

Prerequisites

- Ubuntu VM
- SSH root access or a regular system user with sudo privileges

Step 1. Login to the server

First, log in to your Ubuntu server through SSH as the root user:

```
ssh user@IP_Address -p Port_number
```

You will need to replace 'IP_Address' and 'Port_number' with your server's respective IP address and SSH port number. Additionally, replace 'root' with the username of the system user with sudo privileges.

Step 2. Install PHP

LibreNMS is a PHP-driven network monitoring tool. Hence, we will install PHP and its required extensions, along with other dependencies in this step.

```
# apt install software-properties-common -y
```

```
# add-apt-repository universe
```

Let's update the package index files on our server before proceeding to install PHP.

```
# apt update
```

```
# apt install acl curl composer fping git graphviz imagemagick mtr-tiny  
nmap php-{cli,curl,gd,json,mbstring,mysql,snmp,xml,zip,fpm} rrdtool snmp  
snmpd whois python3-{memcache,mysqldb,pip}
```

Once you have installed all the packages, you must configure the timezone in php.ini file. You need to edit the files below.

```
/etc/php/8.1/fpm/php.ini  
/etc/php/8.1/cli/php.ini
```

Specify your system's timezone according to the following example:

```
date.timezone = Asia/Colombo
```

Save the file and exit the file editor. Finally, restart the PHP-FPM service to implement the modifications:

```
# systemctl restart php8.1-fpm
```

Step 3. Create User

LibreNMS service will be run by a new system user called librenms.

Create a new system user now, and execute this command below.

```
# useradd -Mrd /opt/librenms librenms -s "$(which bash)"
```

Next, create a PHP pool called librenms.

```
# cp -a /etc/php/8.1/fpm/pool.d/www.conf  
/etc/php/8.1/fpm/pool.d/librenms.conf
```

Modify some parameters in this file.

```
# nano /etc/php/8.1/fpm/pool.d/librenms.conf
```

Change the pool name from [www] to [librenms]:

```
[librenms]
```

Change user and group to "librenms":

```
user = librenms  
group = librenms
```

And change the 'listen' parameter to this:

```
listen = /run/php/librenms.sock
```

Save the file; exit then restart the PHP-FPM service

```
# systemctl restart php8.1-fpm
```

Step 4. Install and Configure Nginx

LibreNMS supports Apache and Nginx. In this tutorial, we are going to use nginx as the web server.

```
# apt install nginx
```

On Ubuntu servers, nginx will automatically start and is enabled on boot. Now, let's create a server block for our vTiger CRM website.

```
# nano /etc/nginx/conf.d/librenms.conf
```

Insert these lines

```
server {  
  
    listen      80;  
  
    server_name librenms.yourdomain.com;  
  
    root        /opt/librenms/html;  
  
    index       index.php;  
  
    charset    utf-8;  
  
    gzip on;  
  
    gzip_types text/css application/javascript text/javascript  
application/x-javascript image/svg+xml text/plain text/xsd text/xsl  
text/xml image/x-icon;  
  
    location / {  
  
        try_files $uri $uri/ /index.php?$query_string;  
  
    }  
  
    location ~ [^/]\.php(/|$) {  
  
        fastcgi_pass unix:/run/php/librenms.sock;
```

```
fastcgi_split_path_info ^(.+\.(php|htm|html|css|gif|jpeg|png|swf|xml|js|ini|log|tgz|zip|rar|gz|tar|bz2|doc|xls|xlsx|ppt|pptx|odt|ods|pdf|rtf|tif|tiff))$;

include fastcgi.conf;

}

location ~ /\.(!well-known).* {

    deny all;

}

}
```

Save the file, then exit and restart nginx

```
rm /etc/nginx/sites-enabled/default
```

```
# systemctl restart nginx
```

```
# systemctl restart php8.1-fpm
```

Step 5. Install MariaDB and Create a Database

In this step, install the MariaDB server from the default Ubuntu repository.

```
# apt install mariadb-server
```

On an Ubuntu system, the MariaDB server will be running automatically upon installation. Therefore, we can now continue by creating a fresh database and database user for our LibreNMS website. Let's log in to MySQL shell as root users and create a database for our LibreNMS website.

```
# mysql
```

Once logged in to MySQL shell, we can run the following commands.

```
mysql> CREATE DATABASE librenms;
mysql> GRANT ALL on librenms.* to librenms@localhost identified by '##password##';
mysql> FLUSH PRIVILEGES;
mysql> \q
```

Make sure to create a strong database password.

After this, modify our SQL_MODE

```
# nano /etc/mysql/mariadb.conf.d/50-server.cnf
```

Add this line under section [mysqld]

```
sql_mode = ""
innodb_file_per_table=1
lower_case_table_names=0
```

Then, restart the MariaDB server

```
# systemctl restart mariadb
```

Step 6. Install LibreNMS

In the earlier step, created a system user called 'librenms'.

Download LibreNMS and give permission to the new system user.

```
# cd /opt
```

```
# git clone https://github.com/librenms/librenms.git librenms
```

Assign the correct permission for the files.

```
# chown -R librenms: /opt/librenms
```

```
# chmod 771 /opt/librenms
```

```
# setfacl -d -m g::rwx /opt/librenms/rrd /opt/librenms/logs
/opt/librenms/bootstrap/cache/ /opt/librenms/storage/
```

```
# setfacl -R -m g::rwx /opt/librenms/rrd /opt/librenms/logs
/opt/librenms/bootstrap/cache/ /opt/librenms/storage/
```

Then, run this command to download the dependencies.

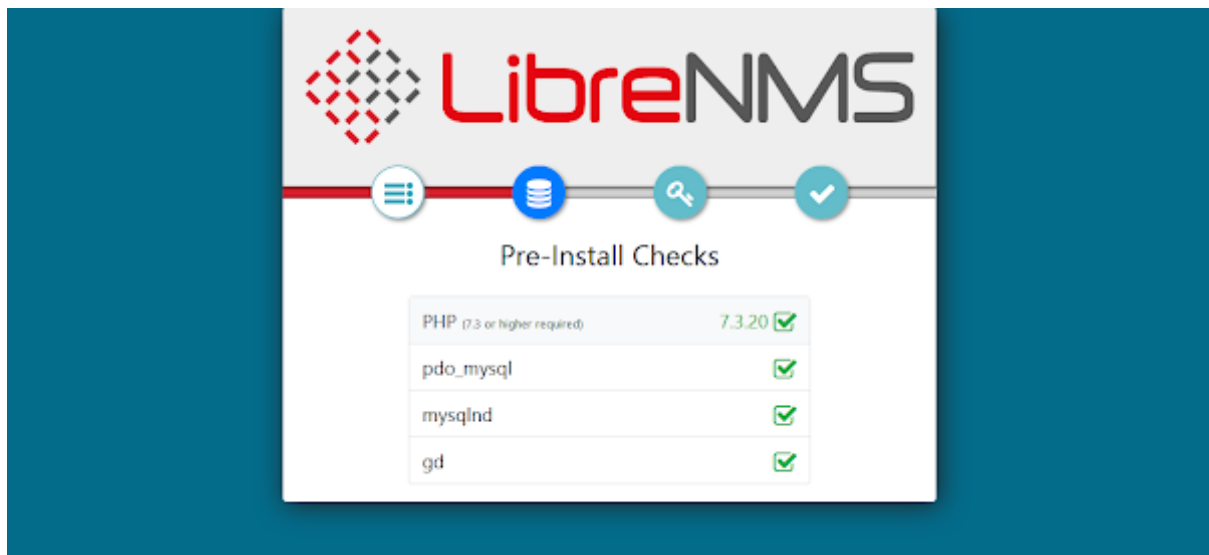
```
# su - librenms
```

```
$ ./scripts/composer_wrapper.php install --no-dev
```

At this point, we can navigate to <http://librenms.yourdomain.com> to perform LibreNMS installation through a GUI using a web browser

Login in to LibreNMS

Once you finish setting up , its time to log into the system. Use your IP address in the browser and you will load the below page.In here the web installer will prerequisite check.



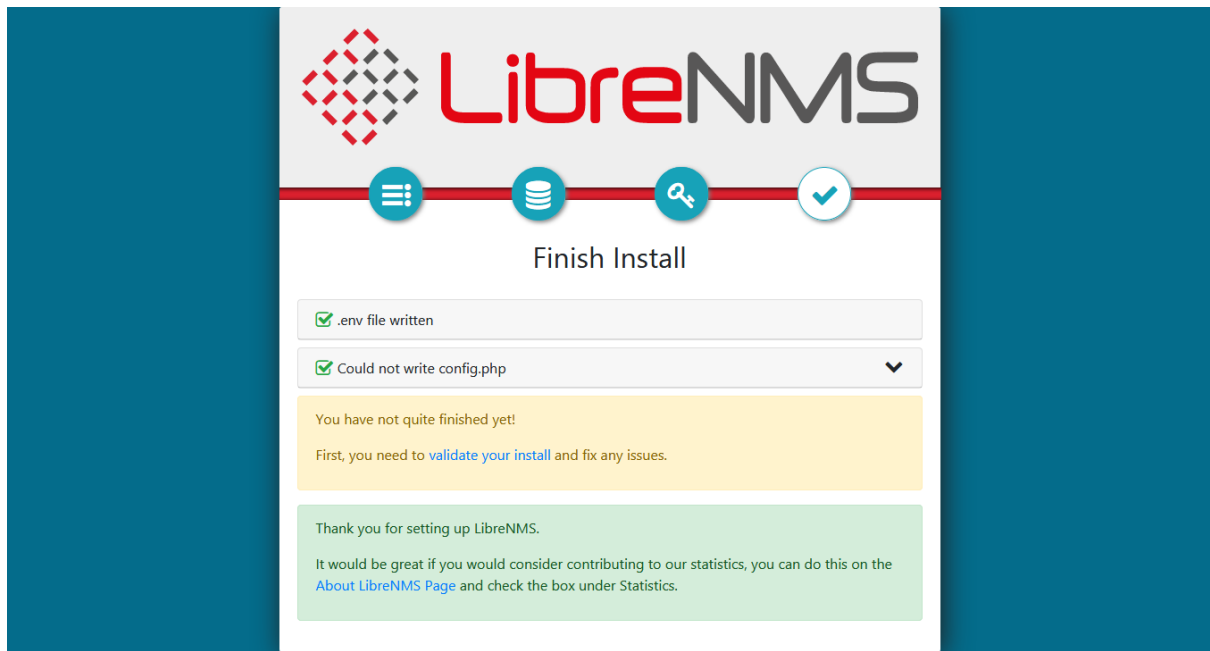
Next, Provide MySQL server connection details and build a database for LibreNMS network monitoring software.




Creating User



Finish Installation



Click on 'Validate your Install' Then, you will direct to LibreNMS login page. Use your credentials to log in.



LibreNMS

Username

Password

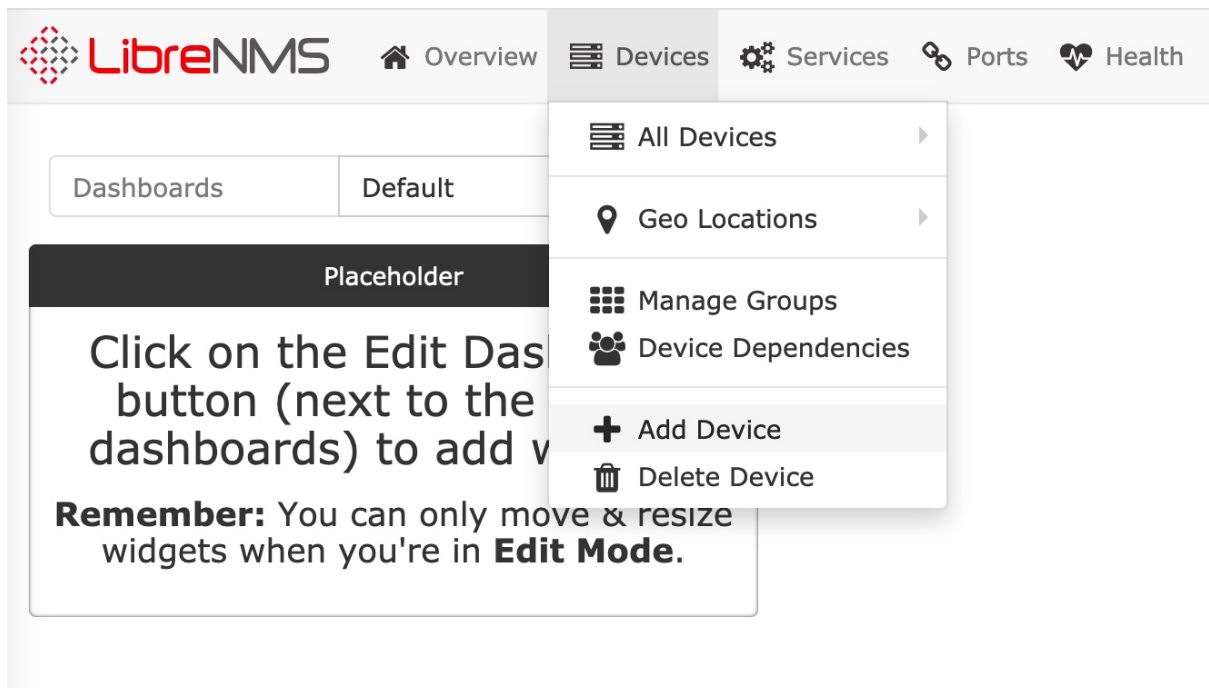
Remember Me

Login

Unauthorised access or use shall render the user liable to criminal and/or civil prosecution.

Adding a Device

To add a device click on Devices and click on Add Devices



LibreNMS Overview Devices Services Ports Health

Dashboards

Default

Placeholder

Click on the Edit Dashboard button (next to the dashboards) to add v

Remember: You can only move & resize widgets when you're in **Edit Mode.**

- All Devices
- Geo Locations
- Manage Groups
- Device Dependencies
- Add Device**
- Delete Device

Once you click on Add Device you will appear the below page. By entering Hostname or IP and Community you can add a device to the system.

Add Device

Devices will be checked for Ping/SNMP reachability before being probed.

Hostname or IP	<input type="text" value="Hostname"/>		
SNMP	<input checked="" type="checkbox"/>		
SNMP Version	<input type="text" value="v2c"/>	port	<input type="text" value="udp"/>
Port Association Mode	<input type="text" value="ifIndex"/>		
SNMPv1/2c Configuration			
Community	<input type="text" value="Community"/>		
Force add (No ICMP or SNMP checks performed)	<input type="checkbox"/> OFF		
<input type="button" value="Add Device"/>			

Troubleshoot (Optional)

Alter User

```
ALTER USER 'sample'@'localhost' IDENTIFIED BY 'testpassword';
```

Change Timezone

```
Vi /etc/mysql/mariadb.conf.d/50-server.cnf
```

```
[mysql]
```

```
default-time-zone='+05:30'
```

```
Resetart mysqld
```