask for information about your geographic location in order to configure Timezone settings, your keyboard language configuration, and a user name and password for the first account on the system. The account configuration screen also provides the option to encrypt your home folder to increase the security of your files and data:

The image shows a screenshot of the Ubuntu installer window titled "Install". The main heading is "Who are you?". Below this, there are several input fields: "Your name:" with a text box, "Your computer's name:" with a text box and a small note "The name it uses when it talks to other computers.", "Pick a username:" with a text box containing "Username", "Choose a password:" with a text box containing "Password", and "Confirm your password:" with a text box containing "Confirm password". Below these fields are three radio buttons: "Log in automatically", "Require my password to log in" (which is selected), and "Encrypt my home folder" (which is a checkbox). At the bottom right are "Back" and "Forward" buttons. At the bottom left, there is a progress bar labeled "▶ Copying files...".

The option is also provided to dictate whether the password must be specified each time the user wishes to log into the system. By default, each time Ubuntu starts a login screen will be presented seeking username and password credentials. If you are the sole user of the system and would like to bypass this screen and be logged in automatically each time the system boots, be sure to set the *Log in automatically* checkbox before proceeding.

Once all the questions have been answered, the installer will simply proceed with the installation. Depending on the speed of your system this process can take some time.

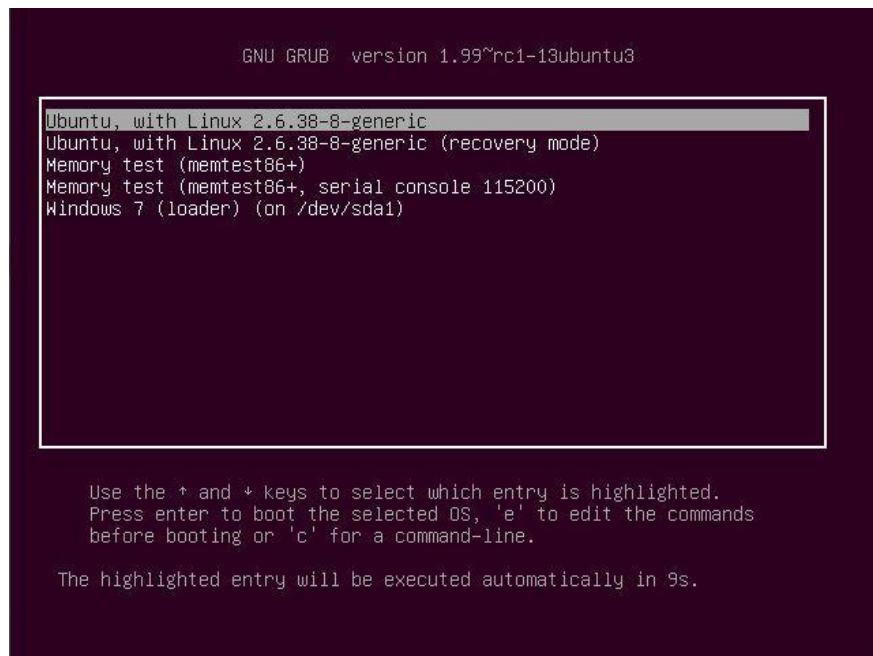
When the installation is complete, the following dialog will appear to inform you the system is ready to be restarted.



When you are ready to reboot, press the *Restart Now* button. The system will take a few moments to shut down. The installer will prompt you to remove the installation media. At this point remove the CDROM or USB flash drive (depending on which you used to perform the installation) and press the *Enter* key to proceed.

Booting Ubuntu for the First Time

When the system reboots a screen similar to the one illustrated below will appear providing the option to boot either Windows or Ubuntu:



Press *Enter* to boot Ubuntu. If you wish to boot Windows use the keyboard arrow keys to select the Windows option. If you choose to boot Ubuntu the operating system will load and the Ubuntu login screen will appear (unless the automatic login option was selected). Enter the user name and password you set up during the installation process and you will be logged into the Ubuntu Desktop environment.

Method 3: Installing Ubuntu 11.04 on a Windows Disk with Wubi

What is Wubi?

The Windows-based Ubuntu Installer (Wubi) allows Ubuntu to be installed within a folder of a Windows file system. An option to boot Ubuntu is then added to the Windows boot menu giving the user the ability to boot either into Windows or Ubuntu when the system starts up. In essence, Wubi allows a Windows/Ubuntu dual boot configuration to be set up without the need to reduce the size of a Windows partition and create new Linux partitions to accommodate the Ubuntu installation.

Downloading Wubi

Wubi consists of a small installer executable which must be downloaded onto the target Windows system. This file can be downloaded from the download page of the Ubuntu web site and may be listed as *Windows Installer* or *Windows Installer for Ubuntu*, or accessed by selecting the *Run it with Windows* option.

Once the Wubi installer has been downloaded, navigate to the location to which it was downloaded and double click on it to run it. Once invoked, the initial screen will appear providing access to a number of installation options. Select the *Install inside Windows* option to display the Wubi installation configuration screen:



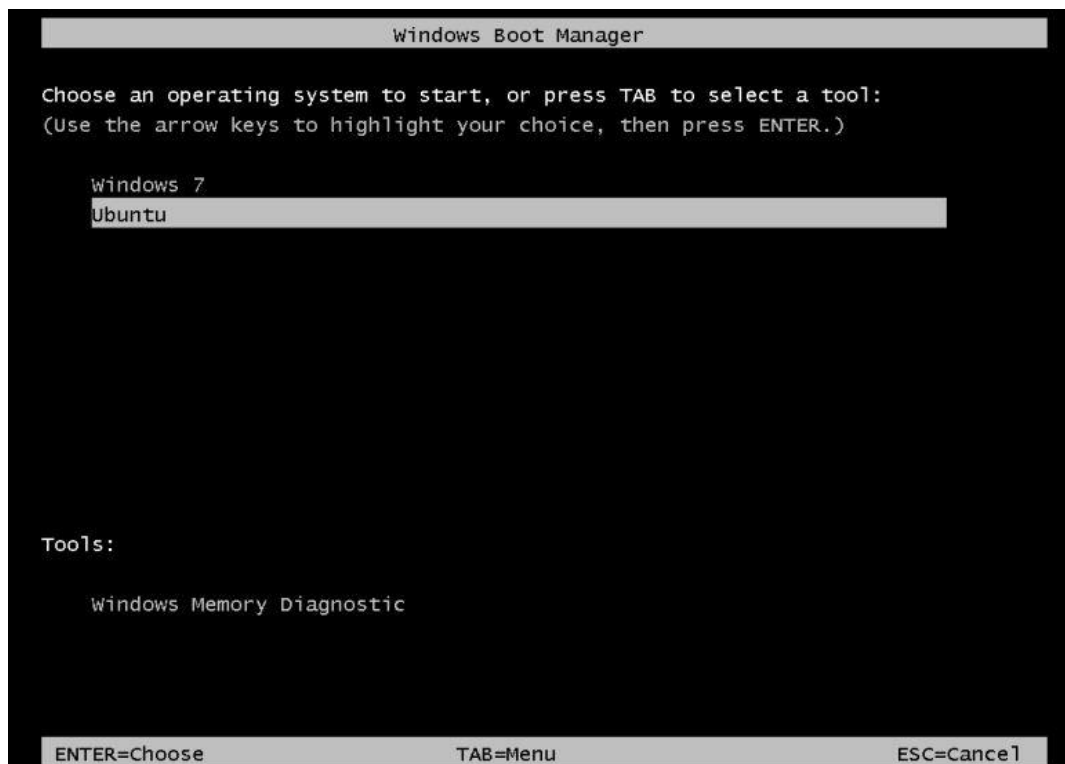
From this screen, select the destination Windows disk drive, the amount of disk space on that drive to be allocated to Ubuntu (a minimum of 8GB is recommended), and a suitable user name and password to be used to gain access to Ubuntu once the installation is complete. In addition, specify a language other than English if necessary and choose a desktop environment (unless you have any objection to the default Unity desktop, which is covered in this book, this option should be left unchanged).

Once the settings are configured, click on *Install* to initiate the installation process. During the installation process, Wubi will install a number of Ubuntu distribution files in the `\ubuntu` folder of the designated Windows disk drive together with two additional files named `wubldr` and `wubldr.mbr`.

Once the download is complete, the setup program will report that the system needs to be rebooted to complete the Ubuntu installation. This may be performed either now or at a later and more convenient time.

Completing the Ubuntu Installation

Once the initial Wubi installation process is complete and the system is restarted, Windows will present a boot menu providing the option to boot into either the original Windows system or the Ubuntu system installed by Wubi. A typical boot menu is illustrated in the following figure:



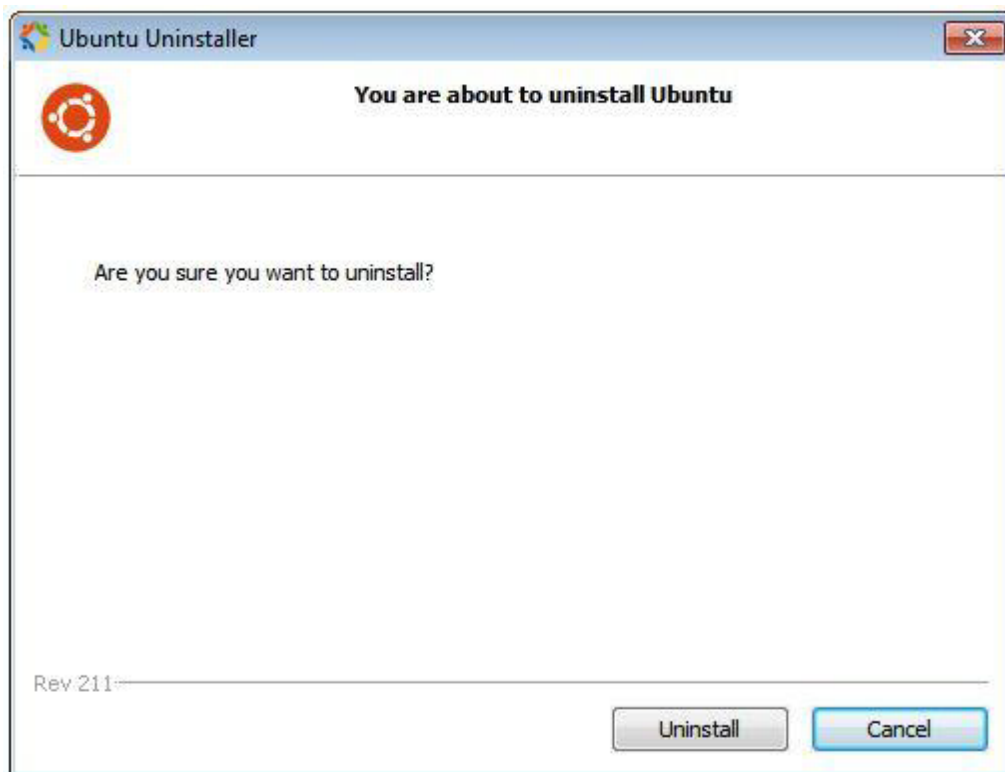
Selecting *Ubuntu* from the menu and pressing the Enter key will start the Ubuntu boot process. If this is the first time that the Ubuntu installation has been started the system will perform a number of tasks to complete the operating system installation process. This process may take some time depending on system performance, but is only necessary the first time the Ubuntu system is started. Subsequent start up times will be significantly reduced. Once the installation is complete, Ubuntu will reboot the system.

Starting the Ubuntu System

Once the installation is complete, restart the computer and select *Ubuntu* from the boot menu. Once Ubuntu has started, log into the desktop environment using the user name and password specified during the initial Wubi setup configuration.

Removing Ubuntu

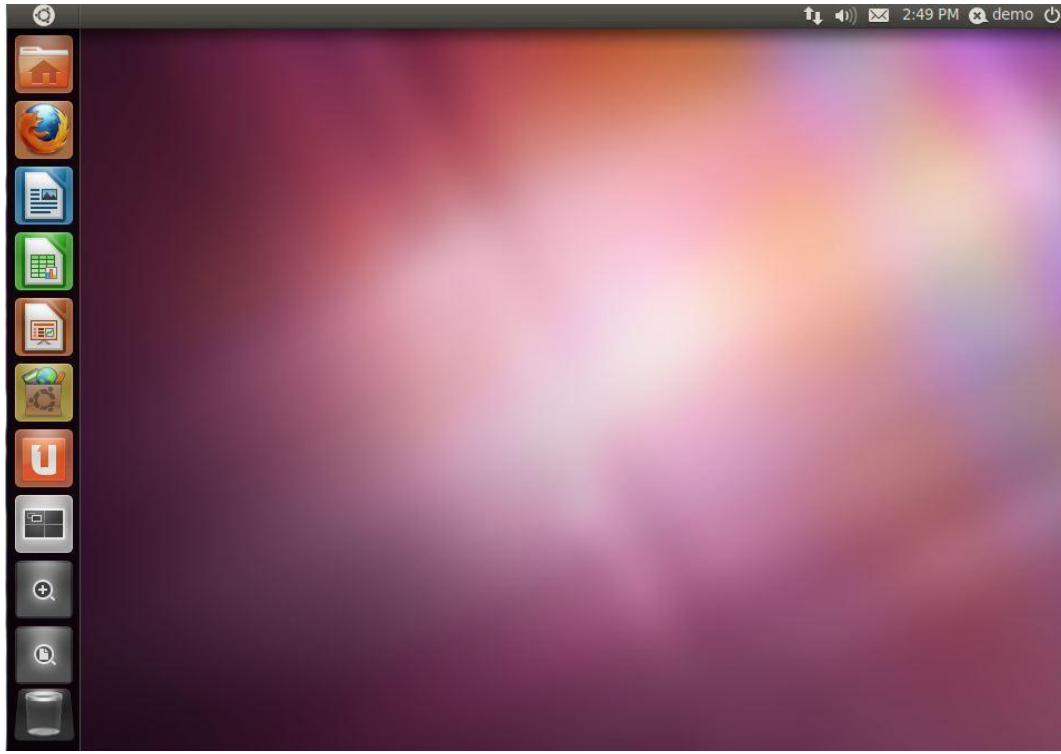
The Ubuntu installation can be removed at any time by booting Windows, navigating to the *\ubuntu* folder on the disk drive onto which Ubuntu was installed and double clicking on the *uninstall-wubi* executable. The uninstaller will launch and seek confirmation that Ubuntu is to be removed from the system as illustrated below:



Clicking on the *Uninstall* button will initiate the removal process.

Booting Ubuntu for the First Time

When the system reboots Ubuntu will load and the Ubuntu login screen will appear (unless you selected the automatic login option during installation). Enter the user name and password you set up during the installation process if prompted to do so and you will be logged into the Ubuntu Unity Desktop environment:



In the event that the graphics display hardware on the system does not support the Unity desktop, a dialog will appear notifying you of this limitation and the Ubuntu GNOME classic desktop will load instead. This typically means that the graphics adapter installed in the system does not meet the requirements to run Unity. The options at this point are either to continue using the classic desktop environment, or to install and use the Unity 2D desktop environment. Unity 2D provides much of the functionality of the full Unity environment, but without the graphics effects that require the presence more advanced display hardware. Before doing so, however, it is worth running a test to confirm that the hardware is incompatible with Unity.

Testing Hardware for Unity Compatibility

As previously discussed, the Ubuntu Unity desktop environment imposes certain requirements in terms of the display adaptor and corresponding Graphics Processing Unit (GPU). If the Unity desktop fails to run then hardware limitations are almost certainly the cause. In order to verify this, and gain a better understanding of the missing display features, the following command may be run

within a Terminal window (accessed within the classic desktop via the *Applications -> Accessories -> Terminal* menu option or by pressing Ctrl-Alt-T):

```
/usr/lib/nux/unity_support_test -p
```

Typical output from this command on a system lacking suitable display hardware is as follows:

```
OpenGL vendor string: Humper
OpenGL renderer string: Chromium
OpenGL version string: 1.1 Chromium 1.9
Not software rendered: yes
Not blacklisted: yes
GLX fbconfig: yes
GLX texture from pixmap: yes
GL npot or rect textures: no
GL vertex program: no
GL fragment program: no
GL vertex buffer object: no
GL framebuffer object: no
GL version is 1.4+: no
Unity supported: no
```

Conversely, the following output was generated on a system with Unity compatible display hardware:

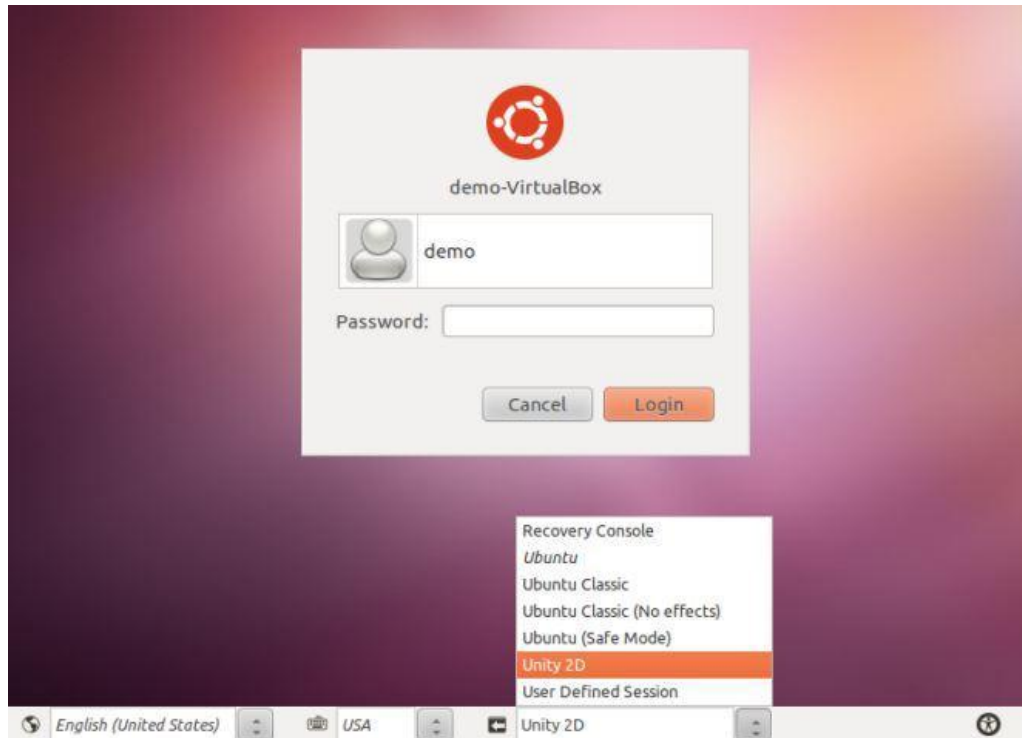
```
OpenGL vendor string: Humper
OpenGL renderer string: Chromium
OpenGL version string: 2.1 Chromium 1.9
Not software rendered: yes
Not blacklisted: yes
GLX fbconfig: yes
GLX texture from pixmap: yes
GL npot or rect textures: yes
GL vertex program: yes
GL fragment program: yes
GL vertex buffer object: yes
GL framebuffer object: yes
GL version is 1.4+: yes
Unity supported: yes
```

Installing Unity 2D

Assuming that the *unity_support_test* tool has confirmed the absence of adequate graphics hardware to run Unity, then the next step is to install the Unity 2D package. To install Unity 2D simply open a Terminal window (Ctrl-Alt-T) and run the following command at the prompt:

```
sudo apt-get install unity-2d
```

Enter your password when prompted and proceed with the installation. Once Unity 2D and any package dependencies have been installed, log out of the classic desktop by clicking on the power button located in the top right hand corner of the screen and selecting the *Log out...* menu option. When the login screen reappears, select your user name so that the settings bar appears along the bottom edge of the screen. Change the session setting from *Ubuntu* (which is used to represent the full Unity environment) to *Unity 2D*:



Having selected the Unity 2D session, enter your password and log into the Unity 2D desktop.

Installing Updates

As with most operating systems today, each particular release of the Ubuntu distribution continues to evolve after it has been released to the public. This generally takes the form of bug fixes and security updates and, occasionally, new features that may be downloaded over the internet and installed on your system.

Best practices dictate that the first step after installing Ubuntu is to make sure any available updates are applied to the system. This can be achieved either through the desktop environment or via the command-line prompt in a Terminal window.

To check for updates using the graphical *Update Manager* tool, press *Alt+F2*, type *update-manager* into the *Run a command* box and press *Enter*. Once invoked, the tool will provide a list of the available updates together with references to more detailed information on each one under the *Description of update* heading:



Clicking the *Install Updates* button will begin the update process which consists of resolving package dependencies, downloading and installation of the updates. The duration of the update process will depend on the number and size of updates available combined with the speed of the internet connection to which the Ubuntu system is connected.

The update process may be configured by clicking on the *Settings...* button located in the bottom left hand corner of the update manager window. This dialog provides a range of options including the frequency with which the system checks to see if new updates are available and whether updates should be installed automatically and without administrator privileges.

The latest updates may also be applied from within a Terminal window (*Applications -> System Tools -> Terminal*) using the *apt-get* command:

```
sudo apt-get upgrade
```

Upon execution, the *apt-get* tool will provide a list of packages that are available for update and prompt to perform the update.

Once the update is complete the installation is essentially finished and Ubuntu is ready for use.