

Migration Guide from VMware image to Ubuntu

Real Time Location System

1 System Requirements

- Ubuntu 14.04 64bit operation system
- Processor Intel Core i3 or higher
- At least 4GB RAM memory

2 Apache, PHP, MySQL installation

In Ubuntu console type following lines:

1) install apache

```
sudo apt-get update
sudo apt-get install apache2
```

2) install mysql, use password "sensmap"

```
sudo apt-get install mysql-server-5.6 php5-mysql
sudo mysql_install_db
```

3) install php5

```
sudo apt-get install php5 libapache2-mod-php5 php5-mcrypt
```

4) Install phpmyadmin, use password "sensmap"

```
sudo apt-get install phpmyadmin
```

5) Edit apache.conf

```
sudo vim /etc/apache2/apache2.conf
```

Then add the following line:

```
Include /etc/phpmyadmin/apache.conf
```

Modify the Apache configuration file and change AllowOverride None to AllowOverride All for the document root:

Locate the section that looks like the following:

```
<Directory /var/www/>
    Options Indexes FollowSymLinks
    AllowOverride None
    Require all granted
</Directory>
```

Change it to the following and save the file:

```
<Directory /var/www/>
  Options Indexes FollowSymLinks
  AllowOverride All
  Require all granted
</Directory>
```

To use mod_rewrite from within .htaccess files, edit the default VirtualHost with

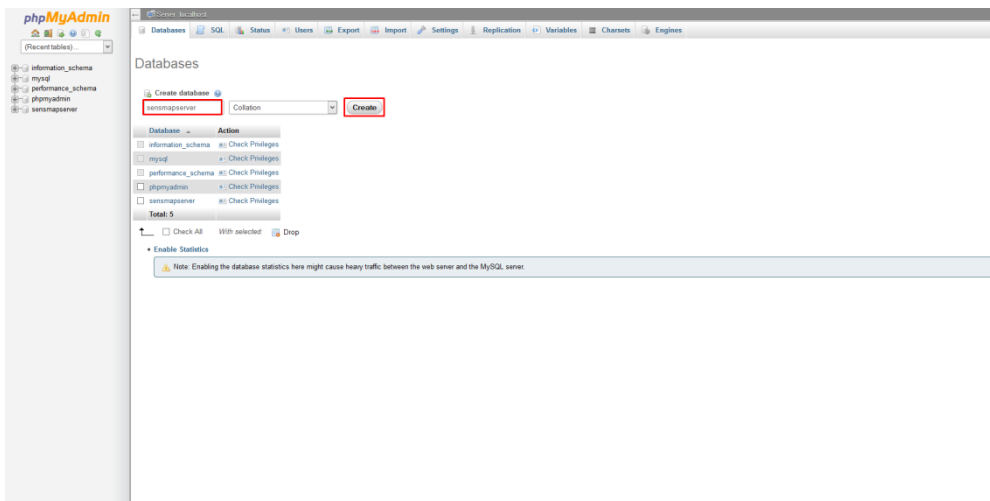
```
sudo vim /etc/apache2/sites-available/000-default.conf
```

Search for "DocumentRoot /var/www/html" and add the following lines directly below:

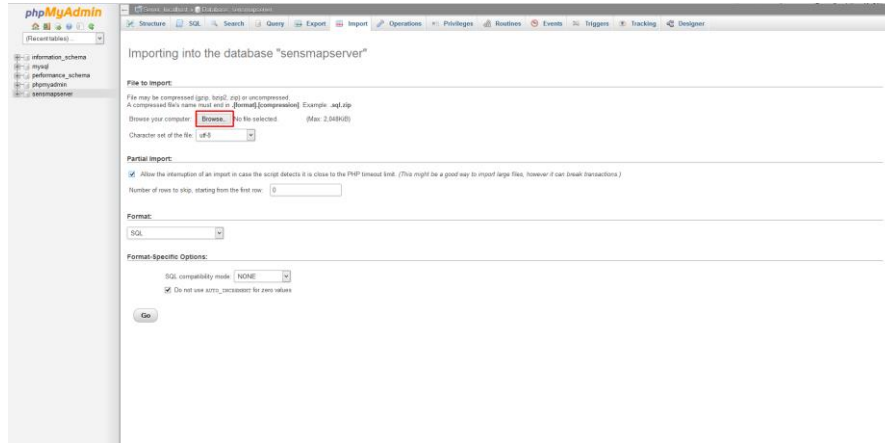
```
<Directory "/var/www/html">
  AllowOverride All
</Directory>
```

- 6) Setting mode rewrite for Apache


```
sudo a2enmod rewrite
sudo service apache2 restart
```
- 7) Go to http://YOUR_IP/phpmyadmin/index.php
Create database with name "sensmapserver"



- 8) Import database schema sensmapserver_default.sql from RTLKit_vmware.zip.



9) Install Glib

```
apt-get install libglib2.0-dev
apt-get install libgtk2.0-dev
```

10) Download and unpack libwebsocket library

<http://git.libwebsockets.org/cgi-bin/cgit/libwebsockets/snapshot/libwebsockets-1.4-chrome43-firefox-36.tar.gz>

```
apt-get install cmake
apt-get install zlibc
apt-get install zlib1g-dev

sudo cmake -DLWS_WITH_SSL=0

sudo make

sudo make install

sudo ln -s /usr/local/lib/libwebsockets.so.5
/usr/lib/libwebsockets.so.5
```

11) Copy RtlS Server to your host

Source Location /home/rtlserver
Change IP in config.ini to your host.

12) Copy Sensmap Server to your host www directory

Source Location: /var/www/html/sensmapserver

13) Copy Sensmap Visualization to your host www directory

Source Location: /var/www/html/sensmap
Change sensmap/config/config.js file_upload_ip and rest_ip to your IP host address.

14) Change permission for www files as follows

(change <your_account_name> to your actual account name):
sudo adduser <your_account_name> www-data
sudo chown -R www-data:www-data /var/www
sudo chmod -R g+rwX /var/www

15) Copy service scripts for Sensmap Server and RTLS server to your host Ubuntu

Source Location: /etc/init/rtlserver.conf
Source Location: /etc/init/sensmapsocketsserver.conf

Services should be started in the following order:
 Apache -> SensmapSocketServer -> RtlS Server

- 16) Edit /etc/init.d/apache2
 Add to line 175 initctl emit apache2-started

```
# Function that starts the daemon/service
#
do_start()
{
    # Return
    # 0 if daemon has been started
    # 1 if daemon was already running
    # 2 if daemon could not be started

    if pidofproc -p $PIDFILE "$DAEMON" > /dev/null 2>&1 ; then
        return 1
    fi

    if apache_conftest ; then
        $APACHECTL start
        apache_wait_start $?
        initctl emit apache2-started
        return $?
    else
        APACHE2_INIT_MESSAGE="The apache2$DIR_SUFFIX configtest failed."
        return 2
    fi
}
```

- 17) Reboot machine `sudo reboot`
- 18) Check whether RTL S Server and SensmapSocketServer are running

```
sensmap@sensmapserver:/home/rtlserver$ sudo service sensmapsocketserver status
[sudo] password for sensmap:
sensmapsocketserver start/running, process 1224
sensmap@sensmapserver:/home/rtlserver$ sudo service rtlserver status
rtlserver start/running, process 1466
sensmap@sensmapserver:/home/rtlserver$
```

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3.1 Changing DB password

If you change password to database you need to also adjust `getConnection()` in Sensmap Server script located at the end of `/sensmapserver/api/index.php`

```
function getConnection() {
    $dbhost="127.0.0.1";
    $dbuser="root";
    $dbpass="sensmap";
    $dbname="sensmapserver";
    $dbh = new PDO("mysql:host=$dbhost;dbname=$dbname", $dbuser, $dbpass);
    $dbh->setAttribute(PDO::ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);

    return $dbh;
}
```

Do not forget re-apply appropriate privileges, step 14.

3.2 How to change Websocket port

Please edit following lines:

Sensmap Visualization:

/var/www/html/sensmap/xively.js, line 28

```
if (!socket && SocketProvider) {
  if (window.SockJS) {
    socketPort = protocol() === "https:" ? 8093 : 8082;
    // TODO: double-check these ports are right
    socketEndpoint = protocol() + "://" + apiHost + ":" + socketPort;
  } else {
    socketPort = protocol() === "https:" ? 8094 : 8080;
```

Sensmap Server:

/var/www/html/sensmapserver/api/index.php, line 3024

```
    }
    $WebSocketClient = new WebSocketClient('127.0.0.1', 8080);
    echo $WebSocketClient->sendData(json_encode($dataToSend));
    unset($WebSocketClient);

  } catch(PDOException $e) {
    echo '{"error":{"text":'. $e->getMessage() .'}}';
  }
}
```

/var/www/html/sensmapserver/socket/bin/websocket-server.php, line 20

```
$server = IoServer::factory(
    new WsServer(
        new SocketHandler()
    ),
    8080
);
$server->run();
```

RTLS Server:

/home/rtlsserver/config.ini, line 6

```
[Sensmap]
ACTIVE=1
IP=192.168.225.134
PORT=80
WEBSOCKET_ACTIVE=1
WEBSOCKET_PORT=8080
API_KEY=17254faec6a60f58458308763
URL=/sensmapserver/api/feeds/
USER_NAME=rtlsuser
LOG_TO_FILE=0
STORE_TO_DB=0

[RTLSserver]
UDP_PORT=5000
FILTER=1
```

3.3 How to modify IP of RTLS server

Sensmap Visualization

/var/www/html/sensmap/config/config.js, lines 10 and 13

```
var sensmapconfig = {
  file_upload_ip: "192.168.225.134",
  (old ip)
  file_upload_path: "sensmapserver",
  rest_ip: "192.168.225.134",
```

RTLS Server:

/home/rtlserver/config.ini, line 3

```
[Sensmap]
ACTIVE=1
IP=192.168.225.134
PORT=80
WEBSOCKET_ACTIVE=1
WEBSOCKET_PORT=8080
API_KEY=17254faec6a60f58458308763
URL=/sensmapserver/api/feeds/
USER_NAME=rtlserver
LOG_TO_FILE=0
STORE_TO_DB=0

[RTLServer]
UDP_PORT=5000
FILTER=1
```