

Prerequisites:

Wi-Fi Radios: 2 x TP-LINK WA7510 v2

- Both radios must be on the 192.168.2.0/24 subnet and accessible
- The provider side radio must have an IP address of 192.168.2.5
- The client side radio must have an IP address of 192.168.2.6

The screenshot shows the 'Status' and 'LAN' configuration page. The 'Status' section displays the Firmware Version as '3.13.0 Build 140730 Rel.39812n' and the Hardware Version as 'WA7510N v2 00000000'. The 'LAN' section displays the MAC Address (redacted), IP Address as '192.168.2.5', and Subnet Mask as '255.255.255.0'.

Status	
Firmware Version:	3.13.0 Build 140730 Rel.39812n
Hardware Version:	WA7510N v2 00000000

LAN	
MAC Address:	[Redacted]
IP Address:	192.168.2.5
Subnet Mask:	255.255.255.0

- Both radios must have SNMP enabled.

The screenshot shows the 'SNMP Settings' configuration page. The 'SNMP Agent' is set to 'Enable'. The 'SysContact' field is empty. The 'SysName' field is set to 'Lunokhod 1'. The 'SysLocation' field is set to 'On the Light Side of the Moon'. The 'Get Community' field is set to 'public'. The 'Get Source' field is set to '0.0.0.0'. The 'Set Community' field is set to 'private'. The 'Set Source' field is set to '0.0.0.0'. A 'Save' button is located at the bottom right.

SNMP Settings	
SNMP Agent:	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
SysContact:	[Empty]
SysName:	Lunokhod 1
SysLocation:	On the Light Side of the Moon
Get Community:	public
Get Source:	0.0.0.0
Set Community:	private
Set Source:	0.0.0.0

Save

LMS Server Operating System: Debian Jessie or Raspbian Jessie

LMS Server Network

- Same subnet as the Wi-Fi radios
- LMS is not intended to be run on a publicly accessible machine. It should be installed on a machine in a private network.

Installation

Install Required Packages

The NMS server requires the following packages:

- mysql-server
- ruby-rails
- snmp
- snmpd
- snmp-mibs-downloader
- python-mysqldb
- git
- libmysqlclient-dev

In `/etc/apt/sources.list`, activate the non-free repository.

To install the packages, run the following on the NMS server:

```
sudo apt-get update
sudo apt-get install mysql-server ruby-rails snmp \
snmpd snmp-mibs-downloader python-mysqldb git libmysqlclient-dev
```

When prompted for the MySQL root user password, enter “rootpass”

Clone the Repository

```
cd /
sudo git clone https://github.com/183LMS/183LMS
```

Set Up Database

To create database tables, run the following:

```
mysql < /183LMS/setup_db.sql
```

Set Up Cron Jobs

To setup the cron jobs, open `/etc/crontab` as root with a text editor, and add the following lines to the crontab:

```
* * * * * root /183LMS/lms_ping.pl
* * * * * root /183LMS/lms_asnmp.pl && /cs183/update_cumulative.py atable
* * * * * root /183LMS/lms_bsnmp.pl && /cs183/update_cumulative.py btable
```

Start Up Ruby On Rails App

To install the required Ruby gems, run the following:

```
cd /183LMS/website
sudo bundle install
```

To start a rails server daemon, run the following:

```
cd /183LMS/website
rails server -d
```

The application is now bound to localhost port 3000.

To verify the website is running, visit <http://localhost:3000/> with a web browser.