

# OpenEMR 3.2.0 Appliance Manual

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[LINK TO MANUAL IN PDF FORMAT](#)

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Discussion Board: <http://sourceforge.net/projects/openemr/forums>

# OpenEMR 3.2.0 Appliance Manual Table of Contents

<a href="#">Introduction</a>	3
<a href="#">Online Demo</a>	4
<a href="#">Download the OpenEMR Appliance and VMware Player</a>	4
<a href="#">Start the OpenEMR Appliance</a>	5
<a href="#">Windows</a>	5
<a href="#">Linux</a>	7
<a href="#">Using the OpenEMR Appliance</a>	9
<a href="#">Using OpenEMR Appliance</a>	9
<a href="#">OpenEMR User Training</a>	11
<a href="#">Helpful Tips</a>	11
<a href="#">List of Login Names and Passwords</a>	12
<a href="#">Configuration of the OpenEMR Appliance</a>	12
<a href="#">OpenEMR Visual Layout Configuration</a>	12
<a href="#">Pharmacy Dispensary Module Configuration</a>	16
<a href="#">Printer Setup</a>	19
<a href="#">Email Server Setup</a>	27
<a href="#">Backup (Automatic) Setup</a>	42
<a href="#">Static IP Address Setup</a>	45
<a href="#">Change Clock</a>	55
<a href="#">Change Appliance Password</a>	58
<a href="#">Reboot or Shutdown Appliance</a>	62
<a href="#">Desktop Installation</a>	65
<a href="#">Instructions for Building the OpenEMR Appliance</a>	66
<a href="#">Software</a>	66
<a href="#">Install the Ubuntu 8.04 Server Virtual Computer</a>	67
<a href="#">Configure PHP and Apache (with SSL)</a>	98
<a href="#">Install OpenEMR 3.0.1</a>	99
<a href="#">Install and Configure Webmin</a>	110
<a href="#">Configure Firewall</a>	114
<a href="#">Finishing Touches On Appliance</a>	125
<a href="#">Upgrading to OpenEMR 3.1.0</a>	137
<a href="#">Upgrade Database to UTF-8</a>	142
<a href="#">Upgrading to OpenEMR 3.2.0</a>	143
<a href="#">Upgrading Webmin</a>	143
<a href="#">Upgrade Language Translation Tables</a>	144
<a href="#">Appendix</a>	152
<a href="#">A. Configuring client web browser for https</a>	152
<a href="#">B. Useful Websites</a>	157
<a href="#">C. Author Email and License/Disclaimer</a>	158

# Introduction

[Main TOC Link](#)

The clinical benefits of computerized medical records are clear, however, the costs of current proprietary systems are large. This high cost precludes many small practices from transitioning to computerized medical records. Open Source medical record systems are quickly becoming a viable, cost effective alternative.

The goal of this project is to maintain a comprehensive Open Source Medical Practice Management Software Appliance, which provides office scheduling, electronic medical records, prescriptions, insurance billing, accounting, and access controls. This appliance has many possible applications, such as a fully functional demo, a testing/developing platform, and as the starting point in real world clinic applications. It can be run on any operating system that supports the *VMware Player*. The detailed building instructions of this appliance are also included in this manual, which will allow easy modification/updates of appliance and will allow simple transition to a native server, if required.

OpenEMR is installed on the Ubuntu 8.04 Server Edition operating system. For users whom require a GUI desktop, the Ubuntu Server edition OS (8.04) does not come with a desktop, however it is easy to install and is described in this manual. The administration in the Ubuntu Server can be mostly done via Webmin, which is described in this manual.

This manual contains instructions on downloading, starting, and using the OpenEMR Appliance, OpenEMR user manual web links, helpful tips on OpenEMR use, instructions for configuration and administration of the Appliance, and full detailed instructions on how the Appliance was built.

The *Download the OpenEMR Appliance and VMware Player* chapter contains how and where to download software from.

The *Start the OpenEMR Appliance* chapter contains information on starting the OpenEMR Appliance.

The *Using the OpenEMR Appliance* chapter contains information on how to use the OpenEMR Appliance, web links to User Manuals, helpful tips, and all the login names and passwords that will be needed while using the appliance.

The *Configuration of the OpenEMR Appliance* chapter describes how to configure and administer OpenEMR and the appliance. There are instructions describing how to set up a printer, an email server, and an automated backup scheme. This chapter also describes how to choose the visual layout of OpenEMR

and how to add the pharmacy dispensary module along with other instructions on setting up a static IP address, installing a desktop environment, setting the time, changing the password, and safely shutting the appliance down.

The *Instructions for Building the OpenEMR Appliance* chapter describes in detail how this Appliance was built.

## Online Demo

[Main TOC Link](#)

Here is the online demo of the OpenEMR 3.2.0 appliance:

**With the new frames look:**

<http://OpenSourceEMR.com:2096/openemr/> (Main OpenEMR program)

This is a fully functional demo, which allows you to play around with all the software packages in the appliance. It uses all the same logins and passwords as the appliance( refer to '[Login Name and Password](#)' section). The OpenEMR users were added to demonstrate the access controls:

**-Login name-----Password-----Description**

- |                 |              |                                       |
|-----------------|--------------|---------------------------------------|
| 1. admin        | pass         | Administrator                         |
| 2. physician    | physician    | Physician(more access than clinician) |
| 3. clinician    | clinician    | Clinician(less access than physician) |
| 4. accountant   | accountant   | Accountant                            |
| 5. receptionist | receptionist | Front desk receptionist               |

Don't worry about breaking it, because it resets itself to its original state every day at 5:00AM Pacific Time. Have fun. (If demo is not working email me at [brady@sparmy.com](mailto:brady@sparmy.com))

## Download the OpenEMR Appliance and VMware Player

[Main TOC Link](#)

1. Download and install the FREE VMware Player at:  
<http://www.vmware.com/products/player/>
2. Download the FREE OpenEMR Appliance.

1. You can download Appliance via Direct Download or Torrent (file is 760MB, which extracts to 2GB):
  1. Direct Download from Sourceforge:  
<http://downloads.sourceforge.net/openemr/OpenEMR-3-2-0-appliance-1.zip>
  2. Torrent file link: <http://www.brady.md.com/OpenEMR-3-2-0-appliance-1.torrent> (If you need a torrent software client, then try: <http://azureus.sourceforge.net/> )

## Start the OpenEMR Appliance

[Main TOC Link](#)

### Windows

[Main TOC Link](#)

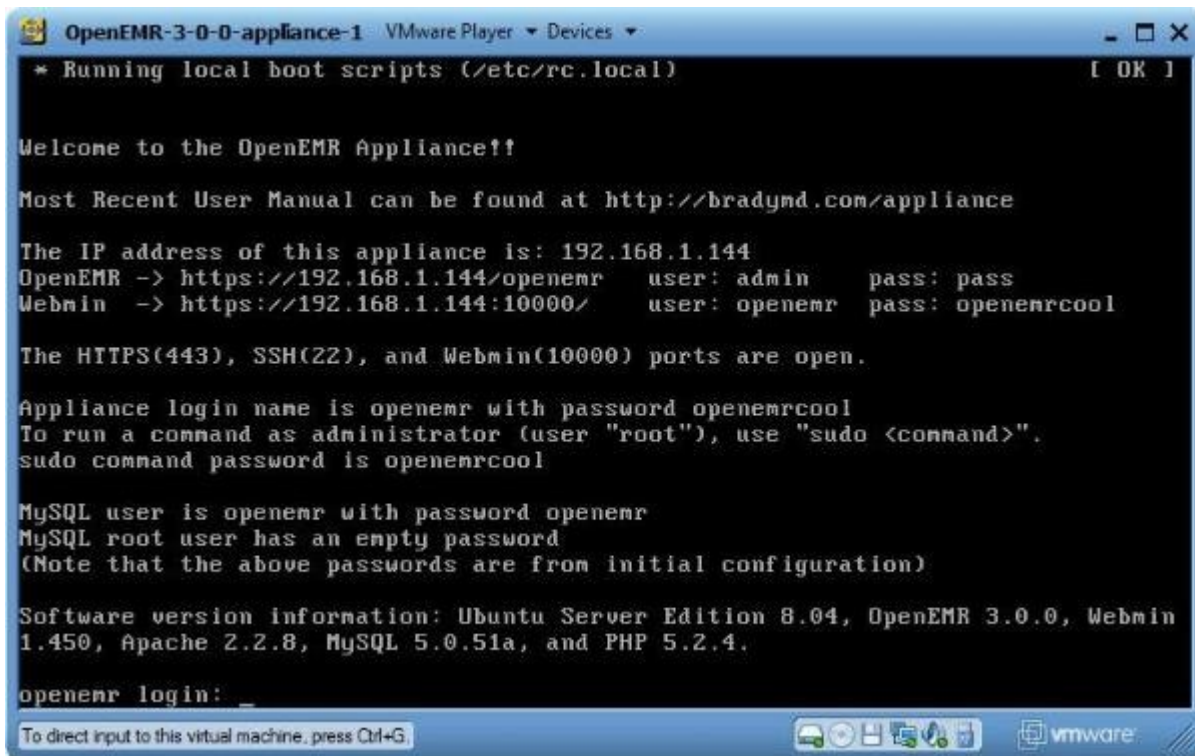
1. Unpackage the OpenEMR-3-2-0-appliance-1.zip file.
2. Run VMware Player (screenshot below).



3. Start up the OpenEMR Appliance by opening the OpenEMR-3-2-0-appliance-1.vmx file in the VMware Player.
4. If this is your first time starting the OpenEMR Appliance, then a window will pop up (see screenshot below). Select 'I copied it' and click the 'OK' button.



5. Several windows may also pop up explaining that certain drives or sound drivers are not gonna work. Just click 'ok' and continue.
6. Ubuntu will now boot up, just give it some time. After boot up you will see the following introduction screen:



```
OpenEMR-3-0-0-appliance-1 VMware Player - Devices
* Running local boot scripts (/etc/rc.local) [ OK ]

Welcome to the OpenEMR Appliance!!

Most Recent User Manual can be found at http://bradynd.com/appliance

The IP address of this appliance is: 192.168.1.144
OpenEMR -> https://192.168.1.144/openemr   user: admin   pass: pass
Webmin -> https://192.168.1.144:10000/   user: openemr pass: openemrcool

The HTTPS(443), SSH(22), and Webmin(10000) ports are open.

Appliance login name is openemr with password openemrcool
To run a command as administrator (user "root"), use "sudo <command>".
sudo command password is openemrcool

MySQL user is openemr with password openemr
MySQL root user has an empty password
(Note that the above passwords are from initial configuration)

Software version information: Ubuntu Server Edition 8.04, OpenEMR 3.0.0, Webmin
1.450, Apache 2.2.8, MySQL 5.0.51a, and PHP 5.2.4.

openemr login: _
```

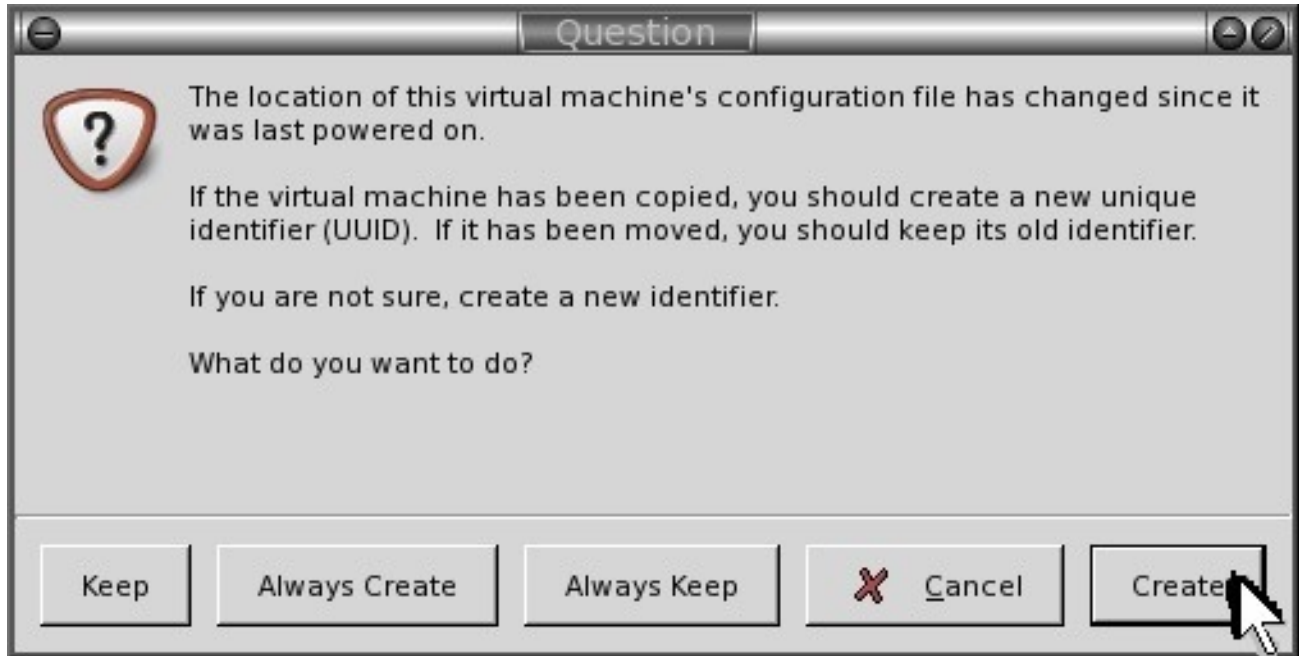
This is the introduction screen. Note that it automatically displays the IP address of your appliance, along with links to OpenEMR and Webmin. These links are customized for you depending on your IP address. The initial important user names and passwords are also displayed. To use appliance, proceed to the '[Using the OpenEMR Appliance](#)' section below.

## Linux

[Main TOC Link](#)

1. Unpackage the OpenEMR-3-2-0-appliance-1.zip file (use the 'unzip OpenEMR-3-2-0-appliance-1.zip' command).
2. Run VMware Player.
3. Start the OpenEMR appliance by opening the OpenEMR-3-2-0-appliance-1.vmx file in the VMware Player.

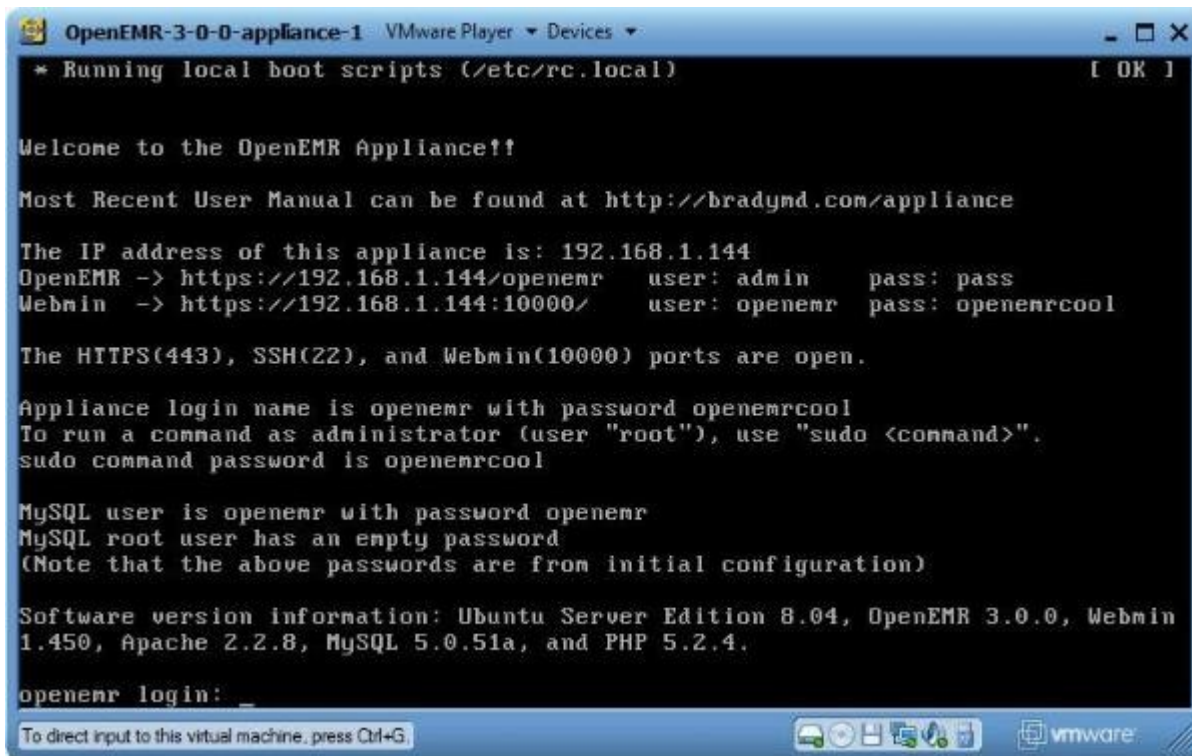
4. If this is your first time starting the OpenEMR Appliance, then the below window will pop up:



You will only see this window the first time you start the appliance. Click 'Create'.

5. Several windows may also pop up explaining that certain drives or sound drivers are not gonna work. Just click 'ok' and continue.
6. Ubuntu will now boot up, just give it some time. After boot up you will see the following introduction screen:





```
OpenEMR-3-0-0-appliance-1 VMware Player ▾ Devices ▾
* Running local boot scripts (/etc/rc.local) [ OK ]

Welcome to the OpenEMR Appliance!!

Most Recent User Manual can be found at http://bradynd.com/appliance

The IP address of this appliance is: 192.168.1.144
OpenEMR -> https://192.168.1.144/openemr user: admin pass: pass
Webmin -> https://192.168.1.144:10000/ user: openemr pass: openemrcool

The HTTPS(443), SSH(22), and Webmin(10000) ports are open.

Appliance login name is openemr with password openemrcool
To run a command as administrator (user "root"), use "sudo <command>".
sudo command password is openemrcool

MySQL user is openemr with password openemr
MySQL root user has an empty password
(Note that the above passwords are from initial configuration)

Software version information: Ubuntu Server Edition 8.04, OpenEMR 3.0.0, Webmin
1.450, Apache 2.2.8, MySQL 5.0.51a, and PHP 5.2.4.

openemr login: _
```

This is the introduction screen. Note that it automatically displays the IP address of your appliance, along with links to OpenEMR and Webmin. These links are customized for you depending on your IP address. The initial important user names and passwords are also displayed. To use appliance, proceed to the '[Using the OpenEMR Appliance](#)' section below.

## Using the OpenEMR Appliance

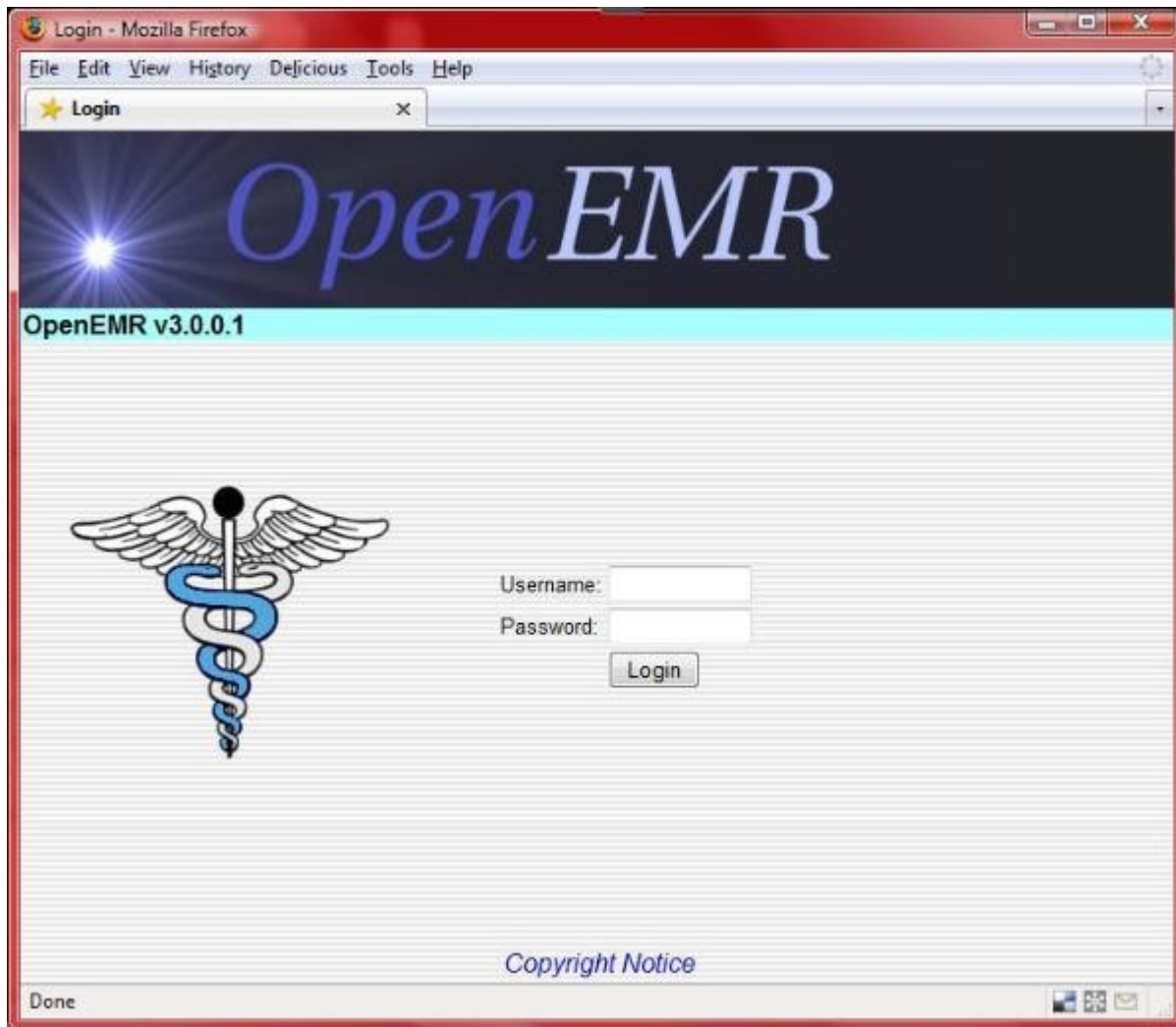
[Main TOC Link](#)

### Using OpenEMR Appliance

[Main TOC Link](#)

1. You connect with the OpenEMR Appliance through a web browser. You can get the Appliance IP address along with links to OpenEMR and Webmin on the above [introduction](#) screen. Use those links as the web address on another computer's web browser. (If you get a security error in your web browser, then first follow the instructions in below appendix section '[Configuring client web browser for https](#)' to configure your web browser.)

1. OpenEMR at `https://Appliance_IP_address/openemr`



2. Webmin at [https://Appliance\\_IP\\_address:10000/](https://Appliance_IP_address:10000/)



3. For the list of application login names and passwords go to the '[Login Name and Password](#)' section below.
2. You can also change your IP address to a static one, so it doesn't change after your virtual server is turned off or re-started. Directions to to do this are in the '[Static IP Address Setup](#)' section.

## OpenEMR User Training

[Main TOC Link](#)

1. There is an excellent OpenEMR wiki with user manual links at: <http://www.openmedsoftware.org/>
2. You can ask question at the SourceForge OpenEMR forum at: <https://sourceforge.net/projects/openemr/forums>
3. The OpenEMR home page is here: <http://www.oemr.org/>
4. The most current version of this appliance user manual will hopefully always be available at: <http://www.bradynd.com/appliance>

## Helpful Tips

[Main TOC Link](#)

1. **NEED** to ensure clock is set correctly (Virtual computer time should not differ from the host computers, or there will be cron scheduling problems)

## List of Login Names and Passwords

[Main TOC Link](#)

1. Ubuntu user -> user: 'openemr' password: 'openemrcool'
2. Ubuntu sudo command -> password: 'openemrcool'
3. Webmin -> user: 'openemr' password: 'openemrcool'
4. OpenEMR -> user: 'admin' password: 'pass'
5. MySQL user -> user: 'openemr' password: 'openemr'
6. MySQL admin -> user: 'root' NO PASSWORD

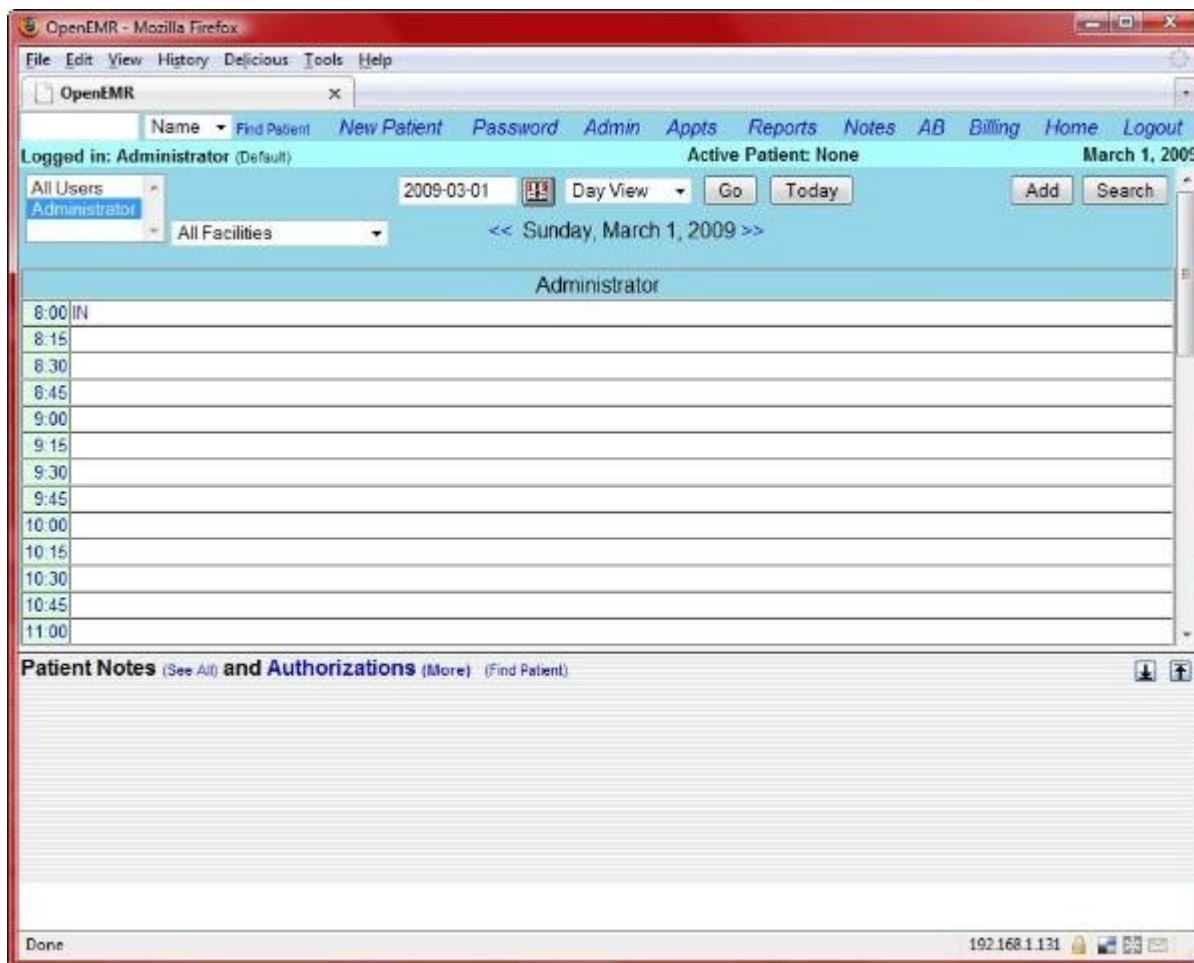
## Configuration of the OpenEMR Appliance

[Main TOC Link](#)

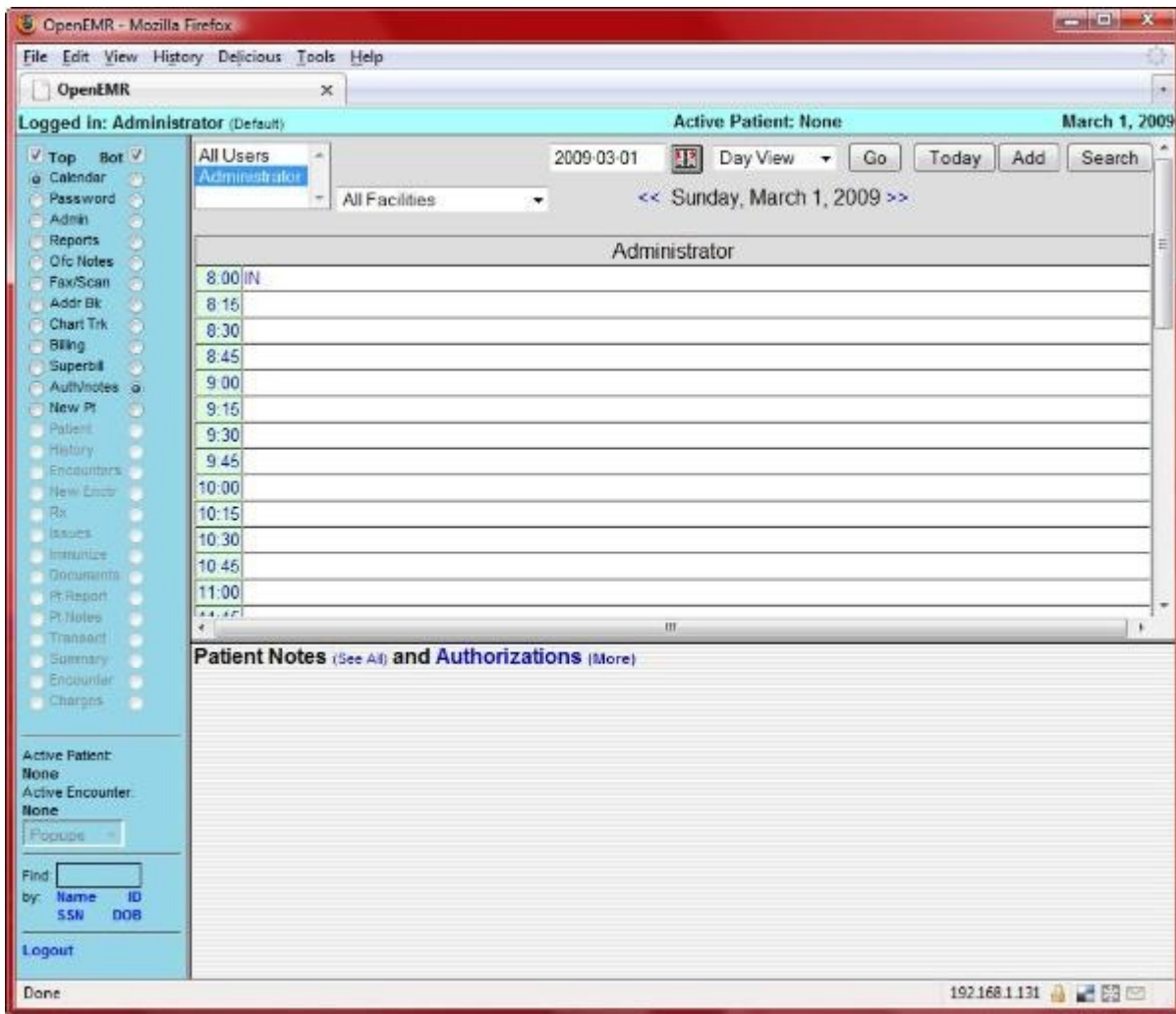
### OpenEMR Visual Layout Configuration

[Main TOC Link](#)

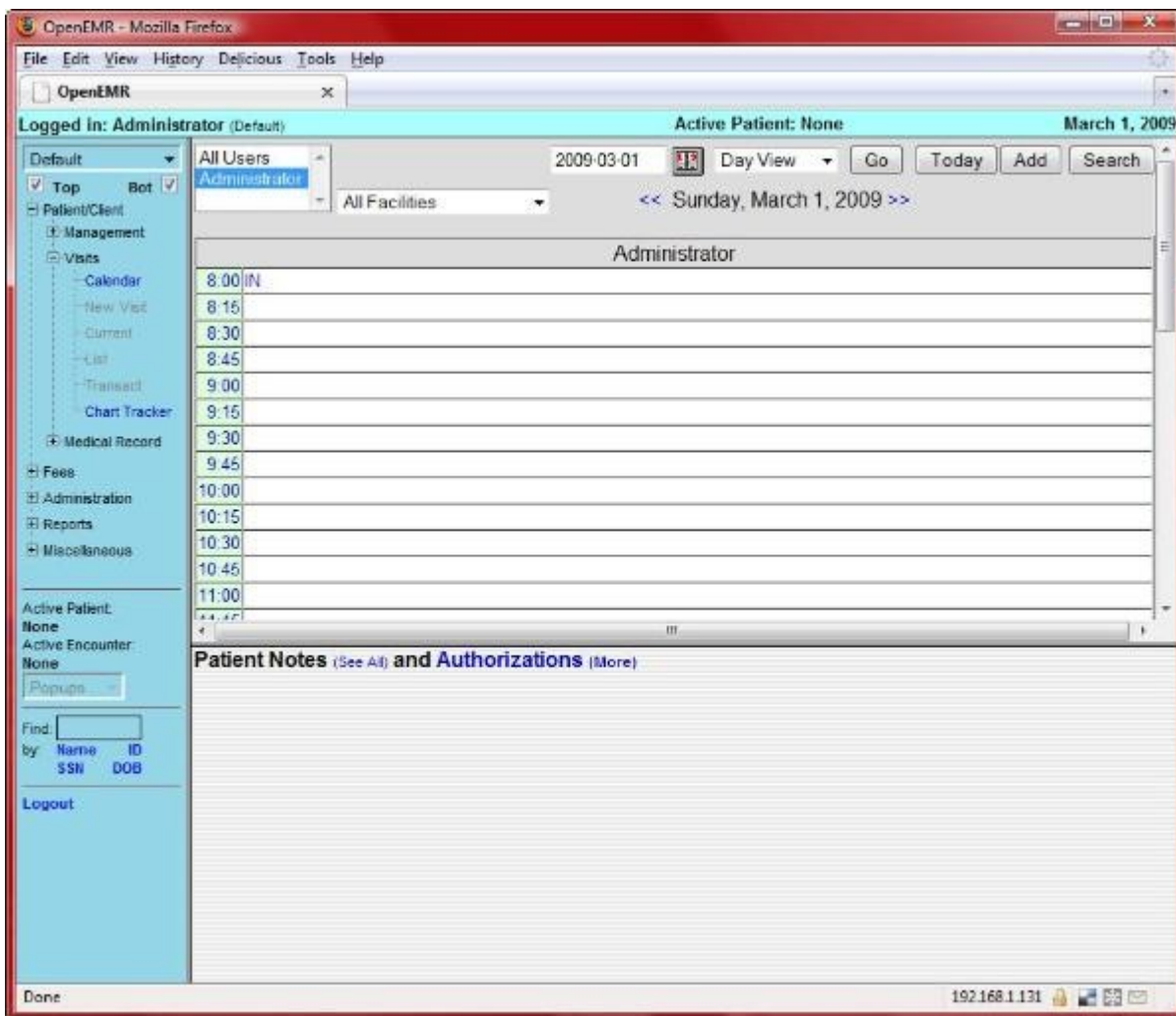
1. OpenEMR has three visual layouts to choose from; the traditional layout, a frames layout with radio buttons, and a frames layout with a tree view menu. We will first show screenshots of the available layouts, and then will show how to configure this option. The default view of OpenEMR 3.2.0 is the tree view.



Traditional view (also called old-style layout).



Frames with navigation by radio buttons.



Frames with navigation by a tree view menu.

2. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then type in your user password):

```
#edit the file /var/www/openemr/interface/globals.php:
sudo jed /var/www/openemr/interface/globals.php
#change below bolded number to desired layout :
// Set this to 1 or 2 to activate support for the new frame layout.
// 0 = Old-style layout
// 1 = Navigation menu consists of pairs of radio buttons
// 2 = Navigation menu is a tree view
//
$GLOBALS['concurrent_layout'] = 2;
TEXT EDITOR SAVE AND EXIT
```

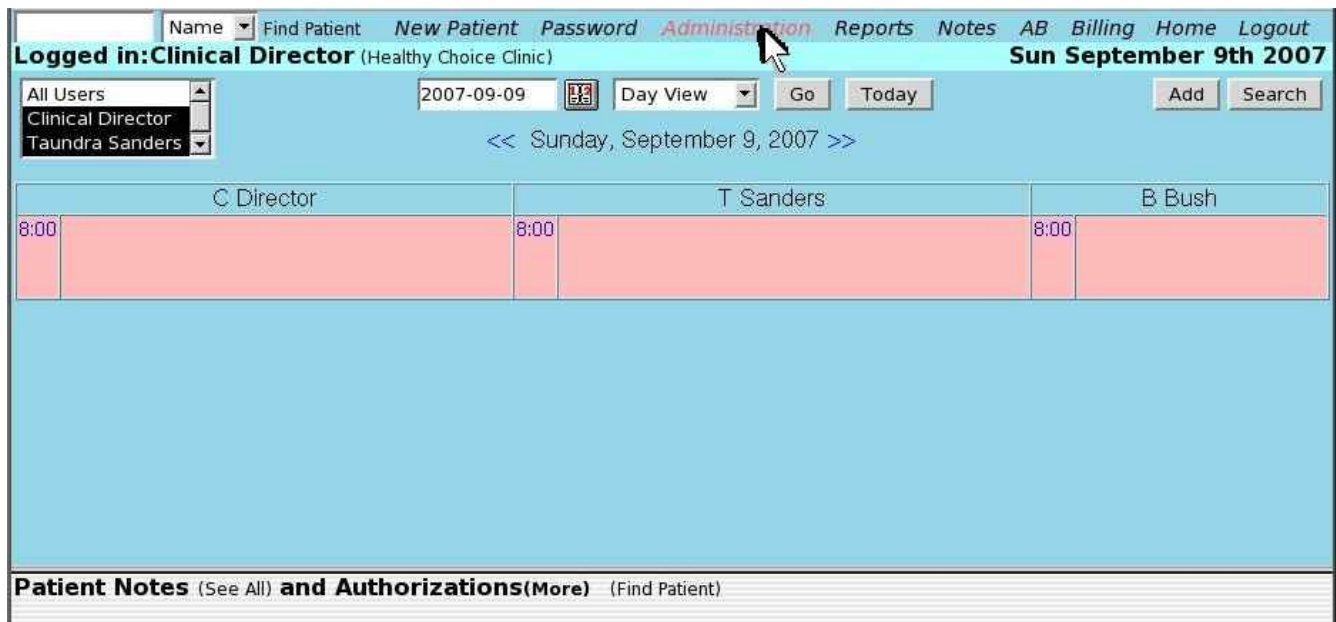
# Pharmacy Dispensary Module Configuration

[Main TOC Link](#)

1. The pharmacy dispensary module will allow you to dispense and keep track of your own med/herbs/supplement dispensary. It will also create bottle labels of the drugs you dispense.
2. Turn on the pharmacy dispensary module in the OpenEMR configuration file. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then type in your user password):

```
#edit file /var/www/openemr/interface/globals.php:  
sudo jed /var/www/openemr/interface/globals.php  
#edit the following bolded variable :  
$GLOBALS['inhouse_pharmacy'] = true;  
TEXT EDITOR SAVE AND EXIT
```

1. Here are some quick OpenEMR screenshots (note these were taken from version 2.8.3 with the Traditional View) that show how to navigate to the pharmacy dispensary module for administrative purposes:



Click 'Administration'



Users & Groups Forms Practice Calendar Database BatchCom **Drugs** Language Logs Back

Logged in: Clinical Director Sun September 9th 2007

User & Group Administration

**New Facility Information:**

Name:  Phone:   
 Address:  Fax:   
 State:  City:   
 Country:  Zip Code:   
 Federal EIN:

Add

**Edit Facilities:** Main Clinic(Edit)

**New User:**

Username:  Password:   
 Groupname: Healthy Choice Clinic  Authorized:   
 First Name:  Middle Name:   
 Last Name:  Default Facility: Main Clinic   
 Federal Tax ID:  Federal Drug ID:   
 UPIN:  See Authorizations: None

Additional Info:

Add

**New Group:**

Groupname:  Initial User: admin  Add

Click 'Drugs'.

Users & Groups Forms Practice Calendar Database BatchCom **Drugs** Language Logs Back

Logged in: Clinical Director Sun September 9th 2007

Name	NDC	Form	Size	Unit	Add	Lot	QOH	Expires
Add Drug								

Click 'Add Drug', enter stuff and play around to figure out how to use.

Quick OpenEMR screenshots of prescribing drugs with the dispensary:

Summary History Encounter Transaction Documents Report Close Popups


**Robert Crawford** (ID: 1, DOB: 1974-02-12, Age: 33, Home: 123-214-3543) **Logged in as: Clinical Director EncounterSun A**

**This Encounter** for Robert Crawford:

**Clinical Director SOAP**      **Subjective:** Itchy foot  
**Objective:** red foot  
**Assessment:** athletes foot  
**Plan:** anti-fungal cream

**Clinical Director Patient Encounter**

**Coding**  
 Superbill  
 ICD9 Search  
 CPT4 Search  
 HCPCS Search  
 Copay  
 Other

**Prescriptions**  
 List Prescriptions  
 Add Prescription 

**Billing** (More) Justify

[Receipt]

CPT4  **5466** Foot Rub 2200.00  
 (416.0)  
 total: 2200.00

ICD9  **416.0** Prim Pulm Hypertension

Click 'Add Prescription'.

Summary History Encounter Transaction Documents Report Close Popups

**Robert Crawford** (ID: 1, DOB: 1974-02-12, Age: 33, Home: 123-214-3543) **Logged in as: Clinical Director EncounterSun A**

**This Encounter** for Robert Crawford:

**Clinical Director SOAP**      **Subjective:** Itchy foot  
**Objective:** red foot  
**Assessment:** athletes foot  
**Plan:** anti-fungal cream

**Clinical Director Patient Encounter**

category

**Coding**

Superbill  
ICD9 Search  
CPT4 Search  
HCPCS Search  
Copay  
Other

**Prescriptions**

List Prescriptions  
Add Prescription

Starting Date: September 09 2007  
Provider: Clinical Director  
Drug:  Drug Lookup  
 in-house -- or select from inventory --  
Quantity:   
Medicine Units:   
Take:  in   
Refills: 00 # of tablets: 0  
Substitution: substitution allowed  
Notes:   
Add to Medication List:  No  Yes  
  units, \$

**Billing** (More) Justify

[Receipt]  
CPT4  5466 Foot Rub 2200.00  
(416.0)  
total: 2200.00  
ICD9  416.0 Prim Pulm Hypertension

Note the things circled in red, which are part of the pharmacy dispensary module. Note that in version 3.0.1 the 'Prescribe and Dispense' button is now labeled 'Save and Dispense'.

## Printer Setup

[Main TOC Link](#)

1. For USB printers, you will need to connect the device by clicking on printer on top of window. Your host computer may no longer be able to see the printer after this step(not permanent, but can be a pain).



In this case I click on the 'Hewlett-Packard...' button at top of VMware window.

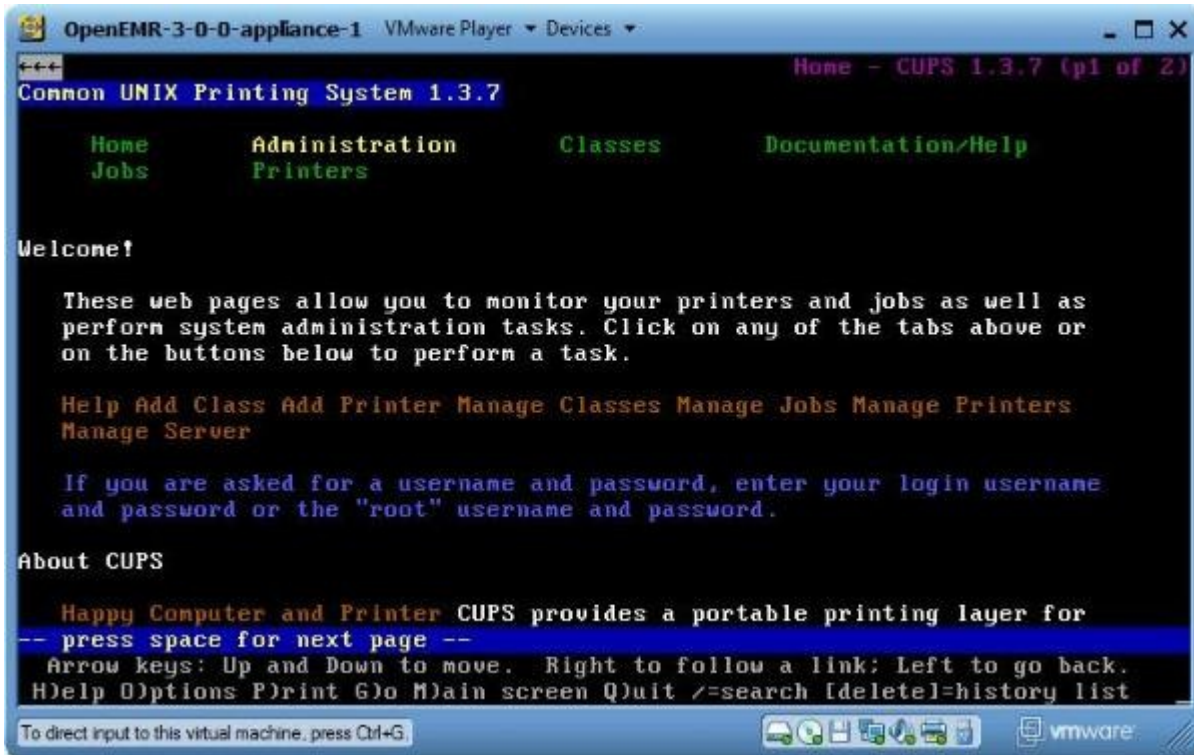


This is just to demonstrate that the 'Hewlett-Packard...' button is now shaded.

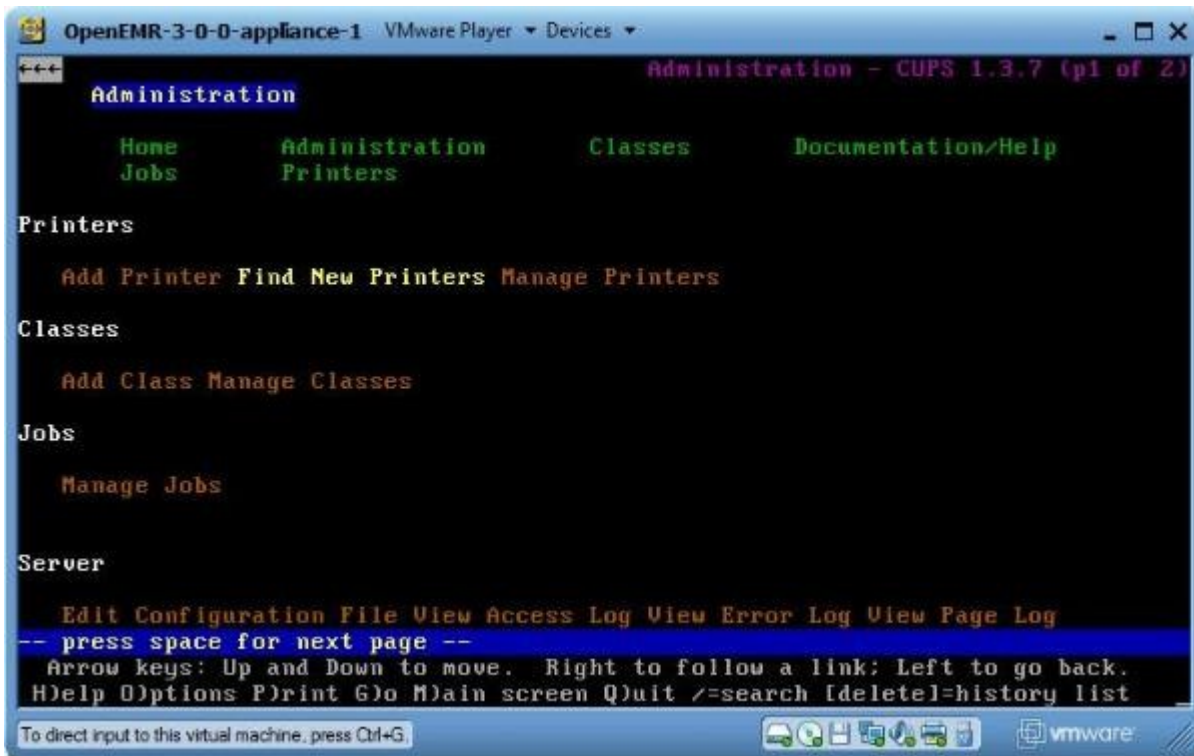
2. Now, you need to add the printer . It would be great if we could add and administer the printer through webmin, but I was unable to get this to work. So we will add a new printer to CUPS directly. To do this, we will actually use a text based browser from the commandline (yes, you are now entering nerd world). Enter below **bolded** instructions on command line:

```
#open up web page with text based browser (use up/down  
arrow keys or 'tab' key to scroll thru links and hit 'enter'  
key to select a link)
```

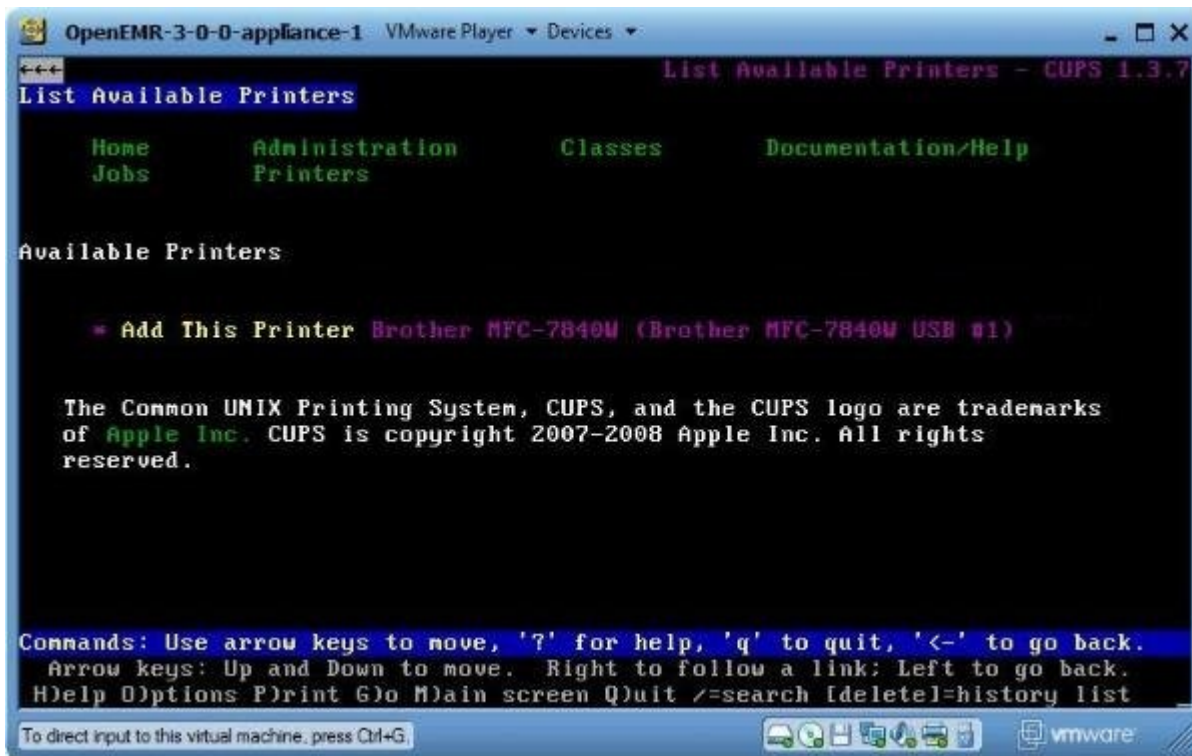
```
lynx http://localhost:631
```



Select 'Administration'.



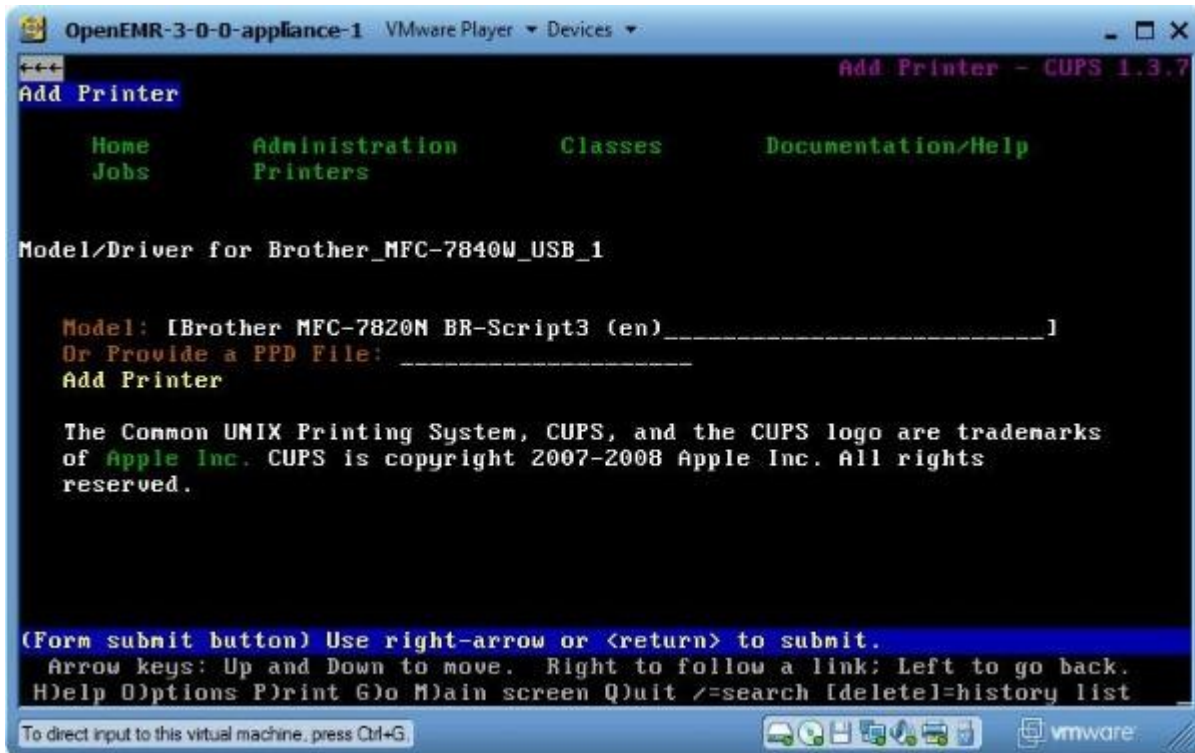
Select 'Find New Printers'. (it will take a bit of time to load next page)



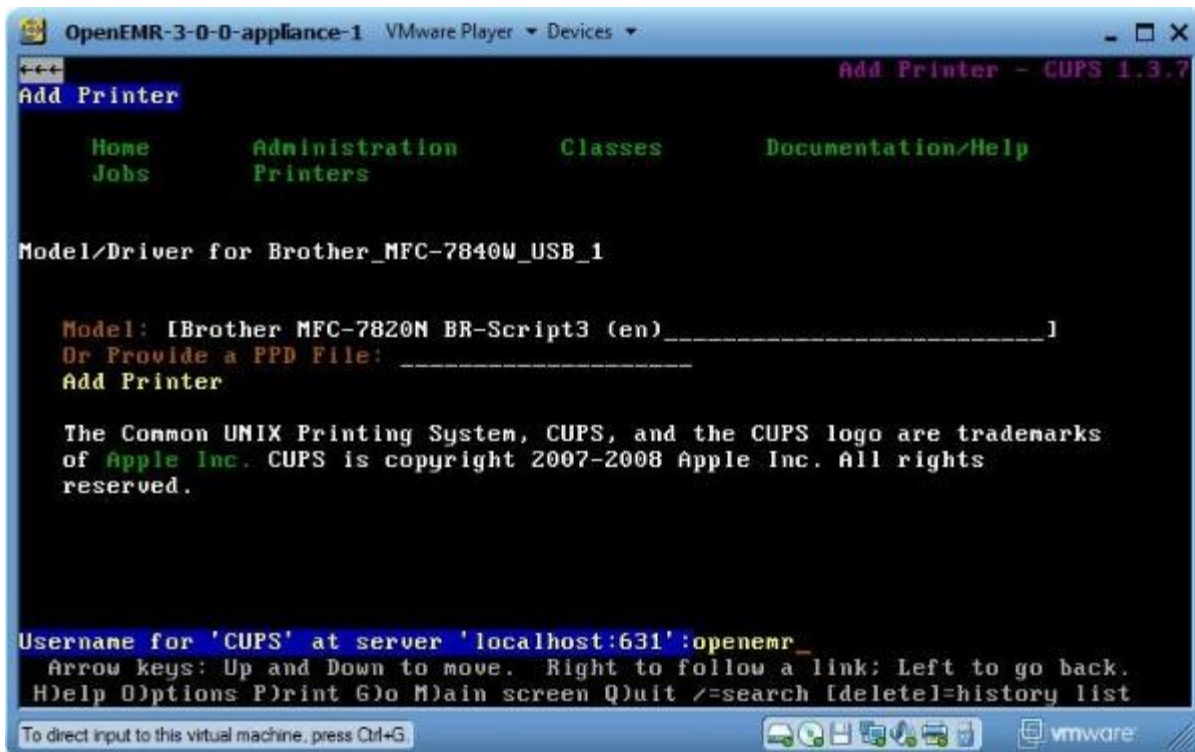
Select the printer you want to add.



Follow instructions to fill out 'Name:', 'Location:', and 'Description:' fields. Then select 'Continue'. (it will take a bit of time to load next page)



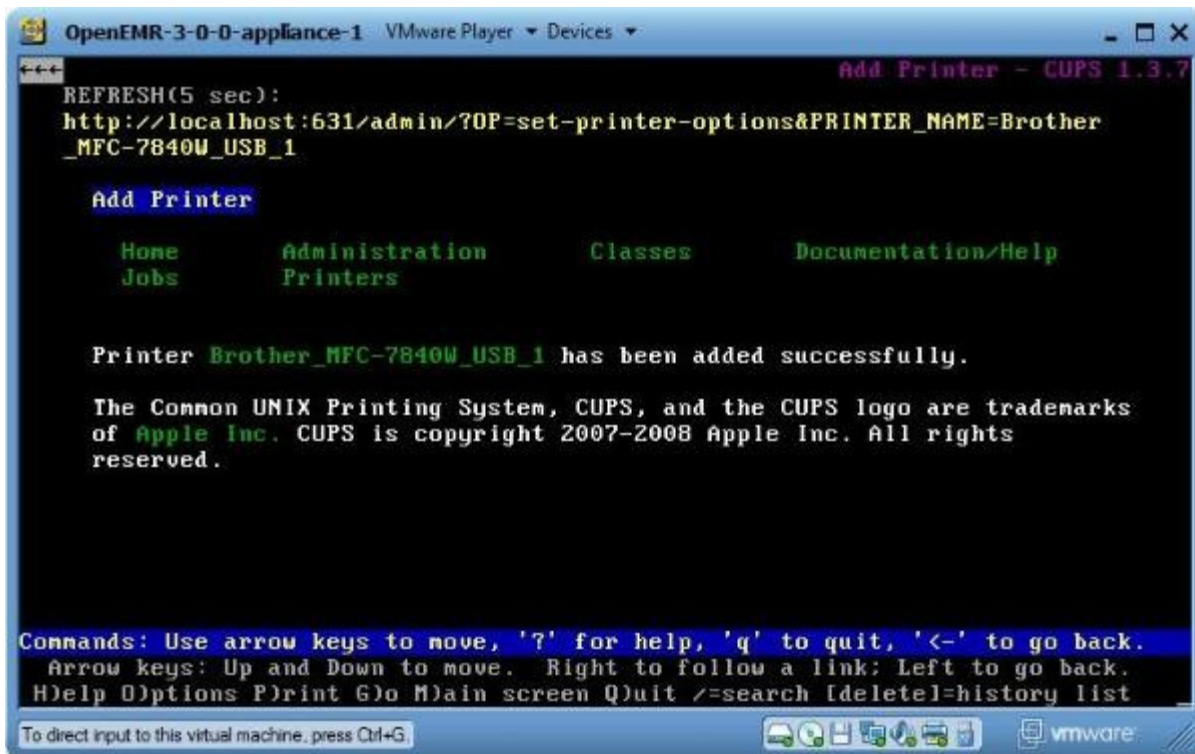
Choose the 'Model:' (use right-arrow key to show the menu after you select this field). Then select 'Add printer'. (it will take a bit of time to load next page)



Enter username 'openemr'.



Enter your 'openemr' user password.



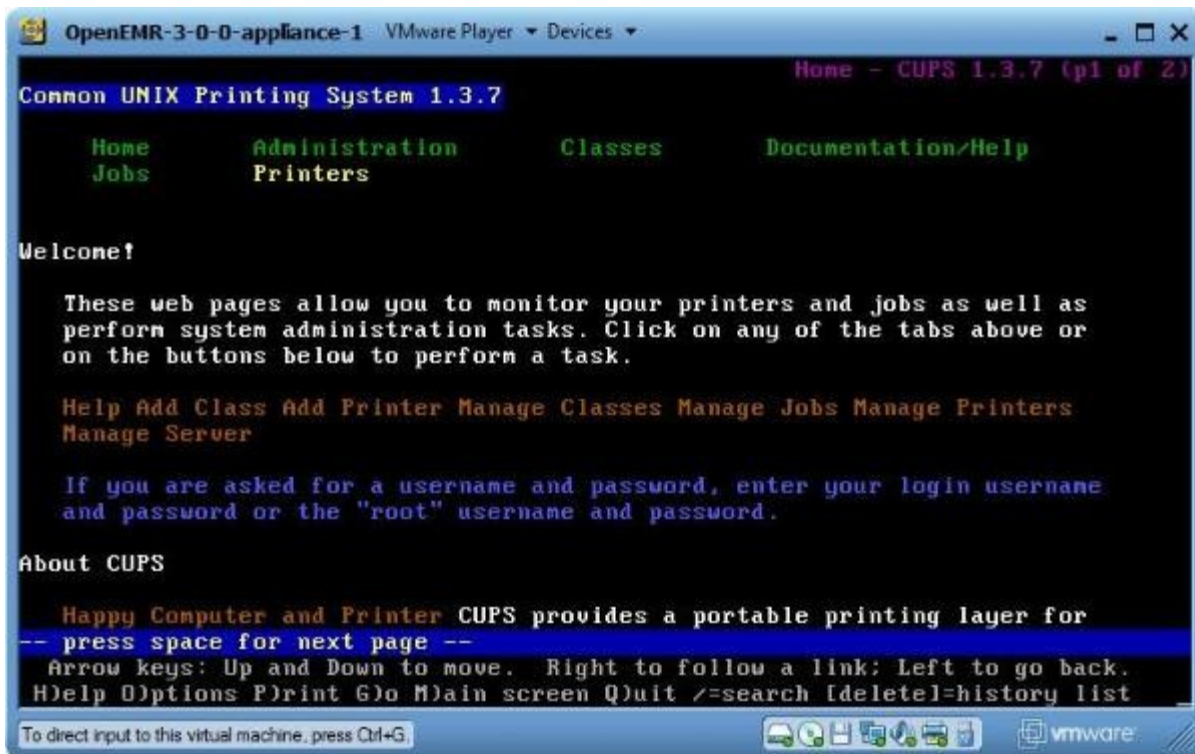
Shows printer was successfully added. Type 'q' to quit.



3. Now that the printer has been added, we can print a test page and learn how to administer the printer. Again, it would be great if we could do this through Webmin, but I was unable to get this to work. So we will go back to using CUPS directly through our text-based browser.

#open up web page with text based browser (use up/down arrow keys or 'tab' key to scroll thru links and hit 'enter' key to select a link)

**lynx http://localhost:631**

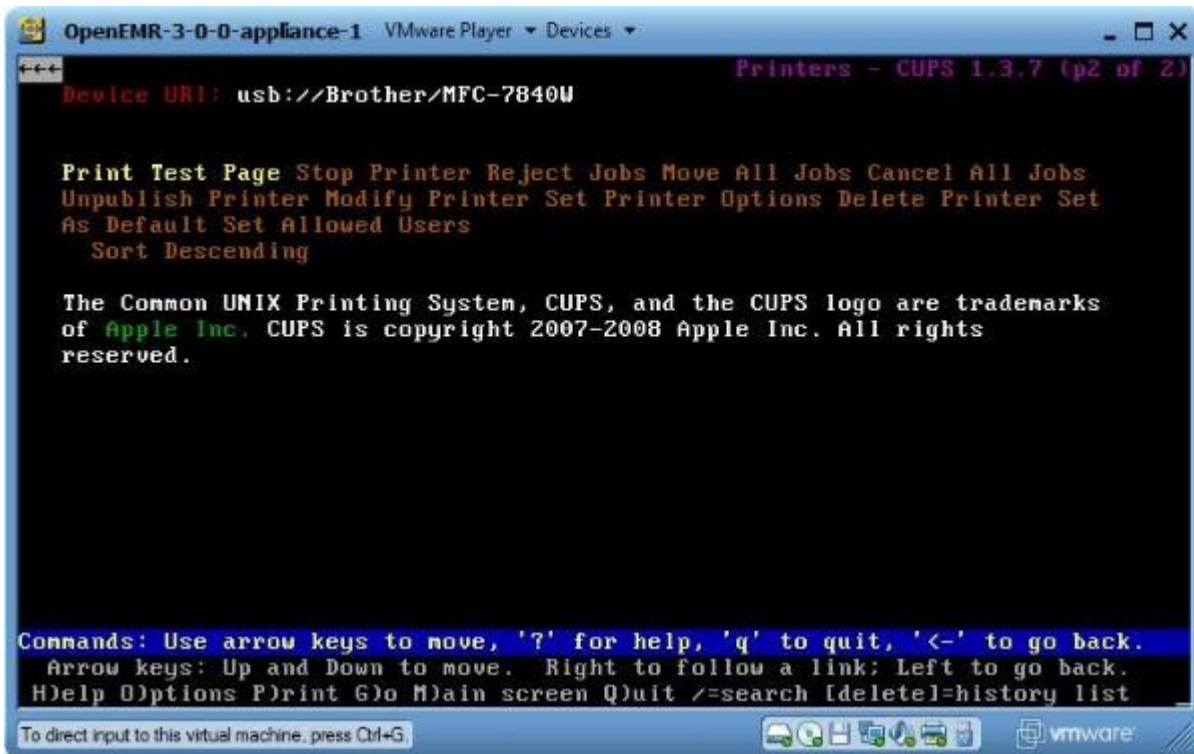


```
OpenEMR-3-0-0-appliance-1 VMware Player Devices
Home - CUPS 1.3.7 (p1 of 2)
Common UNIX Printing System 1.3.7
Home Administration Classes Documentation/Help
Jobs Printers
Welcome!
These web pages allow you to monitor your printers and jobs as well as
perform system administration tasks. Click on any of the tabs above or
on the buttons below to perform a task.
Help Add Class Add Printer Manage Classes Manage Jobs Manage Printers
Manage Server
If you are asked for a username and password, enter your login username
and password or the "root" username and password.
About CUPS
Happy Computer and Printer CUPS provides a portable printing layer for
-- press space for next page --
Arrow keys: Up and Down to move. Right to follow a link; Left to go back.
H)elp O)ptions P)rint G)o M)ain screen Q)uit /=search [delete]=history list
To direct input to this virtual machine, press Ctrl+G.
```

Select 'Printers'



Use down arrow key to scroll below the shown printer.



Select 'Print Test Page' (also note all the other administration options in case you need them in the future).

```
OpenEMR-3-0-0-appliance-1 VMware Player Devices
Print Test Page - CUPS 1.3.7
REFRESH(2 sec): http://localhost:631/printers/Brother_MFC-7840W_USB_1
Print Test Page
Home Administration Classes Documentation/Help
Jobs Printers
Test page sent: job ID is Brother_MFC-7840W_USB_1-3.
The Common UNIX Printing System, CUPS, and the CUPS logo are trademarks
of Apple Inc. CUPS is copyright 2007-2008 Apple Inc. All rights
reserved.
Commands: Use arrow keys to move, '?' for help, 'q' to quit, '<-' to go back.
Arrow keys: Up and Down to move. Right to follow a link; Left to go back.
H)elp O)ptions P)rint G)o M)ain screen Q)uit /=search [delete]=history list
To direct input to this virtual machine, press Ctrl+G
```

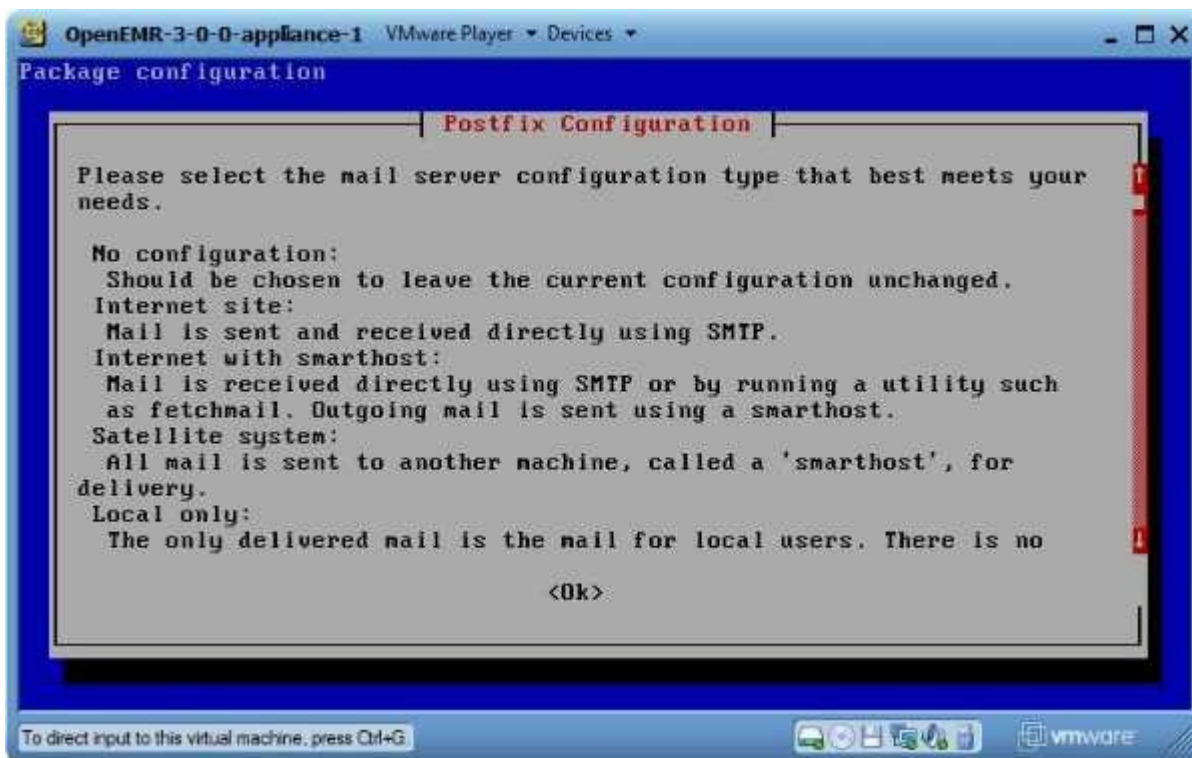
Confirmation of print job is shown. A test page should be sent to your printer. Type 'q' to quit. You are now officially a nerd.

## Email Server Setup

[Main TOC Link](#)

1. This will allow only locally produced emails (such as “status” emails during the below 'backup script' and emails originating from OpenEMR for appt confirmations) to be sent over the internet.
2. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then type in your user password):

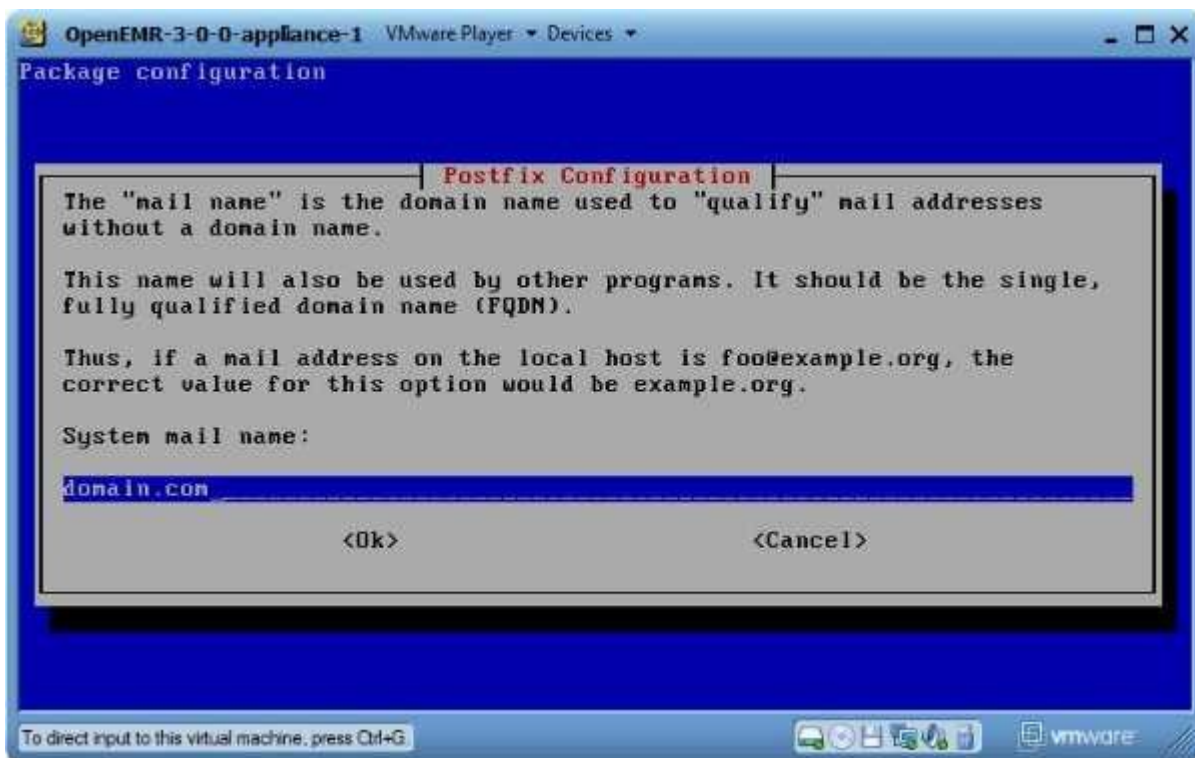
```
#log into root
sudo aptitude install postfix
```



-Hit 'tab' key to select 'Ok'.



Select 'Internet Site', then select 'OK'.



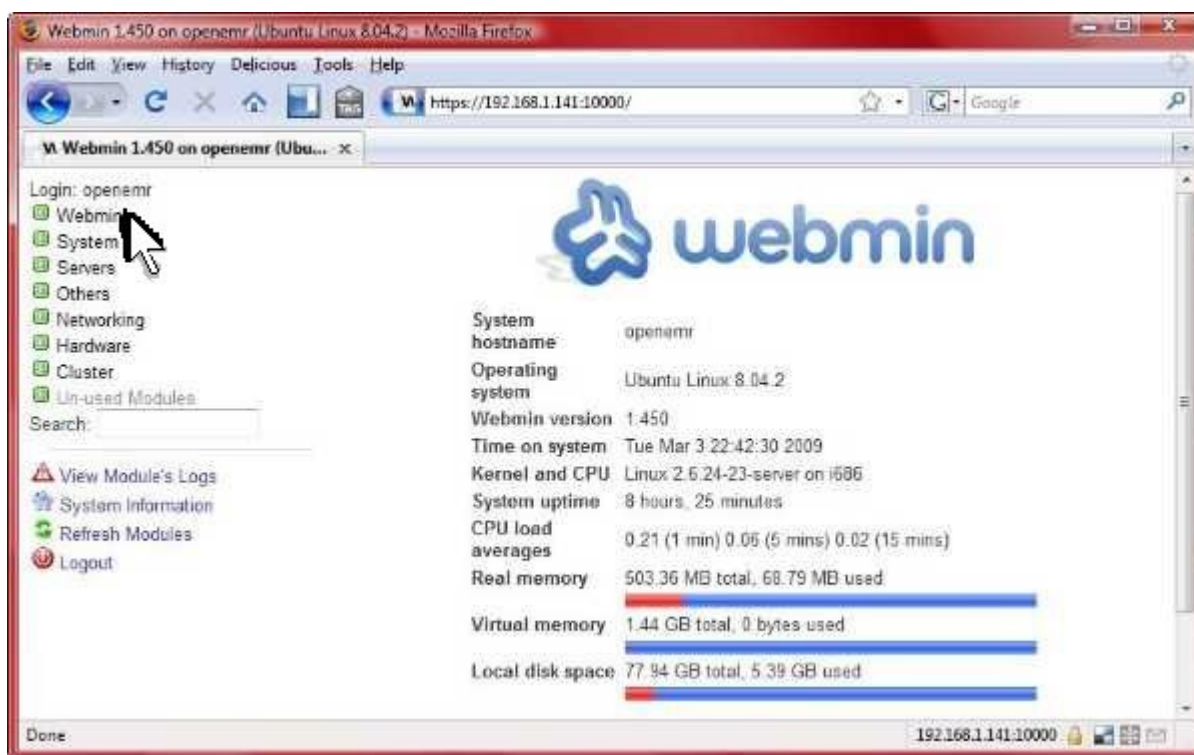
Enter the domain name that is put in the from field of your outgoing emails, for example ouroffice.com . (don't worry, this can always be changed after installation). Then select 'OK'.

3. Now we can configure the mail server in Webmin. First we will start the Postfix module in Webmin, and then we will configure it. Point a web browser outside your appliance to the Webmin link reported in your appliance [introduction](#) screen.

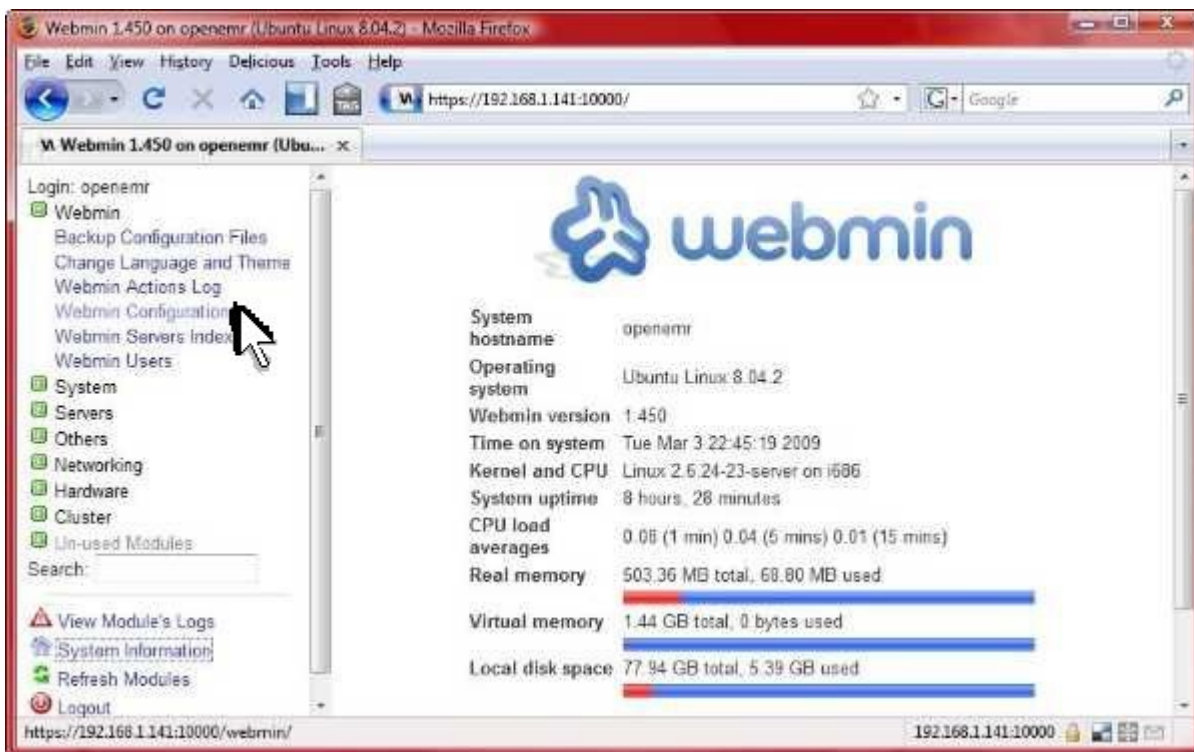
(If you are getting a certificate security error, then first follow the instructions in below appendix section '[Configuring client web browser for https](#)' to configure your web browser.)



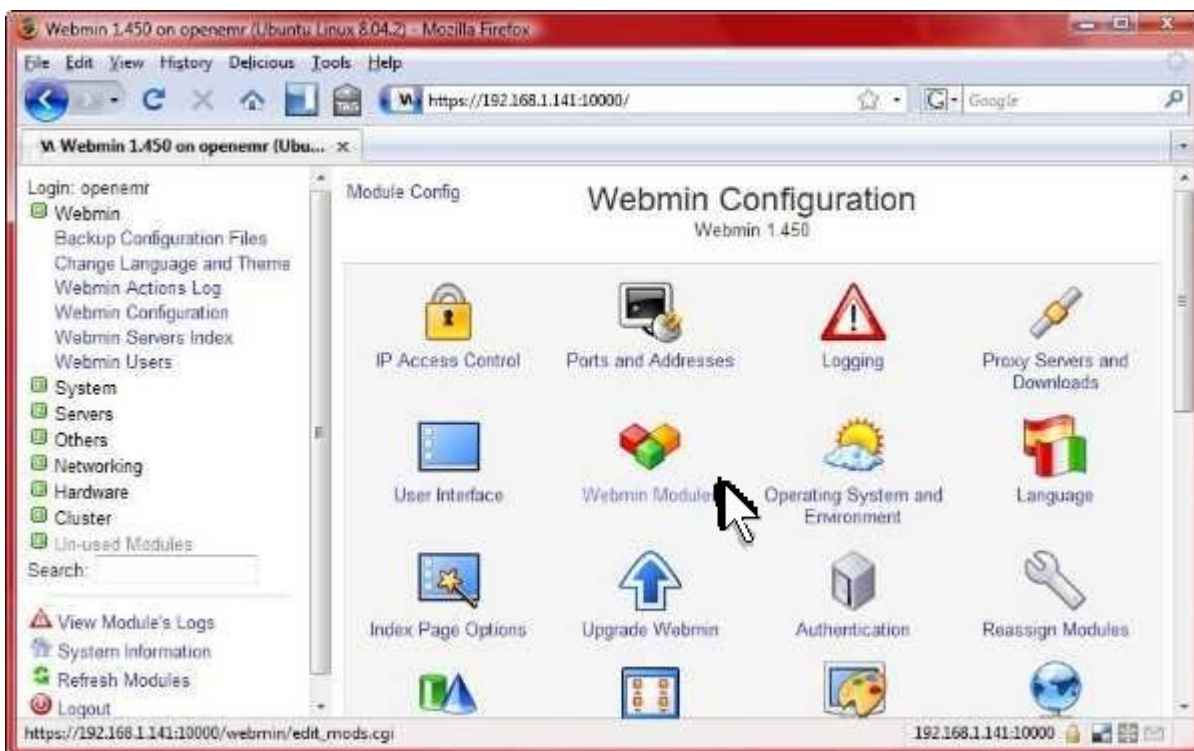
Login.



Click 'Webmin'.



Click 'Webmin Configuration'

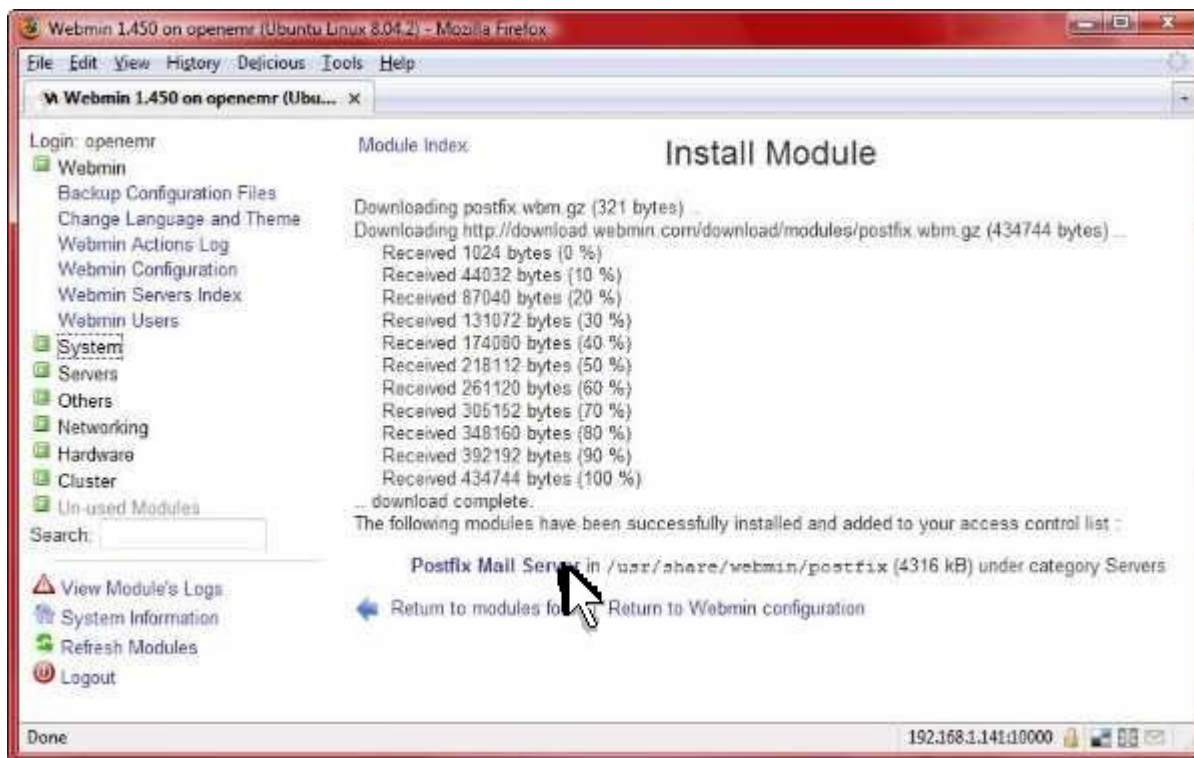


Click 'Webmin Modules'.



Toggle on 'From ftp or http url', then enter 'http://www.webmin.com/updates/postfix-1.450-1.wbm.gz'. Then click 'Install Module'. (We can't use the usual standard postfix module because of a bug in mail aliases).

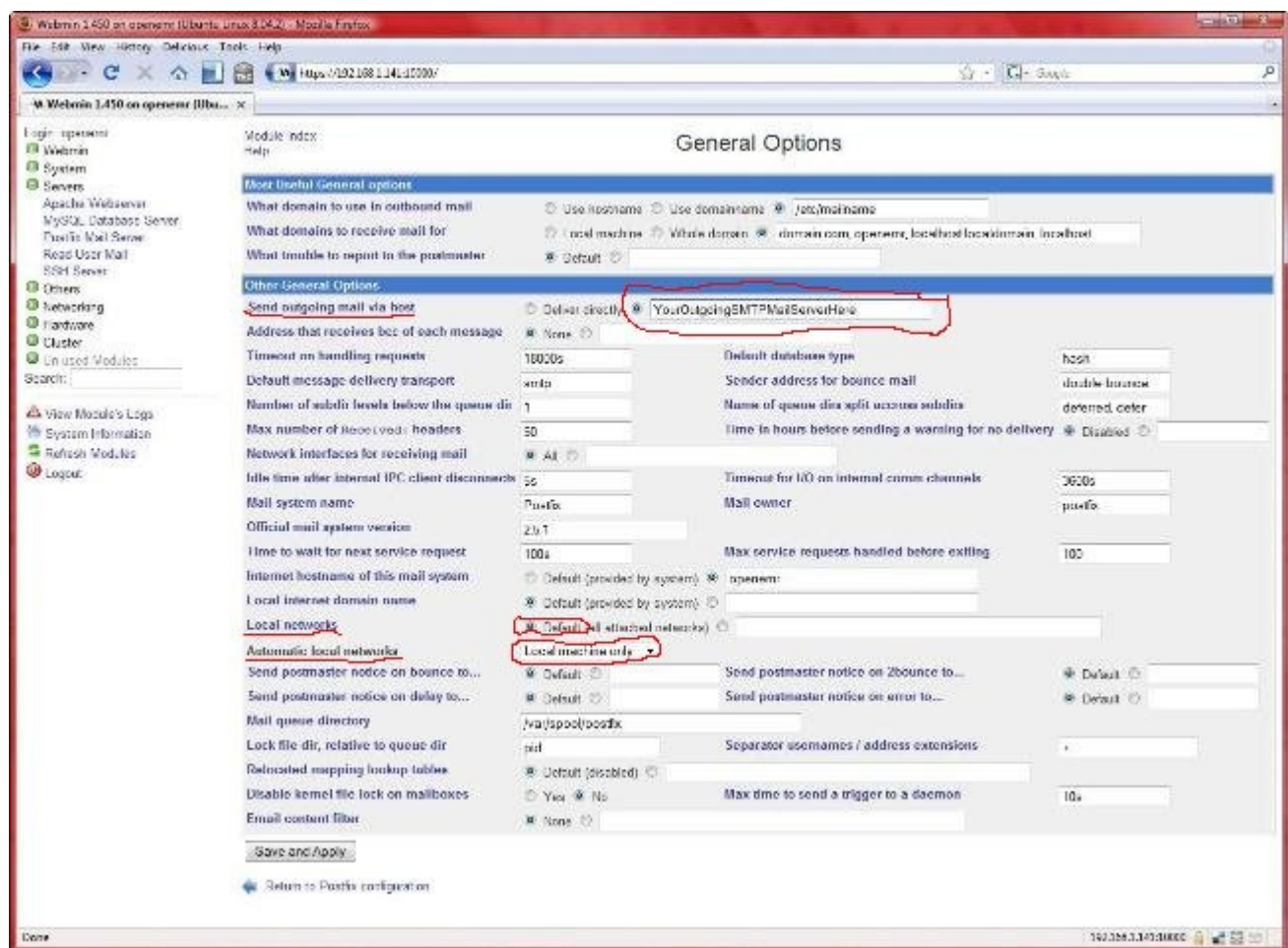




Confirmed successful installation. Then click 'Postfix Mail Server'.



Click 'General Options'.



Sorry about the poor quality screenshot. Only several changes need to be made here (circled in red), which are all detailed directly below.

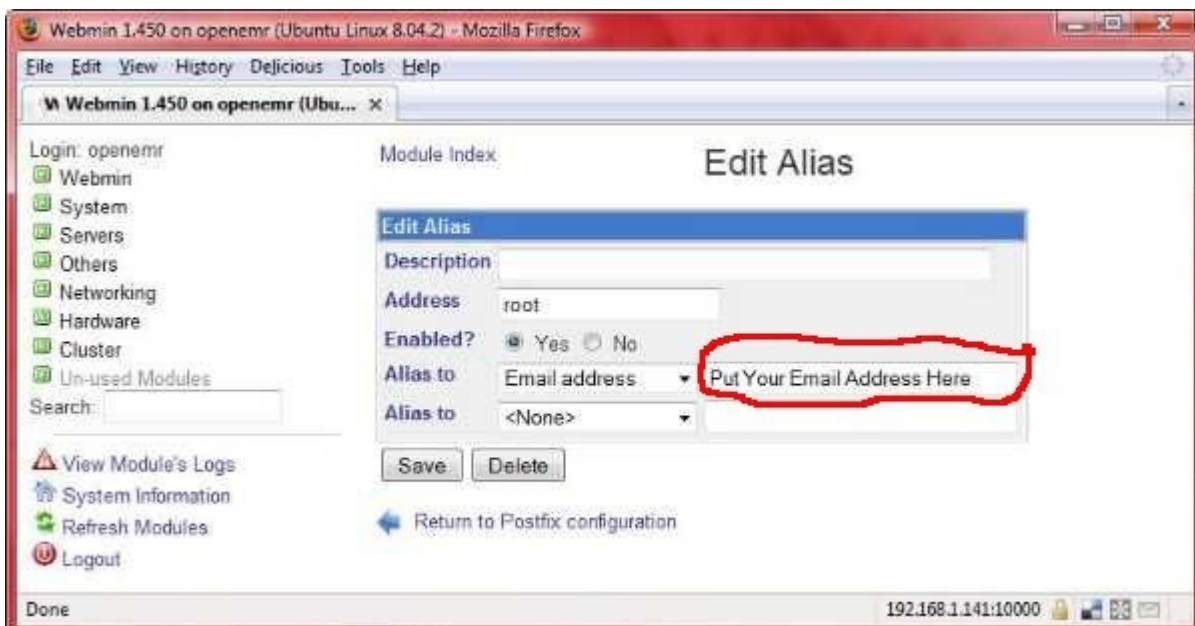
- 1) In 'Send outgoing mail via host', type your outgoing smtp mail server here (this should be given by your internet service provider).
- 2) In 'Local networks', toggle on 'Default'.
- 3) In 'Automatic local networks', choose 'Local machine only'.
- 4) Click the 'Save and Apply' button.



Click 'Mail Aliases'.



Click 'root'.

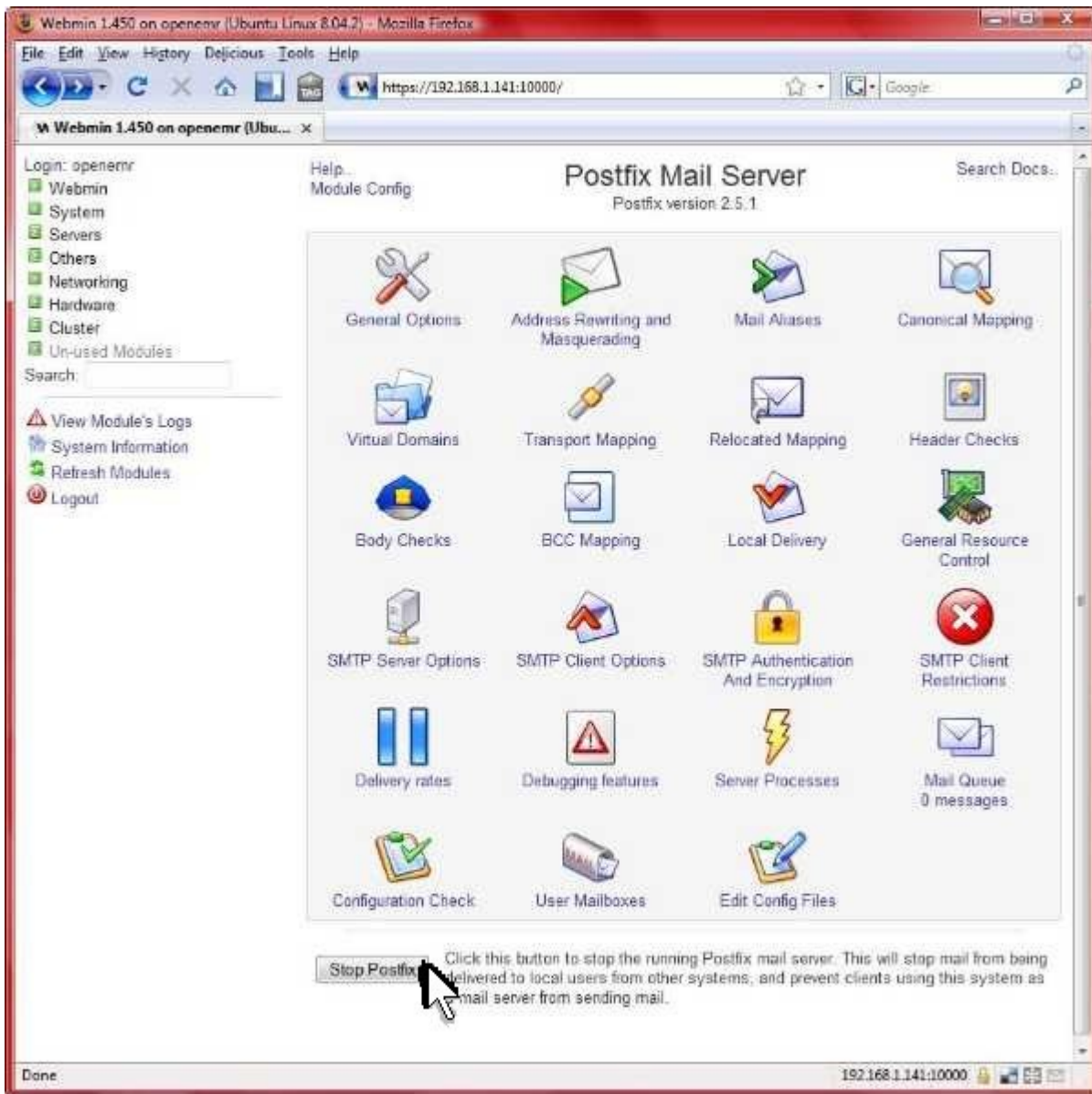


This is where you can direct all the administrative messages created by

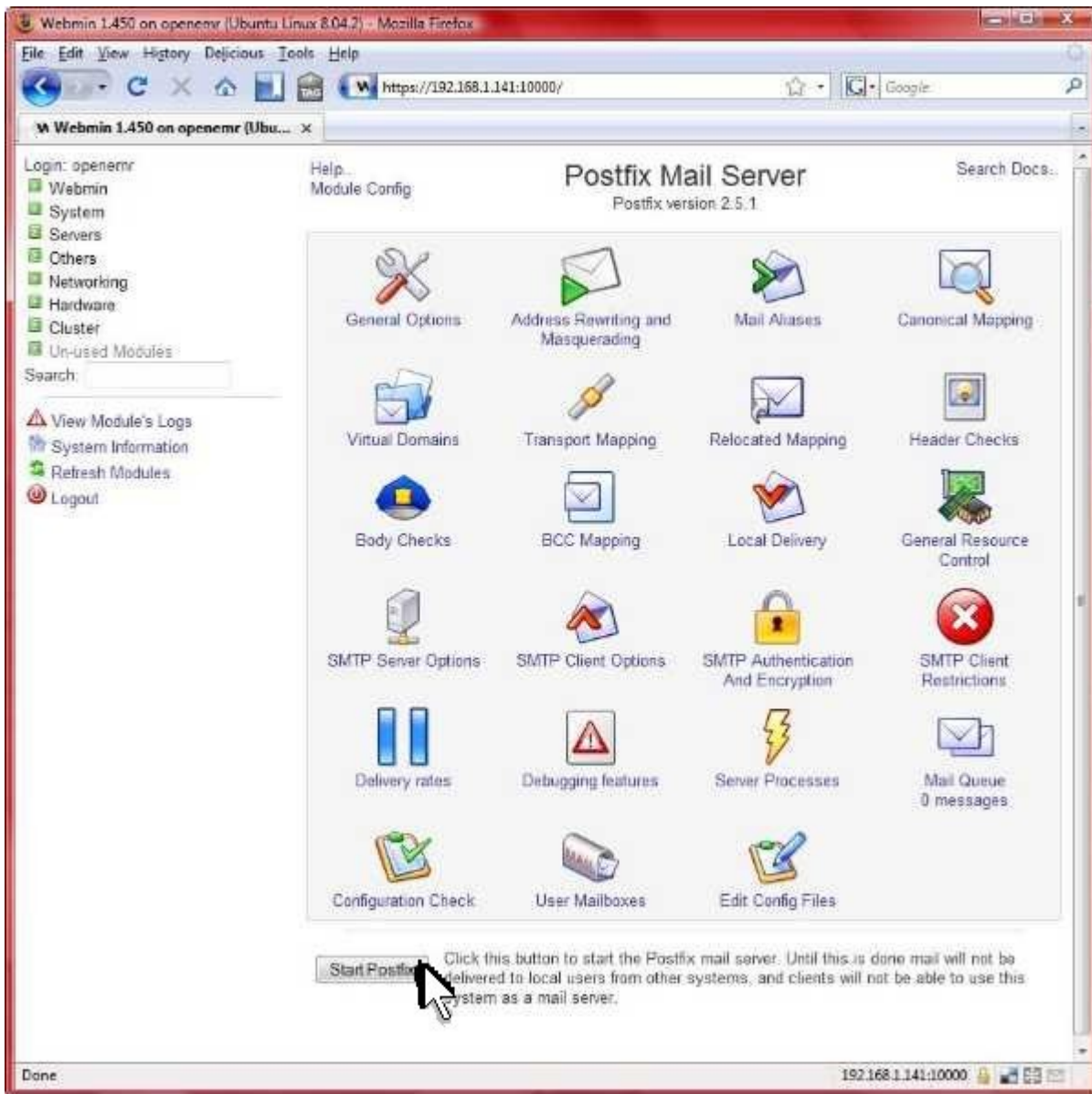
your appliance to your email address. Enter your email address in the field circled in red. Then click 'Save'.



It worked, click 'Return to Postfix Configuration' to restart Postfix.

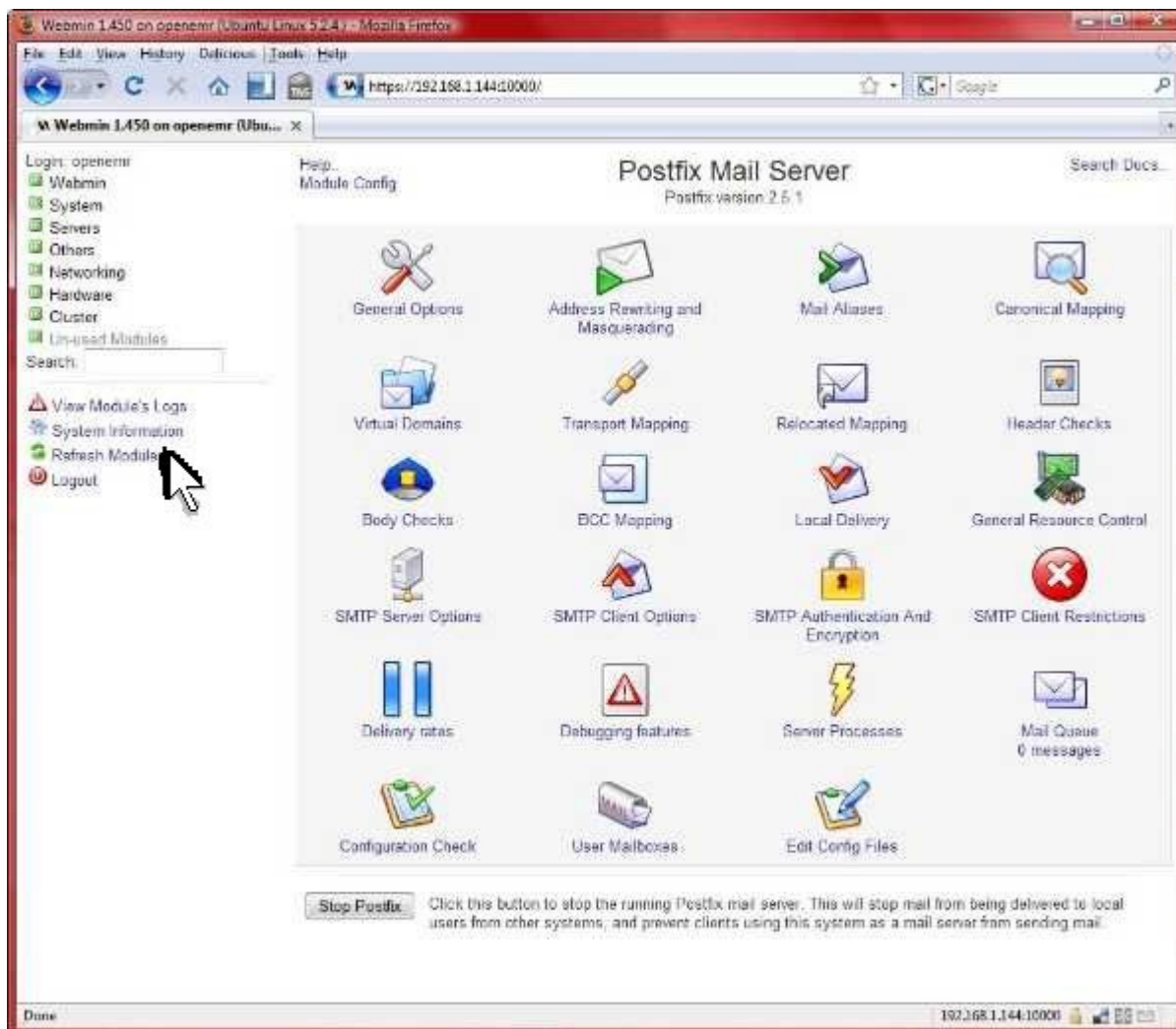


At bottom of page click 'Stop Postfix'.



At bottom of page click 'Start Postfix'.





Click 'Refresh Modules'.



After done, then refresh browser (this will place a postfix link into Webmin's menu in the 'Servers' section).

4. You are now done. For the future you can now get to the postfix configuration menu in Webmin in the 'Servers' section.

## Backup (Automatic) Setup

[Main TOC Link](#)

1. Automatic backups are extremely important. There are numerous strategies and tools to do this. You can back up the entire appliance (turn it off first), you can use tools in Webmin, or you can use scripts/tools in linux. There is no absolute right way to do it (many administrators will employ more than one mechanism), but you have to do it. Imagine the horror if you walked into your clinic one day, and all of your data was gone. Considering the sensitivity of data, it is also a good idea to consider encryption with some backup schemes. The things that need to be backed up in the OpenEMR 3.0.0 Appliance are the openemr MySQL database and the openemr web directory.

2. The script provided will enable a daily backup of the openemr database in the MySQL server and the OpenEMR web directory. The script will place a non-encrypted backup in the local hard drive secured /backup directory, and will also copy an encrypted backup to a DVD. The DVD copy works via multi-session, so you basically just need to leave one DVD in the DVD writer until it fills up. Do NOT use RW DVD. This script will work and should be used with R only DVD's. The output of the automated backup script will be emailed to the person's email entered in above email server setup.
  1. The local /backup directory will have to be manually cleaned up occasionally. I'd recommend deleting old backup sub-directories on a monthly basis or so. (of course, a script could be written for this)
  2. There is no restore script yet, will have to be done manually.
  3. The MySQL database is gzipped and the OpenEMR web directory is tarred and gzipped.
3. Configure file encryption package:
  1. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then type in your user password):

#Configure file encryption. If you want to be able to decrypt your encrypted files you need to remember (case sensitive) the passphrase that you type below. I'd also remember all the other info you type below.

**cd /home/openemr**

**sudo gpg --gen-key**

*-'ENTER' to default of 1 for key selection*

*-'ENTER' to default 2048 keysize bits*

*-'ENTER' to default '0' so key does not expires*

*-Type 'Y' to confirm above*

*-Type your real full name*

*-Type your real email address*

*-Type 'openemr secure backup key'*

*-Type 'O' to confirm*

*-Type a very secure and long 'passphrase' (the longer your passphrase is the more secure, go for at least 15 characters with numbers, different cases, and strange characters)*

**#IMPORTANT!!!** You **NEED** to backup the entire contents of directory **/home/openemr/.gnupg** on the most indestructible disk(s) you can find and then keep in a secure place. This directory contains your secret key file, and without this you will be unable to restore from your encrypted data backup!!! You also need to **remember** your **passphrase**, or you won't be able to restore your backed up data.

#The decrypt command, in case you need at some point:  
#`gpg -o OutputFilename -d InputFilename`

4. Configure backup script and automate it:

1. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then type in your user password):

```
#install the DVD burner software  
sudo aptitude install dvd+rw-tools  
-y to packages
```

```
#create a secure backup directory  
sudo mkdir /backup  
sudo chown root:root /backup  
sudo chmod 700 /backup
```

```
#download and move the backup script to /root , secure it, and  
allow execution  
wget http://www.bradynd.com/fullbackup3.sh  
sudo mv fullbackup3.sh /root  
sudo chown root:root /root/fullbackup3.sh  
sudo chmod 700 /root/fullbackup3.sh
```

```
#edit file /root/dailybackup3.sh:  
sudo jed /root/fullbackup3.sh  
#edit the below DVDDEVICE line to what the  
#device for the DVD writer is. In the appliance (3.0.0)  
#it should be '/dev/scd0'.  
DVDDEVICE=/dev/scd0
```

```
#edit full name you entered above for encryption key:  
YOURFULLNAME='Brady Miller'  
TEXT EDITOR SAVE AND EXIT
```

```
#Automate script to cron for a daily run at 1:02 AM. WARNING:  
This script needs to finish and start on the same day since it  
plays around with file names using the date command.  
Basically, don't start this script before midnight unless you are  
sure it will finish before midnight. This is why I have it set for  
1:02AM.
```

```
export EDITOR=/usr/bin/jed  
sudo crontab -e
```

```
#paste below line at end of file (also ensure you add a new  
line(enter key) after this line):  
02 1 * * * /root/fullbackup3.sh  
TEXT EDITOR SAVE AND EXIT
```

## Static IP Address Setup

[Main TOC Link](#)

1. These are instructions for setting up a static IP address for your appliance using Webmin.
2. First, you should record the required IP addresses (example form below). The 'Appliance IP Address' is going to be the IP address of your appliance (within your network). The 'Subnet Mask' is 255.255.255.0 in most cases. The 'Broadcast IP Address' can be calculated by comparing the 'Appliance IP Address' and the 'Subnet Mask'. For example, if the 'Appliance IP Address' is 192.168.1.114 and the 'Subnet Mask' is 255.255.255.0, then the 'Broadcast IP Address' is 192.168.1.255. There is also a Subnet calculator that can calculate the 'Broadcast IP Address' at <http://www.subnet-calculator.com/>. The 'Gateway IP Address' is the IP address of your gateway. The 'DNS server IP Address' entries are the IP addresses of your DNS servers (the DNS server IP addresses are generally supplied by your internet service providers, and there are usually two of them).

Appliance IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Broadcast IP Address: \_\_\_\_\_

Gateway IP Address: \_\_\_\_\_

DNS server IP Address: \_\_\_\_\_

DNS server IP Address: \_\_\_\_\_

3. Point a web browser outside your appliance to the Webmin link reported in your appliance [introduction](#) screen.

(If you are getting a certificate security error, then first follow the instructions in below appendix section '[Configuring client web browser for https](#)' to configure your web browser.)



Login.

The screenshot displays the Webmin 1.450 interface in a Mozilla Firefox browser window. The browser's address bar shows the URL `https://192.168.1.167:1`. The Webmin dashboard includes a sidebar menu on the left with the following items: Webmin, System, Servers, Others, Networking, Hardware, Cluster, and Un-used Modules. Below the menu is a search box and several utility links: View Module's Logs, System Information, Refresh Modules, and Logout. The main content area features the Webmin logo and a system information section with the following data:

System hostname	openemr
Operating system	Ubuntu Linux 8.04.2
Webmin version	1.450
Time on system	Sat Feb 28 09:33:21 2009
Kernel and CPU	Linux 2.6.24-23-server on i686
System uptime	8 hours, 6 minutes
CPU load averages	0.16 (1 min) 0.03 (5 mins) 0.07 (15 mins)
Real memory	503.36 MB total, 104.82 MB used
Virtual memory	1.44 GB total, 88 kB used
Local disk space	77.94 GB total, 5.35 GB used

At the bottom of the browser window, the status bar shows "Done" and the address `192.168.1.167:10000`.

Click 'Networking'.

The screenshot displays the Webmin 1.450 interface in a Mozilla Firefox browser window. The address bar shows the URL `https://172.16.0.113:10000/`. The page title is "Webmin 1.450 on openemr (Ubuntu Linux 8.04.2)".

**Left Sidebar:**

- Login: openemr
- Webmin
- System
- Servers
- Others
- Networking** (highlighted)
- Bandwidth Monitoring
- Linux Firewall
- NIS Client and Server
- Network Configuration (indicated by a mouse cursor)
- TCP Wrappers
- Hardware
- Cluster
- Un-used Modules
- Search:
- View Module's Logs
- System Information
- Refresh Modules
- Logout

**System Information:**

System hostname	openemr
Operating system	Ubuntu Linux 8.04.2
Webmin version	1.450
Time on system	Mon Mar 2 14:23:18 2009
Kernel and CPU	Linux 2.6.24-23-server on i686
System uptime	2 hours, 25 minutes
CPU load averages	0.00 (1 min) 0.00 (5 mins) 0.00 (15 mins)
Real memory	503.36 MB total, 84.20 MB used
Virtual memory	1.44 GB total, 0 bytes used
Local disk space	77.94 GB total, 5.35 GB used

The bottom status bar shows the URL `https://172.16.0.113:10000/net/` and the IP address `172.16.0.113:10000`.

Click 'Network Configuration'.





Click 'Network Interfaces'.

Webmin 1.450 on openemr (Ubuntu Linux 8.04.2) - Mozilla Firefox

File Edit View History Delicious Tools Help

https://172.16.0.113:10000/

Webmin 1.450 on openemr (Ubu... x

Login: openemr

- Webmin
- System
- Servers
- Others
- Networking
  - Bandwidth Monitoring
  - Linux Firewall
  - NIS Client and Server
  - Network Configuration
  - TCP Wrappers
- Hardware
- Cluster
- Un-used Modules

Search:

View Module's Logs

System Information

Refresh Modules

Logout

Module Index

## Network Interfaces

Active Now **Activated at Boot**

Interfaces listed in this table are currently active on the system. In most cases, you should edit them under the **Activated at Boot** tab.

Select all | Invert selection | Add a new interface.

Name	Type	IP Address	Netmask	Status
<input type="checkbox"/> eth0	Ethernet	172.16.0.113	255.255.255.0	Up
	Ethernet	fe80::20c:29ff:fe06:4b3f64		Up
<input type="checkbox"/> lo	Loopback	127.0.0.1	255.0.0.0	Up
	Loopback	::1	128	Up

Select all | Invert selection | Add a new interface.

De-Activate Selected Interfaces

Return to network configuration

https://172.16.0.113:10000/net/list\_ifcs.cgi?mode=active 172.16.0.113:10000

Click the 'Activated at Boot' tab.

Webmin 1.450 on openemr (Ubuntu Linux 8.04.2) - Mozilla Firefox

File Edit View History Delicious Tools Help

https://172.16.0.113:10000/

Webmin 1.450 on openemr (Ubu... x

Login: openemr

- Webmin
- System
- Servers
- Others
- Networking
  - Bandwidth Monitoring
  - Linux Firewall
  - NIS Client and Server
  - Network Configuration
  - TCP Wrappers
- Hardware
- Cluster
- Un-used Modules

Search:

View Module's Logs

System Information

Refresh Modules

Logout

Module Index

## Network Interfaces

Active Now **Activated at Boot**

Interfaces listed in this table will be activated when the system boots up, and will generally be active now too.

Select all | Invert selection | Add a new interface.

Name	Type	IP Address	Netmask	Activate at boot?
<input type="checkbox"/> eth0	Ethernet	From DHCP	Automatic	Yes
<input type="checkbox"/> lo	Loopback	Automatic	Automatic	Yes

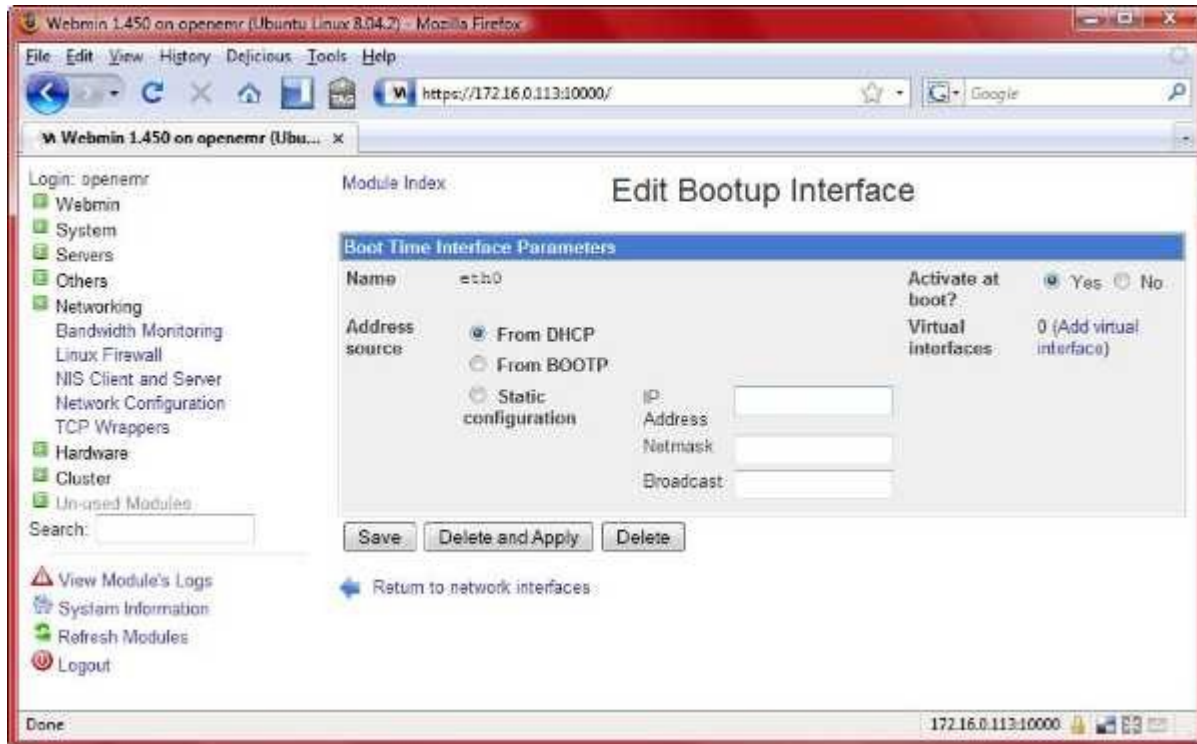
Select all | Invert selection | Add a new interface.

Delete Selected Interfaces Delete and Apply Selected Interfaces Apply Selected Interfaces

Return to network configuration

https://172.16.0.113:10000/net/edit\_bifc.cgi?id=1 172.16.0.113:10000

Click 'eth0'.



- 1) Toggle on 'Static configuration'.
- 2) Enter 'Appliance IP Address' into 'IP Address' field.
- 3) Enter 'Subnet Mask' into 'Netmask' field.
- 4) Enter 'Broadcast IP Address' into 'Broadcast' field.
- 5) Click 'Save'.



Click 'Return to network configuration'.



Click 'Routing and Gateways'.



- 1) Toggle on 'Gateway'
- 2) Enter the 'Gateway IP Address' into 'Gateway' field
- 3) Click 'Save'.



Click 'Hostname and DNS client'.



Enter the 'DNS server IP Address' values into the 'DNS servers' fields, then click 'Save'.



Click 'System Information'.

4. Then reboot the appliance per the instructions found in the '[Reboot or Shutdown Appliance](#)' section.

## Change Clock

[Main TOC Link](#)

1. These are instructions on changing the time in your appliance using Webmin.
2. Point a web browser outside your appliance to the Webmin link reported in your appliance [introduction](#) screen.

(If you are getting a certificate security error, then first follow the instructions in below appendix section '[Configuring client web browser for https](#)' to configure your web browser.)



Login.



Click 'Hardware'.

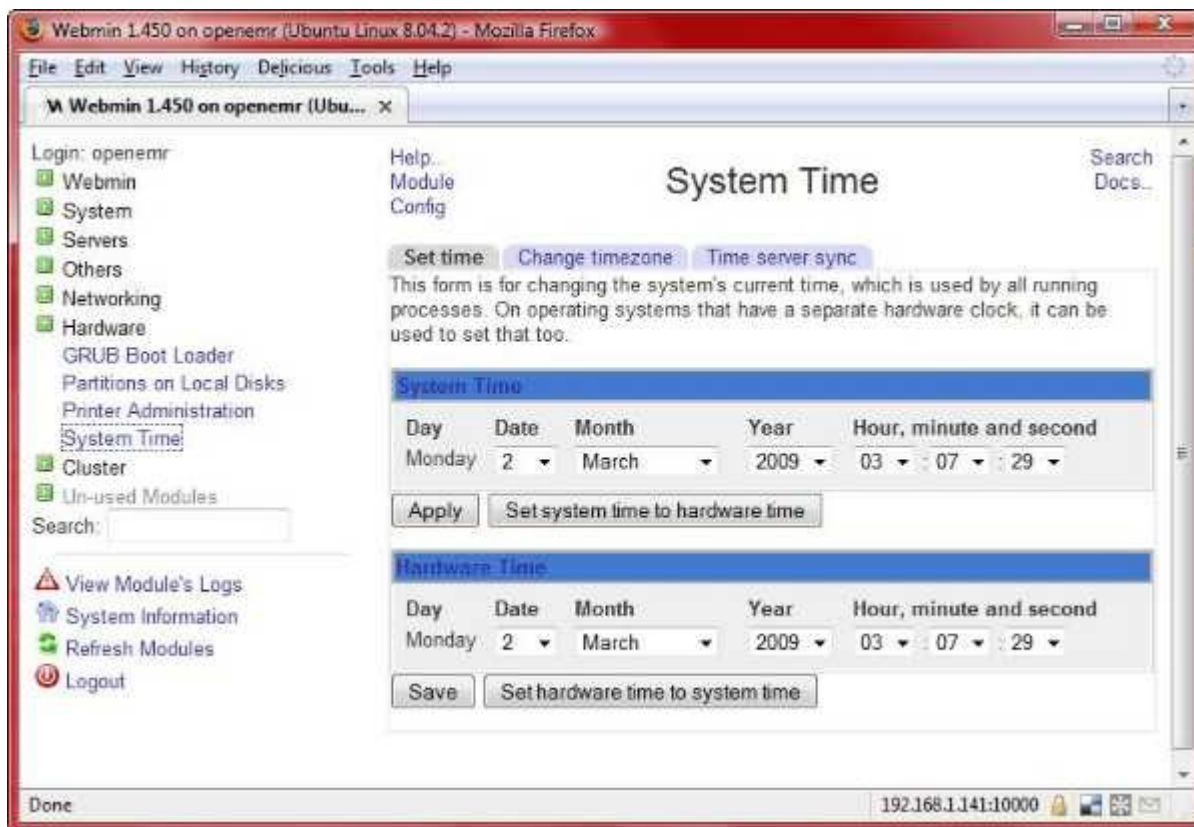


The screenshot displays the Webmin 1.450 web interface. The browser window title is "Webmin 1.450 on openemr (Ubuntu Linux 8.04.2) - Mozilla Firefox". The page content includes a navigation menu on the left with categories like Webmin, System, Servers, Others, Networking, Hardware, Cluster, and Un-used Modules. A mouse cursor is pointing at the "System Time" link under the Hardware category. The main content area shows system details:

System hostname	openemr
Operating system	Ubuntu Linux 8.04.2
Webmin version	1.450
Time on system	Mon Mar 2 03:05:53 2009
Kernel and CPU	Linux 2.6.24-23-server on i686
CPU load averages	0.00 (1 min) 0.06 (5 mins) 0.07 (15 mins)
Real memory	503.36 MB total, 66.90 MB used
Virtual memory	1.44 GB total, 0 bytes used
Local disk space	77.94 GB total, 5.35 GB used

At the bottom, a warning message states: "Warning - Your system is actually running Ubuntu Linux version 5.2.4". The status bar at the bottom of the browser shows "Done" and the IP address "192.168.1.141:10000".

Click 'System Time'.



Set the time and timezone of your appliance here. Do **NOT** set up a 'time server sync'; this will screw up your appliance.

## Change Appliance Password

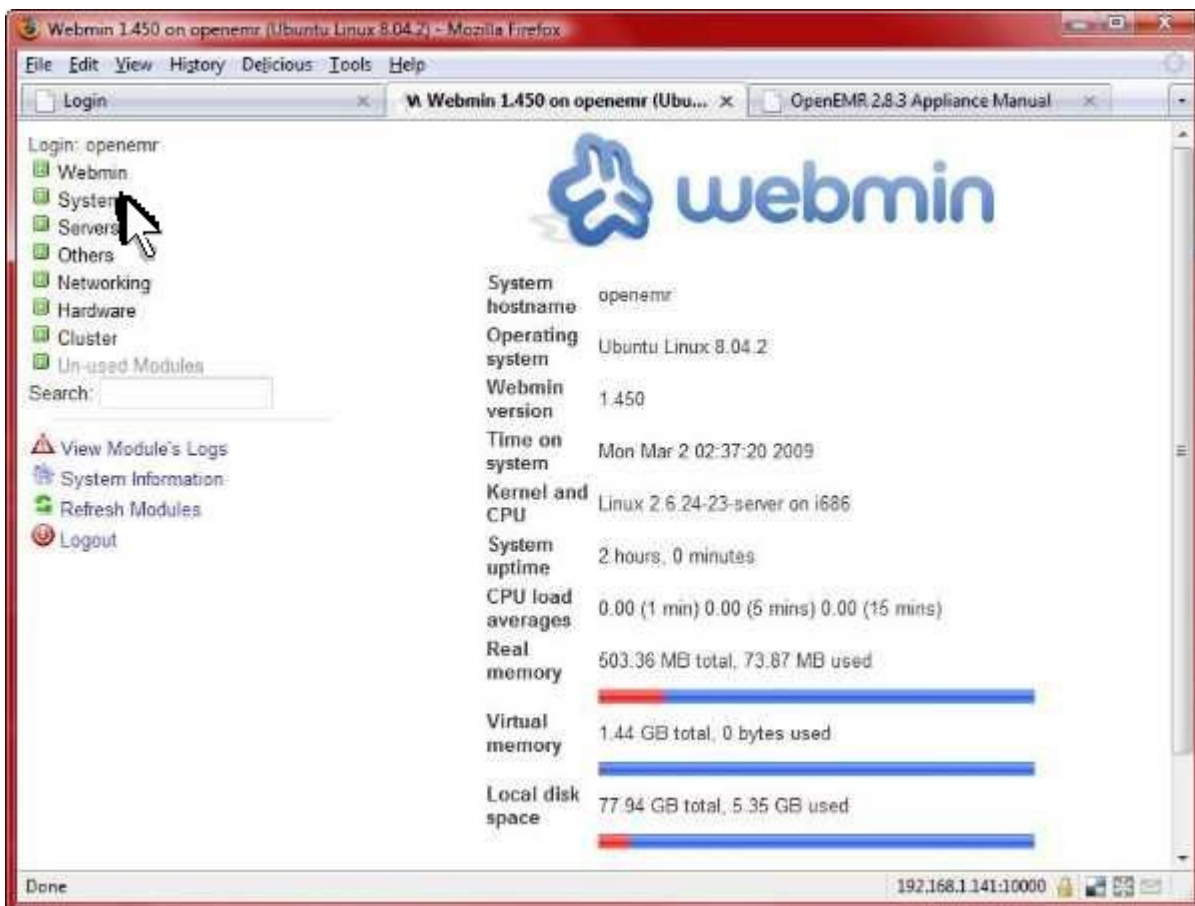
[Main TOC Link](#)

1. These are instructions for changing the password to the 'openemr' user in your appliance using Webmin. This is important to secure your appliance. It will effectively change the 'openemr' user password for logging into Webmin, logging into your appliance's commandline, and to confirm usage of the 'sudo' command.
2. Point a web browser outside your appliance to the Webmin link reported in your appliance [introduction](#) screen.

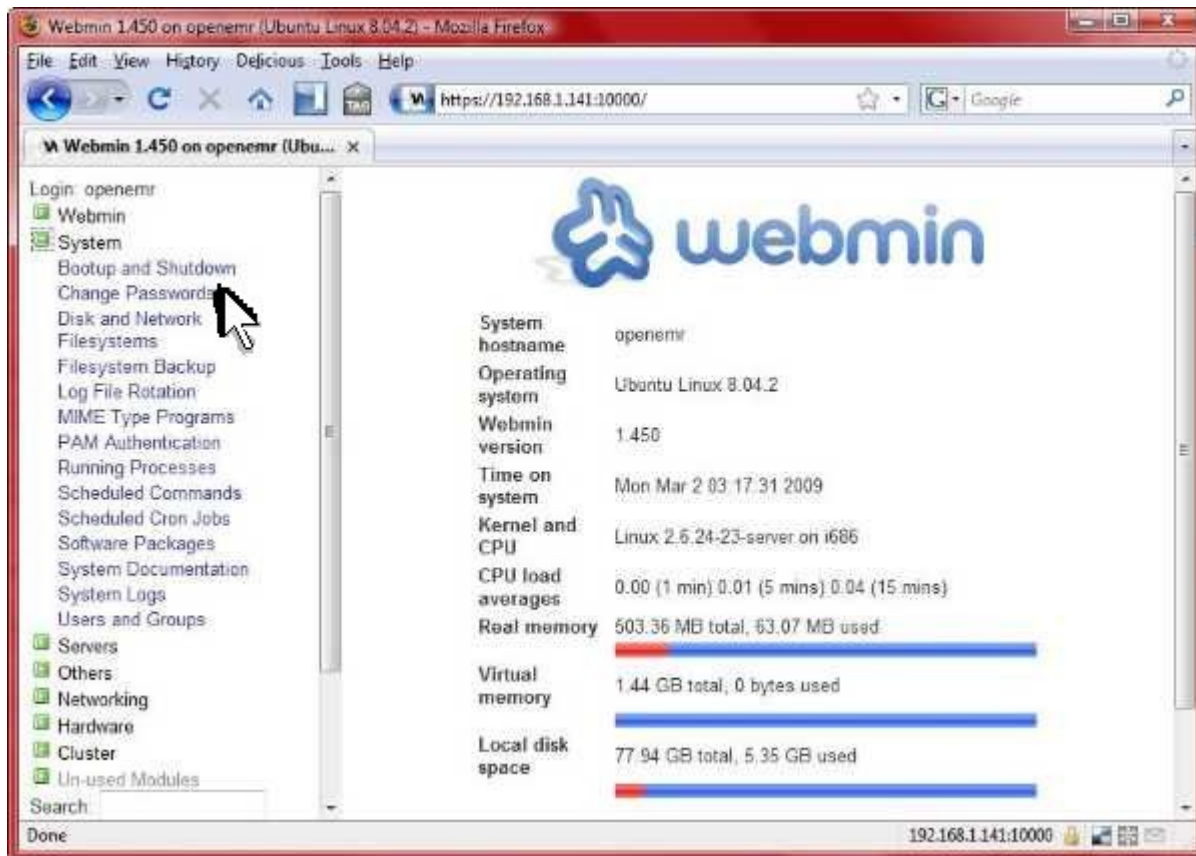
(If you are getting a certificate security error, then first follow the instructions in below appendix section '[Configuring client web browser for https](#)' to configure your web browser.)



Login.



Click 'System'



Click 'Change Passwords'.



Click 'openemr'.



Type and confirm new password, then click 'change'

## Reboot or Shutdown Appliance

[Main TOC Link](#)

1. These are instructions on how to shutdown or restart your appliance using Webmin.
2. Point a web browser outside your appliance to the Webmin link reported in your appliance [introduction](#) screen.

(If you are getting a certificate security error, then first follow the instructions in below appendix section '[Configuring client web browser for https](#)' to configure your web browser.)



Login.

Webmin 1.450 on openemr (Ubuntu Linux 8.04.2) - Mozilla Firefox

File Edit View History Delicious Tools Help

Login: openemr

- Webmin
- System
- Servers
- Others
- Networking
- Hardware
- Cluster
- Un-used Modules

Search:

View Module's Logs

System Information

Refresh Modules

Logout

**webmin**

System hostname: openemr

Operating system: Ubuntu Linux 8.04.2

Webmin version: 1.450

Time on system: Mon Mar 2 02:37:20 2009

Kernel and CPU: Linux 2.6.24-23-server on i686

System uptime: 2 hours, 0 minutes

CPU load averages: 0.00 (1 min) 0.00 (5 mins) 0.00 (15 mins)

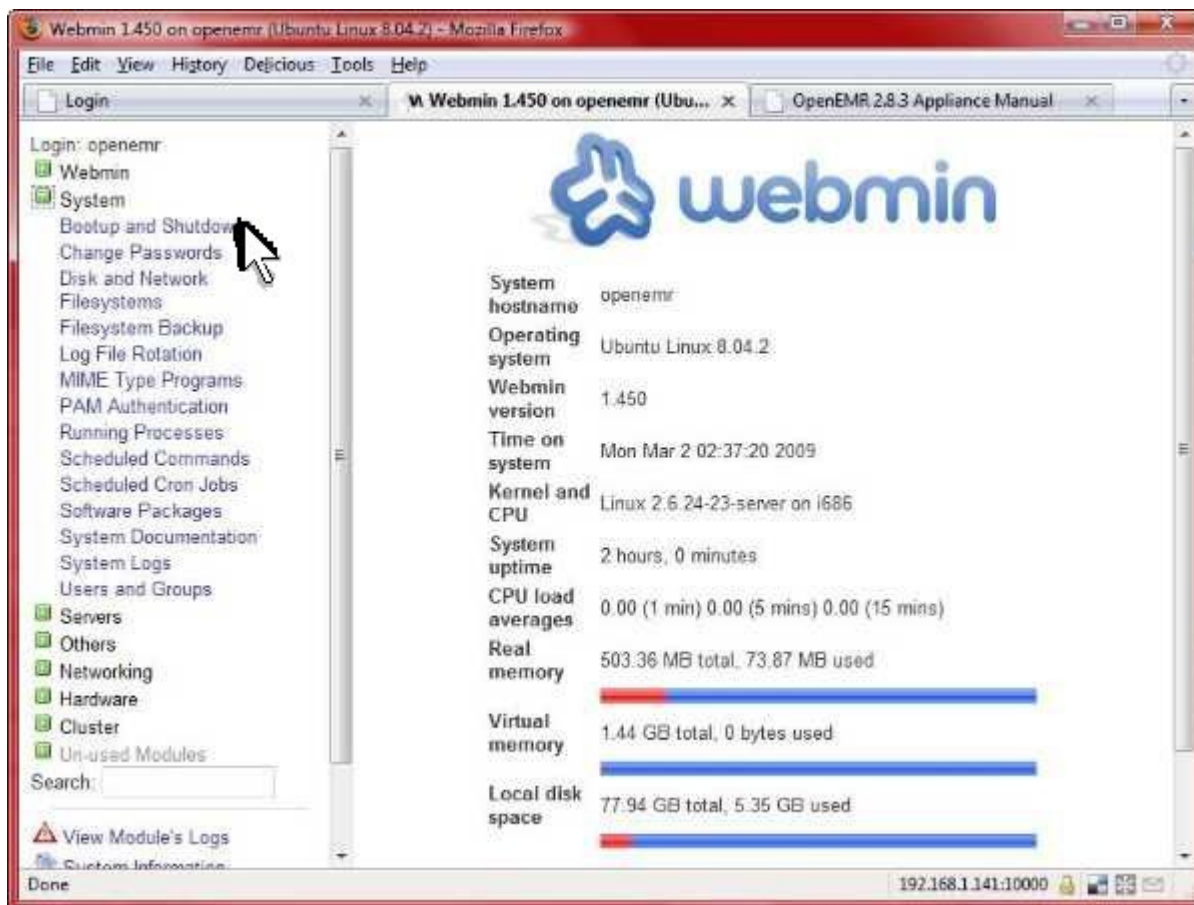
Real memory: 503.36 MB total, 73.87 MB used

Virtual memory: 1.44 GB total, 0 bytes used

Local disk space: 77.94 GB total, 5.35 GB used

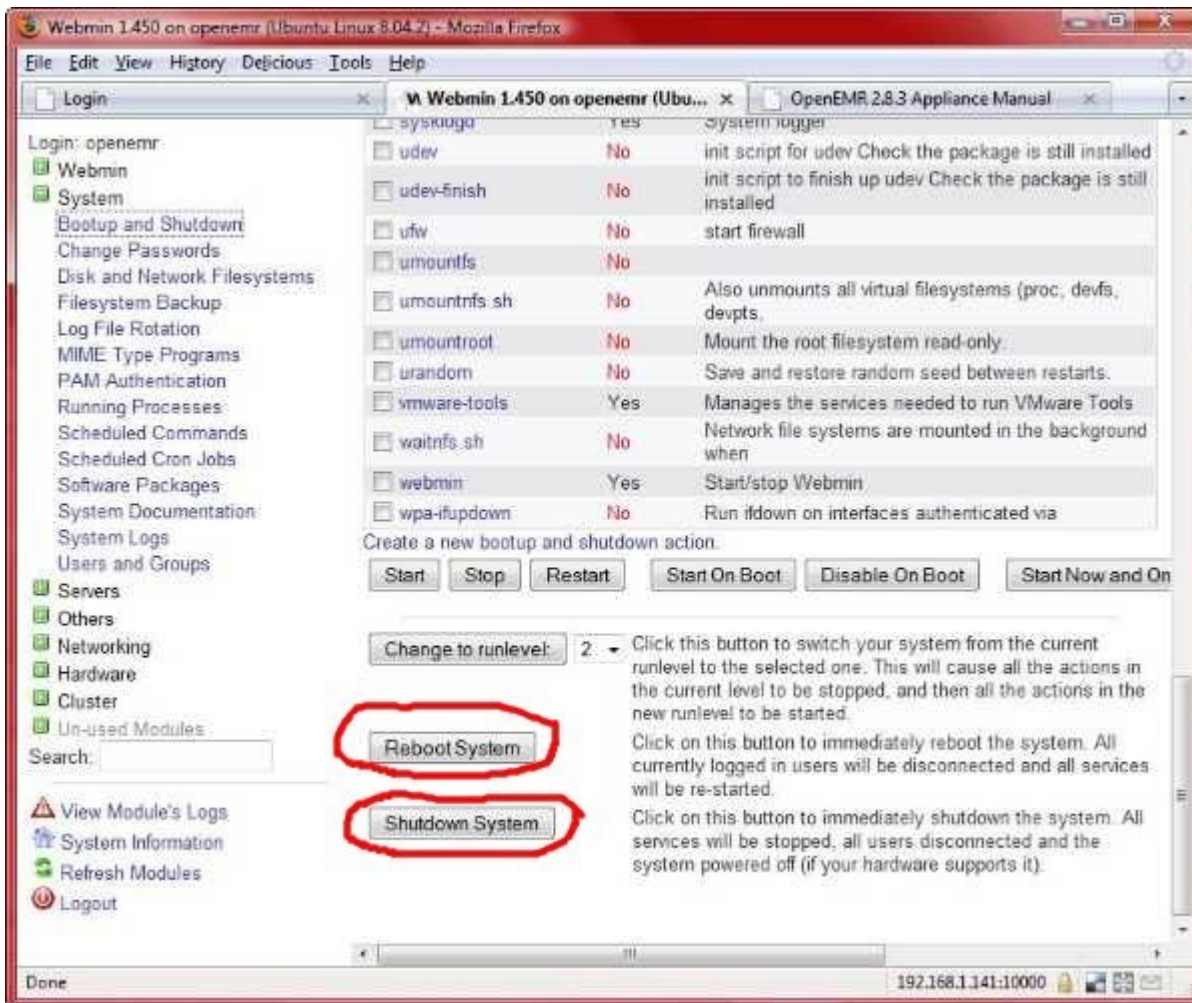
Done 192.168.1.141:10000

Click 'System'.



Click 'Bootup and Shutdown'.





Scroll to bottom of page. To reboot your appliance, click the 'Reboot System' button. To shutdown your appliance, click the 'Shutdown System' button. You will be asked to confirm this on the next screen.

## Desktop Installation

[Main TOC Link](#)

1. This is for those wimps whom are having difficulty with administration of the appliance via commandline and/or Webmin. These are instructions to install the KDE desktop (includes all the thrills such as OpenOffice etc.) on your appliance. This will increase the size of your appliance by 1.6 GB.
2. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then type in your user password):

```
#install kubuntu desktop
sudo apt-get install kubuntu-desktop
```

```
-enter Y to continue
-(this will take awhile)
#install the x-windows manager and start it
sudo apt-get install gdm
-enter Y to continue
-enter 'ok'
-select 'kdm'

#restart computer (will now boot into the KDE desktop)
sudo shutdown -r now
```

# Instructions for Building the OpenEMR Appliance

[Main TOC Link](#)

[LINK TO MANUAL IN PDF FORMAT](#)

## Instructions for Building the OpenEMR Appliance Chapter Index

<a href="#">Instructions for Building the OpenEMR Appliance</a> .....	66
<a href="#">Software</a> .....	66
<a href="#">Install the Ubuntu 8.04 Server Virtual Computer</a> .....	67
<a href="#">Configure PHP and Apache (with SSL)</a> .....	98
<a href="#">Install OpenEMR 3.0.1</a> .....	99
<a href="#">Install and Configure Webmin</a> .....	110
<a href="#">Configure Firewall</a> .....	114
<a href="#">Finishing Touches On Appliance</a> .....	125
<a href="#">Upgrading to OpenEMR 3.1.0</a> .....	137
<a href="#">Upgrade Database to UTF-8</a> .....	142
<a href="#">Upgrading to OpenEMR 3.2.0</a> .....	143
<a href="#">Upgrading Webmin</a> .....	143
<a href="#">Upgrade Language Translation Tables</a> .....	144

## Software

[Main TOC Link](#)

[Chapter Index Link](#)

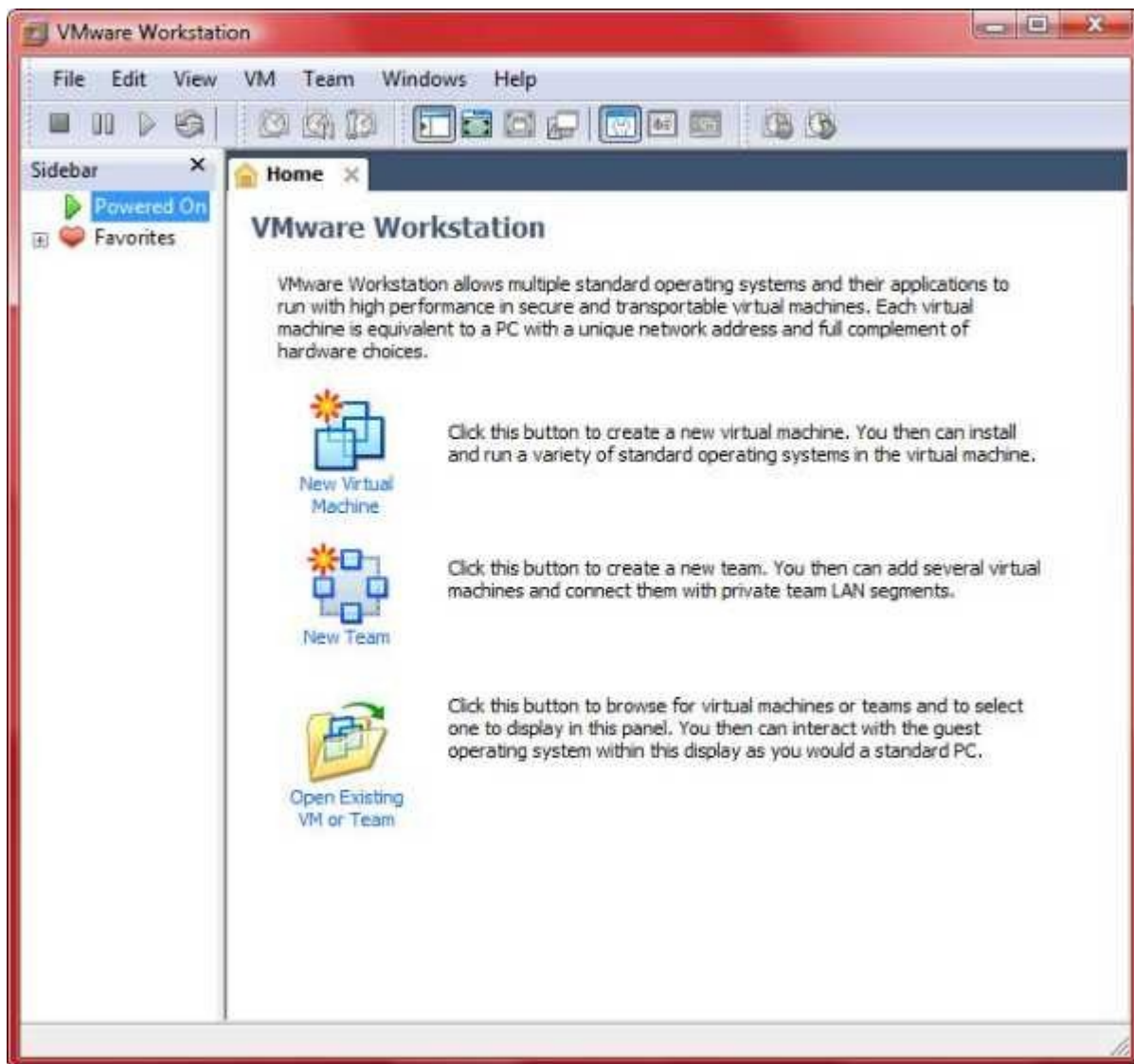
1. Ubuntu Server Edition (8.04)
2. Apache (2.2.8), MySQL (5.0.51a), and PHP (5.2.4)
3. Webmin (1.470 and 1.500)
4. OpenEMR (3.0.1 and 3.1.0 and 3.2.0)

# Install the Ubuntu 8.04 Server Virtual Computer

[Main TOC Link](#)

[Chapter Index Link](#)

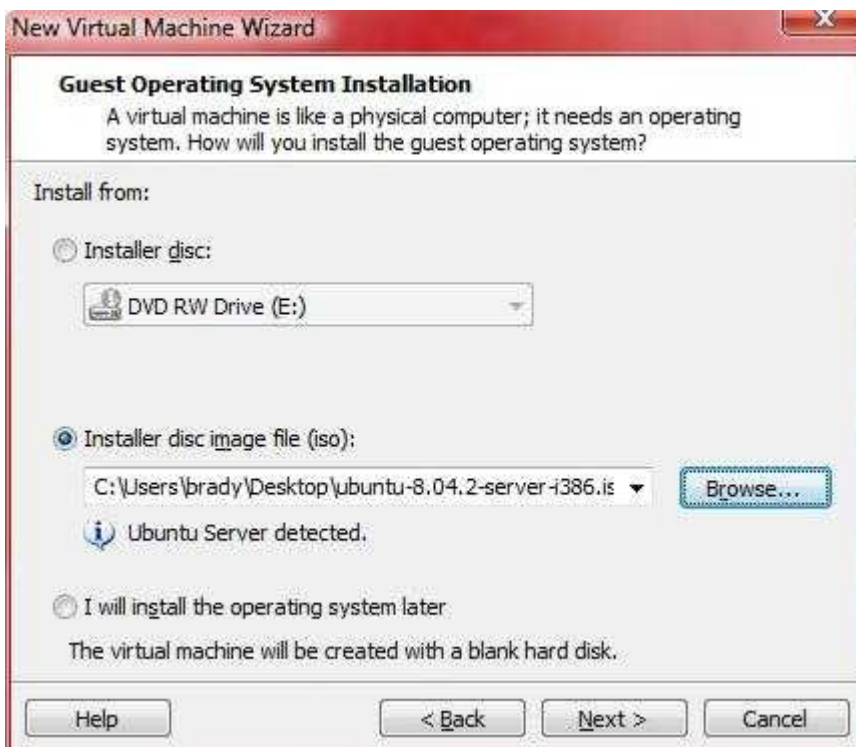
1. You can use either VMware Workstation or VMware Server to build the Ubuntu 8.04 Server Appliance.
2. Download Ubuntu Server Edition 8.04 installation ISO file from <http://www.ubuntu.com/getubuntu/download> .
3. Ubuntu Server Edition 8.04 Appliance Installation with VMware Workstation version 6.5:



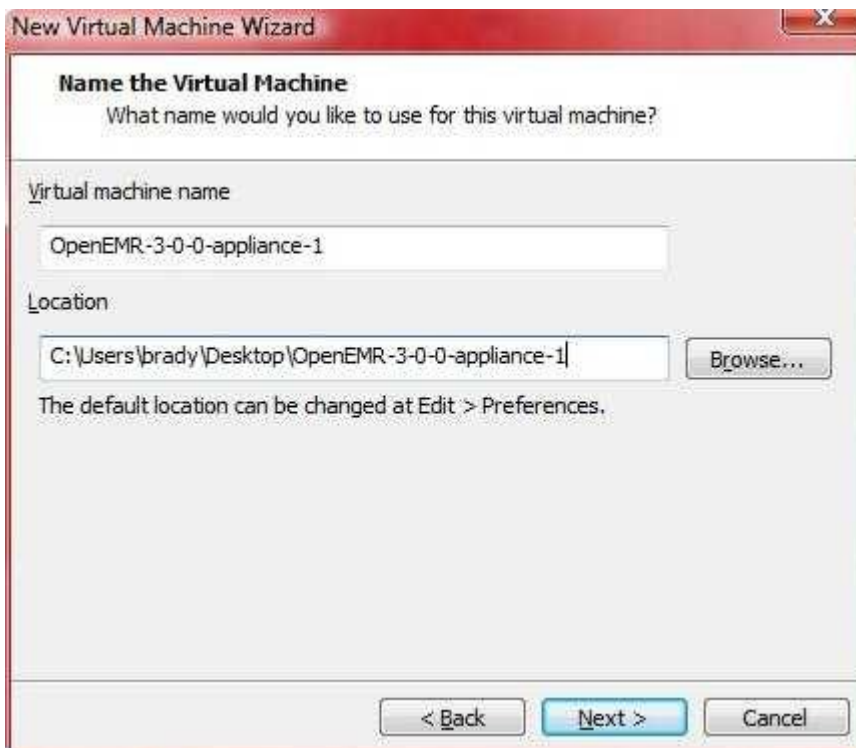
Click 'New Virtual Machine'.



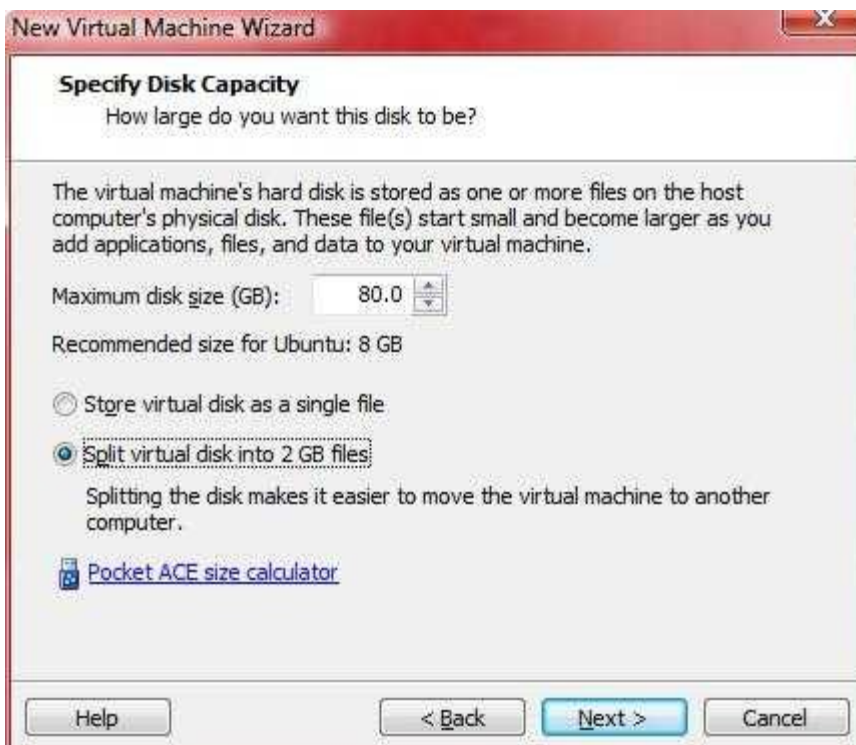
Select 'Typical', then Click 'Next'.



Browse and select ubuntu-8.04.2-server-i386.iso file, then click 'Next'.



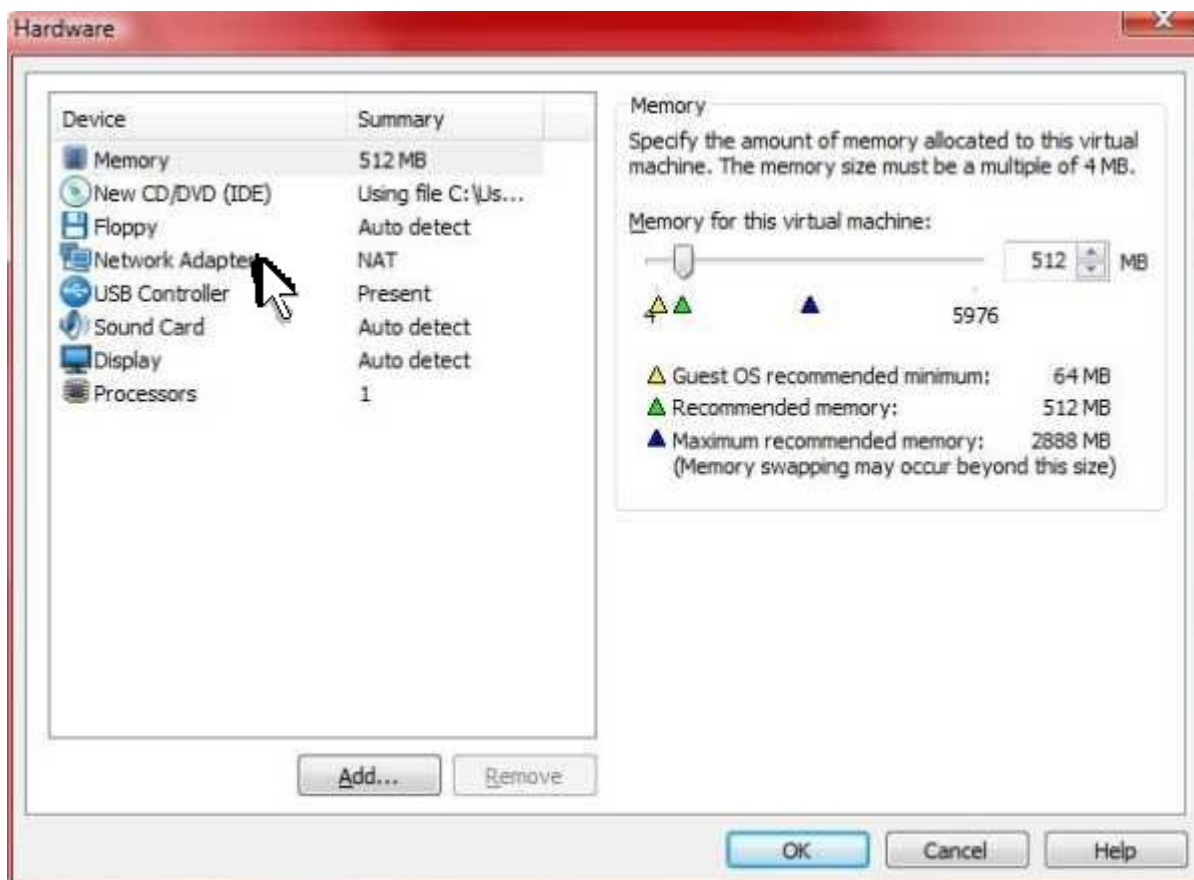
Type in name of appliance and location to save it to, then click 'Next'. I typed OpenEMR-3-0-1-appliance-1.



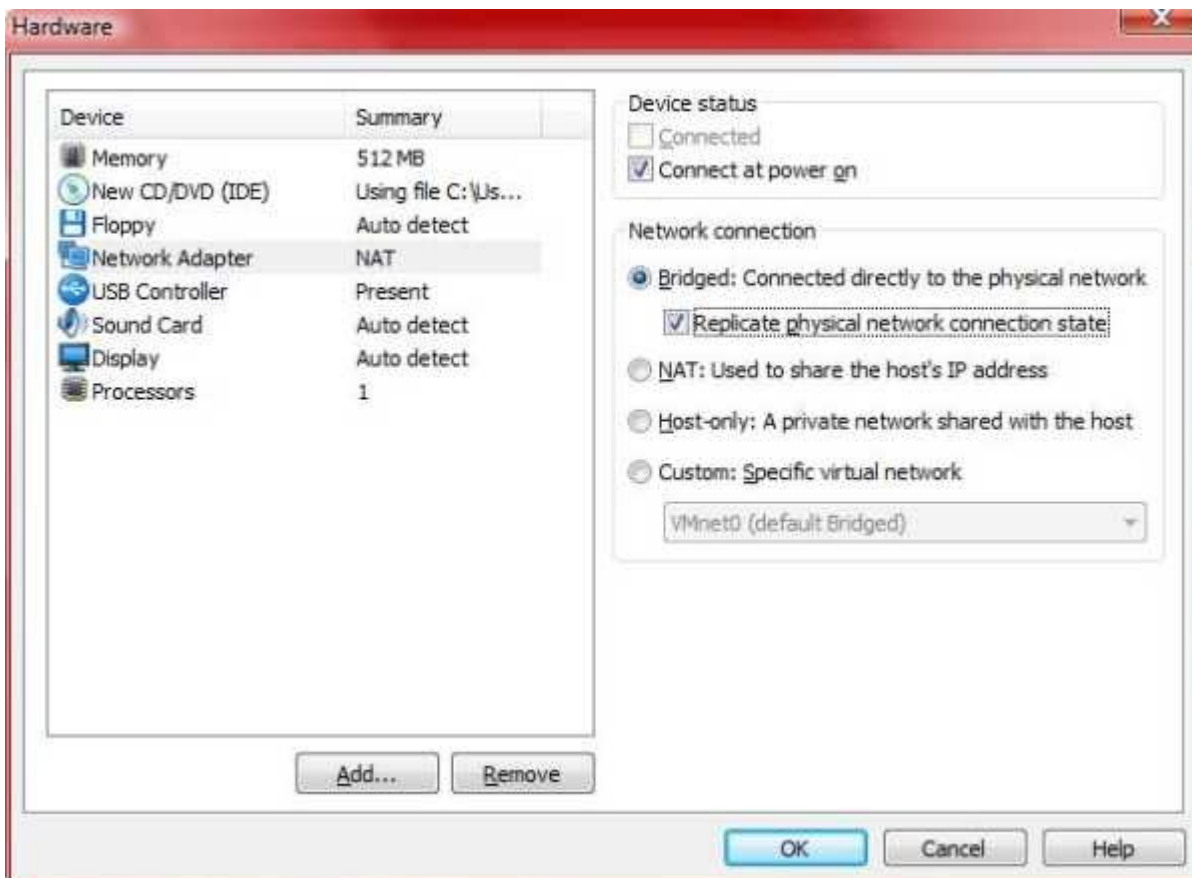
Set maximum disk size to 80GB, select 'Split virtual disk into 2GB files', then click 'Next'.



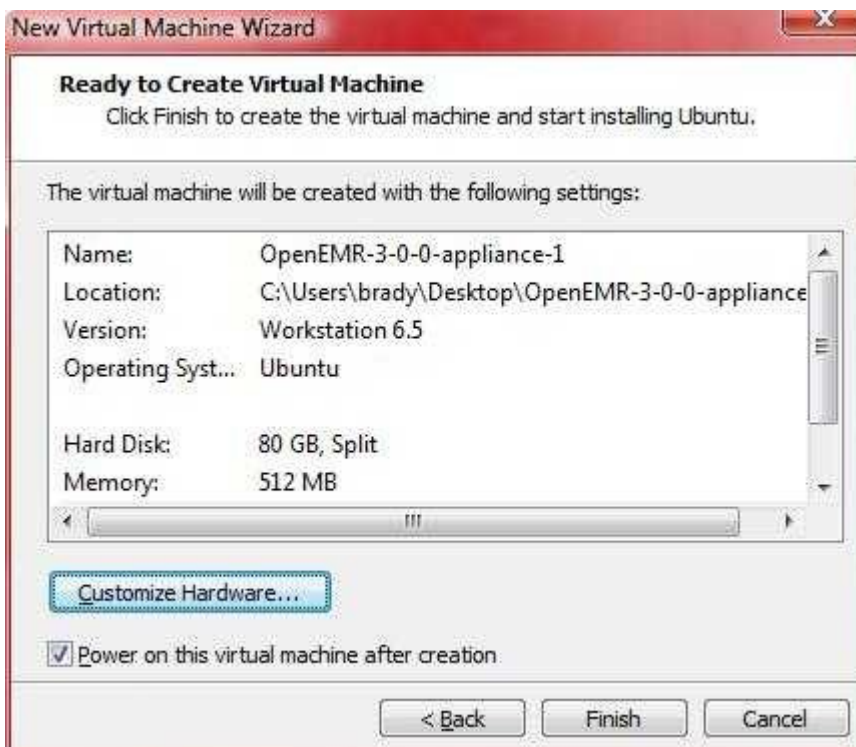
Click 'Customize Hardware...'.  
Click 'Finish'.



Click 'Network Adapter'.

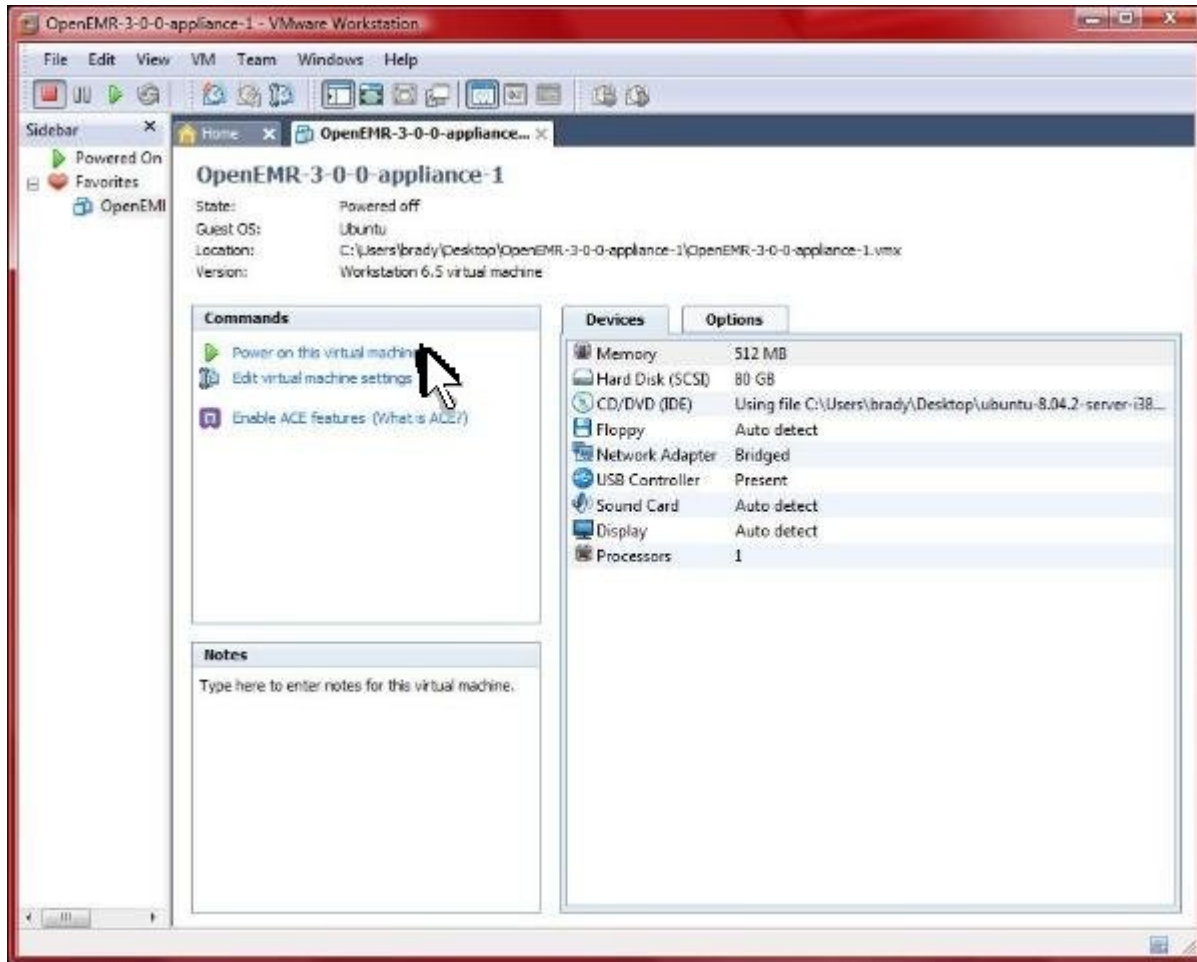


Select 'Bridged: Connected directly to the physical network' and check 'Replicate physical network connection state', then click 'OK'.

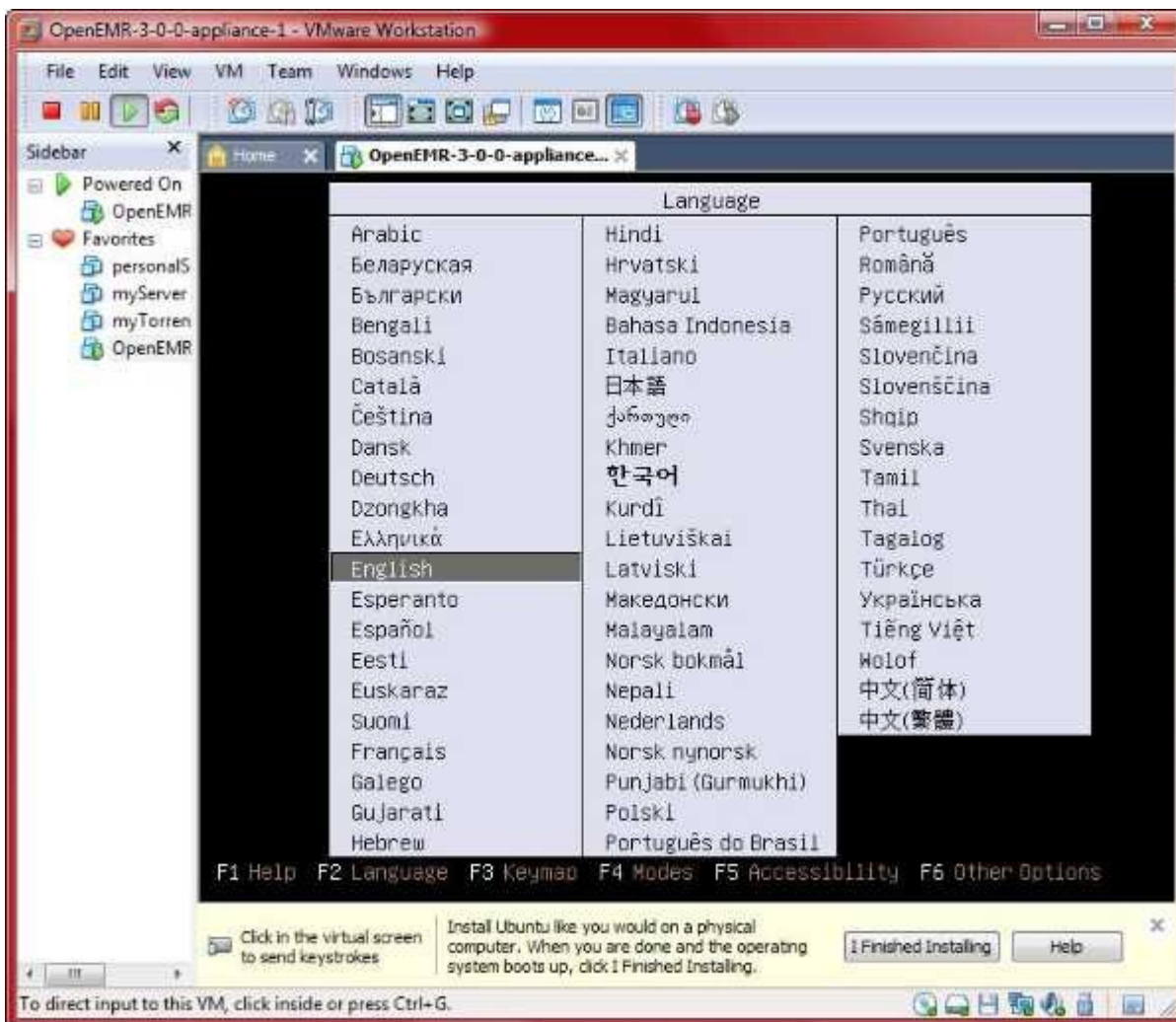




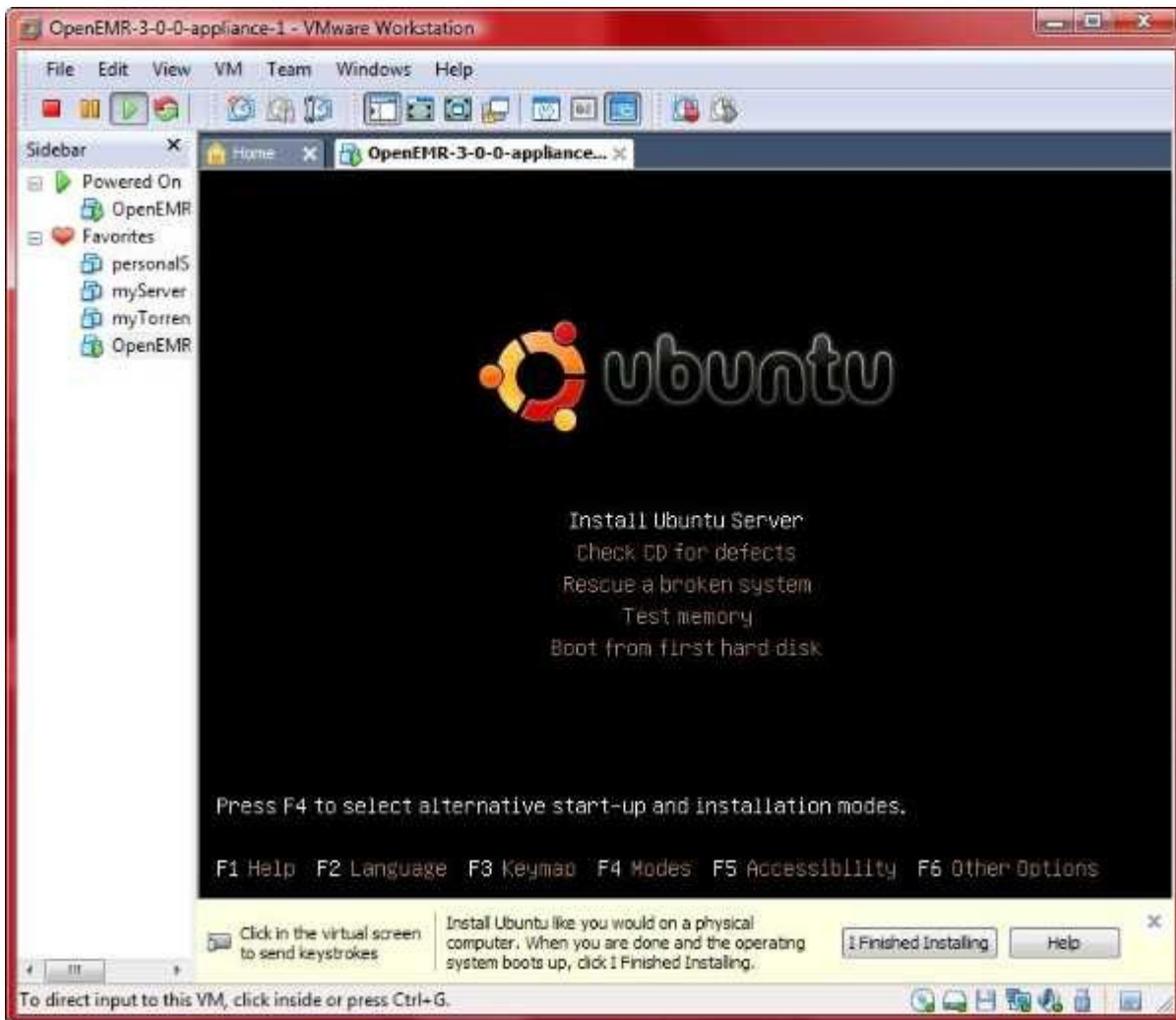
Click 'Finish'.



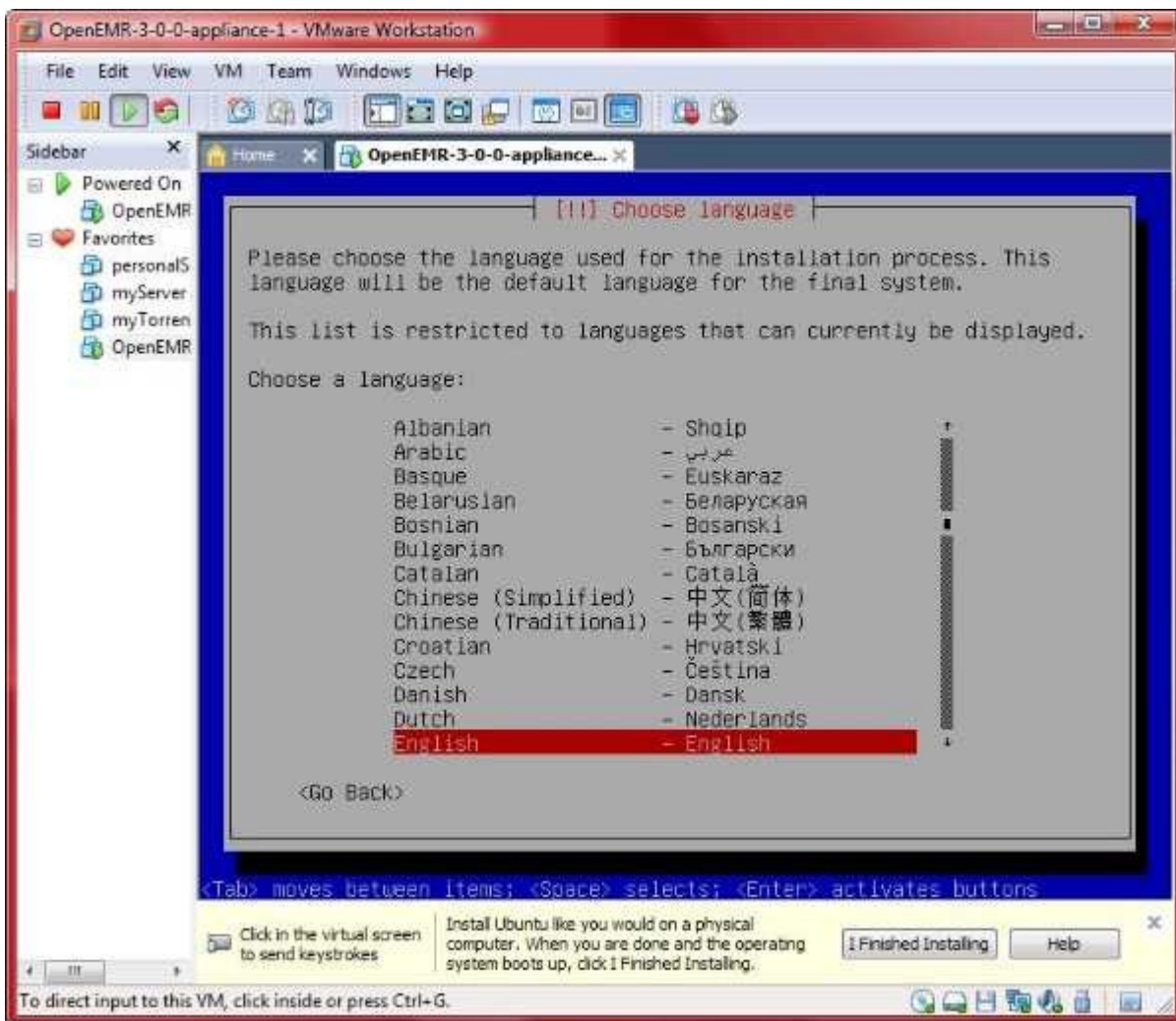
Click 'Power on this virtual machine'.



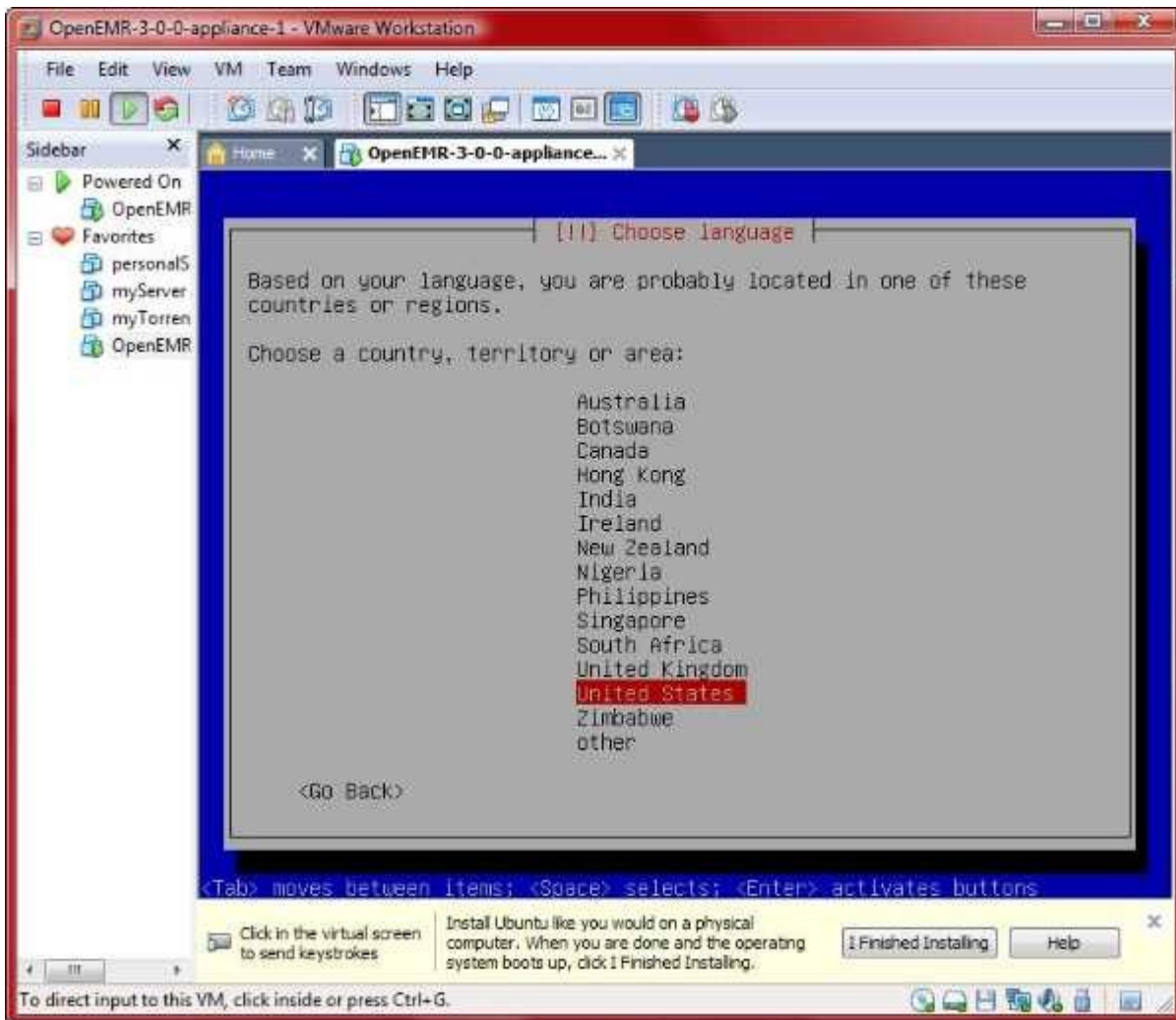
Select language.



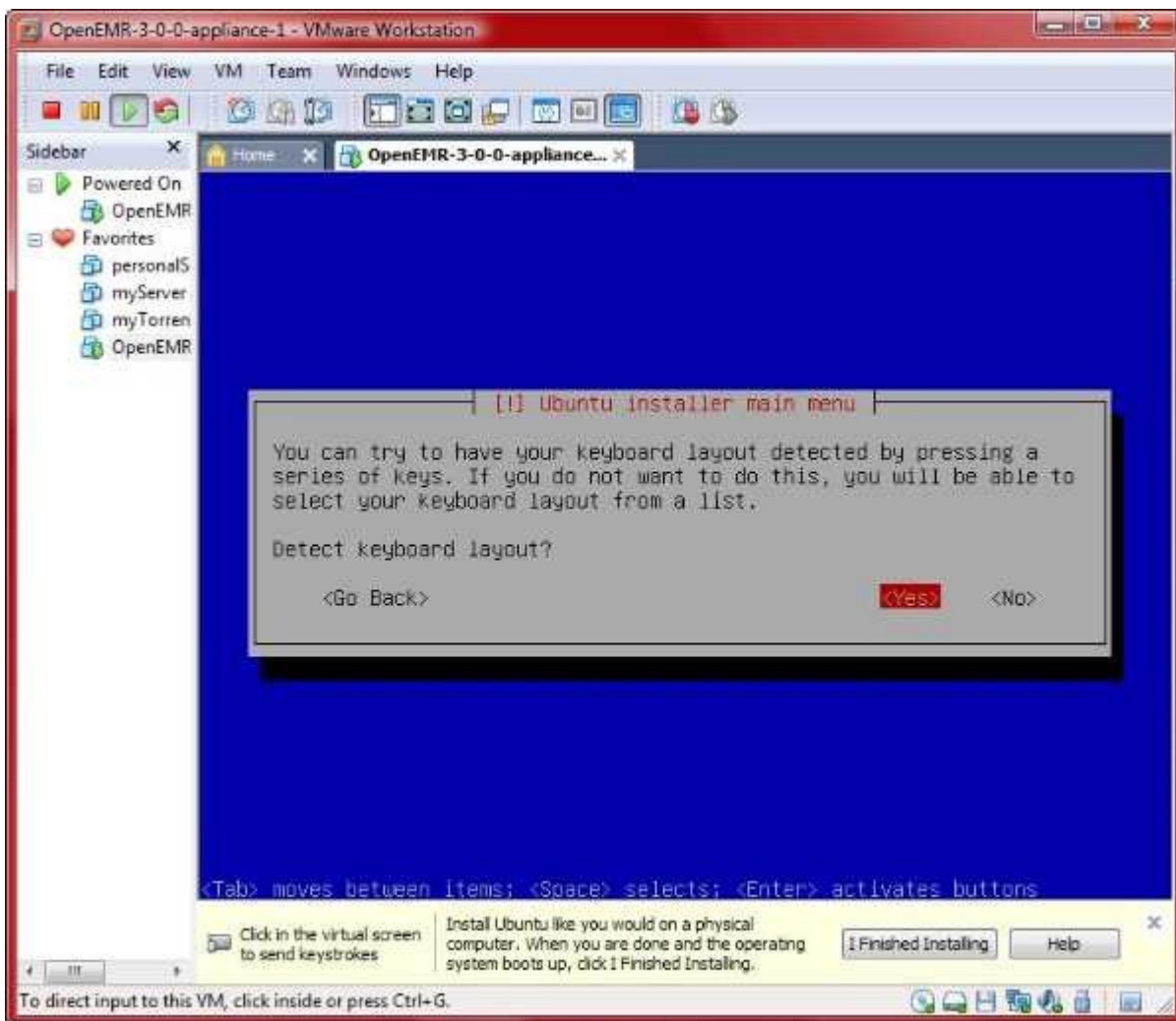
Select 'Install Ubuntu Server'.



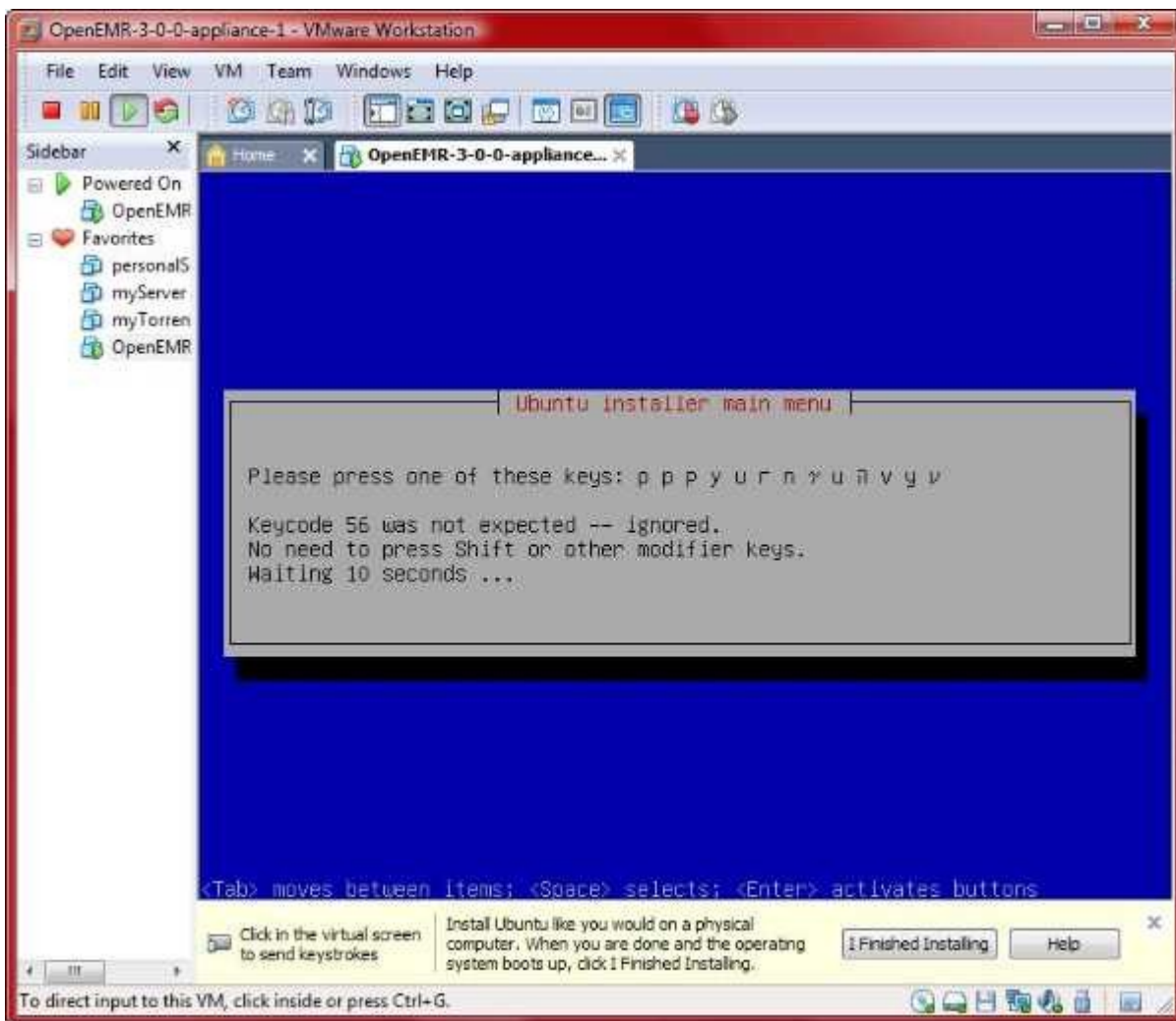
Select language.



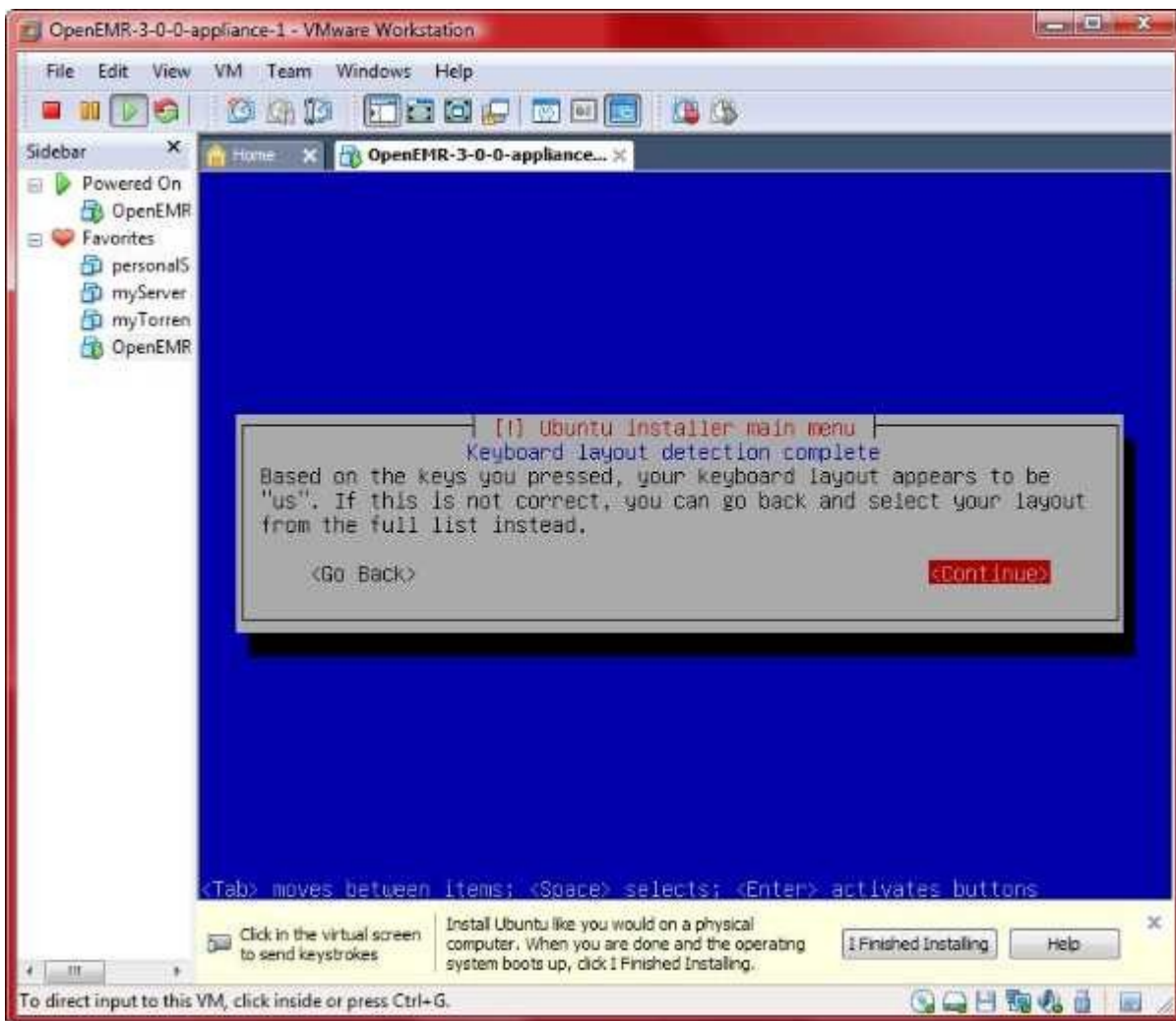
Select country.



Select 'Yes' to detect keyboard layout.

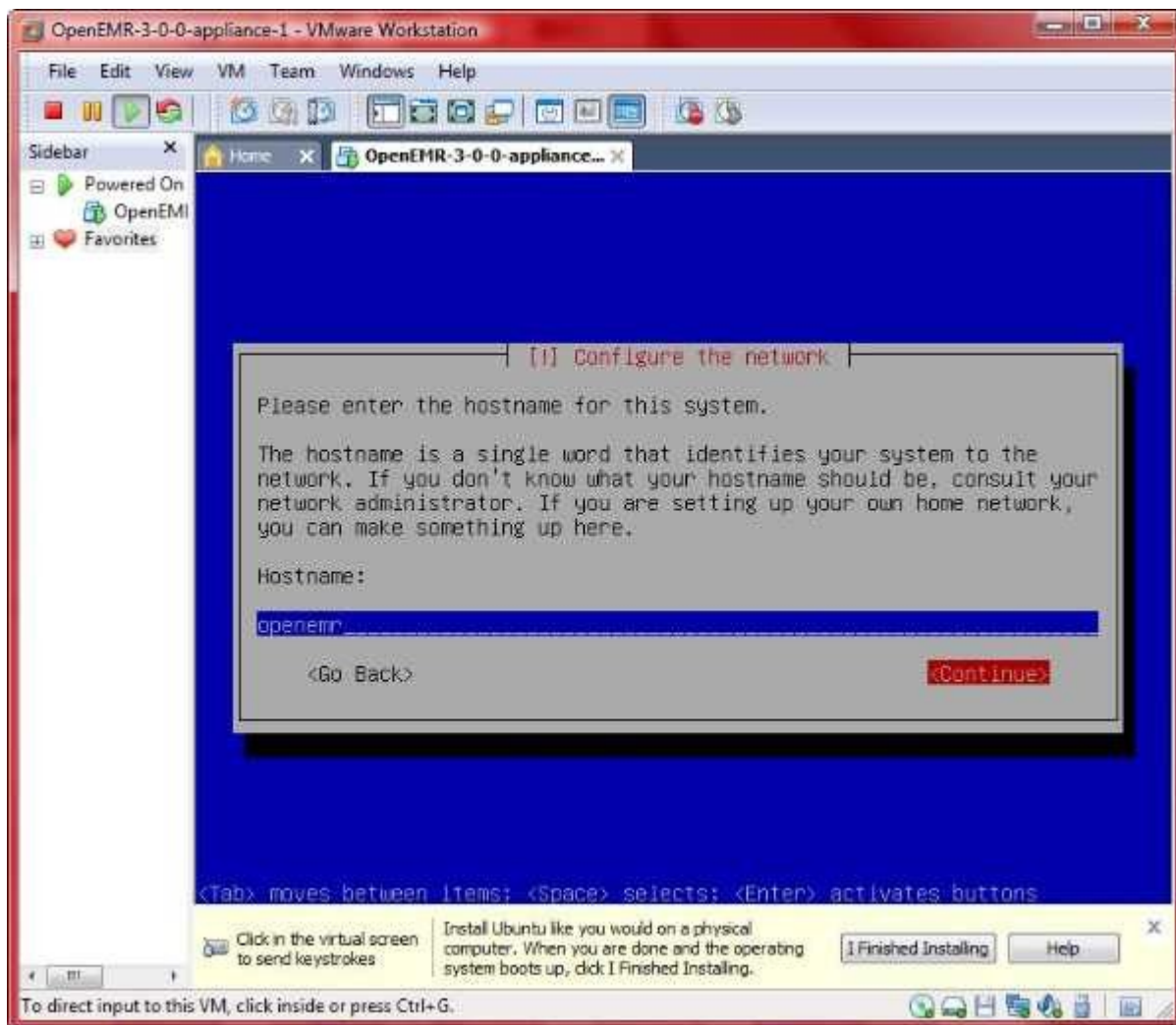


Go through bunch of screens like above to figure out keyboard.

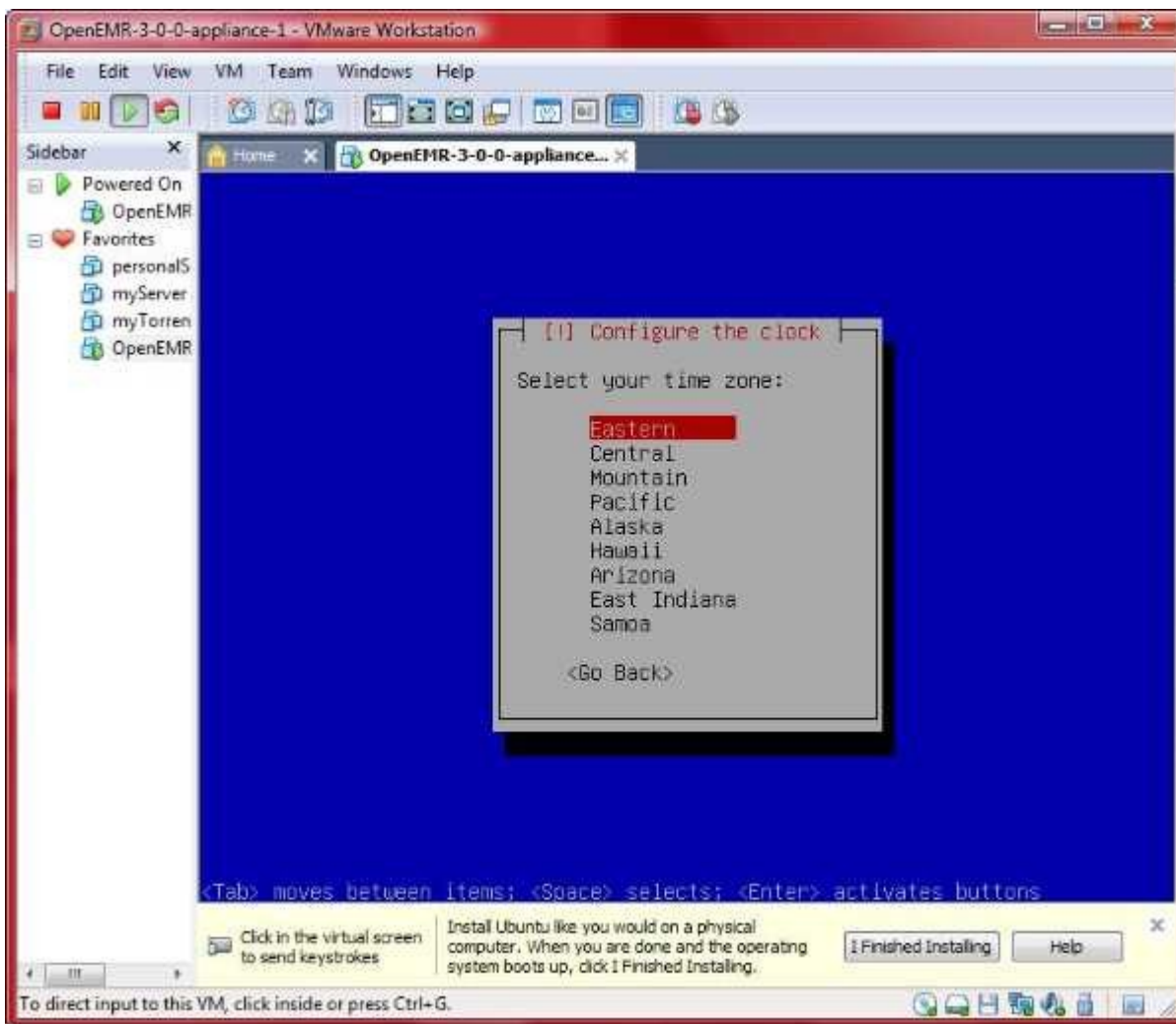


Select 'Continue' if detected correct keyboard.

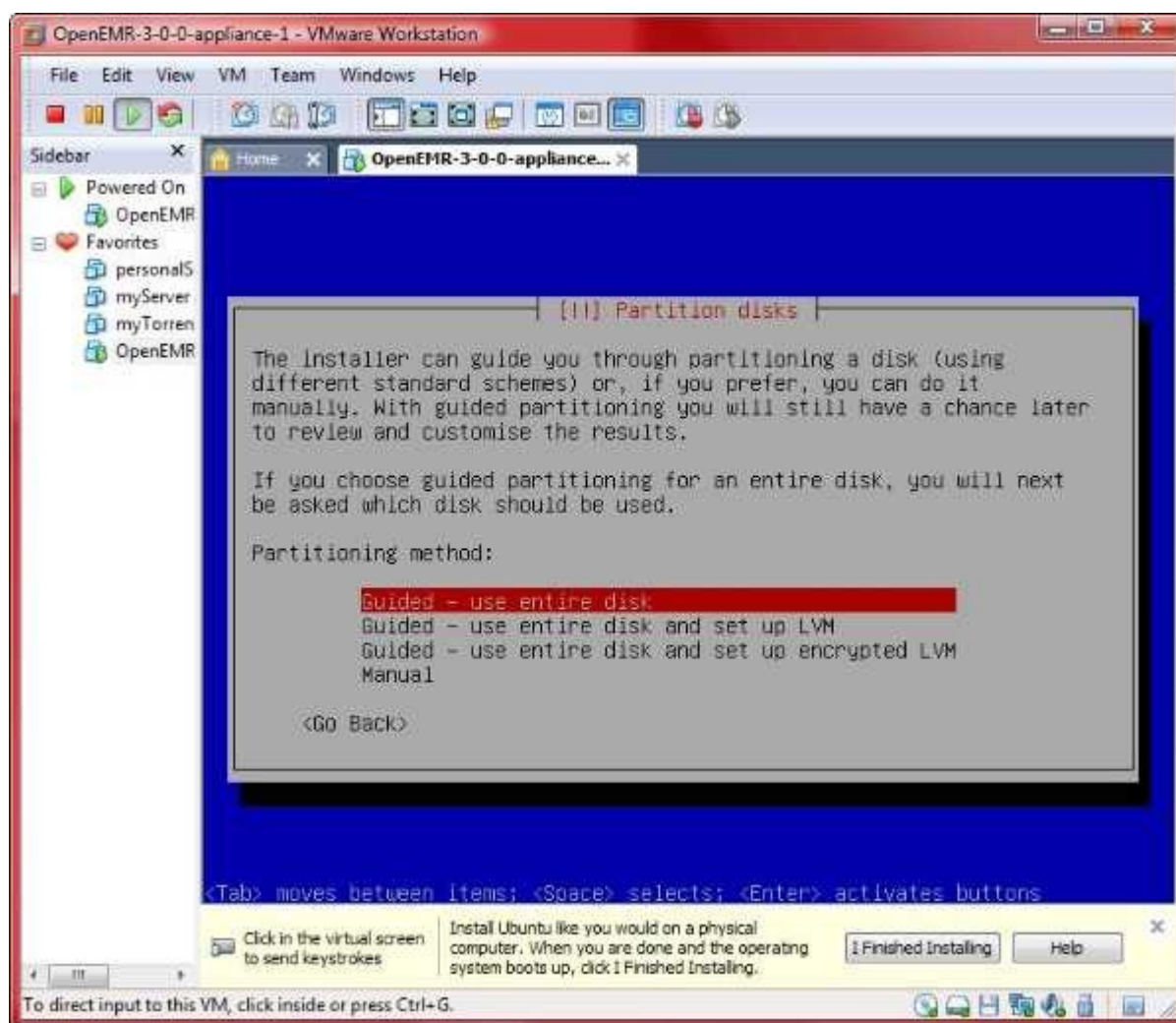




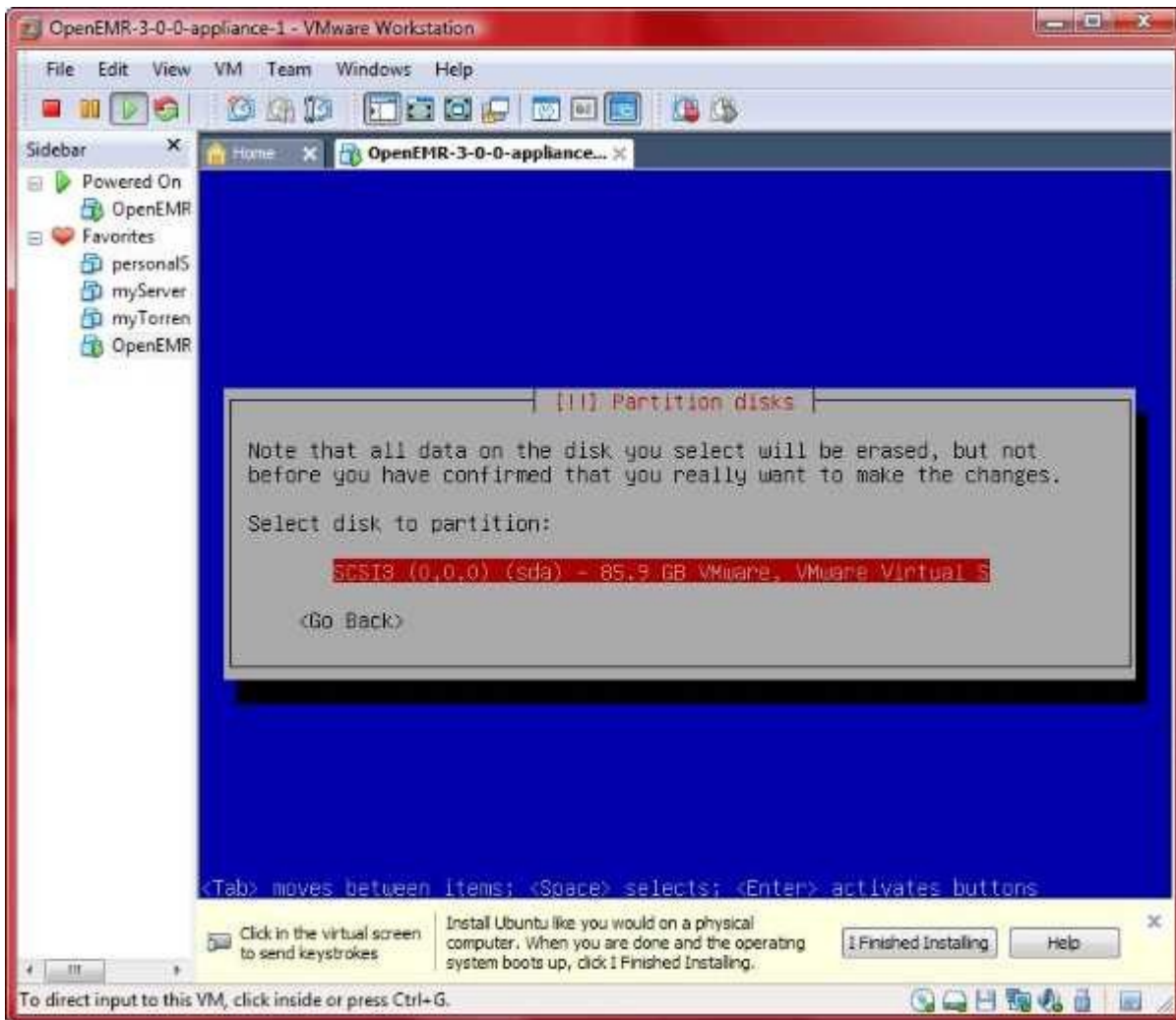
Type 'openemr' for Hostname, and then 'Continue'.



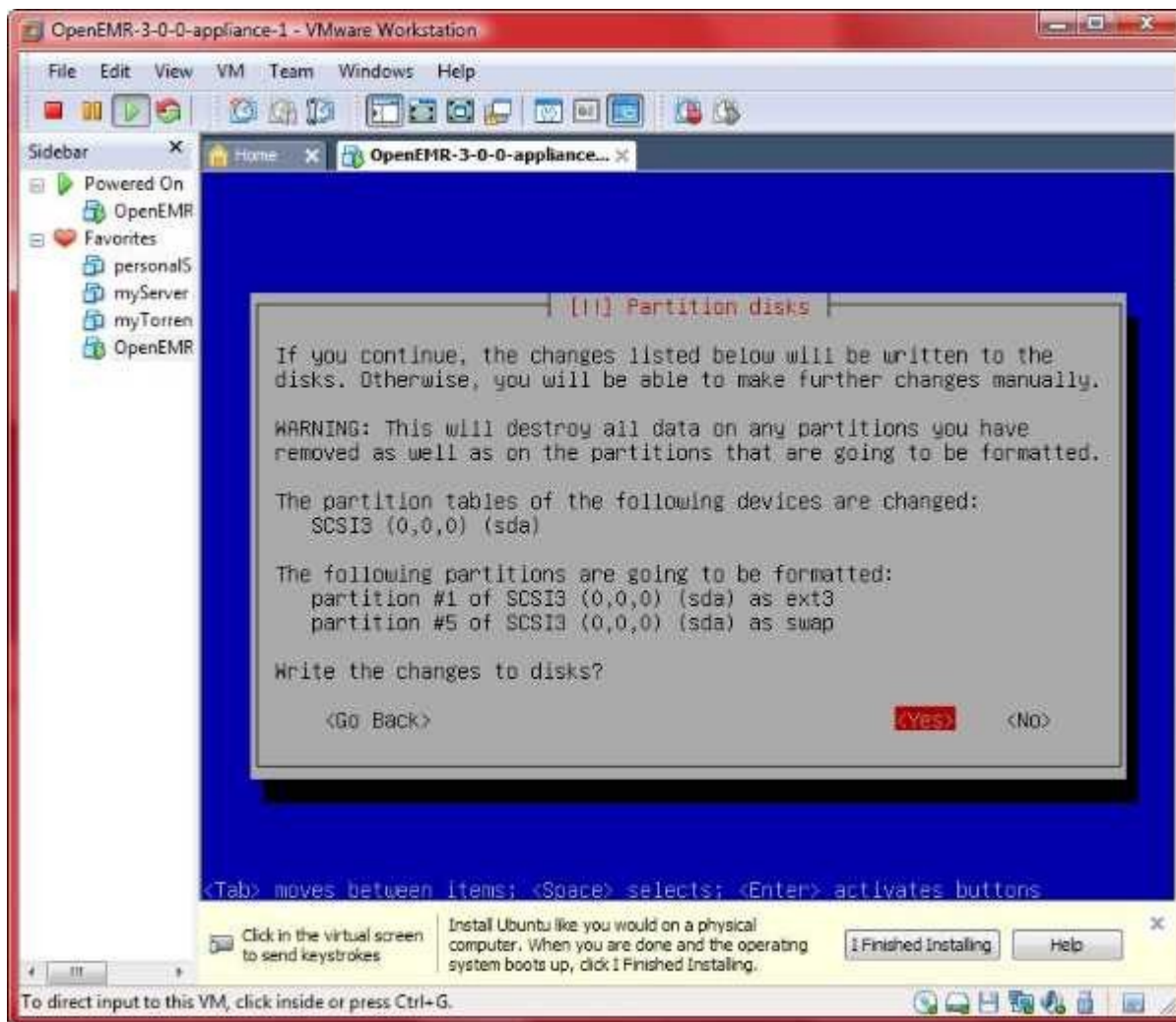
Select time zone, I chose 'Pacific'.



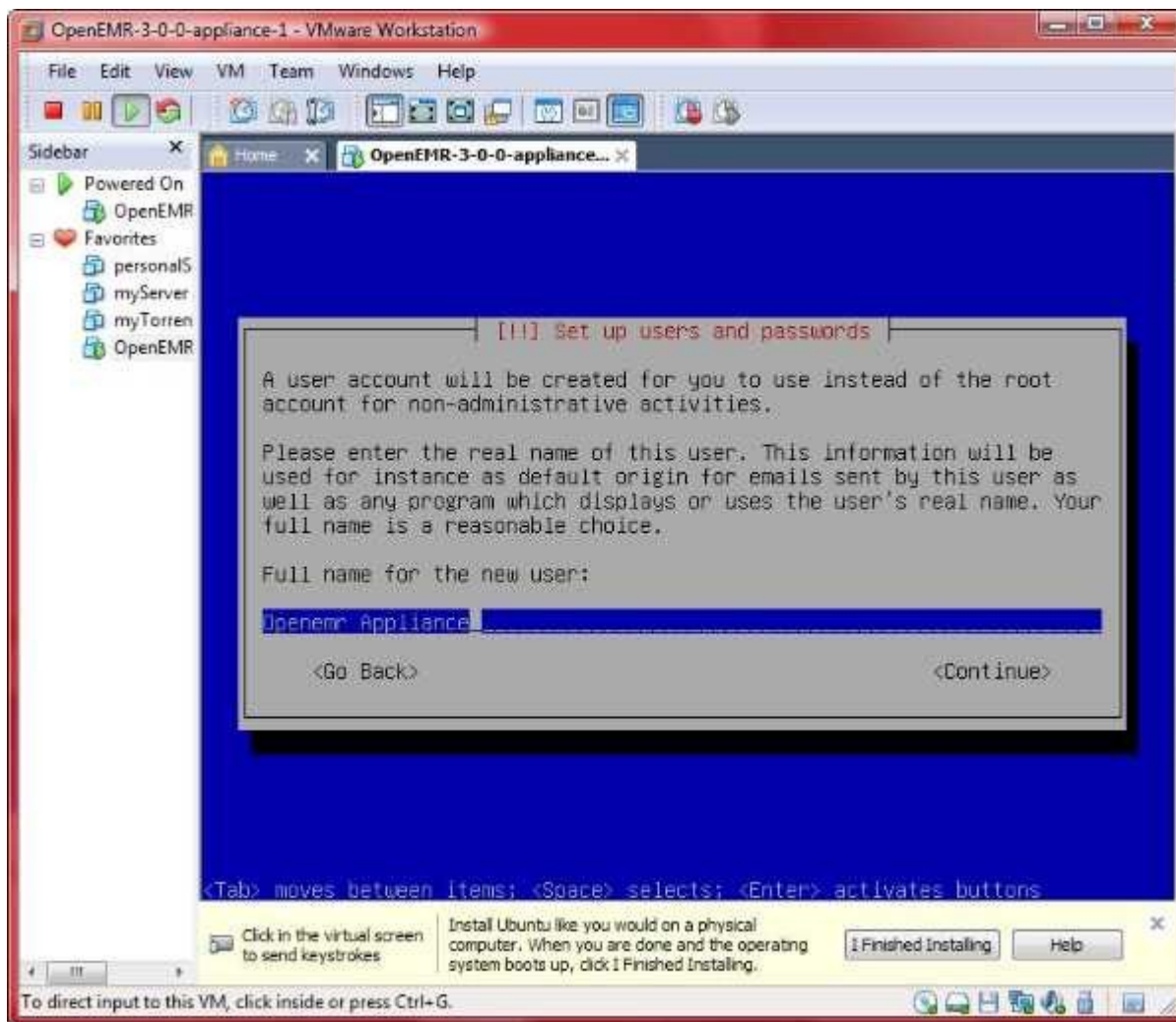
Select 'Guided - use entire disk'.



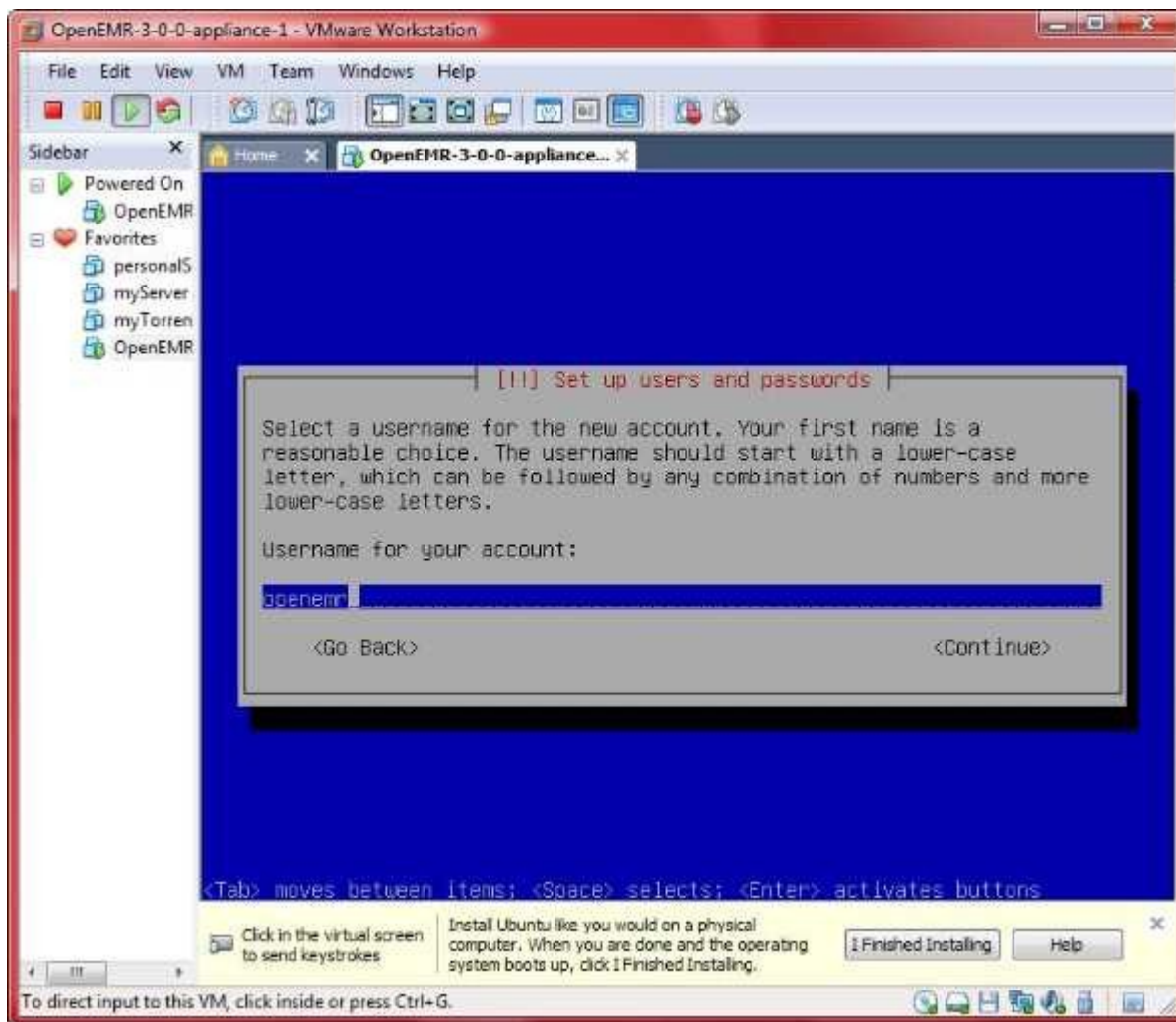
Select the highlighted disk.



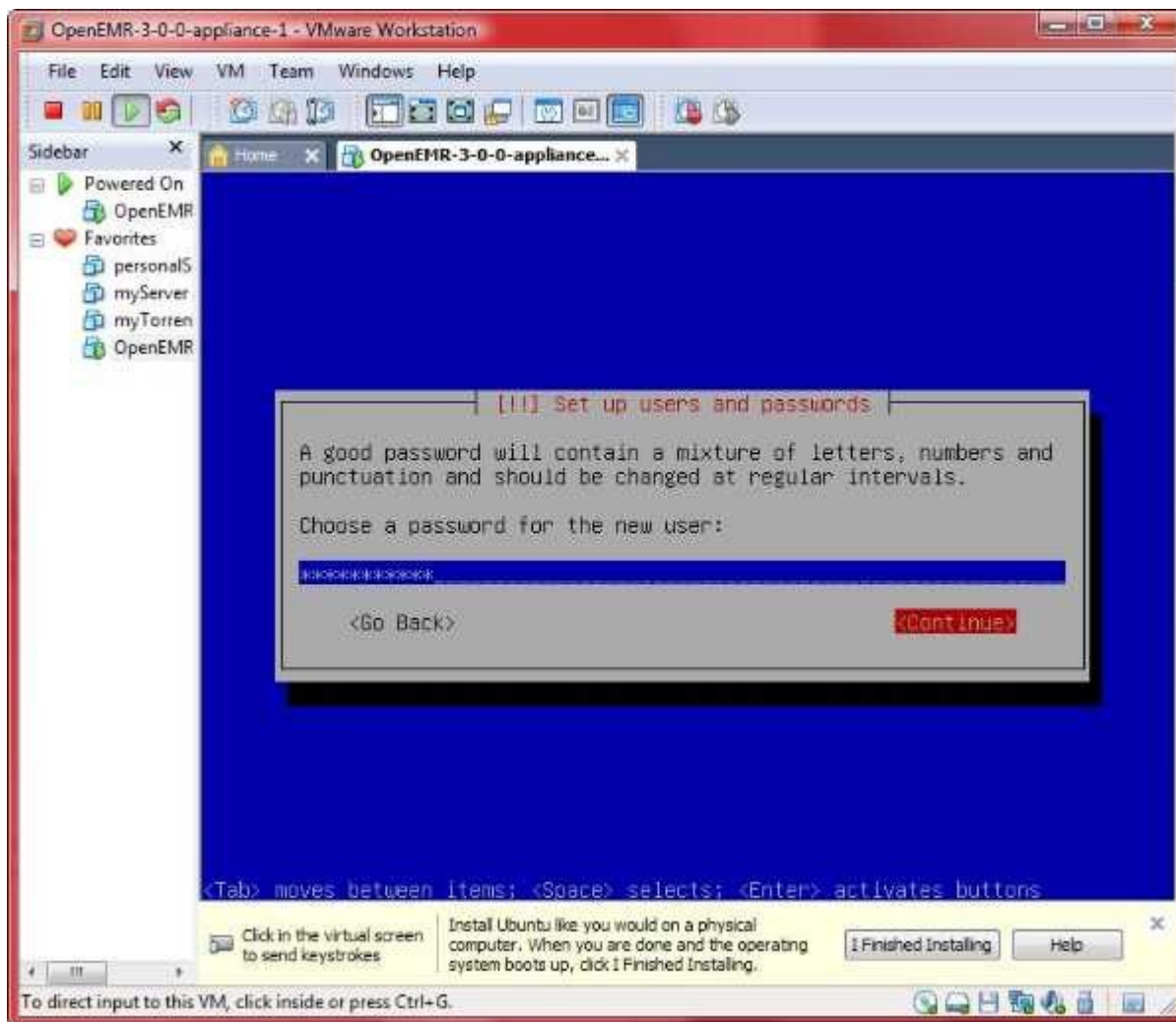
Select 'Yes'.



Type 'Openemr Appliance', then 'Continue'.

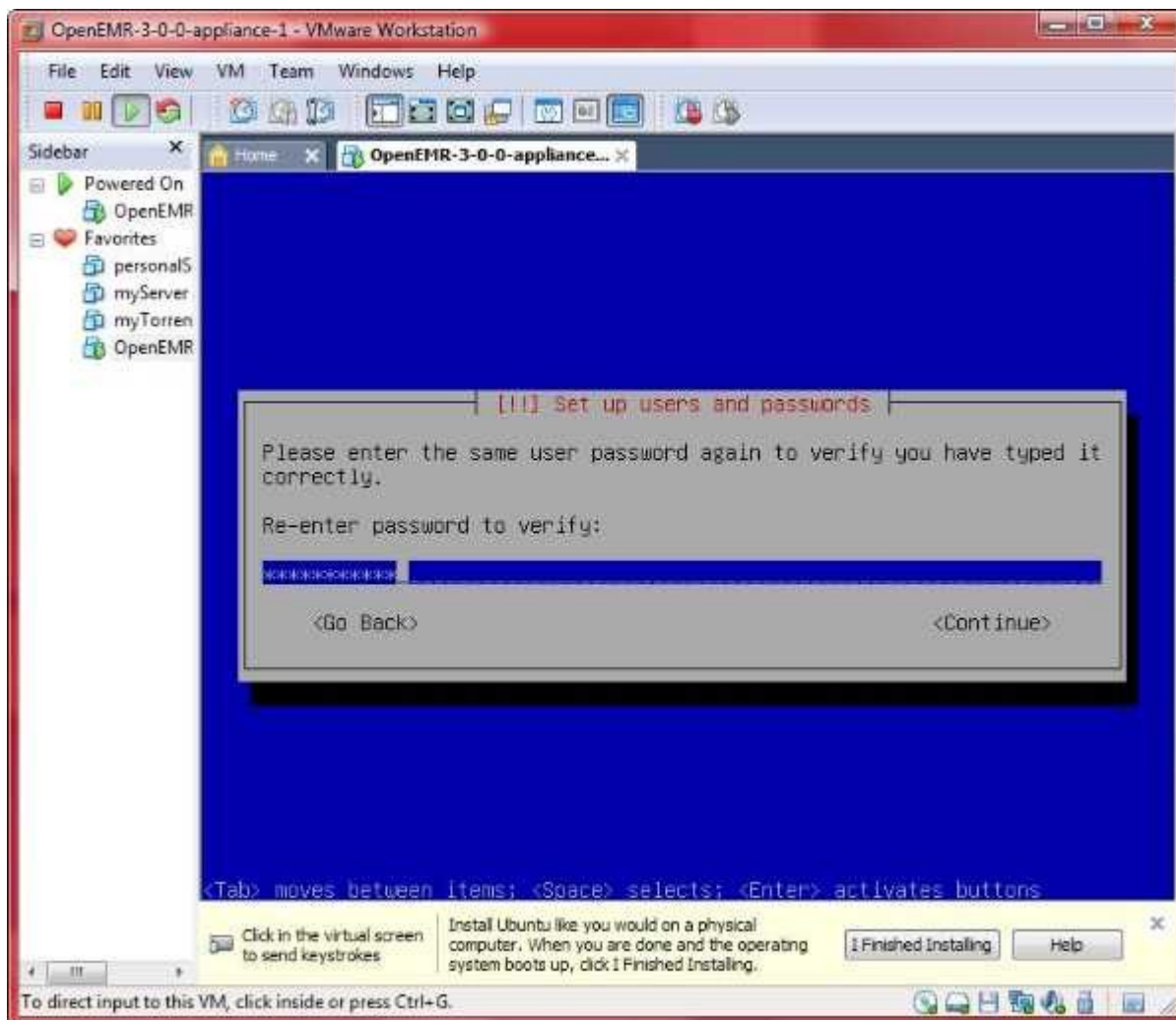


Type 'openemr', then 'Continue'.

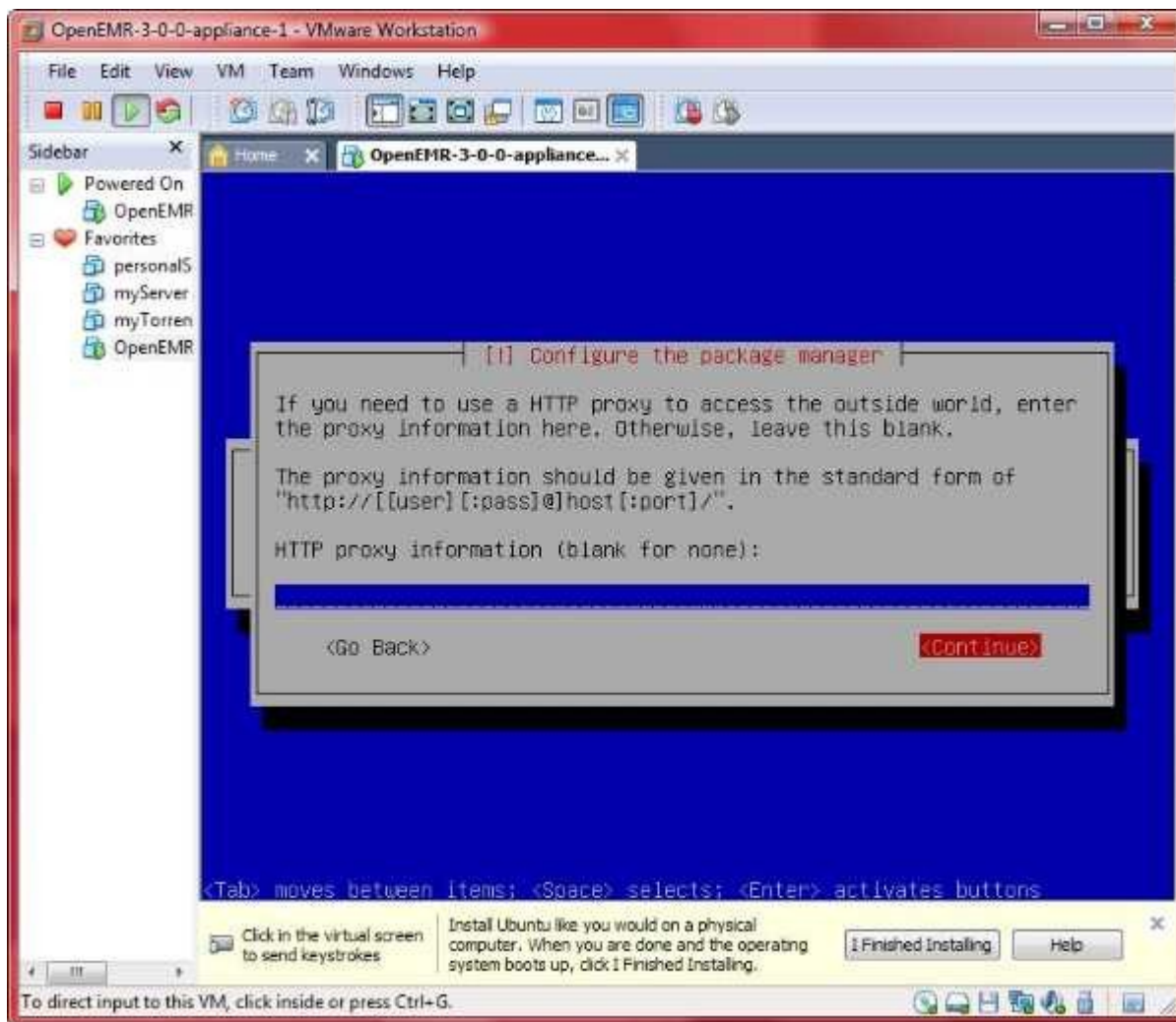


Choose a password. I typed 'openemrcool' for password, then 'Continue'.

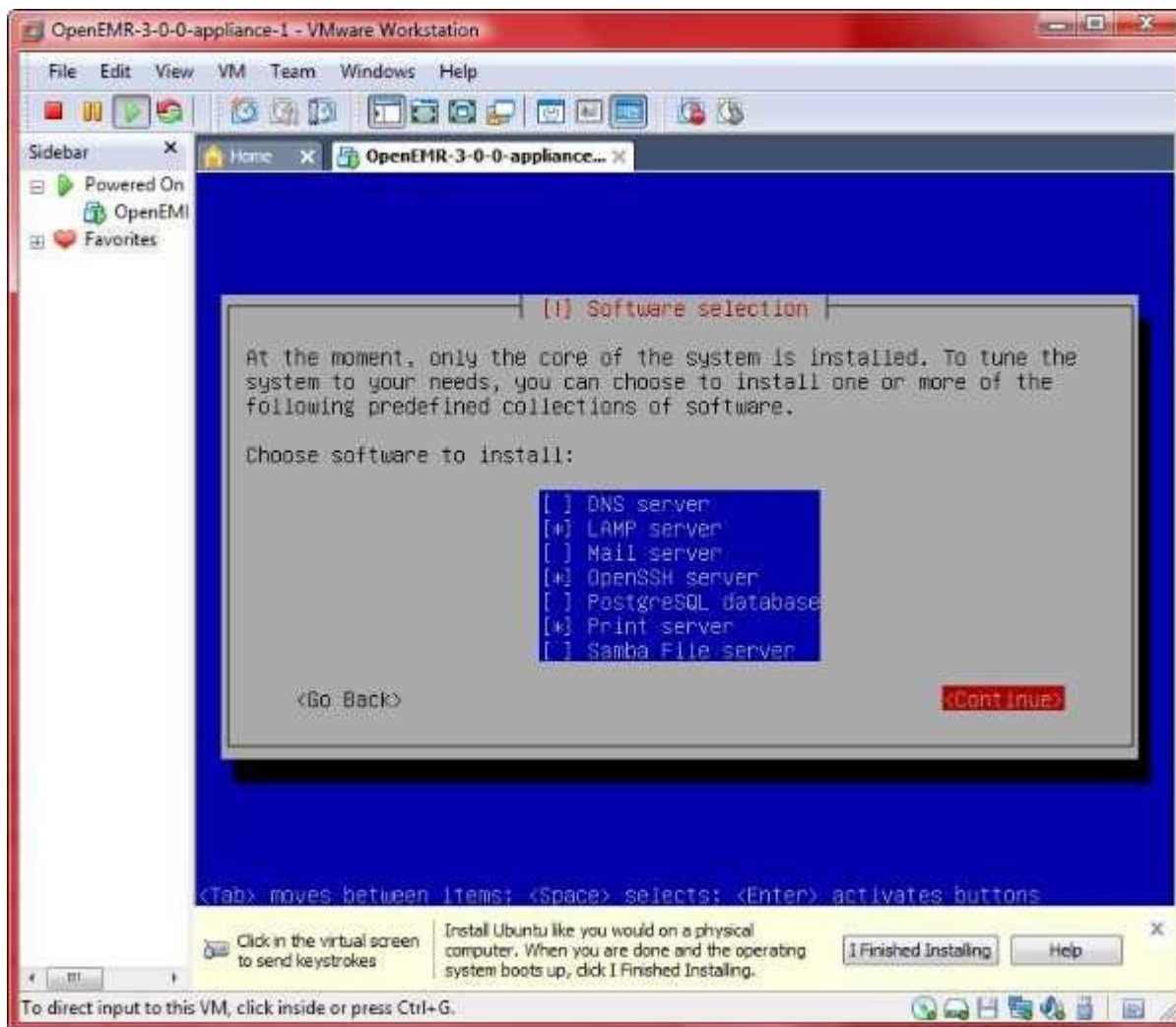




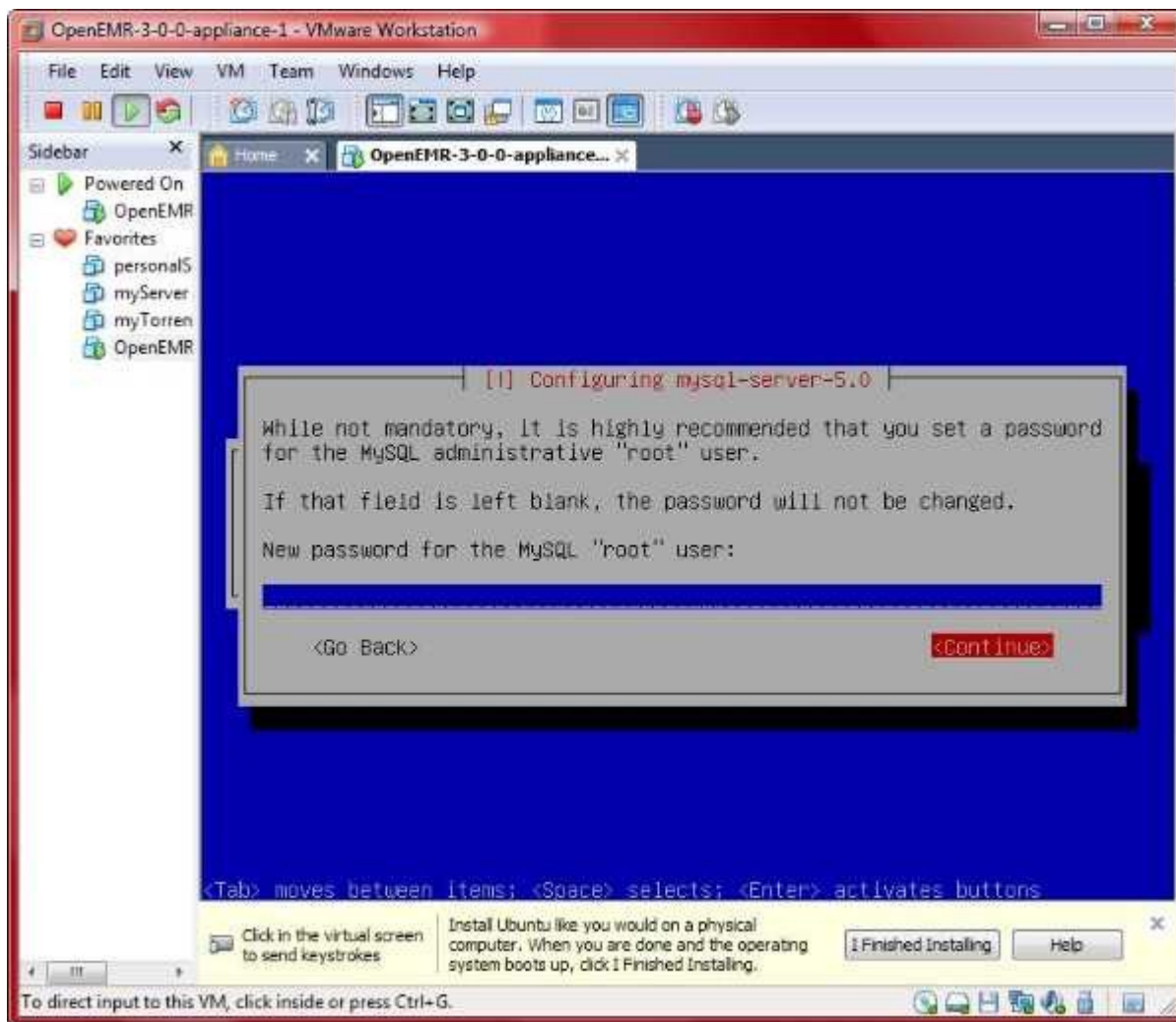
Confirm password 'openemrcool', then 'Continue'.



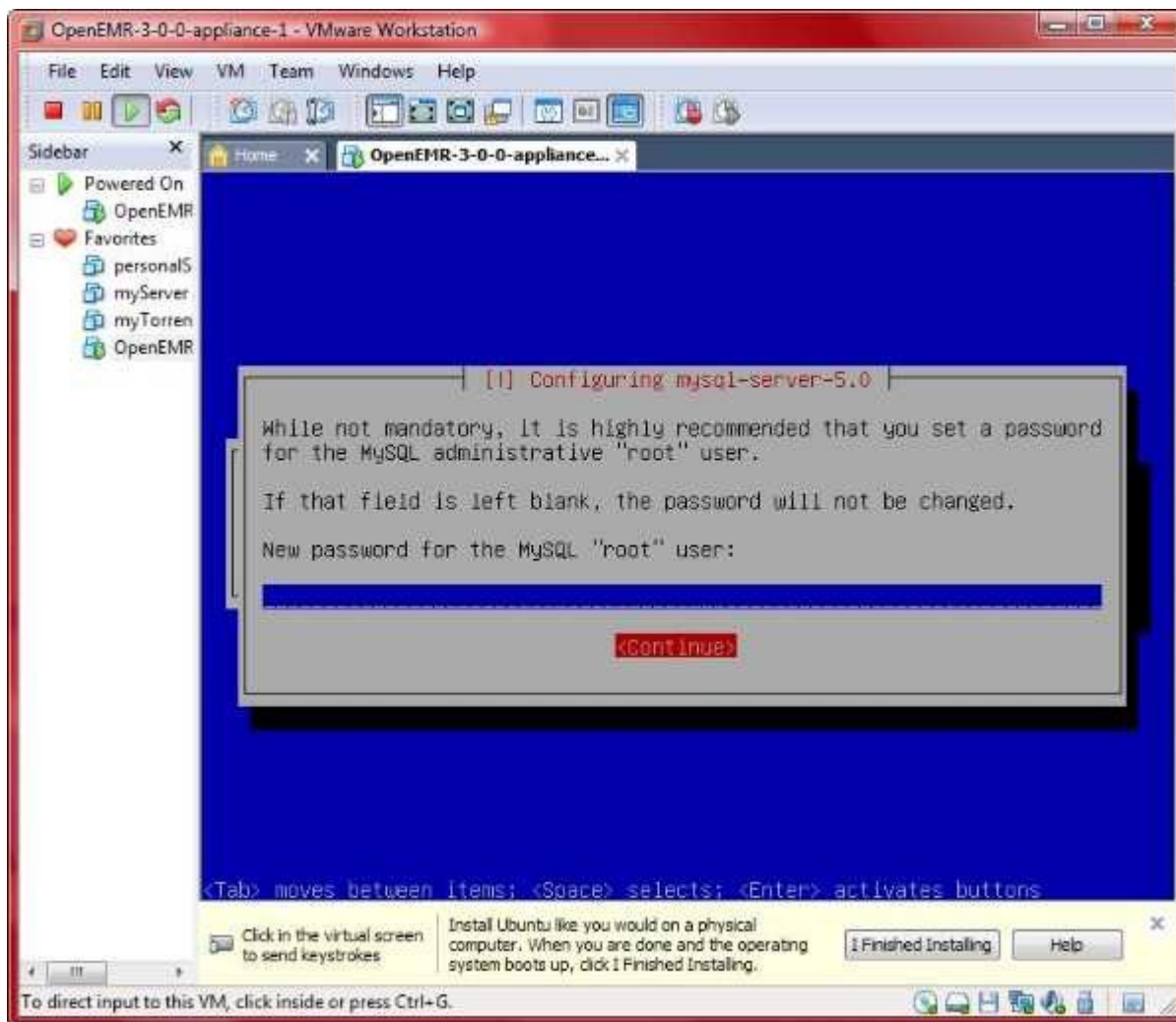
Leave blank and 'Continue'.



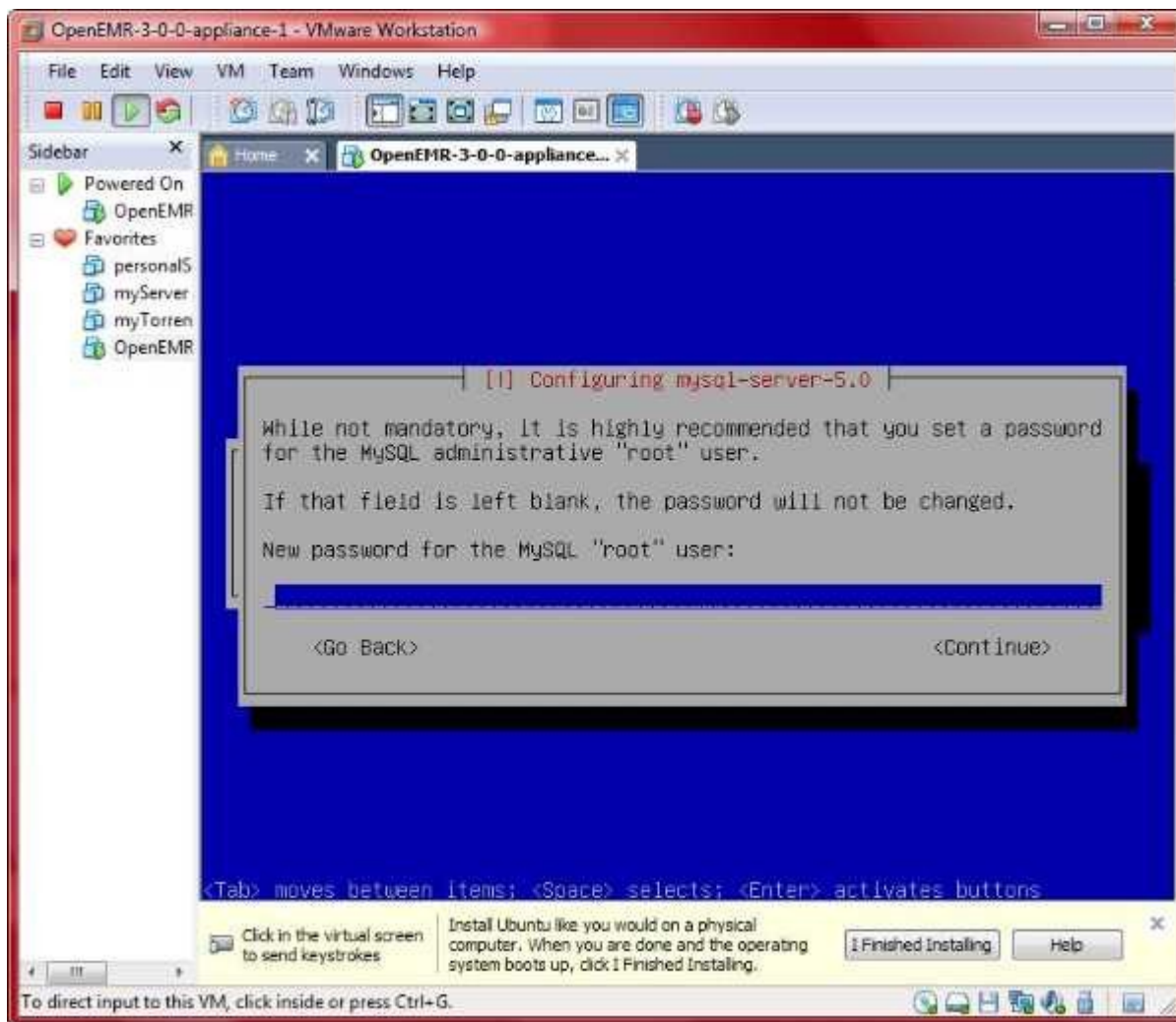
Select 'LAMP server', 'OpenSSH server', and 'Print Server'; then click 'Continue'.



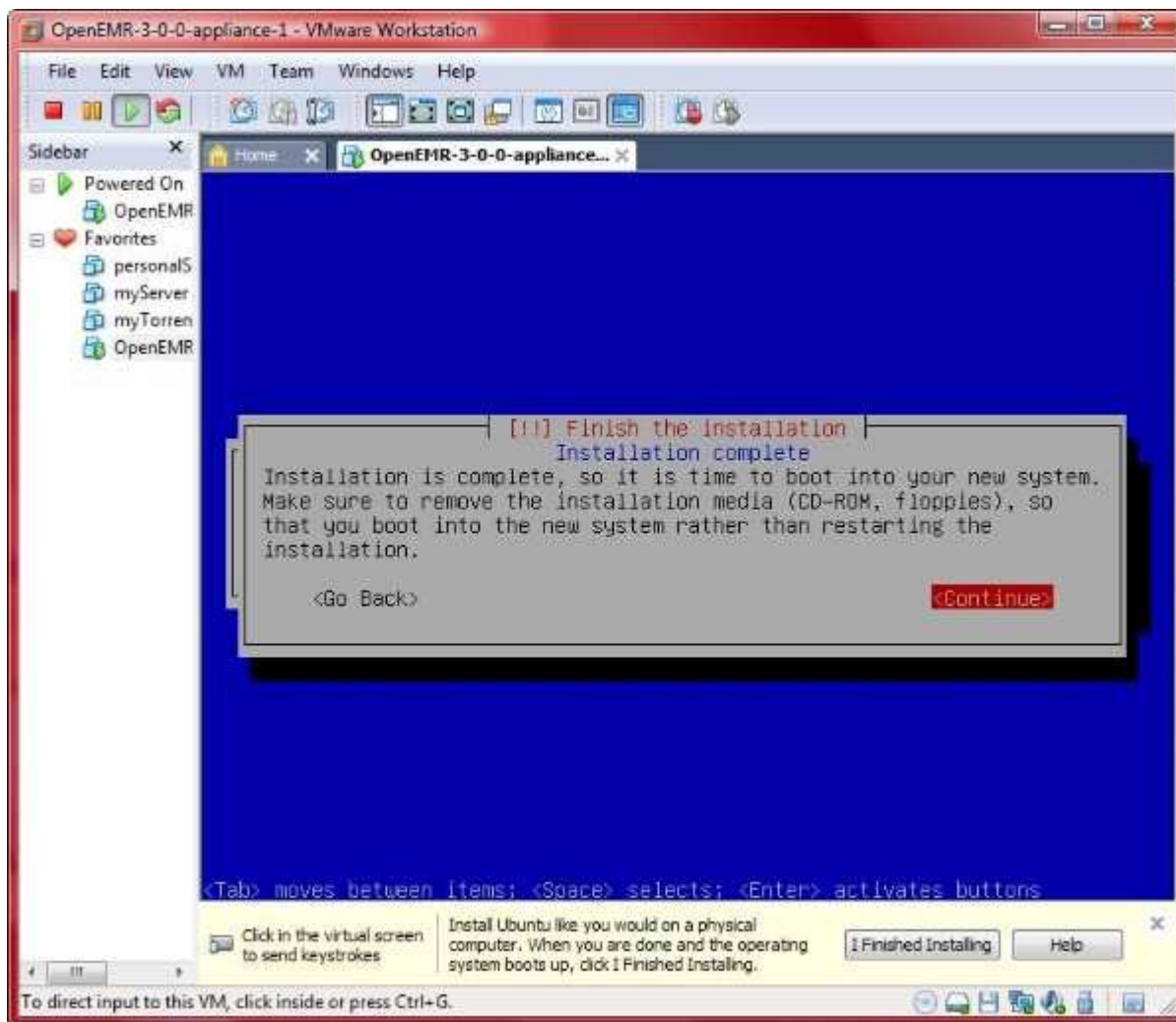
Leave blank and 'Continue'.



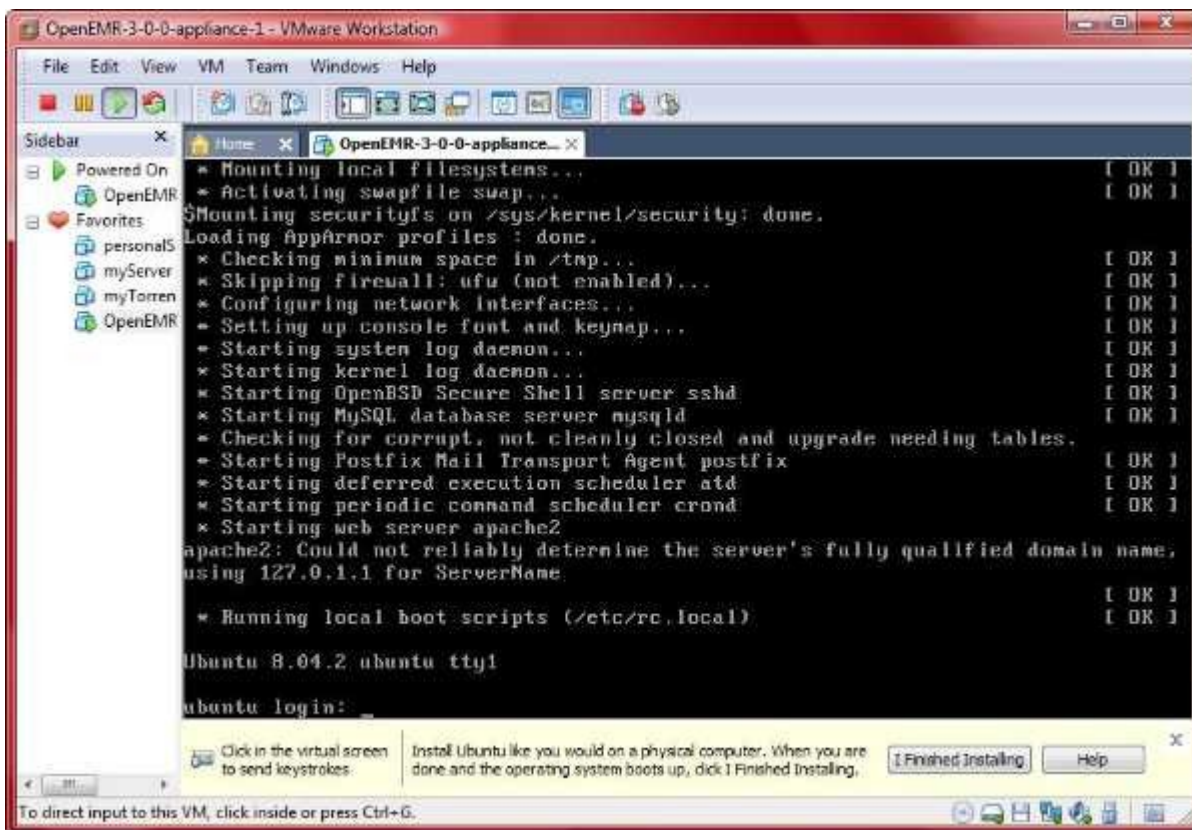
Leave blank and 'Continue'.



Leave blank and 'Continue'.



Click 'Continue'.



login with user:openemr pass:openemrcool

4. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

#update and upgrade ubuntu

**sudo apt-get update**  
**sudo apt-get upgrade**  
 -enter Y to continue

#Install the php command line, imagemagick, lynx client browser, and jed text editor.

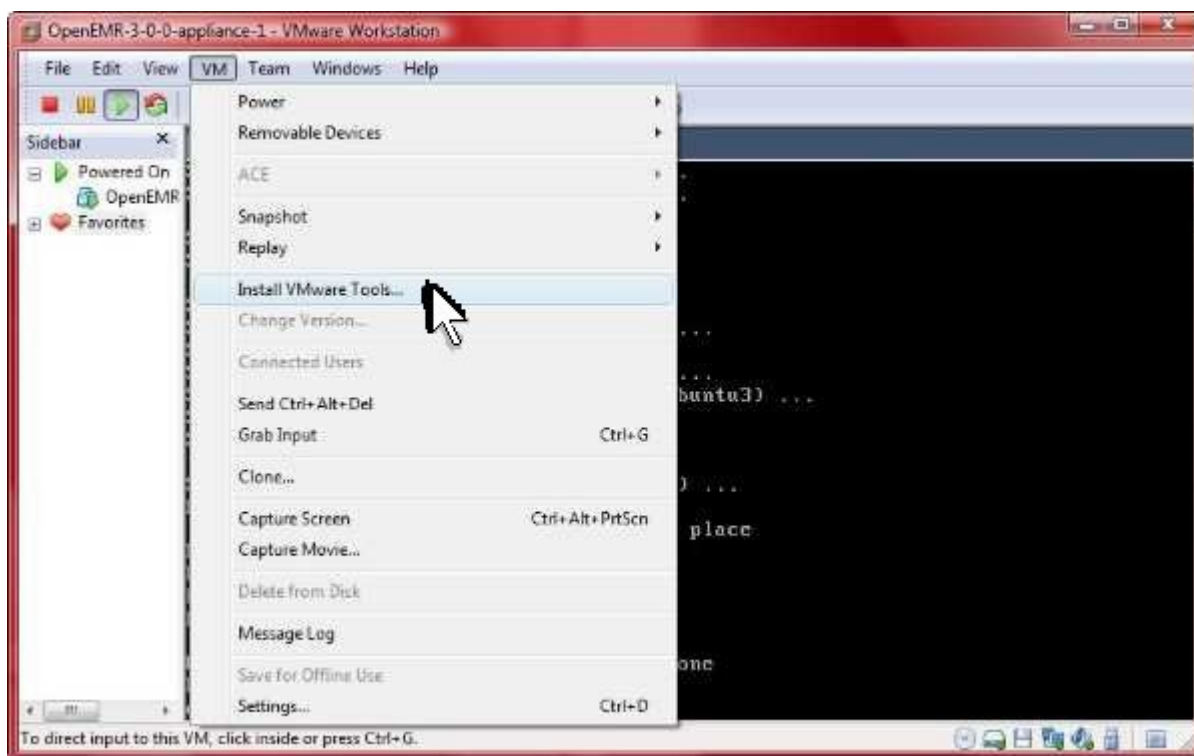
**sudo aptitude install jed lynx php5-cli imagemagick**  
 -enter Y to continue

#get packages required by Vmware Tools

**sudo aptitude install build-essential linux-headers-\$(uname -r)**  
 -enter Y to continue

5. Prepare to install Vmware Tools:





Click 'VM' in top menu, and select 'Install VMware Tools...'.  
To direct input to this VM, click inside or press Ctrl+G.

6. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```
#mount the vmware drive
```

```
sudo mkdir /mnt/temp  
sudo mount /dev/cdrom /mnt/temp
```

```
#get and unpackage vmware tools
```

```
cp /mnt/temp/VMwareTools-*.tar.gz .  
tar -zxpf VMwareTools-*.tar.gz
```

```
#install Vmware Tools
```

```
cd vmware-tools-distrib  
sudo ./vmware-install.pl  
-hit 'enter' to select default for all questions
```

```
#clean up files
```

```
cd ..  
rm -f VMwareTools-*.tar.gz  
rm -fr vmware-tools-distrib
```

```
#unmount the vmware drive
```

```
sudo umount /dev/cdrom  
sudo rm -fr /mnt/temp
```

## Configure PHP and Apache (with SSL)

[Main TOC Link](#)

[Chapter Index Link](#)

1. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```
#edit the php config file /etc/php5/apache2/php.ini
```

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

```
#edit following variables:
```

```
short_open_tag = On
```

```
max_execution_time = 60
```

```
max_input_time = 90
```

```
memory_limit = 128M
```

```
display_errors = Off
```

```
log_errors = On
```

```
register_globals = Off
```

```
post_max_size = 30M
```

```
magic_quotes_gpc = On
```

```
file_uploads = On
```

```
upload_max_filesize = 30M
```

```
TEXT EDITOR SAVE AND EXIT
```

```
#edit apache2 config file /etc/apache2/apache2.conf
```

```
sudo jed /etc/apache2/apache2.conf
```

```
#Paste below to end of file:
```

```
<Directory "/var/www/openemr/documents">
```

```
order deny,allow
```

```
Deny from all
```

```
</Directory>
```

```
<Directory "/var/www/openemr/edi">
```

```
order deny,allow
```

```
Deny from all
```

```
</Directory>
```

```
<Directory "/var/www/openemr/era">
```

```
order deny,allow
```

```
Deny from all
```

```
</Directory>
```

```
TEXT EDITOR SAVE AND EXIT
```

```
#create an SSL certificate
```

```
sudo openssl req @$@ -new -x509 -days 1825 -nodes
```

```
-out /etc/apache2/apache.pem -keyout
```

```
/etc/apache2/apache.pem
```

```
-ok to just select all defaults
```

```

#configure SSL in apache2
sudo a2enmod ssl
sudo cp /etc/apache2/sites-available/default
    /etc/apache2/sites-available/ssl
sudo ln -s /etc/apache2/sites-available/ssl /etc/apache2/
    sites-enabled/

#edit file /etc/apache2/sites-available/default
sudo jed /etc/apache2/sites-available/default
#Edit first two lines of file:
NameVirtualHost *:80
<VirtualHost *:80>
TEXT EDITOR SAVE AND EXIT

#edit file /etc/apache2/sites-available/default
sudo jed /etc/apache2/sites-available/ssl
#Edit first two lines of file:
NameVirtualHost *:443
<VirtualHost *:443>

#Insert the below code right above the 'LogLevel warn'
line:
SSLEngine on
SSLCertificateFile /etc/apache2/apache.pem
TEXT EDITOR SAVE AND EXIT

#edit file /etc/apache2/mods-available/ssl.conf
sudo jed /etc/apache2/mods-available/ssl.conf
#Uncomment the following lines (near end of file):
SSLCipherSuite HIGH:MEDIUM:!ADH
SSLProtocol all -SSLv2
TEXT EDITOR SAVE AND EXIT

#restart apache
sudo /etc/init.d/apache2 restart
-do not worry about the domain name messages

```

## Install OpenEMR 3.0.1

[Main TOC Link](#)  
[Chapter Index Link](#)

1. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```

#Download OpenEMR
wget http://downloads.sourceforge.net/openemr/openemr-3.0.1.tar.gz

```

```
#Put the OpenEMR program in its place
sudo tar -pxzvf openemr-3.0.1.tar.gz
sudo rm -f openemr-3.0.1.tar.gz
sudo mv openemr-3.0.1 /var/www/openemr
sudo chown -R root:root /var/www/openemr
```

```
#Deal with file permissions
sudo chmod 666 /var/www/openemr/library/sqlconf.php
sudo chmod 666 /var/www/openemr/interface/globals.php
sudo chmod 666 /var/www/openemr/gacl/gacl.ini.php
sudo chmod 666 /var/www/openemr/gacl/gacl.class.php
sudo chown -R www-data:www-data
    /var/www/openemr/documents
sudo chown -R www-data:www-data /var/www/openemr/edi
sudo chown -R www-data:www-data /var/www/openemr/era
sudo chown -R www-data:www-data
    /var/www/openemr/custom/letter_templates
sudo chown -R www-data:www-data
    /var/www/openemr/gacl/admin/templates_c
sudo chown -R www-data:www-data
    /var/www/openemr/library/freeb
sudo chown -R www-data:www-data
    /var/www/openemr/interface/main/calendar/modules/PostCa
    lendar/pntemplates/cache
sudo chown -R www-data:www-data
    /var/www/openemr/interface/main/calendar/modules/PostCa
    lendar/pntemplates/compiled
```

```
#Get IP address of appliance
sudo ifconfig
-Look at screenshot below to get IP address
```

```
OpenEMR-3-0-0-appliance-1 - VMware Workstation
File Edit View VM Team Windows Help
Home x OpenEMR-3-0-0-appliance... x
Powered On
OpenEMR
OpenEMR
Favorites
To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
openemr@openemr:~$ sudo ifconfig
[sudo] password for openemr:
eth0      Link encap:Ethernet  HWaddr 00:0c:29:08:80:5a
          inet addr:192.168.1.167  Bcast:192.168.1.255  Mask:255.255.255.0
          inet6 addr: fe80::20c:29ff:fe08:805a/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:82946 errors:0 dropped:0 overruns:0 frame:0
          TX packets:49309 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:100206481 (103.1 MB)  TX bytes:4477747 (4.2 MB)
          Interrupt:17 Base address:0x2000

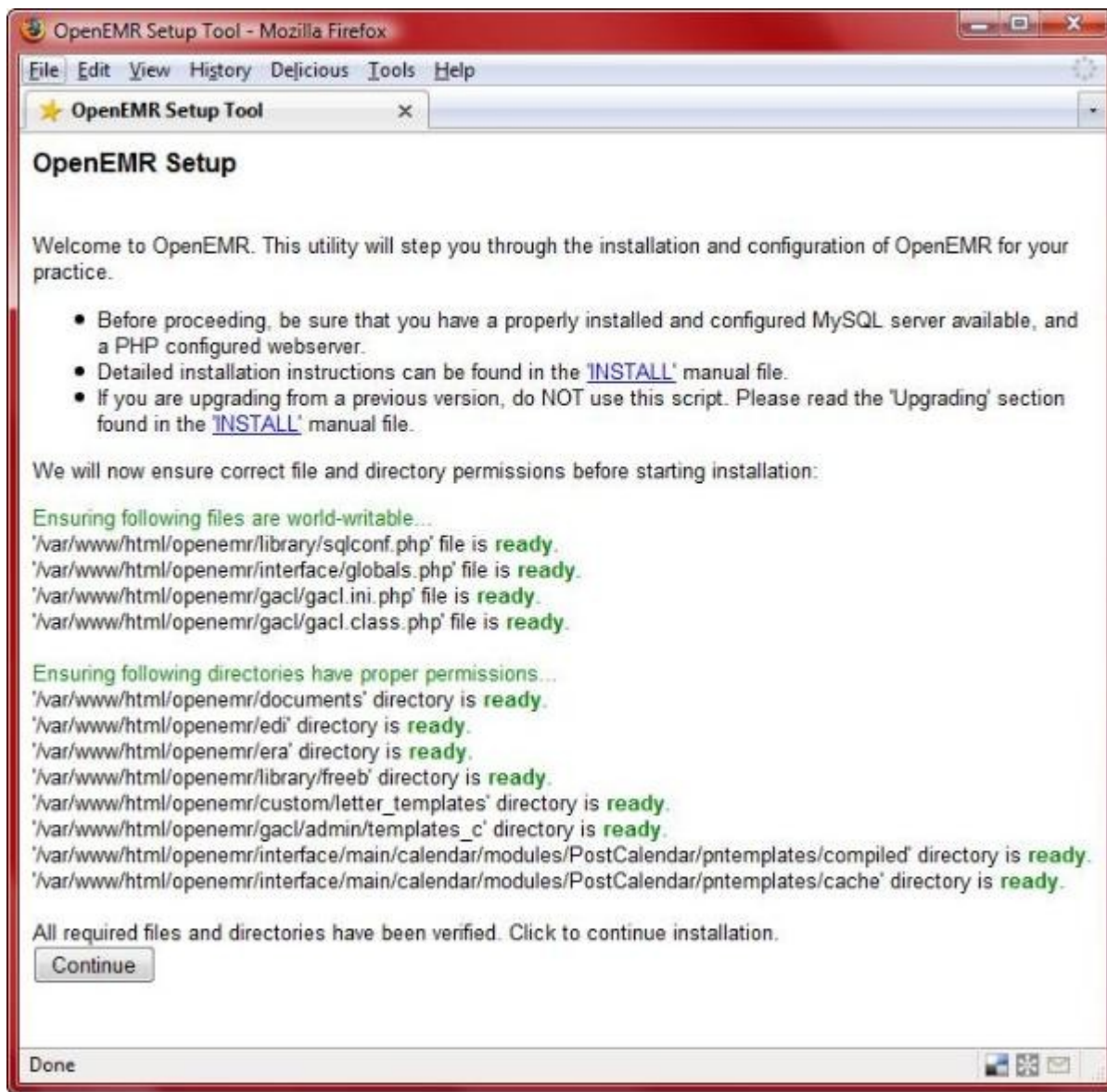
lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:106 errors:0 dropped:0 overruns:0 frame:0
          TX packets:106 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:10258 (10.0 KB)  TX bytes:10258 (10.0 KB)

openemr@openemr:~$ _
To direct input to this VM, click inside or press Ctrl+G.
```

The location where you will find the IP address of your appliance is circled in red above.

3. Now, open a webbrowser outside the appliance and point to (the APPLIANCE\_IP\_ADDRESS was found by above [ifconfig](#) command): [https://APPLIANCE\\_IP\\_ADDRESS/openemr/setup.php](https://APPLIANCE_IP_ADDRESS/openemr/setup.php)

(If you are getting a certificate security error, then first follow the instructions in below appendix section '[Configuring client web browser for https](#)' to configure your web browser.)



Click 'Continue'.



Select 'Have setup create the database', then click 'Continue'.

OpenEMR Setup Tool - Mozilla Firefox

File Edit View History Delicious Tools Help

OpenEMR Setup Tool

## OpenEMR Setup

### Step 2

Now you need to supply the MySQL server information and path information. Detailed instructions on each item can be found in the ['INSTALL'](#) manual file.

#### MYSQL SERVER:

Server Host:  (If you run MySQL and Apache/PHP on the same computer, then leave this as 'localhost'. If they are on separate computers, then enter the IP address of the computer running MySQL.)

Server Port:  (This is the MySQL port. The default port for MySQL is 3306.)

Database Name:  (This is the name of the OpenEMR database in MySQL - 'openemr' is the recommended)

Login Name:  (This is the name of the OpenEMR login name in MySQL - 'openemr' is the recommended)

Password:  (This is the Login Password for when PHP accesses MySQL - it should be at least 8 characters long and composed of both numbers and letters)

Name for Root Account:  (This is name for MySQL root account. For localhost, it is usually ok to leave it 'root'.)

Root Pass:  (This is your MySQL root password. For localhost, it is usually ok to leave it blank.)

User Hostname:  (If you run Apache/PHP and MySQL on the same computer, then leave this as 'localhost'. If they are on separate computers, then enter the IP address of the computer running Apache/PHP.)

#### OPENEMR USER:

Initial User:  (This is the login name of user that will be created for you. Limit this to one word.)

Initial User's Name:  (This is the real name of the 'initial user'.)

Initial Group:  (This is the group that will be created for your users. This should be the name of your practice.)

#### OPENEMR PATHS:

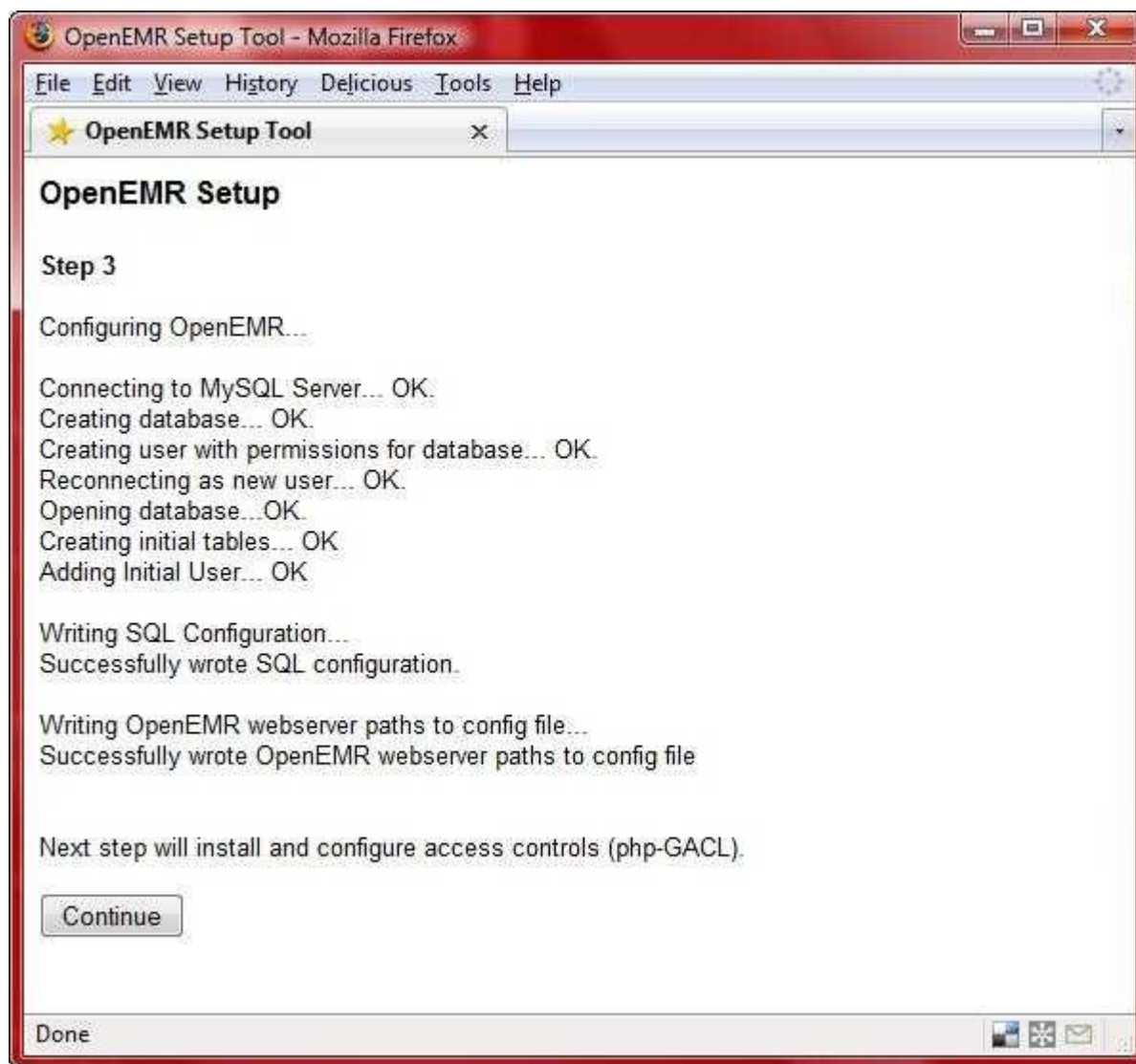
Absolute Path:  (This is the full absolute directory path to openemr. The value here is automatically created, and should not need to be modified. Do not worry about direction of slashes; they will be automatically corrected.)

Relative HTML Path:  (Set this to the relative html path, ie. what you would type into the web browser after the server address to get to OpenEMR. For example, if you type 'http://127.0.0.1/clinic/openemr/' to load OpenEMR, set this to '/clinic/openemr' without the trailing slash. Do not worry about direction of slashes; they will be automatically corrected.)

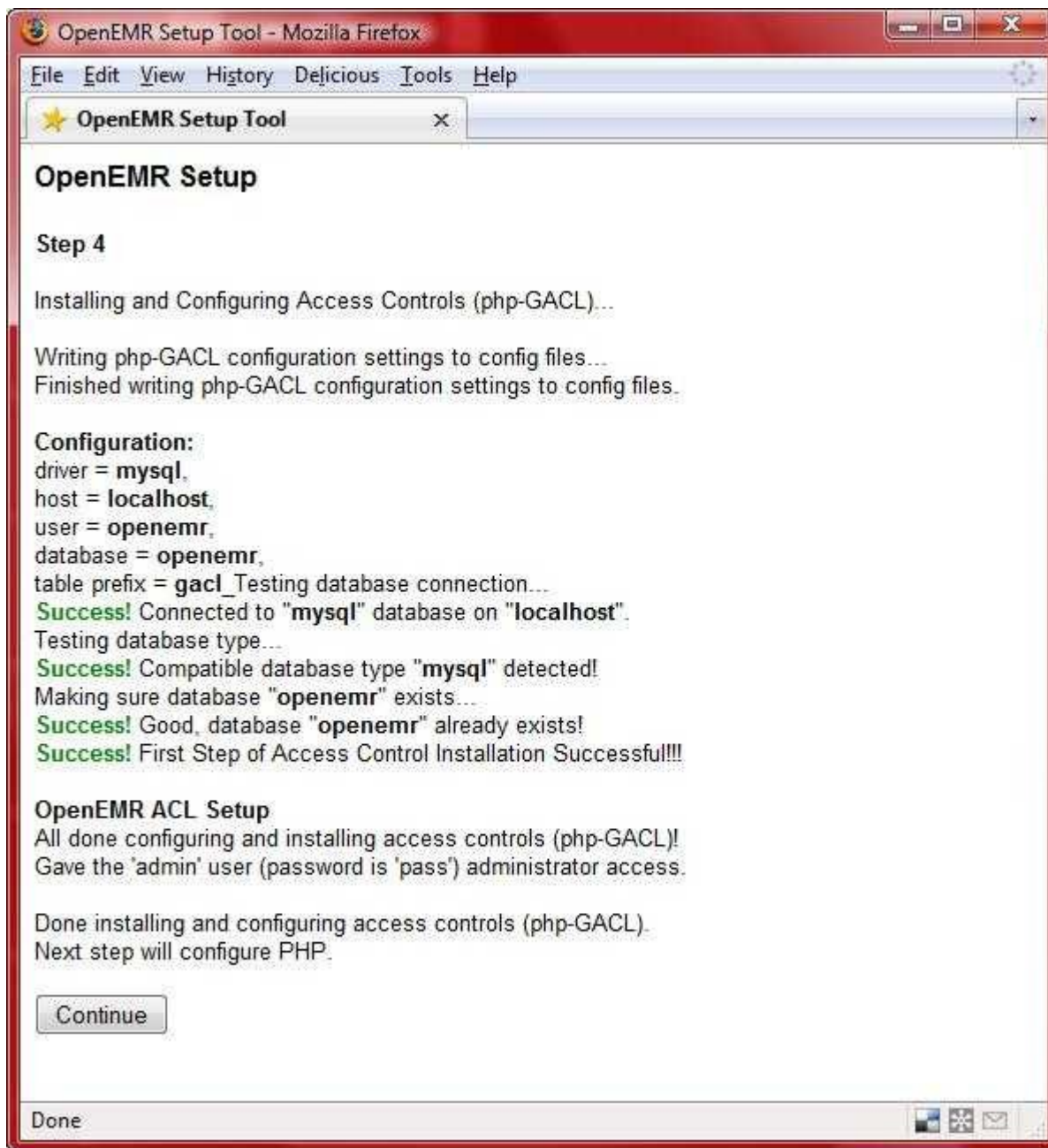
Done 192.168.1.167

For my appliance I typed 'openemr' into 'Password' field, and otherwise kept defaults. Click 'Continue'.

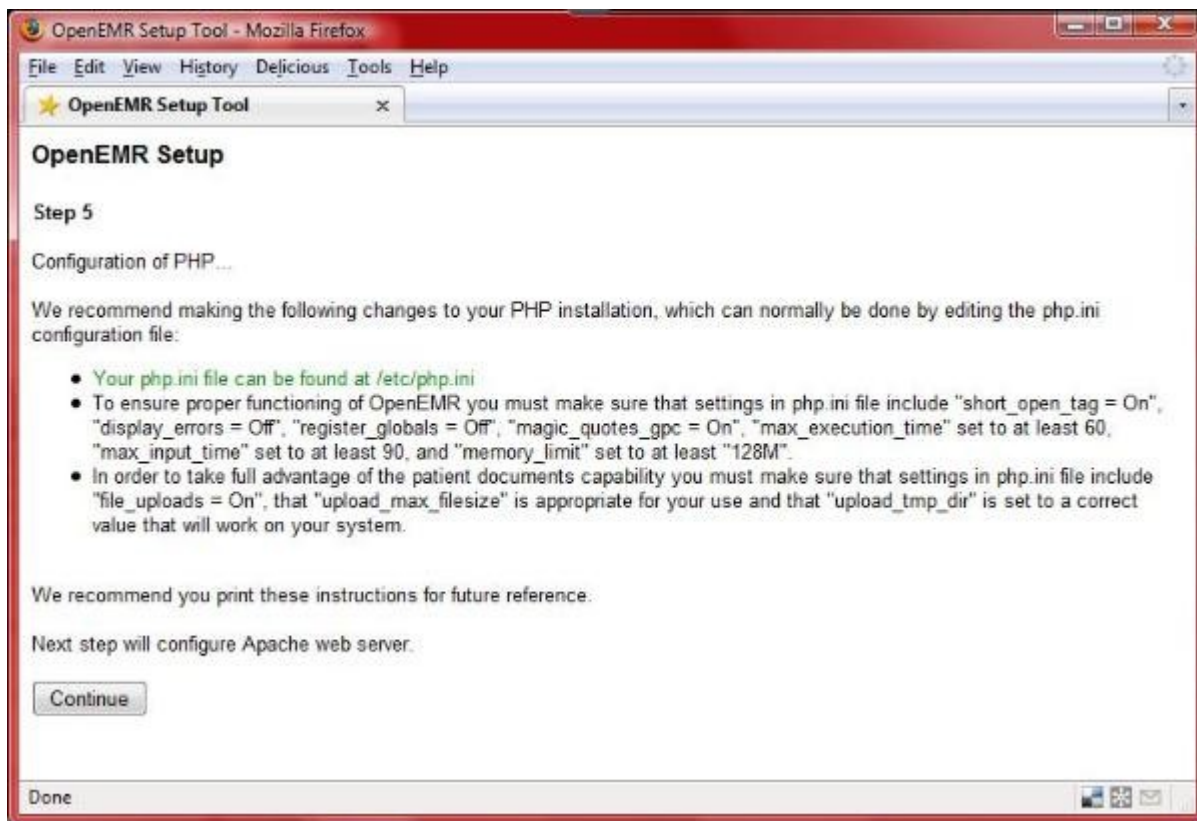




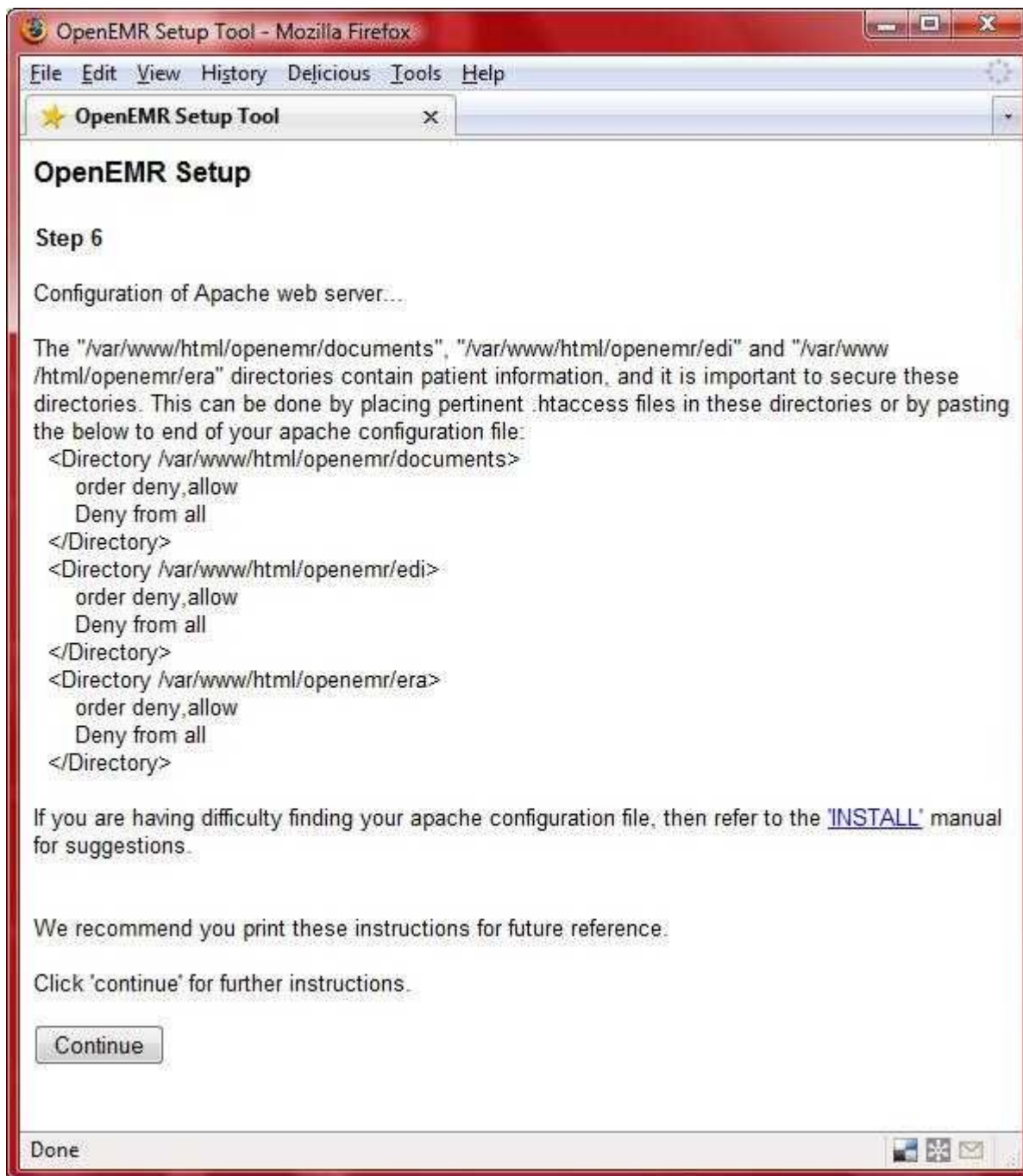
Click 'Continue'.



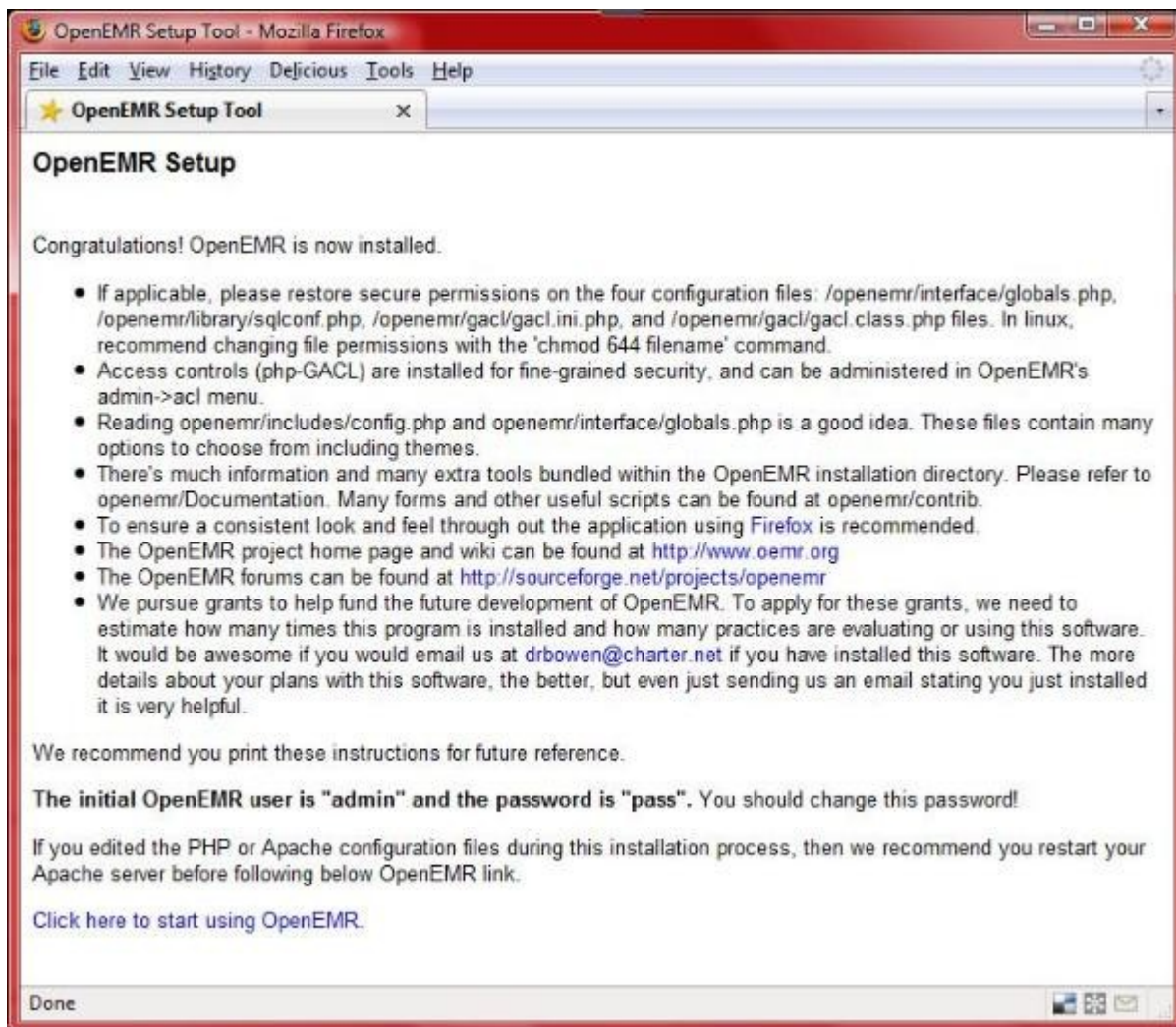
Click 'Continue'.



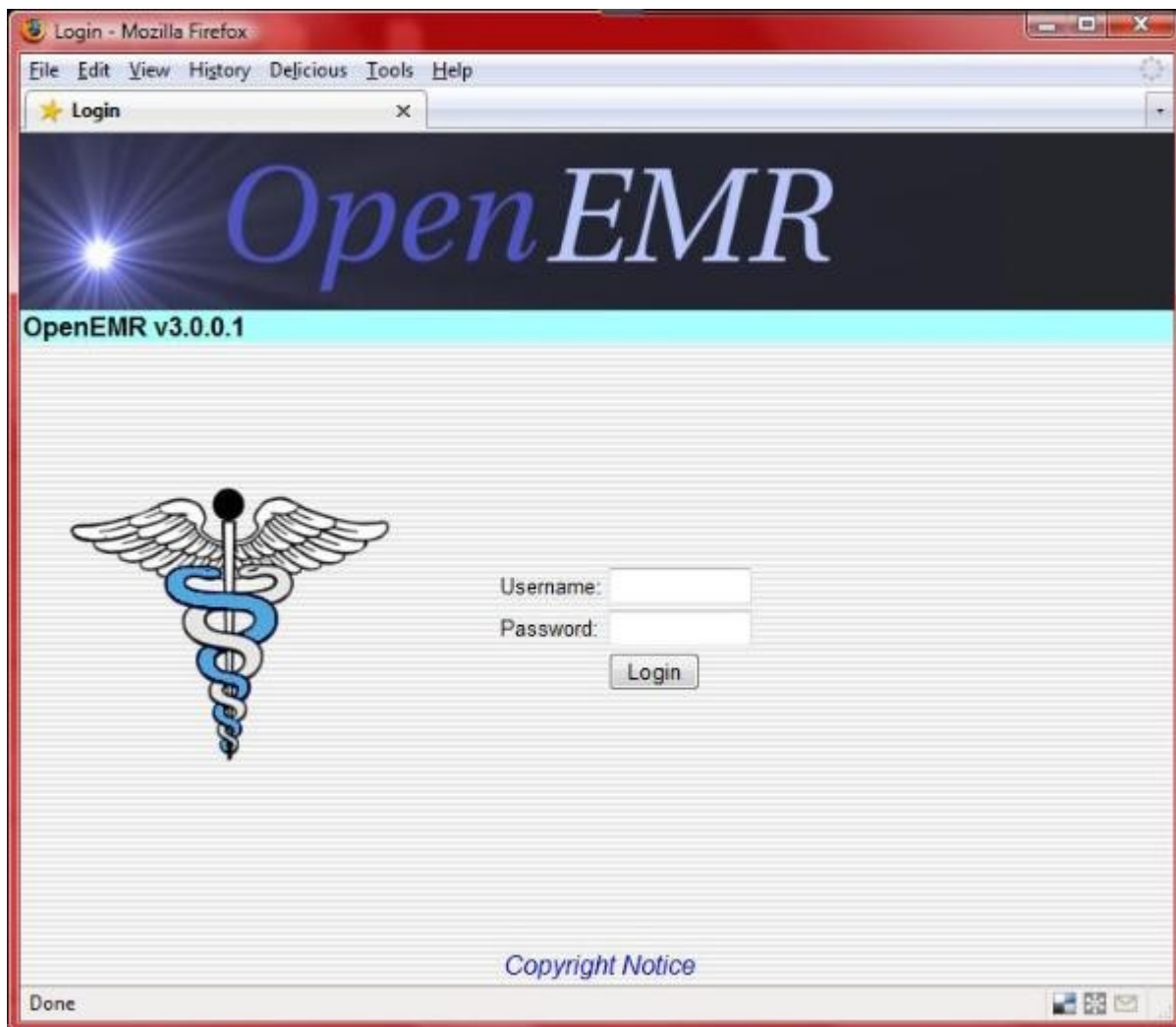
We have already configured this in the above '[Configure PHP and Apache \(with SSL\)](#)' section. Click 'Continue'.



We have already configured this in the above '[Configure PHP and Apache \(with SSL\)](#)' section. Click 'Continue'.



Click 'Click here to start using OpenEMR' to go to OpenEMR.



Continue to below instructions.

4. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```
#Re-secure files  
sudo chmod 644 /var/www/openemr/library/sqlconf.php  
sudo chmod 644 /var/www/openemr/interface/globals.php  
sudo chmod 644 /var/www/openemr/gacl/gacl.ini.php  
sudo chmod 644 /var/www/openemr/gacl/gacl.class.php
```

## Install and Configure Webmin

[Main TOC Link](#)

[Chapter Index Link](#)

1. Webmin is an awesome way to administer a ubuntu server with a graphical interface remotely.

2. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```
#download Webmin
```

```
wget http://prdownloads.sourceforge.net/webadmin/webmin_1.470_all.deb
```

```
#install Webmin
```

```
sudo dpkg -i webmin_1.470_all.deb
```

```
-IGNORE the dependency errors (below command will install)
```

```
sudo apt-get install -f
```

```
-enter 'Y' to continue
```

```
rm -f webmin_1.470_all.deb
```

1. Now, open a webbrowser outside the appliance and point to (the APPLIANCE\_IP\_ADDRESS was found by above [ifconfig](#) command):  
`https://APPLIANCE_IP_ADDRESS:10000/`

(If you are getting a certificate security error, then first follow the instructions in below appendix section '[Configuring client web browser for https](#)' to configure your web browser.)



Login with user:'openemr' and pass:'openemrcool'.

Webmin 1.460 on openemr (Ubuntu Linux 8.04.2) - Mozilla Firefox

File Edit View History Delicious Tools Help

https://192.168.1.167:10000/

Webmin 1.460 on openemr (Ubu... x

Login: openemr

- Webmin
- System
- Servers
- Others
- Networking
- Hardware
- Cluster
- Un-used Modules

Search:

- View Module's Logs
- System Information
- Refresh Modules
- Logout

System hostname: openemr  
Operating system: Ubuntu Linux 8.04.2  
Webmin version: 1.460  
Time on system: Mon Mar 16 02:02:46 2009  
Kernel and CPU: Linux 2.6.24-23-server on i686  
CPU load averages: 0.18 (1 min) 0.15 (5 mins) 0.10 (15 mins)  
Real memory: 503.36 MB total, 97.77 MB used  
Virtual memory: 1.44 GB total, 96 kB used  
Local disk space: 77.94 GB total, 5.41 GB used

The 2 following Webmin module updates are now available ..

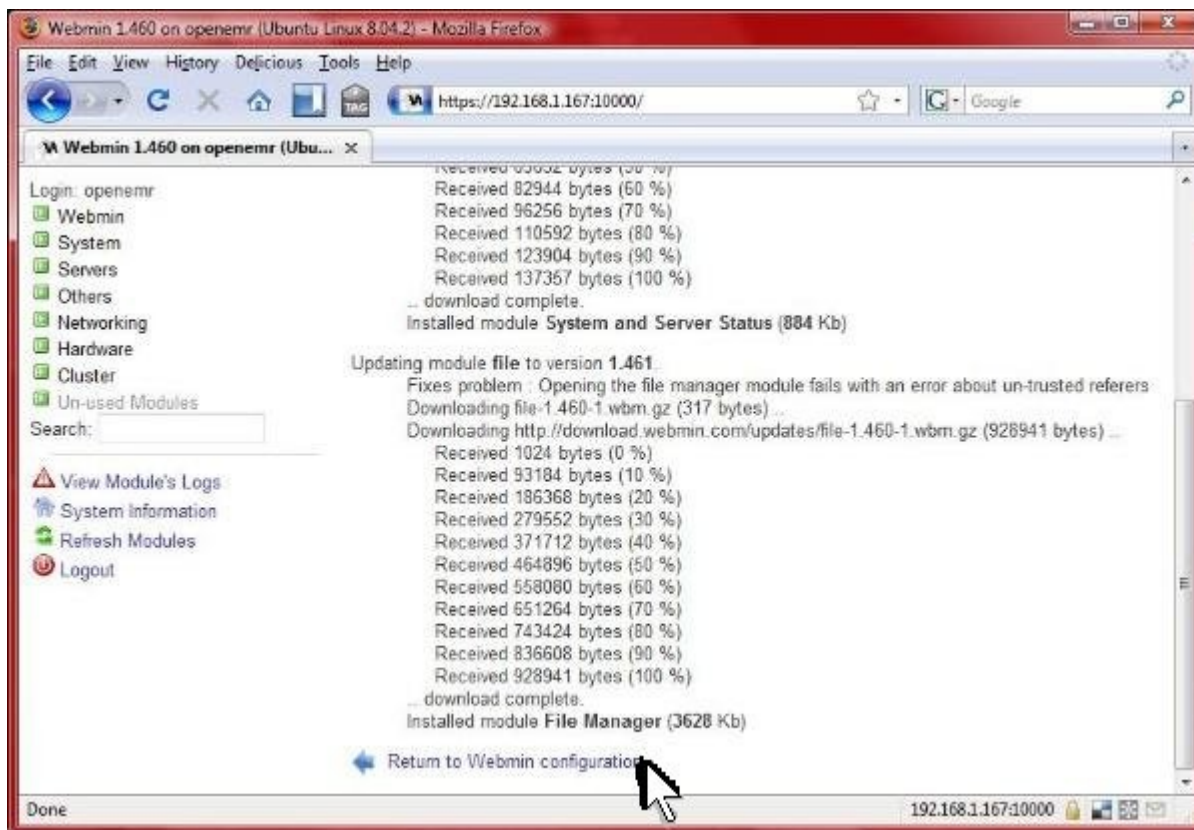
Module	Version	Fixes problem
System and Server Status	1.461	All Remote TCP Service monitors report that the service is not installed
File Manager	1.461	Opening the file manager module fails with an error about un-trusted referers

[Install Updates Now](#)

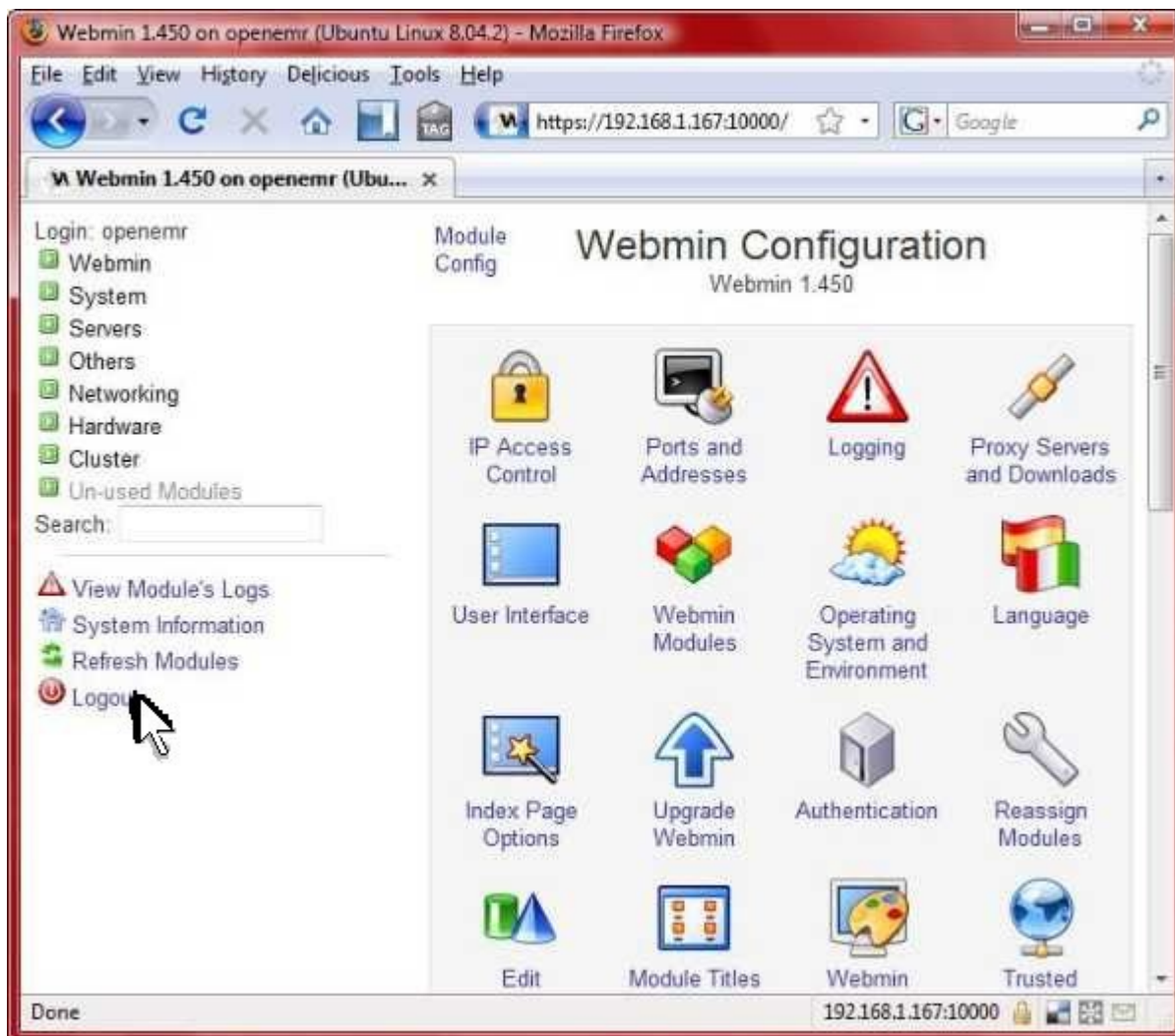
Done 192.168.1.167:10000

Click 'Install Updates Now' button.





Scroll to bottom of window and click 'Return to Webmin configuration'.



Click 'Logout'.

## Configure Firewall

[Main TOC Link](#)

[Chapter Index Link](#)

1. We will only allow access to the appliance through ports 22 (SSH), 443 (OpenEMR via https), and 10000 (Webmin via https). Note that we are blocking the http port (80) to force users to use https (encrypted) when connecting to OpenEMR.
2. Open a webbrowser outside the appliance and point to (the APPLIANCE\_IP\_ADDRESS was found by above [ifconfig](#) command):  
`https://APPLIANCE_IP_ADDRESS:10000/`

(If you are getting a certificate security error, then first follow the instructions in below appendix section '[Configuring client web browser for https](#)' to configure your web browser.)



Login with user:'openemr' and pass:'openemrcool'.

Webmin 1.450 on openemr (Ubuntu Linux 8.04.2) - Mozilla Firefox

File Edit View History Delicious Tools Help

https://192.168.1.167:1

Webmin 1.450 on openemr (Ubu... x

Login: openemr

- Webmin
- System
- Servers
- Others
- Networking
- Hardware
- Cluster
- Un-used Modules

Search:

- View Module's Logs
- System Information
- Refresh Modules
- Logout

**System**  
hostname openemr

**Operating system**  
Ubuntu Linux 8.04.2

**Webmin version**  
1.450

**Time on system**  
Sat Feb 28 09:33:21 2009

**Kernel and CPU**  
Linux 2.6.24-23-server on i686

**System uptime**  
8 hours, 6 minutes

**CPU load averages**  
0.16 (1 min) 0.03 (5 mins) 0.07 (15 mins)

**Real memory**  
503.36 MB total, 104.82 MB used

**Virtual memory**  
1.44 GB total, 88 kB used

**Local disk space**  
77.94 GB total, 5.35 GB used

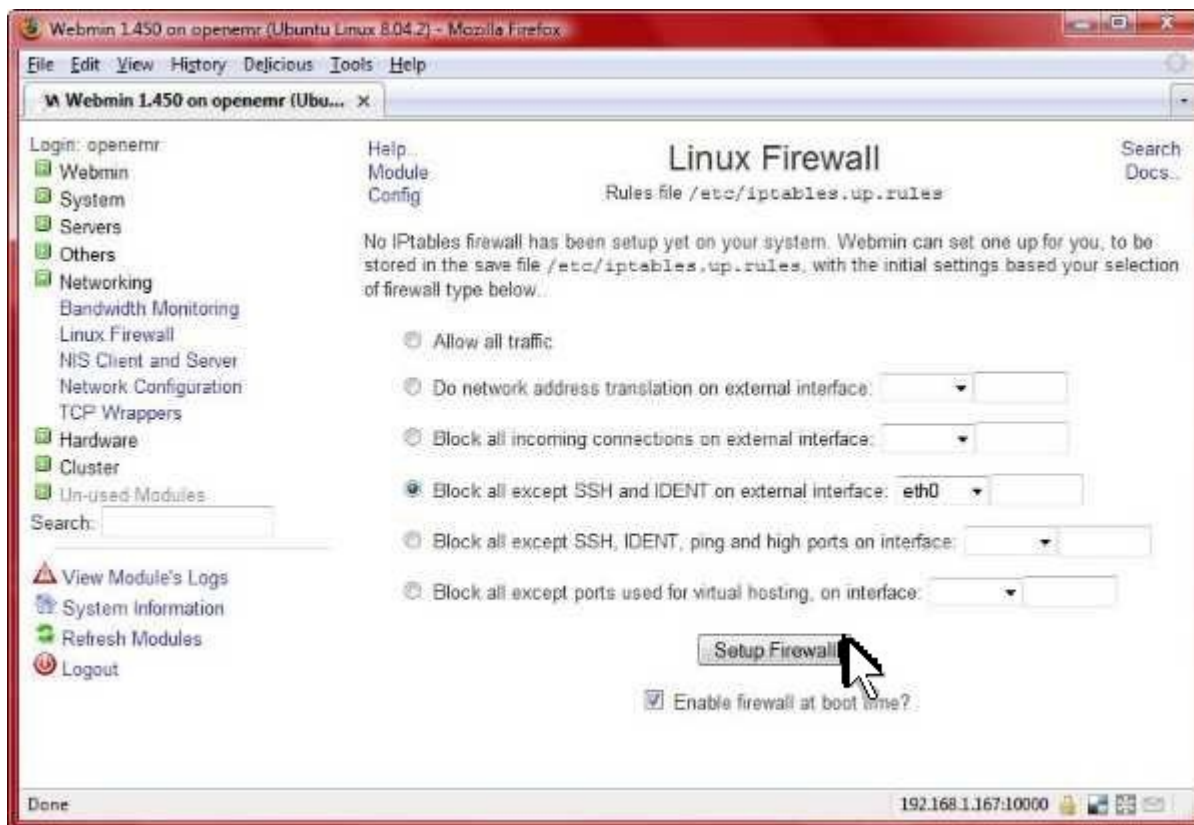
Done 192.168.1.167:10000

Click 'Networking'.

The screenshot displays the Webmin 1.450 web interface. The browser window title is "Webmin 1.450 on openemr (Ubuntu Linux 8.04.2) - Mozilla Firefox". The address bar shows "https://192.168.1.167:1". The main content area features the Webmin logo and a system information panel. The left-hand navigation menu includes sections for "Webmin", "System", "Servers", "Others", "Networking", "Hardware", "Cluster", and "Un-used Modules". The "Networking" section is expanded, showing options like "Bandwidth Monitoring", "Linux Firewall", "NIS Client and Server", "Network Configuration", and "TCP Wrappers". A mouse cursor is positioned over the "Linux Firewall" link. Below the navigation menu are links for "View Module's Logs", "System Information", "Refresh Modules", and "Logout". The system information panel on the right provides details such as hostname, operating system, Webmin version, time on system, kernel and CPU, system uptime, CPU load averages, real memory usage, virtual memory usage, and local disk space usage. Each resource usage section includes a horizontal bar chart. The status bar at the bottom of the browser shows "javascript:toggleview('net','togglenet')", the IP address "192.168.1.167:10000", and various security and utility icons.

System	hostname
System	openemr
Operating system	Ubuntu Linux 8.04.2
Webmin version	1.450
Time on system	Sat Feb 28 09:33:21 2009
Kernel and CPU	Linux 2.6.24-23-server on i686
System uptime	8 hours, 6 minutes
CPU load averages	0.16 (1 min) 0.03 (5 mins) 0.07 (15 mins)
Real memory	503.36 MB total, 104.82 MB used
Virtual memory	1.44 GB total, 88 kB used
Local disk space	77.94 GB total, 5.35 GB used

Click 'Linux Firewall'.



Select 'Block all except SSH and IDENT on external interface'. Select the 'eth0' interface from the menu next to this. Toggle on the 'Enable firewall at boot time?'. Then click the 'Setup Firewall' button.

Webmin 1.450 on openemr (Ubuntu Linux 8.04.2) Mozilla Firefox

File Edit View History Delicious Tools Help

Webmin 1.450 on openemr (Ubu... x

Login: openemr

- Webmin
- System
- Servers
- Others
- Networking
  - Bandwidth Monitoring
  - Linux Firewall
  - NIS Client and Server
  - Network Configuration
  - TCP Wrappers
- Hardware
- Cluster
- Un-used Modules

Search:

View Module's Logs

System Information

Refresh Modules

Logout

Help: Linux Firewall

Module Config

Rules file: /etc/iptables.up.rules

Showing IPTable: Packet filtering (filter) Add a new chain named:

Incoming packets (INPUT)

Select all | Invert selection

Action	Condition	Move	Add
<input type="checkbox"/> Accept	If input interface is not eth0	↓	↓ ↑
<input type="checkbox"/> Accept	If protocol is TCP and TCP flags ACK (of ACK) are set	↓ ↑	↓ ↑
<input type="checkbox"/> Accept	If state of connection is ESTABLISHED	↓ ↑	↓ ↑
<input type="checkbox"/> Accept	If state of connection is RELATED	↓ ↑	↓ ↑
<input type="checkbox"/> Accept	If protocol is UDP and destination port is 1024:65535 and source port is 53	↓ ↑	↓ ↑
<input type="checkbox"/> Accept	If protocol is ICMP and ICMP type is echo reply	↓ ↑	↓ ↑
<input type="checkbox"/> Accept	If protocol is ICMP and ICMP type is destination-unreachable	↓ ↑	↓ ↑
<input type="checkbox"/> Accept	If protocol is ICMP and ICMP type is source-quench	↓ ↑	↓ ↑
<input type="checkbox"/> Accept	If protocol is ICMP and ICMP type is time-exceeded	↓ ↑	↓ ↑
<input type="checkbox"/> Accept	If protocol is ICMP and ICMP type is parameter-problem	↓ ↑	↓ ↑
<input type="checkbox"/> Accept	If protocol is TCP and destination port is 22	↓ ↑	↓ ↑
<input checked="" type="checkbox"/> Accept	If protocol is TCP and destination port is auth	↑	↓ ↑

Select all | Invert selection

Set Default Action To: Drop Delete Selected Add Rule

Forwarded packets (FORWARD)

There are no rules defined for this chain.

Set Default Action To: Accept Add Rule

Outgoing packets (OUTPUT)

There are no rules defined for this chain.

Set Default Action To: Accept Add Rule

Apply Configuration Click this button to make the firewall configuration listed above active. Any firewall rules currently in effect will be flushed and replaced

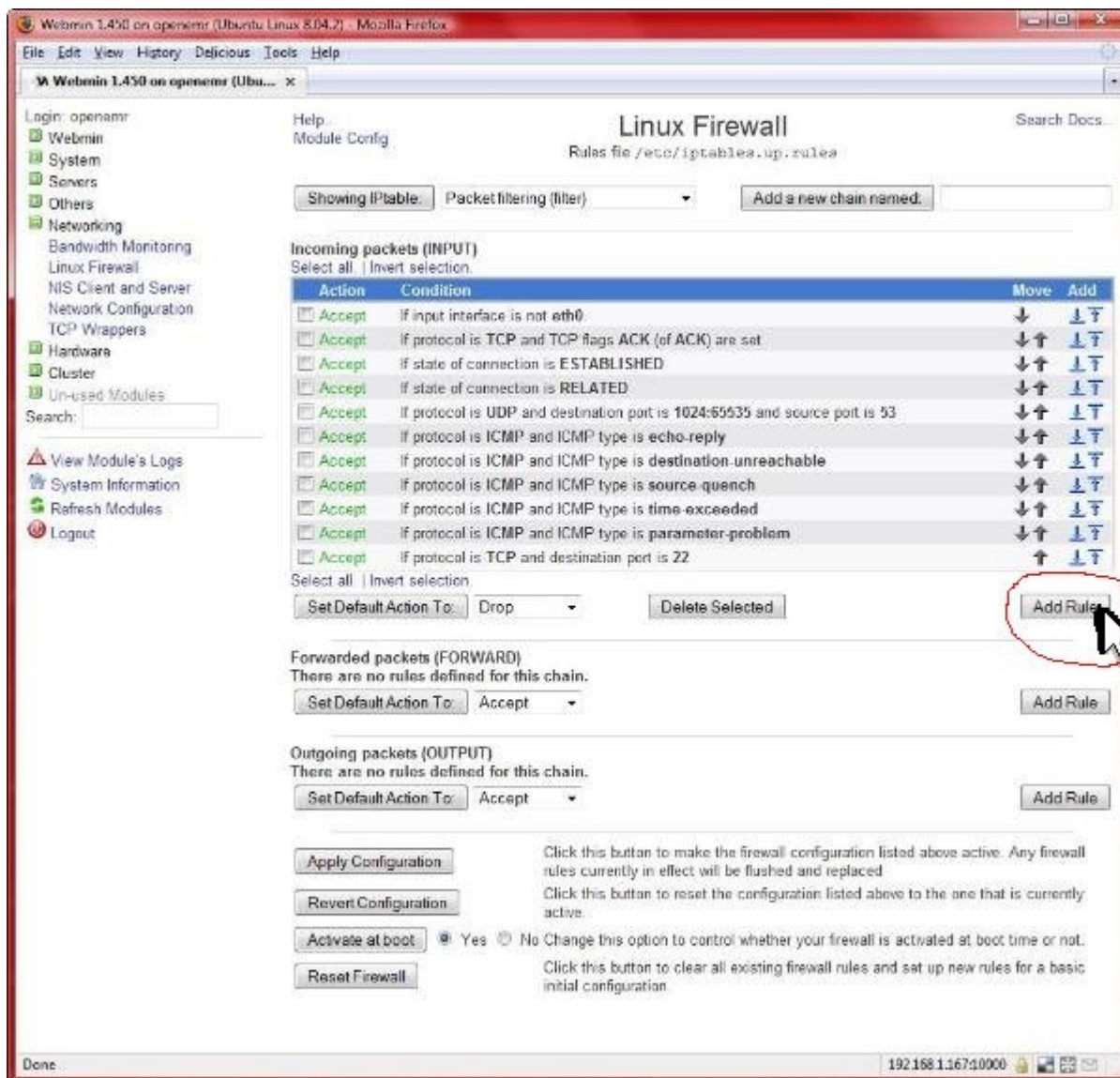
Revert Configuration Click this button to reset the configuration listed above to the one that is currently active

Activate at boot  Yes  No Change this option to control whether your firewall is activated at boot time or not.

Reset Firewall Click this button to clear all existing firewall rules and set up new rules for a basic initial configuration.

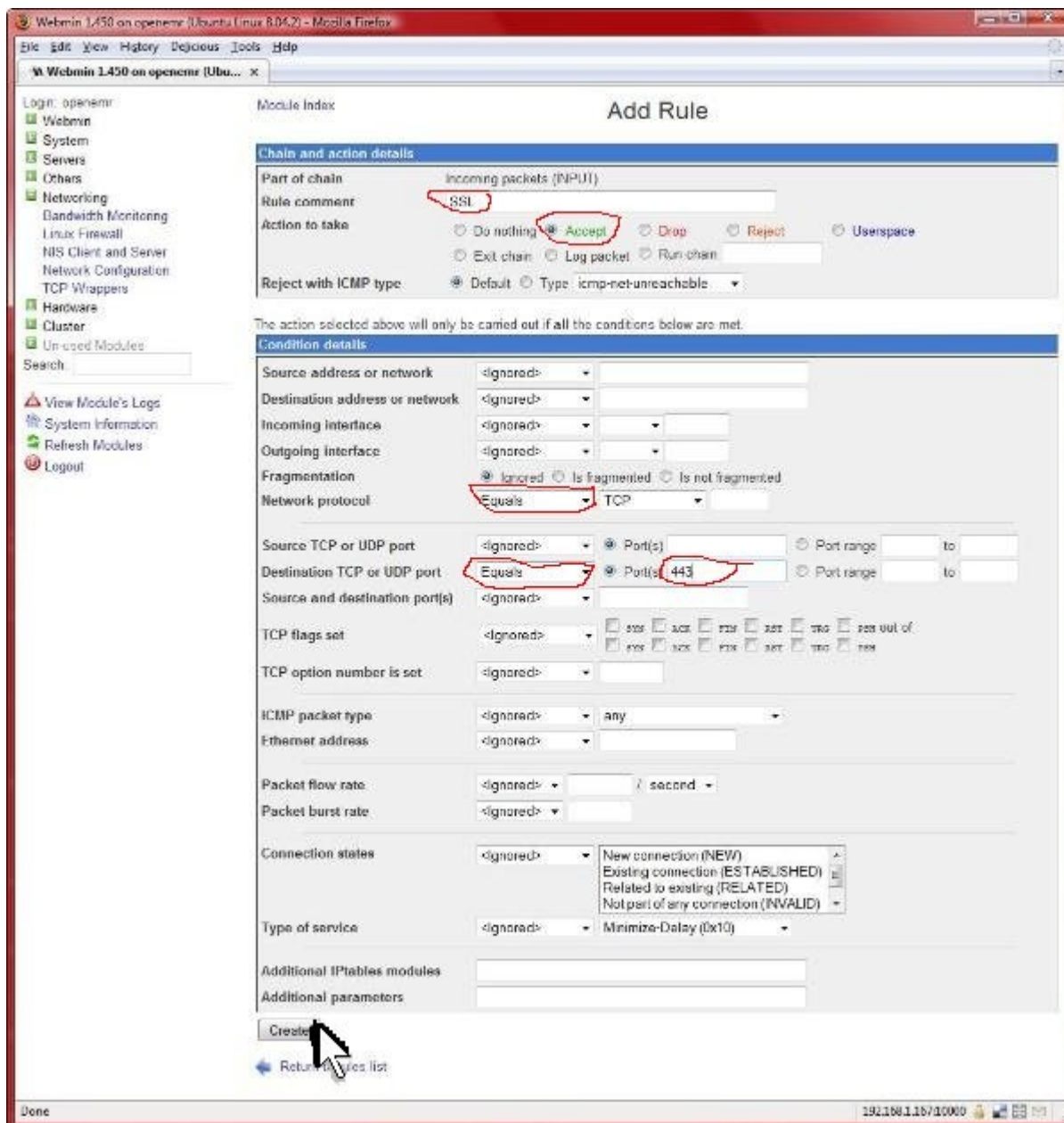
Done 192.168.1.167:10000

Select the line circled in red above. Then click the 'Delete Selected' button.

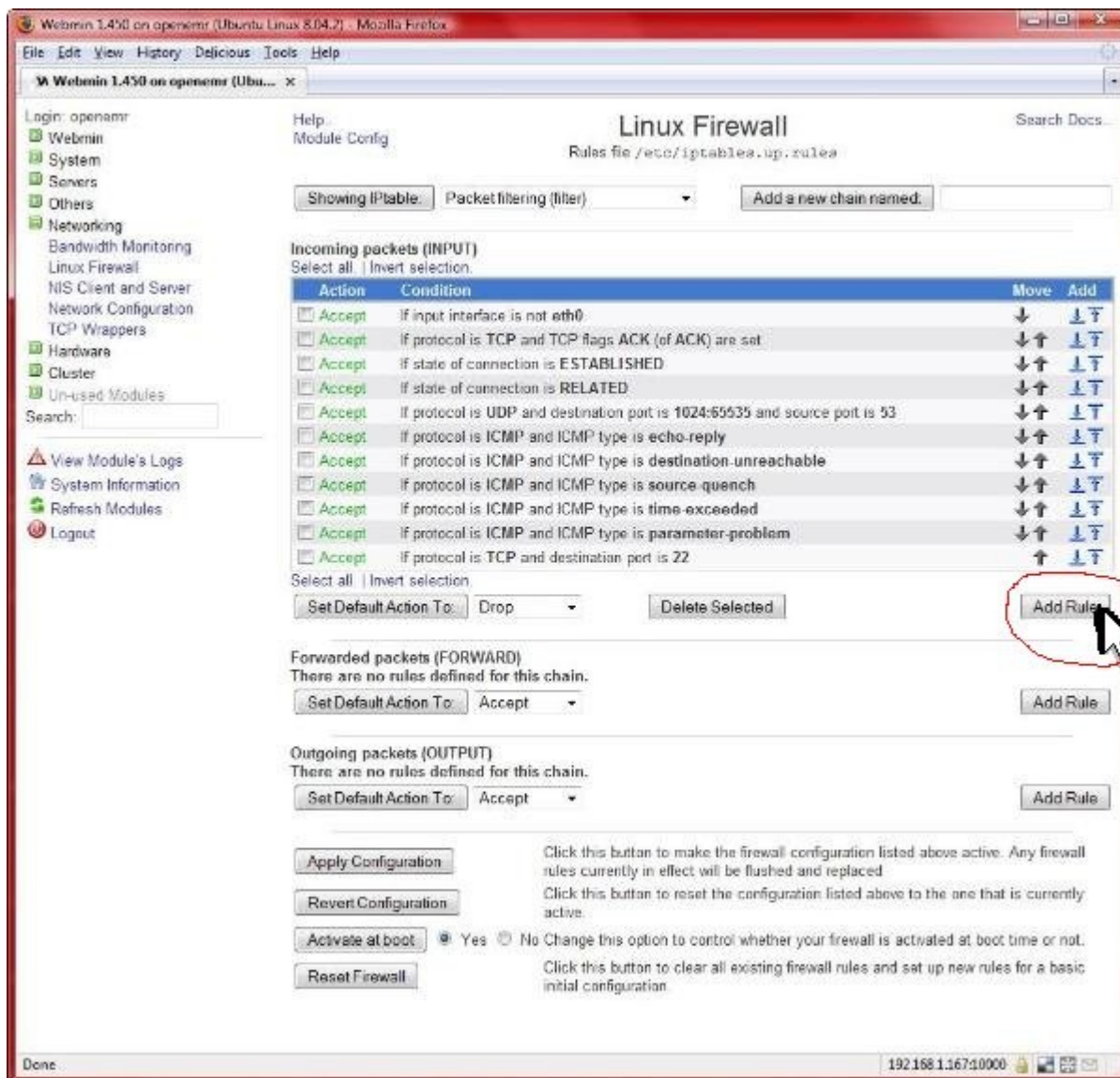


Click the 'Add Rule' button circled in red above.

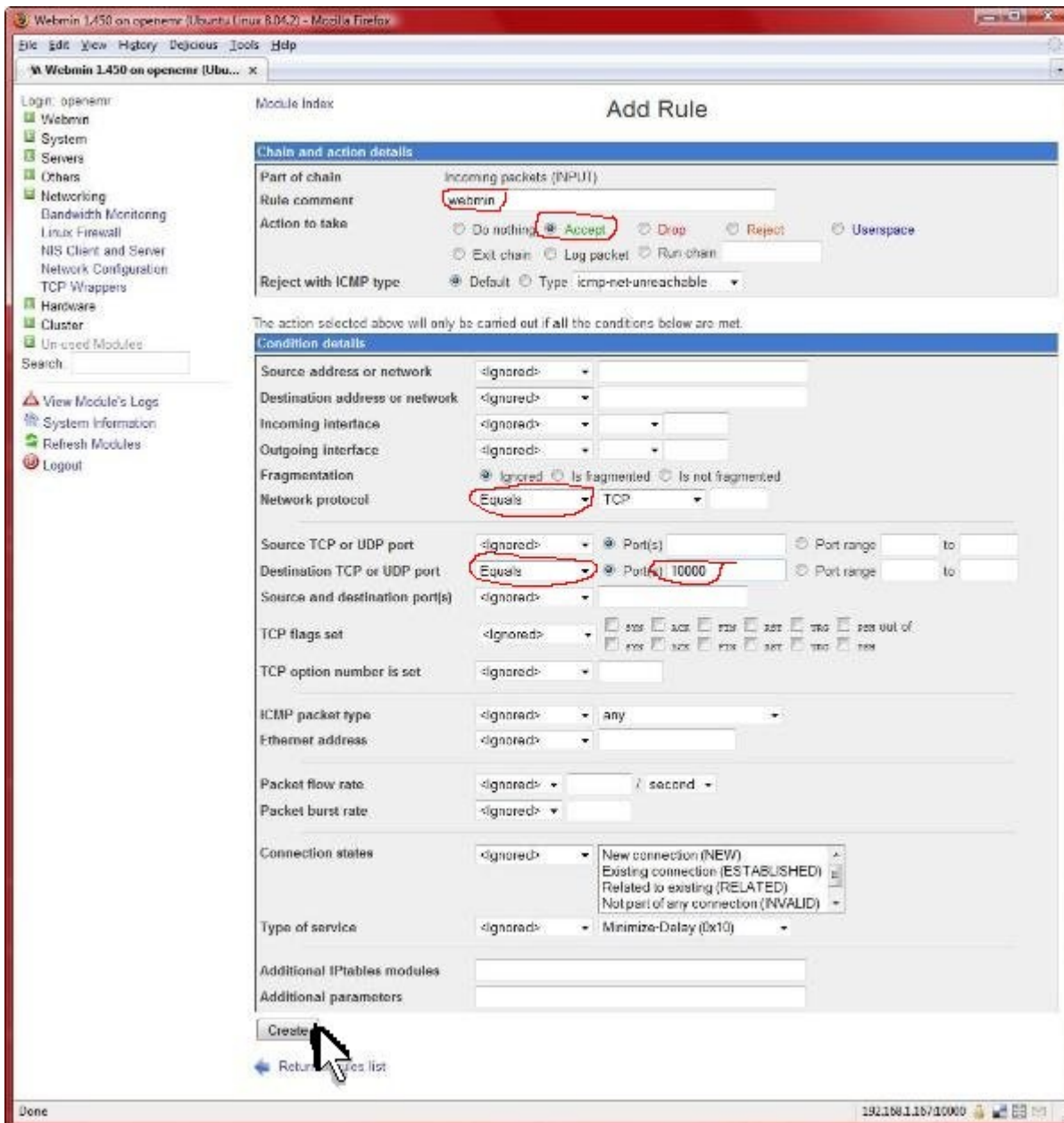




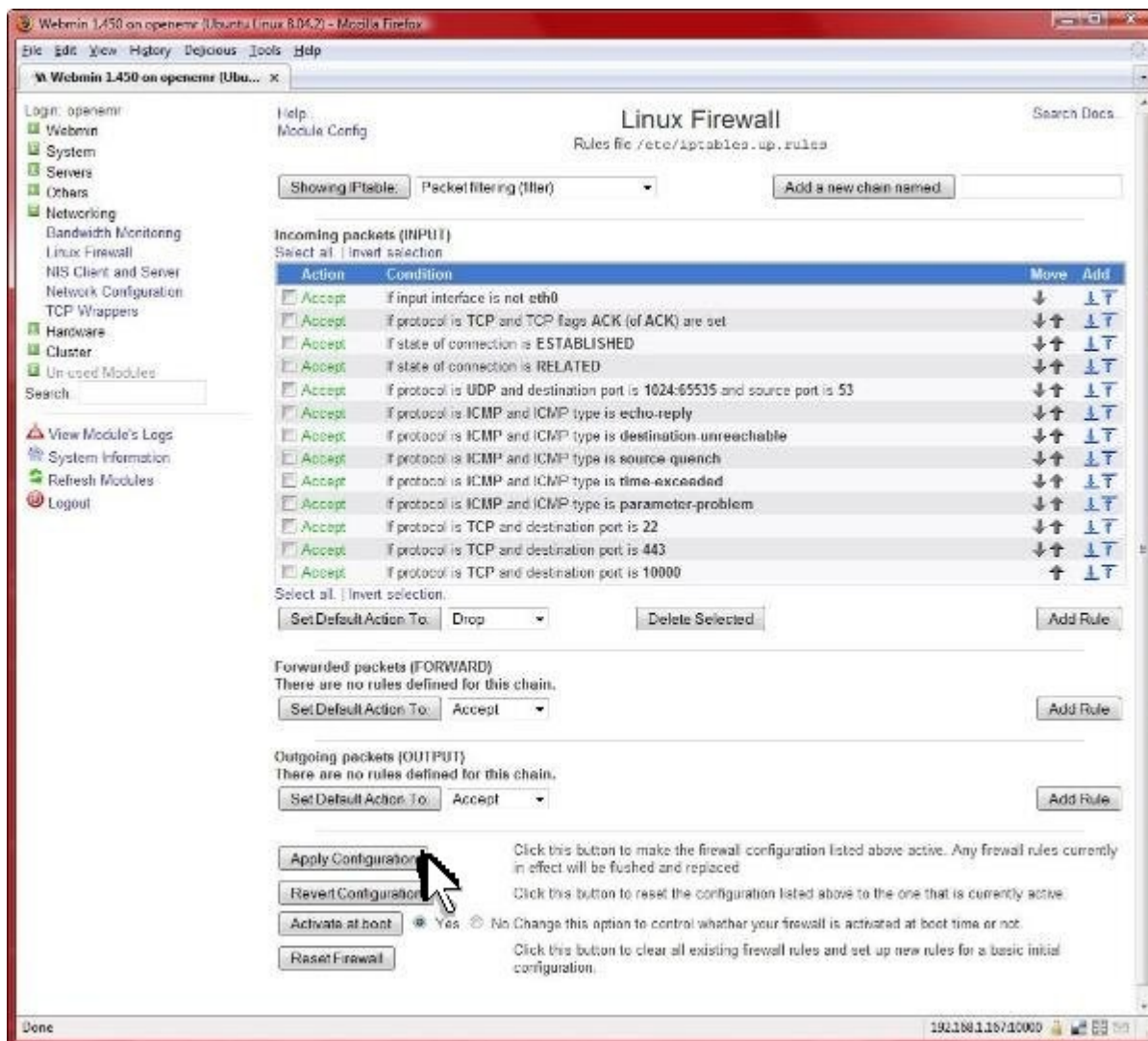
All places that require input are circled in red. Type 'SSL' in 'Rule comment'. Toggle on the 'Accept' in 'Action to take'. In 'Network protocol', select 'Equals'. In 'Destination TCP or UDP port', select 'Equals' and type '443' for 'Port(s)'. Then click the 'Create' button.



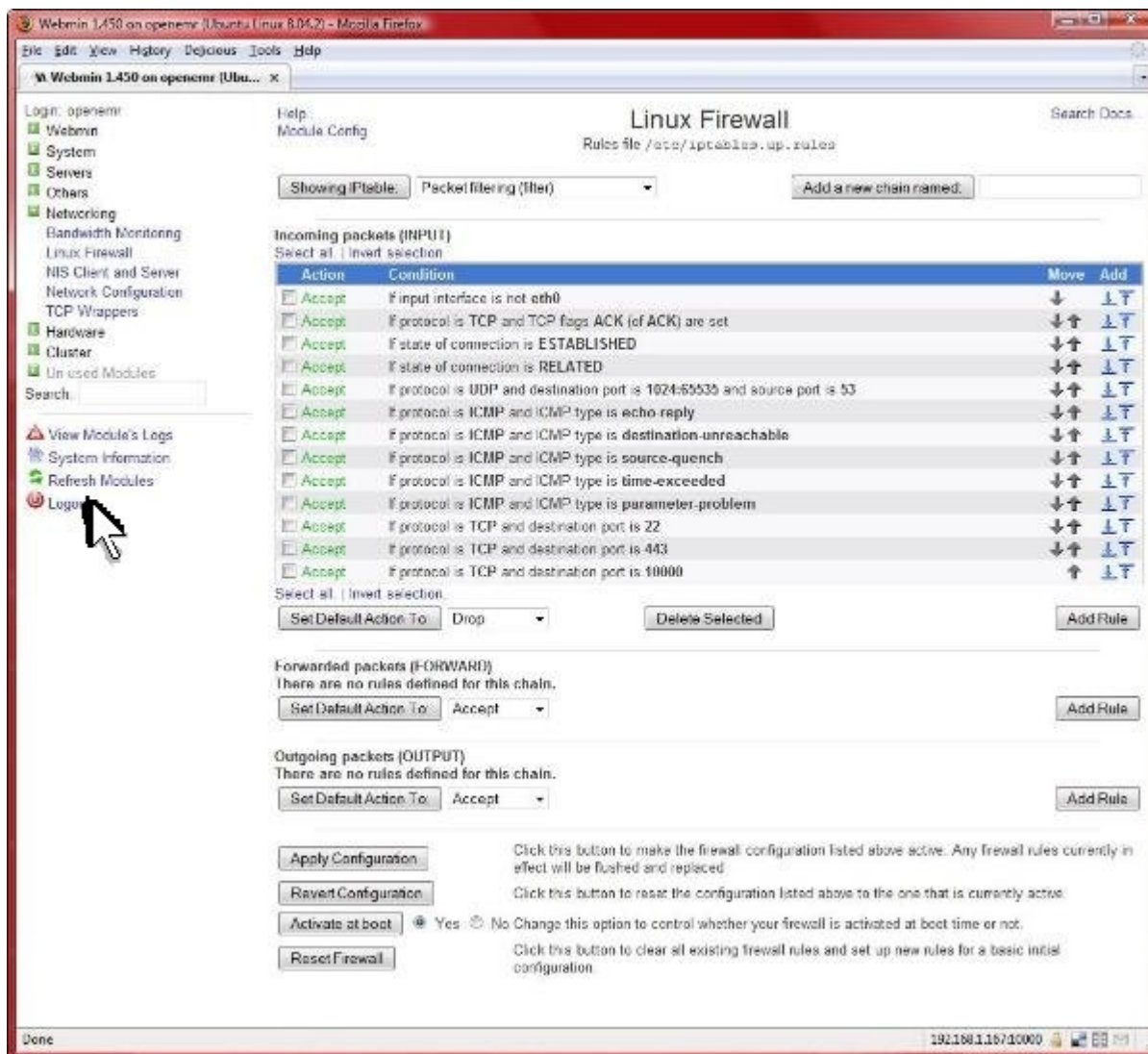
Click the 'Add Rule' button circled in red above.



All places that require input are circled in red. Type 'webmin' in 'Rule comment'. Toggle on the 'Accept' in 'Action to take'. In 'Network protocol', select 'Equals'. In 'Destination TCP or UDP port', select 'Equals' and type '10000' for 'Port(s)'. Then click the 'Create' button.



Click the 'Apply Configuration' button.



Click 'Logout'.

## Finishing Touches On Appliance

[Main TOC Link](#)  
[Chapter Index Link](#)

1. We will install a startup/shutdown script. On startup it will configure the introductory screen to give the user required information (IP address, login names/passwords, etc.). On shutdown it will reset the network card to ensure mobility of the virtual appliance.
2. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

#download the script

**sudo wget http://www.bradynd.com/openemrApplianceScript**

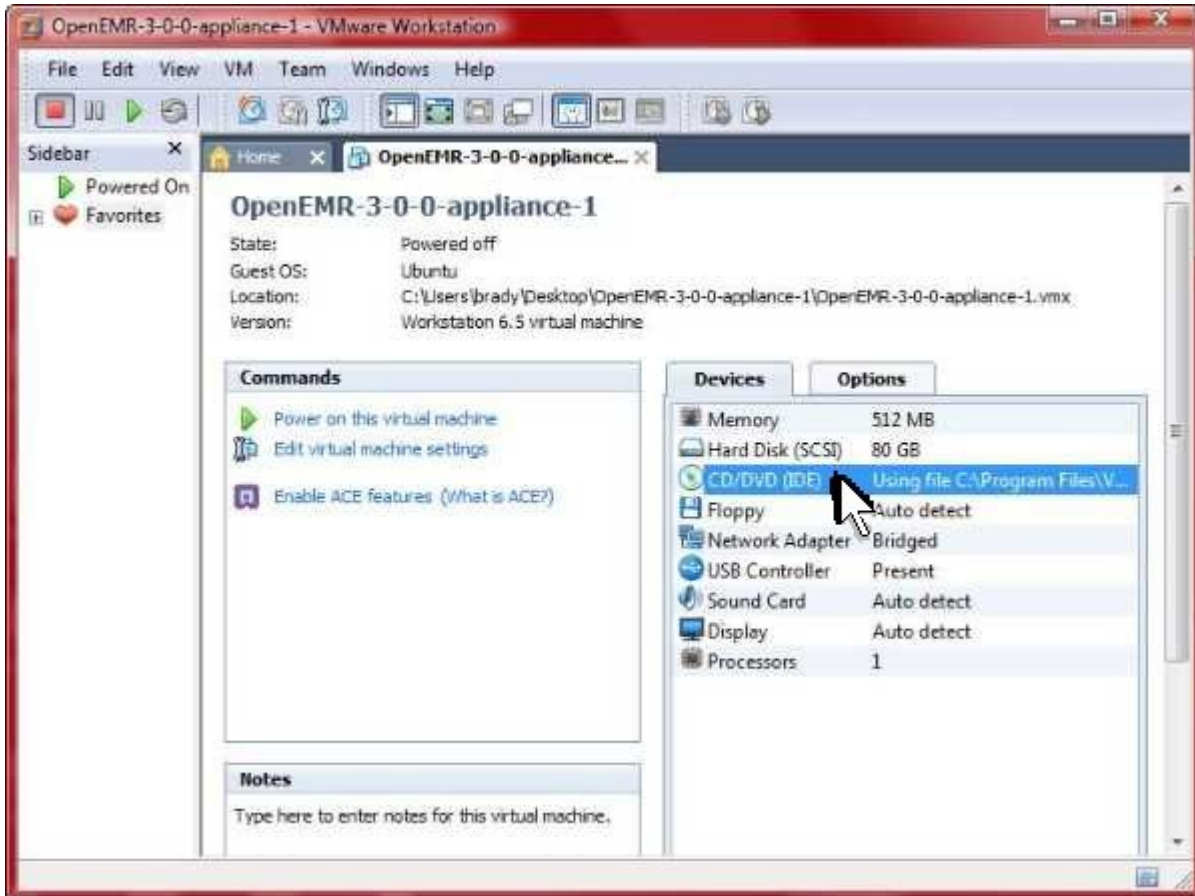
#install the script

```
sudo mv openemrApplianceScript /etc/init.d/  
sudo chown root:root /etc/init.d/openemrApplianceScript  
sudo chmod +x /etc/init.d/openemrApplianceScript  
sudo update-rc.d openemrApplianceScript defaults 99
```

#shutdown the appliance

```
sudo shutdown -h now
```

1. In Vmware, need to set the CD/DVD drive to autoselect.

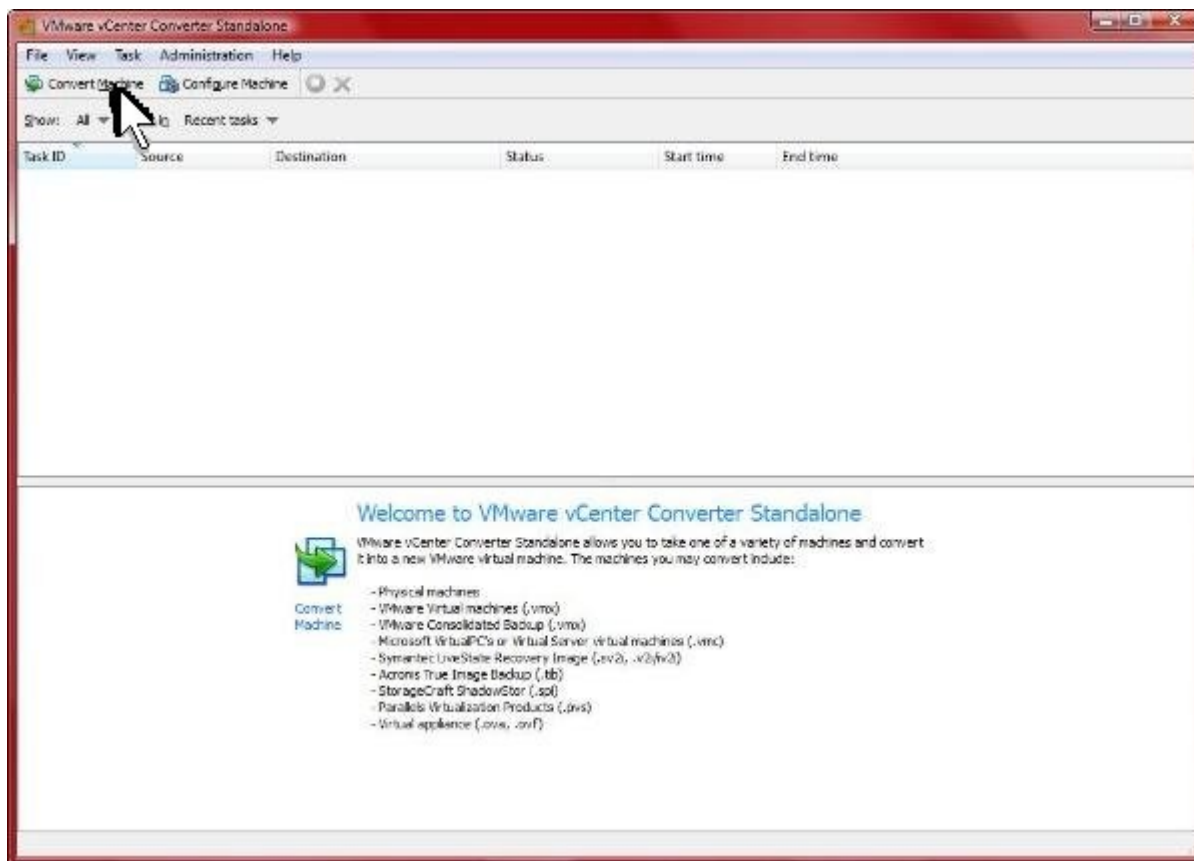


Double-click 'CD/DVD (IDE)'.



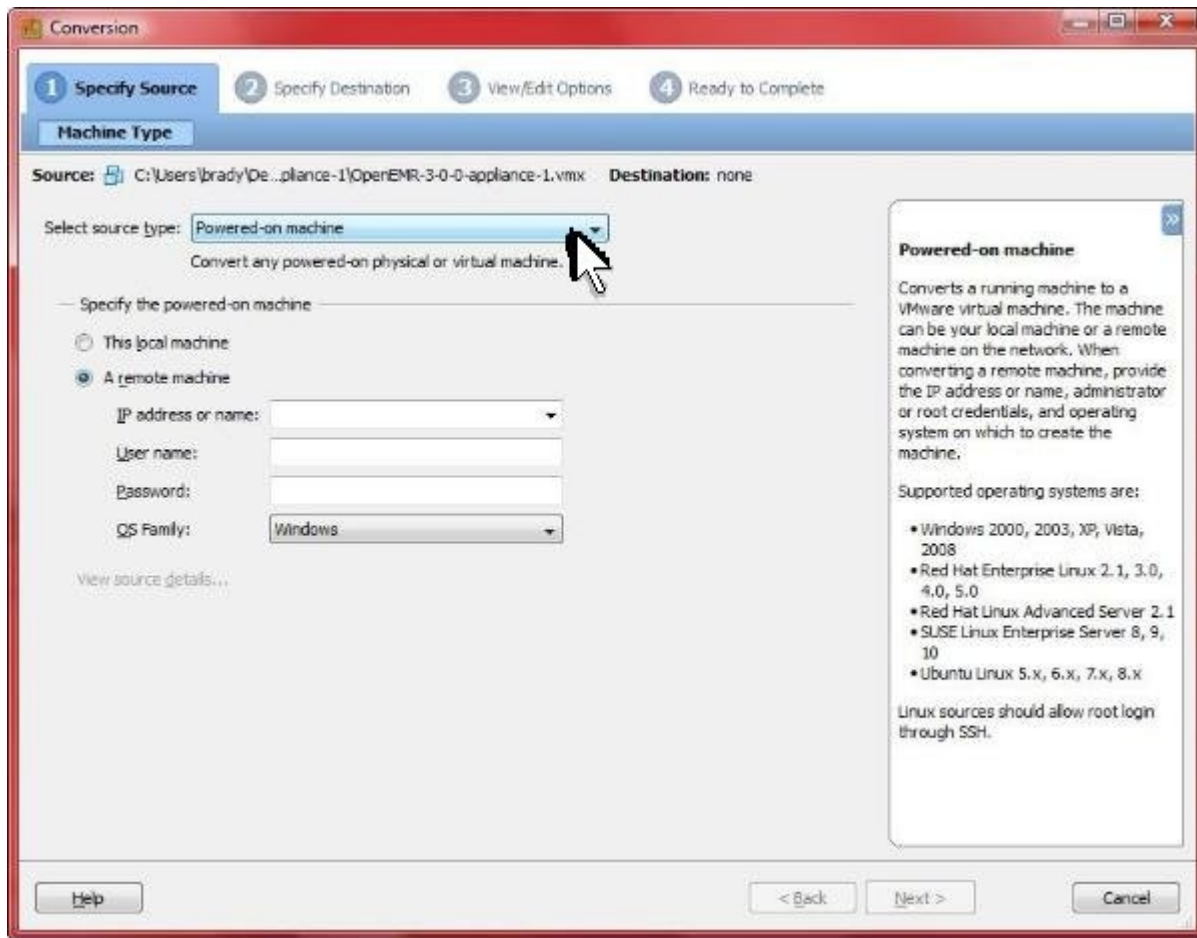
Select 'Use physical drive' and select 'Auto Detect' from menu. Then click 'OK'.

1. Because this appliance was built with VMware Workstation 6.5, we now need to convert the appliance to an earlier version to ensure compatibility with all VMware Player and VMware Server versions. This is done with free software by VMware, called 'VMware vCenter Converter Standalone Client'.
  1. Ensure VMware Workstation is closed.
  2. Download, install, and start the 'VMware vCenter Converter Standalone Client' from vmware.com (it is free).

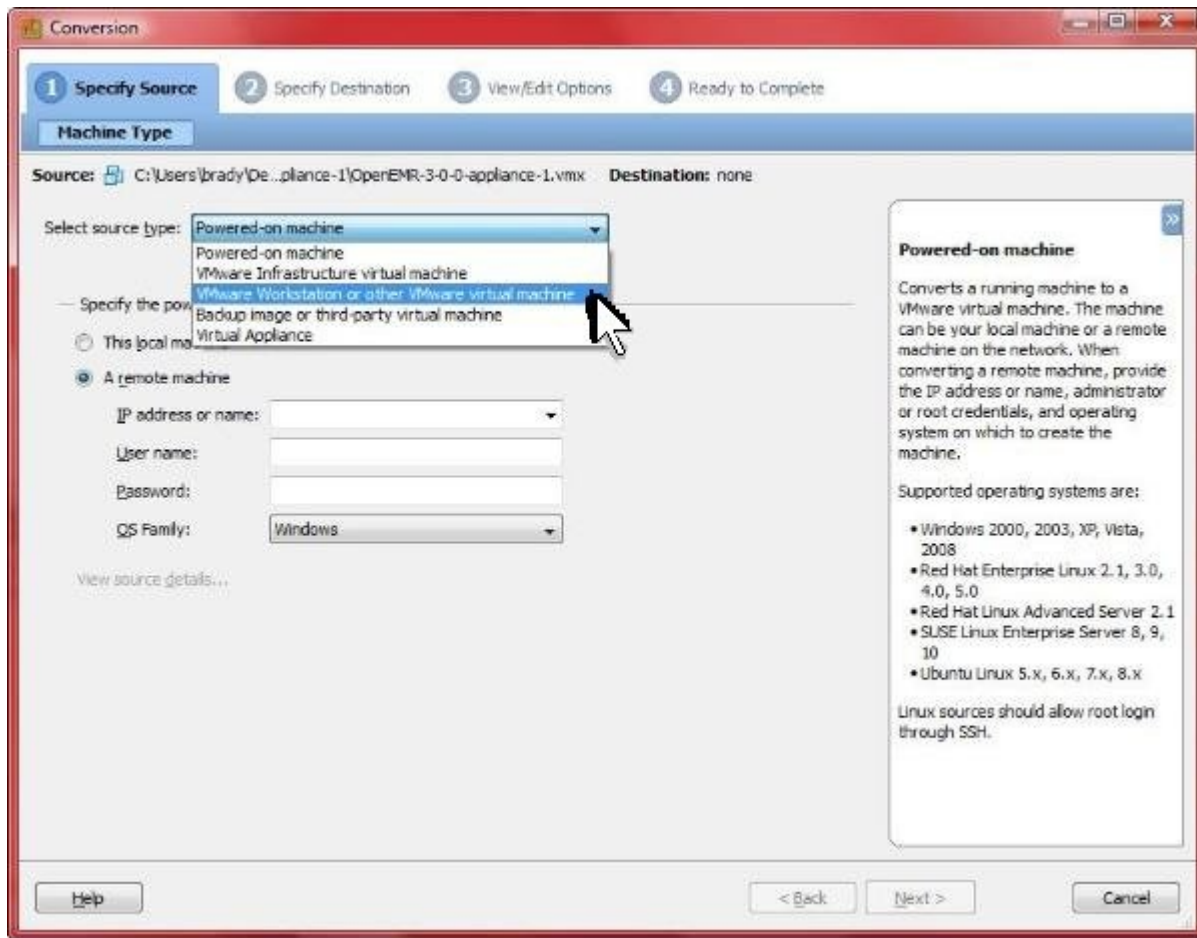


Click 'Convert Machine'.

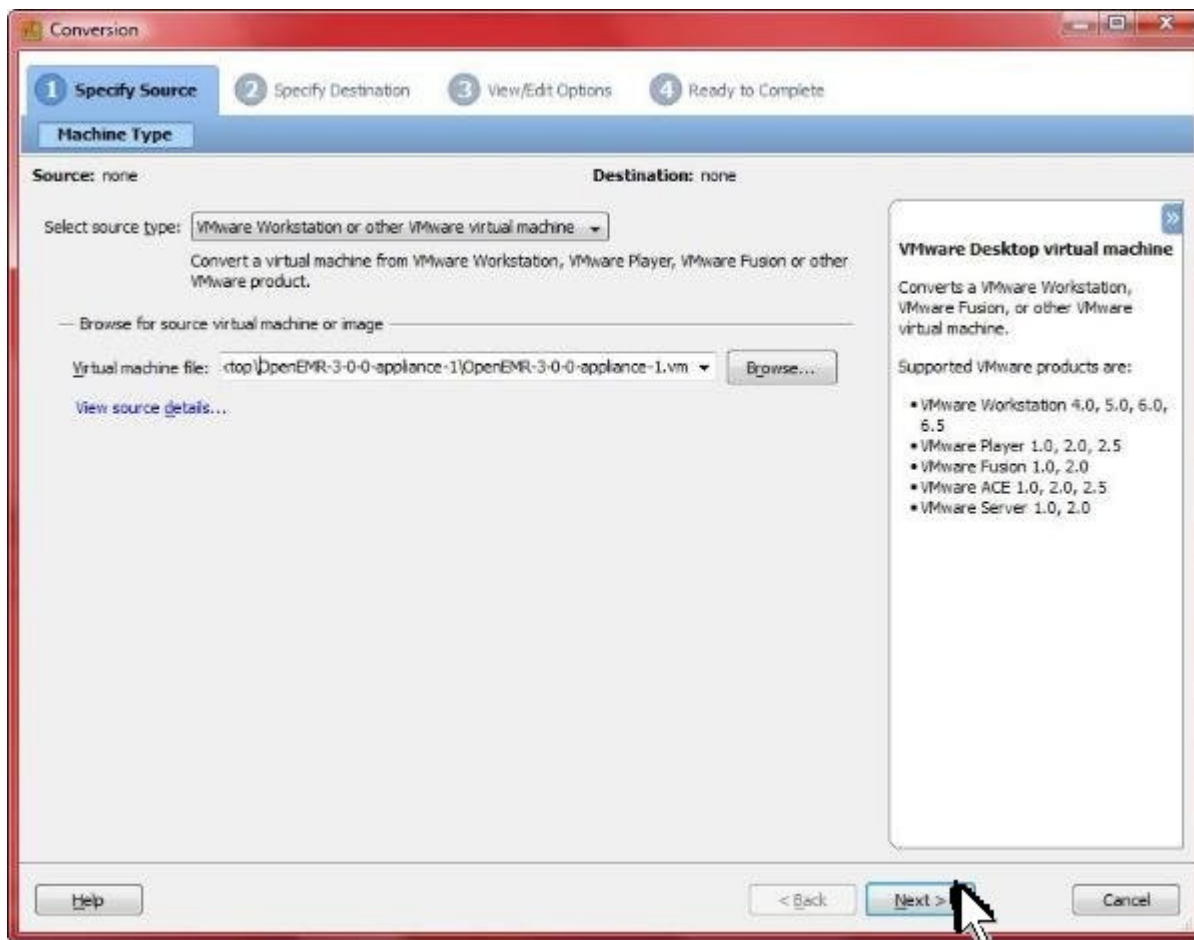




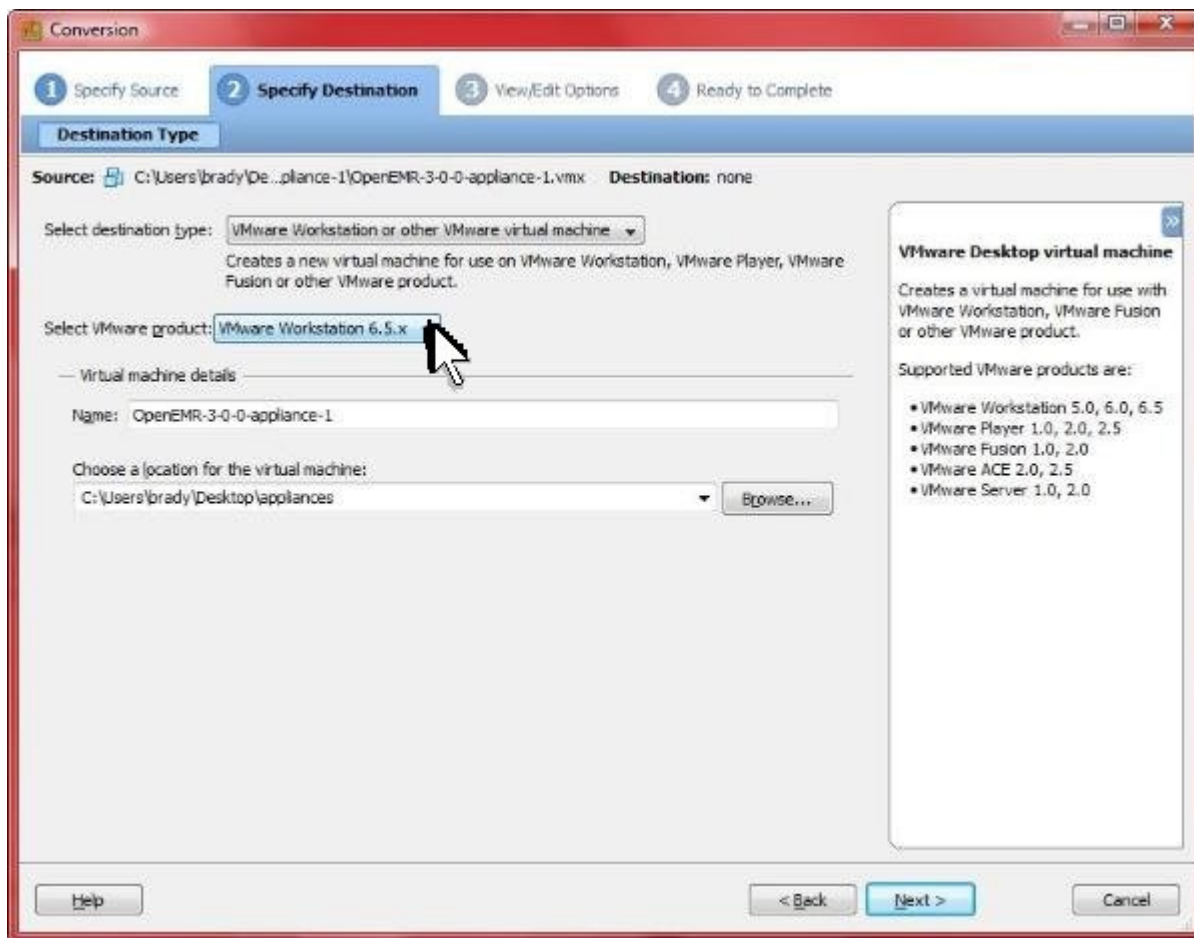
Click 'Select source type:' field.



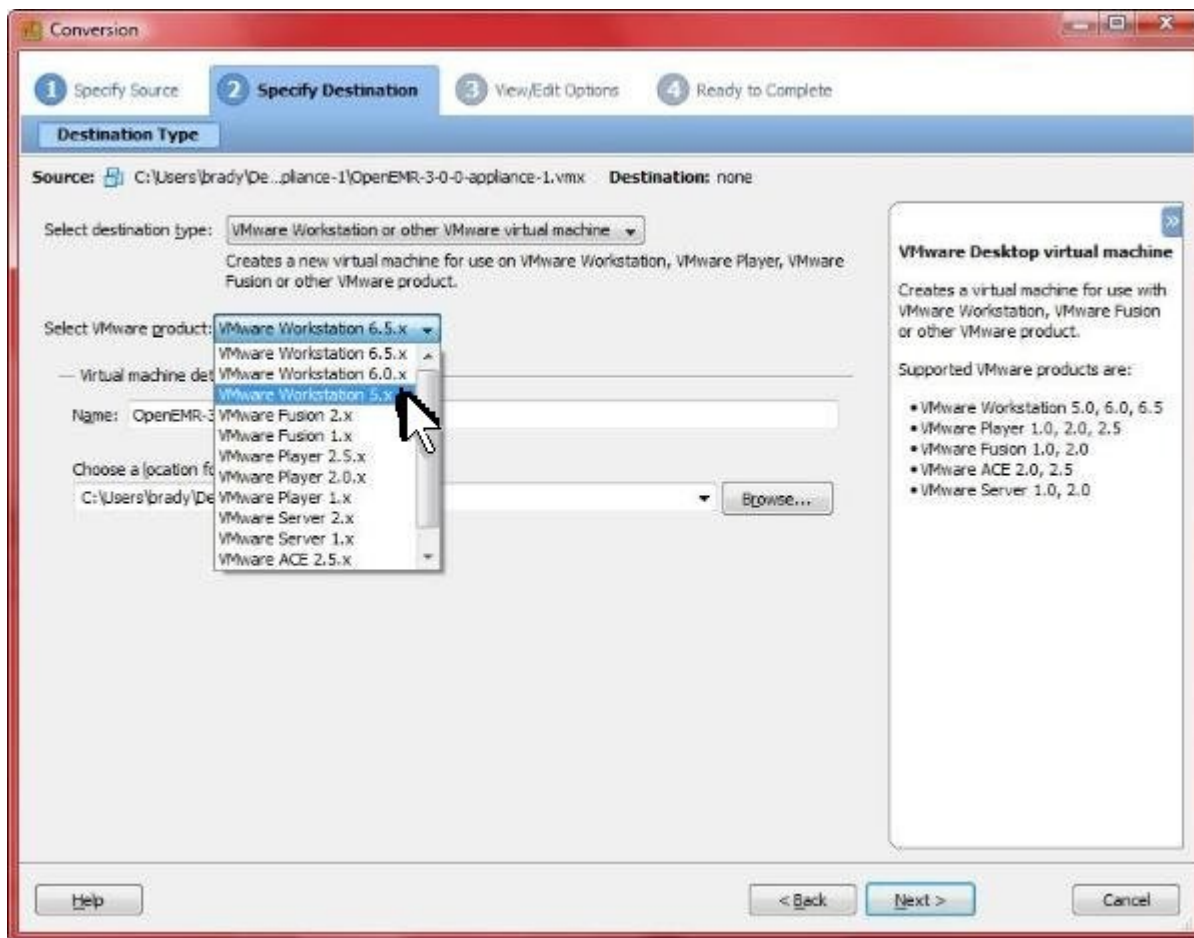
Select 'VMware workstation or other VMware virtual machine'.



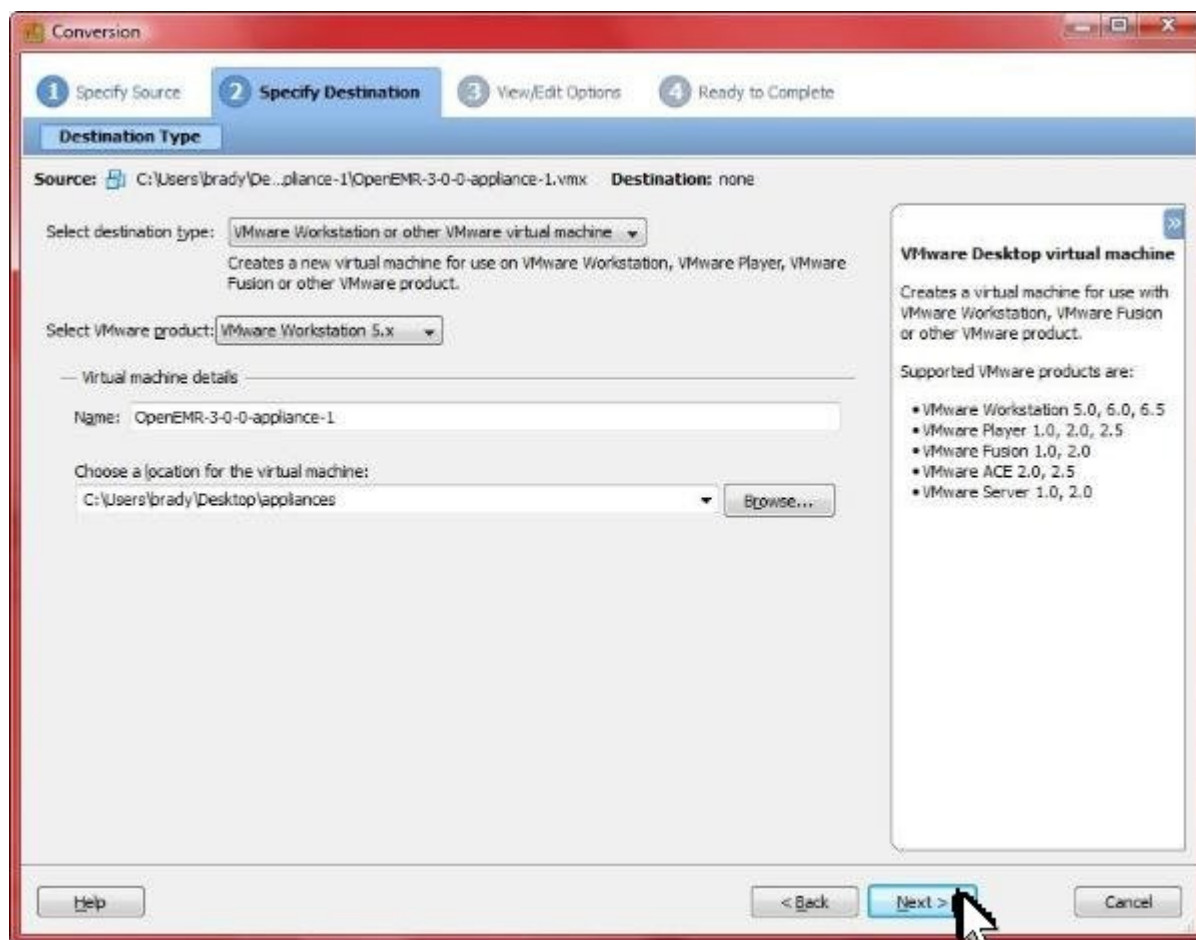
Select the 'virtual machine file:', then click 'Next'.



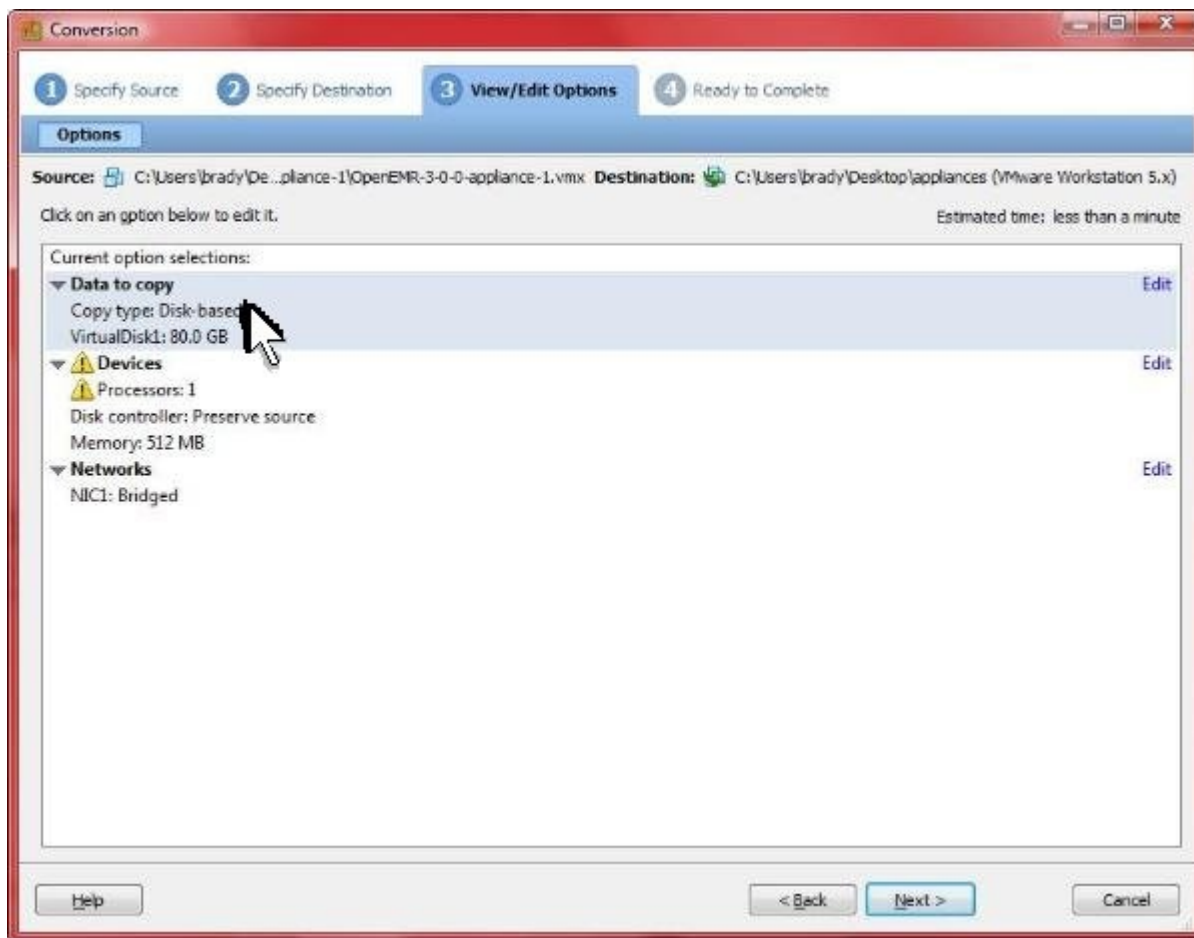
Click 'Select VMware product:' field.



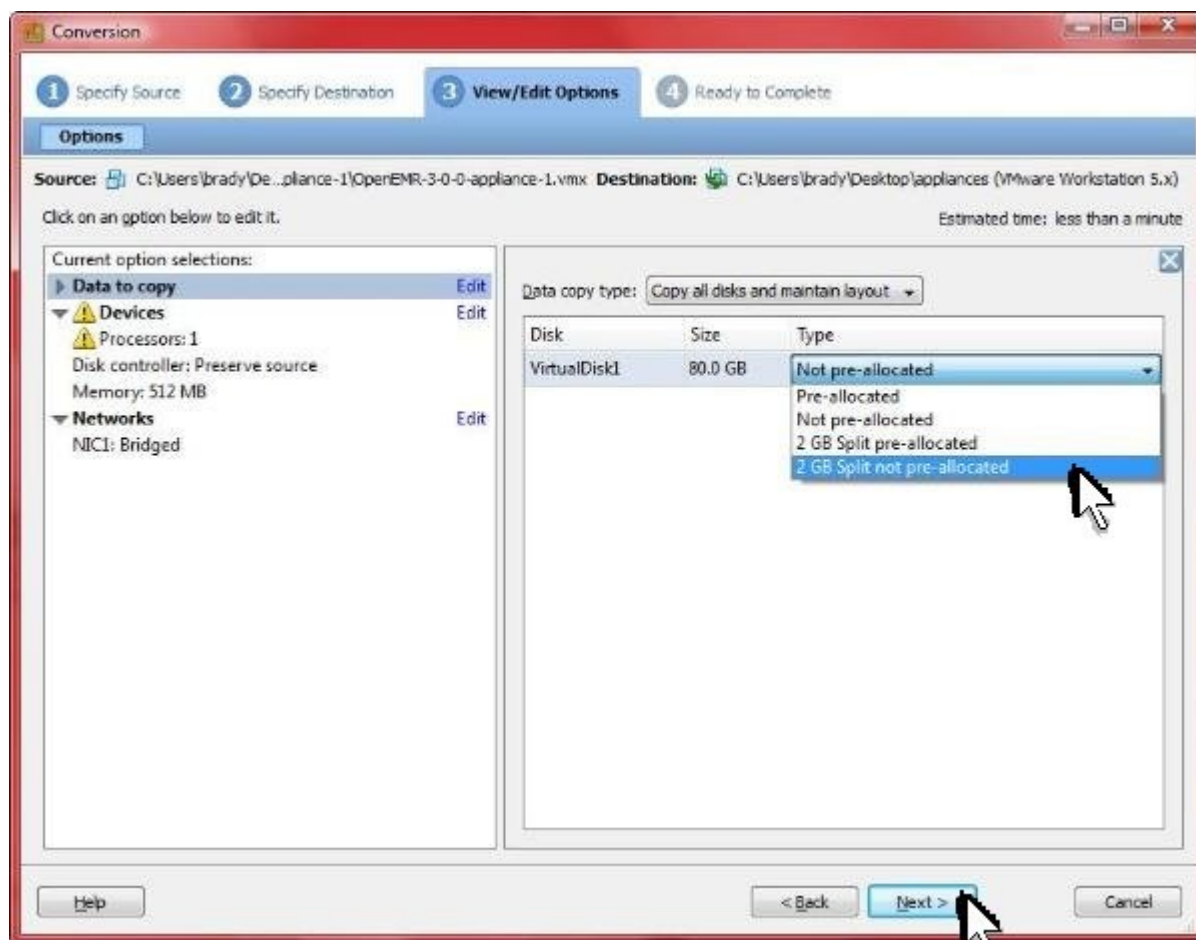
Select 'VMware Workstation 5.x'.



Click 'Next'.

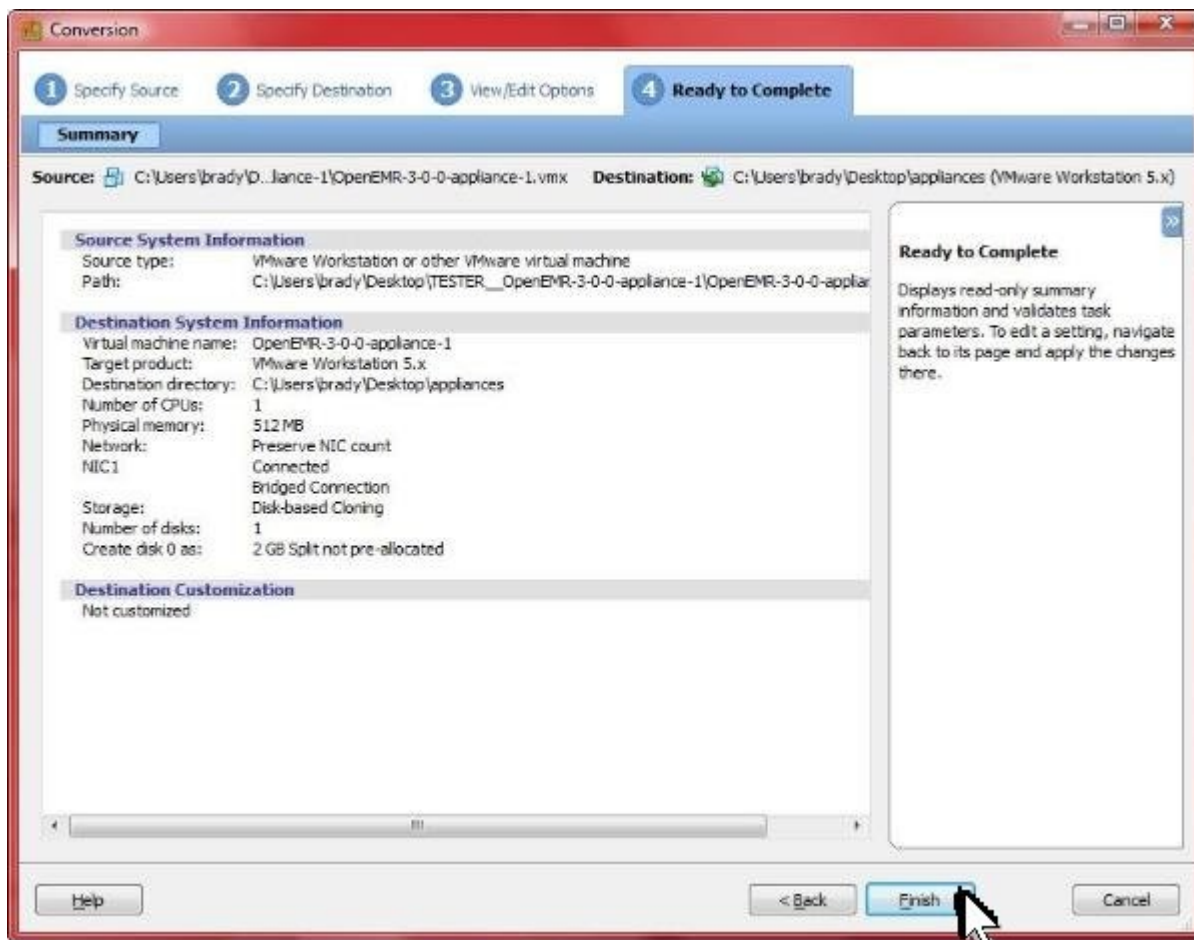


Click the 'Data to copy' field.



Select '2 GB split not pre-allocated', then click 'Next'.





Click 'Finish'.

## Upgrading to OpenEMR 3.1.0

[Main TOC Link](#)

[Chapter Index Link](#)

1. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```
#Download openemr-3.1.0.tar.gz (version 3.1.0)
```

```
wget downloads.sourceforge.net/openemr/openemr-3.1.0.tar.gz
```

```
#install php5-gd package
```

```
sudo aptitude update
```

```
sudo aptitude install php5-gd
```

```
-enter 'Y'
```

```
-enter 'Y'
```

```
#make backup directories
```

```
sudo mkdir /backupopenemr
```

```
sudo mkdir /backupopenemr/3_0_1
```

#Backup the mysql openemr database into backup directory.

```
sudo mkdir /backupopenemr/3_0_1/mysqldatabase  
sudo sh -c 'mysqldump openemr >  
    /backupopenemr/3_0_1/mysqldatabase/mysql_backup.sql'
```

#move old OpenEMR 3.0.1 to the backup directory

```
sudo mv /var/www/openemr /backupopenemr/3_0_1/openemr
```

#put the new OpenEMR 3.1.0 program in its place

```
cd /var/www  
sudo tar pxzvf /location/to/tar/openemr-3.1.0.tar.gz  
sudo mv openemr-3.1.0 /var/www/openemr
```

#secure OpenEMR

```
sudo chown -Rf root:root openemr
```

# Restore some original directories

```
sudo cp -fr /backupopenemr/3_0_1/openemr/documents  
    /var/www/openemr/  
sudo cp -fr /backupopenemr/3_0_1/openemr/era  
    /var/www/openemr/  
sudo cp -fr /backupopenemr/3_0_1/openemr/edi  
    /var/www/openemr/  
sudo cp -fr  
    /backupopenemr/3_0_1/openemr/custom/letter_templates  
    /var/www/openemr/custom
```

#Need to change some file/folder permissions

```
sudo chown -R www-data:www-data  
    /var/www/openemr/documents  
sudo chown -R www-data:www-data /var/www/openemr/edi  
sudo chown -R www-data:www-data /var/www/openemr/era  
sudo chown -R www-data:www-data  
    /var/www/openemr/custom/letter_templates  
sudo chown -R www-data:www-data  
    /var/www/openemr/gacl/admin/templates_c  
sudo chown -R www-data:www-data  
    /var/www/openemr/library/freeb  
sudo chown -R www-data:www-data  
    /var/www/openemr/interface/main/calendar/modules/PostCal  
endar/pntemplates/cache  
sudo chown -R www-data:www-data  
    /var/www/openemr/interface/main/calendar/modules/PostCal  
endar/pntemplates/compiled
```

#Now for the hardest part of the upgrade; editing the new config files. There are three files that need to be compared to your old

config files:

**openemr/library/sqlconf.php:** Ensure the variables (\$host, \$port, \$login, \$pass, \$dbname) at top of file are the same as the variables from previous 3.0.1 version. Also, change the \$config variable (found near bottom of file within all the slashes) to \$config = 1;

**openemr/interface/globals.php:** Ensure the variables (\$webserver\_root, \$web\_root) at top of file are the same as the variables from previous 3.0.1 version. Also ensure optional settings are configured like previous 3.0.1 version.

**openemr/includes/config.php:** Ensure optional settings are configured like previous 3.0.1 version.

For the openemr 3.0.1/3.1.0 appliance, luckily, only one change is required in /var/www/openemr/library/sqlconf.php .

#edit file /var/www/openemr/library/sqlconf.php:

**sudo jed /var/www/openemr/library/sqlconf.php**

#edit the following **bolded** \$config variable:

```
/////DO NOT TOUCH THIS///
```

```
$config = 1; ////////////////
```

```
////////////////////////////////////
```

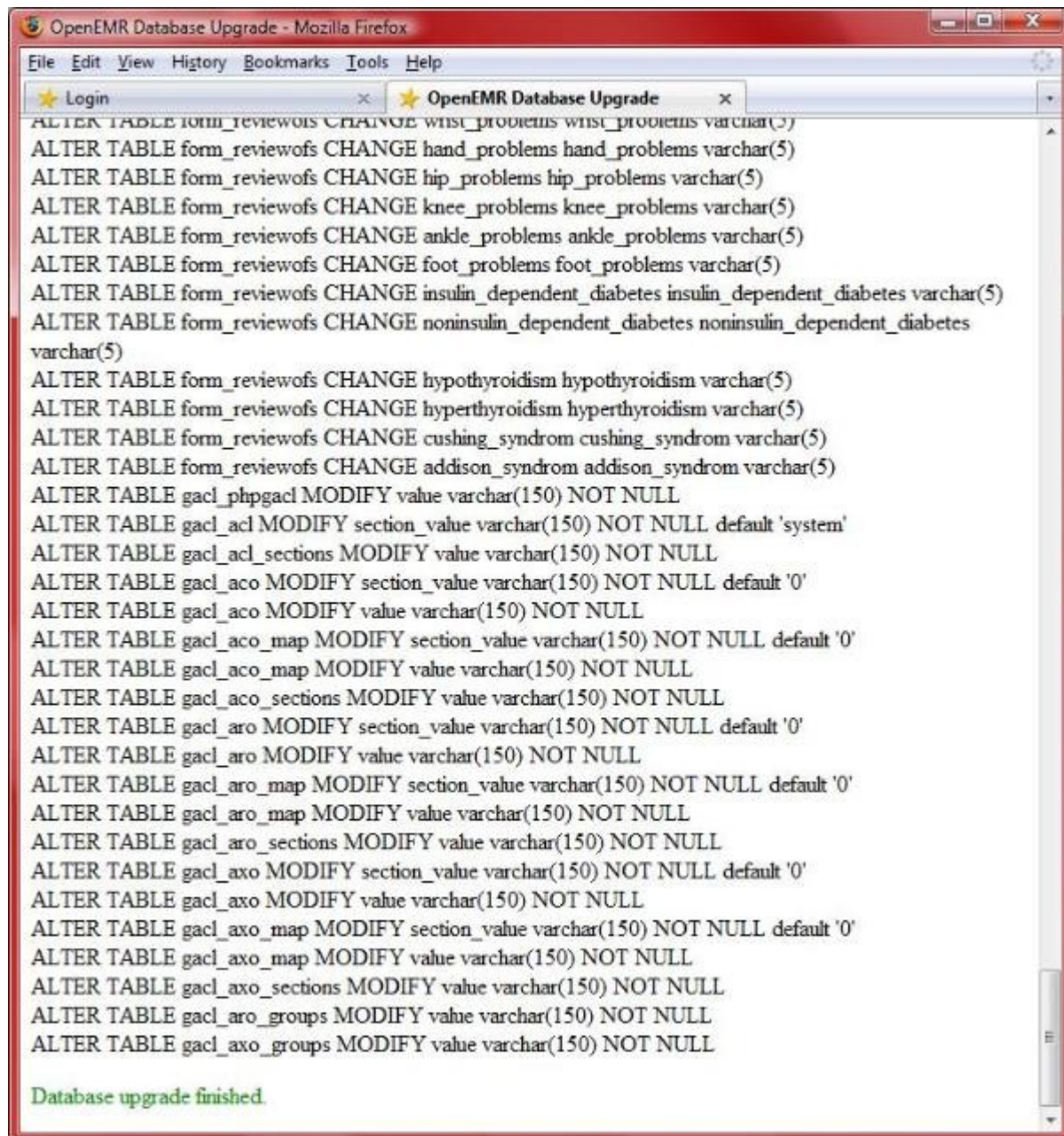
**TEXT EDITOR SAVE AND EXIT**

3. Next, need to upgrade the mysql database. Now, open a webbrowser outside the appliance and point to (the APPLIANCE\_IP\_ADDRESS was found by above [ifconfig](#) command):

[https://APPLIANCE\\_IP\\_ADDRESS/openemr/sql\\_upgrade.php](https://APPLIANCE_IP_ADDRESS/openemr/sql_upgrade.php)



Select '3.0.1' and click 'Upgrade Database'.

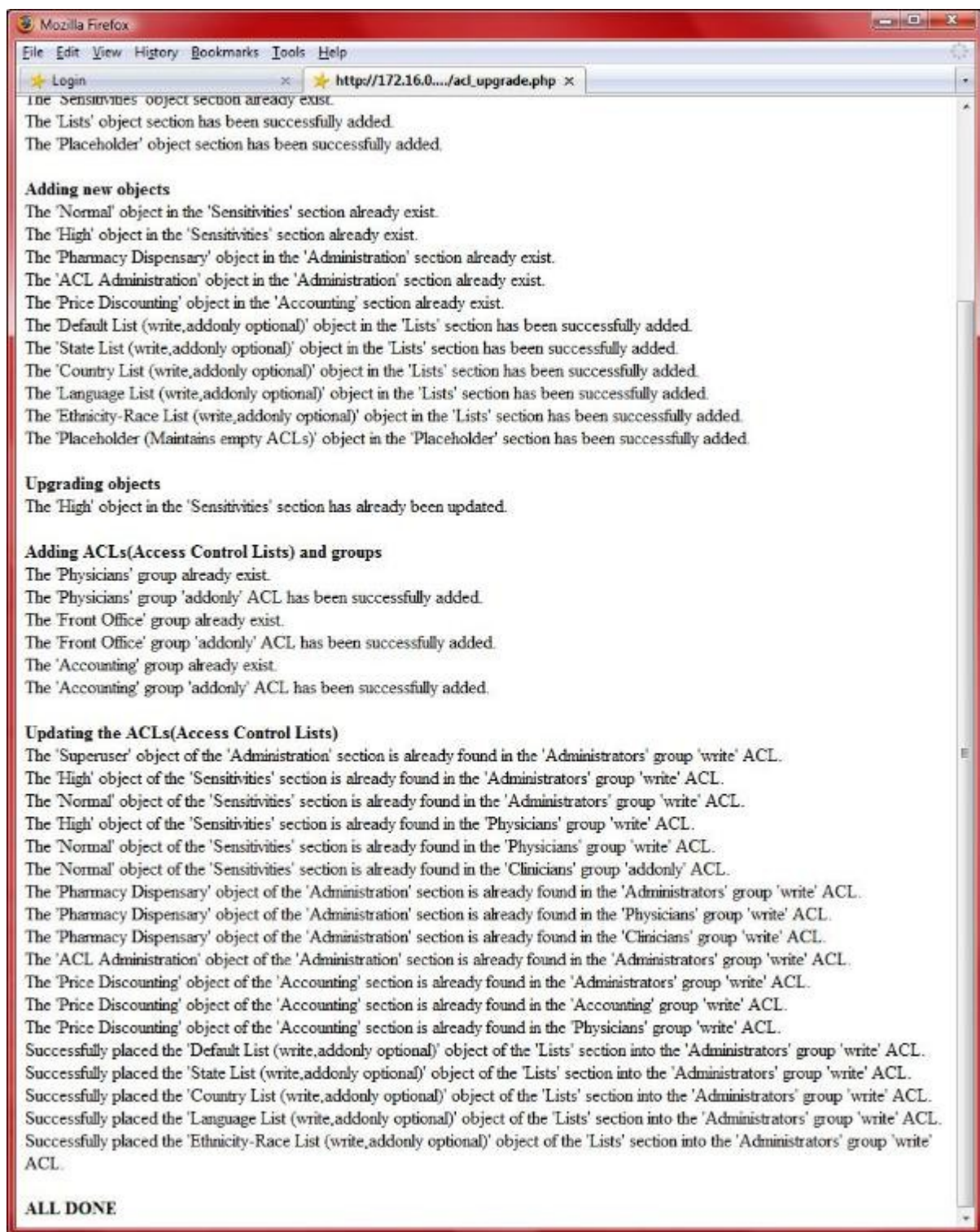


```
ALTER TABLE form_reviewofs CHANGE wrist_problems wrist_problems varchar(5)
ALTER TABLE form_reviewofs CHANGE hand_problems hand_problems varchar(5)
ALTER TABLE form_reviewofs CHANGE hip_problems hip_problems varchar(5)
ALTER TABLE form_reviewofs CHANGE knee_problems knee_problems varchar(5)
ALTER TABLE form_reviewofs CHANGE ankle_problems ankle_problems varchar(5)
ALTER TABLE form_reviewofs CHANGE foot_problems foot_problems varchar(5)
ALTER TABLE form_reviewofs CHANGE insulin_dependent_diabetes insulin_dependent_diabetes varchar(5)
ALTER TABLE form_reviewofs CHANGE noninsulin_dependent_diabetes noninsulin_dependent_diabetes
varchar(5)
ALTER TABLE form_reviewofs CHANGE hypothyroidism hypothyroidism varchar(5)
ALTER TABLE form_reviewofs CHANGE hyperthyroidism hyperthyroidism varchar(5)
ALTER TABLE form_reviewofs CHANGE cushing_syndrom cushing_syndrom varchar(5)
ALTER TABLE form_reviewofs CHANGE addison_syndrom addison_syndrom varchar(5)
ALTER TABLE gac1_php MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_acl MODIFY section_value varchar(150) NOT NULL default 'system'
ALTER TABLE gac1_acl_sections MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_aco MODIFY section_value varchar(150) NOT NULL default '0'
ALTER TABLE gac1_aco MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_aco_map MODIFY section_value varchar(150) NOT NULL default '0'
ALTER TABLE gac1_aco_map MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_aco_sections MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_aro MODIFY section_value varchar(150) NOT NULL default '0'
ALTER TABLE gac1_aro MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_aro_map MODIFY section_value varchar(150) NOT NULL default '0'
ALTER TABLE gac1_aro_map MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_aro_sections MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_axo MODIFY section_value varchar(150) NOT NULL default '0'
ALTER TABLE gac1_axo MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_axo_map MODIFY section_value varchar(150) NOT NULL default '0'
ALTER TABLE gac1_axo_map MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_axo_sections MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_aro_groups MODIFY value varchar(150) NOT NULL
ALTER TABLE gac1_axo_groups MODIFY value varchar(150) NOT NULL

Database upgrade finished.
```

Ensure you got no errors. Close the window.

4. Next, need to upgrade the php-GACL access controls. Open a webbrowser outside the appliance and point to (the APPLIANCE\_IP\_ADDRESS was found by above [ifconfig](#) command): [https://APPLIANCE\\_IP\\_ADDRESS/openemr/acl\\_upgrade.php](https://APPLIANCE_IP_ADDRESS/openemr/acl_upgrade.php)



Ensure you got no 'ERRORS'. Close the window.

- Secure openemr . Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```
sudo chmod 600 /var/www/openemr/acl_setup.php
sudo chmod 600 /var/www/openemr/acl_upgrade.php
sudo chmod 600 /var/www/openemr/sl_convert.php
sudo chmod 600 /var/www/openemr/setup.php
sudo chmod 600 /var/www/openemr/sql_upgrade.php
sudo chmod 600 /var/www/openemr/gacl/setup.php
```

## Upgrade Database to UTF-8

[Main TOC Link](#)

[Chapter Index Link](#)

OpenEMR 3.1.0 is 100% UTF-8 compliant to allow special character languages (such as chinese, greek, etc.), however users that are upgrading from a previous version of OpenEMR will continue to have a hybrid UTF-8/latin1 database and thus won't have 100% UTF-8 compliance. Several ways to go for upgraders:

(If decide to convert to UTF8, ensure you backup the database before conversion.)

1) If your only using english characters currently and plan on only using English characters in the future, then doing a simple OpenEMR upgrade will suffice (no need to convert to database to 100% UTF-8).

2) If your only using english characters, however, plan to use a language with any special non-english characters in the future, then you should consider converting your database to 100% UTF-8. In this special case (since you were only using english characters previously) then a simple conversion will work. So, you would do the simple OpenEMR upgrade discussed elsewhere and then do following two command line commands on your upgraded database (assuming database name is openemr):

```
Step1) mysql --database=openemr -B -N -e "SHOW TABLES" | awk '{print "ALTER TABLE", $1, "CONVERT TO CHARACTER SET utf8;"}' | mysql --database=openemr &
```

```
Step2) mysql -e "ALTER DATABASE openemr CHARACTER SET utf8;"
```

(NOTE that above will alter your database and could possibly screw it up, so BACK IT UP first)

3) If your currently using non-english characters, and want to continue supporting non-english characters. This is the hard one, because OpenEMR's previous releases did not do a very good job maintaining consistent encoding in the database (a very common problem in other software also). You could try above strategy in number 2, however you have a possibility of getting garbage. If 2) doesn't work, then you will likely need to go a strategy like the following linked below:

[http://codex.wordpress.org/Converting\\_Database\\_Character\\_Sets](http://codex.wordpress.org/Converting_Database_Character_Sets)

To repeat:

---This only pertains to users that are upgrading (users that are installing 3.1.0 new do not need to worry about this stuff)

---Upgraders that are only planning to use english characters do not need to worry about this stuff. (unless you want to be cool, and say your using OpenEMR with 100% compliance...)

For the appliance upgrade, I will convert via step 2 (since there is no data in the blank appliance, it is straightforward). Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```
sudo mysql --database=openemr -B -N -e "SHOW TABLES" | awk  
{print "ALTER TABLE", $1, "CONVERT TO CHARACTER  
SET utf8;"}' | sudo mysql --database=openemr &
```

```
sudo mysql -e "ALTER DATABASE openemr CHARACTER SET  
utf8;"
```

## Upgrading to OpenEMR 3.2.0

[Main TOC Link](#)

[Chapter Index Link](#)

1. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```
#Download OpenEMR 3.2.0
```

```
wget downloads.sourceforge.net/openemr/openemr_3.2.0-1_all.deb
```

```
#Upgrade to OpenEMR 3.2.0
```

```
sudo aptitude update
```

```
sudo dpkg -i openemr_3.2.0-1_all.deb
```

```
-enter 'Y'
```

```
(If there was an error(s), then issue the following command (type 'Y'  
after): sudo apt-get install -f )
```

```
#Note backups of your previous OpenEMR version are stored at  
/tmp/openemr-tmp/. Ensure these files are secure(move to secure area  
or remove them), since they contain confidential patient information.
```

## Upgrading Webmin

[Main TOC Link](#)

[Chapter Index Link](#)

2. Enter below **bolded** instructions on command line (if prompted to give password during the sudo command, then use 'openemrcool'):

```
#Download Webmin 1.500
```

```
wget downloads.sourceforge.net/webadmin/webmin_1.500_all.deb
```

```
#Upgrade to Webmin 1.500
```

```
sudo aptitude update
```

```
sudo dpkg -i webmin_1.500_all.deb
```

*(If there was an error(s), then issue the following command (type 'Y' after):* **sudo apt-get install -f** )

```
-enter 'N'
```

## Upgrade Language Translation Tables

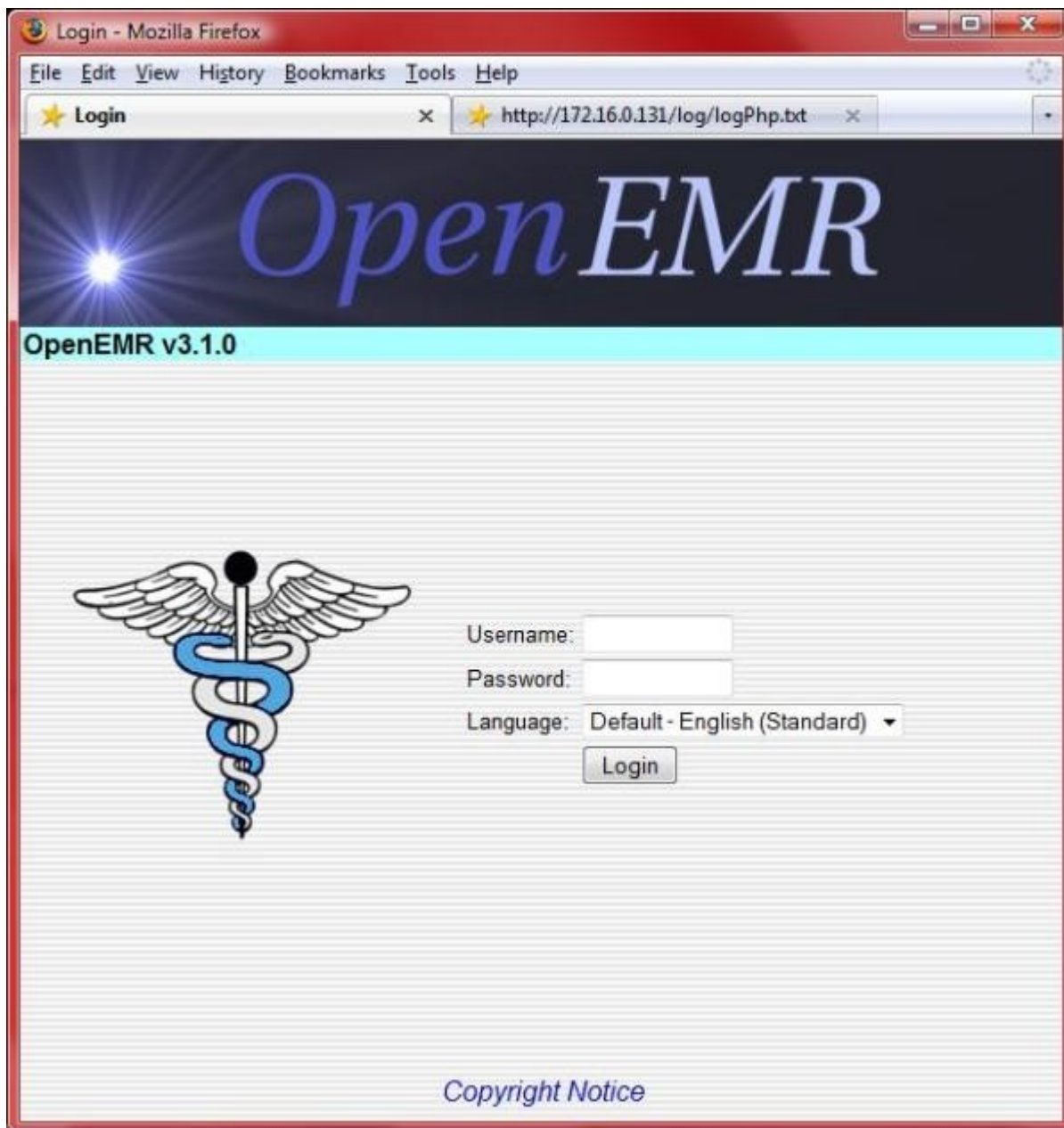
[Main TOC Link](#)

[Chapter Index Link](#)

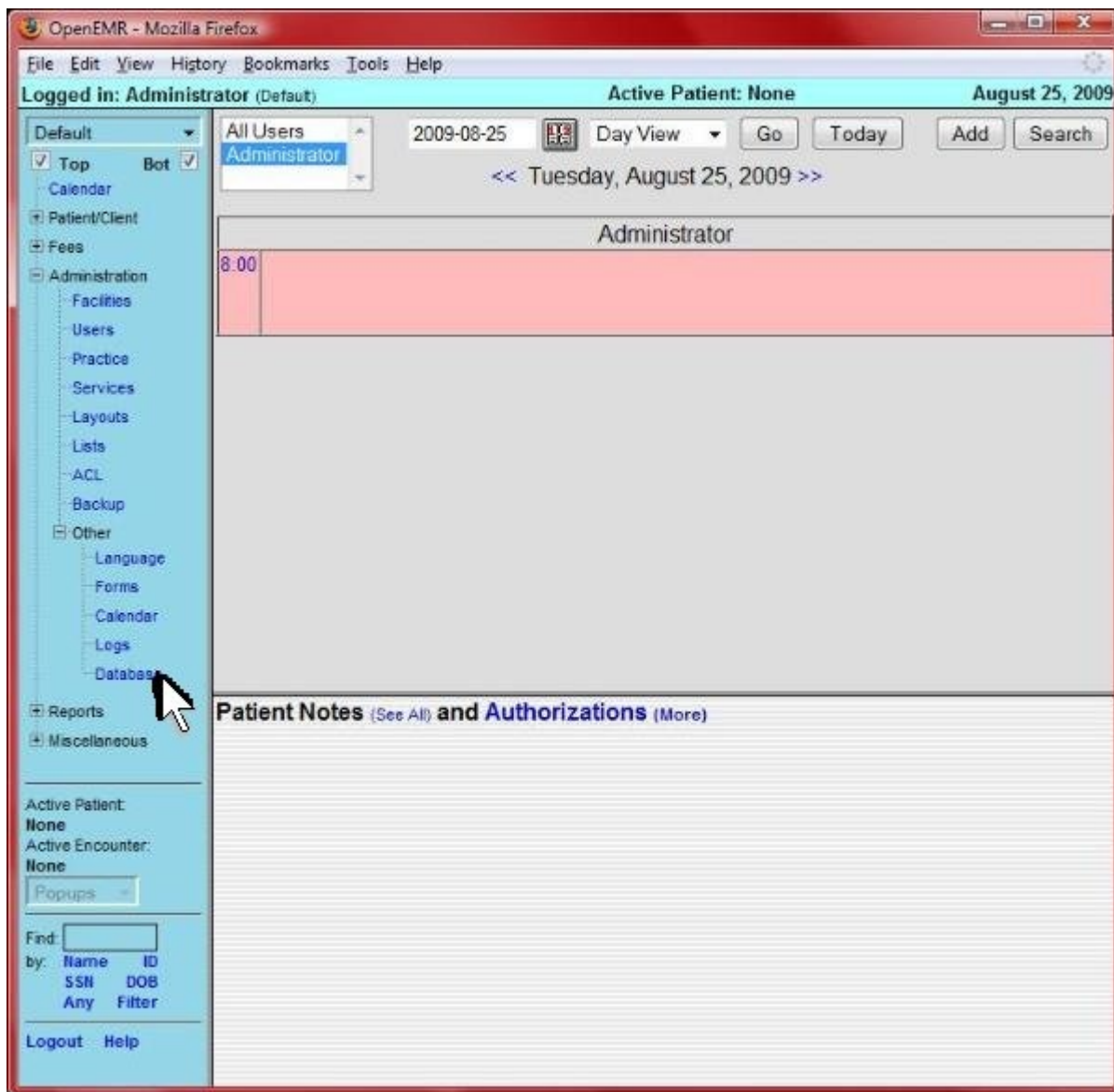
Here we will upgrade to the language translation tables published with OpenEMR 3.2.0 . This is very simple to do. **Note, however, that this will delete all current local language translation tables.**

1. Download translation sql tables from sourceforge to desktop (via 'File'->'Save Page as'): [http://openemr.cvs.sourceforge.net/viewvc/openemr/openemr/contrib/util/language\\_translations/currentLanguage\\_utf8.sql?revision=1.19.2.3](http://openemr.cvs.sourceforge.net/viewvc/openemr/openemr/contrib/util/language_translations/currentLanguage_utf8.sql?revision=1.19.2.3)
1. Login to OpenEMR:

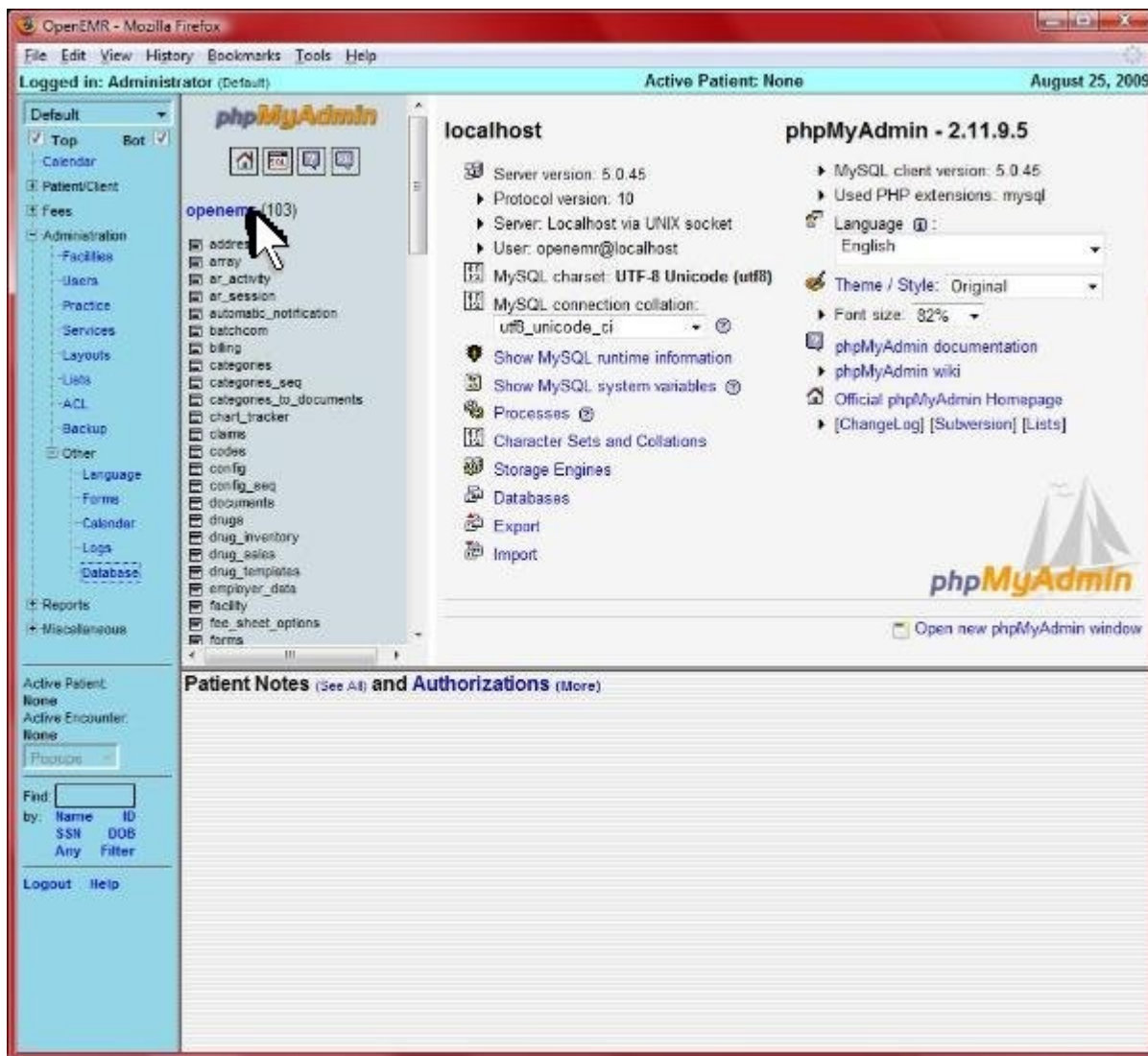




Login.



Click 'Administration'-'>'Other'-'>'Database' from left tree menu.



Click 'openemr' database link near top left (highlighted by arrow).

OpenEMR - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Logged in: Administrator (Default) Active Patient: None August 25, 2009

Server: localhost:3306 Database: openemr

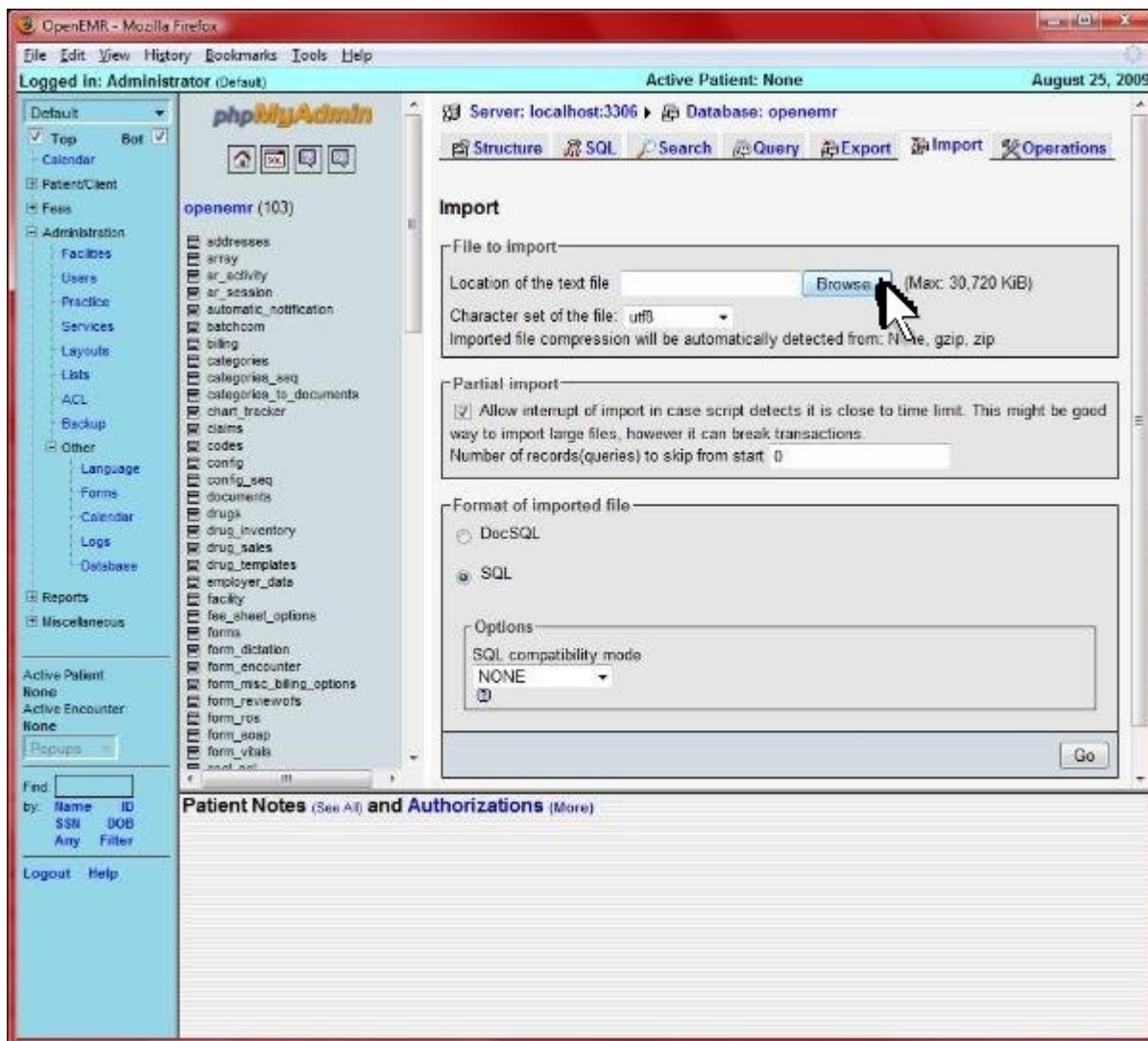
Structure SQL Search Query Export **Import** Operations

Table	Action	Records	Type
addresses		0	MySQL
array		0	MySQL
ar_activity		0	MySQL
ar_session		0	MySQL
automatic_notification		2	InnoDB
batchcom		0	MySQL
billing		0	MySQL
categories		6	MySQL
categories_seq		1	MySQL

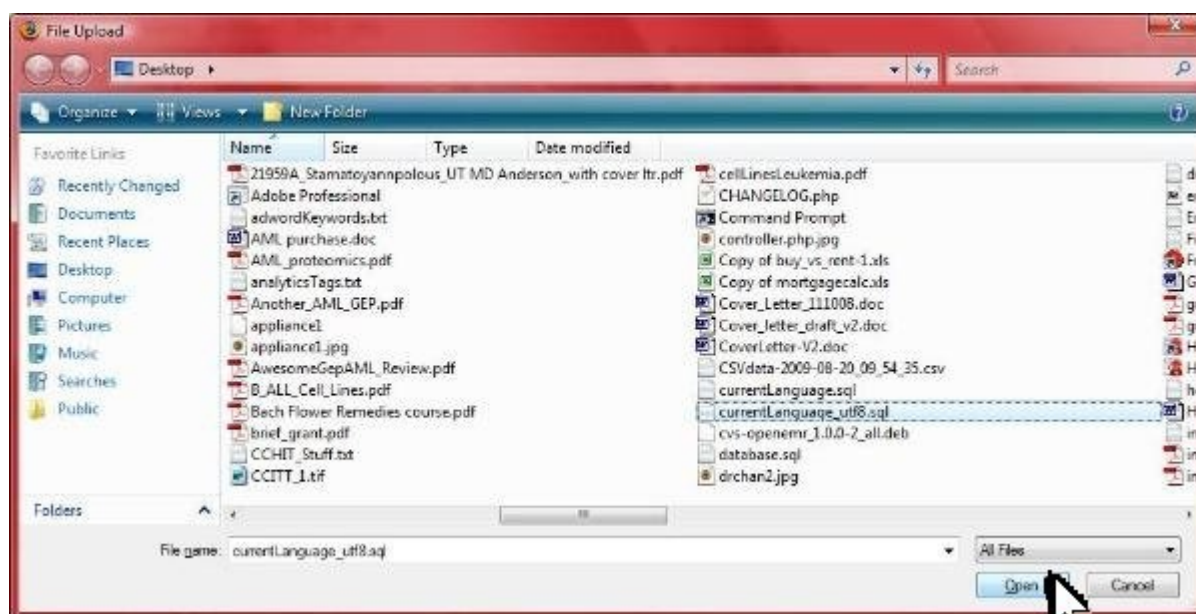
Patient Notes (See All) and Authorizations (More)

Active Patient: None  
Active Encounter: None  
Find:   
by: Name ID  
SSN DOB  
Any Filter  
Logout Help

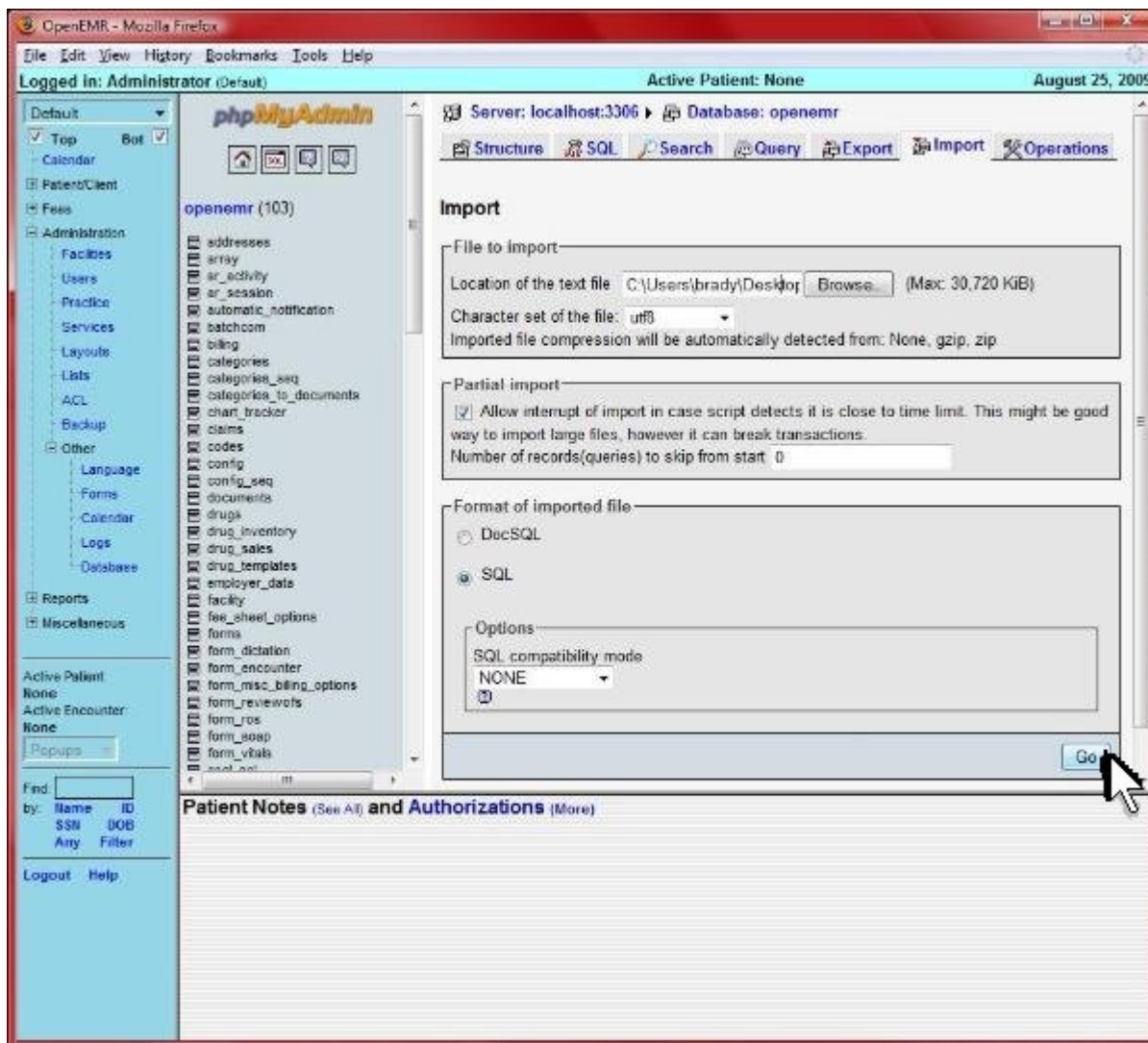
Click 'Import' near top right (highlighted by arrow).



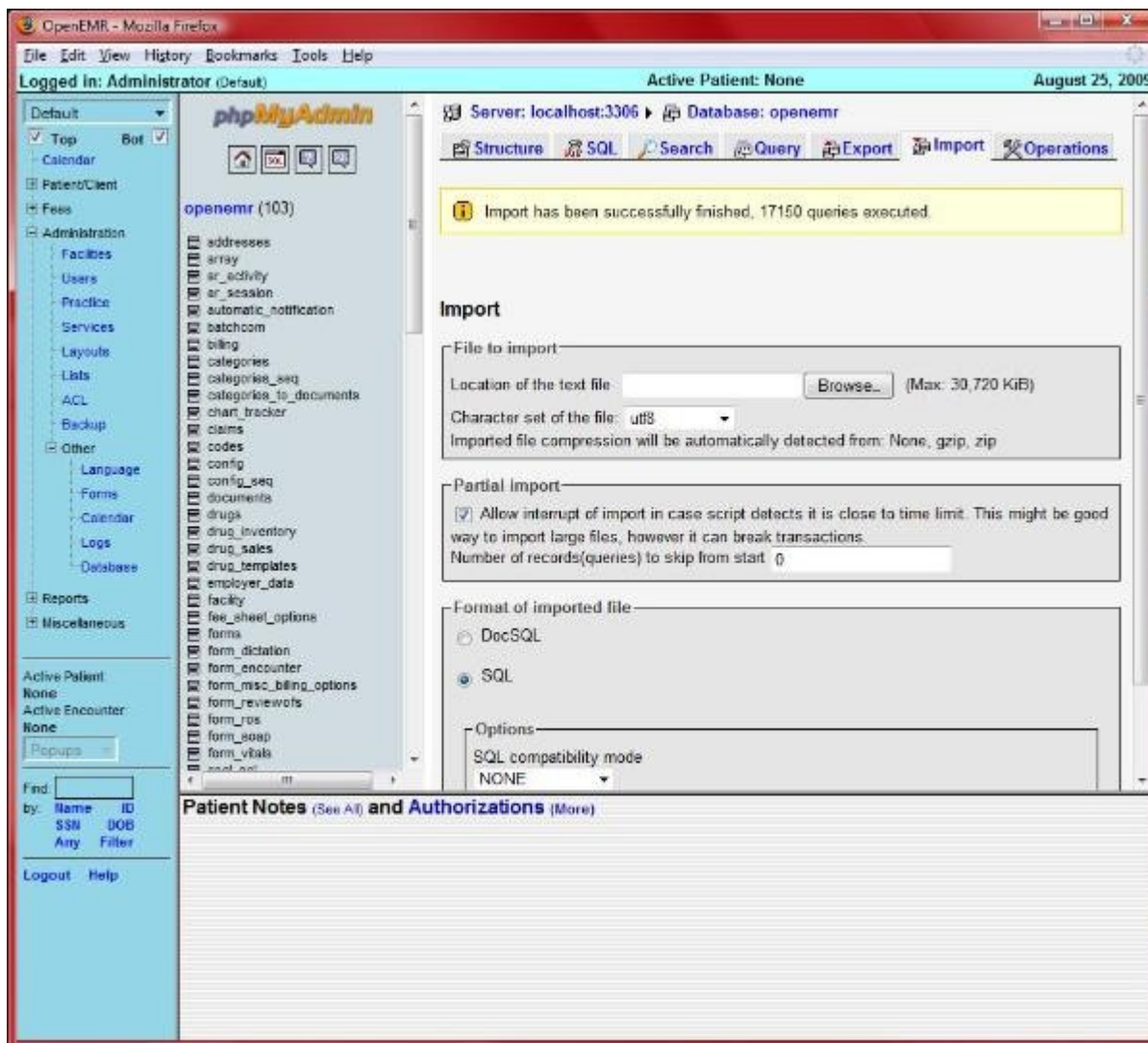
Click 'Browse' (highlighted by arrow).



Select the 'currentLanguage\_utf8.sql' file that you downloaded in above first step, and click 'Open'.



Click 'Go' at bottom right (highlighted by arrow). After click, the import can take up to a minute or so.



After import is done, you should see the above yellow banner stating the import has been successfully finished.

**ALL DONE**

## Appendix

[Main TOC Link](#)

### A. Configuring client web browser for https

[Main TOC Link](#)

1. For security, this appliance forces users to use https (encrypted) over a web browser.



Because we are using a homemade security certificate (real certificates cost money), most new web browsers will give a security error. This can easily be dealt with by following the browser instructions to create an exception. I have posted steps for both [Firefox](#) and [Internet Explorer](#).

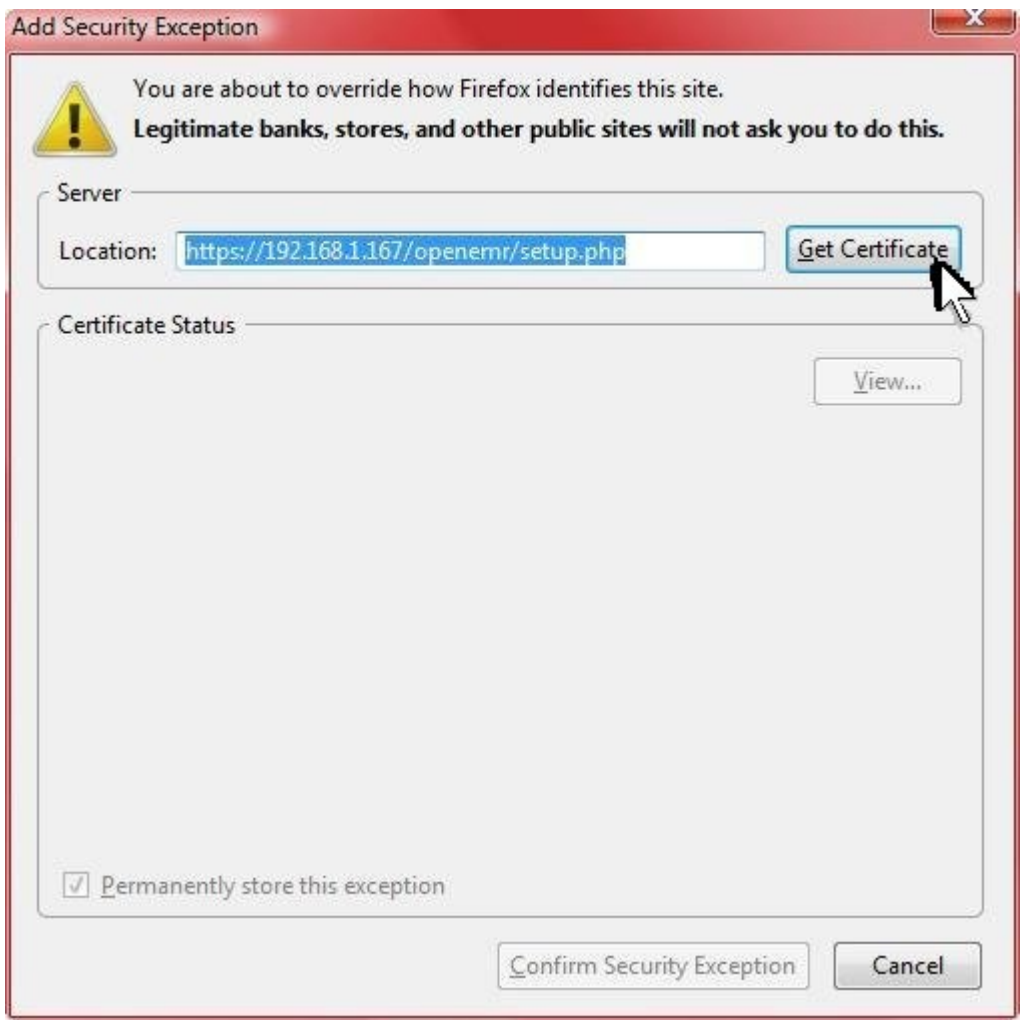
## 2. Firefox:



Click 'Or you can add an exception...!.



Click the 'Add Exception...' button.



Click the 'Get Certificate' button. (DO NOT edit the 'Location:')



Click 'Confirm Security Exception'. Ensure 'Permanently store this exception' is checked, so you don't have to go through this every time. Also, DO NOT change 'Location:'.

**ALL DONE, go back and continue your previous instructions.**

3. Internet Explorer:



Click 'Continue to this website'.

**ALL DONE, go back and continue your previous instructions.**

## **B. Useful Websites**

[Main TOC Link](#)

### **OpenEMR links:**

1. <http://www.oemr.org/> (Main OpenEMR website with a good Wiki and a new forum)
2. <http://sourceforge.net/projects/openemr/> (Main OpenEMR forums are here)
3. <http://www.bradynd.com/appliance/> (OpenEMR Virtual Appliance Homepage)

### **Virtual Machine links:**

1. <http://www.vmware.com/> (VMware website)
2. <http://www.vmware.com/appliances/> (VMware virtual appliance explanation)
3. <http://www.vmware.com/vmtn/appliances/overview.html> (Another VMware virtual appliance explanation)

### **General EMR links:**

1. <http://www.linuxmednews.com/> (Open Source EMR news)
2. <http://www.emrupdate.com/> (Great site and forums which discusses proprietary and open source EMRs. It also has a great actively updated price comparison for most proprietary EMR's)
3. <http://ehr.gplmedicine.org/> (Great detailed reviews of OpenEMR, MirrorMed, and FreeMed)
4. <http://www.bradynd.com/> (Installation instructions and quick reviews of OpenEMR, MirrorMed, FreeMed, and VistA.)

## C. Author Email and License/Disclaimer

[Main TOC Link](#)

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[www.bradynd.com](http://www.bradynd.com)

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