

Step By Step Ubuntu 12.04 (Precise) LAMP Server Setup

May 21, 2012

In around 15 minutes, the time it takes to install Ubuntu Server Edition, you can have a LAMP (Linux, Apache, MySQL and PHP) server up and ready to go. This feature, exclusive to Ubuntu Server Edition, is available at the time of installation. The LAMP option means you don't have to install and integrate each of the four separate LAMP components, a process which can take hours and requires someone who is skilled in the installation and configuration of the individual applications. Instead, you get increased security, reduced time-to-install, and reduced risk of misconfiguration, all of which results in a lower cost of ownership. Currently this installation provide PostgreSQL database, Mail Server, Open SSH Server, Samba File Server, Print Server, Tomcat Java Server, Virtual Machine Host, Manual Package selection, LAMP and DNS options for pre-configured installations, easing the deployment of common server configurations.

Ubuntu LAMP server Install the following Versions

Ubuntu 12.04 (Precise)

Apache 2.2.22

Mysql 5.5.22

PHP 5.3.10

1. A Quick Overview

In this tutorial, we are aiming to accomplish several things:

- We're going to install the Ubuntu Server operating system. I commonly use Ubuntu because of its ease of use and simple administration. It also has a rather large and extremely active community behind it, which makes getting support a breeze.
- We're going to install an OpenSSH server. This allows you to administer your server from remote computers.
- A LAMP (Linux, Apache, MySQL, and PHP) stack is going to be installed. This provides the backbone that will run your web site. Apache is the industry standard web server on Unix-based operating systems; it's what most web hosts use (NETTUTS is using it right now!) and it's what we're going to use.
- We're going to install a firewall to protect your server from unauthorized access.

In order to follow this tutorial, you're going to need a few items:

- A computer to use as your server. It doesn't need to be powerful; as long as it's not ancient, it'll work fine. Please don't do this on your desktop PC; Ubuntu will completely wipe your computer.
- A CD burner and a blank CD. These are so that you can burn Ubuntu to a disk in order to install it.
- Time. Seriously, this process is time-consuming, especially if you run into problems. Try to set aside an afternoon to follow this tutorial.

You may be asking why you'd want to have your own web server. There are several reasons, a few of them being: you can have your own testing ground for your websites; with a little modification, you could host your own site; and, you will learn a lot about Linux/Unix as you go. With that said, let's get started!

One more thing, some users prefer the vim editor and you will need to install it, I use nano since it is already on the system.

2. Download Ubuntu Server

First and foremost, we're going to need a CD with Ubuntu on it. Point your web browser to <http://www.ubuntu.com/>, and click download from the menu to the left. You will now be presented with a box with two tabs: "Desktop Edition" and "Server Edition". Click the "Server Edition" tab, and select "Ubuntu 12.04 LTS". Next, select a download location from the drop-down box. Finally, hit the "Begin Download" button. There are 2 versions of UBUNTU, 32 bit and 64 bit, select the one for your system. If in doubt try the 64 bit system first, it will tell you if the hardware is not compatible. With 64 bit systems I would recommend 4 Gigs of ram.

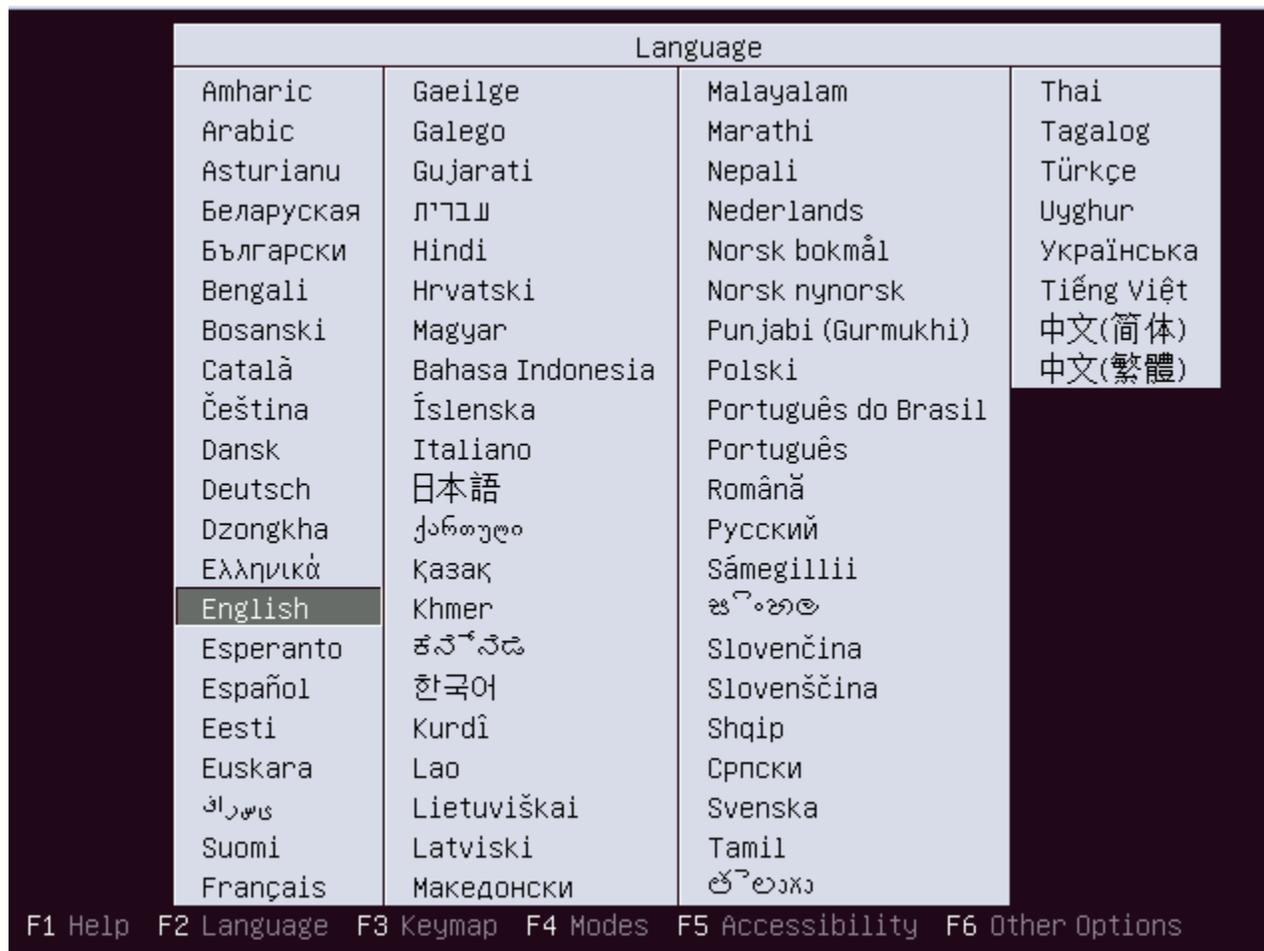
Now you need to burn the ISO (the file that you downloaded) to a blank CD. If you don't know how to do this, there is an excellent guide at <https://help.ubuntu.com/community/BurningIsoHowto>

3. Install Ubuntu Server

Now that you've downloaded and burned the ISO, let's get Ubuntu installed on your server. Put the disk in the drive, and boot from the CD. In most modern computers, this will happen by default if a

disk is in the drive when you turn it on. If it doesn't, then you need to press a key on your keyboard right when you turn it on. For my laptop, it's F12, and for my server, it's F2. It just depends on your computer. You can find it by looking at the text on your screen right when you turn the computer on, during the BIOS. You'll see something like "Press [KEY] to change boot order". Press that key, and select your CD drive.

Now that you've booted up Ubuntu, you should see the following screen:



Now you need to select "Install Ubuntu Server" and press enter



- Install Ubuntu Server
- Install Ubuntu Enterprise Cloud
- Check disc for defects
- Test memory
- Boot from first hard disk
- Rescue a broken system

F1 Help F2 Language F3 Keymap F4 Modes F5 Accessibility F6 Other Options

Select your language and press enter

[!!!] Choose language

Please choose the language used for the installation process. This language will be the default language for the final system.

Choose a language:

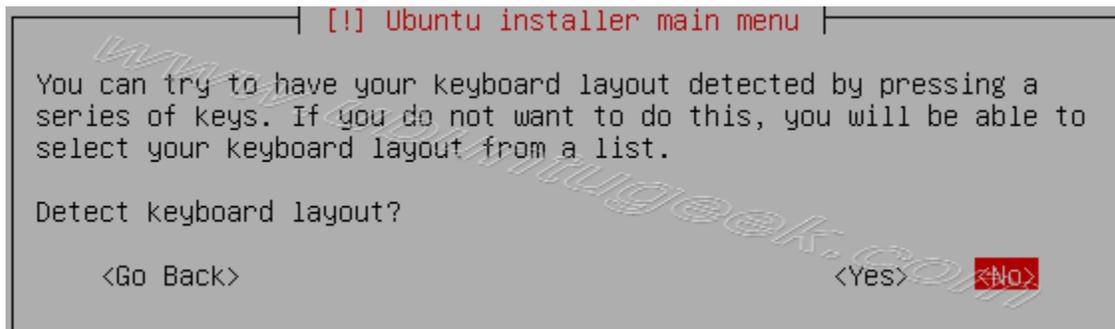
C	- No localization	↑
Albanian	- Shqip	
Arabic	- عربي	
Asturian	- Asturianu	
Basque	- Euskara	
Belarusian	- Беларуская	
Bosnian	- Bosanski	
Bulgarian	- Български	
Catalan	- Català	
Chinese (Simplified)	- 中文(简体)	
Chinese (Traditional)	- 中文(繁體)	
Croatian	- Hrvatski	
Czech	- Čeština	
Danish	- Dansk	
Dutch	- Nederlands	
English	- English	↓

<Go Back>

Select your location and press enter



If you want to try to have your keyboard layout detected by pressing a series of keys you need to select yes option. If you want to choose from a list click no



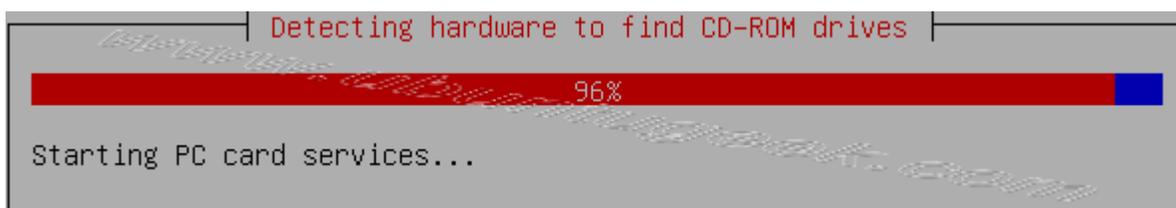
Select Origin of keyboard and press enter



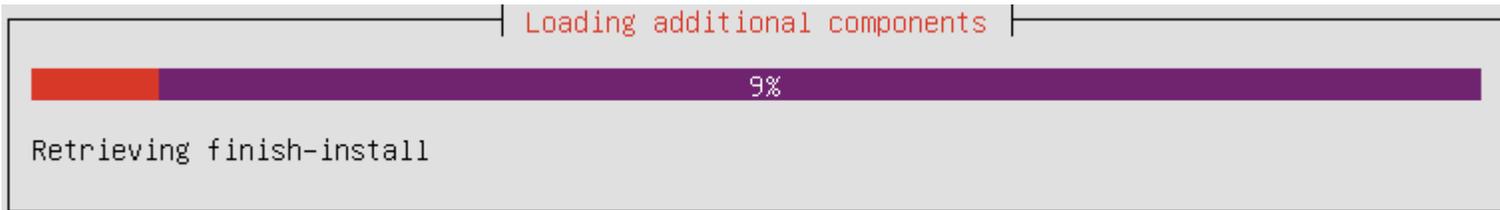
Select keyboard layout and press enter



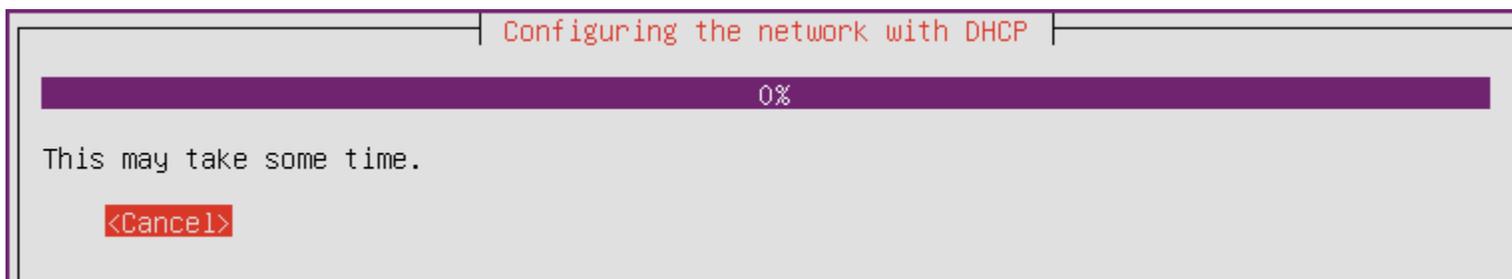
Detecting hardware to find CD-ROM Drivers in progress



Loading additional components in progress

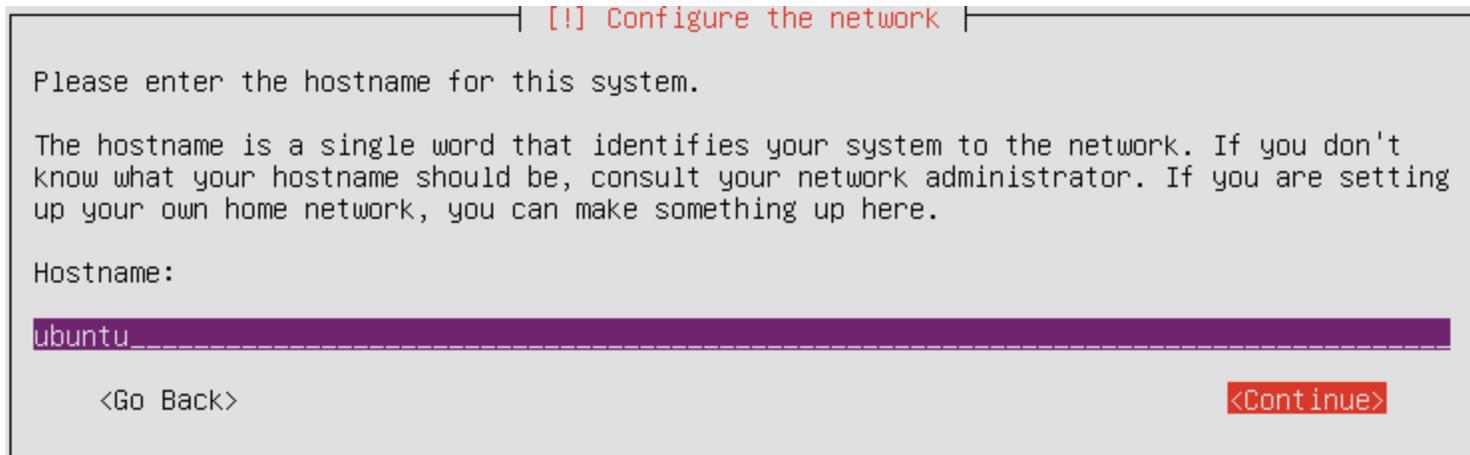


Configures the network with DHCP if there is a DHCP server in your network



After it's done it will ask you for a host name. You can usually set this to anything; I set mine to "web-server".

Enter your server Hostname



You need enter the Full name of the user you want to create for your server, I would enter your full name since this is your personal server i.e. John Q. Smith.

[!!] 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:

ubuntu

<Go Back>

<Continue>

Now give it your username. It will normally just set it as your first name, but you can change it. One name you may not use is "root".

Enter your user account name here

[!!] 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:

ubuntu

<Go Back>

<Continue>

You will now be asked to provide a password. It is ESSENTIAL that you choose a strong password, or your server will not be secure at all. I recommend at LEAST a mixture of numbers, lowercase letters, and uppercase letters. However, for my servers I use symbols, as well as a mixture of the above. DO NOT use a password shorter than 7 characters.

Entered the password for UBUNTU user select continue and press enter

[!!] Set up users and passwords

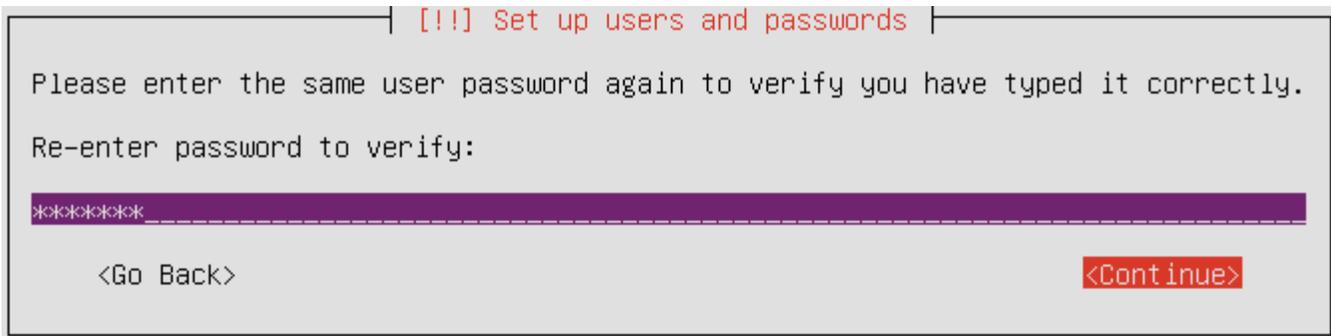
A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

Choose a password for the new user:

<Go Back>

<Continue>

Confirm password for UBUNTU user



If you want to configure encrypted private directory select yes and press enter



Configure the clock

If the correct time zone is shown then press yes otherwise no and select correct time zone.

Starting up the partitioner in progress



You have to partition your hard disk in this example i have selected use entire disk option. If you want to do manually you can choose manual option and press enter. Make sure you have swap partition in place

[!!] Partition disks

The installer can guide you through partitioning a disk (using different standard schemes) or, if you prefer, you can do it manually. With guided partitioning you will still have a chance later to review and customise the results.

If you choose guided partitioning for an entire disk, you will next be asked which disk should be used.

Partitioning method:

- Guided - use entire disk
- Guided - use entire disk and set up LVM
- Guided - use entire disk and set up encrypted LVM
- Manual

<Go Back>

Warning message about data lost on your hard disk

[!!] Partition disks

Note that all data on the disk you select will be erased, but not before you have confirmed that you really want to make the changes.

Select disk to partition:

SCSI3 (0,0,0) (sda) - 8.6 GB VMware, VMware Virtual S

<Go Back>

Write the changes to disk here you need to select yes and press enter

[!!] Partition disks

If you continue, the changes listed below will be written to the disks. Otherwise, you will be able to make further changes manually.

WARNING: This will destroy all data on any partitions you have removed as well as on the partitions that are going to be formatted.

The partition tables of the following devices are changed:

SCSI3 (0,0,0) (sda)

The following partitions are going to be formatted:

partition #1 of SCSI3 (0,0,0) (sda) as ext4

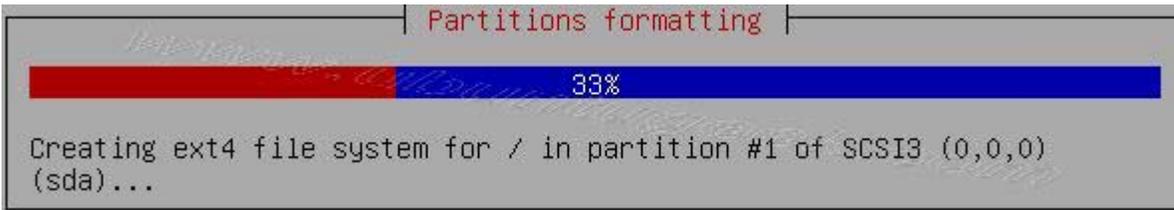
partition #5 of SCSI3 (0,0,0) (sda) as swap

Write the changes to disks?

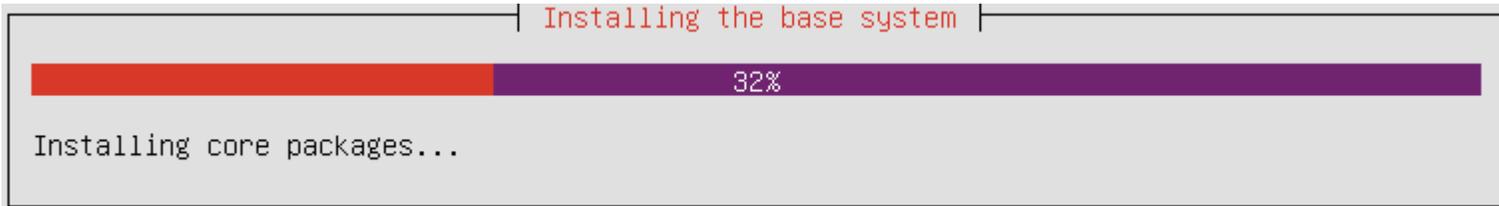
<Yes>

<No>

Creating ext4 file system in progress

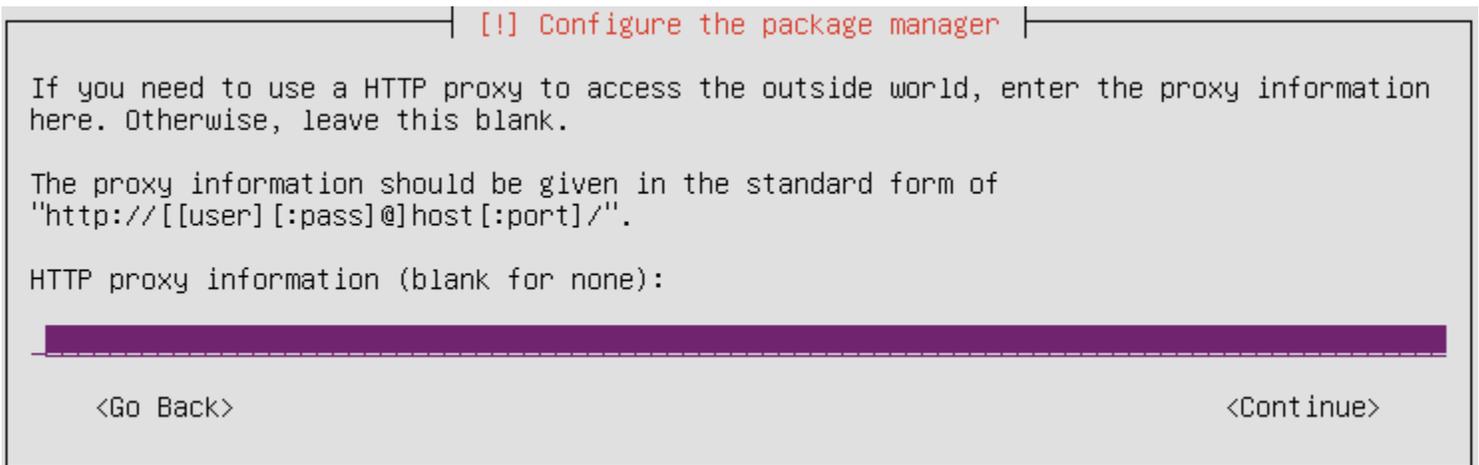


Installing base system in progress

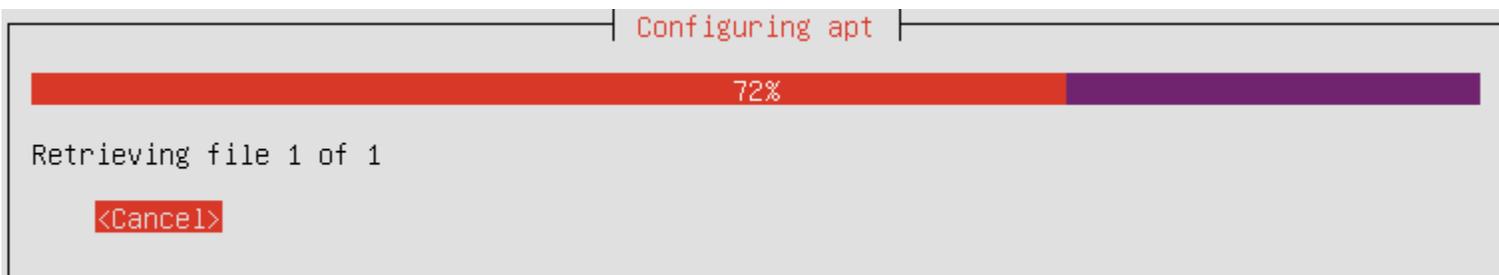


Now the magic happens. The system will begin to install. While this happens, take a break, go get a cup of coffee. This can take anywhere from 10 minutes to an hour. It just depends on your system. There might be times that it seems like it's frozen; don't worry, it isn't. Just let it do its thing. However, if it's stuck on one thing for upwards of an hour, then yes, it is frozen.

Configuring the package manager select continue and press enter



Configuring package mirror this will be related to your country option



Select and install server software, this is automatic.

Select how do you want to configure automatic update press enter, I prefer automatic security updates.

[!] Select and install software

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

Now it will start installing software and here you need to select the server options, here I have selected as OpenSSH, LAMP and Samba server installation. If you want to select each package separately select "Manual package selection" option. Make sure when you select to use the space bar, move the cursor down and select additional installs than hit return otherwise it will start installing before you finished selecting.

[!] 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>

It will now select and install software.

At the time of software installation it will prompt for MYSQL server root password enter root password of your choice and select continue, don't skip the password!

[!] Configuring mysql-server-5.5

While not mandatory, it is highly recommended that you set a password for the MySQL administrative "root" user.

If this field is left blank, the password will not be changed.

New password for the MySQL "root" user:

<Continue>

Confirm MYSQL server root password and select continue

[!] Configuring mysql-server-5.5

Repeat password for the MySQL "root" user:

<Continue>

Software installation is in progress

Select and install software

30%

Configuring fuse-utils

Installing GRUB Boot loader in progress

[!] Install the GRUB boot loader on a hard disk

It seems that this new installation is the only operating system on this computer. If so, it should be safe to install the GRUB boot loader to the master boot record of your first hard drive.

Warning: If the installer failed to detect another operating system that is present on your computer, modifying the master boot record will make that operating system temporarily unbootable, though GRUB can be manually configured later to boot it.

Install the GRUB boot loader to the master boot record?

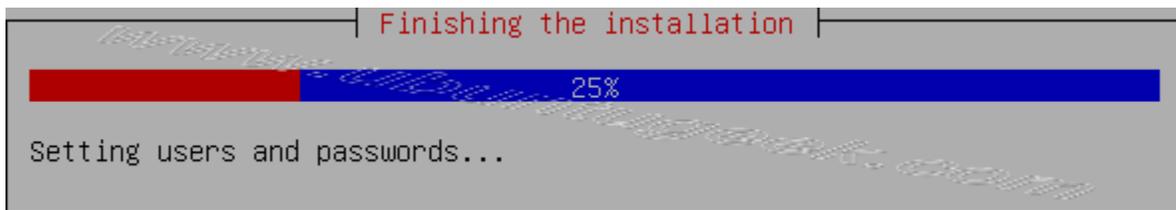
<Go Back>

<Yes>

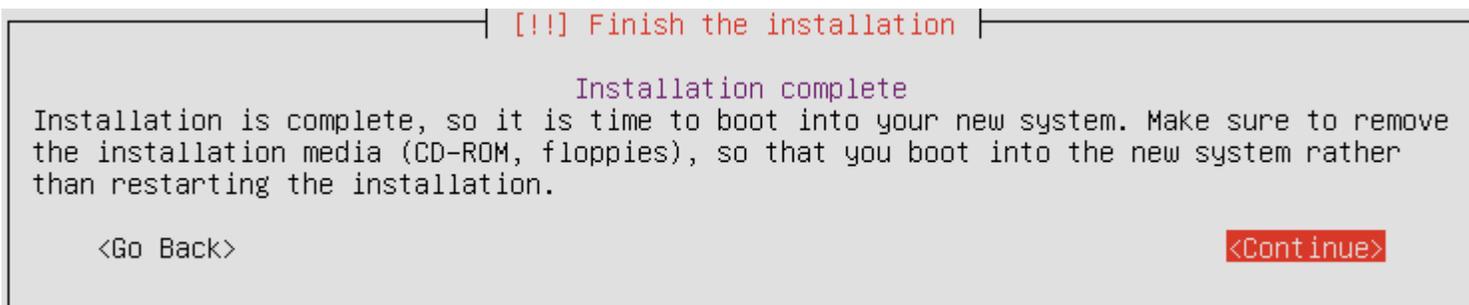
<No>



Finishing installation in Progress



Installation complete message here you need to remove your CD select continue and press enter it will reboot your server



After rebooting your server it will prompt for username and password once you logged in you should see similar to the following screen

```
Ubuntu 12.04 LTS ubuntu-srvr tty1

ubuntu-srvr login: ubuntu
Password:
Welcome to Ubuntu 12.04 LTS (GNU/Linux 3.2.0-23-generic-pae i686)

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

System information as of Sat May 19 19:38:35 BST 2012

System load:  0.62                Processes:            74
Usage of /:   13.4% of 7.47GB     Users logged in:    0
Memory usage: 12%                IP address for eth0: 10.0.2.15
Swap usage:   0%

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

25 packages can be updated.
7 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.

ubuntu@ubuntu-srvr:~$
```

This will complete the Ubuntu 12.04 (Precise) server Installation and your server now have Samba, APACHE, MySQL and PHP installed and running.

4. Update Your New Server

Before we go any further, we need to make sure your server is up-to-date. To do this, you need to login.

First, type your username (the one you chose earlier), press enter, and then type your password. As you're typing your password, you'll notice that nothing seems to be happening. Don't worry, that's the way it was designed to work. After you've finished typing your password, hit enter, and your screen should look similar to the one above if all went well:

Now, type:

```
sudo aptitude update && sudo aptitude dist-upgrade
```

It will ask you for your password, and again, you won't see anything as you're typing it. After you've done that, it will ask you if you want to continue. Type "y" and press enter. Your screen will look similar to the following:

```
Reading package lists... Done
Building dependency tree
Reading state information... Done
Reading extended state information
Initializing package states... Done
Building tag database... Done
The following NEW packages will be automatically installed:
 libdns35 libisc35
The following NEW packages will be installed:
 libdns35 libisc35 linux-image-2.6.24-21-server
 linux-ubuntu-modules-2.6.24-21-server
The following packages will be upgraded:
 apt apt-utils base-files bind9-host cpp-4.2 dnsutils eject gcc-4.2-base
 initramfs-tools iproute libbind9-30 libc6 libc6-i686 libdbus-1-3 libgcc1
 libisc32 libisccc30 libiscfg30 libldap-2.4-2 liblures30 libstdc++6
 linux-image-2.6.24-19-server linux-image-server linux-server login
 logrotate module-init-tools passwd pciutils procps python-apt python2.5
 python2.5-minimal sudo tzdata ufw update-manager-core xkb-data
38 packages upgraded, 4 newly installed, 0 to remove and 0 not upgraded.
Need to get 61.6MB of archives. After unpacking 81.0MB will be used.
Do you want to continue? [Y/n/?] Y
Writing extended state information... Done
Get:1 http://us.archive.ubuntu.com hardy-updates/main login 1:4.0.18.2-1ubuntu2.
1 [255kB]
0% [1 login 44359/255kB 17%]
```

Your system will now download and install all the latest updates. This will take a while depending on your internet connection. After it has finished, your computer will need to be rebooted. To do this, type:

```
sudo shutdown -r now
```

And let it reboot. Your server is now completely updated.

A Quick Note About "Sudo"

By now, you may have noticed that all of the commands you have typed have started with "sudo". This is because they require administrator privileges, and that's what "sudo" does. It runs the command (i.e. "shutdown") as an administrator, allowing it to work properly. This is also why it asks you for your password. However, after you have typed "sudo" once and entered your password, you do not have to enter your password again for five minutes. Not all commands require sudo, only ones that modify parts of the system.

Got all of that? Good.

Testing the Server

After that has all finished, you now have a fully working web server. To test it out, first find your server's IP by typing:

ifconfig | grep inet

```
Setting up liblockfile1 (1.06.2) ...
Setting up mailx (1:8.1.2-0.20071017cvs-2) ...

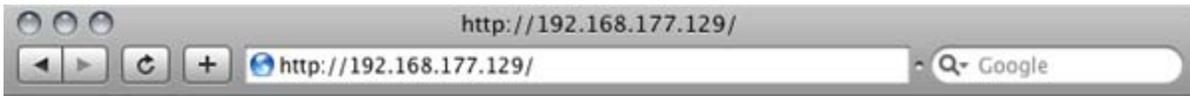
Setting up mysql-server (5.0.51a-3ubuntu5.4) ...
Setting up php5-mysql (5.2.4-2ubuntu5.3) ...

Setting up sgml-base (1.26) ...

Setting up xml-core (0.11) ...

Processing triggers for libc6 ...
ldconfig deferred processing now taking place
Reading package lists... Done
Building dependency tree
Reading state information... Done
Reading extended state information
Initializing package states... Done
Writing extended state information... Done
Building tag database... Done
alex@web-server:~$ ifconfig | grep inet
    inet addr:192.168.177.129 Bcast:192.168.177.255 Mask:255.255.255.0
    inet6 addr: fe80::20c:29ff:feb5:f0b5/64 Scope:Link
    inet addr:127.0.0.1 Mask:255.0.0.0
    inet6 addr: ::1/128 Scope:Host
alex@web-server:~$ _
```

It's usually the first IP returned. In my case, it's 192.168.177.129. Now that you know the IP, open your web browser and point it to your server IP. If you see the "It works!" message, then congratulations, it works.



It works!

//

Note!!

In the current configuration I did not find ServerTokens or ServerSignature in the apashe2.conf file.

However, we're not done yet. We don't want Apache or PHP to disclose any information about themselves, as this information is not needed by your users and could pose a security risk. First, back up the original Apache configuration file:

```
sudo cp /etc/apache2/apache2.conf /etc/apache2/apache2.conf.bak
```

Now open the configuration file:

```
sudo nano /etc/apache2/apache2.conf
```

Scroll down (down arrow) to where it says "ServerTokens Full" and change it to read "ServerTokens Prod"

```
GNU nano 2.0.7      File: /etc/apache2/apache2.conf      Modified
LogFormat "%{Referer}i -> %U" referer
LogFormat "%{User-agent}i" agent
#
# ServerTokens
# This directive configures what you return as the Server HTTP response
# Header. The default is 'Full' which sends information about the OS-Type
# and compiled in modules.
# Set to one of:  Full ; OS ; Minor ; Minimal ; Major ; Prod
# where Full conveys the most information, and Prod the least.
#
ServerTokens Prod_
#
# Optionally add a line containing the server version and virtual host
# name to server-generated pages (internal error documents, FTP directory
# listings, mod_status and mod_info output etc., but not CGI generated
# documents or custom error documents).
# Set to "EMail" to also include a mailto: link to the ServerAdmin.
# Set to one of:  On ; Off ; EMail
^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text    ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is  ^U Next Page  ^U UnCut Text ^T To Spell
```

Now, scroll down a little further and change "ServerSignature On" to "ServerSignature Off"

```
GNU nano 2.0.7      File: /etc/apache2/apache2.conf      Modified
#
ServerTokens Prod
#
# Optionally add a line containing the server version and virtual host
# name to server-generated pages (internal error documents, FTP directory
# listings, mod_status and mod_info output etc., but not CGI generated
# documents or custom error documents).
# Set to "EMail" to also include a mailto: link to the ServerAdmin.
# Set to one of: On | Off | EMail
#
ServerSignature Off_
#
# Customizable error responses come in three flavors:
# 1) plain text 2) local redirects 3) external redirects
#
# Some examples:
^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text    ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is  ^U Next Page  ^U UnCut Text ^T To Spell
```

Finally, press Control-O followed by Control-X. That will save the file and exit the text editor.

Now, we need to do the same thing for PHP. First, back up the original PHP configuration file:

```
sudo cp /etc/php5/apache2/php.ini /etc/php5/apache2/php.ini.bak
```

Open the configuration file:

```
sudo nano /etc/php5/apache2/php.ini
```

Change "expose_php = On" to "expose_php = Off"

```
GNU nano 2.0.7      File: /etc/php5/apache2/php.ini      Modified
; realpath_cache_ttl=120
;
; Misc
;
; Decides whether PHP may expose the fact that it is installed on the server
; (e.g. by adding its signature to the Web server header). It is no security
; threat in any way, but it makes it possible to determine whether you use PHP
; on your server or not.
expose_php = Off_
;::::::::::::::::::;
; Resource Limits ;
;::::::::::::::::::;
max_execution_time = 30      ; Maximum execution time of each script, in seconds
max_input_time = 60 ; Maximum amount of time each script may spend parsing reques
;max_input_nesting_level = 64 ; Maximum input variable nesting level
memory_limit = 16M          ; Maximum amount of memory a script may consume (16MB)
^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text    ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is  ^U Next Page  ^U UnCut Text ^T To Spell
```

Again, press Control-O followed by Control-X. Now that the configuration files are updated, restart Apache

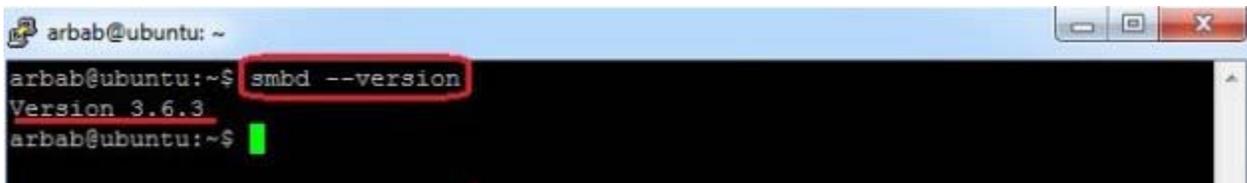
```
sudo /etc/init.d/apache2 restart
```

You are done setting up Apache, MySQL, and PHP.

Check SAMBA operation

Check the version of installed samba software by using this command:

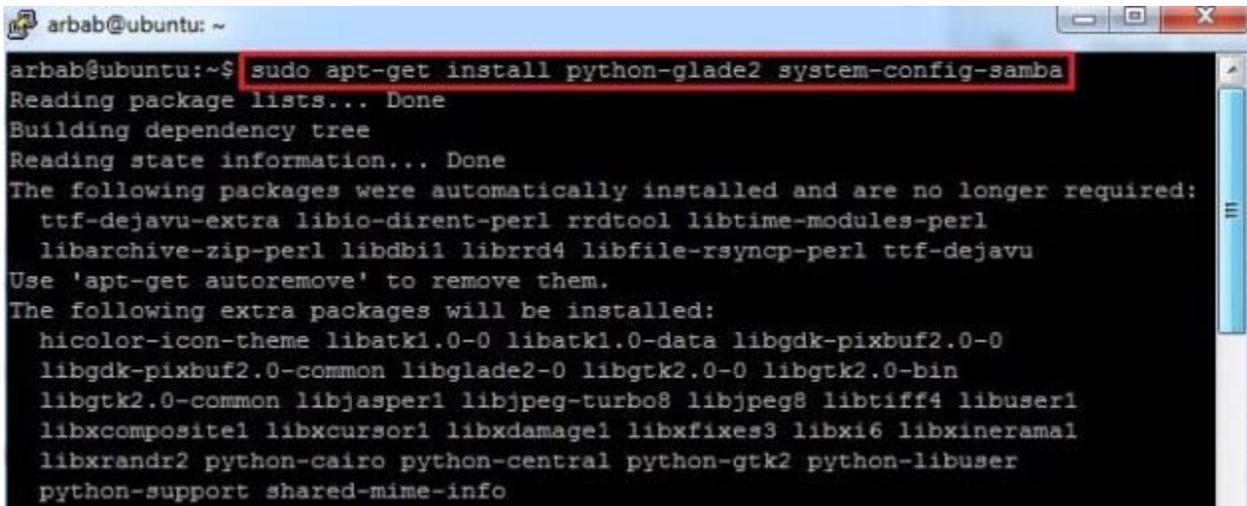
```
smbd --version
```

A terminal window screenshot showing the command 'smbd --version' being executed. The output is 'Version 3.6.3'. The prompt is 'arbab@ubuntu: ~\$'.

```
arbab@ubuntu: ~$ smbd --version
Version 3.6.3
arbab@ubuntu: ~$
```

Also install these suggested packages for samba:

```
sudo apt-get install python-glade2 system-config-samba
```

A terminal window screenshot showing the command 'sudo apt-get install python-glade2 system-config-samba' being executed. The output shows the installation process, including reading package lists, building a dependency tree, and listing extra packages to be installed.

```
arbab@ubuntu: ~$ sudo apt-get install python-glade2 system-config-samba
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
 ttf-dejavu-extra libio-dirent-perl rrdtool libtime-modules-perl
 libarchive-zip-perl libdbi1 librrd4 libfile-rsyncp-perl ttf-dejavu
Use 'apt-get autoremove' to remove them.
The following extra packages will be installed:
 hicolor-icon-theme libatk1.0-0 libatk1.0-data libgdk-pixbuf2.0-0
 libgdk-pixbuf2.0-common libglade2-0 libgtk2.0-0 libgtk2.0-bin
 libgtk2.0-common libjasper1 libjpeg-turbo8 libjpeg8 libtiff4 libuser1
 libxcompositel libxcursor1 libxdamage1 libxfixed3 libxi6 libxinerama1
 libxrandr2 python-cairo python-central python-gtk2 python-libuser
python-support shared-mime-info
```

To setup SAMBA go to my SAMBA setup file.

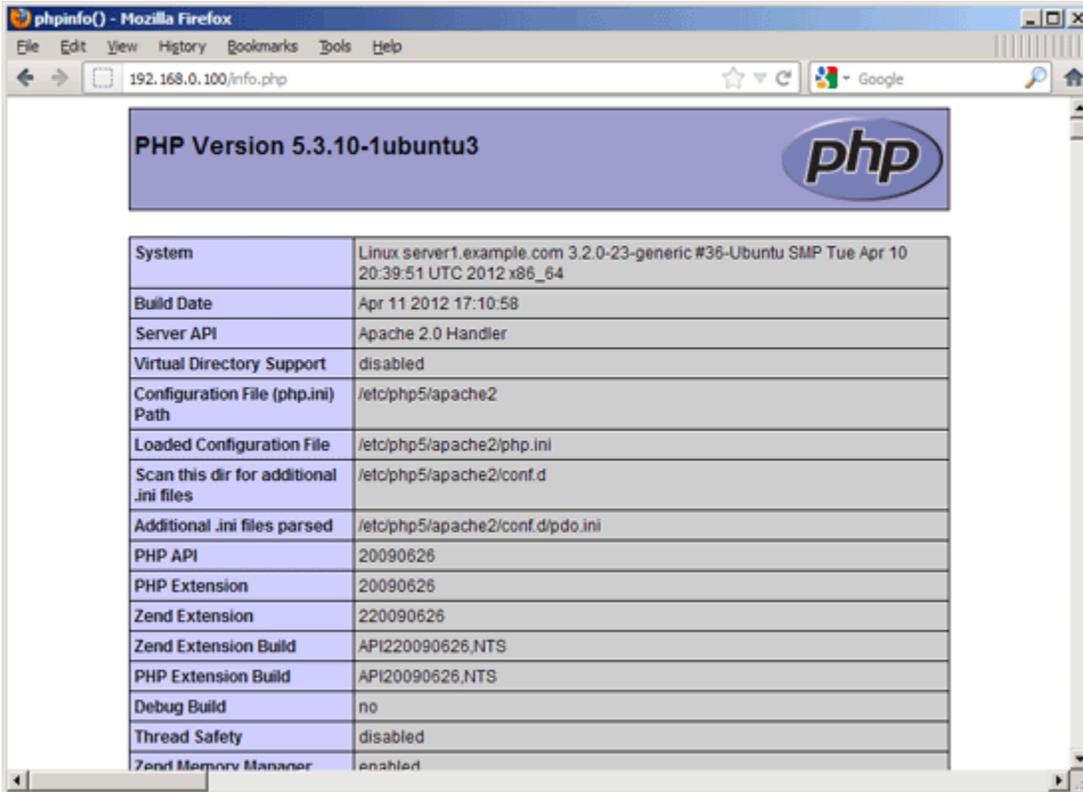
Testing PHP5 / Getting Details About Your PHP5 Installation

The document root of the default web site is /var/www. We will now create a small PHP file (info.php) in that directory and call it in a browser. The file will display lots of useful details about our PHP installation, such as the installed PHP version.

```
vi /var/www/info.php
```

```
<?php
phpinfo();
?>
```

Now we call that file in a browser (e.g. <http://192.168.0.100/info.php>):



As you see, PHP5 is working, and it's working through the Apache 2.0 Handler, as shown in the Server API line. If you scroll further down, you will see all modules that are already enabled in PHP5. MySQL is not listed there which means we don't have MySQL support in PHP5 yet.

6 Getting MySQL Support In PHP5

To get MySQL support in PHP, we can install the php5-mysql package. It's a good idea to install some other PHP5 modules as well as you might need them for your applications. You can search for available PHP5 modules like this:

```
apt-cache search php5
```

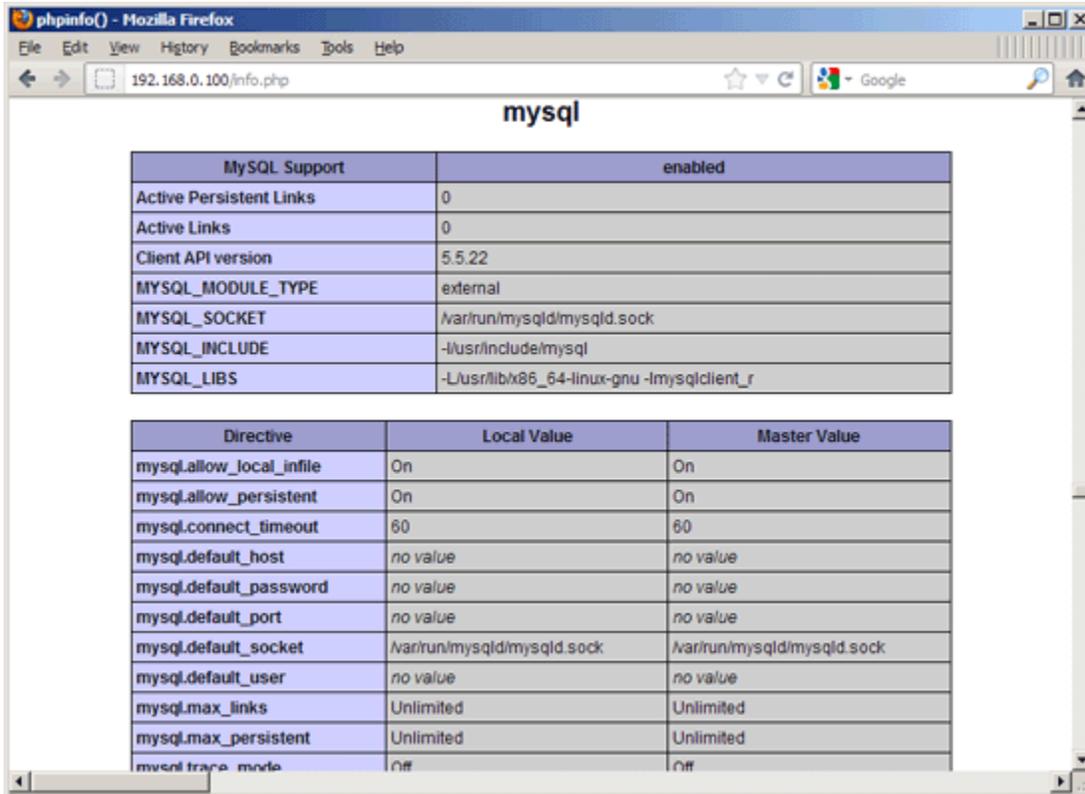
Pick the ones you need and install them like this:

```
apt-get install php5-mysql php5-curl php5-gd php5-intl php-pear php5-imagick php5-imap php5-mcrypt php5-memcache php5-ming php5-ps php5-pspell php5-recode php5-snmp php5-sqlite php5-tidy php5-xmlrpc php5-xsl
```

Now restart Apache2:

```
/etc/init.d/apache2 restart
```

Now reload <http://192.168.0.100/info.php> in your browser and scroll down to the modules section again. You should now find lots of new modules there, including the MySQL module:



The screenshot shows a Mozilla Firefox browser window with the address bar displaying 192.168.0.100/info.php. The page content is titled "mysql" and displays the following information:

MySQL Support	enabled
Active Persistent Links	0
Active Links	0
Client API version	5.5.22
MYSQL_MODULE_TYPE	external
MYSQL_SOCKET	/var/run/mysqld/mysqld.sock
MYSQL_INCLUDE	-I/usr/include/mysql
MYSQL_LIBS	-L/usr/lib/x86_64-linux-gnu -lmysqlclient_r

Directive	Local Value	Master Value
mysql.allow_local_infile	On	On
mysql.allow_persistent	On	On
mysql.connect_timeout	60	60
mysql.default_host	no value	no value
mysql.default_password	no value	no value
mysql.default_port	no value	no value
mysql.default_socket	/var/run/mysqld/mysqld.sock	/var/run/mysqld/mysqld.sock
mysql.default_user	no value	no value
mysql.max_links	Unlimited	Unlimited
mysql.max_persistent	Unlimited	Unlimited
mysql.trace_mode	Off	Off

7 phpMyAdmin

[phpMyAdmin](#) is a web interface through which you can manage your MySQL databases. It's a good idea to install it:

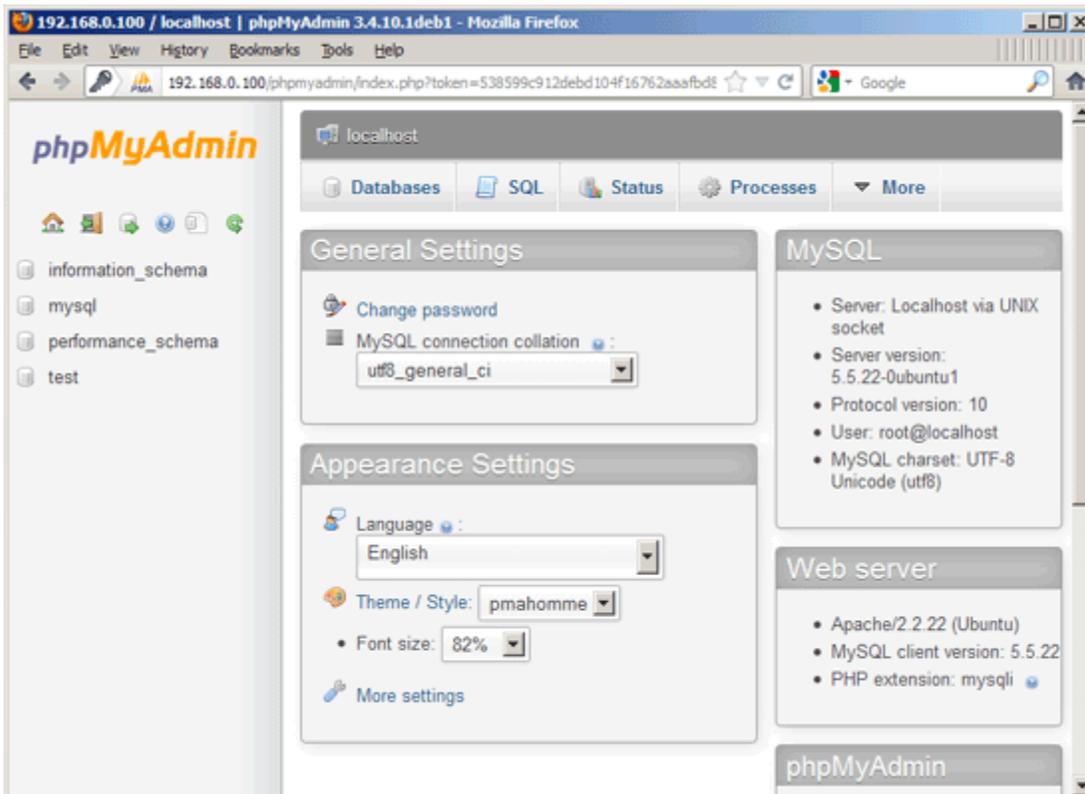
apt-get install phpmyadmin

You will see the following questions:

Web server to reconfigure automatically: <-- apache2

Configure database for phpmyadmin with dbconfig-common? <-- No

Afterwards, you can access phpMyAdmin under <http://192.168.0.100/phpmyadmin/>:



8 Links

- Apache: <http://httpd.apache.org/>
- PHP: <http://www.php.net/>
- MySQL: <http://www.mysql.com/>
- Ubuntu: <http://www.ubuntu.com/>

phpMyAdmin: <http://www.phpmyadmin.net/>

6. Install a Firewall

We now are going to lock down our server a bit more by installing Shorewall, a command-line firewall. To install it:

```
sudo aptitude install shorewall
```

By default, Shorewall is installed with no rules, allowing complete access. However, this is not the behavior we want. Instead, we're going to block all connections to anything other than port 80 (HTTP) and port 22 (SSH). First, copy the configuration files to the Shorewall directory

```
sudo cp /usr/share/doc/shorewall-common/examples/one-interface/* /etc/shorewall/
```

Now, open the "rules" file:

```
sudo nano /etc/shorewall/rules
```

Add these lines above where it says "#LAST LINE"

```
HTTP/ACCEPT net $FW
```

```
SSH/ACCEPT net $FW
```

```
GNU nano 2.0.7 File: /etc/shorewall/rules Modified
#-----$
# For information on entries in this file, type "man shorewall-rules"
#
# The manpage is also online at
# http://shorewall.net/manpages/shorewall-rules.html
#
#####$
#ACTION SOURCE DEST PROTO DEST SOURCE $
# PORT PORT(S) $
# Reject Ping from the "bad" net zone.. and prevent your log from being flooded$
Ping/REJECT net $FW
# Permit all ICMP traffic FROM the firewall TO the net zone
ACCEPT $FW net icmp
HTTP/ACCEPT net $FW
SSH/ACCEPT net $FW_
#LAST LINE -- ADD YOUR ENTRIES BEFORE THIS ONE -- DO NOT REMOVE
^G Get Help ^O WriteOut ^R Read File ^V Prev Page ^X Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^U Next Page ^U UnCut Text ^I To Spell
```

Then press Control-O and Control-X. Your firewall is now configured to only accept HTTP and SSH traffic. The last thing we need to do is tell Shorewall to start on boot. So, open up the main Shorewall configuration file:

```
sudo nano /etc/shorewall/shorewall.conf
```

Scroll down to "STARTUP_ENABLED=No" and set it to "STARTUP_ENABLED=Yes"

```
GNU nano 2.0.7 File: /etc/shorewall/shorewall.conf
# See the file README.txt for further details.
#
# For information about the settings in this file, type "man shorewall.conf"
#
# The manpage is also online at
# http://shorewall.net/manpages/shorewall.conf.html
#####
#           S T A R T U P   E N A B L E D
#####
STARTUP_ENABLED=Yes_
#####
#           U E R B O S I T Y
#####
VERBOSITY=1
#####
#           C O M P I L E R
#####
^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text    ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is  ^U Next Page  ^U UnCut Text ^T To Spell
```

Press Control-O and Control-X. Now, open the Shorewall default configuration file:

```
sudo nano /etc/default/shorewall
```

And change "startup=0" to "startup=1". Press Control-O and Control-X. Finally, start your firewall:

```
sudo /etc/init.d/shorewall start
```

Congratulations! Your firewall is now set up and protecting your server.

7. Add Your Website to Your Web Server

Now that you've got everything all set up, you'd probably like to add a website to it. By default, all of the files Apache serves up to the internet are located at "/var/www/". However, you cannot write to this folder. Let's make it so you can:

```
sudo usermod -g www-data [YOUR USERNAME]
```

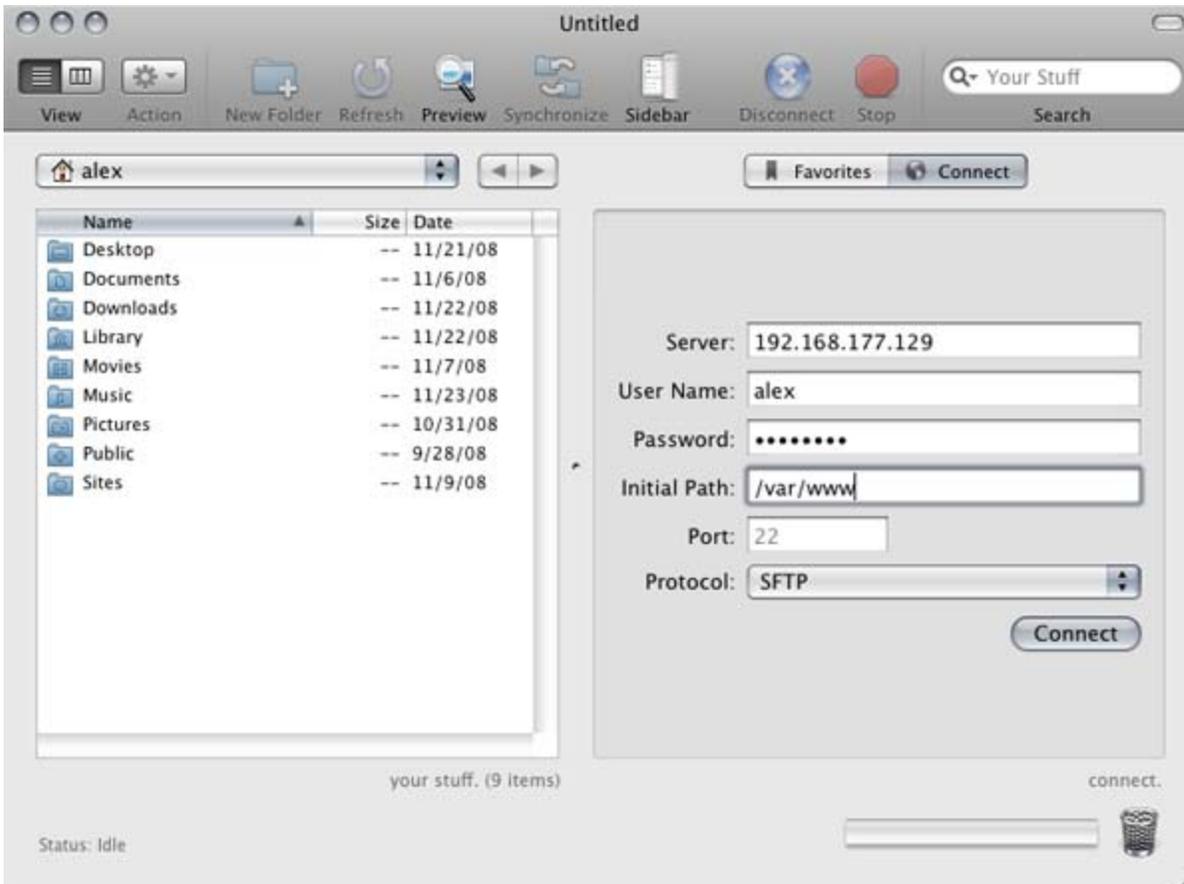
```
sudo chown -R www-data:www-data /var/www
```

```
sudo chmod -R 775 /var/www
```

What happened there was you added yourself to the "www-data" group, and made the website folder writable to the members of the "www-data" group.

Now, you're going to log into your server using SFTP (not to be confused with FTPS). Some clients that support SFTP are: [WinSCP](#) (Windows, Free), [FileZilla](#) (Windows, Linux, OS X, Free), [Cyberduck](#) (OS X, Free), and, my personal favorite, [Transmit](#) (OS X, \$30)

Connect to your server using your username and password, and, if your client supports it, a default path of "/var/www" (if it doesn't, simply browse to /var/www once you have logged in): (Transmit pictured)



You may now add your files to this folder (/var/www) and they will show up on your server when you browse to it with your web browser.

Now, you may wonder why we're using SFTP instead of FTP. Mainly, because SFTP is already built into OpenSSH (which you installed earlier). However, it is also a lot more secure than FTP, and makes it difficult (if not impossible) for malicious users to gain access to your login credentials.

8. Make Your Server Accessible to the Internet

Most modern home networks are behind a router these days. Because of this, your web server will not be visible to the internet without a little work. As I don't have every router available to test with, I can only give you general directions in this area.

There are two ways to open your server up to the internet: a DMZ or Port Forwarding. The main difference you'll notice is that with a DMZ, your server uses the firewall we installed earlier to protect itself. However, with Port Forwarding, your server will be protected by your router's firewall.

However, before we go on, you're going to want to give your server a static LAN address. To do that, login to your router, and look for something along the lines of "Static IPs" or "Static Routing". After you have given your server a static LAN address, you can do these next parts. Remember, Google is your friend.

To port forward, there is an excellent website, PortForward.com, that, while ugly, can help you get the job done for almost any router. The ports that you want to forward are 22 and 80.

To create a DMZ, you need to login to your router and look for something like "DMZ settings". Once you find it, add your server to the DMZ, and you'll be set. Again, Google is helpful in situations like this.

Now, [find your public IP](#), and voila! You can access your server from anywhere as long as your IP doesn't change.

Configuring Static IP address in Ubuntu server

If you want to install vim editor use the following command

```
sudo apt-get install vim
```

nano is already on the system.

Ubuntu installer has configured our system to get its network settings via DHCP, now we will change that to a static IP address for this you need to edit

Edit `/etc/network/interfaces` and enter your IP address details (in this example setup I will use the IP address 172.19.0.10):

```
sudo vi /etc/network/interfaces
```

and enter the following save the file and exit (In vi, ESC, then ZZ to save and exit)

```
# The primary network interface
```

```
auto eth0
iface eth0 inet static
address 172.19.0.10
netmask 255.255.255.0
network 172.19.0.0
broadcast 172.19.0.255
gateway 172.19.0.1
```

Now you need to restart your network services using the following command

```
sudo /etc/init.d/networking restart
```

You need to setup manually DNS servers in `resolv.conf` file when you are not using DHCP.

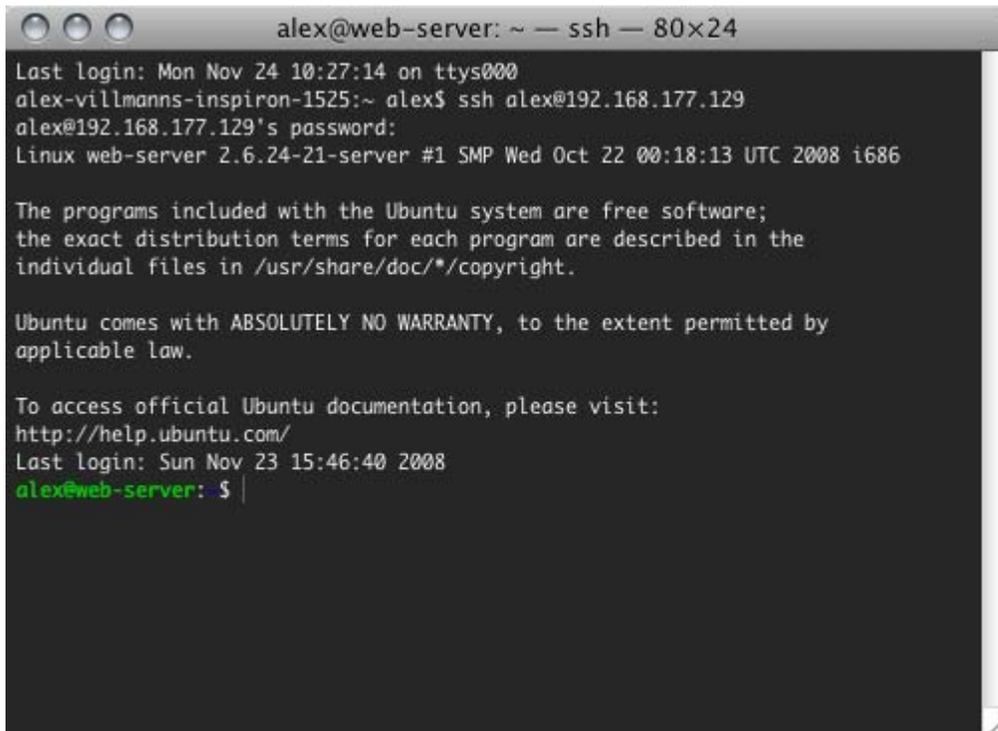
```
sudo vi /etc/resolv.conf
```

You need to add look something like this

```
search domain.com
nameserver xxx.xxx.xxx.xxx
```

9. Managing Your Server Remotely

Besides allowing you to upload files, OpenSSH allows you to login to your server from anywhere as long as you know its IP. For Windows, you'll need an SSH client. I recommend [Putty](#). For OS X, SSH is already installed. Simply open up Terminal, and type "ssh *you@yourip*". For Putty, choose SSH, and put in your IP, username, and password when it asks for it. You'll notice that, once you login, it looks exactly the same as the screen on the server:

A screenshot of a terminal window titled "alex@web-server: ~ — ssh — 80x24". The terminal shows the following text:

```
Last login: Mon Nov 24 10:27:14 on ttys000
alex-villmanns-inspiron-1525:~ alex$ ssh alex@192.168.177.129
alex@192.168.177.129's password:
Linux web-server 2.6.24-21-server #1 SMP Wed Oct 22 00:18:13 UTC 2008 i686

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.

To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
Last login: Sun Nov 23 15:46:40 2008
alex@web-server: $ |
```

You can do anything from here that you would do actually sitting at the server. To logout from the server, simply type "exit" and hit enter.

10. That's It!

Comments to “Step By Step Ubuntu 12.04 (Precise) LAMP Server Setup”

1. *Syafiq ?omo????* says:

[May 21, 2012 at 5:22 am](#)

Just adding small note:

‘sudo /etc/init.d/networking restart’ also can be write as ‘sudo service networking restart’

2. *JohnP* says:

[May 21, 2012 at 6:42 pm](#)

Editing /etc/resolve.conf is deprecated and will be automatically overwritten at the next startup.

The easiest way to setup DNS and domain search is in the /etc/network/interfaces file now so that resolveconf (a new tool) can handle it.

3. *Kevin* says:

[August 1, 2012 at 6:59 pm](#)

Following the steps above and other posts I’ve found I continue to get issues when installing the GRUB loader. Anyone have any suggestions?

Windows Server 2008 R2 SP1
Ubuntu Server 12.04 64 bit

4. *Todd* says:

[October 4, 2012 at 9:24 am](#)

Why do you need to change from a dhcp to a static ip address.

I have three other computers hooked up to the same router that this new ubuntu server is attached to.....so what static ip address do i pick.....does it matter. When the server boots it tells me my ip address is 192.168.1.108. Can I still have this new ubuntu server hooked to my router or do i have to configure my home network differently. My internet provider is brighthouse cable and it is not a static ip address from them....how does this effect my network using a static ip address on this new ubuntu server. I just need a “do this” and it will work explanation.

5. *Matt Evans* says:

[October 6, 2012 at 8:09 pm](#)

Kyle, the simplest explanation is that when you are setting up a server for whatever: Web server, email server, file server, FTP, DNS, DHCP, etc, you want to make sure you can hit that server at the same IP address every time. You are not garunteed the same IP address if it assigned via DHCP, unless you’re using DHCP with MAC reservation. Setting up your PCs with DHCP is fine since they’re clients on your network and it doesn’t really matter what their IP address is. If this server is going to be exposed to

the outside world, then you'll probably want to use some type of dynamic dns service – like dyndns.org . That way, no matter if your ISP changes your IP address, you can hit your server via its DNS name.

6. *naeem* says:

[October 17, 2012 at 8:41 am](#)

I have installed and now i am stuck on authentication, I entered user name and password and now it's showing mypc@MIS-IRD:~\$ I am newbie so kindly tell me how to login to my server desktop?

7. *WSiaB* says:

[November 7, 2012 at 8:30 pm](#)

There is no desktop on a server – you are looking for the desktop Ubuntu version. If you want to escape the terminal (command prompt) you should read this:

<https://help.ubuntu.com/community/ServerGUI>

8. *Gerard* says:

[November 15, 2012 at 10:30 am](#)

Hi I'm totally 0% about ubuntu.. but I'm trying my best to learn it.. My question is.. after I successfully install the software.. what is my next step after this? “ubuntu@ubuntuserver:~\$” please help... what should i key in?

9. *Dougal* says:

[January 4, 2013 at 11:39 pm](#)

Same as Gerard, got it installed. What now? Picked server tpy openssh perhaps I should have gone for LAMP? How do I change? Reinstall?

10. *Ripso* says:

[October 4, 2013 at 2:05 pm](#)

Hi, you say:

```
sudo vi /etc/resolv.conf
```

You need to add look something like this

```
search domain.com
```

```
nameserver xxx.xxx.xxx.xxx
```

Does this mean to add a psuedo domain name like mynewsrver.com rather than an existing one and then an internal ip address?