Install and Configure LibreNMS on Debian 10 / Debian 11

LibreNMS is a PHP/MySQL/SNMP based network monitoring which includes support for a wide range of network hardware and operating systems including Cisco, Linux, FreeBSD, Juniper, Brocade, Foundry, HP and many more.

With LibreNMS, you can automatically discover your entire network using CDP, FDP, LLDP, OSPF, BGP, SNMP, and ARP protocols. In addition, it has a highly flexible alerting system to notify you via email, IRC, Slack, and more.

Install MySQL / MariaDB

LibreNMS requires MySQL/MariaDB database server. So, here, we will install MariaDB.

```
#apt update

#apt install -y mariadb-server mariadb-client
```

Once the MariaDB installation is complete, run the mysql_secure_installation command to secure the database server.

Then, you will need to configure MariaDB for LibreNMS installation by adding the below configuration.

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

Now, add the below lines to the [mysqld] section.

```
innodb_file_per_table=1
lower_case_table_names=0
```

Finally, restart the MariaDB service.

```
#systemctl restart mariadb
#systemctl enable mariadb
#systemctl status mariadb
```

Create Database for LibreNMS

First, log in to the MariaDB database server.

```
#mysql -u root -p
```

Then, create the database for LibreNMS installation.

Database Name: **librenmsdb**
User Name: **librenms**
Password: **password**

```
CREATE DATABASE librenmsdb CHARACTER SET utf8mb4 COLLATE utf8mb4_unicode_ci;

CREATE USER 'librenms'@'localhost' IDENTIFIED BY 'password';

GRANT ALL PRIVILEGES ON librenmsdb.* TO 'librenms'@'localhost';

FLUSH PRIVILEGES;

SHOW DATABASES;

exit
```

Install and Configure Nginx

LibreNMS recommends Nginx as a web server for the installation. So, install Nginx along with PHP packages using the following command.

```
#apt install -y acl curl composer fping git graphviz imagemagick mtr-tiny nginx-full nmap
php-cli php-curl php-fpm php-gd php-json php-mbstring php-mysql php-snmp php-xml php-zip
python3-dotenv python3-pymysql python3-redis python3-setuptools python3-systemd rrdtool
snmp snmpd whois
```

Then, update your timezone in /etc/php/7.4/fpm/php.ini and /etc/php/7.4/cli/php.ini. Also, ensure you change 7.4 with 7.3 for Debian 10.

```
date.timezone = Asia/Dhaka
```

Install Pand Configure LibreNMS

First, create a user account for LibreNMS installation.

```
#useradd librenms -d /opt/librenms -M -r -s /bin/bash
```

Then, clone LibreNMS repository to `/opt` directory.

```
#cd /opt

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

Set the ownership and permission.

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

Install the PHP composer after switching to librenms user.

```
#sudo -u librenms bash
./scripts/composer_wrapper.php install --no-dev
exit
```

Configure PHP-FPM for LibreNMS installation. Make sure to change 7.4 with 7.3 for Debian 10.

```
#cp /etc/php/7.4/fpm/pool.d/www.conf /etc/php/7.4/fpm/pool.d/librenms.conf
#nano /etc/php/7.4/fpm/pool.d/librenms.conf
```

Change [www] to [librenms].

```
[librenms]
```

Change user and group to librenms.

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

Update listen to a unique name.

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

Create an Nginx virtual host file for LibreNMS installation.

```
#nano /etc/nginx/sites-enabled/librenms.vhost
```

Then, add the following configuration to the above file. Replace 192.168.0.10 with your fully qualified domain, as per your requirement.

```
server {
  listen 80;
  server_name 192.168.0.10;
  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(/|$) {
   fastcgi_pass unix:/run/php-fpm-librenms.sock;
   fastcgi_split_path_info ^(.+\.php)(/.+)$;
   include fastcgi.conf;
  }
  location ~ /\.(?!well-known).* {
   deny all;
  }
}
```

Restart the Nginx and PHP-FPM service.

```
# Debian 11

#systemctl reload nginx php7.4-fpm

# Debian 10

#systemctl reload nginx php7.3-fpm
```

Enable command auto-completion for LibreNMS commands.

```
#ln -s /opt/librenms/lnms /usr/bin/lnms

#cp /opt/librenms/misc/lnms-completion.bash /etc/bash_completion.d/
```

Copy the cron job information to enable automatic discovery and polling for newly added devices.

```
#cp /opt/librenms/librenms.nonroot.cron /etc/cron.d/librenms
```

Copy logrotate configuration file to rotate the old logs.

```
#cp /opt/librenms/misc/librenms.logrotate /etc/logrotate.d/librenms
```

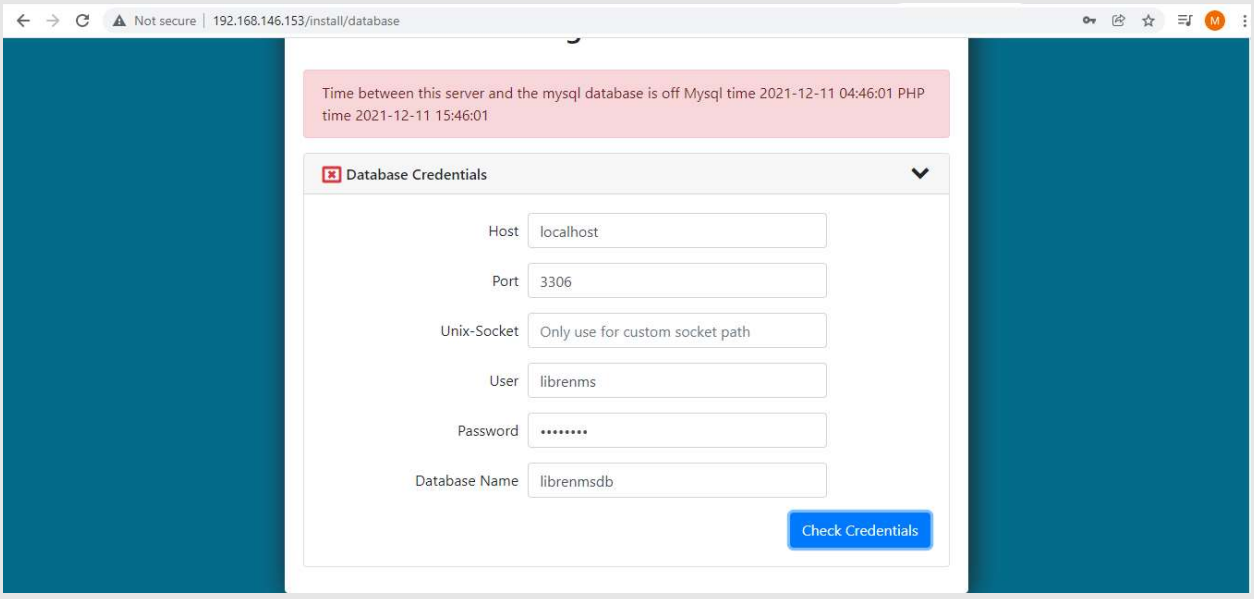
Setup LibreNMS

Open a web browser and then navigate it to the below URL.

http://libre-nms server ip

Follow the web installer to set up LibreNMS.

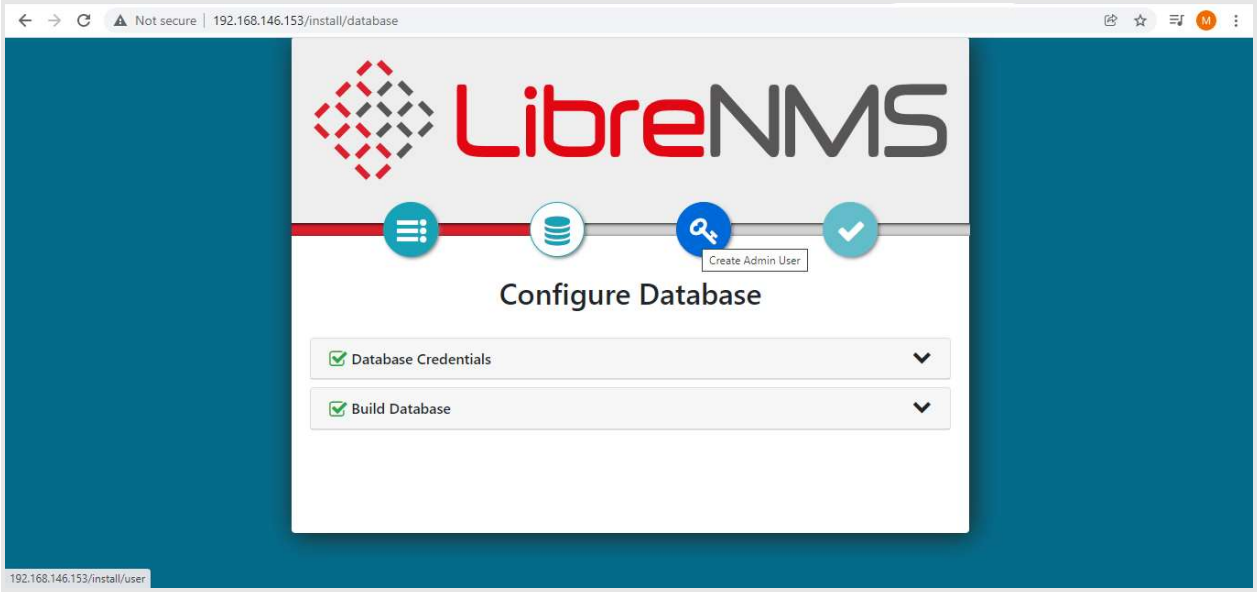
1. By now, the **Pre-Install Checks** should be green.

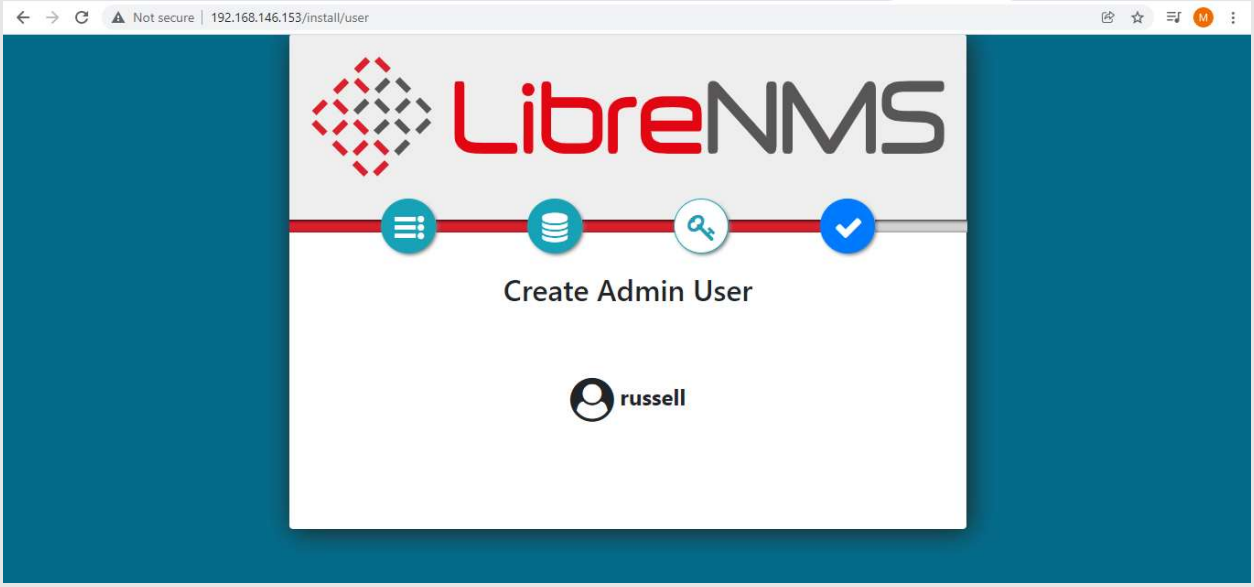


2. Enter the database information in the **Database Credentials** form and then click **Check Credentials**.

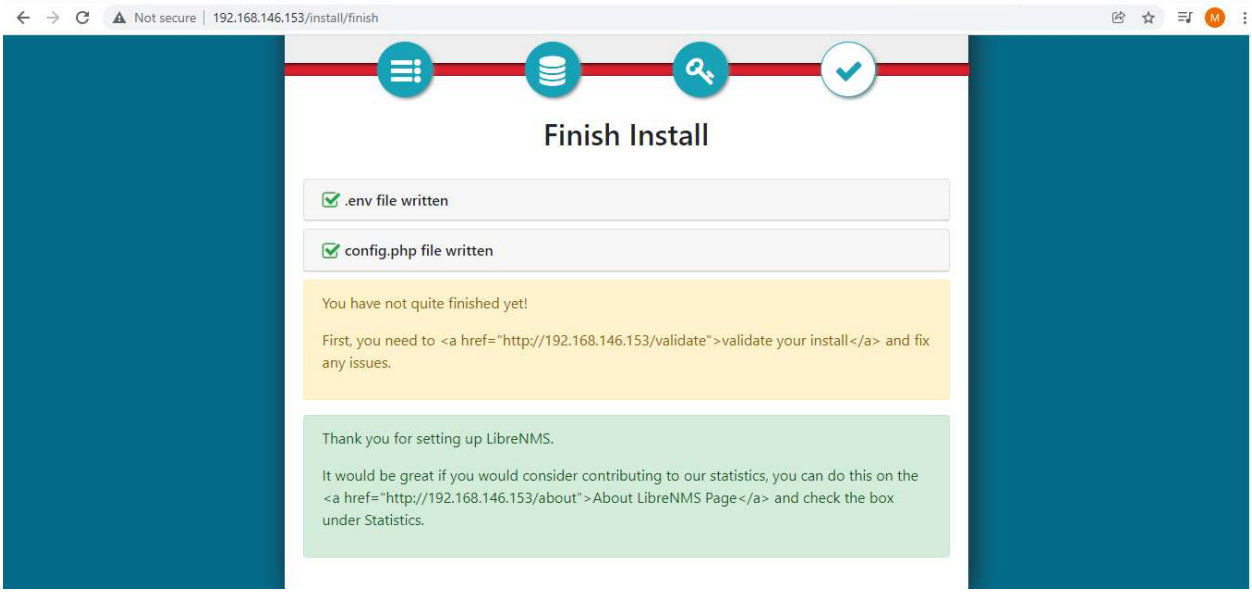
3. Click **Build Database** to begin creating tables.

4. Enter the username, password, and email to **Create Admin User**.





5. Click **validate your install** on **Finish Install**.

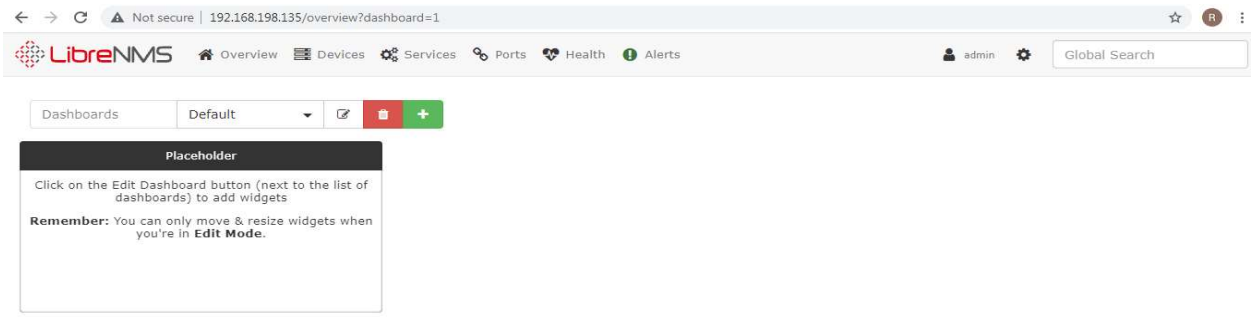


Finally, log in to the LibreNMS monitoring tool with the admin account you created during the setup.

Upon successful login, you will see the configuration validation page with issues and fixes for them. Follow the steps mentioned in this to fix the configuration issues.

LibreNMS Dashboard: (Your dashboard may look like below after you have added devices and customized it)

LibreNMS Dashboard



Note:

We recommend you add localhost (LibreNMS server) as your first device via the LibreNMS web interface.