# SKIT Smart Home Grid Manual

# Basic Requirements :

1. PC with linux based OS & python3 development environment setup.
2. Android Device with Android OS 4.4 Kitkat or above.
3. A Wireless Access point with SSID : "SKIT_SmartHome" & password:"skitsmarthome" Enc:WPA2-Personal
4. NodeMCU for each meter.

# General :

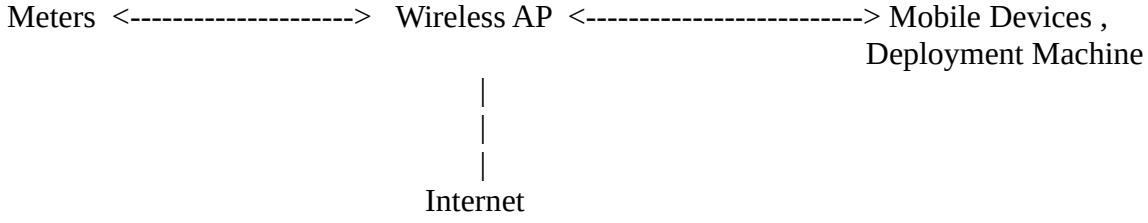
There are basically atleat one PC required as mentioned above which is connected to the above said network.
It can act as both deployment machine as well as server for now.

An android device connected to the same network with the given app installed will be able to recieve data from the devices locally .

Currently a Web interface Layer is yet to be implemented which will provide API for android app to connect to the server remotely over the internet.
As this layer is not implemented yet , the android app can only listen to meters on the local network.

All the smart meters are having full capability to both send data to locally listening android app on the same network & to the programmed server over the internet ( only if it can access internet via the above AP).

# Basic Architecture flow :




# Deployer Machine cum Server ( for now ):

Apart from general requirements:

## Requirements:

1. Python3 packages : ampy , esptool , mysql driver
2. MySQL DB server running .
3. Connected to above mentioned AP.

# Configuration :

The following files needs to match the state of the deployer machine (username , password,database name etc. ) in the section commented as “To be modified by deployer”:

1. SmartHome_GRID/SmartHome-Registry/Database.py
2. SmartHome_GRID/SmartHome-Registry/RegisterSmartDevice.py
3. SmartHome_GRID/SmartHomeServer/Database.py
4. SmartHome_GRID/SmartHomeServer/SmartHomeServer.py

# Deployment :

1. Have the configuration files listed above setup.
2. Have the deployer machine with said dependencies set up.
< --------- Run everything as superuser ----------→
3. run SmartHome_GRID/SmartHome-Registry/RegisterSmartDevice.py script & follow on screen prompts for registering Smart Meters into the database & also to install firmware into them.

4. After all the desired Meters are registered , run SmartHome_GRID/SmartHome-Registry/SmartHomeServer.py script to start the server for receiving data from Meters.

5. After this , you may power on the Meters , they will auto connect to the given AP & discover the server using their config files.

6. Install the given Android app present under SmartHome_GRID/Android_App/APK/SmartHome.apk onto your smartphone & connect to above mentioned AP & start the app. The app will autodetect the local Meters present & will show you the data.