

VICIdial for Dummies

F I R S T & F R E E E D I T I O N

Author:

Deo Dax Sillero-Cordova

I . Introduction

First and foremost I would like to thank Matt Florel and the VICIdial group for the thousands of man hours it took them to develop astguiclient or as we know right now VICIdial.

This document is not an official article from the VICIdial group. I made this document to introduce new users to this wonderful piece of open source software that can be used to power startup call centers at lesser capital (imagine getting an avaya system that's around 1,000 – 1,800 USD a seat).

This document will cover the basics of vicidial, I will discuss one by one the major components of a VICIdial system and how they work together as a solution to your needs.

We will be tackling installation and configuration from scratch using Ubuntu Server 8.0.4 LTS as my choice of distribution mainly because most of my deployments are on Ubuntu Server. And yes we will be installing from scratch.

At the end of this document you will be able to have an understanding of how vicidial works, how to install it and how to start operating it.

And lastly this document is not for sale, this can be downloaded freely. It is my pleasure to give back to the community by making other new users knowledgeable instead of ripping them off.

II. What is VICIdial?

VICIdial is a set of scripts that are designed to interact with the Asterisk Open-Source IP PBX Phone System to make it function as an inbound / outbound call center solution.

Scripts are made up of PERL and PHP. It uses MySQL as its database server, Apache / Httpd Server for its front end web interface, and Linux as its operating system.

It is developed by the vicidial group <http://www.vicidial.com> lead by Matt Florel.

And YES VICIdial is Open-Source under AGPLv2 license. No licensing cost involved, what you will be paying for mostly will be the integration cost, training and custom development.

The latest version of VICIdial upto date is: VICIdial 2.2 Release Candidate 7.

The latest development version of VICIdial is: 2.4b which can be downloaded using subversion.

III. Features of Vicidial?

Here are the major features of VICIdial as taken from their official project website <http://www.vicidial.org>:

- Inbound, Outbound and Blended call handling
- Outbound agent-controlled, broadcast and predictive dialing
- Full USA FTC-compliance capability
- Web-based agent and administrative interfaces
- Ability to have agents operate remotely
- Integrated call recording
- Three-Way calling within the agent application
- Scheduled Callbacks: Agent-Only and Anyone
- Scalable to hundreds of seats
- Ability to use standard Telco lines and VOIP trunks
- **Open-Source AGPLv2 licensed, with no software licensing cost**

IV. VICIdial Full Feature List

- Ability for an agent to call clients in succession from a database through a web-client
- Ability to display a script for the agent to read with fields like name, address, etc. filled-in
- Ability to set a campaign to auto-dial and send live calls to available agents
- Ability to dial predictively in a campaign with an adaptive dialing algorithm
- Ability to dial on a single campaign across multiple Asterisk servers, or multiple campaigns on a single server
- Ability to transfer calls with customer data to a closer/verifier on the local system or a remote Asterisk server
- Ability to open a custom web page with user data from the call, per campaign
- Ability to autodial campaigns to start with a simple IVR then direct to agent
- Ability to broadcast dial to customers with a pre-recorded message
- Ability to park the customer with custom music per campaign
- Ability to send a dropped call to a voicemail box per campaign if no agent is available
- Ability to set outbound CallerID per campaign
- Ability to take inbound calls grabbing CallerID
- Ability to function as an ACD for inbound and frontier/closer verification calls
- Ability to have an agent take both inbound and outbound calls in one session(blended)
- Ability to start and stop recording an agent's calls at any time
- Ability to automatically record all calls

- Ability to manually or automatically call upto two other customer numbers for the same lead
- Automtically dial unlimited numbers per customer until you get an answer
- Ability to schedule a callback with a customer as either any-agent or agent-specific
- Ability in Manual dial mode to preview leads before dialing
- Ability for agents to be logged in remotely anywhere with just a phone and a web browser
- Faster hangup and dispositioning of calls with one key press (HotKeys)
- Definable Agent Wrapup-time per campaign
- Ability to add custom call dispositions per campaign
- Ability to use custom database queries in campaign dialing
- Recycling of specified status calls at a specified interval without resetting a list
- Dialing with custom TimeZone restrictions including per state and per day-of-the-week
- Dialing with Answering Machine Detection, also playing a message for AM calls
- Multiple campaigns and lead-lists are possible
- Option of a drop timer with safe-harbor message for FTC compliance
- Variable drop call percentage when dialing predictively for FTC compliance
- Internal DNC list can optionally be activated per campaign
- All calls are logged and statuses of calls are logged as well as agent time breakdowns
- Load Balancing of call across multiple inbound or outbound Asterisk servers is possible
- Agent phone login balancing and failover across multiple ViciDial servers
- Several real-time and summary reports available

- Real-time campaign display screens
- 3rd party conferencing(with DTMF macros and number presets)
- 3rd party blind call transfer
- 3rd party conferencing with agent drop-off
- Custom Music-On-Hold and agent alert sound for inbound calls
- Estimated hold time, place in line, overflow queues and several other inbound-only features
- Skills-based ranking and call routing per inbound group(queues) and campaign
- Queue Prioritization per campaign and inbound group
- Single agent call queueing
- Ability to set user levels and permissions for certain features and campaigns
- Ability for managers to listen-in on agent conversations
- Ability for managers to enter conversations with agents and customers
- Ability for agents to select a Pause Code when they are not active
- Ability for agents to control volume levels and mute themselves
- Agent shift enforcement by day and time, defined per user group
- Full QueueMetrics-compatible call logging, inbound and outbound
- Several Vtier integration features: user-sync, account-sync, data interconnection
- Full integration with Sangoma Call Progress Detection(CDP) for better Answering Machine Detection(AMD)
- Multi-function web-based agent API allowing for control of agent sessions including click-to-dial outside of the agent screen
- Lead import web-based API
- Web-based data export utilities
- Separate Time-clock application to track user work time
- Web-based administration
- DID, phone and carrier trunk provisioning through the web interface

- Client web-app web pages available in English, Spanish, Greek, German, French, Italian, Polish, Portuguese, Brazillian Portuguese, Slovak, Russian and Dutch.
- Admin web pages available in English, Spanish, Greek, German, Italian and French.

V. The VICIdial Advantage

I know that you will be asking next, “What are the advantages of using VICIdial?”. Here are a few that I can name:

- 1. VICIdial is Open-Source software which simply means you can freely download, and customize to your own needs.*
- 2. Other VICIdial components are also open-source namely the Linux Operating System, Asterisk IP PBX, Apache Web Server, Perl and PHP, which means they can also be downloaded and installed freely, so basically you have a zero or no cost at all in acquiring the said software themselves.*
- 3. Linux Operating system is a good and reliable server platform, in fact there are over millions and counting servers that run using Linux Operating System.*
- 4. VICIdial uses SIP and IAX2 clients which means you can use any soft or hardphone that is IAX2 or SIP compliant, I usually use eyebeam, Twinkle, X-lite, Zoiper or Bria softphones, for hardware you can use Xorcom astribank.*
- 5. It is possible to have an all linux setup for the Agent Workstations using x-lite for linux and twinklephone for linux, this means that you wont be buying Windows Licenses per agent workstation, that’s another huge savings for your company. On the other hand Linux Operating systems are not prone to viruses for windows operating systems, so you wont be buying again anti virus licenses, so another huge savings for your company.*

VI. VICIdial Components

No soldier goes out to the battlefield without the knowledge of how to fire a gun, we need to know how to use it so we could hit the targets on the other end if not we will just be stuck on a boring foxhole like sitting ducks.

Im going to discuss the components of VICIdial so you could have a deeper understanding of how they function hand in hand, having this knowledge it will be easier for you to troubleshoot the issues that will surround your installation if you will encounter one.

I divided VICIdial into several components, others have their style, I have mine based on my experiences, a VICIdial system is composed of:

1. An operating system, **VICIdial uses the Linux Operating System as its platform**, without an operating system its nothing. You can chose from several distributions like Slackware Linux, Gentoo Linux, Ubuntu Server, CentOS, and OpenSuSe. For this document we will be using **Ubuntu Server 8.0.4 LTS**.
2. A database server, **VICIdial uses MySQL 5.0+**, this is the “brain” of the entire system, this is where call logs are stored, agent login sessions, leads and other data, the later version comprises of 106 tables.
3. A web server, **VICIdial uses Apache or Httpd** web server, this is used mainly to provide access for the administration interface and for the agent interface, think of this as the window or a door or basically a front end.

4. An IP PBX, **VICIdial uses Asterisk Open-Source IPPBX** as its means to dial and receive incoming calls.
5. **VICIdial uses the Meetme Conference** bridge module of asterisk as its way of bridging a call to an agent which I will explain more later. Meetme uses a timing device, can be a digium or sangoma hardware or basically ztdummy which comes with Zaptel or Dahdi tools.
6. **VICIdial uses Perl CPAN modules** as its backend to communicate with the **Asterisk Server**, they tell asterisk to process calls, recordings, sending the data to the MySQL database.

VII. How they work

Now let me tell you how they work hand in hand, let us try to simulate an agent trying to login to the dialer for you to have a better understanding.

1. The agent logs in through a web interface provided by the **web server** which is provided namely vicidial.php its usually default at this address: <http://yourlocalipaddress/agc/vicidial.php>
2. Then agent inputs phone login, password, agent username and password, credentials are being checked against the **MySQL database** to see if the agent and phone exists or not. If not an error is returned telling you that you have the wrong password or simply not displaying the list of campaigns you are allowed to login to.
3. If those credentials are correct, MySQL server then allocates a conference number from vicidial_conferences table to the agent, the asterisk server will then call the extension where the agent is connected, for example an agent uses cc100 to connect its softphone then the asterisk server will then calls cc100, the softphone receives the call, the agent answers it and automatically the agent is put into a **MeetMe conference bridge**. You will hear a voice telling you “You are the only person in this conference”.
4. Granting that leads are loaded for the campaign, the perl scripts are in charge of putting those leads into a hopper, a hopper acts like a buffer wherein the contents of the hopper are information, contents of the hopper are then sent to the **Asterisk Server** telling it to call those numbers that are in the

- hopper depending on the DIAL mode that is set in the campaign.
5. Once the agent is put into that campaign, the **Asterisk Server** then dials those numbers in the hopper, once a call is connected or is answered, automatically the **Asterisk Server** will bridge that call to a meetme conference where an agent is waiting.
 6. Agent and called party now converses, once a call is hung up, its then written to the call logs and then the web interface popups a disposition interface for the agent to dispose the call. If call recording is enabled, the recording scripts in the cron job will be processing it and it will be put default under **/var/spool/asterisk/monitorDONE** respectively.
 7. At the end of the shift agent logs out, the **MeetMe Conference bridge** is destroyed and the conference table in the database is updated that the agent has logged out.

So that's as basic as I can explain of how they work hand in hand together and one of them being misconfigured would mean an issue. Now lets get to the other part now which is preparing our installation.

VIII. What we need

Here is what we need to get things started, I have written a happy list for you to follow, this setup is good for 20 to 25 agents:

Server Hardware – Intel Core2Quad 3.0 ghz Processor, Intel Motherboard, 4 GB DDR2 800 Mhz RAM, Western Digital Raptor 320 GB 10,000 RPM SATA hard drive, 550 watts branded power supply (HEC, Gigabyte, Thermaltake, you choose), A full tower casing (Li-an-Li, Gigabyte Poseidon). This build can cost around 30,000 – 40,000 pesos or around 600 or 800USD the last time I setup one of this kind.

Ubuntu Server 8.0.4 LTS 64 bit Linux Operating System – Since this is a stand alone server, a 64-bit version would be really nice, in my deployments using a 64 bit operating system I see a performance increase in MySQL and Apache web servers, asterisk performance hadly had an increase, also on the other hand 64 bit has good memory management, it can detect RAM which is higher than 3 GB flawlessly, for its other advantages you can look it up at google.

Asterisk 1.4.21.2 Version – VICIdial has also their own pre patched version of this asterisk release which Ive been using recently, in my observation asterisk 1.4.21.2 version is much better in handling SIP carriers compared to **asterisk 1.2.30.4** which is also another good version to use for VICIdial. For reliability and stability both are at par. My observations may differ from others though. But so far I have upgraded 87 servers to Asterisk 1.4.21.2 and they seem to be running fine without an issue till now.

Google.com – If ever you stumble upon issues during your installation theres always google for you to copy and paste the error, who knows there could be lots of you who are experiencing it too.

<http://www.vicidial.org/VICIDIALforum/> - The official VICIdial forum just incase you have another issue again which this document could not help.

A cup of coffee or coke light or pepsi max – Youll be needing that also.

A sack full of luck, patience and understanding – You'll need a lot of it, sometimes you'll be experiencing a bad air day wherein you think you're doing it right yet still something screws up, that's just normal we just have to deal with it.

IX. Installing Ubuntu Server

I have divided the components and to start off we will be installing the operating system of course.

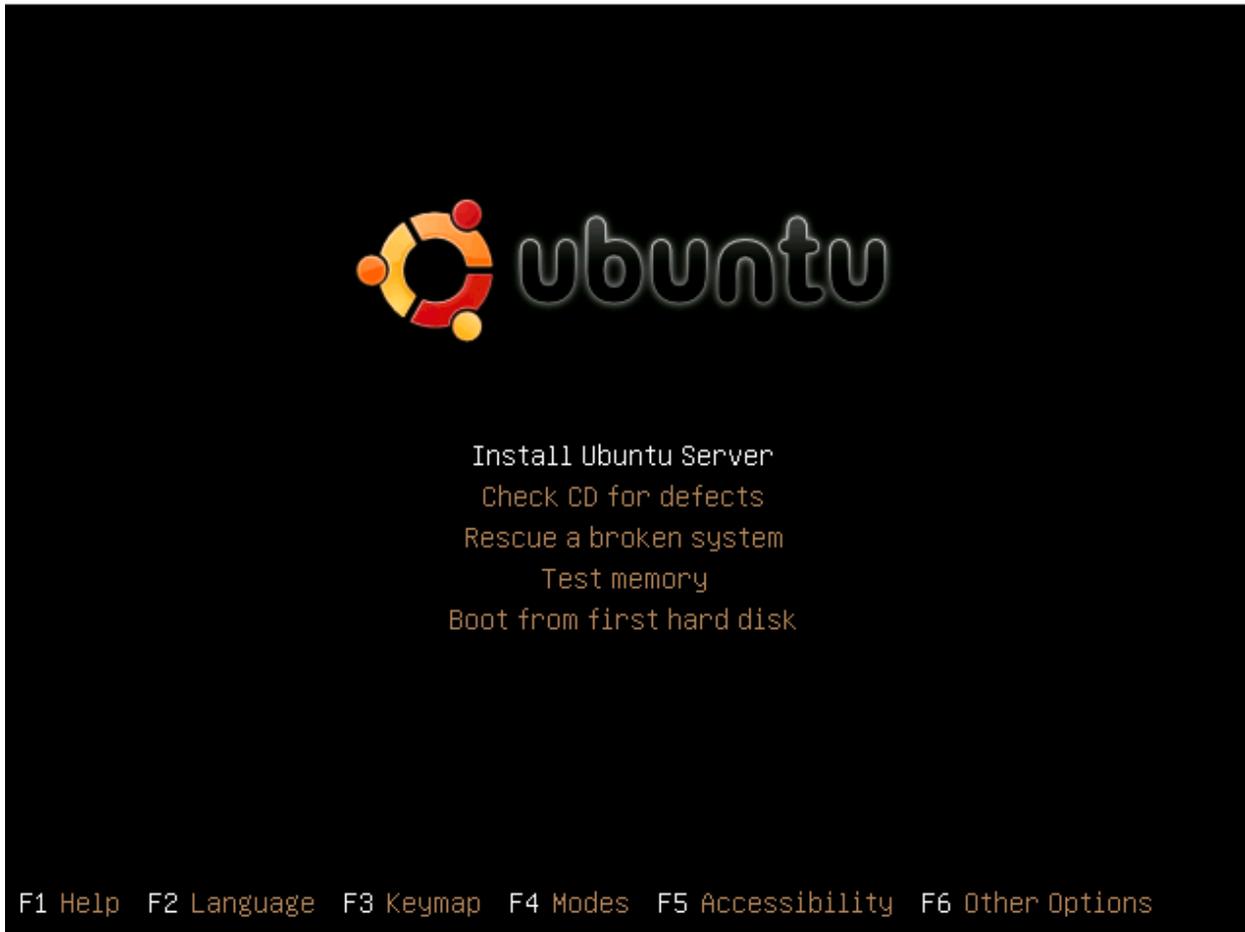
You'd have to download and burn the **Ubuntu Server 8.0.4 LTS** ISO from this link:

<http://mirrors.rit.edu/ubuntu-releases/hardy/ubuntu-8.04.4-server-amd64.iso>

The next step would be to burn it into a CD using Nero, Alcohol, and k3b under KDE if you are using Linux.

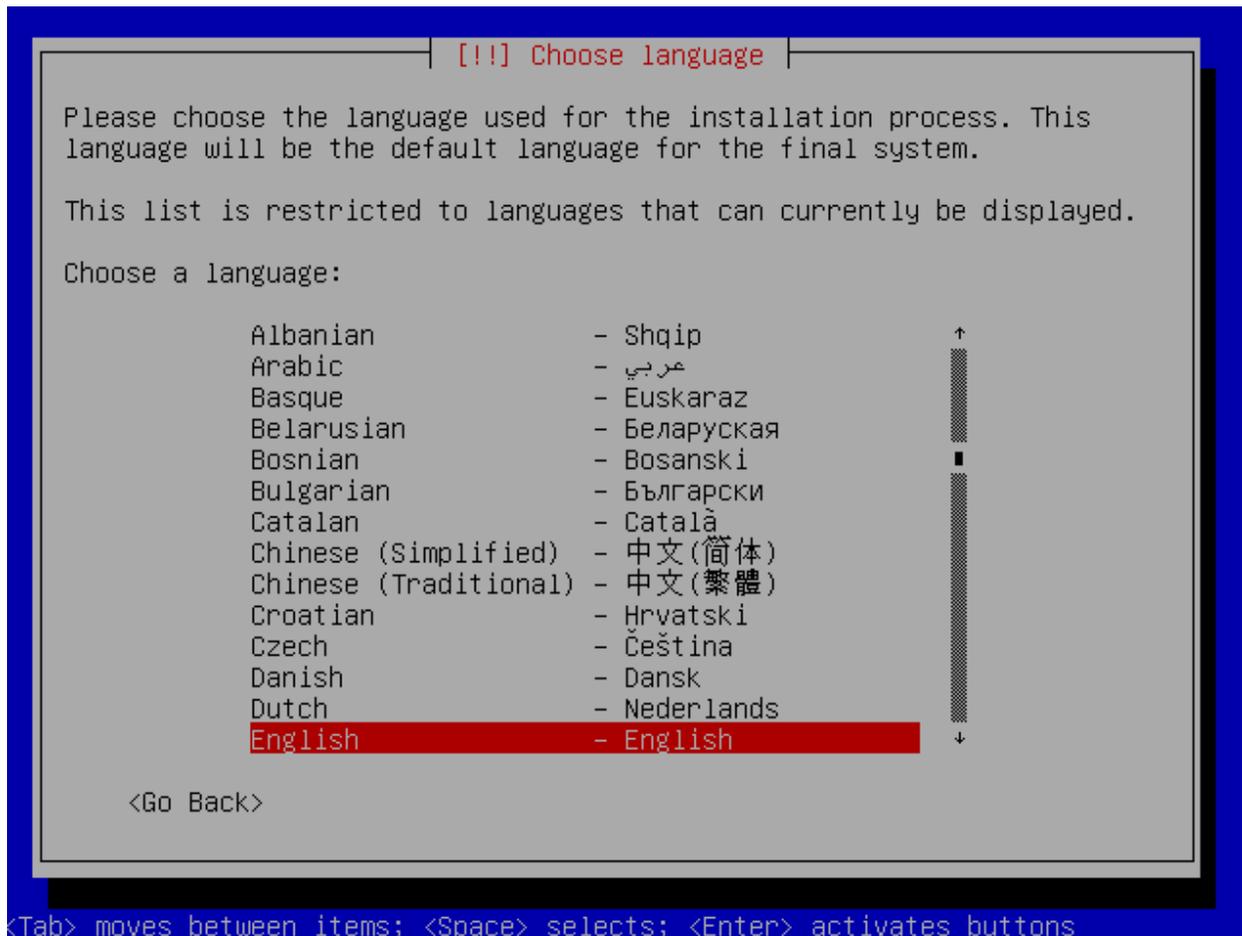
I will be providing screenshots on the install, I will be using VMWARE as to this is an example only, **do not use VMware for production.**

Step 1.



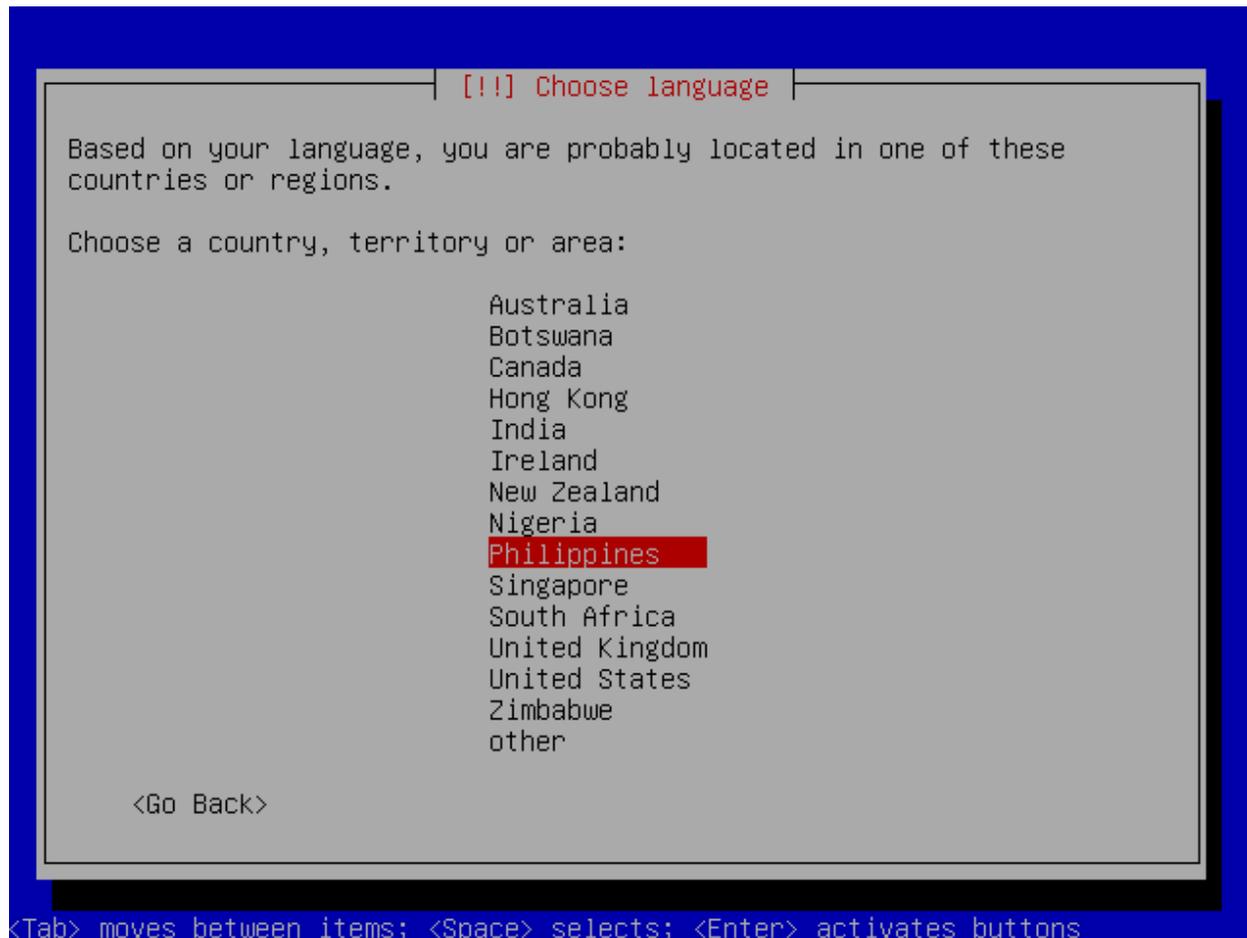
Its pretty obvious to select 'Install Ubuntu Server'. You can use the UP and DOWN keys to navigate and the ENTER key to select.

Step 2. Language Selection



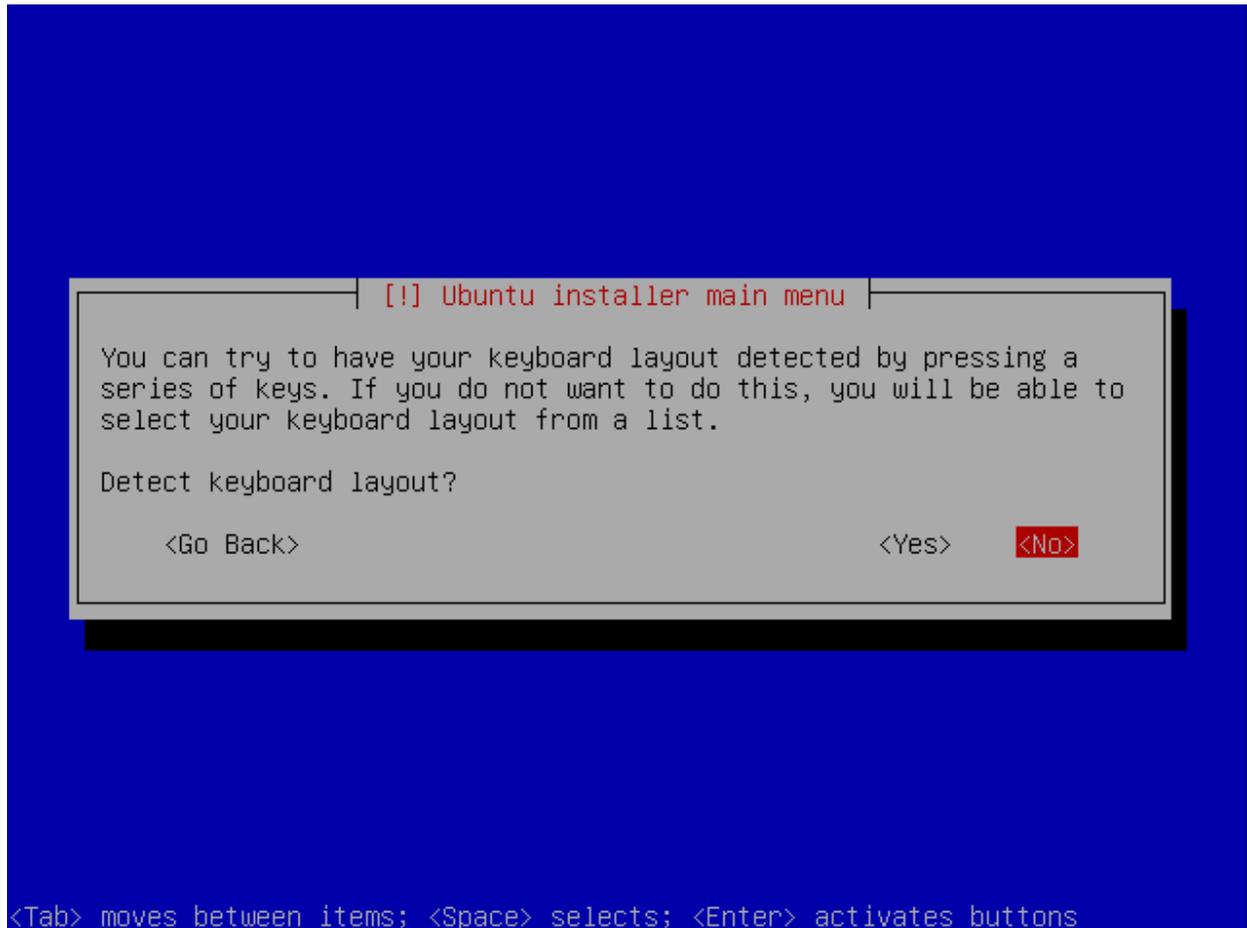
I chose the option English. This will depend on what language you will be using.

Step 3. Territory Selection



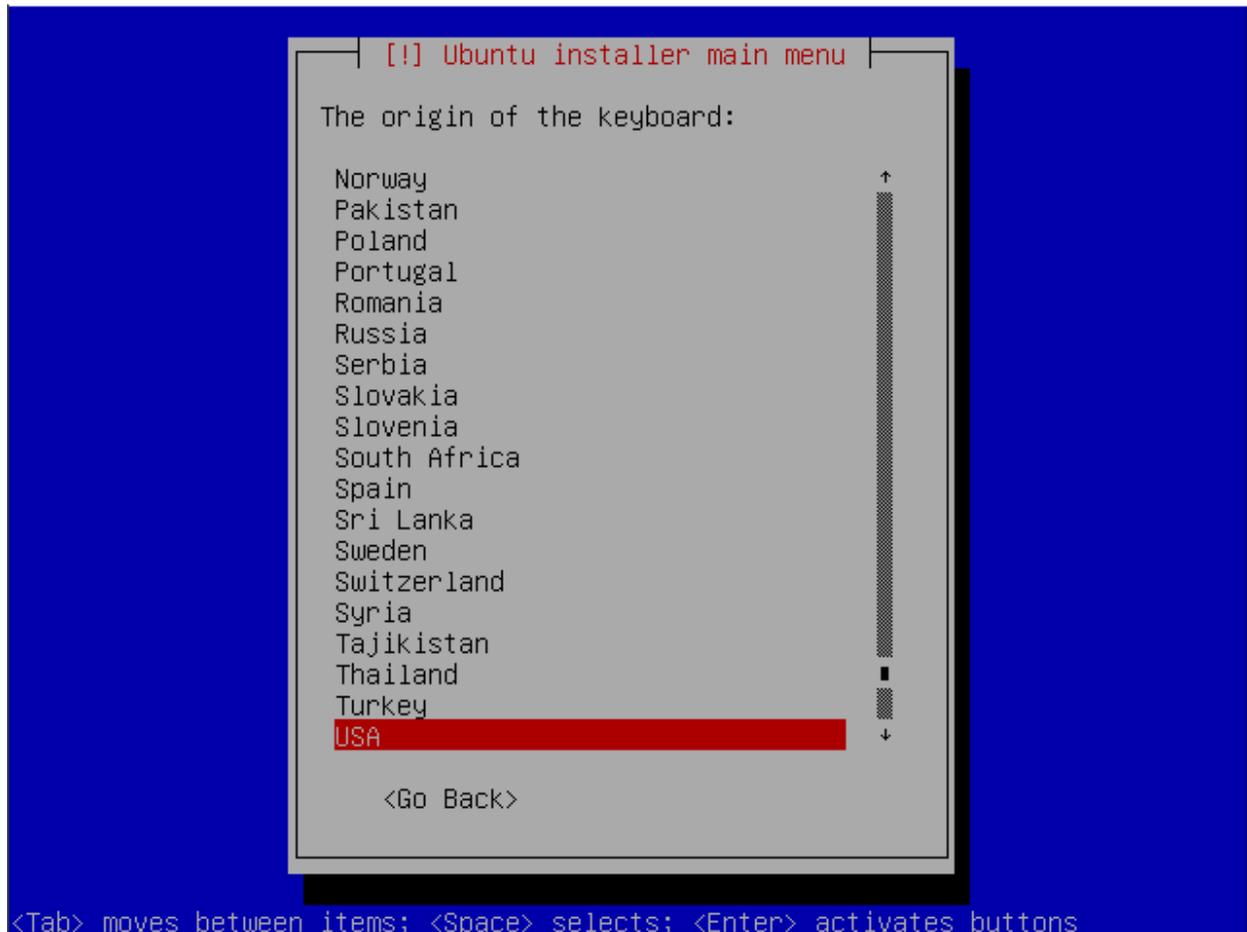
I selected Philippines because this will point to the nearest repository in the territory I selected.

Step 4. Keyboard Layout



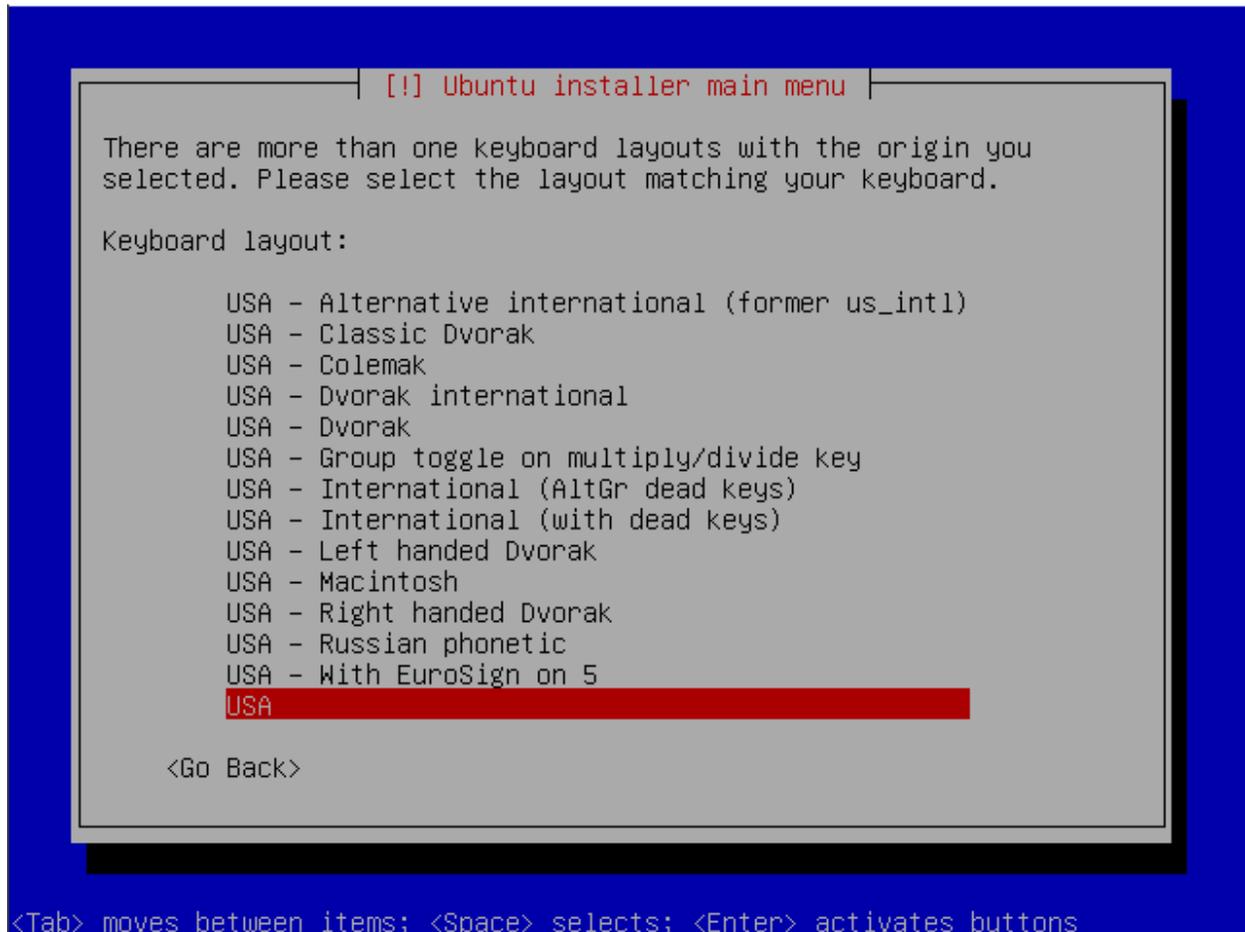
I chose not to detect the keyboard layout, it doesn't really matter for me since I use a standard US keyboard.

Step 5. Choosing the origin of your keyboard



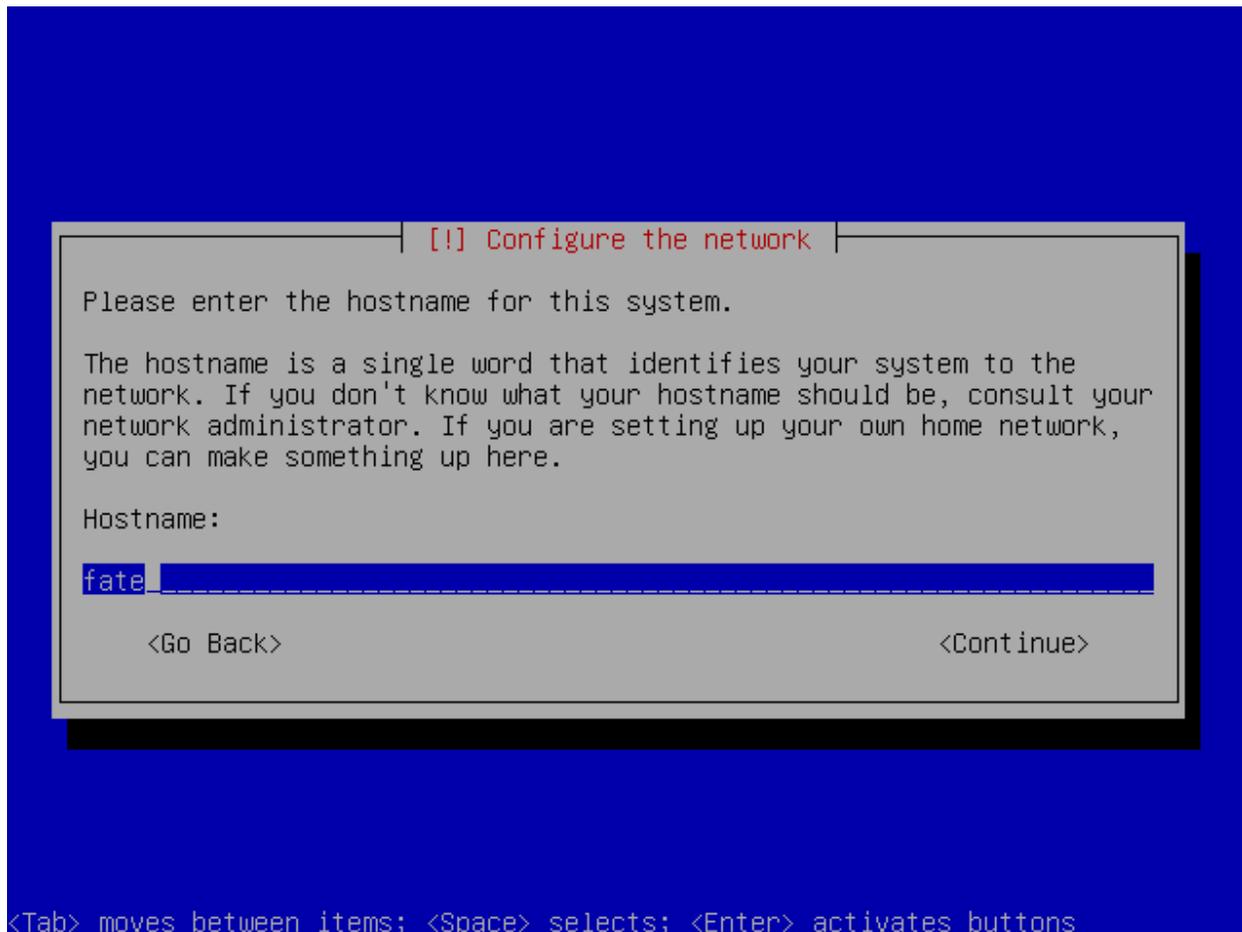
This option comes out if you don't detect the keyboard layout, it will ask you where your keyboard comes from, for generic US keyboard layouts just select USA.

Step 6. Keyboard layout selection



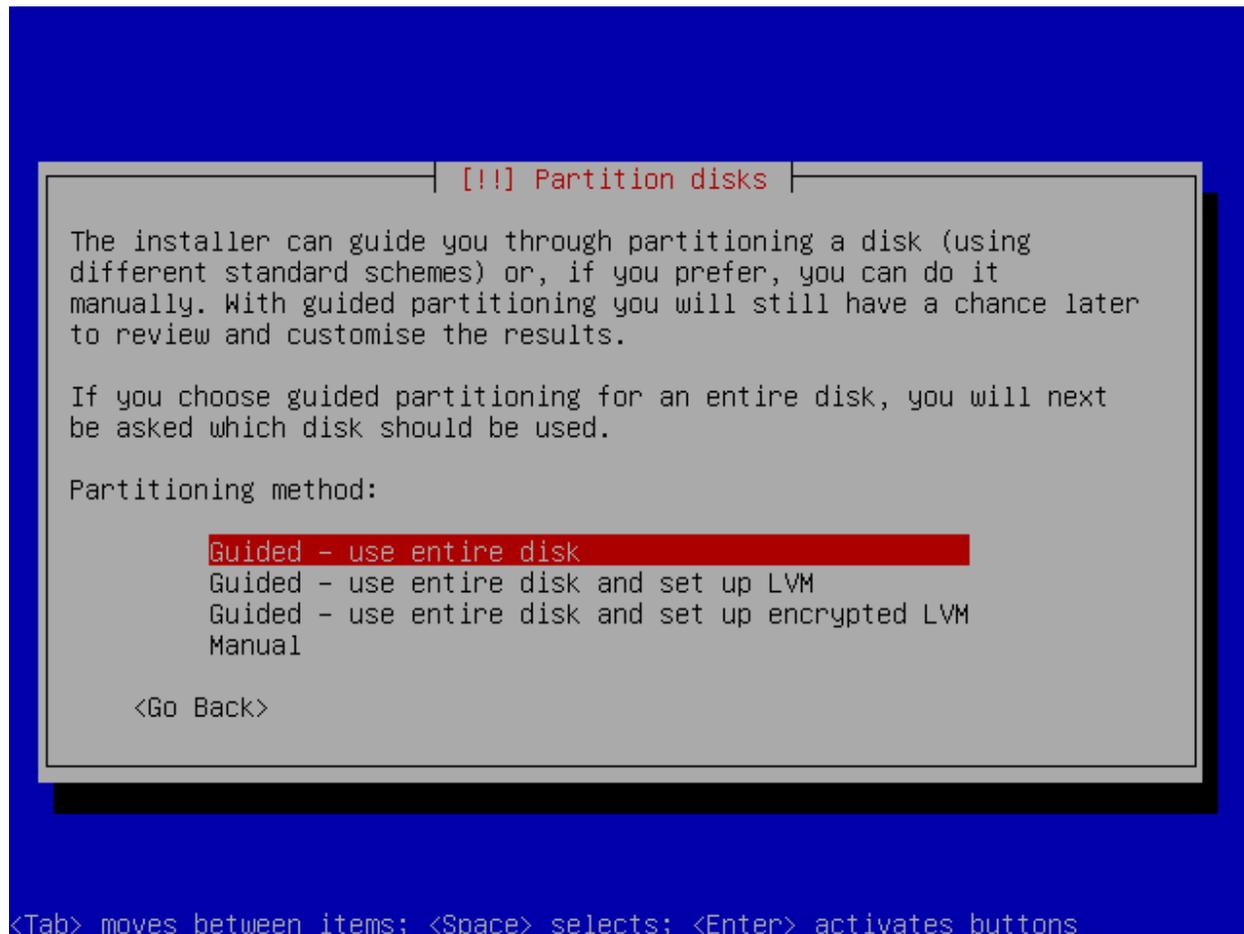
Again I just selected USA since I have the plain USA keyboard.

Step 7. Hostname configuration



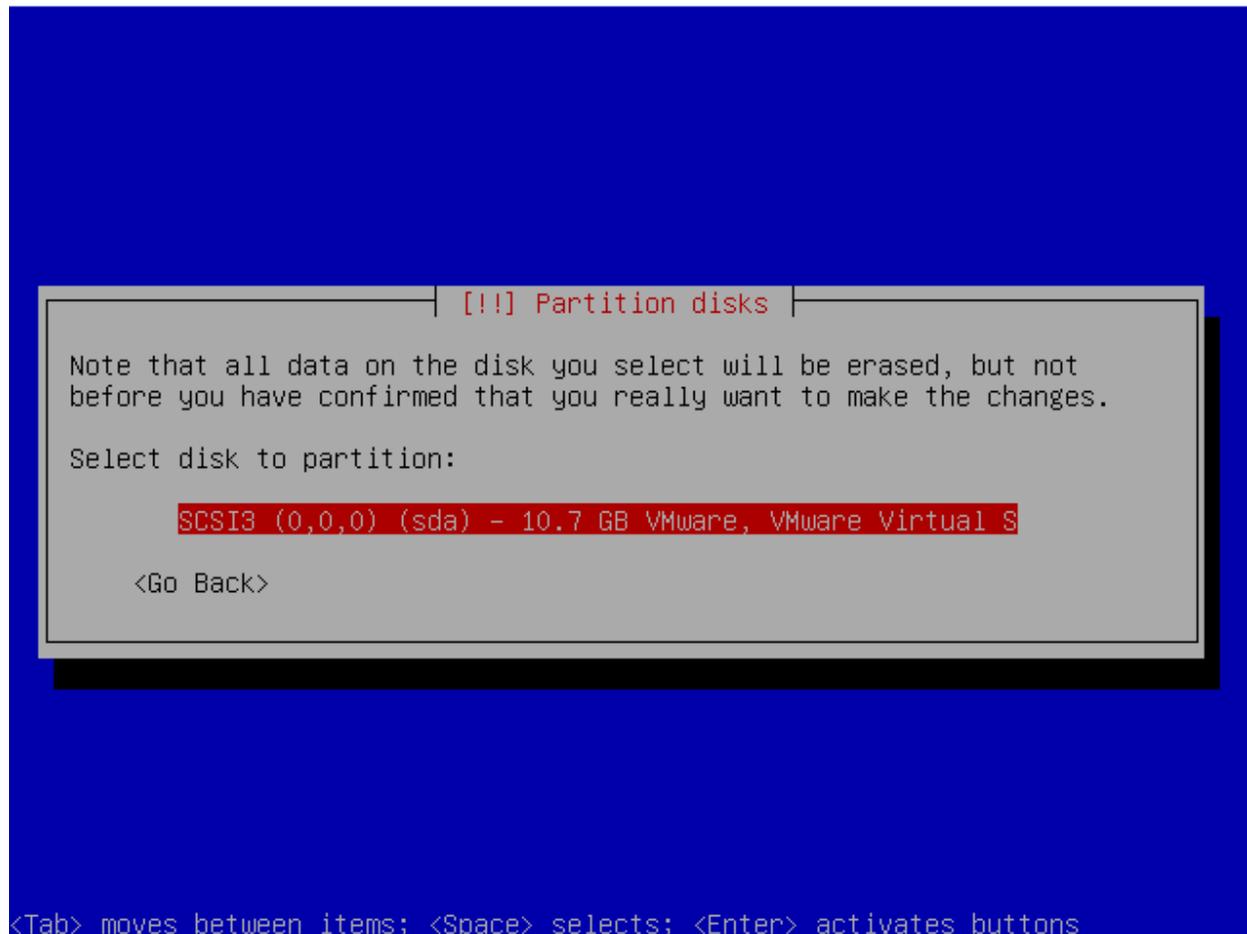
This is where you set the name of your server; in this case I call her Fate since it's the name of the girl that I love. The default installation will attempt to configure your network using DHCP, which means it will attempt to look for a dhcp server to get an IP address, since I have a router which acts as a DHCP server it automatically had an ip address so in this case I will discuss on how to change your ip address statically once your finish installing.

Step 8. Partion Disks



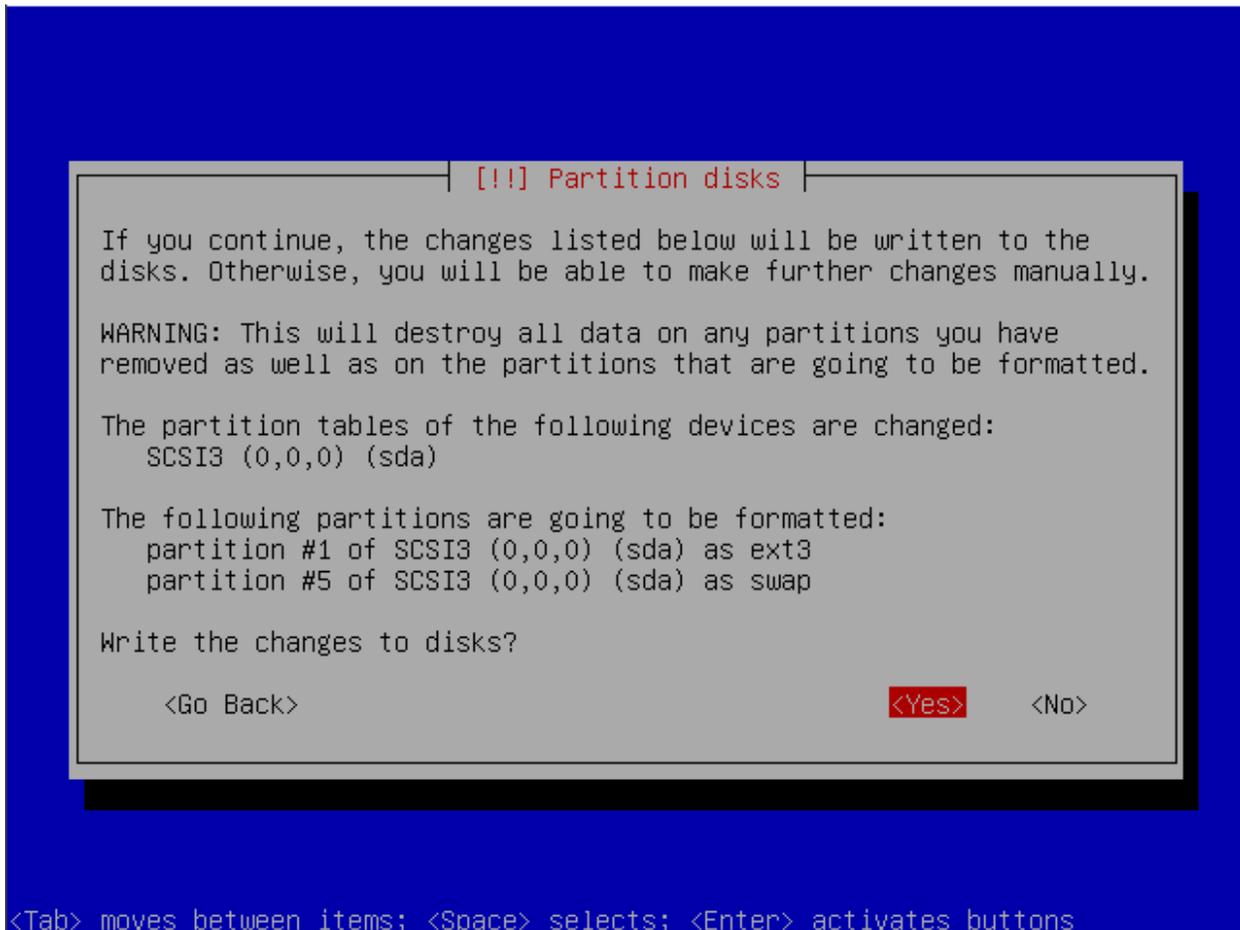
Granting that this is your first few times to install linux I would recommend you do Guided – use entire disk, what this does is that it will destroy all the partitions on your hard drive and install all components in one root partition.

Step 9. Choosing which hard drive to install



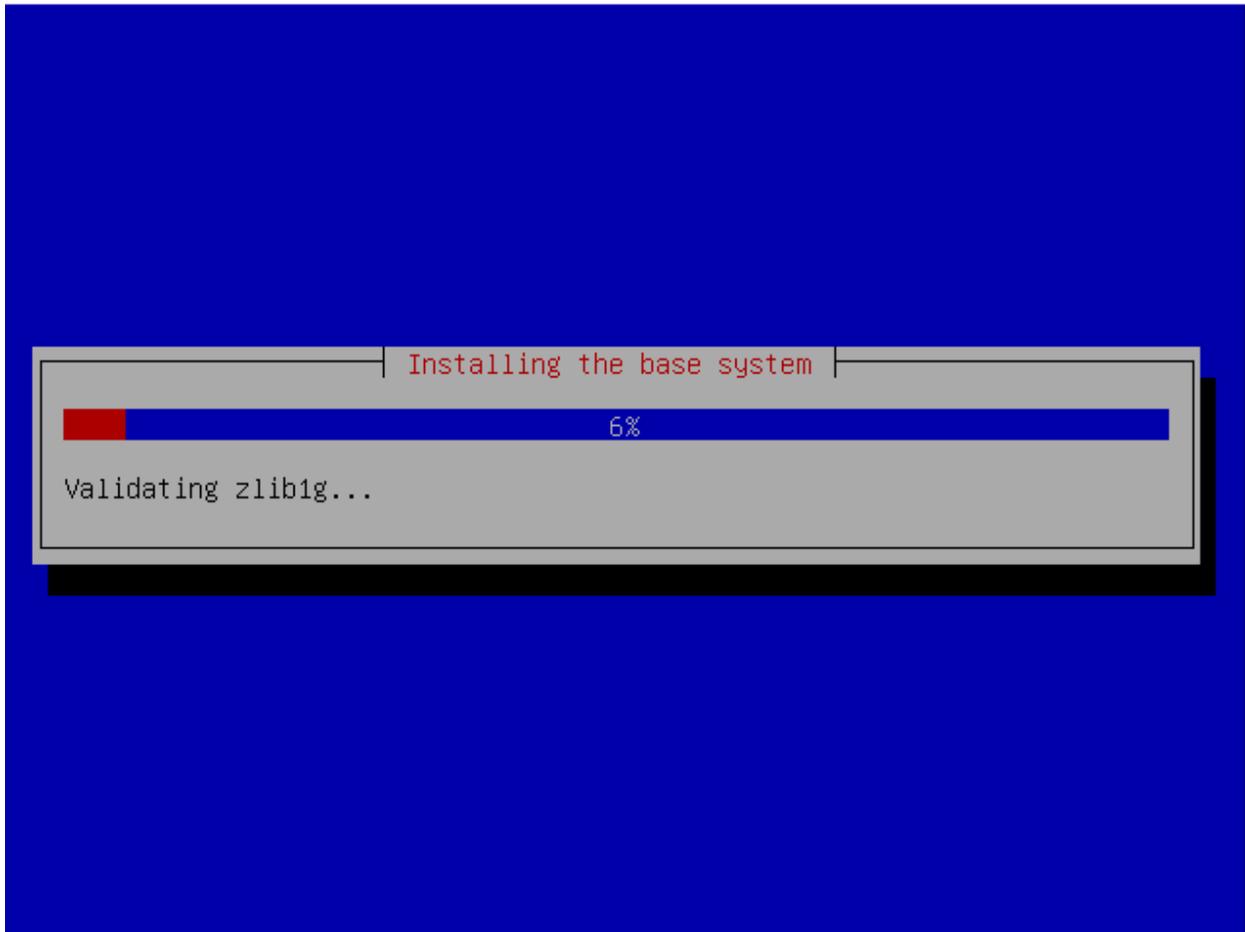
You will be prompted on which hard drive to partition, so if you installed more than one hard drive please choose the appropriate hard drive to partition. You could see here that I just use VMware for faster screenshot making. Again, do not use VMware for production.

Step 9. Finalizing your partition



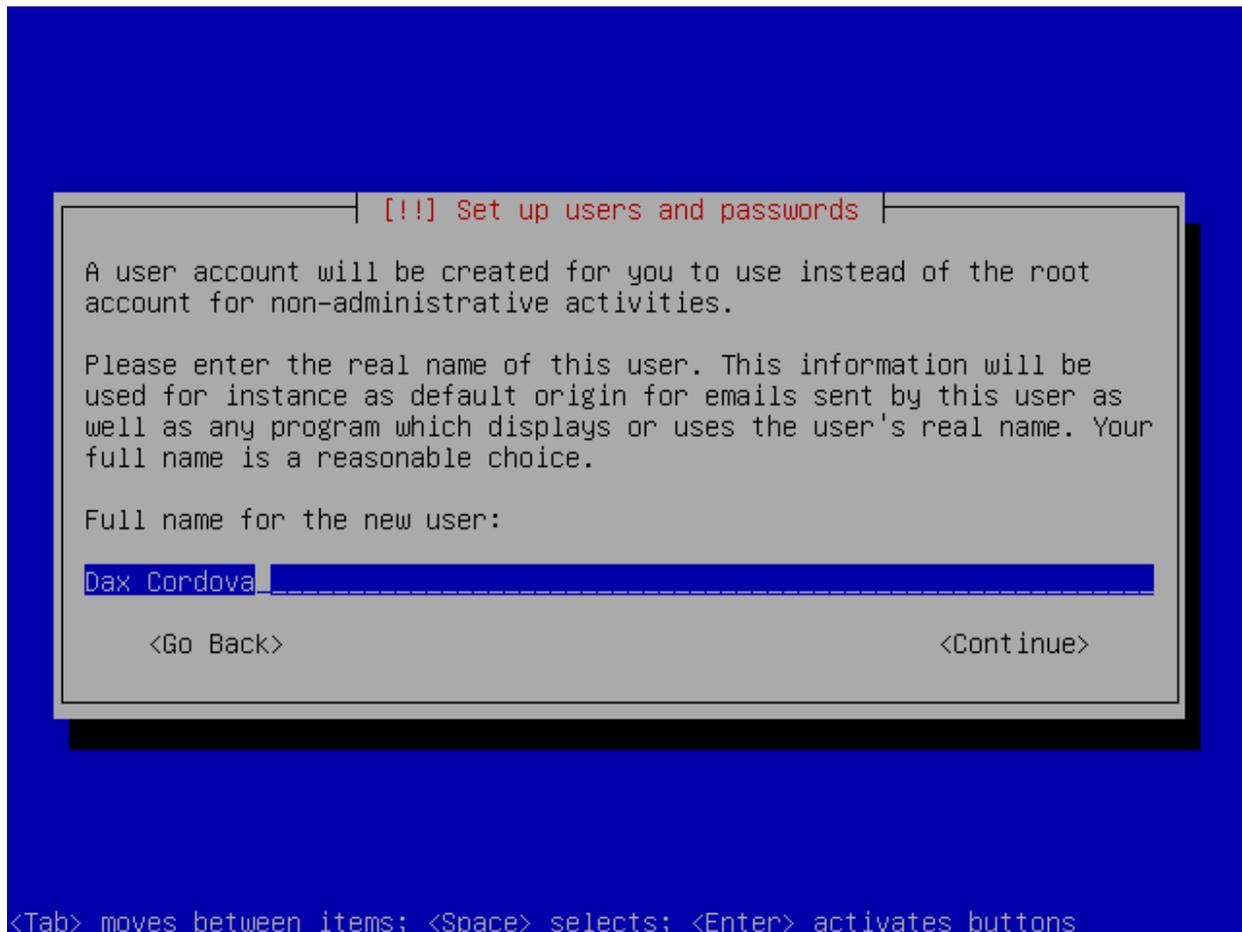
You will be asked to finalize your partition, just chose yes and press the enter key.

Step 10. Installation of base system



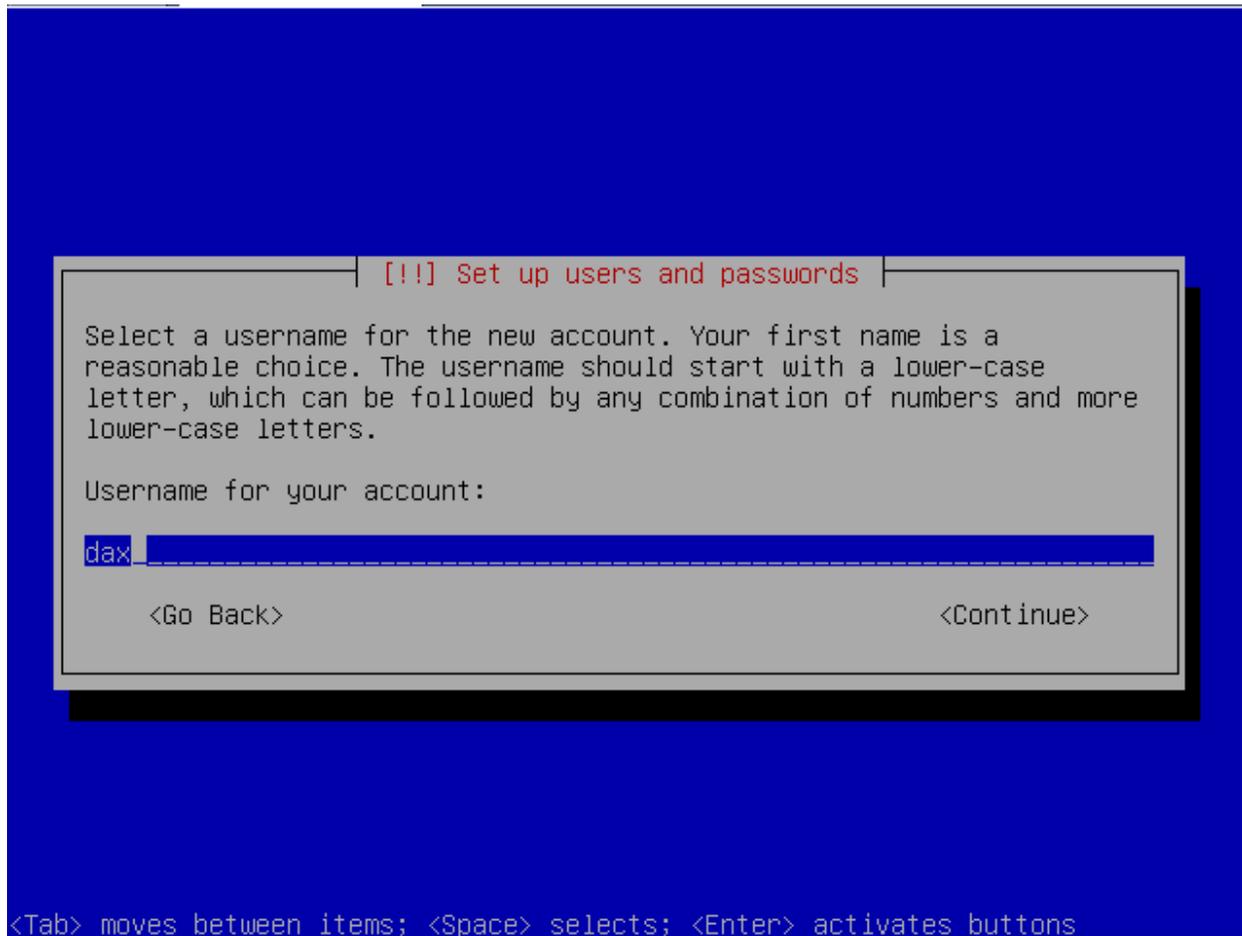
Here is what it will look like after the partitioning. This will go on for a while, depending on the speed of your server.

Step 11. Adding of the first user to your system



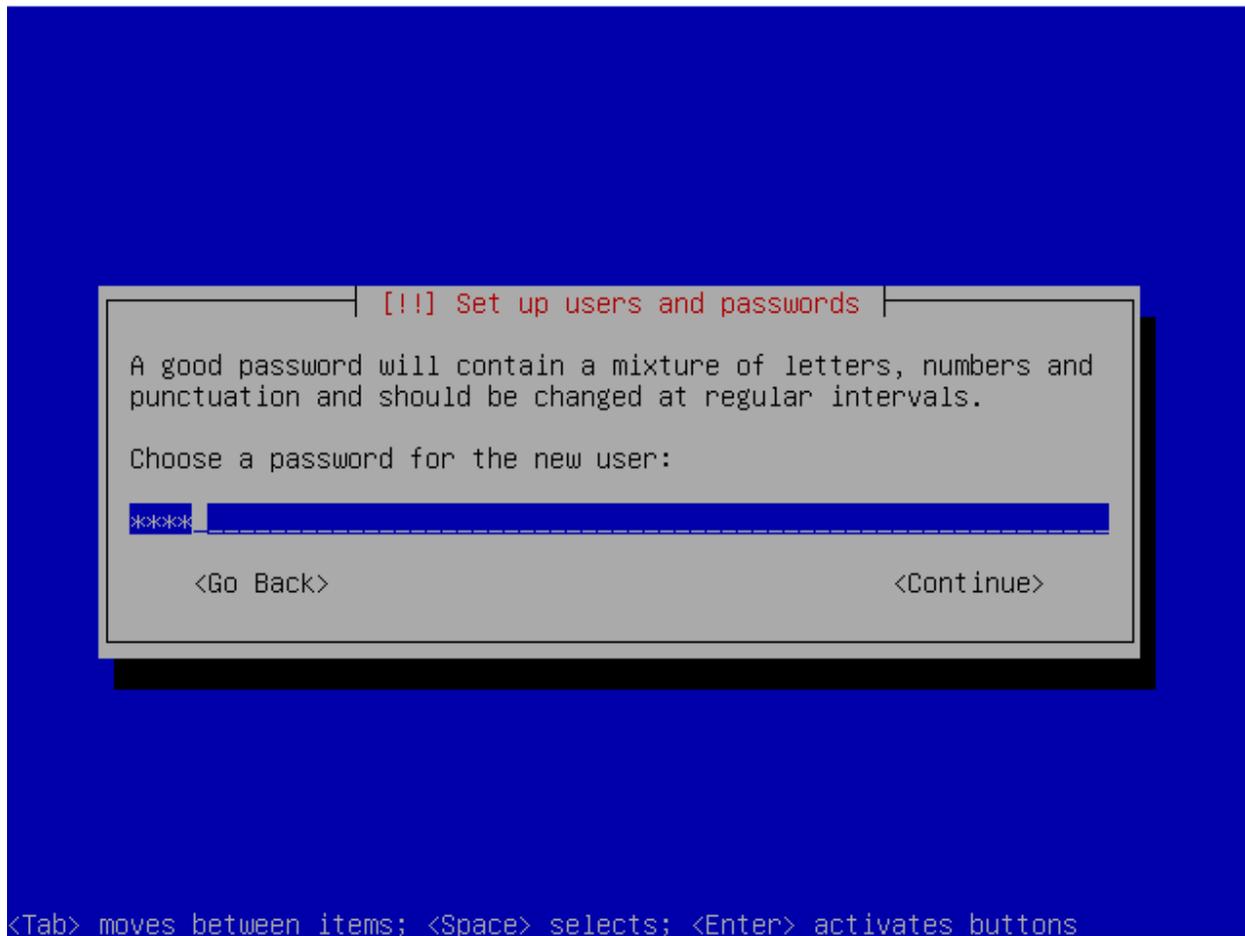
You will be asked for the full name of the new user.

Step 12. Adding of a username



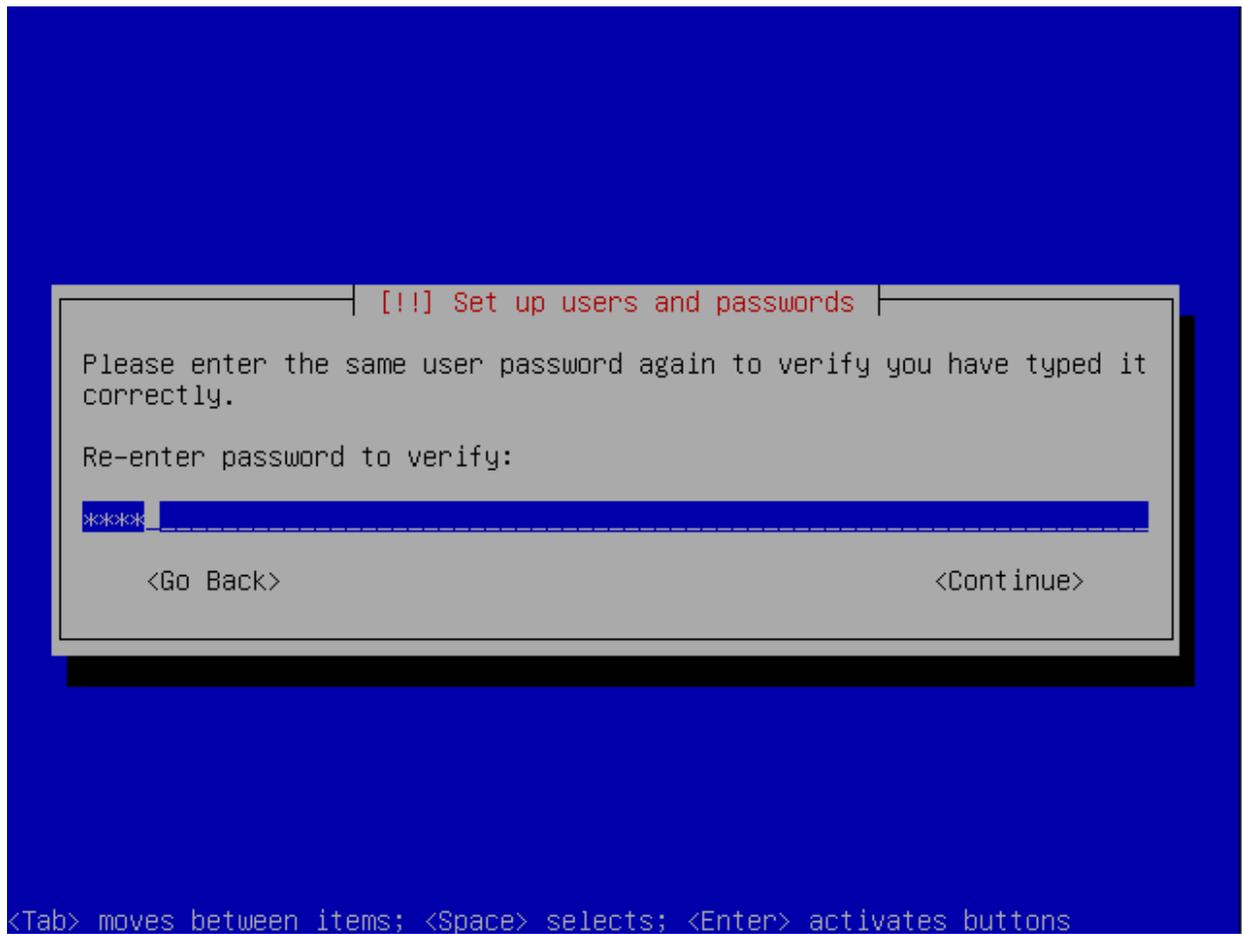
It will prompt you for a username for your account.

Step 13. Setting up a password for your account



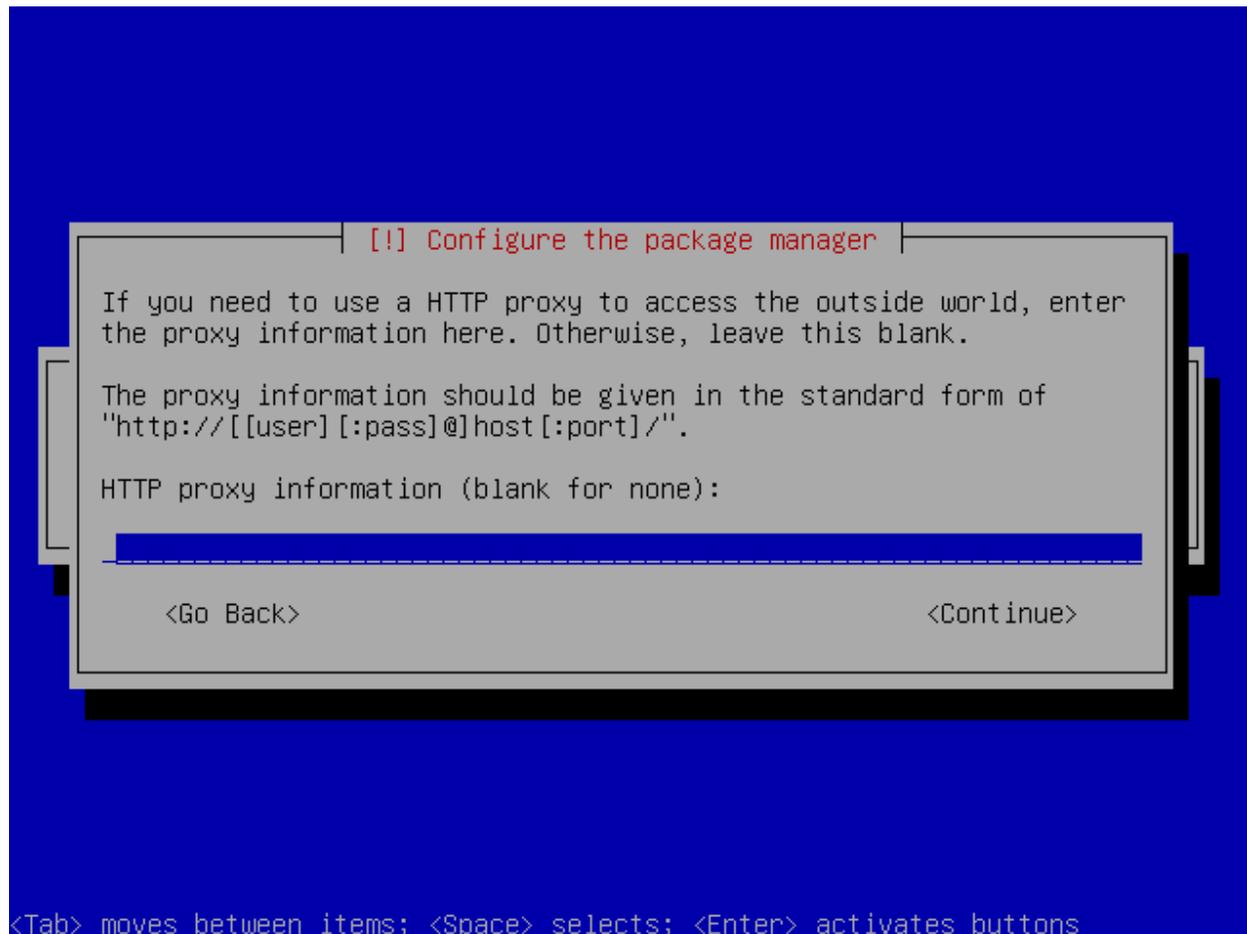
It will prompt you to enter a password for the new user you created.

Step 14. Re-entering your password for confirmation



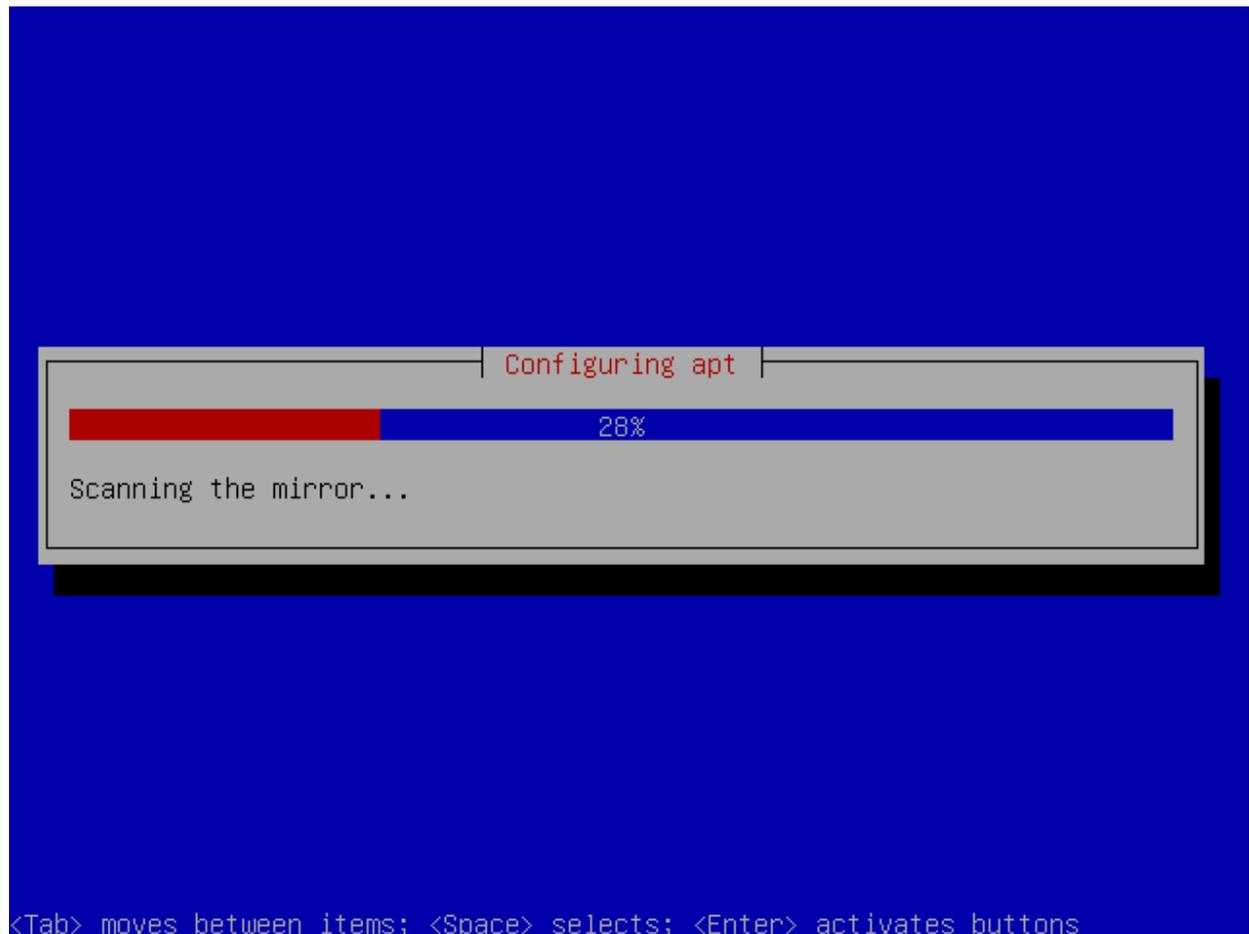
Enter the password you have entered for the user you just created and select continue afterwards.

Step 15. Configuring package manager



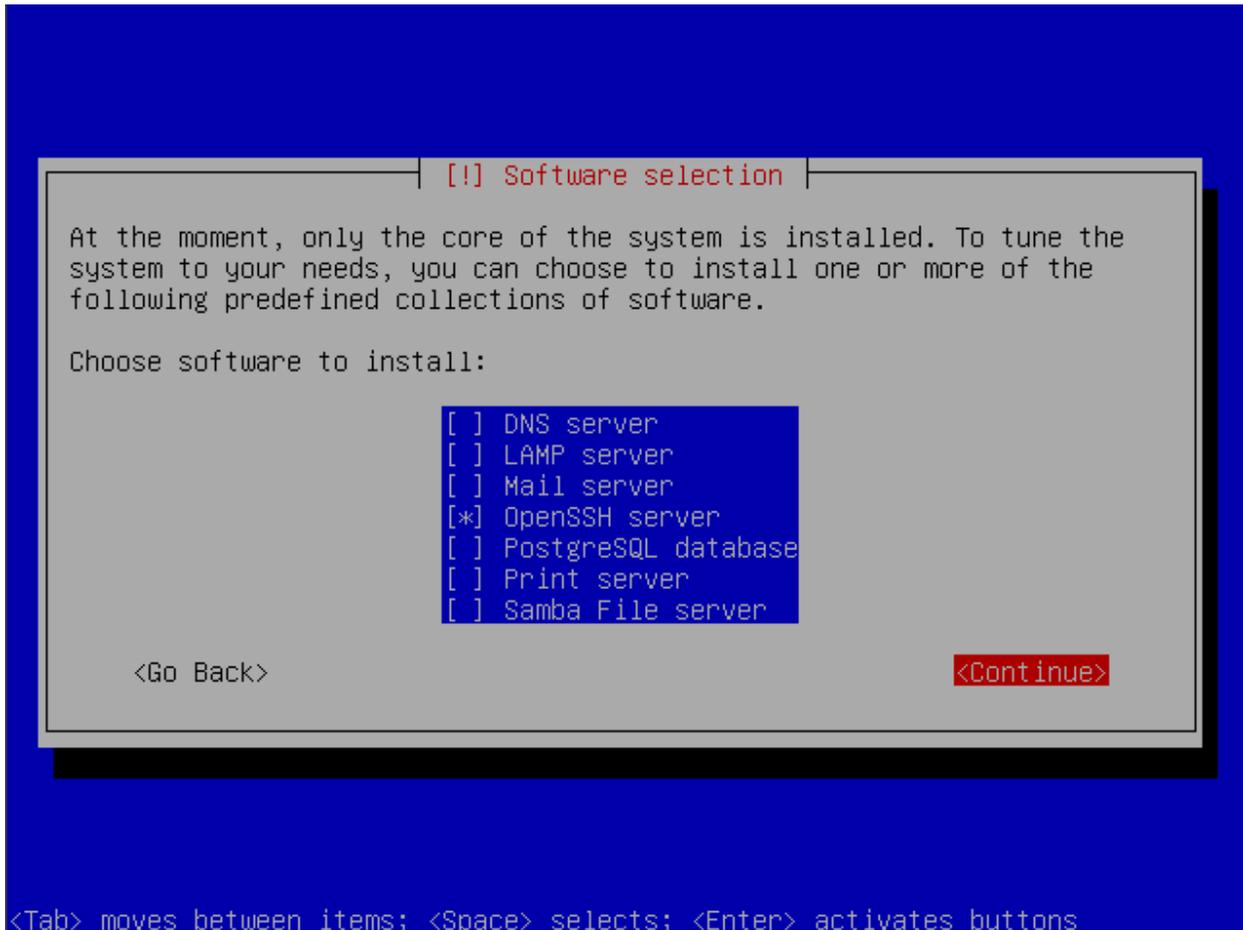
If you are using or behind a proxy server then you should input the information here, if not then leave this blank and proceed to continue.

Step 16. Package manager (APT) is now being configured



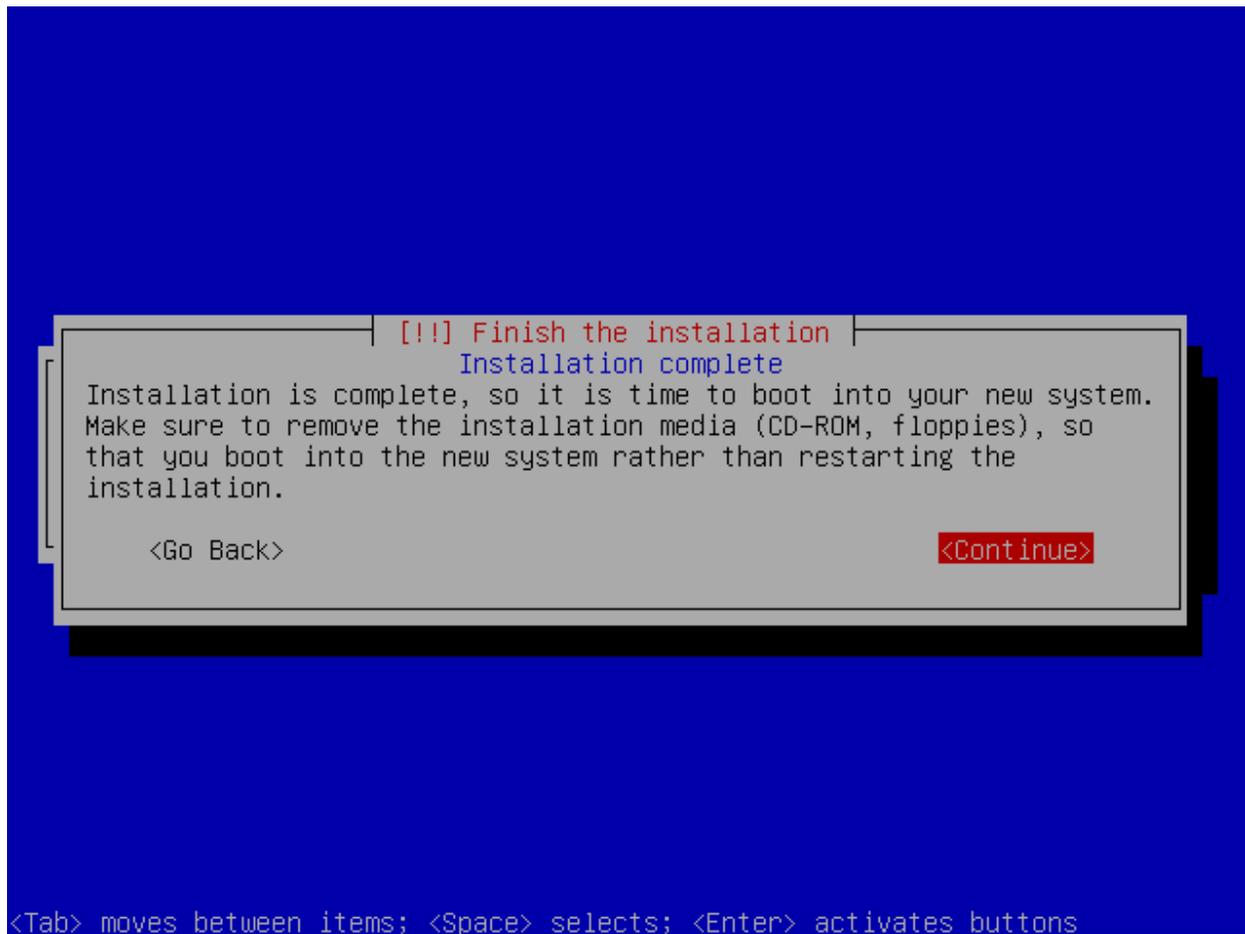
What its doing is that its accessing the nearest package repository and synchronizing it with your newly installed server. This will take a while depending on your internet connection.

Step 17. Software Selection



You will be prompted on what to install on your server, just choose OpenSSH server as you will need it to access your server remotely, we will be installing the others later.

Step 18. Finishing the Installation



Were now on the last part of the installation, were still a long way behind, just select continue and press enter and your computer will reboot.

X. Post installation Steps

Now lets do some post installation steps, first lets make our IP address static. First lets edit /etc/network/interfaces, for personal preferences I use PICO.

```
* Reloading OpenBSD Secure Shell server's configuration sshd [ OK ]
* Starting deferred execution scheduler atd [ OK ]
* Starting periodic command scheduler crond [ OK ]
* Running local boot scripts (/etc/rc.local) [ OK ]

Ubuntu 8.04.4 LTS fate tty1

fate login: dax
Password:
Linux fate 2.6.24-26-server #1 SMP Tue Dec 1 19:19:20 UTC 2009 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/
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

dax@fate:~$ sudo pico /etc/network/interfaces_
```

sudo command gives you super user rights to edit the /etc/network/interfaces using pico.

This is how it will look like if we change it to a static ip address:

```
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto eth0
iface eth0 inet static
    address 192.168.2.69
    netmask 255.255.255.0
    network 192.168.2.0
    broadcast 192.168.2.255
    gateway 192.168.2.1
```

That is the ip address that I used since I'm on a local network. After which do a network restart once you saved your changes in modifying the file.

Basically it will look like this:

```
dax@fate:~$ sudo /etc/init.d/networking restart
* Reconfiguring network interfaces... [ OK ]
dax@fate:~$ _
```

Now edit `/etc/resolv.conf` and set it to a public dns server for better uptime.

It would look like this:

```
GNU nano 2.0.7 File: /etc/resolv.conf Modified
nameserver 4.2.2.2_
```

Now save and you're all set, you can type **dig** on the command line to check if your dns server is working, **4.2.2.2** is a public dns server.

Now let's do an update and prepare our server for the installation of the other components. Let's start with doing an **apt-get update**, an apt-get update command will synchronize your server to the file repository. It will look like this:

```
dax@fate:~$ sudo apt-get update
Hit http://security.ubuntu.com hardy-security Release.gpg
Hit http://ph.archive.ubuntu.com hardy Release.gpg
Ign http://security.ubuntu.com hardy-security/main Translation-en_PH
Ign http://ph.archive.ubuntu.com hardy/main Translation-en_PH
Ign http://security.ubuntu.com hardy-security/restricted Translation-en_PH
Ign http://ph.archive.ubuntu.com hardy/restricted Translation-en_PH
Ign http://security.ubuntu.com hardy-security/universe Translation-en_PH
Ign http://ph.archive.ubuntu.com hardy/universe Translation-en_PH
Ign http://security.ubuntu.com hardy-security/multiverse Translation-en_PH
Hit http://security.ubuntu.com hardy-security Release
Ign http://ph.archive.ubuntu.com hardy/multiverse Translation-en_PH
Hit http://security.ubuntu.com hardy-security/main Packages
46% [Waiting for headers]Quit
dax@fate:~$
```

Next thing for us to do is do an **apt-get upgrade**, this will make the other packages in our system up to date. Here is how it's done:

```
dax@fate:~$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages have been kept back:
  linux-image-server linux-server
The following packages will be upgraded:
  dpkg fuse-utils libfuse2 python2.5 python2.5-minimal sudo tzdata
7 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
Need to get 7380kB of archives.
After this operation, 53.2kB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

Just answer Y and those packages mentioned will be upgraded. Next is we upgrade the kernel image, kernel headers and install the linux source code.

Heres how it's installed:

```
dax@fate:~$ sudo apt-get install linux-image-server linux-headers-server linux-source
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  binutils linux-headers-2.6.24-27 linux-headers-2.6.24-27-server
  linux-image-2.6.24-27-server linux-server linux-source-2.6.24
  linux-ubuntu-modules-2.6.24-27-server
Suggested packages:
  binutils-doc kernel-package libncurses-dev ncurses-dev libqt3-dev
Recommended packages:
  gcc libc-dev make
The following NEW packages will be installed:
  binutils linux-headers-2.6.24-27 linux-headers-2.6.24-27-server
  linux-headers-server linux-image-2.6.24-27-server linux-source
  linux-source-2.6.24 linux-ubuntu-modules-2.6.24-27-server
The following packages will be upgraded:
  linux-image-server linux-server
2 upgraded, 8 newly installed, 0 to remove and 0 not upgraded.
Need to get 81.8MB of archives.
After this operation, 204MB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

Again just answer Y to the prompt and your kernel will be upgraded to the latest version which is 2.6.24-27. Updating your kernel will mean better performance, lesser security issues and more hardware compatibility.

This will go on for a while depending on your internet connection. Next would be to reboot your server:

```
dax@fate:~$ sudo reboot
[sudo] password for dax:

Broadcast message from dax@fate
 (/dev/tty1) at 2:34 ...

The system is going down for reboot NOW!
dax@fate:~$ * Saving the system clock
* Unmounting any overflow tmpfs from /tmp... [ OK ]
* Terminating all remaining processes... [ OK ]
```

Now your server is up to date, next well be installing the rest of the components.

XI. Installing the pre requisites

I know your getting annoyed with always typing sudo before another command so heres a way to get around it:

```
dax@fate:~$ sudo su -l
[sudo] password for dax:
root@fate:~#
```

Now well be doing an **apt-get install** on the following packages just answer Y if you will be prompted:

apache2 (web server)

```
root@fate:~# apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  apache2-mpm-worker apache2-utils apache2.2-common libapr1 libaprutil1
  libpcre3 libpq5
Suggested packages:
  apache2-doc
The following NEW packages will be installed:
  apache2 apache2-mpm-worker apache2-utils apache2.2-common libapr1
  libaprutil1 libpcre3 libpq5
0 upgraded, 8 newly installed, 0 to remove and 0 not upgraded.
Need to get 1874kB of archives.
After this operation, 6214kB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

apache2-mpm-prefork (multi threaded portion to apache2)

```
root@fate:~# apt-get install apache2-mpm-prefork
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be REMOVED:
  apache2-mpm-worker
The following NEW packages will be installed:
  apache2-mpm-prefork
0 upgraded, 1 newly installed, 1 to remove and 0 not upgraded.
Need to get 232kB of archives.
After this operation, 8192B disk space will be freed.
Do you want to continue [Y/n]? _
```

build-essential (this is the build tool chain for gcc)

```
root@fate:~# apt-get install build-essential
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  dpkg-dev g++ g++-4.2 gcc gcc-4.2 libc6-dev libgomp1 libstdc++6-4.2-dev
  libtimedate-perl linux-libc-dev make patch
Suggested packages:
  debian-keyring g++-multilib g++-4.2-multilib gcc-4.2-doc libstdc++6-4.2-dbg
  autoconf automake1.9 bison flex gcc-doc gcc-multilib gdb libtool
  manpages-dev gcc-4.2-locales gcc-4.2-multilib libgcc1-dbg libgomp1-dbg
  libmudflap0-4.2-dev libmudflap0-dbg glibc-doc libstdc++6-4.2-doc make-doc
  diff-doc
The following NEW packages will be installed:
  build-essential dpkg-dev g++ g++-4.2 gcc gcc-4.2 libc6-dev libgomp1
  libstdc++6-4.2-dev libtimedate-perl linux-libc-dev make patch
0 upgraded, 13 newly installed, 0 to remove and 0 not upgraded.
Need to get 9484kB of archives.
After this operation, 37.0MB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

iftop (this is a useful tool for looking at the network interface)

```
root@fate:~# apt-get install iftop
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  iftop
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 31.3kB of archives.
After this operation, 106kB of additional disk space will be used.
WARNING: The following packages cannot be authenticated!
  iftop
Install these packages without verification [y/N]? _
```

lame (this is a mp3 encoding tool)

```
root@fate:~# apt-get install lame
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  lame
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 275kB of archives.
After this operation, 745kB of additional disk space will be used.
WARNING: The following packages cannot be authenticated!
  lame
Install these packages without verification [y/N]? _
```

libmysqlclient15-dev (library that lets programs connect to mysql)

```
root@fate:~# apt-get install libmysqlclient15-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libmysqlclient15off mysql-common zlib1g-dev
Suggested packages:
  mysql-doc-5.0
The following NEW packages will be installed:
  libmysqlclient15-dev libmysqlclient15off mysql-common zlib1g-dev
0 upgraded, 4 newly installed, 0 to remove and 0 not upgraded.
Need to get 9275kB of archives.
After this operation, 25.3MB of additional disk space will be used.
Do you want to continue [Y/n]? y_
```

libncurses5-dev

```
root@fate:~# apt-get install libncurses5-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  libncurses5-dev
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 1483kB of archives.
After this operation, 6480kB of additional disk space will be used.
WARNING: The following packages cannot be authenticated!
  libncurses5-dev
Install these packages without verification [y/N]? y_
```

libploticus0-dev (needed if you will be using ploticus to graph server performance)

```
root@fate:~# apt-get install libploticus0-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libploticus0
The following NEW packages will be installed:
  libploticus0 libploticus0-dev
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 449kB of archives.
After this operation, 1421kB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

libsox-fmt-all (encoding and decoding libraries for sox)

```
root@fate:~# apt-get install libsox-fmt-all
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libao2 libasound2 libavcodec1d libavformat1d libavutil1d libdc1394-13
  libflac8 libgsm1 libltdl3 libmad0 libogg0 libraw1394-8 libsamplerate0
  libsndfile1 libsox-fmt-alsa libsox-fmt-ao libsox-fmt-base libsox-fmt-ffmpeg
  libsox-fmt-flac libsox-fmt-gsm libsox-fmt-mp3 libsox-fmt-ogg libsox-fmt-oss
  libsox-fmt-sndfile libsox0 libtheora0 libvorbis0a libvorbisenc2
  libvorbisfile3
Suggested packages:
  libartsc0 libaudio2 libesd0 libesd-alsa0 libpulse0 libasound2-plugins
  libraw1394-doc
The following NEW packages will be installed:
  libao2 libasound2 libavcodec1d libavformat1d libavutil1d libdc1394-13
  libflac8 libgsm1 libltdl3 libmad0 libogg0 libraw1394-8 libsamplerate0
  libsndfile1 libsox-fmt-all libsox-fmt-alsa libsox-fmt-ao libsox-fmt-base
  libsox-fmt-ffmpeg libsox-fmt-flac libsox-fmt-gsm libsox-fmt-mp3
  libsox-fmt-ogg libsox-fmt-oss libsox-fmt-sndfile libsox0 libtheora0
  libvorbis0a libvorbisenc2 libvorbisfile3
0 upgraded, 30 newly installed, 0 to remove and 0 not upgraded.
Need to get 3731kB of archives.
After this operation, 11.4MB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

mpg123 (mp3 playback utility for the commandline)

```
root@fate:~# apt-get install mpg123
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  oss-compat
The following NEW packages will be installed:
  mpg123 oss-compat
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 402kB of archives.
After this operation, 692kB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

mtop (utility for monitoring mysql)

```
root@fate:~# apt-get install mtop
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libcurses-perl libdbd-mysql-perl libdbi-perl libnet-daemon-perl
  libplrpc-perl mysql-client mysql-client-5.0
Suggested packages:
  dbshell libcompress-zlib-perl mysql-doc-5.0
Recommended packages:
  mysql-server
The following NEW packages will be installed:
  libcurses-perl libdbd-mysql-perl libdbi-perl libnet-daemon-perl
  libplrpc-perl mtop mysql-client mysql-client-5.0
0 upgraded, 8 newly installed, 0 to remove and 0 not upgraded.
Need to get 9034kB of archives.
After this operation, 22.0MB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

Note: You will be encountering an error telling that mtop cannot connect to the mysql server, its because we haven't installed mysql server yet.

mysql-server-5.0 (this will ask for a password you can just press enter a bunch of times)

```
root@fate:~# apt-get install mysql-server-5.0
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  mysql-doc-5.0 tinyca
Recommended packages:
  libhtml-template-perl mailx
The following NEW packages will be installed:
  mysql-server-5.0
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 27.4MB of archives.
After this operation, 86.1MB of additional disk space will be used.
Get:1 http://security.ubuntu.com hardy-security/main mysql-server-5.0 5.0.51a-3u
buntu5.5 [27.4MB]
0% [1 mysql-server-5.0 113567/27.4MB 0%]_
```

Package configuration

Configuring mysql-server-5.0

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

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

New password for the MySQL "root" user:

<Ok>

mytop (utility for monitoring mysql)

```
root@fate:~# apt-get install mytop
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  mytop
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 32.7kB of archives.
After this operation, 152kB of additional disk space will be used.
```

ntp (time synchronization utility)

```
root@fate:~# apt-get install ntp
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  ntp-doc
The following NEW packages will be installed:
  ntp
```

php5 (base php files)

```
root@fate:~# apt-get install php5
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libapache2-mod-php5 libxml2 php5-common
Suggested packages:
  php-pear
Recommended packages:
  xml-core
The following NEW packages will be installed:
  libapache2-mod-php5 libxml2 php5 php5-common
0 upgraded, 4 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 3576kB of archives.
After this operation, 7770kB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

php5-cli (php command line interface (allows us to run php -v for eaccelerator))

```
root@fate:~# apt-get install php5-cli
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  php-pear
The following NEW packages will be installed:
  php5-cli
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 2478kB of archives.
After this operation, 5399kB of additional disk space will be used.
```

php5-dev (development tools for php5 allows us to compile eaccelerator)

```
root@fate:~# apt-get install php5-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  autoconf automake1.4 autotools-dev libssl-dev libtool m4 shtool
Suggested packages:
  autoconf2.13 autobook autoconf-archive gnu-standards autoconf-doc gcj
  gfortran fortran95-compiler libtool-doc
Recommended packages:
  automaken libltdl3-dev
The following NEW packages will be installed:
  autoconf automake1.4 autotools-dev libssl-dev libtool m4 php5-dev shtool
0 upgraded, 8 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 3794kB of archives.
After this operation, 13.5MB of additional disk space will be used.
Do you want to continue [Y/n]? y
```

php5-mysql (allows php5 to connect to a mysql server)

```
root@fate:~# apt-get install php5-mysql
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  php5-mysql
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 65.2kB of archives.
After this operation, 242kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com hardy-updates/main php5-mysql 5.2.4-2ubuntu5.
10 [65.2kB]
30% [1 php5-mysql 20133/65.2kB 30%]_
```

phpmyadmin (vicial uses apache2 as its webserver please select this)

```
root@fate:~# apt-get install phpmyadmin
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libmcrypt4 php5-mcrypt
Suggested packages:
  libmcrypt-dev mcrypt
Recommended packages:
  php5-gd php4-gd
The following NEW packages will be installed:
  libmcrypt4 php5-mcrypt phpmyadmin
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 2960kB of archives.
After this operation, 10.7MB of additional disk space will be used.
Do you want to continue [Y/n]? y_
```

Package configuration

```

|-----| Configuring phpmyadmin |-----|
phpMyAdmin supports any web server that PHP does, but this automatic
configuration process only supports Apache.

Web server to reconfigure automatically:

[ * ] apache2
[   ] apache
[   ] apache-ssl
[   ] apache-perl
[   ] lighttpd

<Ok>
```

ploticus (this is what creates the graphs for the server performance screen)

```
root@fate:~# apt-get install ploticus
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libfreetype6 libgd2-noxpm libjpeg62 libpng12-0 libx11-6 libx11-data libxau6
  libxcb-xlib0 libxcb1 libxdmcp6 x11-common
Suggested packages:
  libfreetype6-dev libgd-tools
Recommended packages:
  ploticus-doc
The following NEW packages will be installed:
  libfreetype6 libgd2-noxpm libjpeg62 libpng12-0 libx11-6 libx11-data libxau6
  libxcb-xlib0 libxcb1 libxdmcp6 ploticus x11-common
0 upgraded, 12 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 2445kB of archives.
After this operation, 7533kB of additional disk space will be used.
Do you want to continue [Y/n]? y_
```

screen (vicial runs its core scripts in screen so this is REQUIRED)

```
root@fate:~# apt-get install screen
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  screen
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 591kB of archives.
After this operation, 1004kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com hardy/main screen 4.0.3-7ubuntu1 [591kB]
3% [1 screen 20131/591kB 3%]_
```

sipsak (tool for sending various information to sip phones)

```
root@fate:~# apt-get install sipsak
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  liboop4 libruli4
The following NEW packages will be installed:
  liboop4 libruli4 sipsak
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 99.3kB of archives.
After this operation, 393kB of additional disk space will be used.
Do you want to continue [Y/n]? y_
```

sox (command line encoding and decoding tool)

```
root@fate:~# apt-get install sox
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  sox
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 60.6kB of archives.
After this operation, 180kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com hardy/universe sox 14.0.0-5 [60.6kB]
13% [1 sox 8453/60.6kB 13%]_
```

subversion (code versioning tool)

```
root@fate:~# apt-get install subversion
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libneon27 libsvn1
Suggested packages:
  db4.6-util subversion-tools
The following NEW packages will be installed:
  libneon27 libsvn1 subversion
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 966kB of archives.
After this operation, 5136kB of additional disk space will be used.
Do you want to continue [Y/n]? y_
```

subversion-tools

```
root@fate:~# apt-get install subversion-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

Unzip

```
root@fate:~# apt-get install unzip
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  zip
The following NEW packages will be installed:
  unzip
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 154kB of archives.
After this operation, 348kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com hardy/main unzip 5.52-10ubuntu2 [154kB]
5% [1 unzip 8451/154kB 5%]_
```

libcurl3

```
root@fate:~# apt-get install libcurl3
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  libcurl3
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 206kB of archives.
After this operation, 418kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com hardy-updates/main libcurl3 7.18.0-1ubuntu2.2
 [206kB]
31% [1 libcurl3 65391/206kB 31%]_
```

Curl

```
root@fate:~# apt-get install curl
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 197kB of archives.
After this operation, 311kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com hardy-updates/main curl 7.18.0-1ubuntu2.2 [197kB]
4% [1 curl 8451/197kB 4%]_
```

htop (a better looking console graph to monitor cpu usage)

```
root@fate:~# apt-get install htop
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  htop
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 46.7kB of archives.
After this operation, 180kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com hardy-updates/universe htop 0.6.6+svn20070915
-1ubuntu0.2 [46.7kB]
0% [1 htop 0/46.7kB 0%]_
```

Vim (if you don't prefer using pico)

```
root@fate:~# apt-get install vim
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  vim-runtime
Suggested packages:
  ctags vim-doc vim-scripts
The following NEW packages will be installed:
  vim vim-runtime
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
1 not fully installed or removed.
Need to get 6229kB of archives.
After this operation, 24.8MB of additional disk space will be used.
Do you want to continue [Y/n]? _
```

Now lets install the Perl Modules (at the root console # you type **cpan**). But what, **what is CPAN?**

As taken from Wikipedia: **CPAN**, the **Comprehensive Perl Archive Network**, is an archive of over 18,000 modules of software written in [Perl](#), as well as documentation for it. It has a presence on the World Wide Web at www.cpan.org and is mirrored worldwide on more than 200 locations. *CPAN* can denote either the archive network itself, or the Perl program that acts as an interface to the network and as an automated software installer (somewhat like a package manager). Most software on CPAN is free and open source software.

This set of modules are necessary to process the perl scripts that VICIdial has.

```
root@fate:~# cpan
We have to reconfigure CPAN.pm due to following uninitialized parameters:

cpan_home, keep_source_where, build_dir, build_cache, scan_cache, index_expire,
gzip, tar, unzip, make, pager, makepl_arg, make_arg, make_install_arg, urllist,
inhibit_startup_message, ftp_proxy, http_proxy, no_proxy, prerequisites_policy,
cache_metadata

/etc/perl/CPAN/Config.pm initialized.

CPAN is the world-wide archive of perl resources. It consists of about
100 sites that all replicate the same contents all around the globe.
Many countries have at least one CPAN site already. The resources
found on CPAN are easily accessible with the CPAN.pm module. If you
want to use CPAN.pm, you have to configure it properly.

If you do not want to enter a dialog now, you can answer 'no' to this
question and I'll try to autoconfigure. (Note: you can revisit this
dialog anytime later by typing 'o conf init' at the cpan prompt.)

Are you ready for manual configuration? [yes] _
```

*Note: Press enter to go through the prompts. If you have a multi cored system you should enter the **-j** option when specified with **n+1** as the value, where **n** is the number of CPUs you have in your system. Also enter **UNINST=1** when asked until you get to the mirror selection portion. Then select 3 mirror sites in your area.*

> install MD5

```
cpan> install MD5
CPAN: Storable loaded ok
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/01mailrc.txt.gz
```

> install Digest::SHA1

```
cpan> install Digest::SHA1
Running install for module Digest::SHA1
Running make for G/GA/GAAS/Digest-SHA1-2.12.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/G/GA/GAAS/Digest-SHA1-2.12.tar.gz
```

> install readline (just press ENTER)

```
cpan> install readline
Running install for module readline
Running make for I/IL/ILYAZ/modules/Term-ReadLine-Perl-1.0303.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/I/IL/ILYAZ/modules/Term-ReadLine-Perl-1.0303.tar.gz
```

> install Bundle::CPAN (do not change settings, and answer Y if it asks you to install pre requisite and additional packages, this will take a while depending upon your internet connection and your servers processing power to compile the cpan modules)

```
cpan> install Bundle::CPAN
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/A/AN/ANDK/Bundle-CPAN-1.858.tar.gz
```

> quit

```
cpan> quit
Lockfile removed.
root@fate:~# _
```

Then type **cpan** again (enter through questions until you get to the cpan prompt)

```
root@fate:~# cpan
Sorry, we have to rerun the configuration dialog for CPAN.pm due to
some missing parameters...

Normally CPAN.pm keeps config variables in memory and changes need to
be saved in a separate 'o conf commit' command to make them permanent
between sessions. If you set the 'auto_commit' option to true, changes
to a config variable are always automatically committed to disk.

<auto_commit>
Always commit changes to config variables to disk? [no] _
```

> o conf commit (saves the config changes)

```
cpan[11]> o conf commit
Unknown config variable 'cpan_version_check'
commit: wrote '/etc/perl/CPAN/Config.pm'
```

> force install Scalar::Util

```
cpan[41]> force install Scalar::Util
Running install for module 'Scalar::Util'
Running make for G/GB/GBARR/Scalar-List-Utils-1.23.tar.gz
  Has already been unwrapped into directory /root/.cpan/build/Scalar-List-Utils-1.23-YdCBdC
```

> install DBI

```
cpan[51]> install DBI
Running install for module 'DBI'
Running make for T/TI/TIMB/DBI-1.609.tar.gz
CPAN: LWP::UserAgent loaded ok (v2.036)
CPAN: Time::HiRes loaded ok (v1.86)
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/T/TI/TIMB/DBI-1.609.tar.gz
```

> force install DBD::mysql

```
cpan[61]> force install DBD::mysql
Running install for module 'DBD::mysql'
Running make for C/CA/CAPTTOFU/DBD-mysql-4.013.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/C/CA/CAPTTOFU/DBD-mysql-4.013.tar.gz
```

> install Net::Server

```
cpan[71]> install Net::Server
Running install for module 'Net::Server'
Running make for R/RH/RHANDOM/Net-Server-0.97.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/R/RH/RHANDOM/Net-Server-0.97.tar.gz
```

> install Time::HiRes

```
cpan[8]> install Time::HiRes
Running install for module 'Time::HiRes'
Running make for J/JH/JHI/Time-HiRes-1.9721.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/J/JH/JHI/Time-HiRes-1.9721.tar.gz
```

> install Net::Telnet

```
cpan[9]> install Net::Telnet
Running install for module 'Net::Telnet'
Running make for J/JR/JROGERS/Net-Telnet-3.03.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/J/JR/JROGERS/Net-Telnet-3.03.tar.gz
```

> install Unicode::Map

```
cpan[10]> install Unicode::Map
Running install for module 'Unicode::Map'
Running make for M/MS/MSCHWARTZ/Unicode-Map-0.112.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/M/MS/MSCHWARTZ/Unicode-Map-0.112.tar.gz
```

> install Jcode

```
cpan[11]> install Jcode
Running install for module 'Jcode'
Running make for D/DA/DANKOGAI/Jcode-2.07.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/D/DA/DANKOGAI/Jcode-2.07.tar.gz
```

> install OLE::Storage_Lite

```
cpan[12]> install OLE::Storage_Lite
Running install for module 'OLE::Storage_Lite'
Running make for J/JM/JMCNAMARA/OLE-Storage_Lite-0.19.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/J/JM/JMCNAMARA/OLE-Storage_Lite-0.19.tar.gz
```

> install Spreadsheet::WriteExcel (Just press enter or yes to install the other pre requisite packages that come with this module)

```
cpan[13]> install Spreadsheet::WriteExcel
Running install for module 'Spreadsheet::WriteExcel'
Running make for J/JM/JMCNAMARA/Spreadsheet-WriteExcel-2.37.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/J/JM/JMCNAMARA/Spreadsheet-WriteExcel-2.37.tar.gz
```

> install Proc::ProcessTable

```
cpan[14]> install Proc::ProcessTable
Running install for module 'Proc::ProcessTable'
Running make for D/DU/DURIST/Proc-ProcessTable-0.45.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/D/DU/DURIST/Proc-ProcessTable-0.45.tar.gz
```

> install Spreadsheet::ParseExcel (Just press ENTER or yes if your prompted to install the pre requisite packages that come with this module)

```
cpan[15]> install Spreadsheet::ParseExcel
Running install for module 'Spreadsheet::ParseExcel'
Running make for J/JM/JMCNAMARA/Spreadsheet-ParseExcel-0.57.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/J/JM/JMCNAMARA/Spreadsheet-ParseExcel-0.57.tar.gz
```

> install Mail::Sendmail

```
cpan[16]> install Mail::Sendmail
Running install for module 'Mail::Sendmail'
Running make for M/MI/MIUKOVIC/Mail-Sendmail-0.79.tar.gz
Fetching with LWP:
  ftp://cpan-du.viaverio.com/pub/CPAN/authors/id/M/MI/MIUKOVIC/Mail-Sendmail-0.79.tar.gz
```

> quit

```
cpan[17]> quit
Lockfile removed.
root@fate:~#
```

Now we have all the required perl modules from CPAN installed to our server, time to move on to the next step.

Installing asterisk-perl module:

```
root@fate:~# cd /usr/src
root@fate:/usr/src# wget http://asterisk.gnuinter.net/files/asterisk-perl-0.08.tar.gz
--00:48:20-- http://asterisk.gnuinter.net/files/asterisk-perl-0.08.tar.gz
=> `asterisk-perl-0.08.tar.gz'
Resolving asterisk.gnuinter.net... 69.54.200.117
Connecting to asterisk.gnuinter.net|69.54.200.117|:80... connected.
HTTP request sent, awaiting response...
```

```
root@fate:/usr/src# tar xzf asterisk-perl-0.08.tar.gz
root@fate:/usr/src# cd asterisk-perl-0.08
root@fate:/usr/src/asterisk-perl-0.08# perl Makefile.PL
Writing Makefile for asterisk-perl
root@fate:/usr/src/asterisk-perl-0.08# make all
cp lib/Asterisk/Manager.pm blib/lib/Asterisk/Manager.pm
cp lib/Asterisk/Voicemail.pm blib/lib/Asterisk/Voicemail.pm
cp lib/Asterisk/QCall.pm blib/lib/Asterisk/QCall.pm
cp lib/Asterisk/Outgoing.pm blib/lib/Asterisk/Outgoing.pm
cp lib/Asterisk.pm blib/lib/Asterisk.pm
cp lib/Asterisk/AGI.pm blib/lib/Asterisk/AGI.pm
Manifying blib/man3/Asterisk::Voicemail.3pm
Manifying blib/man3/Asterisk::Manager.3pm
Manifying blib/man3/Asterisk::Outgoing.3pm
Manifying blib/man3/Asterisk::AGI.3pm
root@fate:/usr/src/asterisk-perl-0.08# make install
Installing /usr/local/share/perl/5.8.8/Asterisk.pm
Installing /usr/local/share/perl/5.8.8/Asterisk/QCall.pm
Installing /usr/local/share/perl/5.8.8/Asterisk/Manager.pm
Installing /usr/local/share/perl/5.8.8/Asterisk/Outgoing.pm
Installing /usr/local/share/perl/5.8.8/Asterisk/Voicemail.pm
Installing /usr/local/share/perl/5.8.8/Asterisk/AGI.pm
Installing /usr/local/man/man3/Asterisk::AGI.3pm
Installing /usr/local/man/man3/Asterisk::Voicemail.3pm
Installing /usr/local/man/man3/Asterisk::Manager.3pm
Installing /usr/local/man/man3/Asterisk::Outgoing.3pm
Appending installation info to /usr/lib/perl/5.8/perllocal.pod
root@fate:/usr/src/asterisk-perl-0.08#
```

Installing ttyload

```
root@fate:/usr/src/asterisk-perl-0.08# cd /usr/src
root@fate:/usr/src# wget http://www.davehld.com/src/util/ttyload/ttyload-0.5.tar
.gz
--00:52:00--  http://www.davehld.com/src/util/ttyload/ttyload-0.5.tar.gz
=> `ttyload-0.5.tar.gz'
Resolving www.davehld.com... 216.218.218.46
Connecting to www.davehld.com[216.218.218.46]:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 14,681 (14K) [application/x-gzip]

100%[=====>] 14,681          29.20K/s

00:52:02 (29.15 KB/s) - `ttyload-0.5.tar.gz' saved [14681/14681]

root@fate:/usr/src# tar xzf ttyload-0.5.tar.gz
root@fate:/usr/src# cd ttyload-0.5
```

```
root@fate:/usr/src/ttyload-0.5# make; make install
ln -s FreeBSD arch/Darwin
ln -s FreeBSD arch/Isilon-OneFS
ln -s `uname -s | sed -e 's/ /-/g'` arch/thisarch
make archtest ttyload ARCH=`uname -s | sed -e 's/ /-/g'`
make[1]: Entering directory `/usr/src/ttyload-0.5'
gcc -pedantic -Wall -I$(PWD:-.) -I$(PWD:-.)/arch/Linux -I$(PWD:-.)/arch/default
-g -DVERSION=""`cat Version``" -o arch/Linux/getload.o -c arch/Linux/getload.
c
gcc -pedantic -Wall -I$(PWD:-.) -I$(PWD:-.)/arch/Linux -I$(PWD:-.)/arch/default
-g -DVERSION=""`cat Version``" -o arch/Linux/terminfo.o -c arch/Linux/terminf
o.c
gcc -pedantic -Wall -I$(PWD:-.) -I$(PWD:-.)/arch/Linux -I$(PWD:-.)/arch/default
-g -DVERSION=""`cat Version``" -o archtest.o -c archtest.c
gcc -pedantic -Wall `./ldflags` -o archtest arch/Linux/getload.o arch/Linux/termi
info.o archtest.o
gcc -pedantic -Wall -I$(PWD:-.) -I$(PWD:-.)/arch/Linux -I$(PWD:-.)/arch/default
-g -DVERSION=""`cat Version``" -o ttyload.o -c ttyload.c
ttyload.c:60: warning: string length 623 is greater than the length 509 ISO
C90 compilers are required to support
gcc -pedantic -Wall `./ldflags` -o ttyload arch/Linux/getload.o arch/Linux/termi
nfo.o ttyload.o
make[1]: Leaving directory `/usr/src/ttyload-0.5'
make archtest ttyload ARCH=`uname -s | sed -e 's/ /-/g'`
make[1]: Entering directory `/usr/src/ttyload-0.5'
make[1]: `archtest' is up to date.
make[1]: `ttyload' is up to date.
make[1]: Leaving directory `/usr/src/ttyload-0.5'
/bin/cp ttyload /usr/local/bin/ttyload
root@fate:/usr/src/ttyload-0.5#
```

Installing E-Accelerator (A must if you are running on a single server setup)

```
root@fate:/usr/src/ttyload-0.5# cd /usr/src
root@fate:/usr/src# wget http://bart.eaccelerator.net/source/0.9.5.3/eaccelerator-0.9.5.3.zip
--00:56:55-- http://bart.eaccelerator.net/source/0.9.5.3/eaccelerator-0.9.5.3.zip
           => `eaccelerator-0.9.5.3.zip'
Resolving bart.eaccelerator.net... 193.190.253.234
Connecting to bart.eaccelerator.net|193.190.253.234|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 809,380 (790K) [application/zip]

100%[=====] 809,380      52.11K/s   ETA 00:00
00:57:13 (47.72 KB/s) - `eaccelerator-0.9.5.3.zip' saved [809380/809380]
```

```
root@fate:/usr/src# unzip eaccelerator-0.9.5.3.zip
Archive:  eaccelerator-0.9.5.3.zip
  creating: eaccelerator-0.9.5.3/
  inflating: eaccelerator-0.9.5.3/run-tests.php
  inflating: eaccelerator-0.9.5.3/shm.c
  creating: eaccelerator-0.9.5.3/modules/
```

```
root@fate:/usr/src# cd eaccelerator-0.9.5.3
root@fate:/usr/src/eaccelerator-0.9.5.3# phpize
Configuring for:
PHP Api Version:      20041225
Zend Module Api No:  20060613
Zend Extension Api No: 220060519
root@fate:/usr/src/eaccelerator-0.9.5.3#
```

```
root@fate:/usr/src/eaccelerator-0.9.5.3# ./configure
checking for grep that handles long lines and -e... /bin/grep
checking for egrep... /bin/grep -E
checking for a sed that does not truncate output... /bin/sed
checking for gcc... gcc
checking for C compiler default output file name... a.out
checking whether the C compiler works... yes
checking whether we are cross compiling... no
checking for suffix of executables...
```

```
root@fate:/usr/src/eaccelerator-0.9.5.3# make
/bin/bash /usr/src/eaccelerator-0.9.5.3/libtool --mode=compile gcc -I. -I/usr/src/eaccelerator-0.9.5.3 -DPHP_ATOM_INC -I/usr/src/eaccelerator-0.9.5.3/include -I/usr/src/eaccelerator-0.9.5.3/main -I/usr/src/eaccelerator-0.9.5.3 -I/usr/include/php5 -I/usr/include/php5/main -I/usr/include/php5/TSRM -I/usr/include/php5/Zend -I/usr/include/php5/ext -I/usr/include/php5/ext/date/lib -D_LARGEFILE_SOURCE -D_FILE_OFFSET_BITS=64 -DHAVE_CONFIG_H -g -O2 -c /usr/src/eaccelerator-0.9.5.3/eaccelerator.c -o eaccelerator.lo
mkdir .libs
```

```
root@fate:/usr/src/eaccelerator-0.9.5.3# make install
Installing shared extensions:      /usr/lib/php5/20060613+libs/
root@fate:/usr/src/eaccelerator-0.9.5.3#
```

```
root@fate:/usr/src/eaccelerator-0.9.5.3# cd /etc/php5/conf.d/
root@fate:/etc/php5/conf.d# pico eaccelerator.ini
```

Add the following lines as it appears on this screenshot:

```
GNU nano 2.0.7          File: eaccelerator.ini          Modified

extension="eaccelerator.so"
eaccelerator.shm_size="48"
eaccelerator.cache_dir="/var/lib/eaccelerator"
eaccelerator.enable="1"
eaccelerator.optimizer="1"
eaccelerator.check_mtime="1"
eaccelerator.debug="0"
eaccelerator.filter=""
eaccelerator.shm_max="0"
eaccelerator.shm_ttl="0"
eaccelerator.shm_prune_period="0"
eaccelerator.shm_only="0"
eaccelerator.compress="1"
eaccelerator.compress_level="9"
```

Create the eaccelerator required directories

```
root@fate:/etc/php5/conf.d# mkdir /var/lib/eaccelerator
root@fate:/etc/php5/conf.d# chmod 0777 /var/lib/eaccelerator
```

Verify your installation, it should look like this:

```
root@fate:/etc/php5/conf.d# php -v
PHP 5.2.4-2ubuntu5.10 with Suhosin-Patch 0.9.6.2 (cli) (built: Jan  6 2010 22:01:14)
Copyright (c) 1997-2007 The PHP Group
Zend Engine v2.2.0, Copyright (c) 1998-2007 Zend Technologies
    with eAccelerator v0.9.5.3, Copyright (c) 2004-2006 eAccelerator, by eAccelerator
root@fate:/etc/php5/conf.d#
```

CONGRATULATIONS, you have now installed all the pre requisites to your server time to move on to the next step which is installing asterisk.

XII. Installing Asterisk

Relax guys were almost there, were down to the last few parts of this document, in installing asterisk you actually have 2 options, either go the asterisk 1.4.21.2 route or the asterisk 1.2.30.4 route, both of them are so far are showing good stability and it is what the VICIdial group recommends. You would have to chose between the two, for me most of my deployments are using 1.4.21.2, only a few of it uses 1.2.30.4, the reason why I like 1.4 is they are good in handling carriers that have complicated SIP packets, plus 1.421.2 is a newer version but that's just me.

Let's start with going to the asterisk 1.4.21.2 route, remember, you will only have to choose between the two and you can't install them together in one server. First we get the required packages.

```
root@fate:/etc/php5/conf.d# mkdir /usr/src/asterisk
root@fate:/etc/php5/conf.d# cd /usr/src/asterisk
root@fate:/usr/src/asterisk# wget http://downloads.vicidial.com/required-apps/asterisk-1.4.21.2-vici.tar.gz
--01:21:05-- http://downloads.vicidial.com/required-apps/asterisk-1.4.21.2-vici.tar.gz
=> `asterisk-1.4.21.2-vici.tar.gz'
Resolving downloads.vicidial.com... 208.38.149.188
Connecting to downloads.vicidial.com|208.38.149.188|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 11,517,008 (11M) [application/x-gzip]
1% [ ] 141,308 44.23K/s ETA 04:11
```

Download zaptel (this is really needed since this will be used for meetme module which is required by vicidial)

```
root@fate:/usr/src/asterisk# wget http://downloads.digium.com/pub/zaptel/zaptel-1.4.12.1.tar.gz
--01:24:03-- http://downloads.digium.com/pub/zaptel/zaptel-1.4.12.1.tar.gz
      => `zaptel-1.4.12.1.tar.gz'
Resolving downloads.digium.com... 76.164.171.232
Connecting to downloads.digium.com|76.164.171.232|:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: http://downloads.asterisk.org/pub/telephony/zaptel/zaptel-1.4.12.1.tar.gz [following]
--01:24:04-- http://downloads.asterisk.org/pub/telephony/zaptel/zaptel-1.4.12.1.tar.gz
      => `zaptel-1.4.12.1.tar.gz'
Resolving downloads.asterisk.org... 76.164.171.233
Connecting to downloads.asterisk.org|76.164.171.233|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1,706,625 (1.6M) [application/x-gzip]
0% [          ] 0      --.--K/s
```

Download libpri

```
root@fate:/usr/src/asterisk# wget http://downloads.asterisk.org/pub/telephony/libpri/old/libpri-1.4.10.1.tar.gz
--01:25:44-- http://downloads.asterisk.org/pub/telephony/libpri/old/libpri-1.4.10.1.tar.gz
      => `libpri-1.4.10.1.tar.gz'
Resolving downloads.asterisk.org... 76.164.171.233
Connecting to downloads.asterisk.org|76.164.171.233|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 97,607 (95K) [application/x-gzip]
10% [==>          ] 9,915      17.17K/s
```

Extract the files

```
root@fate:/usr/src/asterisk# tar xzf asterisk-1.4.21.2-vici.tar.gz
root@fate:/usr/src/asterisk# tar xzf zaptel-1.4.12.1.tar.gz
root@fate:/usr/src/asterisk# tar xzf libpri-1.4.10.1.tar.gz
root@fate:/usr/src/asterisk#
```

Compile and install Libpri first

```
root@fate:/usr/src/asterisk# cd libpri-1.4.10.1
root@fate:/usr/src/asterisk/libpri-1.4.10.1# make clean; make; make install
rm -f *.o *.so *.lo *.so.1.4
rm -f testprilib libpri.a libpri.so.1.4
rm -f pritest pridump
rm -f *.d
gcc -Wall -Werror -Wstrict-prototypes -Wmissing-prototypes -g -fPIC -MD -MT copy_string.o -MF .copy_string.o.d -MP -c -o copy_string.o copy_string.c
```

Compile and install Zaptel next

```
root@fate:/usr/src/asterisk/libpri-1.4.10.1# cd ../zaptel-1.4.12.1
root@fate:/usr/src/asterisk/zaptel-1.4.12.1# ./configure; make clean; make; make
install
checking for gcc... gcc
checking for C compiler default output file name... a.out
checking whether the C compiler works... yes
checking whether we are cross compiling... no
checking for suffix of executables...
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... none needed
checking how to run the C preprocessor... gcc -E
checking for a BSD-compatible install... /usr/bin/install -c
checking whether ln -s works... yes
checking for GNU make... make
checking for grep... /bin/grep
checking for sh... /bin/bash
checking for ln... /bin/ln
checking for wget... /usr/bin/wget
checking for grep that handles long lines and -e... (cached) /bin/grep
checking for egrep... /bin/grep -E
checking for ANSI C header files... yes
checking for sys/types.h... yes
checking for sys/stat.h... █
```


Check the version

```
*CLI> show version
Asterisk 1.4.21.2-vici built by root @ fate on a i686 running Linux on 2010-03-31 17:40:16 UTC
The 'show version' command is deprecated and will be removed in a future release. Please use 'core show version' instead.
*CLI>
```

Check zaptel

```
*CLI> zap show status
Description                               Alarms      IRQ          bpviol      CRC4
ZTDUMMY/1 (source: HRtimer) 1            UNCONFIGUR  0           0           0
*CLI>
```

Check if the meetme application is installed

```
*CLI> show application meetme

  == Info about application 'MeetMe' ==

[Synopsis]
MeetMe conference bridge

[Description]
  MeetMe([confno][,[options][,pin]]): Enters the user into a specified MeetMe conference. If the conference number is omitted, the user will be prompted to enter one. User can exit the conference by hangup, or if the 'p' option is specified, by pressing '#'.
Please note: The Zaptel kernel modules and at least one hardware driver (or ztdummy)
             must be present for conferencing to operate properly. In addition,
the chan_zap
             channel driver must be loaded for the 'i' and 'r' options to operate at all.
```

Stop the asterisk process since we are just starting it to check if everything we are doing is right.

```
*CLI> stop now
Beginning asterisk shutdown...
Executing last minute cleanups
  == Destroying musiconhold processes
Asterisk cleanly ending (0).
root@fate:/usr/src/asterisk/asterisk-1.4.21.2#
```

Now we go to the asterisk 1.2.30.4 route. Again, you can only install one of them on 1 server. Lets start off with downloading the components, this will be quite a long process since we will be doing some patching to make this asterisk version VICIdial compliant.

Download the asterisk 1.2.30.4 package

```
root@fate:~# mkdir /usr/src/asterisk
root@fate:~# cd /usr/src/asterisk
root@fate:/usr/src/asterisk# wget http://downloads.digium.com/pub/asterisk/releases/asterisk-1.2.30.2.tar.gz
--01:56:31-- http://downloads.digium.com/pub/asterisk/releases/asterisk-1.2.30.2.tar.gz
```

Download zaptel

```
root@fate:/usr/src/asterisk# wget http://downloads.digium.com/pub/zaptel/releases/zaptel-1.2.27.tar.gz
--02:03:20-- http://downloads.digium.com/pub/zaptel/releases/zaptel-1.2.27.tar.gz
```

Download libpri

```
root@fate:/usr/src/asterisk# wget http://downloads.digium.com/pub/libpri/releases/libpri-1.2.8.tar.gz
--02:04:16-- http://downloads.digium.com/pub/libpri/releases/libpri-1.2.8.tar.gz
z
=> `libpri-1.2.8.tar.gz'
Resolving downloads.digium.com... 76.164.171.232
Connecting to downloads.digium.com|76.164.171.232|:80... connected.
HTTP request sent, awaiting response...
```

Extract the packages

```
root@fate:/usr/src/asterisk# tar xzf asterisk-1.2.30.2.tar.gz
root@fate:/usr/src/asterisk# tar xzf zaptel-1.2.27.tar.gz
root@fate:/usr/src/asterisk# tar xzf libpri-1.2.8.tar.gz
root@fate:/usr/src/asterisk#
```

Compile and Install libpri first

```
root@fate:/usr/src/asterisk# cd libpri-1.2.8
root@fate:/usr/src/asterisk/libpri-1.2.8# make clean && make && make install
rm -f *.o *.so *.lo *.so.1 *.so.1.0
rm -f testpri testprilib libpri.a libpri.so.1.0
rm -f pritest pridump
rm -f .depend
CC=gcc ./mkdep -Wall -Werror -Wstrict-prototypes -Wmissing-prototypes -g -fPIC
`ls *.c`
make: *** [.depend] Interrupt
```

Compile and Install Zaptel next

```
root@fate:/usr/src/asterisk/libpri-1.2.8# cd ../zaptel-1.2.27
root@fate:/usr/src/asterisk/zaptel-1.2.27# make clean&& make && make install
rm -f torisatool makefw tor2fw.h radfw.h
rm -f ztcfg torisatool ztmonitor ztspeed zttest fxotune
rm -f patgen pattest patlooptest hdlcstress hdlctest hdlcgen hdlcverify timertes
t
rm -f *.o */*.o ztcfg tzdriver sethdlc sethdlc-new
rm -f zonedata.lo tonezone.lo libtonezone.so *.lo
make -C /lib/modules/2.6.24-27-server/build SUBDIRS=/usr/src/asterisk/zaptel-1.2
.27 clean
make[1]: Entering directory `/usr/src/linux-headers-2.6.24-27-server'
```

Now lets patch asterisk before we compile and install it, start with the amd (answer machine detection) patch

```
root@fate:/usr/src/asterisk/zaptel-1.2.27# cd ../asterisk-1.2.30.2
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# cd apps
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# wget http://www.eflo.net/files/app_amd2.c
```

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# mv app_amd2.c app_amd.c
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# █
```

Edit the Makefile

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# pico Makefile █
```

replace this line(line 32):

```
app_mixmonitor.so app_stack.so
```

with this line:

```
app_mixmonitor.so app_stack.so app_amd.so
```

This is how it will look before:

```
&PPS=app_dial.so app_playback.so app_voicemail.so app_directory.so app_mp3.so\  
  app_system.so app_echo.so app_record.so app_image.so app_url.so app_disa.s$  
  app_adsiprog.so app_getcpeid.so app_milliwatt.so \  
  app_zapateller.so app_setcallerid.so app_festival.so \  
  app_queue.so app_senddtmf.so app_parkandannounce.so \  
  app_setcidname.so app_lookupcidname.so app_macro.so \  
  app_authenticate.so app_softhangup.so app_lookupblacklist.so \  
  app_waitforring.so app_privacy.so app_db.so app_chanisavail.so \  
  app_enumlookup.so app_transfer.so app_setcidnum.so app_cdr.so \  
  app_hasnewvoicemail.so app_sayunixtime.so app_cut.so app_read.so \  
  app_setcdruserfield.so app_random.so app_ices.so app_eval.so \  
  app_nbscat.so app_sendtext.so app_exec.so \  
  app_groupcount.so app_txtcidname.so app_controlplayback.so \  
  app_talkdetect.so app_alarmreceiver.so app_userevent.so app_verbose.so \  
  app_test.so app_forkcdr.so app_math.so app_realtime.so \  
  app_dumpchan.so app_waitforsilence.so app_while.so app_setrdnis.so \  
  app_md5.so app_readfile.so app_chanspy.so app_settransfercapability.so \  
  app_dictate.so app_externalivr.so app_directed_pickup.so \  
  app_mixmonitor.so app_stack.so
```

After you edit it:

```
&PPS=app_dial.so app_playback.so app_voicemail.so app_directory.so app mp3.so\  
  app_system.so app_echo.so app_record.so app_image.so app_url.so app_disa.s$  
  app_adsiprog.so app_getcpeid.so app_milliwatt.so \  
  app_zapateller.so app_setcallerid.so app_festival.so \  
  app_queue.so app_senddtmf.so app_parkandannounce.so \  
  app_setcidname.so app_lookupcidname.so app_macro.so \  
  app_authenticate.so app_softhangup.so app_lookupblacklist.so \  
  app_waitforring.so app_privacy.so app_db.so app_chanisavail.so \  
  app_enumlookup.so app_transfer.so app_setcidnum.so app_cdr.so \  
  app_hasnewvoicemail.so app_sayunixtime.so app_cut.so app_read.so \  
  app_setcdruserfield.so app_random.so app_ices.so app_eval.so \  
  app_nbscat.so app_sendtext.so app_exec.so \  
  app_groupcount.so app_txtcidname.so app_controlplayback.so \  
  app_talkdetect.so app_alarmreceiver.so app_userevent.so app_verbose.so \  
  app_test.so app_forkcdr.so app_math.so app_realtime.so \  
  app_dumpchan.so app_waitforsilence.so app_while.so app_setrdnis.so \  
  app_md5.so app_readfile.so app_chanspy.so app_settransfercapability.so \  
  app_dictate.so app_externalivr.so app_directed_pickup.so \  
  app_mixmonitor.so app_stack.so app_amd.so
```

Now save and exit, now we grad the amd configuration file from the VICIdial website:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# wget http://www.eflo.net/files/amd2.conf
```

Then we'll create the `/etc/asterisk` directory so we could copy the `amd.conf` file to that directory:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# mkdir /etc/asterisk
```

We then move the file `amd2.conf` to the `asterisk` directory:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# mv amd2.conf /etc/asterisk/amd.conf
```

That's it we have installed the `amd` patch, now we move on to installing the `DTMF pass-through` patch:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# mv amd2.conf /etc/asterisk/amd.conf
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# wget http://www.eflo.net/files/meetme_DTMF_passthru-1.2.23.patch
```

We'll execute the patching:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# patch -p1 < ./meetme_DTMF_passthru-1.2.23.patch
missing header for unified diff at line 3 of patch
can't find file to patch at input line 3
Perhaps you used the wrong -p or --strip option?
The text leading up to this was:
-----
|--- app_meetme-orig.c  2007-08-13 12:34:41.000000000 -0400
|+++ app_meetme.c      2007-08-13 13:18:21.000000000 -0400
-----
File to patch: app_meetme.c
patching file app_meetme.c
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps#
```

Now we move on to patching the `meetme volume control` patch:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# wget http://www.eflo.net/files/meetme_volume_control_1.2.16.patch
```

Then we apply the patch we downloaded:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# patch -p1 < ./meetme_volume_
control_1.2.16.patch
missing header for unified diff at line 3 of patch
can't find file to patch at input line 3
Perhaps you used the wrong -p or --strip option?
The text leading up to this was:
-----
|--- app_meetme_orig.c  2007-03-09 16:19:50.000000000 -0500
|+++ app_meetme.c      2007-03-09 16:01:54.000000000 -0500
-----
File to patch: app_meetme.c
patching file app_meetme.c
Hunk #1 succeeded at 123 (offset 1 line).
Hunk #2 succeeded at 2147 (offset 23 lines).
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps#
```

Now we move on to get the next patch which is cli_chan_concise_delimiter.patch:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2/apps# cd ../
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# wget http://www.eflo.net/files/cl
i_chan_concise_delimiter.patch
```

Then we apply the patch:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# patch -p1 < ./cli_chan_concise_de
limiter.patch
missing header for unified diff at line 3 of patch
can't find file to patch at input line 3
Perhaps you used the wrong -p or --strip option?
The text leading up to this was:
-----
|--- cli-orig.c 2005-12-29 13:25:32.000000000 -0500
|+++ cli.c      2005-12-29 13:03:48.000000000 -0500
-----
File to patch: cli.c
patching file cli.c
Hunk #1 succeeded at 420 (offset -8 lines).
```

Getting the waitforsilence application:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# wget http://www.eflo.net/files/ap
p_waitforsilence.c
```

Moving it to the apps directory:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# mv app_waitforsilence.c apps/app_waitforsilence.c
```

Getting the modified enter.h and leave.h files:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# wget http://www.eflo.net/files/enter.h
```

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# wget http://www.eflo.net/files/leave.h
```

Moving them to the apps directory:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# mv -f enter.h apps/enter.h
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# mv -f leave.h apps/leave.h
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# █
```

Modifying the GSM makefile to fix GSM codec audio issues (*add OPTIMIZE=-O2 to the file before the ifneq section, to fix GSM audio problems*). Here is how it looks like

```
GNU nano 2.0.7          File: codecs/gsm/Makefile          Modified

##### Define to enable the GSM library's long-term correlation
##### approximation option---faster, but worse; works for
##### both integer and floating point multiplications.
##### This flag is still in the experimental stage.

WAV49    = -DWAV49
#WAV49   =
##### Define to enable the GSM library's option to pack GSM frames
##### in the style used by the WAV #49 format.  If you want to write
##### a tool that produces .WAV files which contain GSM-encoded data,
##### define this, and read about the GSM_OPT_WAV49 option in the
##### manual page on gsm_option(3).

#K6OPT   = -DK6OPT
#K6OPT   =
##### Define to enable MMXTH optimizations for x86 architecture CPU's
##### which support MMX instructions.  This should be newer pentiums,
##### ppro's, etc, as well as the AMD K6 and K7.  The compile will
##### probably require gcc.

OPTIMIZE=-O2 █
```

Then compile and install it:

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# make clean; make; make install
```

Generate configuration samples for 1.2

```
root@fate:/usr/src/asterisk/asterisk-1.2.30.2# make samples
```

And lastly to verify your installation do the same as what is shown in the 1.4 installation.

Were almost done, were now moving to the next step which is to download and install vicidial 2.2 rc7

XIII. Downloading and Installing the VICIdial scripts

For this document we are going to use the latest version of VICIdial which is 2.2 Release candidate 7. You can check out their sourceforge folder in this url:

<https://sourceforge.net/projects/astguiclient/files/>

Now let's get started, first we need to download the files:

```
root@fate:~# mkdir /usr/src/astguiclient
root@fate:~# cd /usr/src/astguiclient
root@fate:/usr/src/astguiclient# wget http://downloads.sourceforge.net/project/astguiclient/astguiclient_2.2.0rc7.zip?use_mirror=nchc
```

Then we unzip:

```
root@fate:/usr/src/astguiclient# unzip astguiclient_2.2.0rc7.zip
```

Then we run the install.pl script to start the installation:

```
root@fate:/usr/src/astguiclient# perl install.pl
Would you like to use manual configuration and installation(y/n): [y]
```

Press enter until you get to webroot and set that to the following:
`/var/www`

```
server webroot path or press enter for default: [/usr/local/apache2/htdocs] /var/www
```

Press enter through to the Sample configuration files and set that to 'y':

```
Enter asterisk version or press enter for default: [1.4]
Copy sample configuration files to /etc/asterisk/ ? [n] y
```

Take note that if you install asterisk 1.2 you need to set the asterisk version to 1.2

Now we install the conf.gsm sound file:

```
root@fate:/usr/src/astguiclient# cd /var/lib/asterisk/sounds
root@fate:/var/lib/asterisk/sounds# wget http://downloads.vicidial.com/conf/conf
.gsm
```

```
root@fate:/var/lib/asterisk/sounds# cp conf.gsm park.gsm
root@fate:/var/lib/asterisk/sounds#
```

That's about it, now well go to the next phase wherein we will now be installing the asterisk database.

XIV. Creating the asterisk database and loading the first server default settings

Let's start by logging into the mysql console as root:

```
root@fate:/var/lib/asterisk/sounds# mysql -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 71
Server version: 5.0.51a-3ubuntu5.5 (Ubuntu)

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql>
```

Then we create the asterisk database:

```
mysql> CREATE DATABASE `asterisk` DEFAULT CHARACTER SET utf8 COLLATE utf8_unicode_ci;
Query OK, 1 row affected (0.01 sec)

mysql>
```

And then we create the cron user with a password of 1234:

```
mysql> GRANT SELECT,INSERT,UPDATE,DELETE,LOCK TABLES on asterisk.* TO cron@localhost IDENTIFIED BY '1234';
Query OK, 0 rows affected (0.00 sec)
```

We then populate it with the vicidial table structure:

```
mysql> use asterisk;
Database changed
mysql> \. /usr/src/astguiclient/extras/MySQL_AST_CREATE_tables.sql
```

Then we populate it with the first server install default data:

```
mysql> \. /usr/src/astguiclient/extras/first_server_install.sql
```

Then we insert the default phone entries for SIP and IAX2 protocols:

```
mysql> \. /usr/src/astguiclient/extras/sip-iax_phones.sql
```

That's about it, now we exit the mysql console to move on to the other tasks left:

```
mysql> quit  
Bye  
root@fate:/var/lib/asterisk/sounds#
```

Now since those default entries we inserted a while ago points to a default 10.10.10.15 ip address which is not our ip address we will need to update it:

```
root@fate:~# /usr/share/astguiclient/ADMIN_update_server_ip.pl --old-server_ip=10.10.10.15  
CLI defined old server IP: 10.10.10.15  
Previous astGUIClient configuration file found at: /etc/astguiclient.conf  
  
Would you like to use interactive mode (y/n): [y]  
  
STARTING SERVER IP ADDRESS CHANGE FOR VICIDIAL...  
  
Old server IP address or press enter for default: [10.10.10.15]  
server IP address or press enter for default: [192.168.109.128]  
  
old server_ip:      10.10.10.15  
new server_ip:      192.168.109.128  
  
Are these settings correct?(y/n): [y]  
Writing change to astguiclient.conf file: /etc/astguiclient.conf
```

Just press enter all the way, it will automatically detect your current ip address.

Now we need to do insert the area codes:

```
root@fate:~# /usr/share/astguiclient/ADMIN_area_code_populate.pl
no command line options set
/usr/bin/wget

Downloading latest phone codes tables
--03:43:29-- http://phonecodes.vicidial.com/phone_codes_GMT-latest-220.txt
=> `phone_codes_GMT-latest-220.txt'
Resolving phonecodes.vicidial.com... 208.38.149.188
Connecting to phonecodes.vicidial.com|208.38.149.188|:80... connected.
HTTP request sent, awaiting response...
```

Now we do performance testing (you can actually skip this part though) to test our server in its speed in loading leads:

```
root@fate:~# cp /usr/src/astguiclient/extras/performance_test_leads.txt /usr/share/astguiclient/LEADS_IN/
root@fate:~# /usr/share/astguiclient/VICIDIAL_IN_new_leads_file.pl --forcelistid=107 --forcephonecode=1

----- FORCE LISTID OVERRIDE: 107 -----

----- FORCE PHONECODE OVERRIDE: 1 -----

-- VICIDIAL_IN_new_leads_file.pl --

This program is designed to take a tab delimited file and import it into the VICIDIAL system.

performance_test_leads.txt 8088890
performance_test_leads.txt 8088890
```

The faster it finishes means that your server has good hardware.

XV. Final Touches

YES, were almost through with our server. We will make the final touches to make your server functional, lets start by adding this crontab entries:

```
root@fate:~# crontab -e
```

Now heres how it will look like:

```
GNU nano 2.0.7 File: /tmp/crontab.MHdEZb/crontab Modified
# m h dom mon dow command
### recording mixing/compressing/ftping scripts
0,3,6,9,12,15,18,21,24,27,30,33,36,39,42,45,48,51,54,57 * * * * /usr/share/astguiclient/AST_CRON_audio_1_move_mix.pl
#0,3,6,9,12,15,18,21,24,27,30,33,36,39,42,45,48,51,54,57 * * * * /usr/share/astguiclient/AST_CRON_audio_1_move_VDonly.pl
1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46,49,52,55,58 * * * * /usr/share/astguiclient/AST_CRON_audio_2_compress.pl --MP3
#2,5,8,11,14,17,20,23,26,29,32,35,38,41,44,47,50,53,56,59 * * * * /usr/share/astguiclient/AST_CRON_audio_3_ftp.pl --MP3
### keepalive script for astguiclient processes
* * * * * /usr/share/astguiclient/ADMIN_keepalive_ALL.pl
### Kill Hangup script for Asterisk updaters
* * * * * /usr/share/astguiclient/AST_manager_kill_hung_congested.pl
### updater for voicemail
* * * * * /usr/share/astguiclient/AST_vm_update.pl
### updater for conference validator
* * * * * /usr/share/astguiclient/AST_conf_update.pl
### flush queue DB table every hour for entries older than 1 hour
11 * * * * /usr/share/astguiclient/AST_flush_DBqueue.pl -q
### fix the vicidial_agent_log once every hour
03 * * * * /usr/share/astguiclient/AST_cleanup_agent_log.pl
### updater for VICIDIAL hopper
* * * * * /usr/share/astguiclient/AST_VDhopper.pl -q
### adjust the GMT offset for the leads in the vicidial_list table
1 1,7 * * * /usr/share/astguiclient/ADMIN_adjust_GMTnow_on_leads.pl --debug
### reset several temporary-info tables in the database
2 1 * * * /usr/share/astguiclient/AST_reset_mysql_vars.pl
### optimize the database tables within the asterisk database
3 1 * * * /usr/share/astguiclient/AST_DB_optimize.pl
## adjust time on the server with ntp
30 * * * * /usr/local/bin/ntpdate -u pool.ntp.org 2>/dev/null 1>&2
### VICIDIAL agent time log weekly summary report generation
2 0 * * 0 /usr/share/astguiclient/AST_agent_week.pl
### remove old recordings more than 7 days old
# 24 0 * * * /usr/bin/find /var/spool/asterisk/monitor -maxdepth 2 -type f -mtime +7 -print | xargs rm -f
### remove old vicidial logs and asterisk logs more than 2 days old
28 0 * * * /usr/bin/find /var/log/astguiclient -maxdepth 1 -type f -mtime +2 -print | xargs rm -f
29 0 * * * /usr/bin/find /var/log/asterisk -maxdepth 3 -type f -mtime +2 -print | xargs rm -f
```

These are the lines respectively for you to copy and paste them:

```
### recording mixing/compressing/ftping scripts
0,3,6,9,12,15,18,21,24,27,30,33,36,39,42,45,48,51,54,57 * * * * /usr/share/astguiclient/AST_CRON_audio_1_move_mix.pl
#0,3,6,9,12,15,18,21,24,27,30,33,36,39,42,45,48,51,54,57 * * * * /usr/share/astguiclient/AST_CRON_audio_1_move_VDonly.pl
1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46,49,52,55,58 * * * * /usr/share/astguiclient/AST_CRON_audio_2_compress.pl --MP3
#2,5,8,11,14,17,20,23,26,29,32,35,38,41,44,47,50,53,56,59 * * * * /usr/share/astguiclient/AST_CRON_audio_3_ftp.pl --MP3
### keepalive script for astguiclient processes
* * * * /usr/share/astguiclient/ADMIN_keepalive_ALL.pl
### kill Hangup script for Asterisk updaters
* * * * /usr/share/astguiclient/AST_manager_kill_hung_congested.pl
### updater for voicemail
* * * * /usr/share/astguiclient/AST_vm_update.pl
### updater for conference validator
* * * * /usr/share/astguiclient/AST_conf_update.pl
### flush queue DB table every hour for entries older than 1 hour
11 * * * * /usr/share/astguiclient/AST_flush_DBqueue.pl -q
### fix the vicidial_agent_log once every hour
33 * * * * /usr/share/astguiclient/AST_cleanup_agent_log.pl
### updater for VICIDIAL hopper
* * * * /usr/share/astguiclient/AST_VDhopper.pl -q
### adjust the GMT offset for the leads in the vicidial_list table
1 1,7 * * * /usr/share/astguiclient/ADMIN_adjust_GMTnow_on_leads.pl --debug
### reset several temporary-info tables in the database
2 1 * * * /usr/share/astguiclient/AST_reset_mysql_vars.pl
### optimize the database tables within the asterisk database
3 1 * * * /usr/share/astguiclient/AST_DB_optimize.pl
## adjust time on the server with ntp
30 * * * * /usr/local/bin/ntpdate -u pool.ntp.org 2>/dev/null 1>&2
### VICIDIAL agent time log weekly summary report generation
2 0 * * 0 /usr/share/astguiclient/AST_agent_week.pl
### remove old recordings more than 7 days old
# 24 0 * * * /usr/bin/find /var/spool/asterisk/monitor -maxdepth 2 -type f -mtime +7 -print | xargs rm -f
### remove old vicidial logs and asterisk logs more than 2 days old
28 0 * * * /usr/bin/find /var/log/astguiclient -maxdepth 1 -type f -mtime +2 -print | xargs rm -f
29 0 * * * /usr/bin/find /var/log/asterisk -maxdepth 3 -type f -mtime +2 -print | xargs rm -f
```

Now lets set vicidial to automatically run when the server starts up:

```
root@fate:~# cd /etc/init.d
root@fate:/etc/init.d# wget http://download.vicidial.com/ubuntu/vicidial
```

We make the vicidial service an executable file:

```
root@fate:/etc/init.d# chmod +x vicidial
```

Now we do an updaterc to make sure that the vicidial service starts on all levels:

```
root@fate:/etc/init.d# update-rc.d -f vicidial defaults
Adding system startup for /etc/init.d/vicidial ...
/etc/rc0.d/K20vicidial -> ../init.d/vicidial
/etc/rc1.d/K20vicidial -> ../init.d/vicidial
/etc/rc6.d/K20vicidial -> ../init.d/vicidial
/etc/rc2.d/S20vicidial -> ../init.d/vicidial
/etc/rc3.d/S20vicidial -> ../init.d/vicidial
/etc/rc4.d/S20vicidial -> ../init.d/vicidial
/etc/rc5.d/S20vicidial -> ../init.d/vicidial
root@fate:/etc/init.d#
```

And then if we need to view the recording folder from our webserver we need to set this in apache:

```
root@fate:/etc/init.d# pico /etc/apache2/sites-available/default
```

Add the following lines in the past part:

```
Alias /RECORDINGS/ "/var/spool/asterisk/monitorDONE/"
<Directory "/var/spool/asterisk/monitorDONE">
Options Indexes MultiViews
AllowOverride None
Order allow,deny
Allow from all
<files *.mp3>
Forcetype application/forcedownload
</files>
</Directory>
```

Then make the recording directory viewable:

```
root@fate:/etc/init.d# chmod 0777 /var/spool/asterisk/monitorDONE/
root@fate:/etc/init.d#
```

Then we set the ram drive for call recordings to be stored directly to RAM which means it will be faster than its being stored to the hard drive:

```
root@fate:/etc/init.d# pico /etc/fstab
```

Add this line at the end of the file (*tmpfs*
/var/spool/asterisk/monitor tmpfs rw 0 0):

```
# /etc/fstab: static file system information.
#
# <file system> <mount point> <type> <options> <dump> <pass>
proc /proc proc defaults 0 0
# /dev/sda1
UUID=4a3119c5-a9c9-4a30-8b22-cf51d94ac5ce / ext3 relatime,errors=remou$
# /dev/sda5
UUID=9d9caelc-86e1-4a5b-bae8-372037133f41 none swap sw 0 $
/dev/scd0 /media/cdrom0 udf,iso9660 user,noauto,exec,utf8 0 0
/dev/fd0 /media/floppy0 auto rw,user,noauto,exec,utf8 0 0
tmpfs /var/spool/asterisk/monitor tmpfs rw 0 0
```

Download the optimized php.ini for Ubuntu from the VICIdial download site:

```
root@fate:~# wget http://download.vicidial.com/ubuntu/php.ini
```

Move the php.ini to the apache2 folder and overwrite the existing php.ini:

```
root@fate:~# mv php.ini /etc/php5/apache2/
root@fate:~# █
```

Then download the optimized my.cnf for ubuntu from the VICIdial download site:

```
root@fate:~# wget http://download.vicidial.com/ubuntu/ubuntu-my-vici.cnf
```

Then overwrite the existing my.cnf:

```
root@fate:~# mv ubuntu-my-vici.cnf /etc/mysql/my.cnf
root@fate:~# █
```

Get the optimized ntp.conf for ubuntu:

```
root@fate:~# wget http://download.vicidial.com/ubuntu/ntp-server.conf
```

Overwrite the existing ntp.conf of your server:

```
root@fate:~# mv ntp-server.conf /etc/ntp.conf
root@fate:~#
```

Then finally do a reboot:

```
root@fate:~# shutdown -r 0

Broadcast message from dax@fate
      (/dev/pts/0) at 4:21 ...

The system is going down for reboot NOW!
root@fate:~#
```

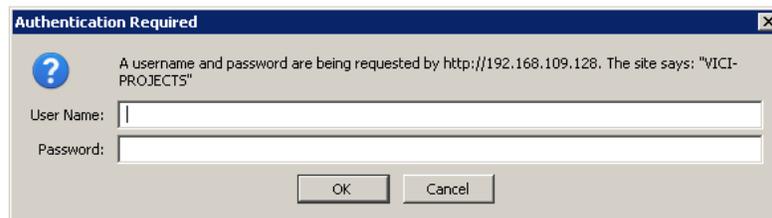
Once your server comes up you can verify if you have installed it correctly by doing a **screen -ls**:

```
root@fate:~# screen -ls
There are screens on:
  5161.ASTfastlog (Detached)
  5158.ASTVDadapt (Detached)
  5155.ASTVDremote (Detached)
  5152.ASTVDauto (Detached)
  5149.ASTlisten (Detached)
  5146.ASTsend (Detached)
  5143.ASTupdate (Detached)
  5054.asterisk (Detached)
  5047.astshell20100401042230 (Detached)
9 Sockets in /var/run/screen/S-root.
```

The default install of VICIdial would usually output 9 screens. It should look like this, if it does then your almost there.

XVI. Post Installation Tasks

Now lets test if we can login to the administrator interface, open up your browser (I strongly recommend Mozilla firefox). And point it to this url : <http://youripaddress/vicial/admin.php> , where youripaddress is the ip address you set when you were installing this server.



This will show up if you did it right. The default installation username and password is username: 6666 password 1234

Lets login and do the first step to make the admin user a full privileged one so we will avoid errors like “You don’t have permission to view this page” so on and so forth, this is what you will see when you first login, now you click on the 6666 user to view the details:

The screenshot shows the 'Vicdial ADMINISTRATION' interface. At the top right, it says 'Thursday April 1, 2010 4:34:55 AM'. Below the header, there are links for 'HOME | Timeclock | Logout'. The main content area is titled 'USER LISTINGS: show all users'. Below this is a table with the following data:

USER ID	FULL NAME	LEVEL	GROUP	ACTIVE	LINKS
6666	Admin	9	ADMIN	Y	MODIFY STATS STATUS TIME

On the left side, there is a navigation menu with the following items: Users, Show Users, Add A New User, Copy User, Search For A User, User Stats, User Status, Time Sheet, Campaigns, Lists, Scripts, Filters, In-Groups, User Groups, Remote Agents, Admin, Reports. At the bottom left, it says 'VERSION: 2.2.0-235 BUILD: 100319-1708'.

Once clicked you will be taken to its details which will look like this:

MODIFY A USERS RECORD: 6666

User Number:	6666 ?
Password:	1234 ?
Full Name:	Admin ?
User Level:	9 ?
User Group:	ADMIN ?
Phone Login:	?
Phone Pass:	?
Active:	Y ?
Email:	?
User Code:	?
Main Territory:	?

AGENT INTERFACE OPTIONS:

Agent Choose Ingroups:	1	?
Hot Keys Active:	0	?
Scheduled Callbacks:	1	?
Agent-Only Callbacks:	0	?
Agent Call Manual:	0	?
Vicidial Recording:	1	?
Vicidial Transfers:	1	?
Closer Default Blended:	0	?
VICIDIAL Recording Override:	DISABLED	?
Agent Alter Customer Data Override:	NOT_ACTIVE	?
Agent Alter Customer Phone Override:	NOT_ACTIVE	?
Agent Shift Enforcement Override:	DISABLED	?
Alert Enabled:	0	?
Allow Alerts:	0	?
Campaign Ranks: ?		
CAMPAIGN RANK CALLS WEB VARS		

Inbound Groups: ?			
INBOUND GROUP	RANK	CALLS	WEB VARS
<input type="checkbox"/> AGENTDIRECT - Single Agent Direct Queue	0	0	
Custom 1:			?
Custom 2:			?
Custom 3:			?
Custom 4:			?
Custom 5:			?

Now on the lower part you will need to enable all ADMIN INTERFACE OPTIONS by changing its value from 0 to 1:

ADMIN INTERFACE OPTIONS:		
View Reports:	0	?
Alter Agent Interface Options:	0	?
Modify Users:	0	?
Change Agent Campaign:	0	?
Delete Users:	0	?
Modify User Groups:	0	?
Delete User Groups:	0	?
Modify Lists:	0	?
Delete Lists:	0	?
Load Leads:	1	?
Modify Leads:	0	?
Download Lists:	0	?
Export Reports:	0	?
Delete From DNC Lists:	0	?
Modify Campaigns:	0	?
Campaign Detail:	1	?
Delete Campaigns:	0	?
Modify In-Groups:	0	?

Delete In-Groups:	0	?
Modify DIDs:	0	?
Delete DIDs:	0	?
Modify Remote Agents:	0	?
Delete Remote Agents:	0	?
Modify Scripts:	0	?
Delete Scripts:	0	?
Modify Filters:	0	?
Delete Filters:	0	?
AGC Admin Access:	1	?
AGC Delete Phones:	0	?
Modify Call Times:	0	?
Delete Call Times:	0	?
Modify Servers:	0	?
Agent API Access:	0	?
Add Timeclock Log Record:	0	?
Modify Timeclock Log Record:	0	?
Delete Timeclock Log Record:	0	?
Manager Shift Enforcement Override:	0	?

Again change all of them from 0 to 1 so you wont be having problems with permission. After that click on submit button for the changes to take effect:

Click

If you haven't set all of them from 0 to 1 you will usually find yourself encountering this error:

The screenshot shows the VICdial ADMINISTRATION interface. The top navigation bar includes links for HOME, Timeclock, and Logout, and the date/time is Thursday April 1, 2010 4:59:46 AM. The main content area displays the message: "You do not have permission to view this page". The left sidebar contains a menu with the following items: Users, Campaigns, Lists (highlighted), Show Lists, Add A New List, Search For A Lead, Add Number To DNC, and Load New Leads.

Now that we have tested the administrator interface we now then move on to testing the agent interface, first thing we must do is to create a test campaign:

The screenshot shows the VICdial ADMINISTRATION interface with the Campaigns section active. The top navigation bar includes links for HOME, Timeclock, and Logout, and the date/time is Thursday April 1, 2010 5:04:12 AM. The main content area displays the message: "CAMPAIGN LISTINGS:". Below this is a table with the following columns: CAMPAIGN ID, NAME, ACTIVE, DIAL METHOD, LEVEL, LEAD ORDER, DIAL STATUSES, and MODIFY. The left sidebar contains a menu with the following items: Users, Campaigns (highlighted), Campaigns Main, Statuses, HotKeys, Lead Recycle, Auto-Alt Dial, List Mix, and Pause Codes.

Once you click on the Campaigns link on the left side of the menu this will show up, click on **Add A New Campaign**:

ADD A NEW CAMPAIGN	
Campaign ID:	<input type="text" value="testcamp"/> ?
Campaign Name:	<input type="text" value="test campaign"/> ?
Campaign Description:	<input type="text" value="test campaign"/> ?
Active:	<input type="text" value="Y"/> ?
Park Extension:	<input type="text"/> ?
Park Filename:	<input type="text"/> ?
Web Form:	<input type="text"/> ?
Allow Closers:	<input type="text" value="Y"/> ?
Hopper Level:	<input type="text" value="1"/> ?
Auto Dial Level:	<input type="text" value="0"/> (0 = off) ?
Next Agent Call:	<input type="text" value="random"/> ?
Local Call Time:	<input type="text" value="24hours - default 24 hours calling"/> ?
Voicemail:	<input type="text"/> ?
Script:	<input type="text" value="NONE"/> ?
Get Call Launch:	<input type="text" value="NONE"/> ?
<input type="button" value="SUBMIT"/>	

Just click on **SUBMIT** to save the changes you made and add the campaign to your server.

You will then be taken to the detail view of the campaign that you just added:

CAMPAIGN ADDED: testcamp

testcamp: [Basic](#) [Detail](#) [Statuses](#) [HotKeys](#) [Lead Recycling](#) [Auto Alt Dial](#) [List Mix](#) [Survey](#) [Pause Codes](#) [Real-Time](#)

Campaign ID:	testcamp ?
Campaign Name:	test campaign ?
Campaign Description:	test campaign ?
Campaign Change Date:	2010-04-01 05:08:50 ?
Campaign Login Date:	? ?
Campaign Call Date:	? ?
Active:	Y ?
Park Extension:	- Filename: ?
Web Form:	? ?
Web Form Two:	? ?
Web Form Target:	vdcwebform ?
Allow Closers:	Y ?
Allow Inbound and Blended:	N ?
Dial Status 1:	NEW - New Lead REMOVE
Add A Dial Status:	- NONE - ADD ?
List Order:	DOWN ?

Since were just going to test if your agent interface is fully working we just need to set a couple of things.

First we have to set the DIAL METHOD to MANUAL, since we have not loaded leads yet and we just want to test by just logging in the campaign without the server dialing out we need to set it that way:

Dial Method:	MANUAL	?	
Auto Dial Level:	0 (0 = off)	?	<input type="checkbox"/> ADAPT OVERRIDE
Available Only Tally:	N	?	
Drop Percentage Limit:	3 %	?	
Maximum Adapt Dial Level:	3.0	number only	?
Latest Server Time:	2100	4 digits only	?
Adapt Intensity Modifier:	0 - Balanced	?	
Dial Level Difference Target:	0 - 0 Balanced	?	
Concurrent Transfers:	AUTO	?	
Queue Priority:	50 - Higher	?	
Multiple Campaign Drop Rate Group:	DISABLED	?	

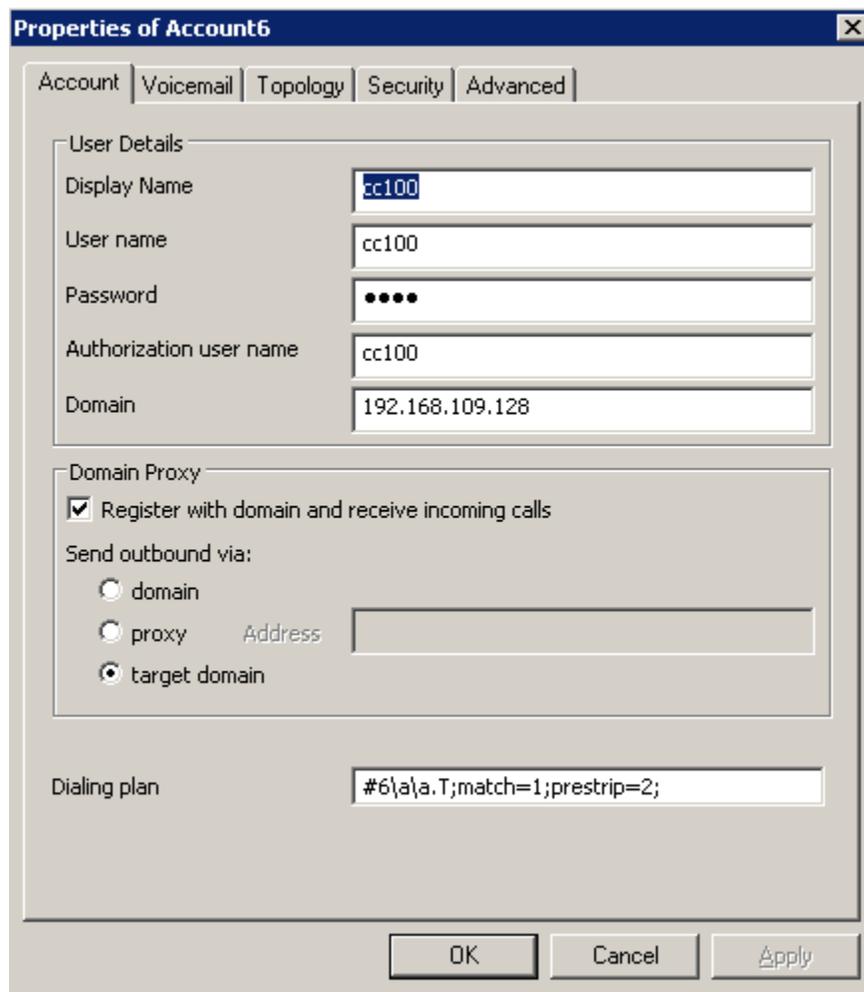
Then next we would set the option **allow no-hopper-leads logins to Y** as it will make the agent login to the agent interface with the campaign having no leads in the hopper, we are doing this because we are testing if our agent interface will fully work. You could see this option on the lower part:

Allow No-Hopper-Leads Logins:	N	?
No Hopper Dialing:	Y	?
Owner Only Dialing:	N	?

Then click on SUBMIT for the changes to be saved. It will look like this:

SUBMIT

Now lets configure a softphone to connect to the server, for this test I will be using eyebeam since I don't have X-lite currently installed. I will use the default **cc100** login and **test** as its password, they come enabled when we installed the sip and iax phones sql file, heres how its configured:



The screenshot shows a dialog box titled "Properties of Account6" with a close button (X) in the top right corner. The dialog has five tabs: "Account", "Voicemail", "Topology", "Security", and "Advanced". The "Account" tab is selected. The "User Details" section contains the following fields:

- Display Name: cc100
- User name: cc100
- Password: ••••
- Authorization user name: cc100
- Domain: 192.168.109.128

The "Domain Proxy" section contains the following options:

- Register with domain and receive incoming calls
- Send outbound via:
 - domain
 - proxy Address: [empty text box]
 - target domain

The "Dialing plan" field contains the text: #6\a\a.T;match=1;prestrip=2;

At the bottom of the dialog are three buttons: "OK", "Cancel", and "Apply".

Remember to replace the domain's ip address with the ip address that you set on your server. After which click on apply which I already did then click on Ok to add it to your sip accounts.

If your asterisk server is working right it will register itself with this status:



If you also are monitoring from your asterisk CLI it will show it as this:

```
fate*CLI>
[Apr  1 05:24:27] -- Registered SIP 'cc100' at 192.168.109.1 port 56688 expires 3600
[Apr  1 05:24:27] -- Saved useragent "eyeBeam release 1003s stamp 31159" for peer cc
100
[Apr  1 05:24:27] NOTICE[5131]: chan_sip.c:12705 handle_response_peerpoke: Peer 'cc100'
is now Reachable. (1ms / 2000ms)
```

You can also verify if it's registered by doing a **sip show peers** on the asterisk CLI:

```
cc102/cc102      (Unspecified)  D N 0 UNKNOWN
cc101/cc101      (Unspecified)  D N 0 UNKNOWN
cc100/cc100      192.168.109.1 D N 56688 OK (1 ms)
```

You can see that cc100 is 1 ms away from your server, put in mind that the lower the **ms**, the better the latency of the softphone from your its point of origin to your server.

Now lets go to login to our campaign and really see if we can access the agent interface and see if the server will call our softphone. Point your URL to <http://youripaddress/agc/vicidial.php> , put in mind that youripaddress is the ip address that you set when you installed your server. You will be first prompted for a phone login and a phone password, we will use the default phone login of cc100 phone which is **100** and its default password which is **test**:

VICIdial Phone Login

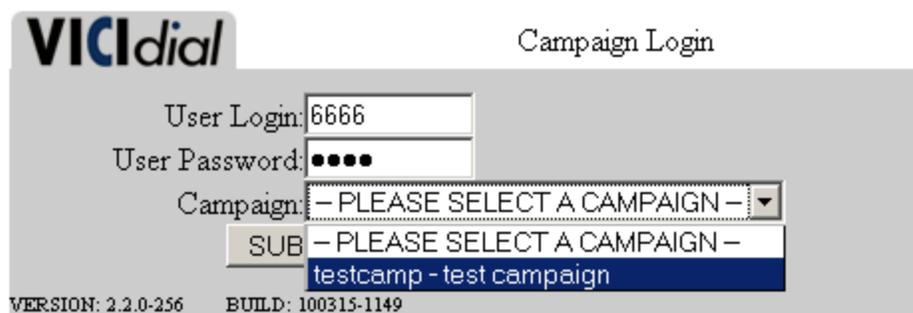
Phone Login: 100

Phone Password: ●●●●●

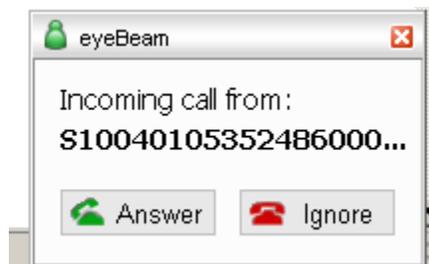
SUBMIT

VERSION: 2.2.0-256 BUILD: 100315-1149

Then after that you will be prompted for a username and password and will see a dropdown box. For this test we will be using the admin username and password which is by default **6666** and a password of **1234** , the admin user has the full privileges of logging into all campaigns that are added to the server. If you entered your username and your password correctly and clicked the drop down box you will see a list of campaigns, kindly select the Test Campaign option and click on SUBMIT after:



Now were taken to the agent interface but first you will have to answer the call to your softphone from the asterisk server. It will normally look like this:



Just click on answer and you will hear a voice telling you that “You’re the only person in this conference”.

You can actually see an agent logging in your asterisk through its CLI successfully with this screenshot:

```
[Apr 1 05:35:37] > Channel SIP/cc100-08272640 was answered.  
[Apr 1 05:35:37] -- Executing [8600051@default:1] MeetMe("SIP/cc100-08272640", "8600051|F") in new stack
```

This simply means that the agent already pressed the answer button to answer the call and the asterisk server assigned that call to a meetme conference number which is **8600051**.

You usually get that conference number if you're the first agent to login. This is the agent interface by the way:

..logged in as User: 6666 on Phone: SIP/cc100 to campaign: TESTCAMP [LOGOUT](#)

VICIdial SCRIPT 2010-04-01 05:43:28 session ID: 8600051 NO LIVE CALL

STATUS: seconds:

DIAL NEXT NUMBER Customer Time: Channel:

LEAD PREVIEW
RECORDING FILE:

RECORD ID:

START RECORDING

WEB FORM
WEB FORM 2

PARK CALL
TRANSFER - CONF

HANGUP CUSTOMER

SEND DTMF

Customer Information:
Title: First: MI: Last:
Address1:
Address2: Address3:
City: State: PostCode:
Province: Vendor ID: Gender: U - Undefined
Phone: DialCode: Alt. Phone:
Show: Email:
Comments:

Agent web-client version: 2.2.0-256 BUILD: 100315-1140 Server: 192.168.109.128

[Show conference call channel information](#) **MUTE** [Agents View +](#)

I guess that wraps it up as the end of the First Edition of VICIdial for dummies, I will be writing a second edition soon which will feature deployment examples.

If you like this document you can say thanks to me in the forum with my new handle 'boybawang', or give me a recommendation in my linkedin profile which is <http://www.linkedin.com/in/codehaxor> or if your kind hearted enough you can send me a donation through paypal.com, my paypal email is dax.cordova@gmail.com , I will not use this money for myself but for the feeding programs that am conducting together with some of my friends to give some free food to street children and those poor workers that hardly can afford to buy a meal because of their low salaries.

XVII. References for further learning

I suggest you visit this sites and links that I will provide for further learning, VICIdial isn't just about the scripts but it's a mixture of linux, mysql, apache, php, asterisk and other helpful open-source programs.

1. Get the Asterisk TFOT 2 (The Future Of Telephony Second Edition): <http://downloads.oreilly.com/books/9780596510480.pdf> this will help you develop your understanding to the asterisk pbx, since this is the core software that vicidial runs ontop of. Expect most issues would come from this specially with wrongly configured dialplans etc, this is a great help.
2. Go to the VICIdial Forum <http://www.vicidial.org/VICIDIALforum/> to ask for free help on your setup, I will only entertain questions about the document but not questions about your setup, I don't give out free consulting, I only give out **free vicidial installation** and **basic configuration**. The rest comes with a price.
3. You may also want to check out the VICIdial wiki which contains a lot of howto articles <http://wiki.vicidial.org/>
4. For ubuntu software you can go to check it out at <http://www.ubuntu.com>
5. For asterisk documentation you would want to check out the ASTERISK DOCUMENTATION PROJECT at <http://www.asteriskdocs.org/>

“One starts to die if he stops to learn, life is a never ending learning Process”