OpenEMR 4.0.0 Appliance Manual

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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 4.0.0 appliance:

http://OpenSourceEMR.com:2098/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 7:30AM Pacific Time. Have fun. (If demo is not working email me at brady@sparmy.com)

Download the OpenEMR Appliance and VMware Player

<u>Main TOC Link</u>

- 1. Download and install the FREE VMware Player at: <u>http://www.vmware.com/products/player/</u>
- 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: <u>http://downloads.sourceforge.net/openemr/OpenEMR-4-0-0-appliance-1.zip</u>
 - 2. Torrent file link: <u>http://www.bradymd.com/OpenEMR-4-0-0-appliance-1.torrent</u> (If you need a torrent software client, then try: <u>http://azureus.sourceforge.net/</u>)

Start the OpenEMR Appliance

Main TOC Link

Windows

Main TOC Link

- 1. Unpackage the OpenEMR-4-0-0-appliance-1.zip file.
- 2. Run VMware Player (screenshot below).

With White Player VMwate Player	- >
🗐 vmware	Commands
	Open Open
	Download a virtual appliance from VMware Virtual Appliance Marketplace. You can then open it in VMware Player.
	Recent Virtual Machines
	Featured Virtual Appliance
VMware Player	Accellion File transfer virtual appliance An on demand file transfer solution that is secure, economical, and easy to use for end users and IT management.
	🗊 vm ware

- 3. Start up the OpenEMR Appliance by opening the OpenEMR-4-0-0-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:



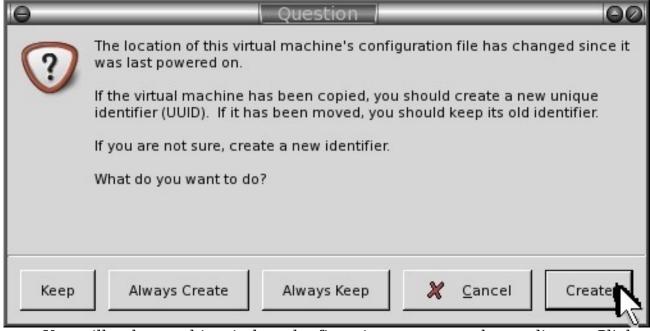
This is the introduction screen. Note that it automatically displays the IP address of your appliance, along with links to OpenEMR and Webmin. These links are customized for you depending on your IP address. The initial important user names and passwords are also displayed. To use appliance, proceed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

Linux

Main TOC Link

- 1. Unpackage the OpenEMR-4-0-0-appliance-1.zip file (use the 'unzip OpenEMR-4-0-0-appliance-1.zip' command).
- 2. Run VMware Player.
- 3. Start the OpenEMR appliance by opening the OpenEMR-4-0-0-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 

                                                                                            - 🗆 X
                                                                                           COK 1
 * Running local boot scripts (/etc/rc.local)
Welcome to the OpenEMR Appliance!!
Nost Recent User Manual can be found at http://bradymd.com/appliance
The IP address of this appliance is: 192.168.1.144
OpenEMR -> https://192.168.1.144/openemr user: admin
Webmin -> https://192.168.1.144:10000/ user: openem
                                                                        pass: pass
                                                     user: openemr pass: openemrcool
The HITPS(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:
                                                                  GOHEON IN MARE
To direct input to this virtual machine, press Ctrl+G.
```

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 <u>introduction</u> 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 '<u>Configuring client web browser for https</u>' to configure your web browser.)
 - 1. OpenEMR at https://Appliance_IP_address/openemr

🕘 Login - Mozilla Firefox		x
Eile Edit View History Delicious Iools Help		()- ()-
📌 Login 🛛 🗙 🚽		•
	nEMR	
OpenEMR v3.0.0.1		
	Username: Password: Login	
	Copyright Notice	
Done		

2. Webmin at https://Appliance_IP_address:10000/

Mozilia Firefox		
<u>File Edit View History Delicious</u>	Iools Help	<u>ې</u>
W https://192.168.1.167:10000/	×	•
	loç Usernam	enter a username and password to in to the Webmin server on 192.168.1.167. openemr
	Password	Remember login permanently?
		Login Clear
Done		192.168.1.167:10000 실 🛃 🖾

- 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 '<u>Static IP Address Setup</u>' section.

OpenEMR User Training

Main TOC Link

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

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

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.

fulltestOpenEMRMandrivaAppliance	
layer CD-ROM CCD-ROM SFloppy Ethernet Sound Adapter Hewlett-Packard hp LaserJet 3015	
🖻 Open Source Electronic Medical Record Software Review - Mozilla Firefox 🥥	
Eile <u>E</u> dit <u>V</u> iew <u>G</u> o <u>B</u> ookmarks <u>T</u> ools <u>H</u> elp	्
G ▼ O × O O O I http://bradymd.com/#0.0.0.0.0.Prir ▼ ☐ Go C.	
📌 Mandriva 🛛 📌 Mandriva Store 📌 Mandriva Club 📌 Mandriva Expert 🛛 📌 Mandriva Online 🕝 LPI	»
Printer Setup	*
<u>Ouick Index Link.</u> This is just to demonstrate that the 'Hewlett-Packard' button is n	

- 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)

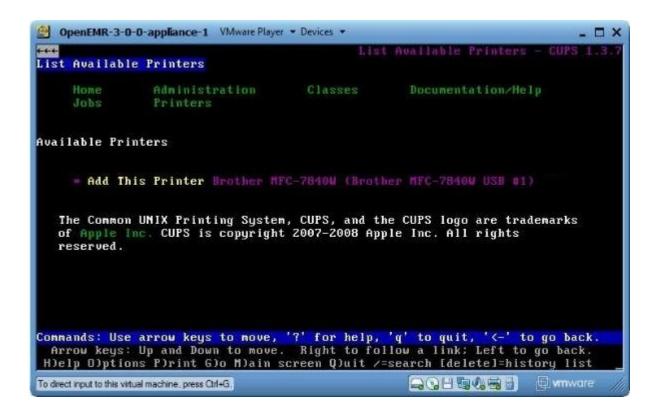
lynx http://localhost:631

OpenEMR-3-0-	0-appliance-1 VMware Playe	r 🕶 Devices 💌		- 🗆 ×
Connon UNIX P	rinting System 1.3.7		Home - CUPS 1.3.7	(p1 of 2)
	Administration Printers	Classes	Documentation/Help	
Welcome†				
perform sys		tasks. Click on	inters and jobs as well n any of the tabs above	
Help Add C Manage Serv		age Classes Mai	nage Jobs Manage Printe	ers
	asked for a username rd or the "root" use:		, enter your login user word.	name
About CUPS				
		S provides a po	ortable printing layer	for
Arrow keys:			llow a link; Left to go =search [delete]=histor	
To direct input to this virte	al machine, press Ctrl+G.			vm ware:

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)



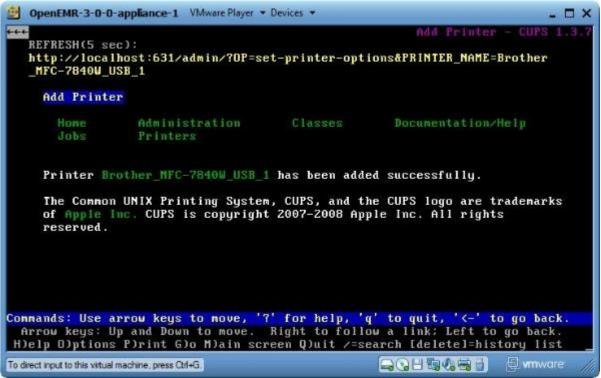
Choose the 'Model:' (use right-arrow key to show the menu after you select this field). Then select 'Add printer'. (it will take a bit of time to load next page)



Enter username 'openemr'.



Enter your 'openemr' user password.

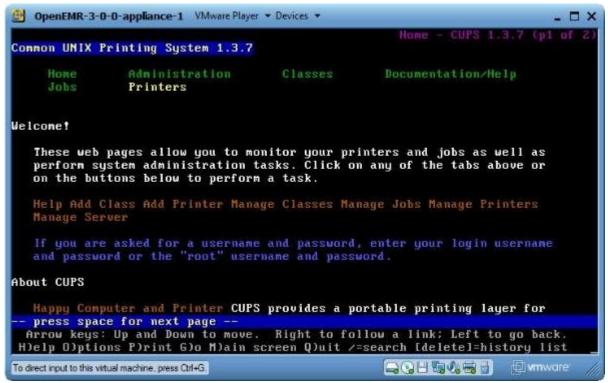


Shows printer was successfully added. Type 'q' to quit.

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)

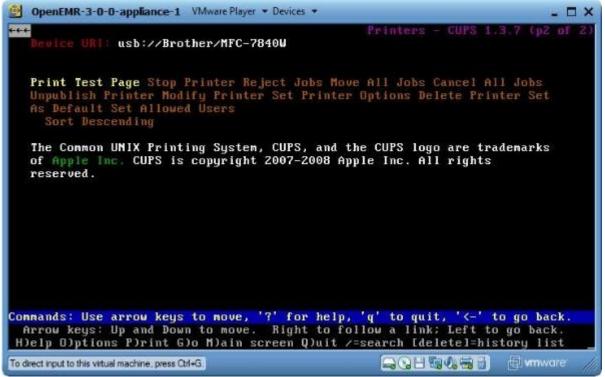
lynx http://localhost:631



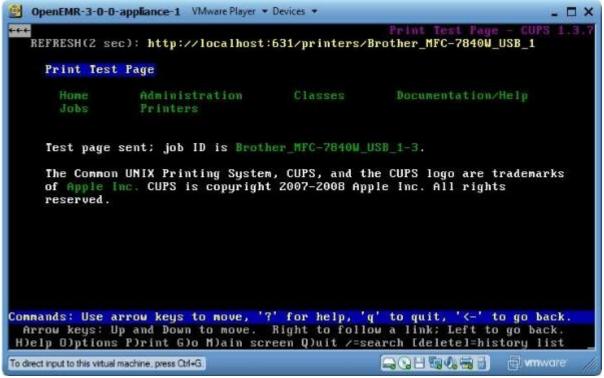
Select 'Printers'



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).



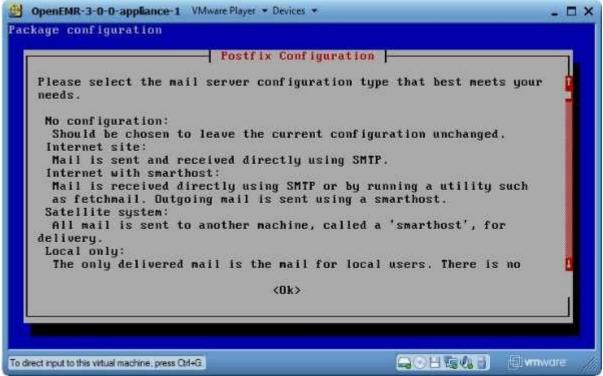
Confirmation of print job is shown. A test page should be sent to your printer. Type 'q' to quit. You are now officially a nerd.

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'.

OpenEMR-3-0-0-appliance-1 VMware Player * Devices *	- 🗆 ×
OpenEMR-3-0-0-appliance-1 VMwarePlayer * Devices * Package configuration Postfix Configuration General type of mail configuration: Mo configuration Internet Site Internet with smarthost Satellite system Local only (Cancel>	- 🗆 ×
To direct input to this virtual machine: press Ord+G) 🗐 vmware

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

without a domain This name will al fully qualified d Thus, if a mail a	is the domain name name. Iso be used by othe lomain name (FQDN). iddress on the loca this option would	l host is foo@example.org, the
	<0k>	<cancel></cancel>

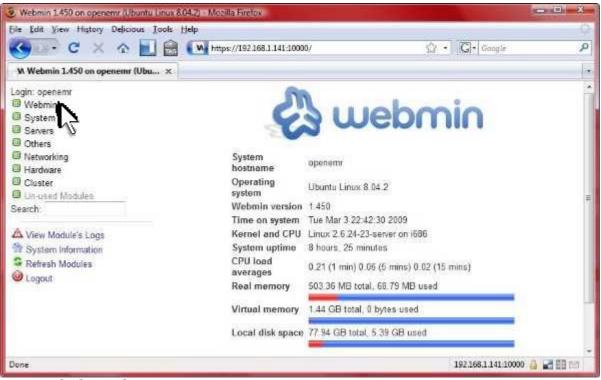
Enter the domain name that is put in the from field of your outgoing emails, for example ouroffice.com . (don't worry, this can always be changed after installation). Then select 'OK'.

3. Now we can configure the mail server in Webmin. First we will start the Postfix module in Webmin, and hen we will configure it. Point a web browser outside your appliance to the Webmin link reported in your appliance <u>introduction</u> screen.

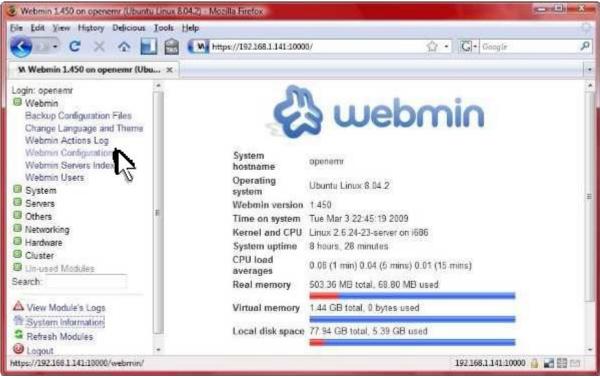
(If you are getting a certificate security error, then first follow the instructions in below appendix section '<u>Configuring client web browser for https</u>' to configure your web browser.)

Mozilia Firefox		
<u>File Edit View History Delicious</u>	<u>I</u> ools <u>H</u> elp	
W https://192.168.1.167:10000/	×	
		enter a username and password to n to the Webmin server on 192.168.1.167
Done		192.168.1.167:10000 실 🛃 🖾 😂

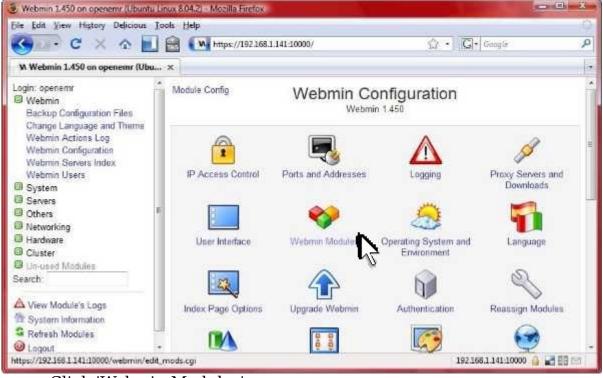
Login.



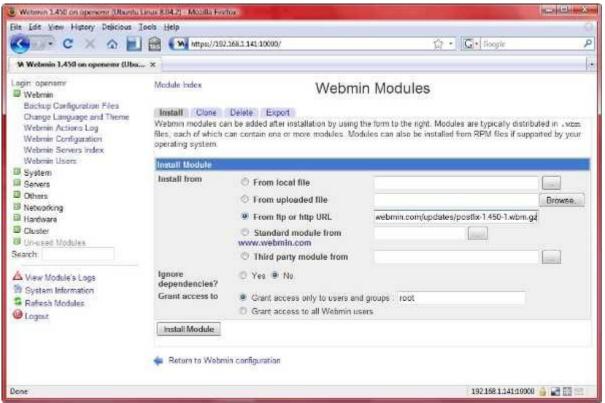
Click 'Webmin'.



Click 'Webmin Configuration'



Click 'Webmin Modules'.

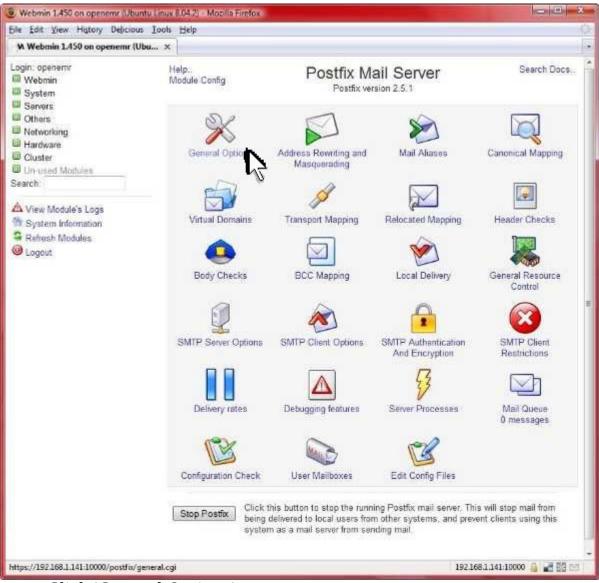


Toggle on 'From ftp or http url', then enter

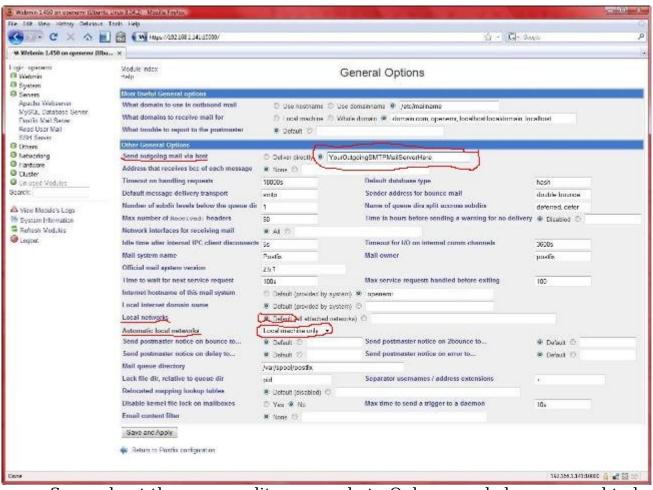
'http://www.webmin.com/updates/postfix-1.450-1.wbm.gz'. Then click 'Install Module'. (We can't use the usual standard postfix module because of a bug in mail aliases).



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'.

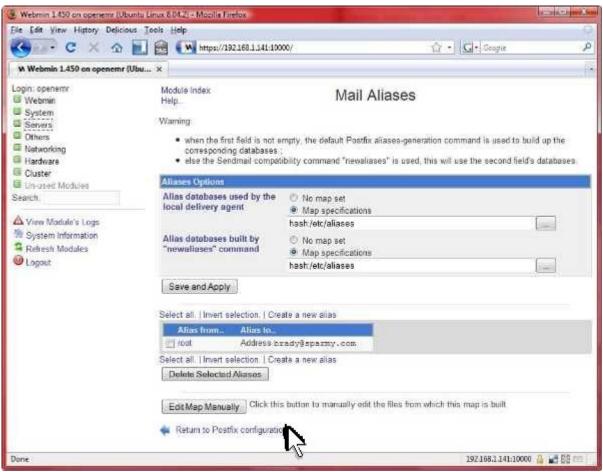
達 Webmin 1.450 on openemr (Ubuntu Lin	ux 8.04.2) - Mozilla Firefox	
Eile Edit View History Delicious Too	ls Help	0
W Webmin 1.450 on openemr (Ubu	×	
Login: openemr Webmin System Servers Others Networking Hardware Cluster Un-used Modules	up the correspondi	Mail Aliases is not empty, the default Postfix aliases-generation command is used to build ng databases : compatibility command "newaliases" is used, this will use the second field's
Search	Aliases Options	
View Module's Logs System Information Refresh Modules OLogaut	Alias databases used by the local delivery agent Alias databases built by "newaliases" command	No map set Map specifications hash/etc/aliases Map specifications Map specifications hash/etc/aliases
	Save and Apply Select all. Invert selection	n. Create a new alias
	Bearing the state of the state	Alina to Address openeme
	Select all vert selection	Contraction of the second s
	Edit Map Manually	lick this button to manually edit the files from which this map is built.
https://192168.1.141.10000/postfix/edit_afia	s.cgiînum=0	192.168.1.141.10000 🔒 📰 📼

Click 'root'.

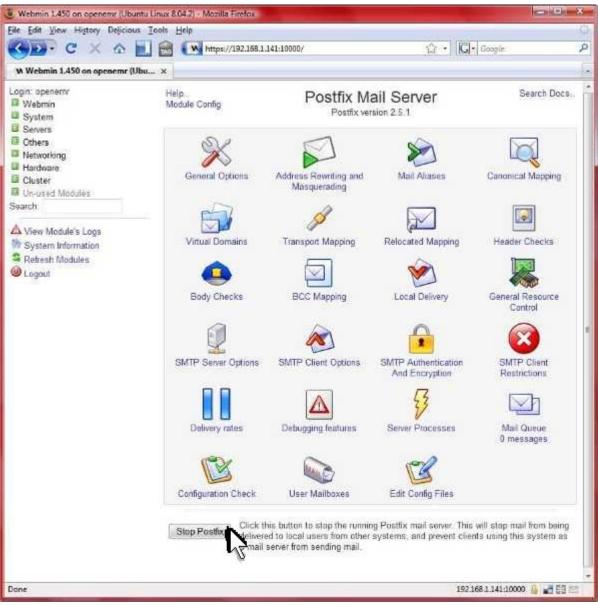
🙂 Webmin 1.450 on openemr (Ubur	tu Linux 8.04.2) - Mozilla Firefox	
Eile Edit Yiew History Delicious	: Iools Help	\$- (1)
W Webmin 1.450 on openemr (U	bu X	-
Login: openemr	Module Index Edit Alias	
System Servers	Edit Alias	
Others	Description	
Networking	Address root	
 Hardware Cluster 	Enabled? a Yes 🔿 No	
💷 Un-used Modules	Alias to Email address Put Your Email Address Here	
Search	Alias to <none> +</none>	
A View Module's Logs	Save	
System Information		
Refresh Modules	Return to Postfix configuration	
() Logout		
Done	192.168.1.141:100	00 🔒 🛃 🖽 🔄

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

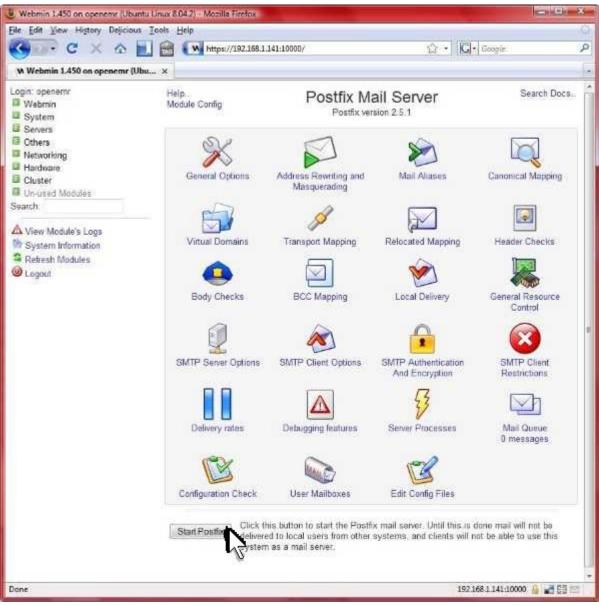
your appliance to your email address. Enter your email address in the field circled in red. Then click 'Save'.



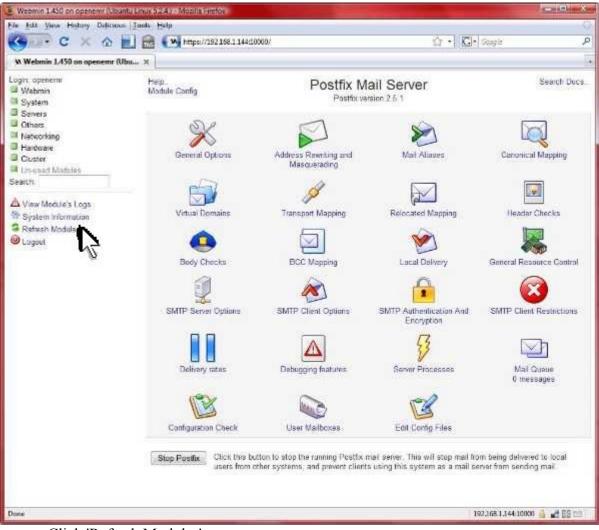
It worked, click 'Return to Postfix Configuration' to restart Postfix.



At bottom of page click 'Stop Postfix'.



At bottom of page click 'Start Postfix'.



Click 'Refresh Modules'.

🧶 Webmin 1.450 on openemr (Ubuntu Linux 5.2.4.) - Mozilla Firefox	
Eile ⊈dit ⊻iew History Delicious	Iools Help
🔇 💽 C 🗙 🏠 📘	. 🙀 M https://192.168.1.144:1 ☆ • Google 🔎
V Webmin 1.450 on openemr (Ubu ×	
Login: openemr Webmin System Servers Others Networking Hardware Cluster Un-used Modules Search:	Refresh Modules Checking for usable Webmin modules found 56 with installed applications, 48 not installed.
 View Module's Logs System Information Refresh Modules Logout 	
Done	192.168.1.144:10000 🏭 🛃 🖾

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.bradymd.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

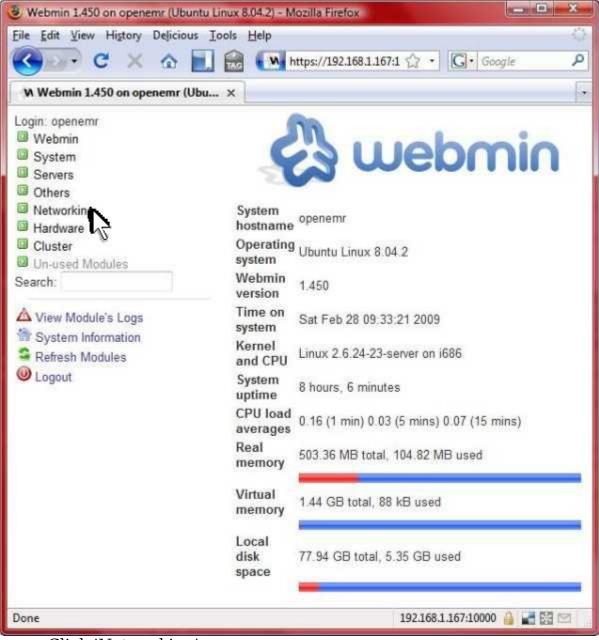
- 1. These are instructions for setting up a static IP address for your appliance using Webmin.
- 2. First, you should record the required IP addresses (example form below). The 'Appliance IP Address' is going to be the IP address of your appliance (within your network). The 'Subnet Mask' is 255.255.255.0 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:

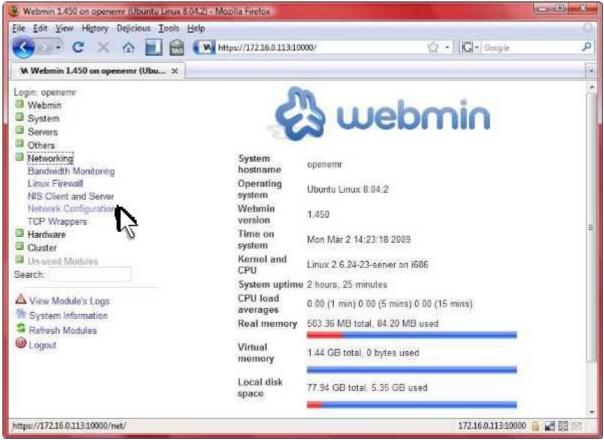
3. Point a web browser outside your appliance to the Webmin link reported in your appliance <u>introduction</u> screen.

Mozilia Firefox	-		
<u>File Edit View History Delicious</u>	<u>I</u> ools <u>H</u> elp	ž.	\$- -
W https://192.168.1.167:10000/	x		•
		enter a username and password to in to the Webmin server on 192.168.1.167. openemr	
Done			2.168.1.167:10000 실 🛃 🖽 📨

Login.



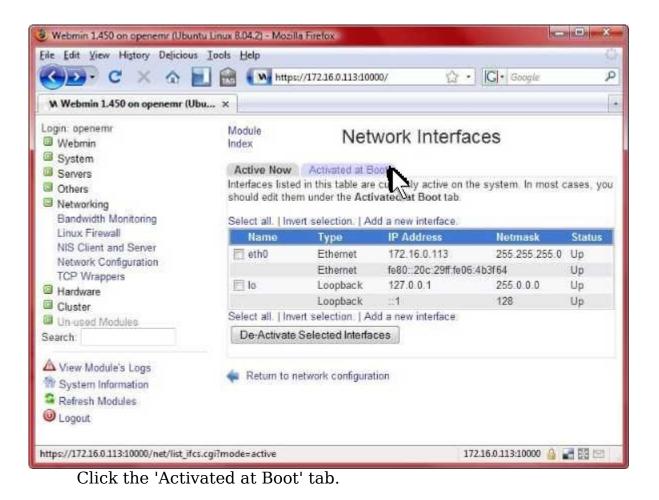
Click 'Networking'.



Click 'Network Configuration'.



Click 'Network Interfaces'.

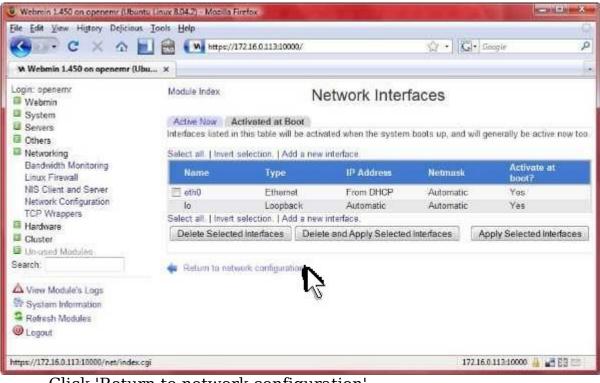




Click 'eth0'.

Webmin 1.450 on openemr (l	bu ×	
.ogin: openemr Webmin	Module Index Edit Bo	ootup Interface
System Servers	Boot Time Interface Parameters	
Conters Conters Conters Content Conte	Name eth0 Address source From DHCP From BOOTP Static IP Configuration Address Netmask Broadcar	k
Search: View Module's Logs System Information Refresh Modules Ucgout	Save Delete and Apply Delete	

- 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'.

Webmin 1.450 on openemic (Ubu	and the second				
File Edit View Higtory Delicious	🔝 🗃 🚺 https://172.16	0.113:10000/		⟨ŷr • (G]•] Google	م
Webmin System Servers Others Networking Bandwidth Monitoring	Module Index Boot time configura This section allows you network settings are fu	tion Active configur to configure the router lly re-applied.	a that are activated v	Ways	when
Eardware Monitoring Linux Firewall NIS Client and Server Network Configuration TCP Wrappers Hardware Cluster	Default router 👜 N	n activated at boot U one (or from DHCP) face Network face Network	Gateway Netmask	eth0 + Gateway stmask	
Search:	Save Save	configuration			
Done				172.16.0.113.10000	

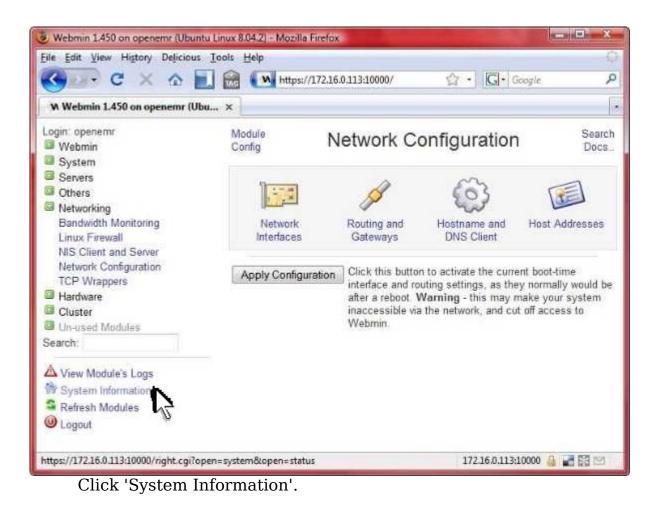
- Toggle on 'Gateway'
 Enter the 'Gateway IP Address' into 'Gateway' field
 Click 'Save'.

Eile Edit View History Dejiciou	ntu Linux 8.04.2) - Mozilia Firefox s. Iools Help			X-REAL
C X D	🗾 🔮 🚺 https://172.16.0.	113:10000/	ŵ • G•	īoogie 🖉
V Webmin 1.450 on openemr (l.	lbu ×			
Login: openemr Webmin System	Module Config	Network Co	onfiguration	Search Docs.
Servers Others Networking		ø	6	
Bandwidth Monitoring Linux Firewall NIS Client and Server	Network Interfaces	Routing and Gateways	Hostname and DNS Client	Host Addresses
Network Configuration TCP Wrappers Hardware	Apply consignation	Click this button to activate th they normally would be after a inaccessible via the network	a reboot. Warning - this ma	iy make your system
Cluster				
Un-used Modules Search:				
View Module's Logs				
System Information Refresh Modules				
Logout				
Done			172.16	0.11340000 🔒 📑 🖽

Click 'Hostname and DNS client'.

3 Webmin 1.450 on openemr (Ubuntu	Linux 8-04-2) - Mozilla Fin	efox			THE OWNER WATER	
Eile Edit Yiew Higtory Delicious	Iools Help					0
🔇 - C X 🏠 📃	https://17	2.16.0.113:100007			🟠 🔹 🖸 · Google	م
Webmin 1.450 on openemr (Ubu						
Login openemr Webmin System	Module Index	Hostn	ame a	nd DN	IS Client	
Servers	DNS Client Option	16				
 Others Networking 	Hostname	openemr 2 Update hostnar	ne in host a	iddresses if	changed?	
Bandwidth Monitoring Linux Freewall NIS Client and Server Network Configuration TCP Wrappers Hardware Cluster	Resolution order DNS servers		DNS		None O Linted	•
Order United Modules Search:	Save	8 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1				
View Module's Logs System Information Refresh Modules Logout	🗣 Return to netwo	ark configuration				
Done					172.16.0.113:100	00 🛔 🛃 🖾 📋

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



4. Then reboot the appliance per the instructions found in the '<u>Reboot</u> or Shutdown Appliance' section.

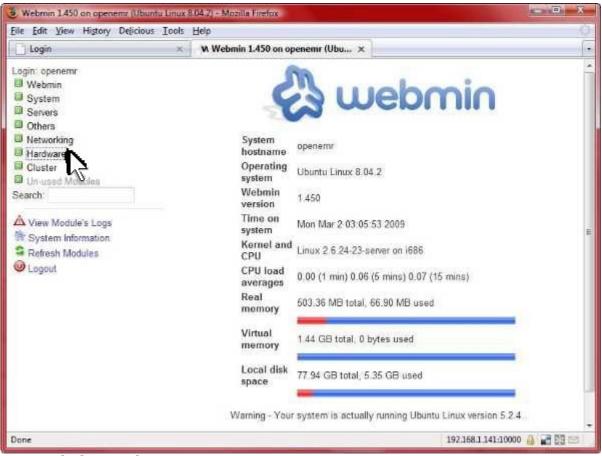
Change Clock

Main TOC Link

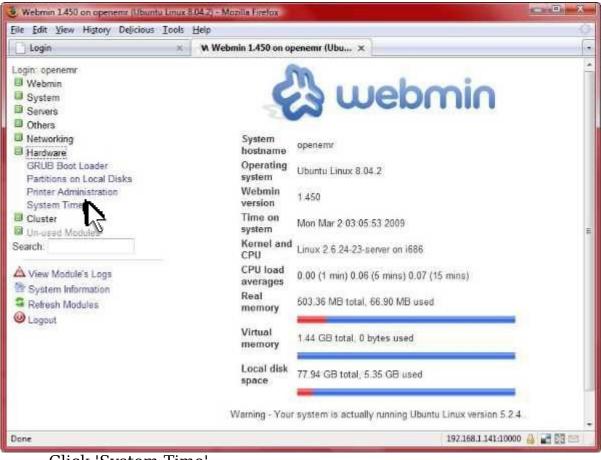
- 1. These are instructions on changing the time in your appliance using Webmin.
- 2. Point a web browser outside your appliance to the Webmin link reported in your appliance <u>introduction</u> screen.

Mozilia Firefox		
<u>File Edit View History Delicious</u>	<u>I</u> ools <u>H</u> elp	
W https://192.168.1.167:10000/	x	
		ebmin nter a username and password to to the Webmin server on 192.168.1.167. openemr ••••••••••••••••••••••••••••••••••••
Done		192.168.1.167:10000 실 📰 🖾

Login.



Click 'Hardware'.



Click 'System Time'.

W Webmin 1.450 on openemr (U	lbu X	
Login: openemr Webmin System Servers Others Networking Hardware	Help. Module Config Set time Change timezone Time server sync This form is for changing the system's current time, which is used by processes. On operating systems that have a separate hardware clorused to set that too.	
GRUB Boot Loader Partitions on Local Disks Printer Administration System Time Cluster Un-used Modules Search:	System Time Day Date Month Year Hour, minute a Monday 2 • March • 2009 • 03 • : 07 • Apply Set system time to hardware time	
 View Module's Logs System Information Refresh Modules Logout 	Handware Time Day Date Month Year Hour, minute a Monday 2 March 2009 03 07 Save Set hardware time to 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

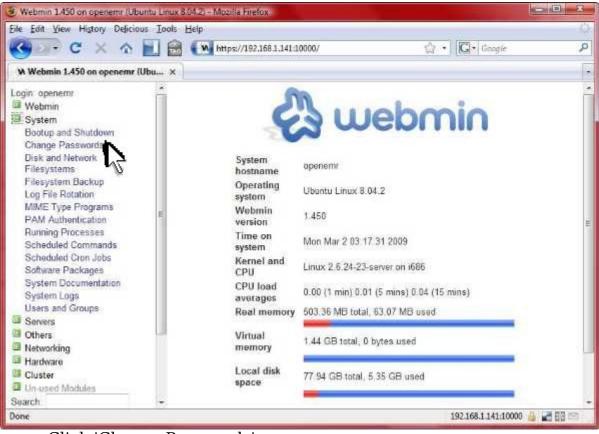
- 1. These are instructions for changing the password to the 'openemr' user in your appliance using Webmin. This is important to secure your appliance. It will effectively change the 'openemr' user password for logging into Webmin, logging into your appliance's commandline, and to confirm usage of the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

Mozilia Firefox		
<u>File Edit View History Delicious</u>	<u>I</u> ools <u>H</u> elp	÷
W https://192.168.1.167:10000/	×	
		Inter a username and password to to the Webmin server on 192.168.1.167. openemr ••••••••••••••••••••••••••••••••••••
Done		permanently? Login Clear 192.168.1.167:10000

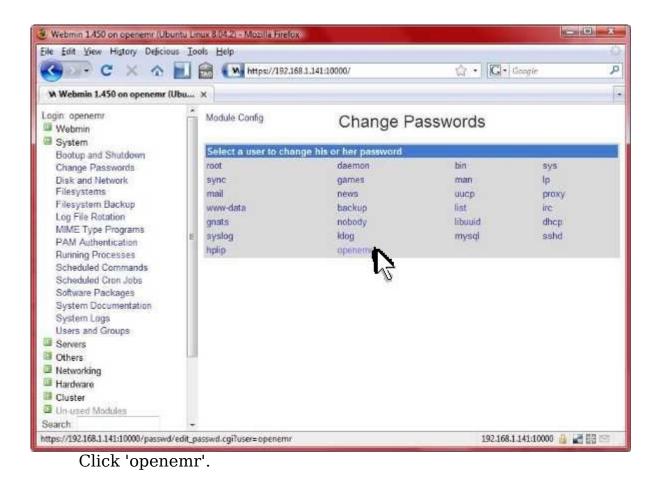
Login.

Login	× N.W.	ebmin 1.450 on op	enemr (Ubu × CopenEMR 2.8.3 Appliance Manual ×	
ogin: openemr Webmin Systen Servers Others Networking		System		
Hardware Cluster Un-used Modules Search:		hostname Operating system Webmin	Ubuntu Linux 8.04.2 1 450	
View Module's Logs System Information Refresh Modules		version Time on system Kernel and CPU	Mon Mar 2 02:37:20 2009 Linux 2 6 24-23-server on i686	
Degout Degout		System uptime CPU load	2 hours, 0 minutes 0.00 (1 min) 0.00 (5 mins) 0.00 (15 mins)	
		averages 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	

Click 'System'



Click 'Change Passwords'.





Type and confirm new password, then click 'change'

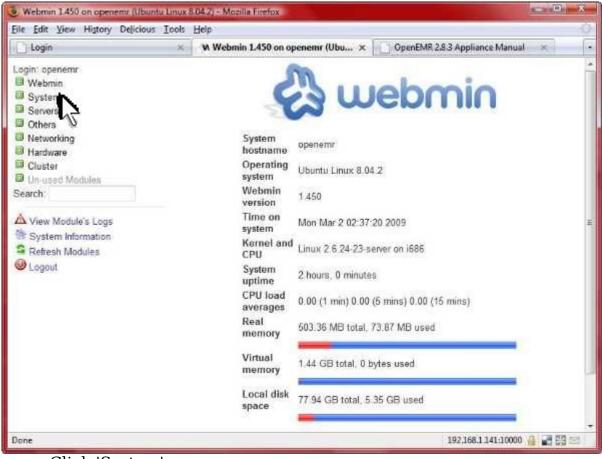
Reboot or Shutdown Appliance

Main TOC Link

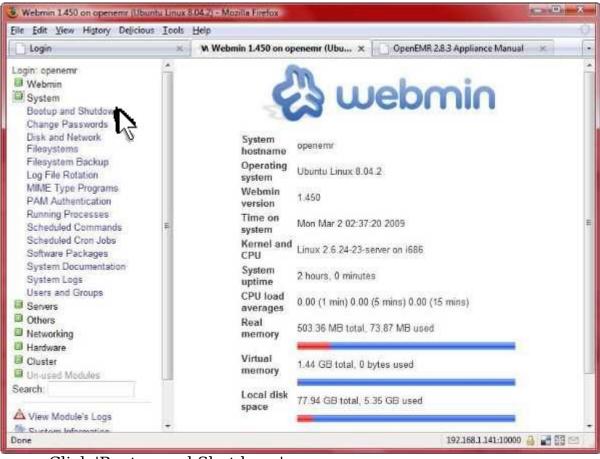
- 1. These are instructions on how to shutdown or restart your appliance using Webmin.
- 2. Point a web browser outside your appliance to the Webmin link reported in your appliance <u>introduction</u> screen.

🥑 Mozilia Firefox		
<u>File Edit View History Delicious</u>	<u>I</u> ools <u>H</u> elp	
W https://192.168.1.167:10000/	×	
	Login to V You must	lebmin enter a username and password to
	log	n to the Webmin server on 192.168.1.167
		openemr
	Password	
		Remember login permanently?
		Login Clear
Done		192.168.1.167:10000 🔒 🛃 🖾 📨

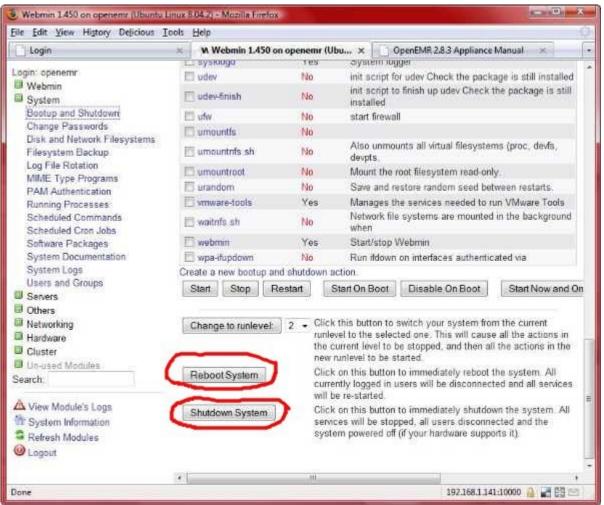
Login.



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

Instructions for Building the OpenEMR Appliance Chapter Index

Instructions for Building the OpenEMR Appliance.	
<u>Software</u>	
Install the Ubuntu 8.04 Server Virtual Computer	60
Configure PHP and Apache (with SSL)	
Install OpenEMR 3.0.1	92
Install and Configure Webmin.	103
Configure Firewall	107
Finishing Touches On Appliance.	
Upgrading to OpenEMR 3.1.0.	130
Upgrade Database to UTF-8.	135
Upgrading to OpenEMR 3.2.0.	
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Upgrade Language Translation Tables (3.2.0)	
Upgrading to OpenEMR 4.0.0.	145
Secure the New Documents Directory	
Install a 4.0.0 Patch	
Upgrade Language Translation Tables (4.0.0)	

Software

<u>Main TOC Link</u> <u>Chapter Index Link</u>

1. Ubuntu Server Edition (8.04)

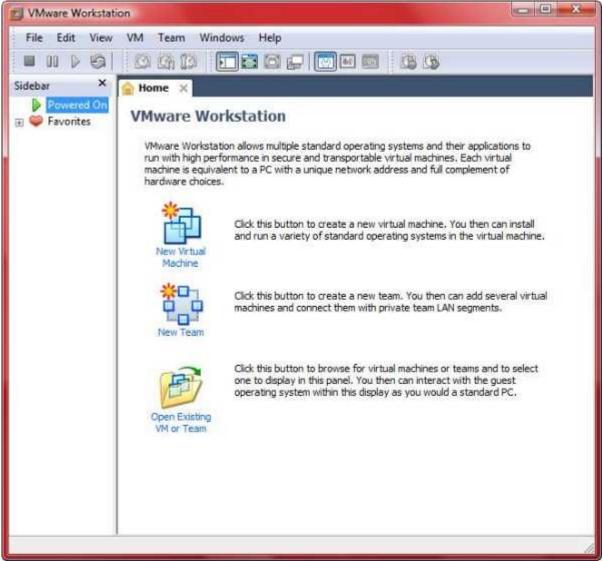
- 2. Apache (2.2.8), MySQL (5.0.51a), and PHP (5.2.4)
- 3. Webmin (1.470 and 1.500)
- 4. OpenEMR (3.0.1 and 3.1.0 and 3.2.0 and 4.0.0)

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 <u>http://www.ubuntu.com/getubuntu/download</u>.
- 3. Ubuntu Server Edition 8.04 Appliance Installation with Vmware Workstation version 6.5:



Click 'New Virtual Machine'.



Select 'Typical', then Click 'Next'.

	ystem Installation
	e is like a physical computer; it needs an operating I you install the guest operating system?
install from:	
💮 Installer <u>d</u> isc:	
DVD RW Drive	(F-1)
12005	• (E:)
 Installer disc image 	: file (iso):
 Installer disc image 	e file (iso); Jesktop\ubuntu-8.04.2-server-i386.is ▼ B <u>rowse</u>
 Installer disc image C: \Users \brady \D Ubuntu Serve I will install the ope 	e file (iso): Pesktop\ubuntu-8.04.2-server-i386.is ▼ Browse r detected.

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

Name the Virtual Machine What name would you like	to use for this virtual mach	ine?
<u>V</u> irtual machine name		
OpenEMR-3-0-0-appliance-1		
Location		
C: \Users \brady \Desktop \OpenE	EMR-3-0-0-appliance-1	Browse
The default location can be chan	-	

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

Specify Disk Capacity How large do you wan	it this disk to be?
omputer's physical disk. Th	lisk is stored as one or more files on the host lese file(s) start small and become larger as you data to your virtual machine.
4aximum disk <u>s</u> ize (GB):	80.0
lecommended size for Ubur	ידעי: 8 GB
🖱 Store virtual disk as a sin	igle file
Split virtual disk into 2 GE	3 files
Splitting the disk makes i computer.	it easier to move the virtual machine to another
Pocket ACE size calculat	or
57 C	

Set maximum disk size to 80GB, select 'Split virtual disk into 2GB files',

then click 'Next'.

vill be created with the following settings:	
Workstation 6.5	8
Ubuntu	
	1
80 GB, Split	
512 MB	-
NAT	
CD/DVD, Floppy, USB Controller, Sound Card	1
(II)	
	Workstation 6.5 Ubuntu 80 GB, Split 512 MB NAT CD/DVD, Floppy, USB Controller, Sound Card

Device	Summary	Memory Specify the amount of memory allocated to this vir	tual
 Memory New CD/DVD (IDE) Floppy Network Adapter USB Controller Sound Card Display Processors 	512 MB Using file C:\Us Auto detect NAT Present Auto detect Auto detect 1	Specify the another of memory anotated to dis vir machine. The memory size must be a multiple of 4 Memory for this virtual machine:	MB. ME
	Add		

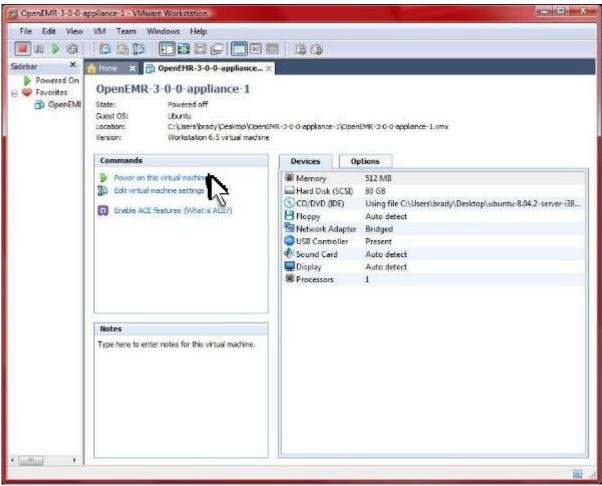
Click 'Network Adapter'.

Device	Summary	Device status
Memory New CD/DVD (IDE) Floppy Network Adapter USB Controller Sound Card Display Processors	512 MB Using file C:\Us Auto detect NAT Present Auto detect Auto detect 1	Connect at power gn Network connection Endged: Connected directly to the physical network Replicate physical network connection state NAT: Used to share the host's IP address NAT: Used to share the host's IP address Custom: Specific virtual network VMnetD (default Bridged)
	Add	

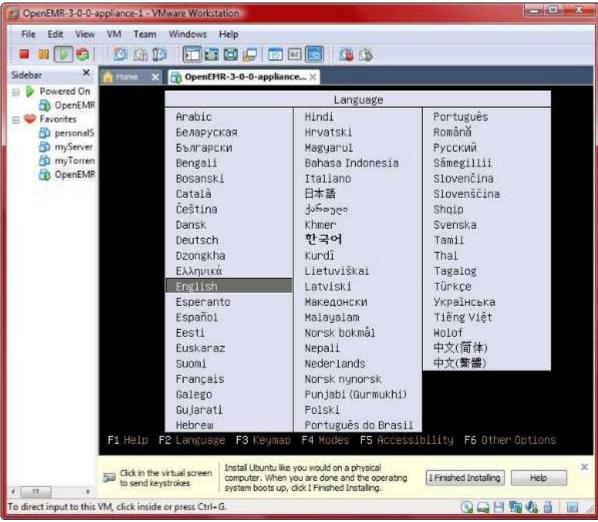
Select 'Bridged: Connected directly to the physical network' and check 'Replicate physical network connection state', then click 'OK'.

he virtual machine v	will be created with the following settings:
Name:	OpenEMR-3-0-0-appliance-1
Location:	C:\Users\brady\Desktop\OpenEMR-3-0-0-appliance
Version:	Workstation 6.5
Operating Syst	Ubuntu
Hard Disk:	80 GB, Split
Memory:	512 MB
4	

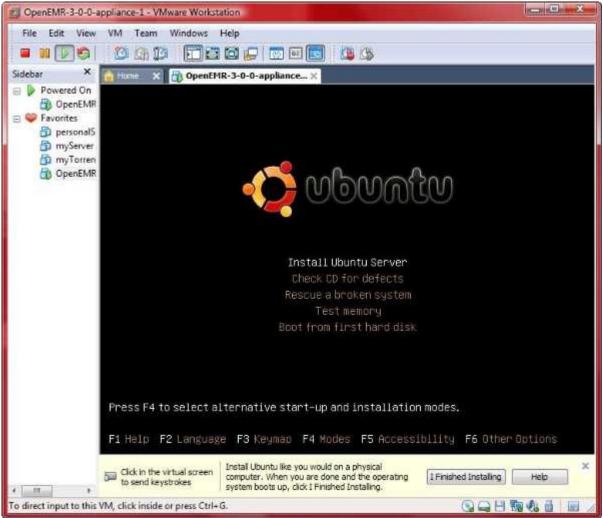
Click 'Finish'.



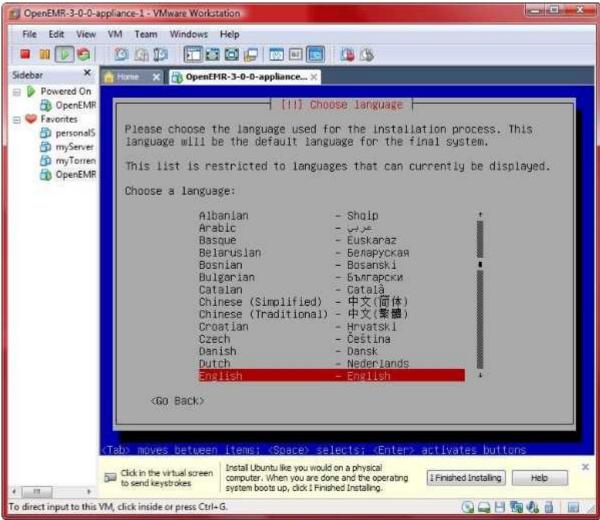
Click 'Power on this virtual machine'.



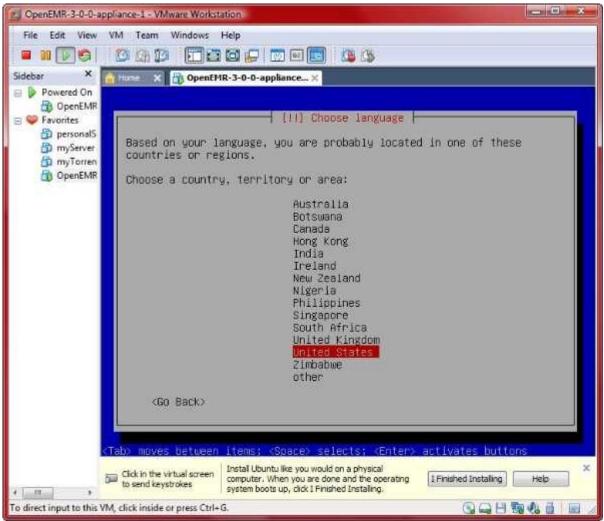
Select language.



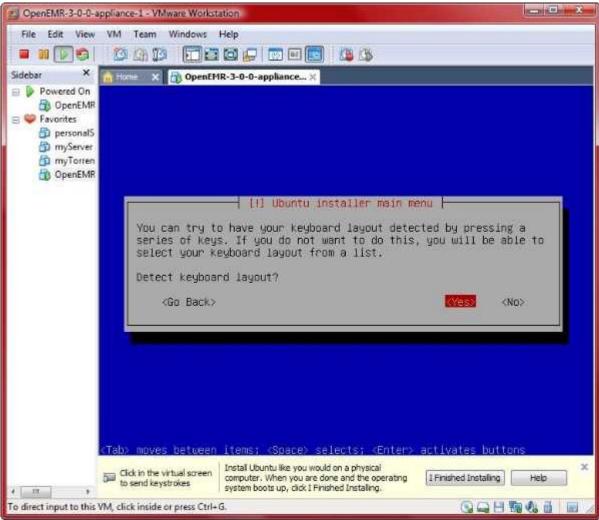
Select 'Install Ubuntu Server'.



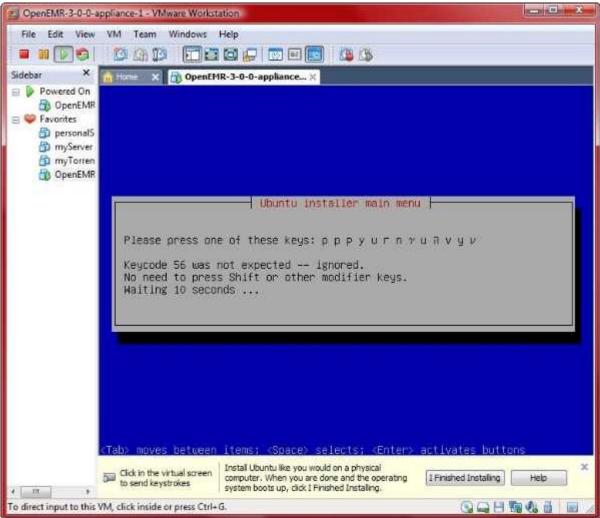
Select language.



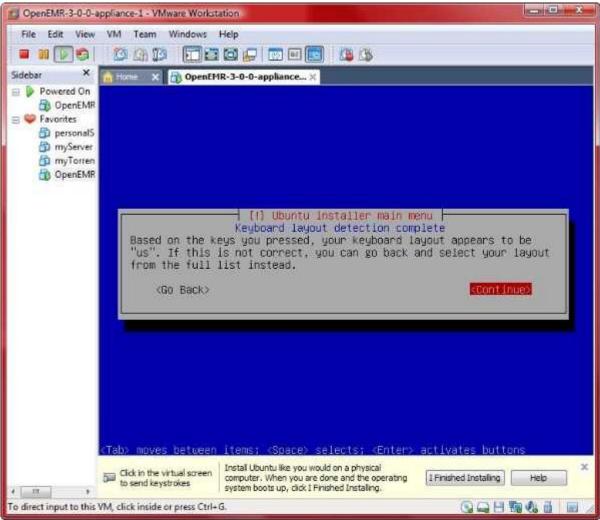
Select country.



Select 'Yes' to detect keyboard layout.



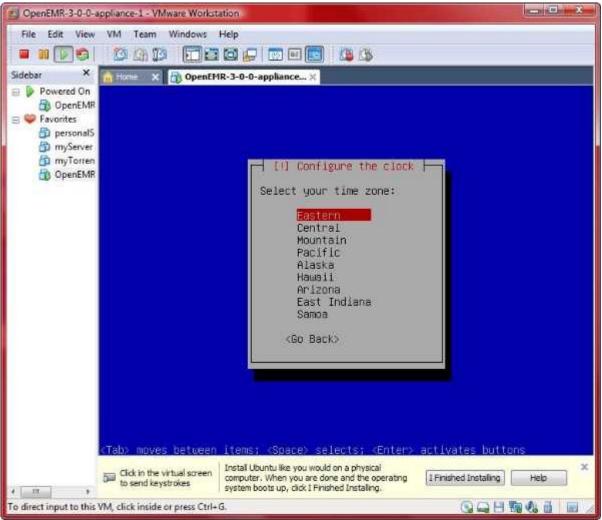
Go through bunch of screens like above to figure out keyboard.



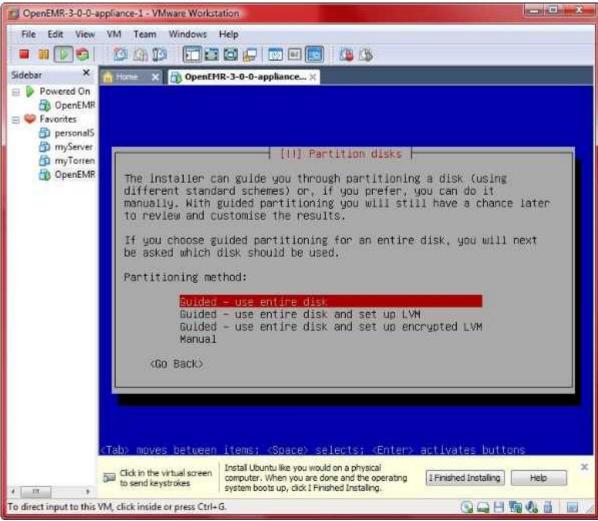
Select 'Continue' if detected correct keyboard.

OpenEMR-3-0-0-appliance-1 - VMware Workstation	
File Edit View VM Team Windows Help	
Sidebar 🛛 🗙 🏠 Harro 🗙 📳 OpenEMR-3-0-0-appliance 🗙	
Powered On GenEMI	
I Ventovi	
[1] Configure the network	
Please enter the hostname for this system.	
The hostname is a single word that identifies your system t	o the
network. If you don't know what your hostname should be, co	nsuit your
network administrator. If you are setting up your own home you can make something up here.	network,
Hostname:	
openem	
<go back=""></go>	tinges
<tab> moves between items; <space> selects; <enter> activates bu</enter></space></tab>	ttons
Click in the virtual screen to send keystrokes Unstall Ubuntu like you would on a physical computer. When you are done and the operating system boots up, dick I Finished Installing.	ng Help X
To direct input to this VM, click inside or press Ctrl+G.	

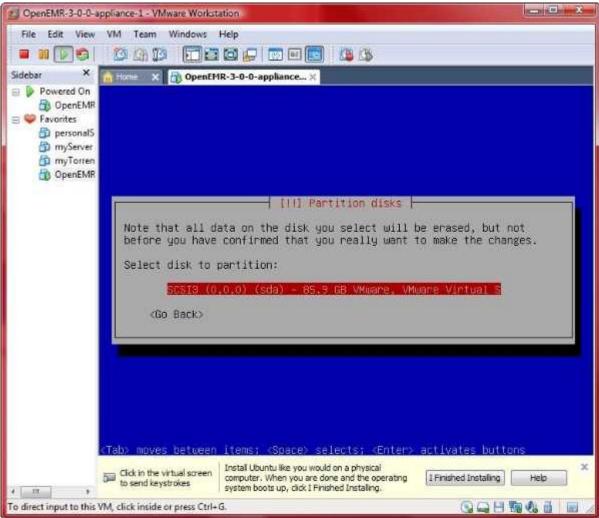
Type 'openemr' for Hostname, and then 'Continue'.



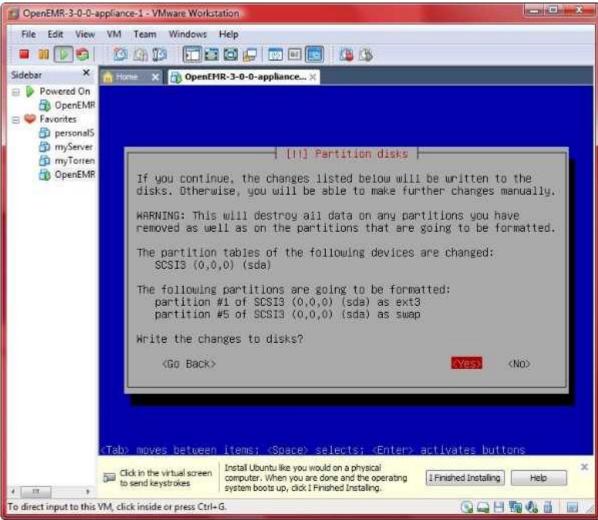
Select time zone, I chose 'Pacific'.



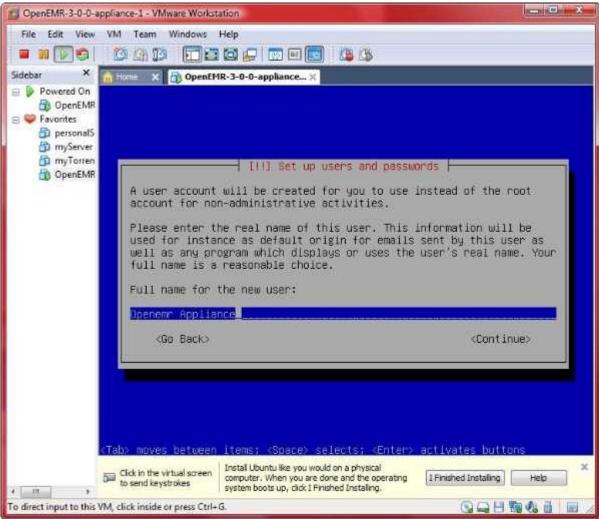
Select 'Guided - use entire disk'.



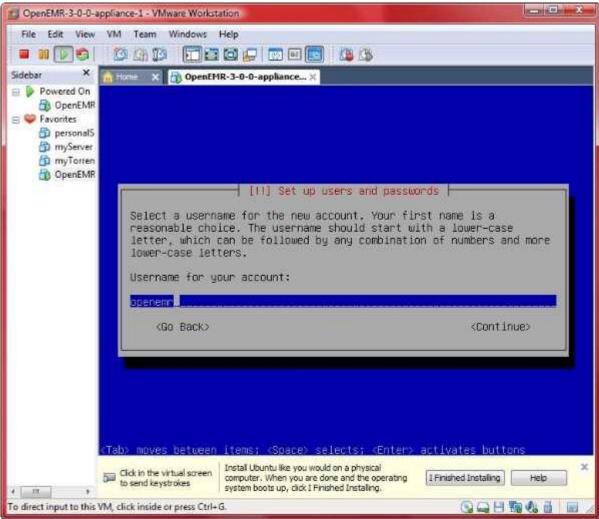
Select the highlighted disk.



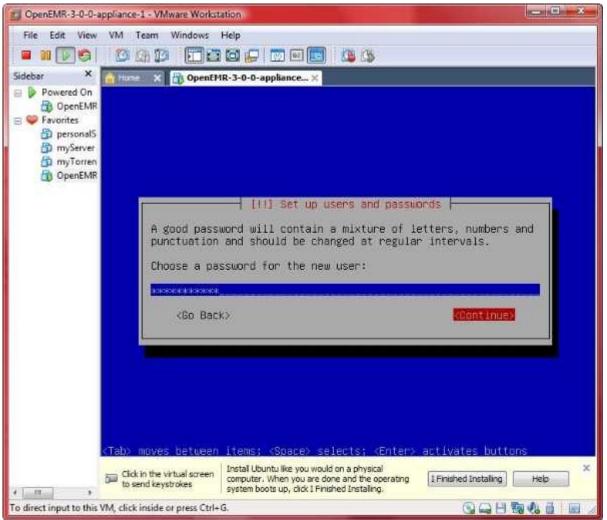
Select 'Yes'.



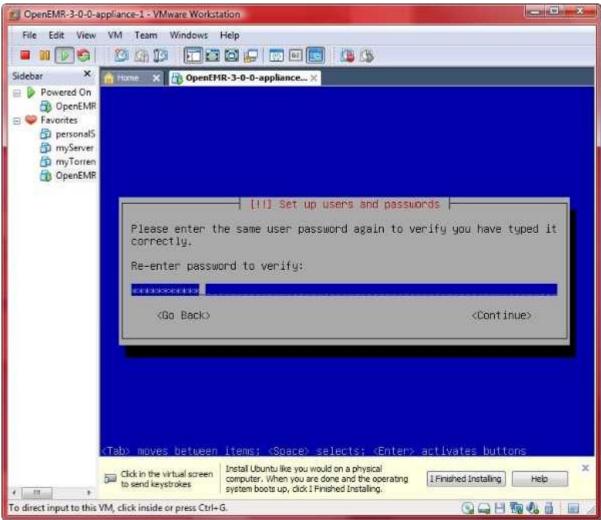
Type 'Openemr Appliance', then 'Continue'.



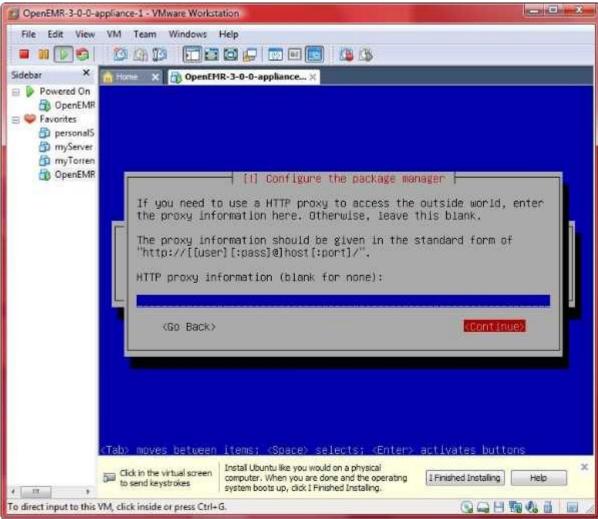
Type 'openemr', then 'Continue'.



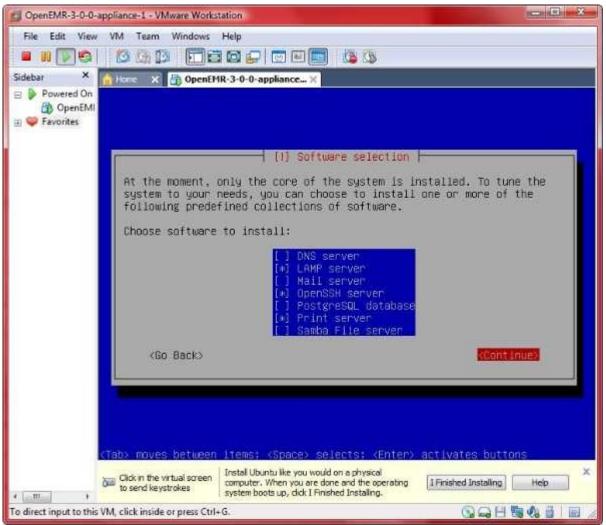
Choose a password. I typed 'openemrcool' for password, then 'Continue'.



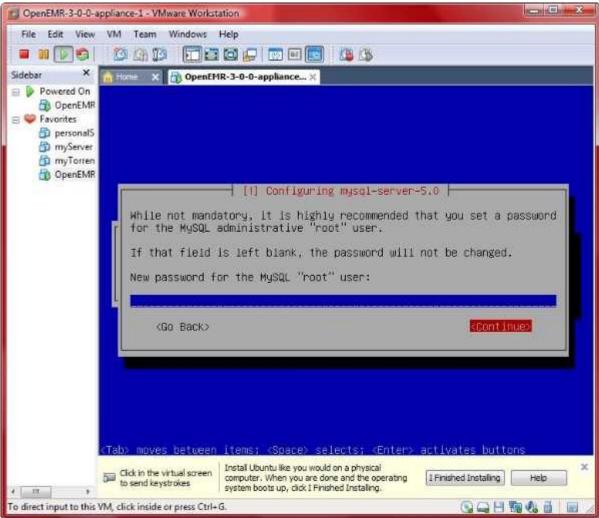
Confirm password 'openemrcool', then 'Continue'.



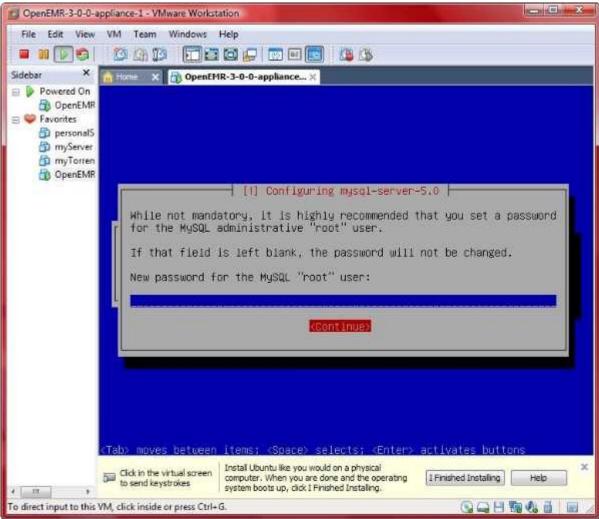
Leave blank and 'Continue'.



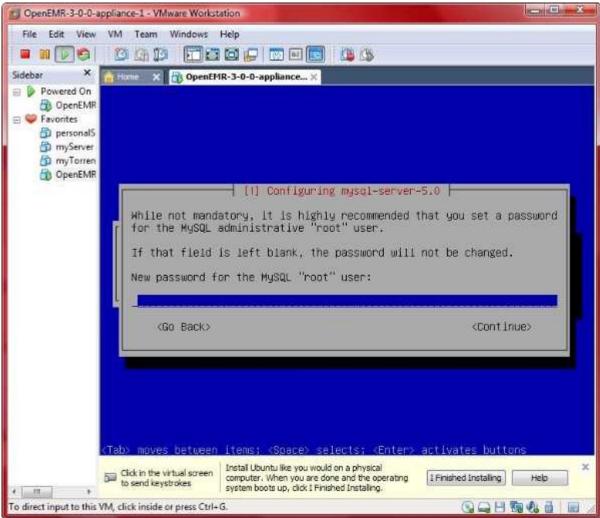
Select 'LAMP server', 'OpenSSH server', and 'Print Server'; then click 'Continue'.



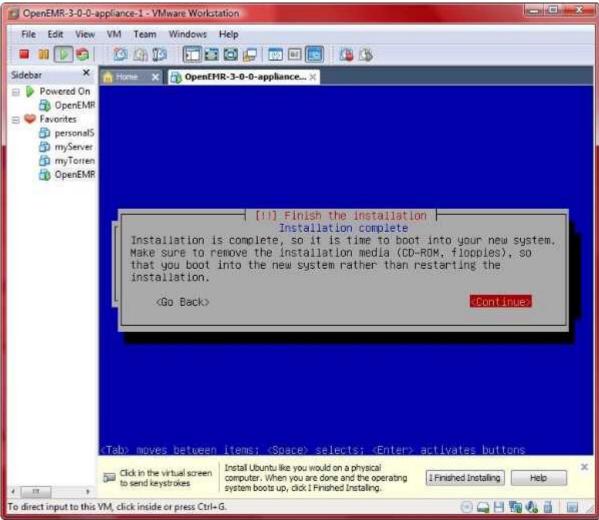
Leave blank and 'Continue'.



Leave blank and 'Continue'.



Leave blank and 'Continue'.



Click 'Continue'.

File Edit View VM Team	Windows Help	
= III 🔊 🕲 🖄 🕼		
Sidebar × https://www.sidebar	OpenEMR-3-0-0-appliance×	
 OpenEMR Activat Favorites Shounting 	y local filesystems ing swapfile swap securityfs on /sys/kernel/security: don	E OK 1 E OK 1
myServer K Skippin	pArnor profiles : done. g minimum space in ∕tmp g firewall: ufw (not enabled)	E 0K 1 L 0K 1
🚯 OpenEMR = Setting	ring network interfaces up console funt and keynap g system log daemon	
* Startin * Startin	g kernel log daemon g OpenBSD Secure Shell server sshd	I OK 1 I OK 1
- Checkin	g MySQL database server mysqld g for corrupt, not cleanly closed and (
	g Postfix Mail Transport Agent postfix g deferred execution scheduler atd	
* Startin * Startin	g periodic connand scheduler crond g web server apache2	t ox 1
	ould not reliably determine the server 0.1.1 for ServerName	's fully qualified domain name;
		L OK 1
* Running	local boot scripts (/etc/rc.local)	E DK 1
Ubuntu 8.0	4.2 ubuntu tty1	
ubanta log	in:	
Dick in the v	Instal screen Instal Ubuntu like you would on a physical computer. Wh trokes done and the operating system boots up, dick 1 Finished	

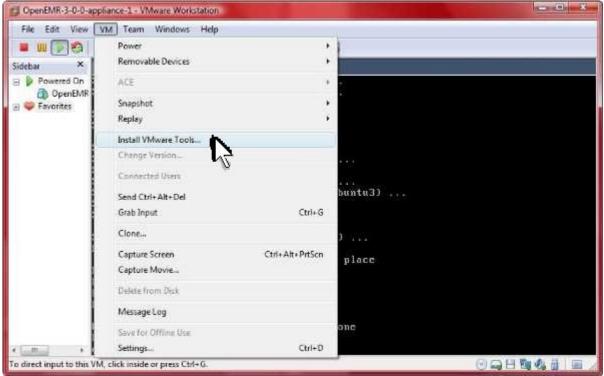
login with user:openemr pass:openemrcool

#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...'.

#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)

<u>Main TOC Link</u>

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

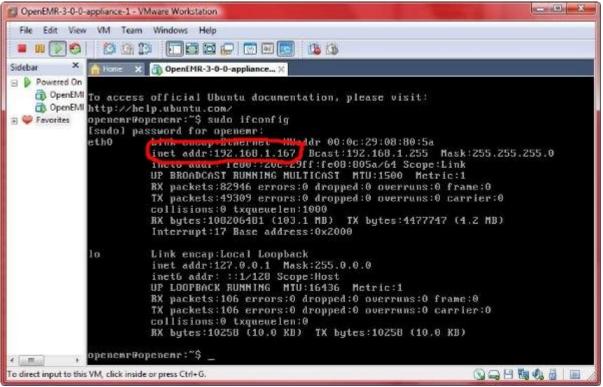
<u>Main TOC Link</u> <u>Chapter Index Link</u>

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



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 <u>ifconfig</u> command): https://APPLIANCE_IP_ADDRESS/openemr/setup.php

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

OpenEMR Setup Tool - Mozilla F	irefox		
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📌 OpenEMR Setup Tool	×		4
OpenEMR Setup			
Welcome to OpenEMR. This utili practice.	ty will step you through th	ne installation and configuration of Oper	EMR for your
 a PHP configured websen Detailed installation instru If you are upgrading from a 	ver. ctions can be found in the a previous version, do NO	r installed and configured MySQL server • <u>INSTALL'</u> manual file. T use this script. Please read the 'Upgra	
found in the <u>INSTALL</u> ma We will now ensure correct file a		before starting installation:	
Ensuring following files are world '/var/www/html/openemr/library/so '/var/www/html/openemr/interface '/var/www/html/openemr/gacl/gac '/var/www/html/openemr/gacl/gac	glconf.php' file is ready. /globals.php' file is ready l.ini.php' file is ready.	-	
Ensuring following directories have '/var/www/html/openemr/documer '/var/www/html/openemr/ed' direct '/var/www/html/openemr/library/fre '/var/www/html/openemr/library/fre '/var/www/html/openemr/custom//	nts' directory is ready. tory is ready. tory is ready. eeb' directory is ready.	is roady	
'/var/www/html/openemr/gacl/adm '/var/www/html/openemr/interface '/var/www/html/openemr/interface	nin/templates_c' directory /main/calendar/modules/F /main/calendar/modules/F	is ready. PostCalendar/pntemplates/compiled dir PostCalendar/pntemplates/cache direct	
All required files and directories b Continue	ave been verified. Click to	o continue installation.	
Done			

Click 'Continue'.

OpenEMR Setup Tool - Mozilla Firefox	
<u>Eile Edit View His</u> tory Delicious <u>T</u> ools	Help
OpenEMR Setup Tool ×	
OpenEMR Setup	
Step 1	
already created the database for me to use supply the MySQL root password.	o create the database on my own or if you have For me to create the database, you will need to ay delete or cause damage to data on e please backup your data.
Have setup create the database	
I have already created the database	
Continue	
Done	192.168.1.167 🔒 🛃 🖾 📃

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

Jie Edit View History Delicious Iools Help OpenEMR Setup Tool 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: localhost (If you run MySQL and Apache/PHP on the same computer, then leave this as Incalhost'. If they are on separate computers, then enter the IP address of the computer running MySQL.) Server Port: 3306 Openemm (This is the name of the OpenEMR database in MySQL - 'openemr' is the recommended) Login Name: openemm I.ogin Name: openemm (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 leacharacters long and composed of both numbers and letters) Name for Root (This is name for MySQL root password for when PHP accesses MySQL - it should be at leacharacters long and composed of both numbers and letters) Name for Root (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 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: (This is the login name of	<u>ः</u>
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: localhost incalhost: If they are on separate computers, then enter the IP address of the computer running MySQL. Server Port: 3306 Openemr (This is the MySQL port. The default port for MySQL is 3306.) Database openemr Name: openemr (This is the name of the OpenEMR database in MySQL - 'openemr' is the recommended) Password: (This is the Login Password for when PHP accesses MySQL - it should be at let characters long and composed of both numbers and letters) Name for Root (This is name for MySQL root password. For localhost, it is usually ok to leave it it account: Root Pass: (If you run Apache/PHP and MySQL not password. For localhost, it is usually ok to leave it blas in calhost if they are on separate computers, then enter the IP address of the computer running Apache/PHP.) OPENEMR USER: Initial User's admin (This is the login name of user that will be created for you. Limit this to one word initial User's Name:	•
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: localhost (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: 3306 Database openemr (This is the MySQL port. The default port for MySQL - 'openemr' is the recommended) Database openemr (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 let characters long and composed of both numbers and letters) Name for root (This is name for MySQL root account. For localhost, it is usually ok to leave it 'fact Root Pass: (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's admin Initial User's admin (This is the login name of user that will be created for you. Limit this to one word initial User's Administrator	
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INSTALL' manual file: MYSQL SERVER: Server Host: localhost (If you run MySQL and Apache/PHP on the same computer, then leave this as Tocalhost'. If they are on separate computers, then enter the IP address of the computer running MySQL.) Server Port: 3306 (This is the MySQL port. The default port for MySQL is 3306.) Database openemr (This is the name of the OpenEMR database in MySQL - 'openemr' is the recommended) Login Name: openemr (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 leave characters long and composed of both numbers and letters) Name for Root root (This is your MySQL root account. For localhost, it is usually ok to leave it blai User localhost (If you run Apache/PHP and MySQL on the same computer, then leave this as Tocalhost'. If they are on separate computers, then enter the IP address of the computer running Apache/PHP.) OPENEMR USER: Initial User's Administrator (This is the login name of user that will be created for you. Limit this to one word (This is the real name of the 'initial user'.)	
Server Host: localhost (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: 3306 (This is the MySQL port. The default port for MySQL is 3306.) Database openemr (This is the name of the OpenEMR database in MySQL - 'openemr' is the recommended) Login Name: openemr (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 leacharacters long and composed of both numbers and letters) Name for Root (This is your MySQL root account. For localhost, it is usually ok to leave it 'n Account: Root Pass: (This is your MySQL root password. For localhost, it is usually ok to leave it blant User localhost (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: admin (This is the login name of user that will be created for you. Limit this to one word initial User's Administrator Initial User's Name: (This is the real name of the 'initial user'.)	
Incalhost. If they are on separate computers, then enter the IP address of the computer running MySQL.) Server Port: 3306 Openemic (This is the MySQL port. The default port for MySQL is 3306.) Database openemic Name: (This is the name of the OpenEMR database in MySQL - 'openemic' is the recommended) Login Name: openemic Openemic (This is the name of the OpenEMR login name in MySQL - 'openemic' is the recommended) Password: (This is the Login Password for when PHP accesses MySQL - it should be at leacharacters long and composed of both numbers and letters) Name for root Root (This is your MySQL root account. For localhost, it is usually ok to leave it 'n Account: Root Pass: (This is your MySQL root password. For localhost, it is usually ok to leave it blain User localhost 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: admin Initial User's Administrator Name: (This is the login name of user that will be created for you. Limit this to one word	
Database Name: openemr (This is the name of the OpenEMR database in MySQL - 'openemr' is the recommended) Login Name: openemr (This is the name of the OpenEMR login name in MySQL - 'openemr' is the recommended) Password: (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 leacharacters long and composed of both numbers and letters) Name for Root (This is name for MySQL root account. For localhost, it is usually ok to leave it 'n Root Account: Root Pass: (This is your MySQL root password. For localhost, it is usually ok to leave it blait User Iocalhost (If you run Apache/PHP and MySQL on the same computer, then leave this as Tocalhost. if they are on separate computers, then enter the IP address of the computer running Apache/PHP.) OPENEMR USER: Initial User's admin (This is the login name of user that will be created for you. Limit this to one word Initial User's Name:	
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Hostname: Tocalhost'. If they are on separate computers, then enter the IP address of the computer running Apache/PHP.) OPENEMR USER: Initial User: Initial User's admin Initial User's Administrator Name: (This is the real name of the 'initial user'.)	k.)
Initial User: admin (This is the login name of user that will be created for you. Limit this to one word Initial User's Administrator (This is the real name of the 'initial user'.) Name:	
Initial User's Administrator (This is the real name of the 'initial user'.)	
Name:	5
Initial Group: Default (This is the group that will be created for your users. This should be the name of	
practice.)	our
OPENEMR PATHS:	
Absolute /var/www/openemr (This is the full absolute directory path to openemr. The value here is automatica created, and should not need to be modified. Do not worry about direction of slast they will be automatically corrected.)	
Relative /openemr (Set this to the relative html path, ie. what you would type into the web browser at the server address to get to OpenEMR. For example, if you type 'http://127.0.0.1 /openemr/ to load OpenEMR, set this to '/clinic/openemr' without the trailing slass not worry about direction of slashes; they will be automatically corrected.)	clinic
Continue	
Done 192.168.1.167 🔒 🛃	

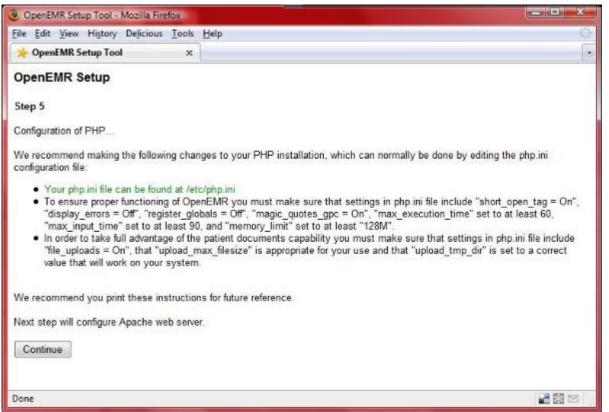
For my appliance I typed 'openemr' into 'Password' field, and otherwise kept defaults. Click 'Continue'.

OpenEMR Setup Tool - Mozilla Firefox	
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A OpenEMR Setup Tool X	
OpenEMR Setup	
Step 3	
Configuring OpenEMR	
Connecting to MySQL Server OK. Creating database OK. Creating user with permissions for database OK. Reconnecting as new user OK. Opening databaseOK. Creating initial tables OK Adding Initial User OK Writing SQL Configuration Successfully wrote SQL configuration. Writing OpenEMR webserver paths to config file Successfully wrote OpenEMR webserver paths to config file	
Next step will install and configure access controls (php-GACL).	
Continue	
Done	

Click 'Continue'.

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CopenEMR Setup Tool ×			
OpenEMR Setup			
Step 4			
Installing and Configuring Access Controls (php-GACL)			
Writing php-GACL configuration settings to config files Finished writing php-GACL configuration settings to config files.			
Configuration: driver = mysql,			
host = localhost,			
user = openemr, database = openemr,			
table prefix = gacl_Testing database connection			
Success! Connected to "mysql" database on "localhost". Testing database type			
Success! Compatible database type "mysql" detected!			
Making sure database "openemr" exists			
Success! Good, database "openemr" already exists! Success! First Step of Access Control Installation Successful!!!			
Success, First Otep of Access Control installation Ouccession:			
OpenEMR ACL Setup			
All done configuring and installing access controls (php-GACL)! Gave the 'admin' user (password is 'pass') administrator access.			
Done installing and configuring access controls (php-GACL). Next step will configure PHP.			
Continue			
Done			

Click 'Continue'.



We have already configured this in the above '<u>Configure PHP and Apache</u> (with SSL)' section. Click 'Continue'.

OpenEMR Setup Tool - Mozilla Firefox	- • ×		
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OpenEMR Setup			
Step 6			
Configuration of Apache web server			
The "/var/www/html/openemr/documents", "/var/www/html/openemr/edi" and "/var/www /html/openemr/era" directories contain patient information, and it is important to secure these directories. This can be done by placing pertinent .htaccess files in these directories or by pasting the below to end of your apache configuration file: <directory documents="" html="" openemr="" var="" www=""> order deny,allow Deny from all </directory> <directory edi="" html="" openemr="" var="" www=""> order deny,allow Deny from all </directory> <directory era="" html="" openemr="" var="" www=""> order deny,allow Deny from all </directory>			
If you are having difficulty finding your apache configuration file, then refer to the <u>INSTALL</u> manual for suggestions.			
We recommend you print these instructions for future reference.			
Click 'continue' for further instructions.			
Continue			
Done			

We have already configured this in the above '<u>Configure PHP and Apache</u> (with SSL)' section. Click 'Continue'.

OpenEMR Setup Tool - Mozilla Firefox	
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📌 OpenEMR Setup Tool 🛛 🗙	
OpenEMR Setup Congratulations! OpenEMR is now installe	d
 If applicable, please restore secure /openemr/library/sqlconf.php, /open recommend changing file permission Access controls (php-GACL) are in admin->acl menu. Reading openemr/includes/config.p options to choose from including th There's much information and many openemr/Documentation. Many form To ensure a consistent look and fee The OpenEMR project home page at The OpenEMR forums can be found We pursue grants to help fund the fiestimate how many times this prog It would be awesome if you would et 	permissions on the four configuration files: /openemr/interface/globals.php, emr/gacl/gacl.ini.php, and /openemr/gacl/gacl.class.php files. In linux, ns with the 'chmod 644 filename' command. stalled for fine-grained security, and can be administered in OpenEMR's hp and openemr/interface/globals.php is a good idea. These files contain many
We recommend you print these instruction	ns for future reference.
The initial OpenEMR user is "admin" a	nd the password is "pass". You should change this password!
If you edited the PHP or Apache configura Apache server before following below Oper	tion files during this installation process, then we recommend you restart your EMR link.
Click here to start using OpenEMR.	
Done	

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

🕘 Login - Mozilla Firefox	
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📌 Login 🛛 🗙 🚽	•
Oper	<i>EMR</i>
OpenEMR v3.0.0.1	
T	Username: Password: Login Copyright Notice
Done	

Continue to below instructions.

```
#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.

#download Webmin
wget http://prdownloads.sourceforge.net/webadmin/webmin_1.470_all.deb

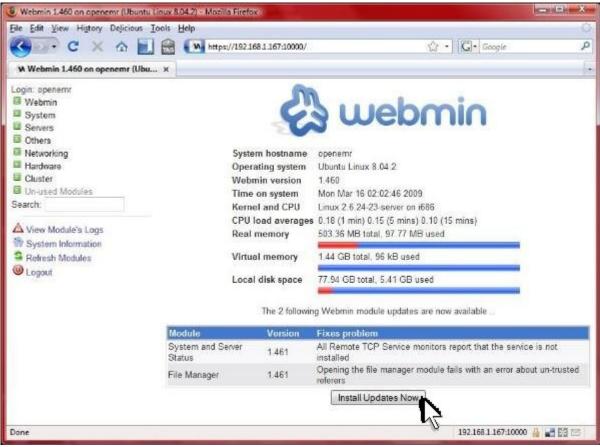
#install Webmin
sudo dpkg -i webmin_1.470_all.deb
-IGNORE the dependency errors (below command will install)
sudo apt-get install -f
-enter 'Y' to continue
rm -f webmin_1.470_all.deb

1. Now, open a webbrowser outside the appliance and point to (the APPLIANCE IP_ADDRESS was found by above <u>ifconfig</u> command): https://APPLIANCE_IP_ADDRESS:10000/

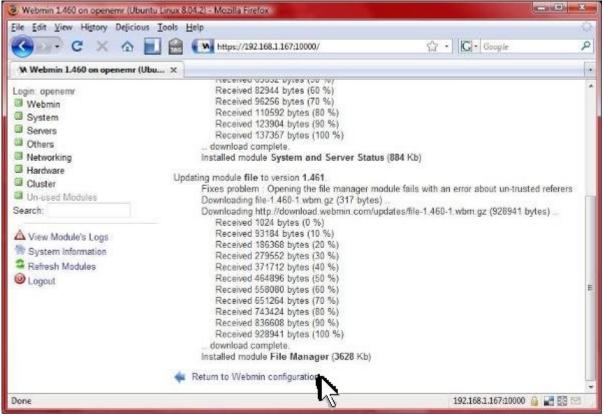
(If you are getting a certificate security error, then first follow the instructions in below appendix section '<u>Configuring client web browser for https</u>' to configure your web browser.)

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		Login Clear
Done		192.168.1.167:10000 🔒 🛃 🖾

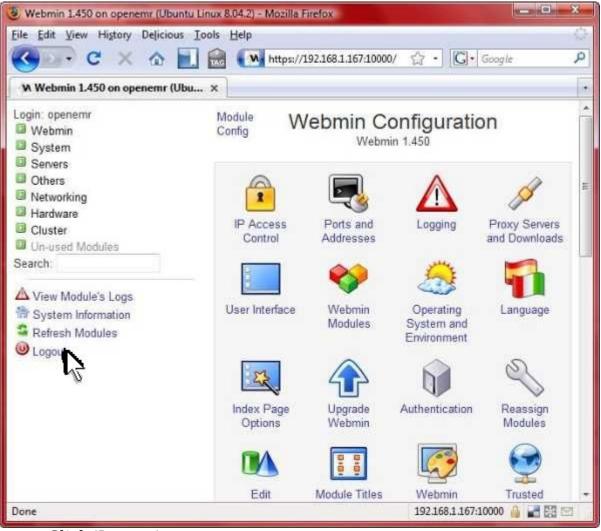
Login with user: 'openemr' and pass: 'openemrcool'.



Click 'Install Updates Now' button.



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



Click 'Logout'.

Configure Firewall

<u>Main TOC Link</u>

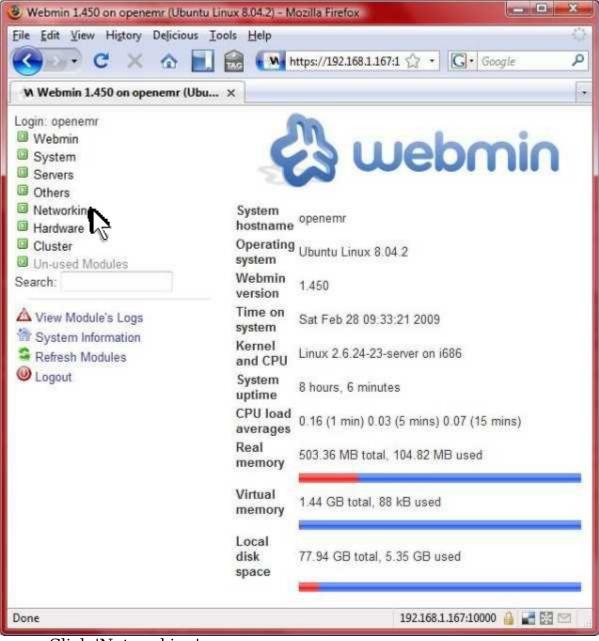
Chapter Index Link

- 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 <u>ifconfig</u> command): https://APPLIANCE_IP_ADDRESS:10000/

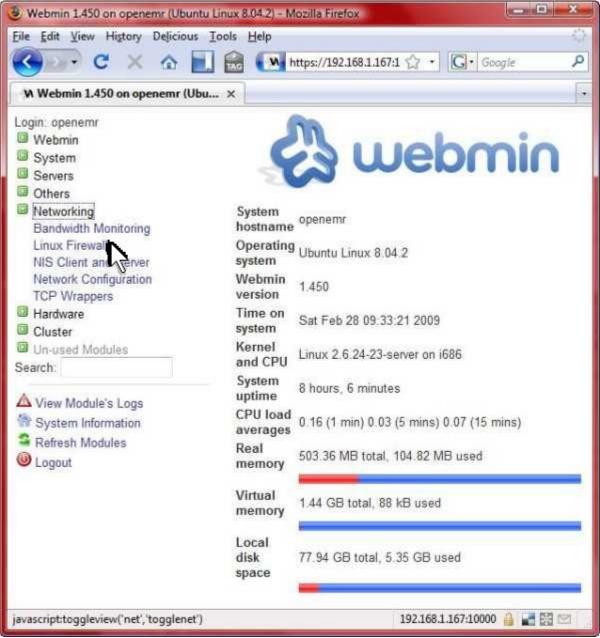
(If you are getting a certificate security error, then first follow the instructions in below appendix section '<u>Configuring client web browser for https</u>' to configure your web browser.)

Mozilia Firefox			
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		ebmin Inter a username and password to to the Webmin server on 192.168.1.167. Openemr C Remember login permanently?	
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Login with user:'openemr' and pass:'openemrcool'.



Click 'Networking'.



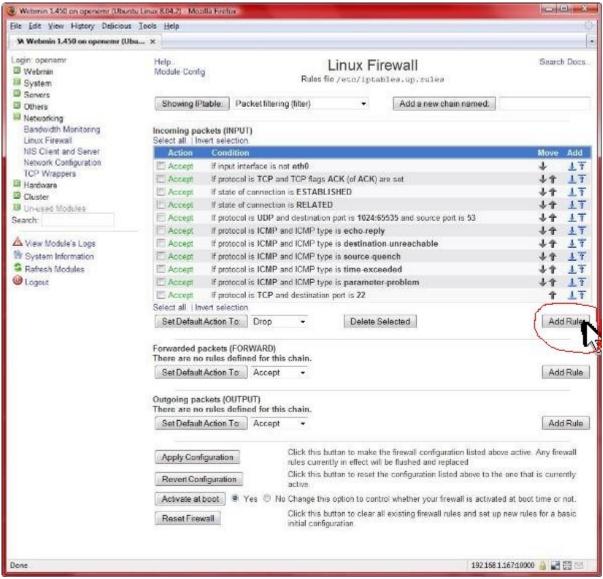
Click 'Linux Firewall'.

迭 Webmin 1.450 on openemr (Ubuntu Linux	x 8.04.2) - Mozilla Firefox	
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W Webmin 1.450 on openemr (Ubu ×		
Webmin System Servers Others	Help. Module Config Rules file /etc/iptables.up.rules No IPtables frewall has been setup yet on your system. Webmin can set one up for your stored in the save file /etc/iptables.up.rules, with the initial settings based your of firewall type below. Allow all traffic Do network address translation on external interface. Block all incoming connections on external interface: Block all except SSH and IDENT on external interface: Block all except SSH, IDENT, ping and high ports on interface: Block all except ports used for virtual hosting, on interface: Enable firewall Enable firewall at boot ime?	
Done	192.168.1.167:10000	

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.

ile Edit View History Deliciou	s Tools Help	
VA Webmin 1.450 on openemr (U		
agin: openemr		
9 Webmin	Help. Linux Firewall	Search Docs
9 System	Rules file /etc/iptables.up.rules	
Servers		
Others	Showing IPtable: Packet filtering (filter) - Add a new chain named:	
Networking		
Bandwidth Monitoring	Incoming packets (INPUT)	
Linux Firewall	Select all Invert selection.	
NIS Client and Server	Action Condition	Move Add
Network Configuration	C Accept If input interface is not eth0	+ 11
TCP Wrappers	Accept if protocol is TCP and TCP flags ACK (of ACK) are set	1t t4
0 Hardware 9 Cluster	Accept If state of connection is ESTABLISHED	44 LT
Un-used Modules	Accept If state of connection is RELATED	44 17
earch:	C Accept If protocol is UDP and destination port is 1024:65535 and source port is 53	++ +1
calcri.	C Accept If protocol is ICMP and ICMP type is echo-reply	14 13
View Module's Logs	CAccept If protocol is ICMP and ICMP type is destination-unreachable	44 11
System Information	C Accept If protocol is ICMP and ICMP type is source-quench	44 17
Refresh Modules	Contemporary of a second secon	44 11
Logout	Accept If protocol is ICMP and ICMP type is parameter-problem	44 11
Logoet	Accept If protocol is TCP and destination port is 22	44 11
	Accept 7 If protocol is TCP and destination port is auth	+ 11
	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.	Add Rule
	Set Default Action To: Accept 👻	Add Rule
	Click this button to make the firewall configuration listed above	a active. Any firewall
	Apply Configuration ules currently in effect will be flushed and replaced	
	Revert Configuration Click this button to reset the configuration listed above to the active	one that is currently
	Activate at boot 9 Yes 10 No Change this option to control whether your frewall is activate	d at boot time or not.
	Reset Firewall Click this button to clear all existing firewall rules and set up initial configuration.	new rules for a basic
		167:10000 🔒 🛃 🖽 📾

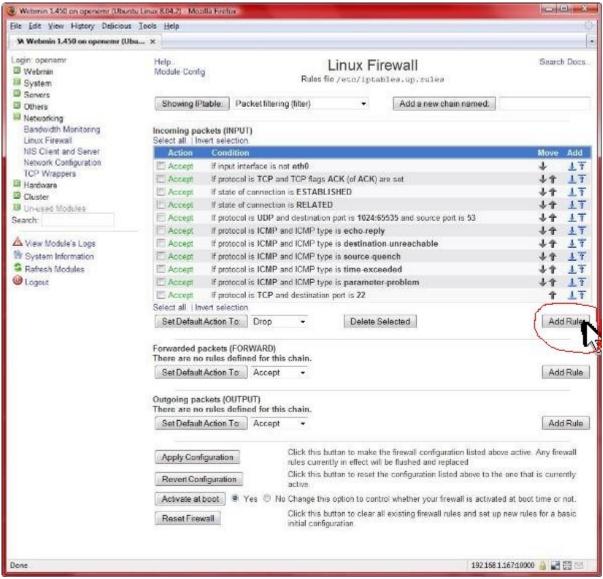
Select the line circled in red above. Then click the 'Delete Selected button.



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

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TCP Wrappers	Reject with ICMP type 🔹 1	relation of type is	прпетинеасная	Ne ····································		
Hardware Cluster	The action selected above will only be	carried out if all th	e conditions below	are met		
Un-used Modules	Condition details					
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		- 53				
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	Destination TCP or UDP port	Equals	7 🖲 Portis 443	7	© Port range	to
	Source and destination port(s)	<ignored></ignored>	-	-		
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	TCP option number is set	decests in the		C FIA C BOL	C. 349 C. 500	
	TCP option number is set	<ignored></ignored>				
	ICMP packet type	<ignored></ignored>	- any			
	Ethernet address	<ignored></ignored>				
	Packet flow rate	<ignored> +</ignored>	/ second			
	Packet burst rate	<ignored> +</ignored>				
	Connection states	<pre>dgnored></pre>	Related to exis	n (NEW) tion (ESTABUS ting (RELATED) connection (INV		
	Type of service	<ignored></ignored>	Minimize-Delay			
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	Additional parameters					
	Create					
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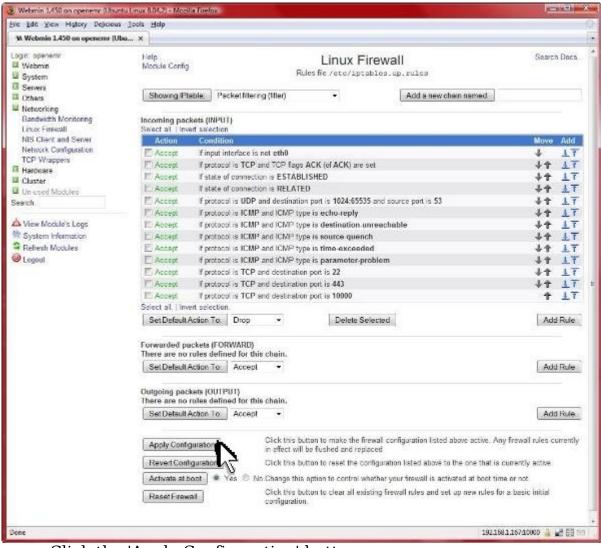
All places that require input are circled in red. Type 'SSL' in 'Rule comment'. Toggle on the 'Accept' in 'Action to take'. In 'Network protocol', select 'Equals'. In 'Destination TCP or UDP port', select 'Equals' and type '443' for 'Port(s). Then click the 'Create' button.



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

3 Webmin 1,450 on openemr (Uburi	ru (mux 8.04.2) - Mosilla Firefox		
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% Webmin 1.450 on openemr (Ub	и х		l.
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NIS Client and Server	0	kit chain : C Log packet : D Run chain	
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1 System Information	Incoming interface		
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	Destination TCP or UDP port	Equals) @ Port () 10000 / 0	Port range to
	Source and destination port(s)	dignored> •	
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	Additional parameters		
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	Return Vies list		
Done			19216811870000 🍶 🛃 🖽
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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.

Webmin 1,450 on openemr (Ubu	etu (inux 8.04.2) - Mesi	la Firefox				1000	•
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W Webmin 1.450 on openemr (l	Ли х						
ogin: openemir	Help.			Linux Fire	wall	Searc	h Docs
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System				Hurs are / as a / Append	ar.ap.rarea		
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Others	Concerning in a	aute. Packe	cure sign (supp)	-	Chad a new cital mained.		
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earch	Accept			on port is 1024:65535 and	a source port is 53	+T	+]
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Refresh Modules	E Accept		Sector Contraction	/pe is time-exceeded		+1	11
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1,2	III Accept		TCP and destinat	21.50.0.2.223		++	±1
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	E Accept	and the second se	TCP and destinat	on port is 10000		+	11
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			ARD) for this chain. ccept +			Ad	d Rule
	Low Lenger	Seand the	eresta -			1,000	di mie
		kets (OUTPUT rules defined) for this chain.				
	Set Dafault	Action To A	ccept +			Ad	d Rula
	Apply Confi	guration		otton to make the firewall e Rushed and replaced	configuration listed above active. Any fr	ewail rules curr	ently i
	RevertCom	guration			ration listed above to fite one that is curr	antly active	
	Activate at t	oot @ Yes			er your firewall is activated at boot time of		
	ResetFirew	al	Click this to configuration		frewall rules and set up new rules for a t	ossic initial	
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ne					192.168.1.1	6740000 🏭 🛃	開始

Click 'Logout'.

Finishing Touches On Appliance

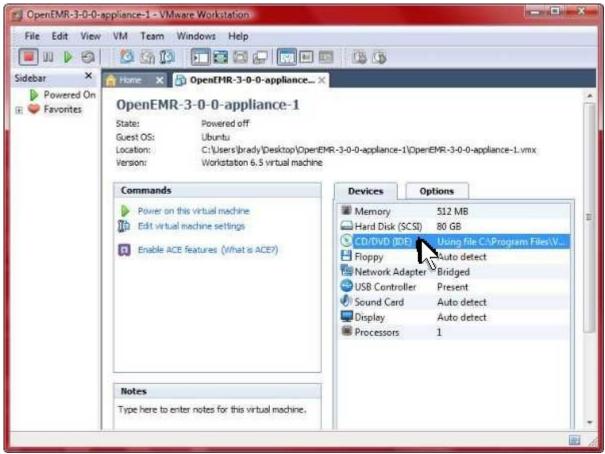
Main TOC Link

- 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.bradymd.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 autoset.

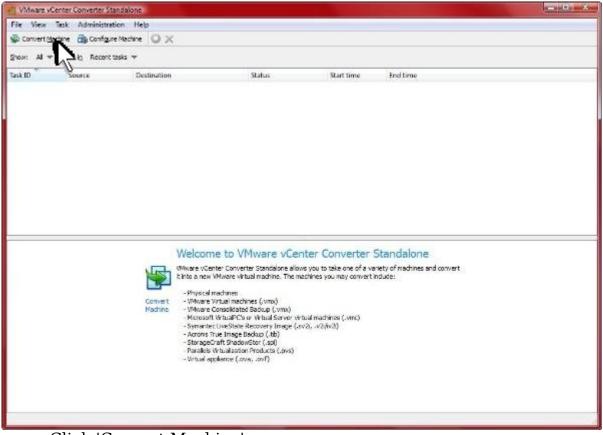


Double-click 'CD/DVD (IDE)'.

Device status			
Connected			
Connect at power on			
Connection			
Use physical drive:			
Auto detect	*]	
🗇 Use ISO i <u>m</u> age file:			
C:\Program Files\VM	∧are\VN -	Browse,	
	i sen con con con con con con con con con co		-
		Advanced	d
		6	

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).



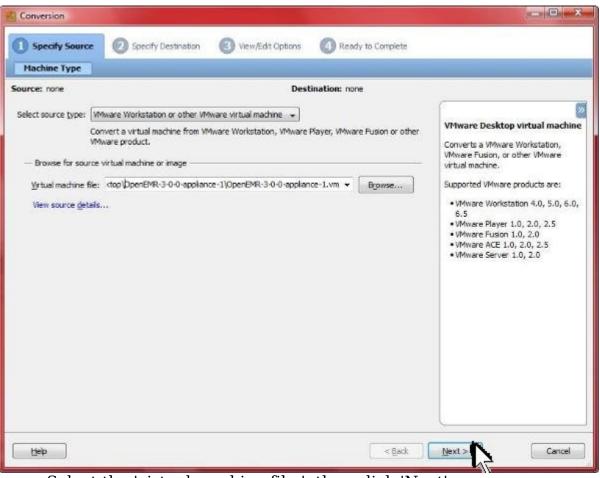
Click 'Convert Machine'.

Conversion	- D ×
Specify Source Specify Destination SView/Edit Options Ready to Complete Machine Type	ete
Source: C:Users'brady'Deplance-1/OpenEMR-3-0-0-appliance-1.vmx Destination: none Select source type: Powered-on machine Convert any powered-on physical or virtual machine Specify the powered-on machine A genote machine User name: User name: User name: User name: User name: Vew source getails	Powered-on machine Converts a running machine to a VMware virtual machine. The machine can be your local machine or a remote machine on the network. When converting a remote machine, provide the IP address or name, administrator or root credentials, and operating system on which to create the machine. Supported operating systems are: • Windows 2000, 2003, XP, Vista, 2008 • Red Hat Enterprise Linux 2.1, 3.0, 4.0, 5.0 • Red Hat Enterprise Linux 2.1, 3.0, 4.0, 5.0 • Red Hat Linux Advanced Server 2.1 • SUSE Linux Enterprise Server 8, 9, 10 • Ubuntu Linux 5.x, 6.x, 7.x, 8.x Linux sources should allow root logn through SSH.
	ack [Vext > Cancel

Click 'Select source type:' field.

Conversion		
Specify Source	Specify Destination 🔞 View/Edit Options 🚳 Ra	eady to Complete
Select source type: Power Power VMwar		Powered-on machine Converts a running machine to a Weware virtual machine. The machine can be your local machine or a remote machine on the network. When converting a remote machine, provide the IP address or name, administrator or root credentials, and operating system on which to create the machine. Supported operating systems are: • Windows 2000, 2003, XP, Vista, 2008 • Red Hat Enterprise Linux 2.1, 3.0, • Red Hat Enterprise Linux 2.1, 3.0, • Red Hat Linux Advanced Server 2.1 • SUSE Linux Enterprise Server 8, 9, 10 • Ubuntu Linux 5.x, 6.x, 7.x, 8.x Linux sources should allow root login through SSH.
<u>H</u> eb		<a>Back Cancel

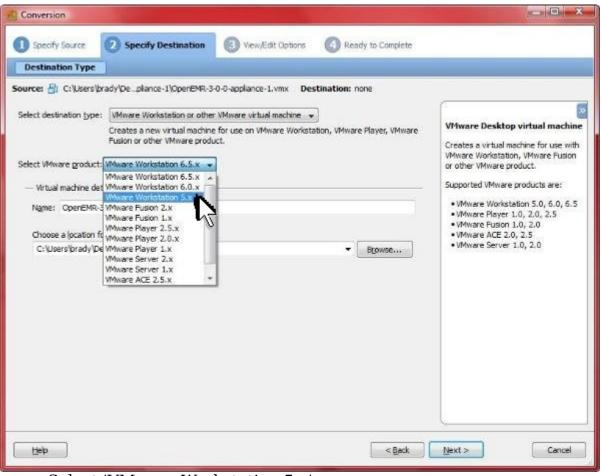
Select 'VMware workstation or other VMware virtual machine'.



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

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Specify Source Destination Type	Specify Destination	View/Edit Options	O Rez	ady to Complete	
The subscription of the second					
Select destination type:	Creates a new virtual machine Fusion or other VMware produ VMware Workstation 6.5.x	VMware virtual machine 🔹	3		VMware Desktop virtual machine Creates a virtual machine for use with VMware Workstation, VMware Fusion or other VMware product. Supported VMware products are: • VMware Workstation 5.0, 6.0, 6.5
	r the virtual machine:			Browse	VMware Player 1.0, 2.0, 2.5 VMware Fusion 1.0, 2.0 VMware ACE 2.0, 2.5 VMware Server 1.0, 2.0
<u>Heb</u>				< <u>B</u> ack	Next > Cancel

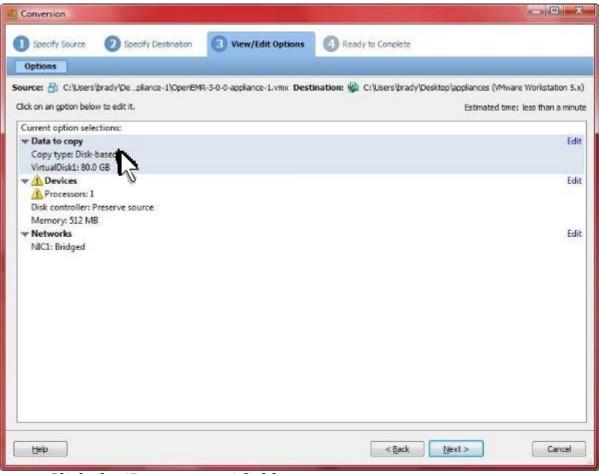
Click 'Select VMware product:' field.



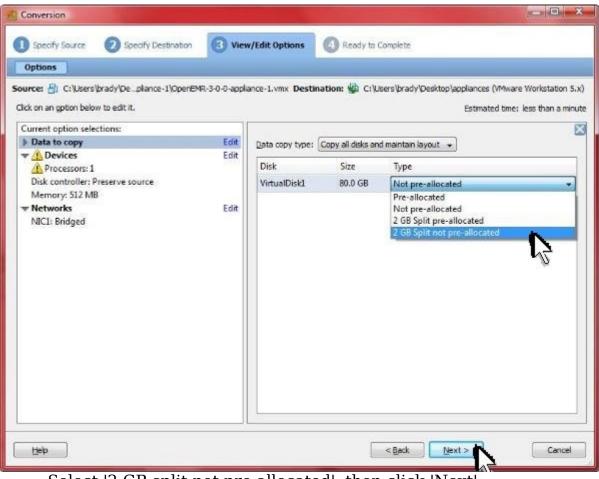
Select 'VMware Workstation 5.x'.

Conversion			_ D X
O Specify Source Destination Type	2 Specify Destination 🕑 Vew	Edit Options 🕜 Ready to C	implete
Source: 🔠 C:\Users\br	dy'Deplance-1\OpenEMR-3-0-0-appliance	e-1.vmx Destination: none	1
Select destination type: Select VMware product:	VMware Workstation or other VMware virb Creates a new virtual machine for use on V Fusion or other VMware product.	and an	184 Decktory interdention
— Virtual machine deta Name: OpenEMR-3	ls 0-0-appliance-1		Supported VMware products are: • VMware Workstation 5.0, 6.0, 6.5 • VMware Player 1.0, 2.0, 2.5 • VMware Fusion 1.0, 2.0
Choose a location fo C: \Users\brady\De		■ Brow	• VMware ACE 2.0, 2.5 • VMware Server 1.0, 2.0
Help			<back next=""> Cancel</back>

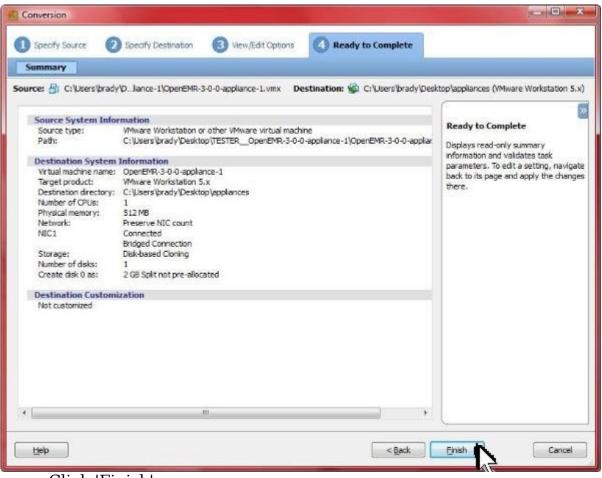
Click 'Next'.



Click the 'Data to copy' field.



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



Click 'Finish'.

Upgrading to OpenEMR 3.1.0

<u>Main TOC Link</u> <u>Chapter Index Link</u>

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, \$dbase) 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

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



Select '3.0.1' and click 'Upgrade Database'.

ne Lan Tren I	<u>s</u> tory <u>B</u> ookmarks <u>T</u> ools <u>H</u> elp		1
🜟 Login	🛪 🛛 📌 OpenEMR Database Upg		
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ALTER TABLE	orm_reviewofs CHANGE addison_syndrom addi	lison_syndrom varchar(5)	
ALTER TABLE	acl_phpgacl MODIFY value varchar(150) NOT	NULL	
ALTER TABLE	acl_acl_MODIFY section_value varchar(150) No	OT NULL default 'system'	
ALTER TABLE	acl_acl_sections MODIFY value varchar(150) N	NOT NULL	
ALTER TABLE	acl_aco MODIFY section_value varchar(150) N	NOT NULL default '0'	
ALTER TABLE	acl_aco MODIFY value varchar(150) NOT NU	πL	
ALTER TABLE	acl_aco_map MODIFY section_value varchar(1)	50) NOT NULL default '0'	
ALTER TABLE	acl_aco_map MODIFY value varchar(150) NO	TNULL	
ALTER TABLE	acl_aco_sections MODIFY value varchar(150) 1	NOT NULL	
ALTER TABLE	acl_aro MODIFY section_value varchar(150) N	IOT NULL default '0'	
ALTER TABLE	acl_aro MODIFY value varchar(150) NOT NUI	LL	
ALTER TABLE	acl aro map MODIFY section value varchar(14	50) NOT NULL default '0'	
ALTER TABLE	acl_aro_map MODIFY value varchar(150) NOT	TNULL	
	acl_aro_sections MODIFY value varchar(150) N		
	acl axo MODIFY section value varchar(150) N		
	acl_axo MODIFY value varchar(150) NOT NU		
	acl_axo_map MODIFY section_value varchar(1)		
	acl axo map MODIFY value varchar(150) NO		
	acl axo sections MODIFY value varchar(150) 1		
	acl aro groups MODIFY value varchar(150) N		
	acl axo groups MODIFY value varchar(150) N		

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 <u>ifconfig</u> command): https://APPLIANCE_IP_ADDRESS/openemr/acl_upgrade.php

e <u>E</u> dit <u>V</u> iew Hi <u>s</u> tory <u>B</u> i		
 Login ne Sensitivities object se 	× / http://172.16.0/acl_upgrade.php ×	
	as been successfully added.	
	as been successfully added.	
at raceional cojecto	soon and over decostantly actives,	
dding new objects		
	'Sensitivities' section already exist.	
	ensitivities' section already exist.	
	y' object in the 'Administration' section already exist.	
he 'ACL Administration'	object in the 'Administration' section already exist.	
he 'Price Discounting' ob	ject in the 'Accounting' section already exist.	
he Default List (write, ad	donly optional)' object in the 'Lists' section has been successfully added.	
he 'State List (write, adds	only optional)' object in the 'Lists' section has been successfully added.	
he 'Country List (write,a	ddonly optional)' object in the 'Lists' section has been successfully added.	
he 'Language List (write,	addonly optional)' object in the 'Lists' section has been successfully added.	
he 'Ethnicity-Race List (v	write, addonly optional)' object in the 'Lists' section has been successfully added.	
he 'Placeholder (Maintai	as empty ACLs)' object in the 'Placeholder' section has been successfully added.	
pgrading objects		
ne rugn object in the S	ensitivities' section has already been updated.	
dding ACLs(Access C	ontrol Lists) and groups	
he 'Physicians' group alre		
	donly' ACL has been successfully added.	
he 'Front Office' group a		
	ddonly' ACL has been successfully added.	
he 'Accounting' group al		
he 'Accounting' group 'a	idenly' ACL has been successfully added.	
pdating the ACLs(Acc	ese Control Lists)	
· · · · · · · · · · · · · · · · · · ·	the 'Administration' section is already found in the 'Administrators' group 'write' ACL.	
	ensitivities' section is already found in the 'Administrators' group 'write' ACL.	
	'Sensitivities' section is already found in the 'Administrators' group 'write' ACL.	
	ensitivities' section is already found in the 'Physicians' group 'write' ACL.	
	'Sensitivities' section is already found in the 'Physicians' group 'write' ACL.	
	'Sensitivities' section is already found in the 'Clinicians' group 'addonly' ACL.	
	object of the 'Administration' section is already found in the 'Administrators' group 'w	write' ACL.
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he 'Price Discounting' ob	ject of the 'Accounting' section is already found in the 'Accounting' group 'write' ACL.	
he 'Price Discounting' ob	ject of the 'Accounting' section is already found in the Physicians' group 'write' ACL.	
uccessfully placed the 'D	efault List (write, addonly optional)' object of the 'Lists' section into the 'Administrators'	group 'write' ACL.
	ate List (write, addonly optional)' object of the 'Lists' section into the 'Administrators' g	
	ountry List (write, addonly optional)' object of the 'Lists' section into the 'Administrator	
	anguage List (write, addonly optional)' object of the 'Lists' section into the 'Administrate	
uccessfully placed the 'E	hnicity-Race List (write, addonly optional)' object of the 'Lists' section into the 'Admini	strators' group 'write'
CL.		
LL DONE		

5. 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/sql_upgrade.php

Upgrade Database to UTF-8

<u>Main TOC Link</u> <u>Chapter Index Link</u>

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

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 straighforward). 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

<u>Main TOC Link</u> <u>Chapter Index Link</u>

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/openemt-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'):

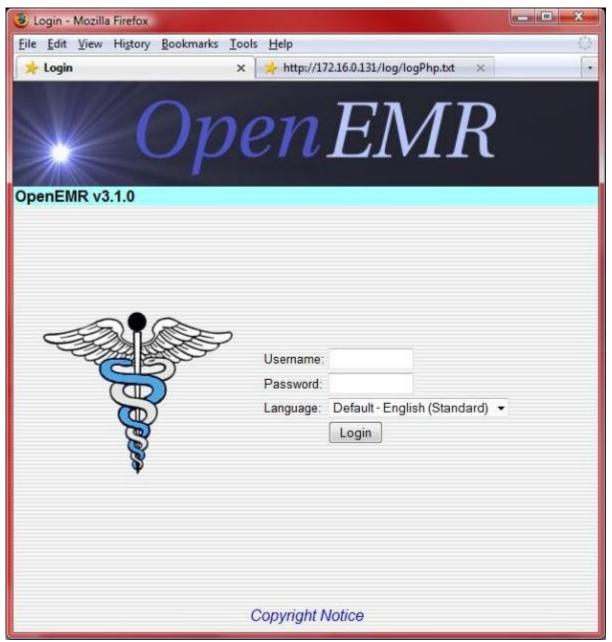
```
#Download Webmin 1.500
wget downloads.sourceforge.net/webadmin/webmin_1.500_all.deb
```

Upgrade Language Translation Tables (3.2.0)

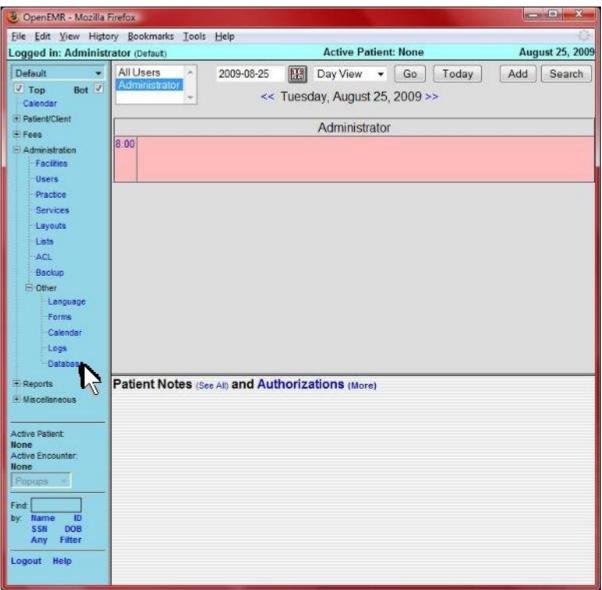
<u>Main TOC Link</u> <u>Chapter Index Link</u>

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.

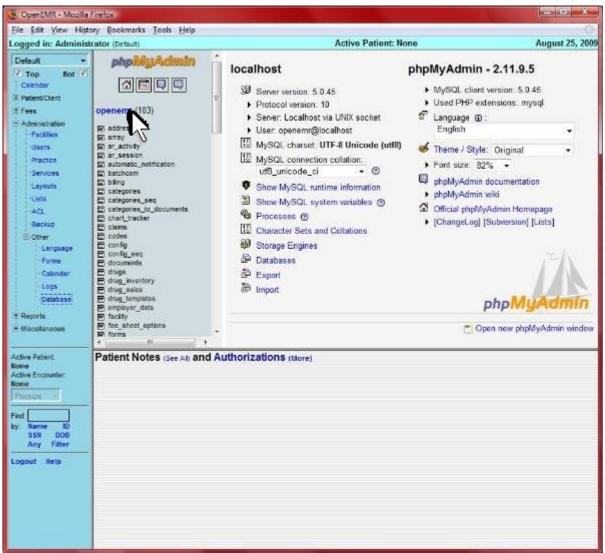
- Download translation sql tables from sourceforge to desktop (via 'File'->'Save Page as'): <u>http://openemr.cvs.sourceforge.net/viewvc/openemr/openemr/cont</u> <u>rib/util/language_translations/currentLanguage_utf8.sql?</u> <u>revision=1.19.2.3</u>
- 1. Login to OpenEMR:



Login.



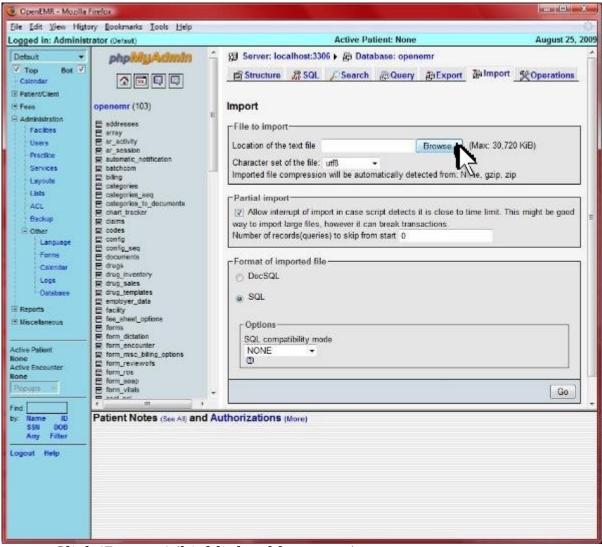
Click 'Administration'->'Other'->'Database' from left tree menu.



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

ogged in: Administ		Active Patient: None									ust 25, 20		
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- Practice Services	automatic_notification		21	ar_activity		300	ß	12	3÷	117	×	a	MyISAA
Layouts	E billing E categories			ar_session		(m)	ß	130	34	Πř.	×	0	MyISAM
Lists ACL	Categories_seq		73	automatic_notific	ation	10	ß	匪	3é	Ξĩ.	×	2	InnoD6
Backup	E chart_tracker E deine F codes		77	batchcom		1	6	12		Ť	×	a	MyISAM
H Other Language	Conto Conto Conto sec		71	billing		12	ß	世	7÷	11	×	a	MyISAJ
Forms	E documents E drugs		71	categories		Ξ	ES	127	The state	TT	×	5	MyISAM
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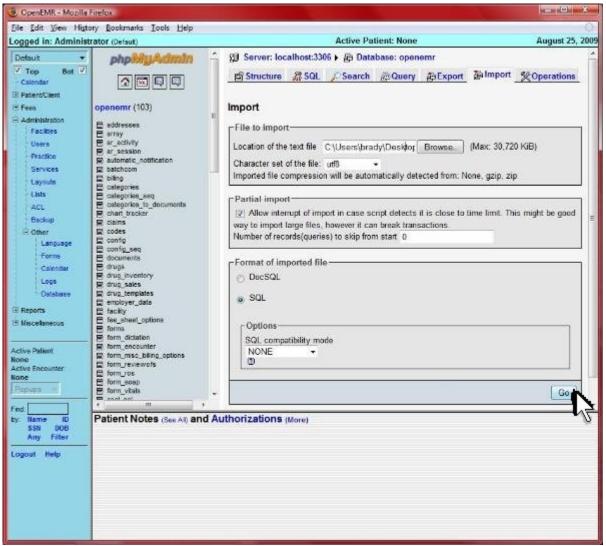
Click 'Import' near top right (highlighted by arrow).



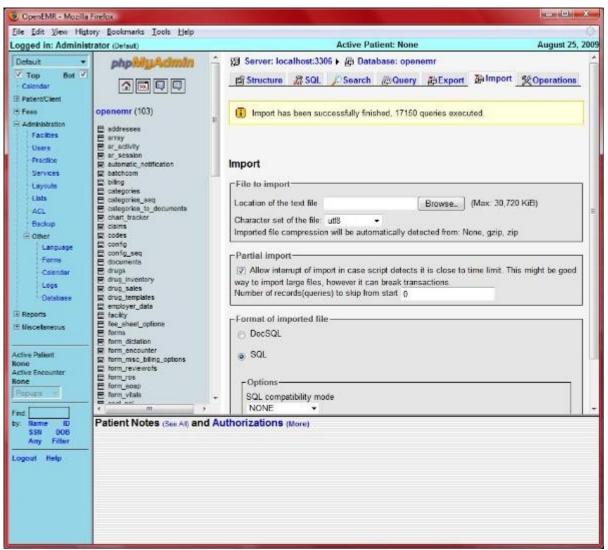
Click 'Browse' (highlighted by arrow).

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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.

Upgrading to OpenEMR 4.0.0

Main TOC Link

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

#Download OpenEMR 4.0.0
wget downloads.sourceforge.net/openemr/openemr_4.0.0-1_all.deb

#Upgrade to OpenEMR 4.0.0 sudo aptitude update sudo dpkg -i openemr_4.0.0-1_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.

Secure the New Documents Directory

Main TOC Link

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

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

sudo jed /etc/apache2/apache2.conf

#Modify below bolded entries near end of file: <Directory "/var/www/openemr/sites/default/documents"> order deny,allow Deny from all </Directory> <Directory "/var/www/openemr/sites/default/edi"> order deny,allow Deny from all </Directory> <Directory "/var/www/openemr/sites/default/era"> order deny,allow Deny from all </Directory> TEXT EDITOR SAVE AND EXIT

#restart apache
 sudo /etc/init.d/apache2 restart

Install a 4.0.0 Patch

Main TOC Link

Will install the first 4.0.0 patch which fixes a very annoying facilities administration bug.

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

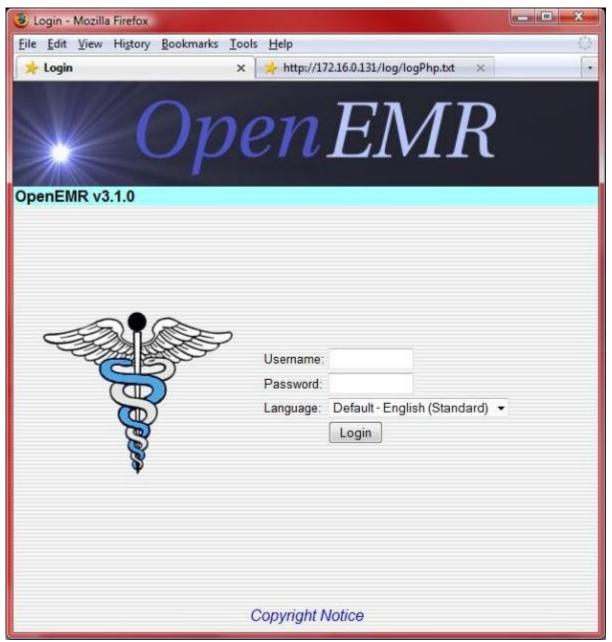
```
sudo unzip 4-0-0-Patch-1.zip
-enter 'A'
sudo rm 4-0-0-Patch-1.zip
```

Upgrade Language Translation Tables (4.0.0)

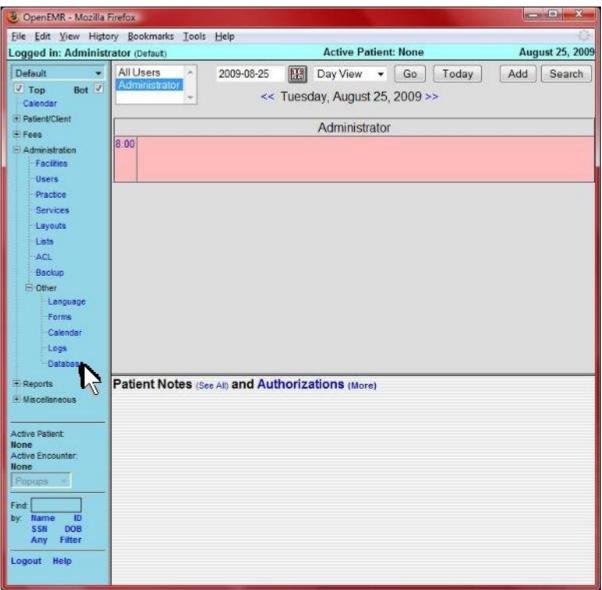
Main TOC Link

Here we will upgrade to the language translation tables published with OpenEMR 4.0.0 . This is very simple to do. Note, however, that this will delete all current local language translation tables.

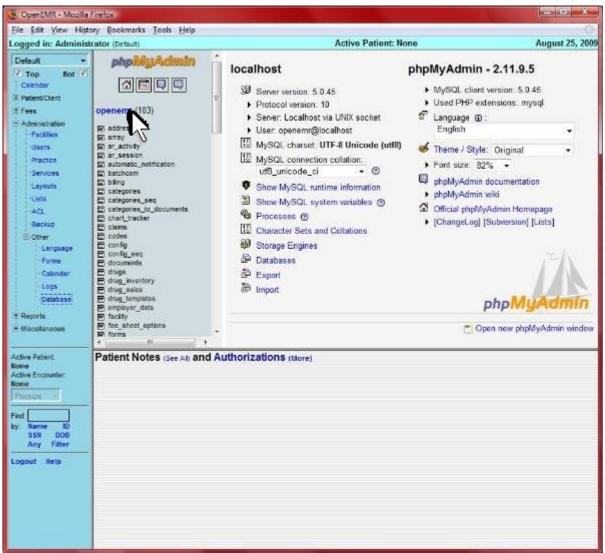
- Download translation sql tables from sourceforge to desktop (via 'File'->'Save Page as' 'currentLanguage_utf8.sql'): <u>http://openemr.git.sourceforge.net/git/gitweb.cgi?</u> p=openemr/openemr;a=blob_plain;f=contrib/util/language_transl ations/currentLanguage_utf8.sql;hb=5bb4c7beab1fe274147df9ccf 3b989adcb0ae04b
- 1. Login to OpenEMR:



Login.



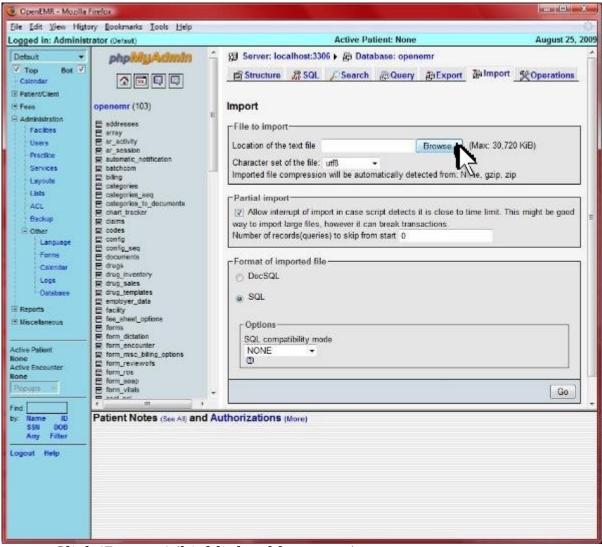
Click 'Administration'->'Other'->'Database' from left tree menu.



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

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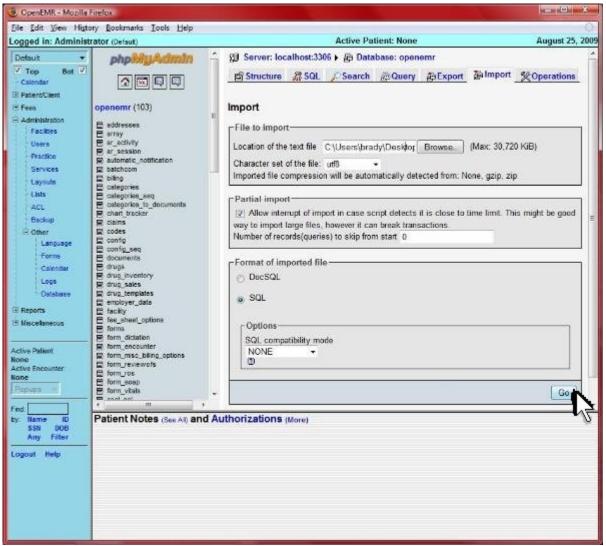
Click 'Import' near top right (highlighted by arrow).



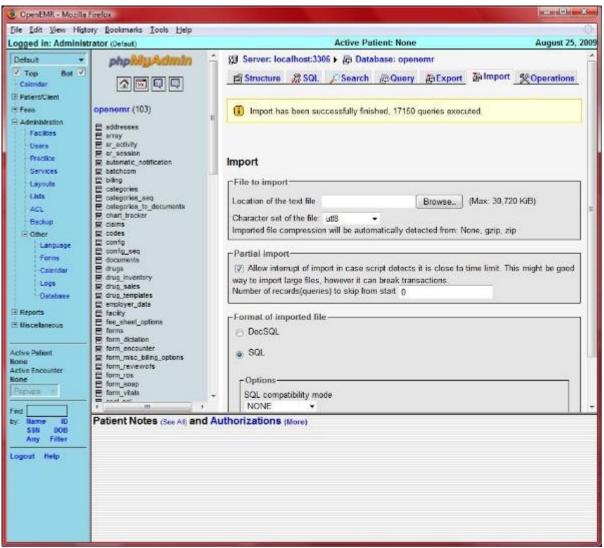
Click 'Browse' (highlighted by arrow).

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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 <u>Firefox and Internet Explorer</u>.

2. Firefox:



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

age Load Error - Mozilla	universitere	
Edit View History		
Page Load Error	×	
Sec	ure Connection Failed	
192.	168.1.167 uses an invalid security o	ertificate.
The	certificate is not trusted because it is	s self signed.
	certificate is not valid for any server	
(Erro	r code: sec_error_untrusted_issuer)	
	is could be a problem with the server's co uld be someone trying to impersonate the	
	you have connected to this server success ror may be temporary, and you can try ag	
	should not add an exception if you are using a do not trust completely or if you are not used er.	
G	et me out of here! Add Exception	
	4	
e		

Click the 'Add Exception...' button.

Server —	ttps://192.168.1.167/openen	nr/setup.php	Get Certificate
Certificate St		onsumoutoneidend seld entrite sel	
Serundate St	103		View
			<u></u>

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

Server —			
Location:	https://192.168.1.167/openemr/setup.p	php	et Certificate
Certificate	Status		
This site at	tempts to identify itself with invalid info	rmation.	View
Wrong Sit	e		<u> </u>
Certificate	belongs to a different site, which could	indicate an identity th	neft.
Unknown	Identity		
Certificate	is not trusted, because it hasn't been ve	rified by a recognized	authority.

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. <u>http://www.oemr.org/</u> (Main OpenEMR website with a good Wiki and a new forum)
- 2. <u>http://sourceforge.net/projects/openemr/</u> (Main OpenEMR sourceforge page)
- 3. <u>http://www.bradymd.com/appliance/</u> (OpenEMR Virtual Appliance Homepage)

Virtual Machine links:

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

C. Author Email and License/Disclaimer

Main TOC Link

Author: Brady Miller

Email: brady@sparmy.com

www.bradymd.com

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