# Tutorial on how to setup and run

## Setup and run on Raspberry Pi

1. Download raspberry pi os on <https://www.raspberrypi.org/downloads/raspberry-pi-os/> (Version used is May 2020, release date: 2020-05-27)
2. Install Motion tool

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| --- | --- | --- |
| * sudo apt-get install motion -y * sudo nano /etc/motion/motion.conf  |  | | --- | | # Start in daemon (background) mode and release terminal (default: off)  **daemon on**  ...  # Restrict stream connections to localhost only (default: on)  **stream\_localhost off**  ...  # Target base directory for pictures and films  # Recommended to use absolute path. (Default: current working directory)  **target\_dir /home/pi/Monitor** |  * Restart the raspberry pi * Replace “no” with “yes” on the daemon * sudo nano /etc/default/motion  |  | | --- | | start\_motion\_daemon=yes |  * mkdir /home/pi/Monitor * sudo chgrp motion /home/pi/Monitor * chmod g+rwx /home/pi/Monitor * sudo service motion start |

1. Install of system dependencies

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| --- |
| sudo apt-get install libatlas-base-dev python3-devel gcc python3-dev libzbar-dev libevent-dev python-all-dev libssl-dev |

1. Use pip install on requirements.txt in Raspberry Pi folder

|  |
| --- |
| sudo pip3 install -r requirements.txt |

1. Run socket\_client.py

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| --- |
| sudo python3 socket\_client.py 127.0.0.1 8889 |

1. Run socket\_server.py

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| --- |
| sudo python3 socket\_server.py 127.0.0.1 8889 |

## Setup and run on AI server

\*Note: We used Ubuntu Server 18.04 LTS image for this AWS ec2 instance

1. Installation of anaconda on ubuntu

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| --- |
| wget https://repo.anaconda.com/archive/Anaconda3-2020.07-Linux-x86\_64.sh  bash Anaconda3-2020.07-Linux-x86\_64.sh  cd ~  source. Bashrc  conda create –name iot\_env python=3.7 |

1. Installation of system dependencies

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| --- |
| sudo apt-get install libgl1-mesa-glx libegl1-mesa libxrandr2 libxrandr2 libxss1 libxcursor1 libxcomposite1 libasound2 libxi6 libxtst6 gcc python3-dev g++ |

1. Use pip install on requirements.txt in AI server folder

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| --- |
| sudo pip3 install -r requirements.txt |

1. Run socket\_client.py

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| --- |
| sudo python3 AiModel.py |

## Setup and run on Web Server

\*Note: We used Amazon Linux 2 (Linux Kernel 4.14) for this AWS ec2 instance

1. Installation of system dependencies

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| --- |
| sudo yum install python3-devel gcc |

1. Use pip install on requirements.txt in web server/IoT-Dashboard folder

|  |
| --- |
| sudo pip3 install -r requirements.txt |

1. In order to make this application work, you have to replace the api key in the IoT-Dashboard folder

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| --- |
| The pages that we are going to modify are:  socket\_client.py  web\_server.py  templates/data.html  templates/index.html  ------------------------------------------------------------------------------------------------------------------------------  1) socket\_client.py  on line 46 onward  change the following:  - account\_sid -> your sid  - auth\_token -> your auth token  - my\_hp -> your phone number  - twilio\_hp -> your twilio phone number  ------------------------------------------------------------------------------------------------------------------------------  2) web\_server.py  on line 129 onward  change the following:  - account\_sid -> your sid  - auth\_token -> your auth token  - my\_hp -> your phone number  - twilio\_hp -> your twilio phone number  - whatsapp\_hp -> your twilio whatsapp number  ------------------------------------------------------------------------------------------------------------------------------  3) templates/data.html  on line 62  <script src="https://maps.googleapis.com/maps/api/js?key=Key here"></script>  replace the Key here to the google map api key  on line 65  google.charts.load('current', {'packages':['corechart','table','controls','gauge','map'],'mapsApiKey':'Key here'});  replace the Key here to the google map api key  ------------------------------------------------------------------------------------------------------------------------------  4) template/index.html  on line 62  google.charts.load('current', {'packages':['corechart','table','gauge','map'], 'mapsApiKey':'Key here'});  replace the Key here to the google map api key |

1. Run socket\_client.py

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| --- |
| sudo python3 web\_server.py 80 |

1. Replace the 116.87.64.143 with your Pi IP address or other IP camera IP address.

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| A screenshot of a cell phone  Description automatically generated |

1. Access the web server on the ec2 IP address