# **OpenEMR 3.0.1 Appliance Manual**

Page Last modified: 04/11/09 03:06:44 AM

LINK TO MANUAL IN PDF FORMAT

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## Introduction

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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.

This version of the OpenEMR Appliance is markedly different than previous versions. OpenEMR is now installed on the Ubuntu 8.04 Server Edition operating system, and is a vast improvement over the previous Mandriva 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**

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Here are online demos of the OpenEMR 3.0.1 appliance:

### With the new frames look:

<u>http://OpenSourceEMR.com:2090/openemr/</u> (Main OpenEMR program)

### With the traditional look:

<u>http://OpenSourceEMR.com:2091/openemr/</u> (Main OpenEMR program)

These are fully functional demos, 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 '<u>Login Name and Password</u>' section). The OpenEMR users were added to demonstrate the access controls:

#### -Login name-----Password-----Description

- 1. admin\_\_\_\_\_pass\_\_\_\_Administrator
- 2. physician\_\_\_\_\_Physician(more access than clinician)
- 3. clinician\_\_\_\_\_Clinician(less access than physician)
- 4. accountant\_\_\_\_\_Accountant
- 5. receptionist \_\_\_\_\_ Front desk receptionist

Don't worry about breaking it, because it resets itself to its original state every day at 8:00AM(new frames appliance) and 9:00AM(traditional look appliance) Pacific Time. Have fun. (If demo is not working email me at brady@sparmy.com)

## **Download the OpenEMR Appliance and VMware Player**

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- 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: http://sourceforge.net/project/showfiles.php?group\_id=167832
    - 2. Torrent file link: <u>http://www.bradymd.com/OpenEMR-3-0-1-</u> <u>appliance-1.torrent</u> (If you need a torrent software client, then try: <u>http://azureus.sourceforge.net/</u>)

## **Start the OpenEMR Appliance**

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## Windows

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

| VMware Player VMware Player - | - ×  |
|-------------------------------|--|
| 🗐 vmware:                     | Commands   |
| <b>~</b> 7                    | Open<br>Browse for available virtual machines. When you select a<br>virtual machine, it opens in this VMware Player window.                                      |
|                               | Download a virtual appliance from VMware Virtual Appliance<br>Marketplace. You can then open it in VMware Player.  |
|                               | Recent Virtual Machines  |
|                               |  |
|                               | Featured Virtual Appliance   |
| VMware<br>Player              | Accellion File transfer virtual appliance<br>An on demand file transfer solution that is secure, economical,<br>and easy to use for end users and IT management. |
|                               | 🗊 <b>vm</b> ware   |

- 3. Start up the OpenEMR Appliance by opening the OpenEMR-3-0-1appliance-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

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

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### **Using OpenEMR Appliance**

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- 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                   |                                 | ×    |
|---|---------------------------------|------|
| Eile Edit View History Delicious Iools Help |                                 |      |
| 📌 Login 🛛 🗙 🚽                               |                                 | •    |
| рет Срет                                    | <i>iEMR</i>                     |      |
| OpenEMR v3.0.0.1                            |                                 |      |
|   | Username:<br>Password:<br>Login |      |
| Done  | Copyright Notice                | 19   |
| Done  |                                 | 1021 |

2. Webmin at https://Appliance\_IP\_address:10000/

| Mozilia Firefox                         |  |   |                             |
|---|--|---|-----------------------------|
| <u>File Edit View History Delicious</u> | <u>I</u> ools <u>H</u> elp                               |   | ()<br>()                    |
| Whttps://192.168.1.167:10000/           | ×  |   | •                           |
|   | Login to W<br>You must e<br>logi<br>Username<br>Password | Pebmin<br>Inter a username and password to<br>n to the Webmin server on<br>192.168.1.167.<br>Openemr<br>Openemr<br>Demomber Ionin |                             |
|   |  | 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**

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- 1. There is an excellent OpenEMR wiki at: http://www.oemr.org/modules/wiwimod/
- There is an excellent web site for learning how to use all of the components of OpenEMR at: http://www.oemr.org/modules/cjaycontent/index.php?id=2
- 3. You can ask question at the SourceForge OpenEMR forum at: <u>http://sourceforge.net/forum/?group\_id=60081</u>
- 4. The OpenEMR home page is here: <u>http://www.oemr.org/</u>
- 5. The most current version of this appliance user manual will hopefully always be available at: <u>http://www.bradymd.com/appliance</u>
- 6. There is also an older user manual in the /var/www/html/openemr/Documentation directory which can be helpful.

## **Helpful Tips**

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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**

#### <u>Main TOC Link</u>

- 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**

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### **OpenEMR Visual Layout Configuration**

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

| 🕘 OpenEMR - Mozilla Firefox        |                  |                |                    |            |   |
|------------------------------------|------------------|----------------|--------------------|------------|---|
| Eile Edit View History Delicious   | Icols Help       |                |                    |            | -0                                      |
| OpenEMR                            | ×                |                |                    |            |   |
| Name + Find Pable                  | nt New Patient   | Password Admin | Appts Reports      | Notes AB B | illing Home Logout                      |
| Logged in: Administrator (Default) |                  |                | Active Patient: No | ne         | March 1, 2009                           |
| All Users                          | 2009-03-         | 01 🔛 Day View  | + Go Today         |            | Add Search                              |
| Administrator                      |                  | Cunday Mara    | 4 2000             | ÷.         | 19 - 19 - 19 - 19 - 19 - 19 - 19 - 19 - |
| All Facilities                     | -                | < Sunday, Marc | 11,2009 22         |            |   |
|                                    |                  | Administrato   | r                  |            | 1                                       |
| 8:00 IN                            |                  |                |                    |            |   |
| 8.15                               |                  |                |                    |            |   |
| 8.30                               |                  |                |                    |            |   |
| 8:45                               |                  |                |                    |            |   |
| 9:00                               |                  |                |                    |            |   |
| 9.15                               |                  |                |                    |            |   |
| 9:30                               |                  |                |                    |            |   |
| 9:45                               |                  |                |                    |            |   |
| 10.00                              |                  |                |                    |            |   |
| 10:30                              |                  |                |                    |            |   |
| 10.45                              |                  |                |                    |            |   |
| 11:00                              |                  |                |                    |            |   |
| Patiant Notes and Au               | thorizations     | (Train 1)      |                    |            |   |
| Fauent Notes (See All) and Au      | monzauona (more) | (Find Patient) |                    |            | i i                                     |
|                                    |                  |                |                    |            |   |
|                                    |                  |                |                    |            |   |
|                                    |                  |                |                    |            |   |
|                                    |                  |                |                    |            |   |
|                                    |                  |                |                    |            |   |
|                                    |                  |                |                    |            |   |
|                                    |                  |                |                    |            |   |
|                                    |                  |                |                    |            |   |
| Done                               |                  |                |                    | 19         | 92.168.1.131 🔒 📑 🖾 📼                    |

Traditional view (also called old-style layout).

| 🗿 OpenEMR - Mozilla I   | Firefox   |   | - 0 - X       |
|---|---|---|---------------|
| File Edit View Histo  | ary Delicious <u>T</u> ools   | Help  | -02           |
| OpenEMR   | ×   |   |               |
| Logged in: Administ   | rator (Default)   | Active Patient: None  | March 1, 2009 |
| Calendar     Calendar     Password     Admin     Reports  | All Users   | 2009-03-01 Day View • Go Today Add All Facilities • << Sunday, March 1, 2009 >> Administrator | Search *      |
| C Ofe Notes C<br>Fax/Scan C<br>Addr Bk<br>C Chart Trk<br>Billing C<br>Superbill<br>Auth/Indes a<br>New Pr<br>Patient<br>History<br>Encounters<br>New Encor<br>Rx<br>Issues<br>Immunice<br>Documents | 8:00 IN<br>8:15<br>8:30<br>8:45<br>9:00<br>9:15<br>9:30<br>9:45<br>10:00<br>10:15<br>10:30<br>10:45 |   |               |
| Pt Nepon<br>Pt Notes<br>Transart  | 11.00<br>  44.47 <br>  4  | m   | 1             |
| Active Fatient:<br>None<br>Active Encounter   | Patient Notes   | See All) and Authorizations (More)  |               |
| Find D<br>SSN D08   |   |   |               |
| Done  |   | 1921681131  |               |

Frames with navigation by radio buttons.

| OpenEMR - Mozilla    | Firefox  |  | - 0 X         |
|----------------------|--|--|---------------|
| File Edit View Histo | ory Delicious <u>T</u> ool   | s <u>H</u> elp   | - Sh          |
| OpenEMR              | >  | c  |               |
| Logged in: Administ  | rator (Default)  | Active Patient: None   | March 1, 2009 |
| Default              | All Users<br>Administrator<br>8:00 IN<br>8:15<br>8:30<br>8:45<br>9:00<br>9:15<br>9:30<br>9:45<br>10:00<br>10:15<br>10:30<br>10:46<br>11:00<br>** | 2009-03-01 ID Day View • Go Today Add<br>All Facilities • << Sunday, March 1, 2009 >><br>Administrator<br>Administrator<br>(See All) and Authorizations (More) | Search =      |
| Done                 |  | 1921681131   |               |

Frames with navigation by a tree view menu.

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

#edit the file /var/www/openemr/interface/globals.php: sudo jed /var/www/openemr/interface/globals.php

#change below **bolded** number to desired layout :

- $\ensuremath{\textit{//}}$  Set this to 1 or 2 to activate support for the new frame layout.
- // 0 = Old-style layout
- // 1 = Navigation menu consists of pairs of radio buttons
- // 2 = Navigation menu is a tree view

//

\$GLOBALS['concurrent\_layout'] = 1;
TEXT EDITOR SAVE AND EXIT

## **Pharmacy Dispensary Module Configuration**

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

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

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

| Name 💌 Find Patient            | New Patient Password     | Administration Report | s Notes AB | Billing Home  | Logout   |
|--------------------------------|--------------------------|-----------------------|------------|---------------|----------|
| Logged in:Clinical Director () | Healthy Choice Clinic)   | ん                     | Sur        | n September 9 | 9th 2007 |
| All Users                      | 2007-09-09 🔢 Da          | y View 💌 Go 🛛 Toda    | У          | Add           | Search   |
| Clinical Director              | << Sunday, Se            | ptember 9, 2007 >>    |            |               |          |
| C Director                     |                          | T Sanders             |            | B Bush        |          |
| 8:00                           | 8:00                     |                       | 8          | 00            |          |
|                                |                          |                       |            |               |          |
|                                |                          |                       |            |               |          |
|                                |                          |                       |            |               |          |
|                                |                          |                       |            |               |          |
|                                |                          |                       |            |               |          |
|                                |                          |                       |            |               |          |
|                                |                          |                       |            |               |          |
| Patient Notes (See All) and Au | thorizations(More) (Find | J Patient)            |            |               |          |

Click 'Administration'

| Users & Groups Forms             | Practice         | Calendar    | Database      | BatchCom           | Drugs     | Language   | Logs     | Back |
|----------------------------------|------------------|-------------|---------------|--------------------|-----------|------------|----------|------|
| Logged in: Clinical Direc        | tor              |             |               |                    | 12-       | Sun Senter | nher 9th | 2007 |
| User & Group Administra          | ation            |             |               |                    | 201       | OpenEMR -  | Free     | -    |
| New Facility Information:        | Name:            |             | Phone:        |                    |           | _          |          |      |
|                                  |                  |             | Fax:          |                    |           |            |          |      |
|                                  | Address:         |             | City:         |                    |           |            |          |      |
|                                  | State:           |             | Zip Co        | de:                |           |            |          |      |
|                                  | Country:         |             | Federal       | EIN:               |           |            |          |      |
|                                  |                  |             |               | Add                |           |            |          |      |
|                                  |                  |             |               |                    |           |            |          |      |
| All second and second and second |                  |             |               |                    |           |            |          |      |
| Edit Facilities:                 | Main Clinic(Edit | )           |               |                    |           |            |          |      |
| New User:                        | Username:        |             |               | Password:          |           |            |          |      |
|                                  | Groupname:       | Healthy Cho | ice Clinic 💌  | Authorized:        | F         |            |          |      |
|                                  | First Name:      |             |               | Middle Name:       |           |            |          |      |
|                                  | Last Name:       |             |               | Default Facility:  | Main Clin | ic 📲       | -        |      |
|                                  | Federal Tax ID:  |             |               | Federal Drug ID:   |           |            | -        |      |
|                                  | UPIN:            | -           |               | See Authorizations | None      | <b>•</b>   |          | 20   |
|                                  | Additional Info: |             |               |                    | 1         |            |          |      |
|                                  |                  |             |               | -i                 |           |            |          |      |
|                                  |                  |             |               |                    |           |            |          |      |
|                                  |                  |             |               |                    |           |            |          |      |
|                                  |                  |             |               |                    |           |            |          |      |
|                                  | Add              |             |               |                    |           |            |          |      |
| New Group:                       | Groupname:       |             | Initial User: | admin 🗾            | Add       |            |          |      |

Click 'Drugs'.

| Users & Groups    | Forms      | Practice | Calendar | Database | BatchCom | Drugs | Language  | Logs    | Back   |
|-------------------|------------|----------|----------|----------|----------|-------|-----------|---------|--------|
| Logged in: Clinic | cal Direct | tor      |          |          |          |       | Sun Septe | mber 9t | h 2007 |
| Name              | NDC        | Form     | Size     | Unit     | Add      | Lot   | QOH       | Expires | 5      |
|                   |            |          |          | Add Drug |          |       |           |         |        |
|                   |            |          |          |          |          |       |           |         |        |
|                   |            |          |          | •1       |          |       |           |         |        |
|                   |            |          |          |          |          |       |           |         |        |

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

Quick OpenEMR screenshots of prescribing drugs with the dispensary:

| Summary                 | History         | Encounter        | Transaction          | Documents          | Report       | Close             | Popups     |
|-------------------------|-----------------|------------------|----------------------|--------------------|--------------|-------------------|------------|
| Robert Craw             | ford (ID-1 D    | OB-1974-02-12 An | e: 33 Home: 123-214  | -3543) Logged in   | as: Clinical | Director Enc      | ounterSun  |
| This Encount            | er for Robe     | rt Crawford:     | 0. 501 Home. 125 214 | 55 (5) <b>10 J</b> |              | category          |            |
| <b>Clinical Directo</b> | r SOAP          | Subject          | tive: itchy foot     |                    |              | Cuttegory         |            |
|                         |                 | Ohjecti          | ve: red foot         |                    |              |                   |            |
|                         |                 | Assess           | ment: athletes foot  |                    |              |                   |            |
|                         |                 | Plan: ar         | nti-fundal cream     |                    |              |                   |            |
|                         |                 | Fight di         | ia-rungar cream      |                    |              |                   |            |
| Clinical Directo        | r Patient Encou | unter            |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   | 10         |
| Coding                  |                 |                  |                      |                    | Billing (Mo  | re) Just          | ify        |
| Superbill               |                 |                  |                      |                    |              |                   |            |
| ICD9 Searcl             | n               |                  |                      |                    | [Receipt]    |                   |            |
| CPT4 Searc              | h               |                  |                      |                    | _            | 5466 Foot Rub     | 2200.00    |
| HCPCS Sear              | ch              |                  |                      |                    | CPT4         | (416.0)           |            |
| Copay                   |                 |                  |                      |                    | tota         | 1:2200.00         |            |
| Other                   |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    | ICD9 F 4     | 16.0 Prim Pulm Hy | pertension |
| Prescriptions           | 5               |                  |                      |                    |              |                   |            |
| List Prescrip           | tions           |                  |                      |                    |              |                   |            |
| Add Prescrip            | Ren             |                  |                      |                    |              |                   |            |
|                         | 13              |                  |                      |                    |              |                   |            |
|                         | 0               |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |
|                         |                 |                  |                      |                    |              |                   |            |

Click 'Add Prescription'.

| Summary             | History       | Encounter       | Transaction              | Documents        | Report       | Close        | Popu            | ps 🔻  |
|---------------------|---------------|-----------------|--------------------------|------------------|--------------|--------------|-----------------|-------|
| <b>Robert Crawf</b> | ord (ID: 1, D | OB: 1974-02-12, | Age: 33, Home: 123-214   | -3543) Logged ir | as: Clinical | Director     | Encounters      | Sun A |
| This Encounte       | er for Robe   | ert Crawford:   |                          |                  |              | catego       | ry              |       |
| Clinical Director   | SOAP          | Subj            | ective: itchy foot       |                  |              |              |                 |       |
|                     |               | Obje            | ctive: red foot          |                  |              |              |                 |       |
|                     |               | Asse            | ssment: athletes foot    |                  |              |              |                 |       |
|                     |               | Plan            | : anti-fungal cream      |                  |              |              |                 |       |
| Clinical Director   | Patient Enco  | unter           |                          |                  |              | -            |                 |       |
| Coding              |               | Starting Date   | September 💌 09 💌 2       | :007 💌           | Billing (Mo  | re)          | Justify         | *     |
| Superbill           |               | Provider        | Clinical Director        |                  | [Receipt]    |              |                 |       |
| CPT4 Search         |               | Drug            |                          | rug Lookun       | [[Keceipt]   | FAGE Foot    | Pub 2200.00     |       |
| HCPCS Searc         | h             | (in house)      | ar coloct from inventory |                  | CPT4         | (416.0)      | 1100 2200.00    |       |
| Copay               |               | In-modse        |                          |                  | tota         | 1:2200.00    |                 |       |
| Other               |               | Quantity        |                          | é                |              |              |                 |       |
| Prescriptions       |               | Medicine Units  | <u> </u>                 | 2                |              | 16.0 Prim Pu | Im Hypertension |       |
| List Prescript      | ons           | Take            | in 💌                     |                  |              |              |                 |       |
| Add Prescript       | tion          |                 | <b>_</b>                 |                  |              |              |                 |       |
|                     |               | Refills         | 00 💌 # of tablets: 0     |                  |              |              |                 |       |
|                     |               | Substitution    | substitution allowed     | 1                |              |              |                 |       |
|                     |               | 10000           |                          |                  |              |              |                 |       |
|                     |               | Notes           |                          |                  |              |              |                 |       |
|                     |               | Add to          | 1<br>                    |                  |              |              |                 |       |
|                     |               | Medication List | • No F Yes               |                  |              |              |                 |       |
|                     |               | Prescribe       | Prescribe and Dispens    | e units, \$      |              |              |                 |       |
|                     |               |                 |                          |                  |              |              |                 |       |

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

### **Printer Setup**

#### Main TOC Link

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

| fulltestOpenEMRMandrivaApplia   | ance OO                     |
|---|-----------------------------|
| Player CD-ROM CD-ROM BFloppy Ethernet Sound Adapter Hewlett-Packard hplaser                                     | rJet 3015                   |
| 🗇 Open Source Electronic Medical Record Software Review - Mozilla Firefox 🕂 🖓                                   |                             |
| <u>E</u> ile <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 ▼ ) → (C) (G) (D) http://bradymd.com/#0.0.0.0.0.Prir ▼ ⊡ Go (C,  |                             |
| 📌 Mandriva 📌 Mandriva Store 📌 Mandriva Club 📌 Mandriva Expert 📌 Mandriva Onlin                                  | ie CLPI »                   |
| Printer Setup   |                             |
| Quick Index Link.   |                             |
| 1. For USB printers will need to connect the device thru VM<br>menu->VM->Removable Devices->USB Devices. Your h | MWare<br>lost<br>after this |

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

window.



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

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

lynx http://localhost:631



Select 'Administration'.



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



Select the printer you want to add.

| DpenEMR-3-0-0                                  | 0-appliance-1 VMware Player  | ▼ Devices ▼  | - 🗆 >  |
|--|--|--|--|
| Add Printer                                    |  |  | Add Printer - CUPS 1.3.  |
| Home<br>Jobs                                   | Administration<br>Printers   | Classes  | Documentation/Help   |
| Add New Printe                                 | r  |  |  |
| Name:<br>Location:                             | Brother_MFC-7840W_U<br>(May contain any pr<br>Local Printer<br>(Human-readable loc | ISB_1<br>Fintable charac<br>cation such as   | cters except "/", "#", and space<br>"Lab 1")                                   |
| Description:                                   | (Human-readable des<br>Continue  | cription such  | as "HP LaserJet with Duplexer")  |
| The Common<br>of Apple In<br>reserved.         | UNIX Printing System<br>c. CUPS is copyright                                       | n, CUPS, and t<br>2007-2008 Ap   | he CUPS logo are trademarks<br>ple Inc. All rights                             |
| (Form submit b<br>Arrow keys:<br>H)elp O)ption | utton) Use right-arr<br>Up and Down to move<br>s P)rint G)o M)ain s                | r <mark>ow or <return< mark=""><br/>Right to fo<br/>creen Q)uit /</return<></mark> | > to submit.<br>llow a link; Left to go back.<br>=search [delete]=history list |
| To direct input to this virtue                 | al machine, press Ctrl+G,  |  | CHECE Vmware   |

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 *  | - 🗆 X      |
|--|------------|
| Package configuration  |            |
| Postfix Configuration<br>General type of mail configuration:<br>No configuration<br>Internet Site<br>Internet with smarthost<br>Satellite system<br>Local only |            |
| <pre> «Cancel&gt; </pre>   |            |
| To direct input to this visual machine, press Cirl+G   | 🔁 vmware 🥢 |

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

| without a doma<br>This name will<br>fully qualifie<br>Thus, if a mai<br>correct value | in name.<br>also be used by othe<br>d domain name (FQDN).<br>l address on the loca<br>for this option would | r programs. It should be the single,<br>1 host is foo@example.org, the<br>be example.org. |
|---|---|---|
| System mail na  | ne:   |   |
| domain.con  | <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/          | ×   |   |
|   | Login to V<br>You must<br>log<br>Username<br>Password | /ebmin         enter a username and password to         n to the Webmin server on         192.168.1.167.         openemr         ••••••••••         Remember login         permanently?         Login       Clear |
| Done                                    |   | 192.168.1.167:10000 👙 🛃 🖾   |

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  |   |  |
|--|---|---|--|
| File Edit View History Delicious Too   | ls Help   | 0   |  |
| W Webmin 1.450 on openemr (Ubu   | ×   |   |  |
| Login: openemr<br>Webmin<br>System<br>Servers<br>Others<br>Networking<br>Hardware<br>Cluster | Module Index<br>Help. Mail Aliases<br>Warning:<br>• when the first field is not empty, the default Postfix aliases-generation command is used to build<br>up the corresponding databases :<br>• else the Sendmail compatibility command "newaliases" is used, this will use the second field's<br>databases |   |  |
| Search   | Aliases Options   |   |  |
| View Module's Logs     System Information     Refresh Modules     Logout                     | Alias databases used<br>by the local delivery<br>agent<br>Alias databases built<br>by "newaliases"<br>command   | No map set     Map specifications     hash/etc/aliases     Map specifications     Map specifications     hash/etc/aliases |  |
|  | Save and Apply<br>Select all.   Invert selection  | n.   Create a new alias   |  |
|  | Alias from  | Alina to<br>Address openemr   |  |
|  | Select all A vert selection   | n  Create a new alias   |  |
|  | Edit Map Manually   | lick this button to manually edit the files from which this map is built.   |  |
| https://192168.1.141.10000/postfix/edit_alia   | s,cgiînum≈0   | 192.168.1.141.10000 🔒 📰 📼   |  |

Click 'root'.

| 🕑 Webmin 1.450 on openemr (Ubur  | ntu Linux 8.04.2) - Mozilla Firefox                   | - 0 X |
|----------------------------------|---|-------|
| Eile Edit View History Delicious | s Iools Help  | \$P-  |
| W Webmin 1.450 on openemr (U     | bu ×  |       |
| Login: openemr                   | Module Index Edit Alias                               |       |
| System Servers                   | Edit Alias  |       |
| Others                           | Description   |       |
| Networking                       | Address root  |       |
| 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                       |       |
| U Logout                         |   |       |
| Done                             | 192.168.1.141:10000                                   |       |

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) - Mozilia Firefox   |
|---|--|
| <u>File Edit View</u> Higtory Delicious   | Iools Help   |
| 🔇 🔊 C 🗙 🏠 📘   | B M https://192.168.1.144:1 ☆ • Google P   |
| W Webmin 1.450 on openemr (Ubu  | x  |
| Login: openemr<br>Webmin<br>System<br>Servers<br>Others<br>Networking<br>Hardware<br>Cluster<br>Un-used Modules<br>Search | Refresh Modules<br>Checking for usable Webmin modules<br>found 56 with installed applications, 48 not installed. |
| View Module's Logs<br>System Information<br>Refresh Modules<br>Uogout   |  |
| 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 <u>http://www.subnet-calculator.com/</u>. 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:  |
| Sateway IP Address:    |
| ONS server IP Address: |
| ONS 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                            |  | Q.              |
| W https://192.168.1.167:10000/          | x   |  | •               |
|   | Login to V<br>You must<br>log<br>Username<br>Password | Vebmin<br>enter a username and password to<br>in to the Webmin server on<br>192.168.1.167.<br>openemr<br><br>Remember login<br>permanently?<br>Login Clear |                 |
| Done                                    |   | 192.168.1.1  | .67:10000 🔒 📰 🖾 |

Login.



Click 'Networking'.



Click 'Network Configuration'.



Click 'Network Interfaces'.



Click the 'Activated at Boot' tab.



#### Click 'eth0'.

| 🕜 🖙 C 🗙 🏠   | https://172.16.0.113:10000/   |  |
|---|---|--|
| Login: openemr<br>Webmin  | Module Index Edit Bo  | ootup Interface  |
| System  | Boot Time Interface Parameters  |  |
| Conters Conters Conternation Content and Server Network Configuration TCP Wrappers Conternation TCP Wrappers Conternation | Name eth0<br>Address<br>source From DHCP<br>From BOOTP<br>Static IP<br>configuration Address<br>Netmas<br>Broadce | Activate at e Yes C No<br>boot? Virtual 0 (Add virtual<br>interface)<br>s<br>sk<br>ast |
| Search:<br>View Module's Logs<br>System Information<br>Refresh Modules<br>Ucgout  | Save Delete and Apply Delete  |  |

- Toggle on 'Static configuration'.
   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 openemr (Ubu  | ntu (inux 8.04.2) - Mozilia Firefox   |  | 14 11                          |                                      |      |
|---|---|--|--------------------------------|--------------------------------------|------|
| Elle Edit Yiew Higtory Deliciou   | s Iools Help  | 0.113:10000/   |                                | Ŵ • G• Google                        | م    |
| Login: openemr<br>Webmin<br>System<br>Servers<br>Others<br>Networking<br>Packwidth Montanna   | Module Index<br>Boot time configura<br>This section allows you<br>network settings are fu | Routing<br>tion Active configure<br>to configure the nuiter<br>lly re-applied. | g and Gate                     | Ways<br>when the system boots up, or | when |
| Linux Firewall<br>NIS Client and Server<br>Network Configuration<br>TCP Wrappers<br>Hardware<br>Cluster   | Default router  Mouting configuration Default routes Inter Local routes Inter             | in activated at boot 0<br>one (or from DHCP)<br>face Network<br>face Network   | me<br>Gatewäy<br>Notmask<br>Ne | eth0 +<br>Gateway<br>tmask           |      |
| Consistent Module's Search:  View Module's Logs View Module's Logs View Module's System Information Constraints C | Save Save Return to network   | 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                                 | is Iools Help            |   |                            | A. CONTRACTOR       |
|---|--------------------------|---|----------------------------|---------------------|
| C X D   | 🔝 😥 🚺 https://172.16.0.3 | 113:10000/  | ŵ • G•                     | ioogie 🖉            |
| v Webmin 1.450 on openemr (l                                    | lbu ×                    |   |                            |                     |
| Login: openemr<br>Webmin<br>System                              | Module Config            | Network Co  | onfiguration               | Search Docs         |
| Servers<br>Others<br>Networking                                 |                          | ø   | 6                          |                     |
| Bandwidth Monitoring<br>Lioux Firewall<br>NIS Client and Server | Network Interfaces       | Routing and Gateways  | Hostname and DNS<br>Client | Host Addresses      |
| Network Configuration<br>TCP Wrappers                           | Apply Configuration      | Apply Configuration Click this button to activate the current boot-time interface and routin they normally would be after a reboot. Warning - this may make your the state of |                            |                     |
| Cluster   |                          |   |                            |                     |
| Search:   |                          |   |                            |                     |
| View Module's Logs  |                          |   |                            |                     |
| System Information<br>Refresh Modules                           |                          |   |                            |                     |
| @ Logout  |                          |   |                            |                     |
| Jone  |                          |   | 172.16                     | 0.113-10000 🔒 🛃 🖽 🗌 |

Click 'Hostname and DNS client'.

| 3 Webmin 1.450 on openemr (Ubunt.  | Linux 8.04.2) - Mozilla Fin     | eftax.                      |                 |                | I DO IN NO.      |              |
|--|---------------------------------|-----------------------------|-----------------|----------------|------------------|--------------|
| Eile Edit Yiew Higtory Delicious   | Iools Help                      |                             |                 |                |                  | 0            |
| 🕜 · C × 🏠 📄  | https://17                      | 2.16.0.113:10000/           |                 |                | 🛱 • 🖸 · Google   | R            |
| Webmin 1.450 on openemr (Ubu   |                                 |                             |                 |                |                  |              |
| Login openentr<br>Webmin   | Module index                    | Hostr                       | iame a          | and DN         | NS Client        |              |
| Samars   | <b>DNS</b> Client Option        | 16                          |                 |                |                  |              |
| Others  Networking   | Hostname                        | openemr<br>v Update hostnar | ne in host :    | iddresses if   | changed?         |              |
| Bandwidth Monitoring<br>Linux Firewall<br>NIS Client and Server<br>Network Configuration<br>TCP Wrappers | Resolution order<br>DNS servers | Hasts 🔹                     | DNS<br>Search o | •<br>Iomains ( | None O Listed    |              |
| D Uniesod Modules<br>Search:   | Save                            |                             |                 |                |                  | 51.          |
| View Module's Logs System Information Refresh Modules Logout   | 🐐 Return to netwo               | irk 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   | •   |
|   | Login to W<br>You must e<br>logii<br>Username<br>Password | ebmin<br>Inter a username and password to<br>to the Webmin server on<br>192.168.1.167.<br>openemr<br>••••••••••<br>Remember login<br>permanently? |
| Done                                    |   | Login Clear   |

Login.



Click 'Hardware'.



Click 'System Time'.

| tie Edit View History Delicious 10   | ыз Деір   | 3 |
|--|---|---|
| W Webmin 1.450 on openemr (Ubu   | x   |   |
| Login: openemr<br>Webmin<br>System<br>Servers<br>Others<br>Networking<br>Hardware<br>SPLIB Boot Logder | Help.<br>Module<br>Config       System Time       Searc<br>Docs.         Set time       Change timezone       Time server sync         This form is for changing the system's current time, which is used by all running<br>processes. On operating systems that have a separate hardware clock, it can be<br>used to set that too. |   |
| Partitions on Local Disks<br>Printer Administration<br>System Time<br>Cluster<br>Un-used Modules       | System Time           Day         Date         Month         Year         Hour, minute and second           Monday         2         •         March         2009         •         03         •         07         •         29         •  |   |
| A View Module's Logs   | Rantware Time       Day     Date     Month     Year     Hour, minute and second       Monday     2     March     2009 *     03 *     07 *     29 *  | I |
| Logout   | 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/          | x   | •   |
|   | Login to W<br>You must e<br>logii<br>Username<br>Password | ebmin<br>Inter a username and password to<br>to the Webmin server on<br>192.168.1.167.<br>openemr<br>••••••••••<br>Remember login<br>permanently? |
| Done                                    |   | Login Clear   |

Login.

| Webmin 1.450 on openemr (U   | buntu Linux 8 | 04.7) - Mozilla Firefox  |  |   | 0.0     | ×      |
|--|---------------|--|--|---|---------|--------|
| Eile Edit Yiew History Delic   | ious Iools    | Help   |  |   |         | -Q-    |
| Login  | ×             | W Webmin 1.450 on op   | enemr (Ubu ×   | OpenEMR 2.8.3 Appliance Manual                            | ×       |        |
| Login: openemr<br>Webmin<br>Systen<br>Servers<br>Others<br>Networking<br>Hardware<br>Cluster<br>Un-used Modules<br>Search<br>View Module's Logs<br>System Information<br>Refresh Modules<br>Uogout | x             | W Webmin 1.450 on op<br>System<br>hostname<br>Operating<br>system<br>Webmin<br>version<br>Time on<br>system<br>Kernel and<br>CPU<br>System<br>uptime<br>CPU load<br>averages<br>Real | openemir<br>Ubuntu Linux 8.04<br>1.450<br>Mon Mar 2 02:37<br>Linux 2 6 24-23-5<br>2 hours, 0 minute<br>0.00 (1 min) 0.00 | 20 2009<br>erver on 1686.<br>s<br>(6 mins) 0.00 (15 mins) | X       | m (* * |
|  |               | Real<br>memory<br>Virtual<br>memory  | 503.36 MB total,<br>1.44 GB total, 0 b   | 73.87 MB used<br>nytes used                               |         |        |
|  |               | Local disk<br>space  | 77.94 GB total, 5  | 35 GB used  |         |        |
| Done   |               |  |  | 192,168.1 141:10000                                       | e ∎ 83: | 3      |

Click 'System'



Click 'Change Passwords'.



![](_page_60_Picture_1.jpeg)

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<br>You must e<br>log | /ebmin<br>enter a username and password to<br>n to the Webmin server on |
|   | Username                        | 192.168.1.167   |
|   | Password                        | •••••   |
|   |                                 | Remember login<br>permanently?  |
|   |                                 | Login Clear   |
| Done                                    |                                 | 192.168.1.167:10000 🔒 🛃 🖽 📨   |

Login.

![](_page_62_Picture_0.jpeg)

Click 'System'.

![](_page_63_Picture_0.jpeg)

Click 'Bootup and Shutdown'.

![](_page_64_Picture_0.jpeg)

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

#### **Desktop Installation**

#### Main TOC Link

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

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

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

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

## **Instructions for Building the OpenEMR Appliance**

Main TOC Link

#### LINK TO MANUAL IN PDF FORMAT

## Instructions for Building the OpenEMR Appliance Chapter Index

| Instructions for Building the OpenEMR Appliance |     |
|---|-----|
| Software  | 66  |
| Install the Ubuntu 8.04 Server Virtual Computer | 66  |
| Configure PHP and Apache (with SSL)             |     |
| Install OpenEMR 3.0.1                           |     |
| Install and Configure Webmin                    | 110 |
| Configure Firewall                              | 114 |
| Finishing Touches On Appliance                  | 125 |
|   |     |

#### Software

Main TOC Link

Chapter Index Link

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

#### **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 <a href="http://www.ubuntu.com/getubuntu/download">http://www.ubuntu.com/getubuntu/download</a> .
- 3. Ubuntu Server Edition 8.04 Appliance Installation with Vmware Workstation version 6.5:

![](_page_66_Picture_3.jpeg)

Click 'New Virtual Machine'.

![](_page_67_Picture_0.jpeg)

Select 'Typical', then Click 'Next'.

| A virtual machine<br>system. How will                     | ystem Installation<br>is like a physical computer; it needs an operating<br>you install the guest operating system? |
|---|---|
| Install from:   |   |
| 💮 Installer <u>d</u> isc:                                 |   |
| DVD RW Drive  | (E:) -  |
|   |   |
| Installer disc image<br>C: \Users\brady\D                 | file (iso):<br>esktop\ubuntu-8.04.2-server-i386.is ▼ Browse   |
| Installer disc image<br>C:\Users\brady\D<br>Ubuntu Server | file (iso):<br>esktop \ubuntu-8.04.2-server i 386.is ★ Browse<br>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 machine?  |        |
| <u>V</u> irtual machine name                               |        |
| OpenEMR-3-0-0-appliance-1                                  |        |
| Location   |        |
| C:\Users\brady\Desktop\OpenEMR-3-0-0-appliance-1           | Browse |
| The default location can be changed at Eult > Preferences, |        |
|  |        |

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

| ne virtual machine's hard disk is stored as one or more files on the host<br>omputer's physical disk. These file(s) start small and become larger as you<br>dd applications, files, and data to your virtual machine.<br>aximum disk <u>size</u> (GB): 80.0<br>ecommended size for Ubuntu: 8 GB<br>) Store virtual disk as a single file<br><u>Split virtual disk into 2 GB files</u> | How large do you war  | nt this disk to be?   |
|---|---|---|
| aximum disk <u>s</u> ize (GB): 80.0<br>ecommended size for Ubuntu: 8 GB<br>) St <u>o</u> re virtual disk as a single file<br>) <u>Split virtual disk into 2 GB files</u>  | he virtual machine's hard o<br>omputer's physical disk. Th<br>dd applications, files, and | disk is stored as one or more files on the host<br>hese file(s) start small and become larger as you<br>data to your virtual machine. |
| ecommended size for Ubuntu: 8 GB<br>) St <u>o</u> re virtual disk as a single file<br>) <u>Split virtual disk into 2 GB files</u>   | laximum disk <u>s</u> ize (GB):   | 80.0  |
| Store virtual disk as a single file<br>Split virtual disk into 2 GB files   | ecommended size for Ubu   | intu: 8 GB  |
| Split virtual disk into 2 GB files  | ) Store virtual disk as a si  | ngle file   |
|   | Split virtual disk into 2 G   | B files   |
| Splitting the disk makes it easier to move the virtual machine to another computer.   | Splitting the disk makes computer.  | it easier to move the virtual machine to another  |
| Pocket ACE size calculator  |   | top.  |
|   | Pocket ACE size calcula   | <u>tor</u>  |

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

| he virtual machine v | vill be created with the following settings: |      |
|----------------------|--|------|
| Version:             | Workstation 6.5                              |      |
| Operating Syst       | Ubuntu                                       | Ē    |
| Hard Disk:           | 80 GB, Split                                 |      |
| Memory:              | 512 MB                                       |      |
| Network Adapt        | NAT  |      |
| Other Devices:       | CD/DVD, Floppy, USB Controller, Sound Card   | 1000 |
| *                    |  |      |

Click 'Customize Hardware...'.

| Device  | Summary  | Specify the amount of memory allocated to this virtual   |
|---|--|--|
| Memory<br>New CD/DVD (IDE)<br>Floppy<br>USB Controller<br>Sound Card<br>Display<br>Processors | 512 MB<br>Using file C:\Us<br>Auto detect<br>NAT<br>Present<br>Auto detect<br>Auto detect<br>1 | Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.<br>Memory for this virtual machine:<br>512 → ME<br>512 → ME<br>5976<br>Subset OS recommended minimum: 64 MB<br>Recommended memory: 512 MB<br>Maximum recommended memory: 2888 MB<br>(Memory swapping may occur beyond this size) |

Click 'Network Adapter'.

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

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   |
| * [                  |  |
## 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   | X   |
|--|-----|
| File Edit View VM Team Windows Help  |     |
|  |     |
| Sidebar 🛛 🐣 🏠 Hone 🛪 🐻 OpenEMR-3-0-0-appliance 🛪   |     |
| Powered On   |     |
|  |     |
|  |     |
|  |     |
| [1] Configure the network  | 1   |
| Please enter the hostname for this system.   |     |
| The bostname is a single word that identifies your system to the   |     |
| network. If you don't know what your hostname should be, consult your  |     |
| you can make something up here.  |     |
| Hostname:  |     |
|  |     |
|  |     |
| <go back=""></go>  |     |
|  | 4   |
|  |     |
|  |     |
|  |     |
| <tab» (enter)="" (space)="" activates="" between="" buttons<="" items:="" moves="" selects:="" td=""><td></td></tab»>  |     |
| Click in the virtual screen to send keystrokes Click in the virtual scre | ) × |
| fo 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'.

| DpenEMR-3-0-0-   | appliance-1 - VMware Workst  | ation  | 1000                        |                | *      |
|--|--|--|-----------------------------|----------------|--------|
| File Edit View   | VM Team Windows  | Help   |                             |                |        |
| 🛢 🖩 🗊 🗐  |  |  |                             |                |        |
| Sidebar ×  | llane 🗙 📑 OpenEM   | R-3-0-0-appliance×   |                             |                |        |
| <ul> <li>Powered On</li> <li>OpenEMR</li> <li>Favorites</li> </ul> | <ul> <li>Hounting local</li> <li>Activating swa</li> <li>SMounting securit</li> </ul>                        | filesystems<br>pfile swap<br>yfs on /sys/kernel/security: done.  | 1<br>T                      | OK<br>OK       | 1      |
| personalS     myServer     myTorren     OpenEMB                    | <ul> <li>Coading HppHrnor</li> <li>Checking minin</li> <li>Skipping fireu</li> <li>Configuring ne</li> </ul> | profiles : done.<br>um space in /tmp<br>all: ufu (not enabled)<br>twork interfaces   | 1<br>1<br>1                 | OK<br>OK       | 1111   |
| C opención   | <ul> <li>Setting up con</li> <li>Starting system</li> <li>Starting kerne</li> <li>Starting OpenB</li> </ul>  | sole font and Keynap<br>n log daenon<br>l log daenon<br>SD Secure Shell server sshd  |                             | OK<br>OK<br>OK |        |
|  | <ul> <li>Starting MySQL</li> <li>Checking for c</li> <li>Starting Postf</li> </ul>                           | database server mysqld<br>orrupt, not cleanly closed and upgrade<br>is Bail Transport Agent mostfix                                      | needing tables.             | OK<br>OK       | i<br>1 |
|  | * Starting defer<br>* Starting perio<br>* Starting web s   | red execution scheduler atd<br>dic conmand scheduler crond<br>erver apache2  | t<br>t                      | OK<br>OK       | 1      |
|  | apache2: Could no  | t reliably determine the server's full   | y qualified domain          | ham            | e,     |
|  | * Running local  | boot scripts (/etc/rc.local)   | L<br>L                      | OK<br>OK       | 1      |
|  | Ubuntu 8.04.2 ubu<br>ubuntu login:   | ntu ttyl   |                             |                |        |
| e  | Oick in the virtual screen to send keystrokes  | Instal Ubuntu like you would on a physical computer. When you are<br>done and the operating system boots up, dick I Finished Installing, | I Finished Installing. Help |                | x      |
| To direct input to this  | VM, click inside or press Ctrl+  | 6.   |                             | 撞              | 6 /    |

login with user:openemr pass:openemrcool

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

#update and upgrade ubuntu
sudo apt-get update
sudo apt-get upgrade
-enter Y to continue

#Install the php command line, imagemagick, lynx client browser, and jed text editor.
sudo aptitude install jed lynx php5-cli imagemagick
-enter Y to continue

#get packages required by Vmware Tools **sudo aptitude install build-essential linux-headers-\$(uname -r)** *-enter Y to continue* 

5. Prepare to install Vmware Tools:



Click 'VM' in top menu, and select 'Install VMware Tools...'.

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

#mount the vmware drive
sudo mkdir /mnt/temp
sudo mount /dev/cdrom /mnt/temp

#get and unpackage vmware tools
cp /mnt/temp/VMwareTools-\*.tar.gz .
tar -zxpf VMwareTools-\*.tar.gz

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

#clean up files
cd ..
rm -f VMwareTools-\*.tar.gz
rm -fr vmware-tools-distrib

#unmount the vmware drive
sudo umount /dev/cdrom
sudo rm -fr /mnt/temp

## **Configure PHP and Apache (with SSL)**

Main TOC Link

Chapter Index Link

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

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

#edit following variables: short\_open\_tag = On max\_execution\_time = 60 max\_input\_time = 90 memory\_limit = 128M display\_errors = Off log\_errors = On register\_globals = Off post\_max\_size = 30M magic\_quotes\_gpc = On file\_uploads = On upload\_max\_filesize = 30M TEXT EDITOR SAVE AND EXIT

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

#Paste below to end of file: <Directory "/var/www/openemr/documents"> order deny,allow Deny from all </Directory> <Directory "/var/www/openemr/edi"> order deny,allow Deny from all </Directory> <Directory "/var/www/openemr/era"> order deny,allow Deny from all </Directory> TEXT EDITOR SAVE AND EXIT

#create an SSL certificate
sudo openssl req \$@ -new -x509 -days 1825 -nodes
 -out /etc/apache2/apache.pem -keyout
 /etc/apache2/apache.pem
-ok to just select all defaults

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

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

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

<VirtualHost \*:443>

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

#edit file /etc/apache2/mods-available/ssl.conf
sudo jed /etc/apache2/mods-available/ssl.conf

**#Uncomment** the following lines (near end of file): SSLCipherSuite HIGH:MEDIUM:!ADH SSLProtocol all -SSLv2 **TEXT EDITOR SAVE AND EXIT** 

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

## **Install OpenEMR 3.0.1**

Main TOC Link Chapter Index Link

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

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

**#**Put the OpenEMR program in its place sudo tar -pxzvf openemr-3.0.1.tar.gz sudo rm -f openemr-3.0.1.tar.gz sudo mv openemr-3.0.1 /var/www/openemr sudo chown -R root:root /var/www/openemr **#**Deal with file permissions sudo chmod 666 /var/www/openemr/library/sqlconf.php sudo chmod 666 /var/www/openemr/interface/globals.php sudo chmod 666 /var/www/openemr/gacl/gacl.ini.php sudo chmod 666 /var/www/openemr/gacl/gacl.class.php sudo chown -R www-data:www-data /var/www/openemr/documents sudo chown -R www-data:www-data /var/www/openemr/edi sudo chown -R www-data:www-data /var/www/openemr/era sudo chown -R www-data:www-data /var/www/openemr/custom/letter templates sudo chown -R www-data:www-data /var/www/openemr/gacl/admin/templates c sudo chown -R www-data:www-data /var/www/openemr/library/freeb sudo chown -R www-data:www-data /var/www/openemr/interface/main/calendar/modules/PostCa lendar/pntemplates/cache sudo chown -R www-data:www-data /var/www/openemr/interface/main/calendar/modules/PostCa lendar/pntemplates/compiled

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



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 Fi  | refox   |   |                                 |
|--|---|---|---------------------------------|
| Eile Edit View History Deliciou  | s <u>I</u> ools <u>H</u> elp  |   | 0                               |
| 📌 OpenEMR Setup Tool   | ×   |   | 2                               |
| OpenEMR Setup  |   |   |                                 |
| Welcome to OpenEMR. This utili<br>practice.  | ty will step you through the  | installation and configuration of OpenE   | EMR for your                    |
| <ul> <li>Before proceeding, be survival PHP configured webservity</li> <li>Detailed installation instruities</li> <li>If you are upgrading from a survival procession of the survival p</li></ul> | e that you have a properly in<br>er.<br>ctions can be found in the <u>l</u><br>previous version, do NOT u                       | nstalled and configured MySQL server a<br><u>NSTALL'</u> manual file.<br>use this script. Please read the 'Upgrad | available, and<br>ding' section |
| We will now ensure correct file ar   | iual file.<br>Id directory permissions bef  | fore starting installation:   |                                 |
| Ensuring following files are world-<br>'/var/www/html/openemr/library/so<br>'/var/www/html/openemr/interface.<br>'/var/www/html/openemr/gacl/gac<br>'/var/www/html/openemr/gacl/gac  | writable<br>Iconf.php' file is ready.<br>'globals.php' file is ready.<br>.ini.php' file is ready.<br>.class.php' file is ready. |   |                                 |
| Ensuring following directories hav<br>'/var/www/html/openemr/documer<br>'/var/www/html/openemr/edi' direc<br>'/var/www/html/openemr/era' direc<br>'/var/www/html/openemr/library/fre<br>'/var/www/html/openemr/library/fre   | e proper permissions<br>ts' directory is ready.<br>tory is ready.<br>tory is ready.<br>eb' directory is ready.                  | roady   |                                 |
| '/var/www/html/openemr/gacl/adm<br>'/var/www/html/openemr/interface.<br>'/var/www/html/openemr/interface.  | in/templates_c' directory is<br>'main/calendar/modules/Po:<br>'main/calendar/modules/Po:  | ready.<br>stCalendar/pntemplates/compiled dire<br>stCalendar/pntemplates/cache directo                            | ctory is ready.<br>ry is ready. |
| All required files and directories h   | ave been verified. Click to c   | ontinue installation.   |                                 |
| Done   |   |   |                                 |

Click 'Continue'.

| OpenEMR Setup Tool - Mozilla Firefox  |  |
|---|--|
| <u>Eile Edit View History Delicious Iools</u>   | <u>H</u> elp   |
| OpenEMR Setup Tool ×  |  |
| OpenEMR Setup   |  |
| Step 1  |  |
| Now I need to know whether you want me to<br>already created the database for me to use<br>supply the MySQL root password.<br>NOTE: clicking on "Continue" me<br>your system. Before you continue | to create the database on my own or if you have<br>For me to create the database, you will need to<br>ay delete or cause damage to data on<br>the 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'.

| 遵 OpenEMR Se                  | tup Tool - Mozilla Firefox                    |   |
|-------------------------------|---|---|
| <u>File Edit Viev</u>         | v History Delicious <u>T</u> ools <u>H</u> el | P distance of the second |
| OpenEMR                       | Setup Tool ×                                  | •   |
| OpenEMR                       | Setup   |   |
| Step 2                        |   |   |
| Now you need<br>'INSTALL' man | to supply the MySQL server info<br>ual file.  | ormation and path information. Detailed instructions on each item can be found in the   |
| MYSQL SE                      | RVER:   |   |
| Server Host:                  | localhost                                     | (If you run MySQL and Apache/PHP on the same computer, then leave this as<br>Tocalhost'. If they are on separate computers, then enter the IP address of the<br>computer running MySQL.)  |
| Server Port:                  | 3306  | (This is the MySQL port. The default port for MySQL is 3306.)   |
| Database<br>Name:             | openemr                                       | (This is the name of the OpenEMR database in MySQL - 'openemr' is the<br>recommended)   |
| Login Name:                   | openemr                                       | (This is the name of the OpenEMR login name in MySQL - 'openemr' is the<br>recommended)   |
| Password:                     |   | (This is the Login Password for when PHP accesses MySQL - it should be at least 8<br>characters long and composed of both numbers and letters)  |
| Name for<br>Root              | root  | (This is name for MySQL root account. For localhost, it is usually ok to leave it 'root'.)  |
| Root Pass:                    |   | (This is your MySQL root password. For localhost, it is usually ok to leave it blank.)  |
| User<br>Hostname:             | localhost                                     | (If you run Apache/PHP and MySQL on the same computer, then leave this as<br>localhost'. If they are on separate computers, then enter the IP address of the<br>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<br>Name:       | Administrator                                 | (This is the real name of the 'initial user'.)  |
| Initial Group:                | Default                                       | (This is the group that will be created for your users. This should be the name of your<br>practice.)   |
| OPENEMR                       | PATHS   |   |
| Absolute<br>Path:             | /var/www/openemr                              | (This is the full absolute directory path to openemr. The value here is automatically<br>created, and should not need to be modified. Do not worry about direction of slashes;<br>they will be automatically corrected.)  |
| Relative<br>HTML Path:        | /openemr                                      | (Set this to the relative html path, ie. what you would type into the web browser after<br>the server address to get to OpenEMR. For example, if you type 'http://127.0.0.1/clinic<br>/openemr/ to load OpenEMR, set this to '/clinic/openemr' without the trailing slash. Do<br>not worry about direction of slashes; they will be automatically corrected.)   |
| 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  | X    |
|---|------|
| <u>Eile Edit View History Delicious Tools H</u> elp   | -()- |
| A OpenEMR Setup Tool X  |      |
| OpenEMR Setup   |      |
| Step 3  |      |
| Configuring OpenEMR   |      |
| Connecting to MySQL Server OK.<br>Creating database OK.<br>Creating user with permissions for database OK.<br>Reconnecting as new user OK.<br>Opening database OK.<br>Creating initial tables OK<br>Adding Initial User OK<br>Writing SQL Configuration<br>Successfully wrote SQL configuration.<br>Writing OpenEMR webserver paths to config file<br>Successfully wrote OpenEMR webserver paths to config file |      |
| Next step will install and configure access controls (php-GACL).  |      |
| Continue  |      |
| Done  |      |

Click 'Continue'.

| OpenEMR Setup Tool - Mozilla Firefox   |      |
|--|------|
| Eile Edit View History Delicious Tools Help  | -{}- |
| CopenEMR Setup Tool ×  |      |
| OpenEMR Setup  |      |
| Step 4   |      |
| Installing and Configuring Access Controls (php-GACL)  |      |
| Writing php-GACL configuration settings to config files<br>Finished writing php-GACL configuration settings to config files. |      |
| Configuration:<br>driver = mysql,  |      |
| host = localhost,  |      |
| database = openemr,  |      |
| table prefix = gacl_Testing database connection  |      |
| Success! Connected to "mysql" database on "localhost".   |      |
| Success! Compatible database type "mysql" detected!  |      |
| Making sure database "openemr" exists  |      |
| Success! Good, database "openemr" already exists!<br>Success! First Step of Access Control Installation Successful!!         |      |
|  |      |
| OpenEMR ACL Setup  |      |
| Gave the 'admin' user (password is 'pass') administrator access.   |      |
| Done installing and configuring access controls (php-GACL).<br>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  | - O X                            |
|---|----------------------------------|
| <u>File Edit View History Delicious Tools H</u> elp   | -{}-                             |
| CopenEMR Setup Tool ×   |                                  |
| OpenEMR Setup   | n. s                             |
| 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 seed directories. This can be done by placing pertinent .htaccess files in these directories the below to end of your apache configuration file:<br><directory documents="" html="" openemr="" var="" www=""><br/>order deny,allow<br/>Deny from all<br/></directory><br><directory edi="" html="" openemr="" var="" www=""><br/>order deny,allow<br/>Deny from all<br/></directory><br><directory era="" html="" openemr="" var="" www=""><br/>order deny,allow<br/>Deny from all<br/></directory><br><directory era="" html="" openemr="" var="" www=""><br/>order deny,allow<br/>Deny from all<br/></directory> | rw<br>ure these<br>or by pasting |
| If you are having difficulty finding your apache configuration file, then refer to the <u>'INS</u> for suggestions.   | TALL' manual                     |
| 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   |   |
|--|---|
| Eile Edit View History Delicious Tools   | Help  |
| 📌 OpenEMR Setup Tool 🛛 🗙   |   |
| OpenEMR Setup  |   |
| Congratulations! OpenEMR is now installe   | d.  |
| <ul> <li>If applicable, please restore secure<br/>/openemr/library/sqlconf.php, /open<br/>recommend changing file permission<br/>Access controls (php-GACL) are in<br/>admin-&gt;acl menu.</li> <li>Reading openemr/includes/config.p<br/>options to choose from including th</li> <li>There's much information and many<br/>openemr/Documentation. Many forri</li> <li>To ensure a consistent look and fee<br/>The OpenEMR project home page a</li> <li>The OpenEMR forums can be found</li> <li>We pursue grants to help fund the f<br/>estimate how many times this prog<br/>It would be awesome if you would e<br/>details about your plans with this s<br/>it is very helpful.</li> </ul> | permissions on the four configuration files: /openemr/interface/globals.php,<br>emr/gacl/gacl.ini.php, and /openemr/gacl/gacl.class.php files. In linux,<br>ns with the 'chmod 644 filename' command.<br>stalled for fine-grained security, and can be administered in OpenEMR's<br>hp and openemr/interface/globals.php is a good idea. These files contain many<br>emes.<br>v extra tools bundled within the OpenEMR installation directory. Please refer to<br>ns and other useful scripts can be found at openemr/contrib.<br>el through out the application using Firefox is recommended.<br>and wiki can be found at http://www.oemr.org<br>d at http://sourceforge.net/projects/openemr<br>iuture development of OpenEMR. To apply for these grants, we need to<br>ram is installed and how many practices are evaluating or using this software.<br>mail us at drbowen@charter.net if you have installed this software. The more<br>oftware, the better, but even just sending us an email stating you just installed |
| 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<br>Apache server before following below Oper   | tion files during this installation process, then we recommend you restart your<br>IEMR link.   |
| Click here to start using OpenEMR.   |   |
| Done   |   |

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

| 🕘 Login - Mozilla Firefox                   |                                       |
|---|---------------------------------------|
| Eile Edit Yiew History Delicious Iools Help | · · · · · · · · · · · · · · · · · · · |
| 📌 Login 🛛 🗙 📃                               | •                                     |
| Oper  | 1EMR                                  |
| OpenEMR v3.0.0.1                            |                                       |
|   | Username:<br>Password:<br>Login       |
| Done  |                                       |

Continue to below instructions.

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

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

### **Install and Configure Webmin**

### Main TOC Link

#### Chapter Index Link

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

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

#download Webmin
wget http://prdownloads.sourceforge.net/webadmin/webmin\_1.470\_all.deb

#install Webmin
sudo dpkg -i webmin\_1.470\_all.deb
-IGNORE the dependency errors (below command will install)
sudo apt-get install -f
-enter 'Y' to continue
rm -f webmin\_1.460\_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.)

| Mozilia Firefox                         |   |   |
|---|---|---|
| <u>File Edit View History Delicious</u> | <u>T</u> ools <u>H</u> elp                                  |   |
| W https://192.168.1.167:10000/          | ×   |   |
|   | Login to We<br>You must er<br>login<br>Username<br>Password | ebmin<br>Inter a username and password to<br>to the Webmin server on<br>192.168.1.167.<br>Openemr<br>••••••••••<br>Remember login<br>permanently? |
|   |   | Login Clear   |
| Done                                    |   | 192.168.1.167:10000 실 🛃 🖾   |

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                         |  |   |                           |
|---|--|---|---------------------------|
| <u>File Edit View History Delicious</u> | <u>I</u> ools <u>H</u> elp                                 |   |                           |
| W https://192.168.1.167:10000/          | x  |   | •                         |
|   | Login to W<br>You must en<br>login<br>Username<br>Password | ebmin<br>Inter a username and password to<br>to the Webmin server on<br>192.168.1.167.<br>Openemr<br>C Remember login<br>permanently? |                           |
|   |  | Login Clear   |                           |
| Done                                    |  |   | 192.168.1.167:10000 🔒 🛃 🖾 |

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



Click 'Networking'.



Click 'Linux Firewall'.

| 送 Webmin 1.450 on openemic (Ubuntu Lin  | ox 8.04.2) ~ Mozilia  | hitefax:  |                          |   |
|---|---|---|--------------------------|---|
| Eile Edit View Higtory Delicious Ioo  | is <u>H</u> elp   |   |                          |   |
| W Webmin 1.450 on openemr (Ubu  | < ]   |   |                          |   |
| Login: openemr<br>Webmin<br>System<br>Servers<br>Others<br>Networking<br>Bandwidth Monitoring<br>Linux Firewall<br>NIS Client and Server<br>Network Configuration<br>TCP Wrappers<br>Hardware<br>Cluster<br>Un-used Modules<br>Search:<br>View Module's Logs<br>System Information<br>Refresh Modules<br>Uogout | Heip<br>Module<br>Config<br>No IPtables firew<br>stored in the sav<br>of firewall type be<br>Allow all<br>Do netw<br>Diock al<br>Block al<br>Block al<br>Block al | Linux Firewall<br>Rules file /etc/iptables.up.r<br>will has been setup yet on your system. Webmi<br>e file /etc/iptables.up.rules. with the in<br>elow.<br>traffic<br>ork address translation on external interface.<br>I incoming connections on external interface.<br>I except SSH and IDENT on external interface.<br>Except SSH and IDENT on external interface.<br>Except SSH, IDENT, ping and high ports on in<br>Eaxcept ports used for virtual hosting, on interfa | eth0 •<br>terface:<br>a? | Search<br>Docs.<br>ne up for you, to be<br>s based your selection |
| Done  |   |   | 192.168.1.16             | 7:10060 🔒 📑 🔛 🖂   |

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

| Webmin 1,450 on openemr (Ubunt                         | u Linux 8 (4.2) - Mozilla Evelov   |  |
|--|--|--|
| Eile Edit View History Delicious                       | Iools Help   | <i>\$</i>                                  |
| M Webmin 1.450 on openemr (Ub                          | u X  | 1  |
| Login: openemm<br>12 Webmin<br>12 System               | Help. Linux Firewall<br>Module Config Rules fie /etc/iptables.up.rules   | Search Docs                                |
| D Servers  | Showing (Ptable Packet filtering (filter) + Add a new chain named  |  |
| Networking     Bandwidth Monitoring     Linux Firewall | Incoming packets (INPUT)<br>Select all Unvert selection  |  |
| NIS Client and Server                                  | Action Condition   | Move Add                                   |
| Network Configuration                                  | C Accept If input interface is not eth0  | 4 17                                       |
| TCP Wrappers   | Accept if protocol is TCP and TCP flags ACK (of ACK) are set   | 14 11                                      |
| B Andware  | Accept If state of connection is ESTABLISHED   | 1+ IT                                      |
| D User   | Accept If state of connection is RELATED   | 14 17                                      |
| Search   | Accept If protocol is UDP and destination port is 1024:65535 and source port is 53   | 14 17                                      |
| Genen  | Accept If protocol is ICMP and ICMP type is echo-reply   | 14 17                                      |
| A View Module's Logs                                   | Accept If protocol is ICMP and ICMP type is destination-unreachable  | 11 17                                      |
| The System Information                                 | Accept If protocol is ICMP and ICMP type is source-ovench  | 14 17                                      |
| S Refresh Modules                                      | Accept If protocol is ICMP and ICMP type is time-exceeded  | 14 11                                      |
| () Looger  | Accent II protocol is ICMP and ICMP type is parameter problem  | 14 17                                      |
| - coget  | Access I protocol is TCP and destination and is 22   | 14 17                                      |
|  | Access 1 If protocol is TCP and destination port is auth   | 4 17                                       |
|  | Select all, Hoved selection.   | • + •                                      |
|  | Set Default Action To: Doop * Default Selected   | Add Rule                                   |
|  |  | - Teter / Marce                            |
|  | Forwarded packets (FORWARD) There are no rules defined for this chain.   |  |
|  | Set Default Action To: Accept 👻  | Add Rule                                   |
|  | Outgoing packets (OUTPUT)<br>There are no rules defined for this chain.  |  |
|  | Set Default Action To: Accept -  | Add Rule                                   |
|  | Apply Configuration Click this button to make the firewall configuration listed above a<br>nules currently in effect will be flushed and replaced<br>Click this button to reset the configuration listed above to the on | ctive. Any firewall<br>e that is currently |
|  | active Activate at boot  Yes  No Change this option to control whether your frewall is activated a   | t boot time or not.                        |
|  | Reset Firewall Click this button to clear all existing firewall rules and set up new initial configuration.  | w rules for a basic                        |
| Done   | 1921581157   | 40000 🔒 🖃 🕾 🕬                              |

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



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

| Webmin 1/30 on openemy (Ubun<br>Elle Edit View History Delicious                 | s Jools Help  |          |
|--|---|----------|
| W. Webmin 1.450 on openemr (U  | lbu x   | R        |
| Login: openemir<br>Webmin  | Module Index Add Rule   |          |
| U System   | Chain and action details  | - 7      |
| Cebers   | Det al chale income anchale (NOUI)  |          |
| Networking     Bandwidth Monitoring     Linux Firewall     NIS Client and Server | Rule comment SSL<br>Action to take O Do nothing & Accept O Drop O Reject O Userspace<br>O Exit chain O Log packet O Ronchain                          |          |
| Network Configuration<br>TCP Wrappers  | Reject with ICMP type   |          |
| Cluster  | The action selected above will only be carried out if all the conditions below are met.   |          |
| Un-used Modules  | Condition details   |          |
| Search.  | Source address or network signmeds -  |          |
| A construction of the second   |   |          |
| View Module's Logs   | Destination address or network dignoreds •  |          |
| R System Information   | Incoming interface <ignored> • •</ignored>  |          |
| Refresh Modules  | Outgoing interface 4gnored> • •   |          |
| Logout   | Fragmentation 🖉 lanced 🔿 is fragmented 🗇 is not fragmented  |          |
|  | Network protocol  |          |
|  | Source TCP or UDP part dignared> •  Port(s) O Port range to   |          |
|  | Destination TCP or UDP port Equals 7 Port/s 443 © Port range to   |          |
|  | Source and destination port(s)  |          |
|  | TCP flags set   |          |
|  | TCP option number is set  |          |
|  | ICMP packet type  |          |
|  | Ethernet address dignored> •  |          |
|  | Packet flow rate  |          |
|  | Packet burst rate   |          |
|  | Connection states dgnored>  Vew connection (NEW) Existing connection (STABLISHED) Related to existing (RELATED) Not part of any connection (NVALID) + |          |
|  | Type of service <li>dignorad&gt; - Minimize-Dalay (0x10) -</li>   |          |
|  | Additional IPtables modules   |          |
|  | Additional parameters   |          |
|  | Creater   |          |
| Done   | 1921681.1570000 🔒   | 2 63 191 |

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.

| 🕘 Webmin 1,450 on openemr (Ubuntu Lin | nux 6.04.2) - Modilla Finefox   |                                |       |  |                                      |                   |                    |
|---------------------------------------|---|--------------------------------|-------|--|--------------------------------------|-------------------|--------------------|
| File Edit View History Dejicious Io   | ols Help  |                                |       |  |                                      |                   | 0                  |
| % Webmin 1.450 on openemr (Ubu        | ×   |                                |       |  |                                      |                   | 6                  |
| Login: openemir<br>Webmin             | Module Index  |                                |       | Add Rule   | e                                    |                   |                    |
| Li System                             | Chain and action details  |                                |       |  |                                      |                   | 1                  |
| US Servers                            | Deer at ababa   | and the second second second   |       | · · · · · ·  |                                      |                   |                    |
| Vertical States                       | Part of chain PC  | aning pactors (ra-             | out   |  |                                      |                   |                    |
| Bandwidth Monitoring                  | Ruise comment   | orin /                         |       | -  |                                      |                   |                    |
| Linux Firewall                        | ACTION TO SAKE  | Do nothing @ A                 | ccep  | Drop   | C Rejec                              | 0 Userspac        | ie -               |
| NIS Client and Server                 | 0   | Exit chain C L                 | og pr | acket 🗢 Run ch   | am                                   |                   |                    |
| TCP Wrappers                          | Reject with ICMP type 🛛 😕   | Default O Type                 | icm   | p-net-unreachabl   | e                                    |                   |                    |
| Hardware                              | and the second second second  |                                |       |  |                                      |                   |                    |
| 🛄 Cluster                             | The action selected above will only b   | e carried out if all           | the c | anditions below:   | are met.                             |                   | 35                 |
| Un used Modules                       | Condition details   |                                |       |  |                                      |                   |                    |
| Search                                | Source address or network   | gnored                         |       |  |                                      |                   |                    |
| A View Medule's Loos                  | Destination address or network  | <pre><ignored></ignored></pre> |       |  |                                      |                   |                    |
| 1 System Information                  | Incoming interface  | dianoreda                      |       |  |                                      |                   |                    |
| Refresh Modules                       | Ordening Interface  | tignered                       |       |  |                                      |                   |                    |
| @ Logout                              | Composite and a | agnued.                        |       |  | 1994 - C. C. C. C. A.                |                   |                    |
|                                       | Fragmentation   | · Ignored O                    | Is ha | gmented C is r   | of fragmented                        |                   |                    |
|                                       | Network protocol  | CEquais                        | 1     | ice a  |                                      |                   |                    |
|                                       | Source TCP or UDP port  | <pre>dgnored&gt;</pre>         |       | Port(s)  |                                      | © Port range      | to                 |
|                                       | Destination TCP or UDP port   | Equals                         | 5     | Port 41 1000   | 07                                   | © Port range      | to                 |
|                                       | Source and destination portic)  | classes                        | -     |  | -                                    | T                 |                    |
|                                       | Source and observation ported   | signation                      |       |  |                                      | 2 23              |                    |
|                                       | TCP flags set   | <li>lgnored&gt;</li>           |       | SYS L ACE  | - FIN - X81                          | E TRO E PER UNI O | <i>(</i>           |
|                                       |   |                                |       | C. 328 C. 328  | - FIX - 181                          |                   |                    |
|                                       | TCP option number is set  | <ignored></ignored>            |       |  |                                      |                   |                    |
|                                       | ICMP packet type  | <gnored></gnored>              |       | any  |                                      |                   |                    |
|                                       | Ethernet address  | <ignored></ignored>            |       |  |                                      |                   |                    |
|                                       |   |                                |       |  |                                      |                   |                    |
|                                       | Packet flow rate  | <ignored> +</ignored>          |       | / second   | *                                    |                   |                    |
|                                       | Packet burst rate   | <ignored> •</ignored>          |       |  |                                      |                   |                    |
|                                       | Connection states   | dgnored>                       |       | New connection<br>Existing connect<br>Related to existi<br>Not part of any c | (NEW)<br>ion (ESTABL)<br>ng (RELATED | SHED)             |                    |
|                                       | Type of service   | <li>dgnored&gt;</li>           | •     | Minimize-Dalay   | (0x10)                               | •                 |                    |
|                                       |   | _                              |       |  |                                      |                   |                    |
|                                       | Additional IPtables modules   |                                |       |  |                                      |                   |                    |
|                                       | Additional parameters   |                                |       |  |                                      |                   |                    |
|                                       | Creater<br>Return of gres list  |                                |       |  |                                      |                   |                    |
| Done                                  | 7   |                                |       |  |                                      | 192.168.          | 1.16710000 🛔 🛃 🖽 🖂 |

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 openeme (Uo.                                  | et a Linux 8.04.2) – Modila Finefox   | a faire (                                |
|---|---|--|
| ne §dit View Higtory Deliciou<br>M Webmin 1.450 on openemr (U | s Iools Help<br>Ibax  |  |
| ogin: openemir<br>II Webmin<br>II System                      | Help Linux Firewall<br>Module Config Rules file / ot o/ iptables.up.rules   | Search Doc                               |
| I Servers   |   |  |
| Others  | Showing Ptable: Packet fillering (filler) - Add a new chain re  | amed:                                    |
| Networking<br>Bandwidth Nonitoring<br>Linux Firewall          | Incoming packets (INPUT)<br>Select at Tinvert selection   |  |
| NIS Client and Server   | Action Condition  | Move Ado                                 |
| TCD Weeners   | E Accept If input interface is not eth0   | 1 L                                      |
| Hopfuges  | C Accept     Forotocol is TCP and TCP flags ACK (of ACK) are set  | 44 1                                     |
| Cluster   | CAccept Fistate of connection is ESTABLISHED  | +† <u>1</u>                              |
| Univer Modeler  | C Accept If state of connection is RELATED  | ++ 1                                     |
| and a set wooderes  | E Accept If protocol is UDP and destination cort is 1024:65535 and source cort is 53  | 14 1                                     |
| barch   | Fi Accest If protocol is ICMP and ICMP type is echo reply   | 14 1                                     |
| View Medialo's Loos   | Exercise Exercises ICHP and ICMP type is destination unreachable  | 14 1                                     |
| Surteen Information   | E Assert Ferderal & ICHP and ICHP type is source quanch   | 14 1                                     |
| Cafarak Mark Lan  | E Annual Support of CHP and CHP type is Subject quench  | 14 1                                     |
| Refess Modules  | E Accept r protocol is ICMP and ICMP type is dime-exceeded  | ** *                                     |
| Logor   | Accept If protocol is ICMP and ICMP type is parameter-problem   | +T 1                                     |
|   | Accept If protocol is TCP and destination port is 22  | 47 <u>1</u>                              |
| • <i>U</i>  | Accept If protocol is TCP and destination port is 443   | 44 T                                     |
|   | E Accept If protocol is TCP and destination port is 10000   | Ŷ 1                                      |
|   | Select al. Invert selection   |  |
|   | Set Default Action: To Drop - Defete Selected   | Add Rul                                  |
|   | Forwarded packets (FORWARD)<br>There are no rules defined for this chain.   |  |
|   | Set Default Action To Accept -  | Add Rule                                 |
|   | Outgoing packets (OUTPUT)<br>There are no rules defined for this chain.   | en e |
|   | Set Dafault Action To: Accept +   | Add Rul                                  |
|   | Apply Configuration Click this button to make the firewall configuration listed above ad<br>effect will be flushed and replaced | tive. Any frewall rules currently        |
|   | RevertConfiguration Click this button to reset the configuration listed above to the one  | that is currently active.                |
|   | Activate at boat 🖉 Yes 🖄 No Change this option to control whether your frewall is activated at                                  | boot time or not.                        |
|   | Reset Firewall Click this button to clear at existing trewall rules and set up new<br>opringuration                             | rules for a basic initial                |
| 33  |   |  |
| ne  |   | 195109110/10000 - M FR 5                 |

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              |                        |
|----------------------------|------------------------|
| <u>Connected</u>           |                        |
| Connect at power on        |                        |
| Connection                 |                        |
| Ose physical drive:        |                        |
| Auto detect                | •                      |
| 🗇 Use ISO image file:      |                        |
| C:\Program Files\VMware\VM | Browse                 |
|                            |                        |
|                            |                        |
|                            |                        |
|                            |                        |
|                            | Advanced               |
|                            | hand the second second |
|                            |                        |

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  | - <b>D</b> X  |
|---|---|
| Specify Source O Specify Destination O View/Edit Options O Ready to Complete Machine Type   | ete   |
| Source: C:Usersibrady'Deplance-1/OperEMR-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 remote machine P address or name: User name: Bassword: Sp Family: Windows Veew source getals | Powered-on machine<br>Converts a running machine to a<br>VMware virtual machine. The machine<br>can be your local machine or a remote<br>machine on the network. When<br>converting a remote machine, provide<br>the IP address or name, administrator<br>or root credentials, and operating<br>system on which to create the<br>machine.<br>Supported operating systems are:<br>• Windows 2000, 2003, XP, Vista,<br>2008<br>• Red Hat Enterprise Linux 2.1, 3.0,<br>4.0, 5.0<br>• Red Hat Enterprise Linux 2.1, 3.0,<br>4.0, 5.0<br>• Red Hat Linux Advanced Server 2.1<br>• SUSE Linux Enterprise Server 8, 9,<br>10<br>• Ubuntu Linux 5.x, 6.x, 7.x, 8.x<br>Linux sources should allow root logn<br>through SSH. |
|   | sck [Mext > Cancel  |

Click 'Select source type:' field.

| Specify Source  | Specify Destination 🔞 View/Edit Options 🗿 Ready to   | Complete   |
|---|--|--|
| Source: C:UsersUprady<br>Select source type: Power<br>Power<br>Of this local ma<br>Of | //Deplance-1/OpenEMR-3-0-0-appliance-1.vmx       Destination: none         ed-on machine          ed-on machine          ed-on machine          e Infrastructure virtual machine          Workstation on other Virtual machine          Appliance          windows | Powered-on machine<br>Converts a running machine to a<br>Whware virtual machine. The machine<br>can be your local machine or a remote<br>machine on the network. When<br>converting a remote machine, provide<br>the IP address or name, administrator<br>or root credentials, and operating<br>system on which to create the<br>machine.<br>Supported operating systems are:<br>• Windows 2000, 2003, XP, Vista,<br>2008<br>• Red Hat Enterprise Linux 2.1, 3.0,<br>4.0, 5.0<br>• Red Hat Enterprise Linux 2.1, 3.0,<br>4.0, 5.0<br>• Red Hat Linux Advanced Server 2.1<br>• SUSE Linux Enterprise Server 8, 9,<br>10<br>• Ubuntu Linux 5.x, 6.x, 7.x, 8.x<br>Linux sources should allow root login<br>through SSH. |
| (d≢∏  | C  | < Back Next > Cancel   |

Select 'VMware workstation or other VMware virtual machine'.



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

| Conversion   | Statistics of the   |   |                                |                      |  |
|--|---|---|--------------------------------|----------------------|--|
| Specify Source     Destination Type  | Specify Destination   | View/Edit Options   | Read                           | y to Complete        |  |
| Source: C:\Users\br<br>Select destination type:<br>Select VMware groduct:<br>Virtual machine det<br>Ngme: OpenEMR-3<br>Choose a location fo<br>C:\Users\brady\De | rady/Deplance-1\OpenEMR-3<br>VMware Workstation or othe<br>Creates a new virtual machin<br>Fusion or other VMware produ<br>VMware Workstation 6.5.x<br>als<br>3-0-0-appliance-1<br>ar the virtual machine:<br>esktop\appliances | -0-0-appliance-1.vmx De<br>r VMware virtual machine v<br>e for use on VMware Workst<br>uct. | stination: no<br>ation, vMware | ne<br>Player, VMware | VMware Desktop virtual machine<br>Creates a virtual machine for use with<br>VMware Workstation, VMware Fusion<br>or other VMware products<br>Supported VMware products are:<br>•VMware Workstation 5.0, 6.0, 6.5<br>•VMware Player 1.0, 2.0, 2.5<br>•VMware Player 1.0, 2.0<br>•VMware ACE 2.0, 2.5<br>•VMware Server 1.0, 2.0 |
| [ Цер  |   |   |                                | (< <u>B</u> ack      | Next > Cancel  |

Click 'Select VMware product:' field.

| Conversion  |   | - 0 ×  |
|---|---|--|
| Specify Source     Destination Type   | 2 Specify Destination 3 View/Edit Options 3 Ready to Complete   |  |
| Source: D C:\Users\b<br>Select destination type:<br>Select VMware groduct:<br>— Virtual machine det<br>Ngme: OpenEMR-3<br>Choose a location fr<br>C:\Users\brady\De | rady'Deplance-1'OperEMR-3-0-0-applance-1.vmx Destination: none<br>VMware Workstation or other VMware virtual machine  Creates a new virtual machine for use on VMware Workstation, VMware Player, VMware Fusion or other VMware product.<br>WMware Workstation 6.5.x<br>VMware Workstation 6.5.x<br>VMware Fusion 2.x<br>VMware Fusion 1.x<br>VMware Fusion 1.x<br>VMware Player 2.5.x<br>VMware Player 2.5.x<br>VMware Server 2.x<br>VMware Server 1.x<br>VMware ACE 2.5.x | VMware Desktop virtual machine<br>Creates a virtual machine for use with<br>Wware Workstation, Wware Fusion<br>or other VMware products are:<br>• VMware Workstation 5.0, 6.0, 6.5<br>• VMware Player 1.0, 2.0, 2.5<br>• VMware Fusion 1.0, 2.0<br>• VMware Fusion 1.0, 2.0<br>• VMware ACE 2.0, 2.5<br>• VMware Server 1.0, 2.0 |
| Пер   | < <u>B</u> ack  | Next > Cancel  |

Select 'VMware Workstation 5.x'.

| Conversion   |  |  |
|--|--|--|
| O Specify Source<br>Destination Type   | 2 Specify Destination 🕑 Vew/Edit Options 🕑 Ready to Com  | plete  |
| Source: 🔠 C:\Users\br  | ady'/Depliance-1'/OpenEMR-3-0-0-appliance-1.vmx Destination: none  |  |
| Select destination type:<br>Select VMware groduct:<br>— Virtual machine detu<br>Name: OpenEMR-3<br>Choose a (ocation fo<br>C:\Users\brady\De | VMware Workstation or other VMware virtual machine  Creates a new virtual machine for use on VMware Workstation, VMware Player, W Fusion or other VMware product. WMware Workstation 5.x  All als -0-0-appliance-1 r the virtual machine: sktop\appliances | Mware VMware Desktop virtual machine<br>Creates a virtual machine for use with<br>VMware Workstation, VMware Fusion<br>or other VMware product.<br>Supported VMware products are:<br>• VMware Workstation 5.0, 6.0, 6.5<br>• VMware Player 1.0, 2.0, 2.5<br>• VMware Player 1.0, 2.0, 2.5<br>• VMware ACE 2.0, 2.5<br>• VMware Server 1.0, 2.0 |
| [Feb   | <  | lack Next > Cancel   |

Click 'Next'.



Click the 'Data to copy' field.



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

| Summary   |   |  |
|---|---|--|
| rce: C:\Users\brady<br>Source System Infor<br>Source type:<br>Path:<br>Destination System<br>Virtual machine name:<br>Target product:<br>Destination directory:<br>Number of CPUs:<br>Physical memory:<br>Network:<br>NIC1<br>Storage:<br>Number of disks:<br>Create disk 0 as:<br>Destination Customized | Vp. Jance-1\OpenEMR-3-0-0-appliance-1.vmx       Destination: Image: C:\Users\brady\Desktop         mation       VMware Workstation or other VMware wirtual machine         C:\Users\brady\Desktop\TESTER_OpenEMR-3-0-0-appliance-1\Op | Ready to Complete<br>Displays read-only summary<br>information and validates task<br>parameters. To edit a setting, navig<br>back to its page and apply the char<br>there. |
|   | m   |  |



#### ALL DONE

# Appendix

Main TOC Link

## A. Configuring client web browser for https

Main TOC Link

1. For security, this appliance forces users to use https (encrypted) over a web browser. Because we are using a homemade security certificate (real certificates cost money), most new web browsers will give a security error. This can easily be dealt with by following the browser instructions to create an exception. I have posted steps for

#### both Firefox and Internet Explorer.

2. Firefox:



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

| Page Load Error - Mozilla Firefox   |                   |
|---|-------------------|
| <u>Eile Edit View Higtory Delicious Iools H</u> elp   | 1                 |
| A Page Load Error ×   | •                 |
| Secure Connection Failed         192.168.1.167 uses an invalid security certificate.         The certificate is not trusted because it is self signed.<br>The certificate is not valid for any server names.         (Error code: sec_error_untrusted_issuer)         • This could be a problem with the server's configuration, or it<br>could be someone trying to impersonate the server.         • If you have connected to this server successfully in the past, the<br>error may be temporary, and you can try again later. | 2                 |
| You should not add an exception if you are using an internet connection<br>you do not trust completely or if you are not used to seeing a warning f<br>server.  | n that<br>or this |
| Get me out of here! Add Exception   |                   |
| 13  |                   |
|   |                   |
|   |                   |
| Done  |                   |
|   |                   |

Click the 'Add Exception...' button.

| ocation: ht     | tps://192.168.1. | 167/openemr/s | etup.php | G | et Certificat <u>e</u> |
|-----------------|------------------|---------------|----------|---|------------------------|
| ertificate Stat | us —             |               |          |   | <u>ا</u>               |
|                 |                  |               |          | [ | <u>V</u> iew           |
|                 |                  |               |          |   |                        |
|                 |                  |               |          |   |                        |
|                 |                  |               |          |   |                        |
|                 |                  |               |          |   |                        |
|                 |                  |               |          |   |                        |
|                 |                  |               |          |   |                        |

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

| penemr/setup.php <u>G</u> et Certificate   |
|--|
| vith invalid information. <u>V</u> iew<br>e, which could indicate an identity theft. |
| vith invalid information. <u>V</u> iew<br>e, which could indicate an identity theft. |
| e, which could indicate an identity theft.   |
| e, which could indicate an identity theft.   |
|  |
|  |
| hasn't been verified 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 forums are here)
- 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)

#### **General EMR links:**

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

## **C. Author Email and License/Disclaimer**

Main TOC Link

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www.bradymd.com

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