

# LibreNMS

## Campus Network Design Workshop

### Installing LibreNMS (HowTo)

#### Version

- HowTo Document for Installing LibreNMS from source on Ubuntu Server 16.04 LTS

#### Goals

- Learn how to initially install the LibreNMS Network Management System

#### Notes

- Commands preceded with “\$” imply that you should execute the command as a general user - not as root.
- Commands preceded with “#” imply that you should be working as root.
- Commands with more specific command lines (e.g. “rtrX>” or “mysql>”) imply that you are executing commands on remote equipment, or within another program.
- These instructions assume you are the root user. If you are not, prepend ‘sudo’ to the shell commands (the ones that aren’t at ‘mysql>’ prompts) or temporarily invoke root privileges with ‘sudo -s’.

#### Create database

NOTE: These instructions are based on the official LibreNMS installation notes and have been tested on a fresh install of Ubuntu 14.04.

We will assume that the database is running on the same machine as your network management server (this is the most common initial deployment scenario).

For this class we will install on db.campusY.ws.nsrc.org. Connect to this machine and become root:

```
$ sudo bash
```

Then install mysql and configure:

```
# apt-get update
# apt-get install mysql-server mysql-client
```

You will be asked to enter a password for the MySQL root user. *Be absolutely sure* that you remember what you choose here. You will use this later.

```
# mysql -uroot -p
```

Input the MySQL root password (the one you chose in the previous step) to enter the MySQL command-line interface where you will get a *mysql>* prompt.

Create the database:

```
CREATE DATABASE librenms;
GRANT ALL PRIVILEGES ON librenms.*
TO 'librenms'@'localhost'
IDENTIFIED BY '<CLASS_PASSWORD>'
;
FLUSH PRIVILEGES;
exit
```

### PLEASE NOTE

Here we are using <CLASS\_PASSWORD> as the password for LibreNMS to access MySQL. Please replace <CLASS\_PASSWORD> with, you've guessed it, the class password :)

## Install LibreNMS

The NMS is the host is where the web server and SNMP poller run.

Install the required software:

```
apt-get install mysql-server mysql-client libapache2-mod-php php-cli php-mysql php-gd php-s
```

The packages listed above are an all-inclusive list of packages that were necessary on a clean install of Ubuntu 14.04.

### Post install configuration

**snmp**

You need to configure snmpd appropriately if you have not already done so. We will do a minimal snmp configuration on our server – *please DON'T do this if you've already configured SNMP earlier!*

```
# mv /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.orig
# editor /etc/snmp/snmpd.conf
```

and, add the following line to the empty file:

```
rocommunity NetManage 127.0.0.1
```

And, now restart the snmp service so that the changes become active.

```
# systemctl restart snmpd
```

You can verify that snmp now responds to you locally by typing:

```
# snmpstatus -v2c -c NetManage 127.0.0.1 sysStatus
```

## php

In both “/etc/php/7.0/apache2/php.ini” and “/etc/php/7.0/cli/php.ini”, ensure “date.timezone” is set to your preferred time zone.

See <<http://php.net/manual/en/timezones.php>> or files under “/usr/share/zoneinfo” for a list of supported timezones. For this workshop we are all going to use the same timezone, that is **PLEASE USE UTC** only. If you select anything other than UTC then other programs will not work properly.

In the two archives noted above find the line that reads:

```
;date.timezone =
```

and change it to:

```
date.timezone = Etc/UTC
```

Save and exit from the files.

## Adding the LibreNMS user

We need to create a LibreNMS system user, **librenms**

```
# useradd librenms -d /opt/librenms -M -r
# usermod -a -G librenms www-data
```

## Cloning the LibreNMS source code with git

LibreNMS is installed using git. If you're not familiar with git, check out the git book or the tips at git ready. The initial install from github.com is called a "git clone"; subsequent updates are done through "git pull".

The initial clone can take quite a while (nearly 3 minutes on a 10Mbps connection is typical) as the size of the software repository is 220+ MB in size.

Run the following:

```
# cd /opt
# git clone --depth 1 https://github.com/librenms/librenms.git librenms
```

At this point, you should have a "librenms" directory, with the most recent revision checked out.

It's strongly suggested to check out the most recent stable.

To do this:

```
# cd librenms
# git tag
```

Look for the most recent tag in the form YYYYMM, and then type:

```
# git checkout YYYYMM
```

For instance, if the newest tag is 201605, then do `git checkout 201605`.

## Web Interface

To prepare the web interface (and adding devices shortly), you'll need to create and change the ownership of a directory as well as create an Apache Virtual Host definition.

First, create and chown the "rrd" directory and create the "logs" directory:

```
# cd /opt/librenms
# mkdir rrd logs
# chown -R librenms:librenms /opt/librenms
# chmod 775 rrd
# chown www-data /opt/librenms
```

Next, create "/etc/apache2/sites-available/librenms.conf":

```
# editor /etc/apache2/sites-available/librenms.conf
```

Add the following lines:

```
<VirtualHost *:80>
    DocumentRoot /opt/librenms/html/
    ServerAlias librenms*.ws.nsrc.org
```

```

CustomLog /opt/librenms/logs/access_log combined
ErrorLog /opt/librenms/logs/error_log
AllowEncodedSlashes NoDecode
<Directory "/opt/librenms/html/">
    Require all granted
    AllowOverride All
    Options FollowSymLinks MultiViews
</Directory>
</VirtualHost>

```

‘mcrypt’ is not enabled on install. Run the following to enable it:

```
# phpenmod mcrypt
```

Now enable the Virtual Host, but wait to restart Apache

```

# a2ensite librenms.conf
# a2enmod rewrite
# systemctl restart apache2

```

## Web installer

You can choose either a web configuration or manual configuration at the command line. We’re going to use the Web installer, which is by far the easiest.

At this stage you can launch the web installer by going to <http://librenms.campusY.ws.nsrc.org/install.php>

Follow the onscreen instructions.

- Stage 0 is a summary of the PHP modules installed, normally you should just click on “Next Stage”
- Stage 1 prompts you for the database settings. Enter
  - DB Host: localhost
  - DB User: librenms
  - DB Pass: <CLASS\_PASSWORD>
  - DB Name: librenms
- Stage 2 is the DB creating itself - it should finish correctly, and you simply click on “Goto Add User” at the bottom
- Stage 3: enter a username, password and E-mail address. This will become the login you use to access the web interface.

We suggest you use ‘admin’, the class password, and your own E-mail address.

- Stage 4 should show you the successful user creation, click on “Generate Config”

- Stage 5: the interface should show, at this point:

The config file has been created

You can now click ‘Finish install’.

Note: **IF** the installer tells you it can’t write the configuration file, it may be that you forgot to run ‘chown www-data /opt/librenms’

You should try and fix the problem, and reload <http://librenmsN.ws.nsrc.org/install.php>

See below if you still have problems.

- Stage 6: you are done!

You can now follow the instructions and click where it says ‘click here to login to your new install’.

A useful tool is provided with LibreNMS to help verify that the software is installed correctly.

Let’s try it out:

```
# cd /opt/librenms
# ./validate.php
```

You may see warnings about the software not being up to date, and some more about permissions. You can probably ignore these for now, but it might come in useful later if you experience issues with LibreNMS.

We can now secure the ‘/opt/librenms’ directory again:

```
# chown librenms /opt/librenms
```

=> YOU CAN NOW PROCEED TO THE FINE TUNING LAB ! <=

### **If you’re still experiencing problems...**

If it still doesn’t work, you will need to copy the generated configuration displayed in the Browser window and place this in a new file:

‘/opt/librenms/config.php’

using a text editor of your choice. (Remember if you are using ‘vi’ to enter insert mode before you paste)