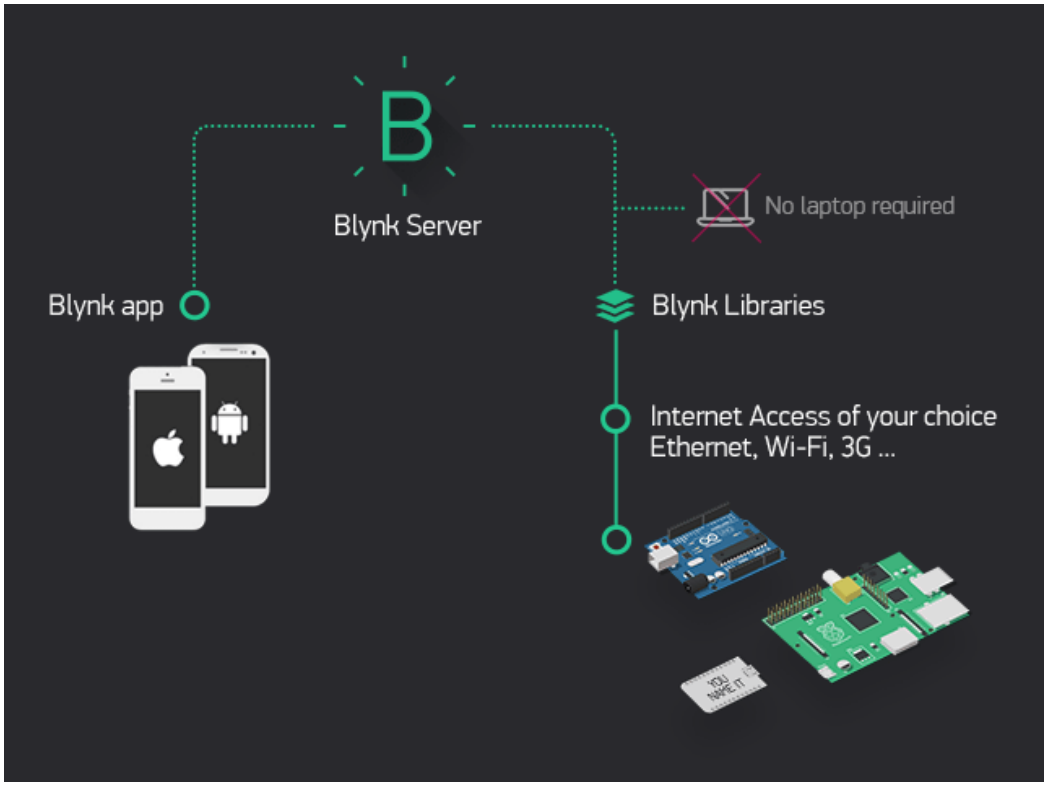
Cloud Based monitoring of operations using BLYNK

Report by By Vahin Reddy, B.Tech Mechatronics – VIth Sem

Introduction

Blynk is a cloud-based service that can be used for IOT applications. The platform can be used in smart home products, HVAC systems, agricultural applications and more. With the blynk app, we can control any supported device using a mobile device over various data communication types like Ethernet, WIFI, USB, etc.

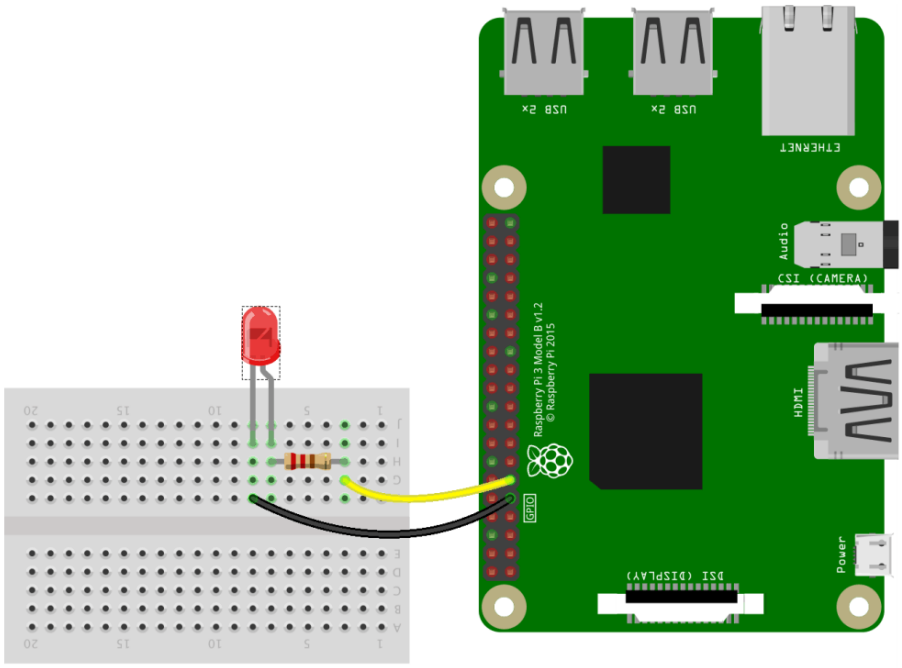
For this experiment, we will be using a Raspberry Pi with blynk installed, to control an LED with a pushbutton.



Components

To create the Blynk circuit, we will be utilizing a few hardware components such as:

- Red LED
- 230 Ohm Resistor
- Connecting wires
- Raspberry Pi
- Mobile device



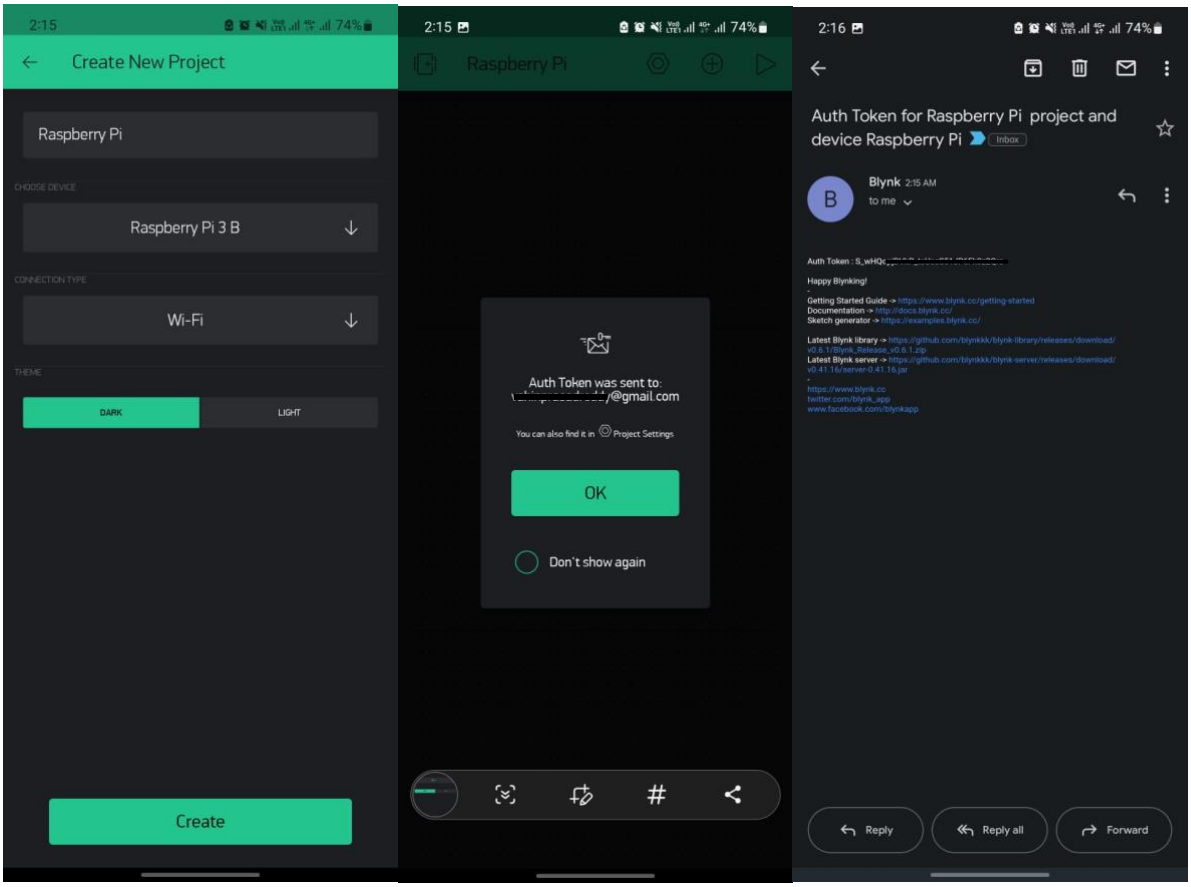
Procedure

We begin the process by:

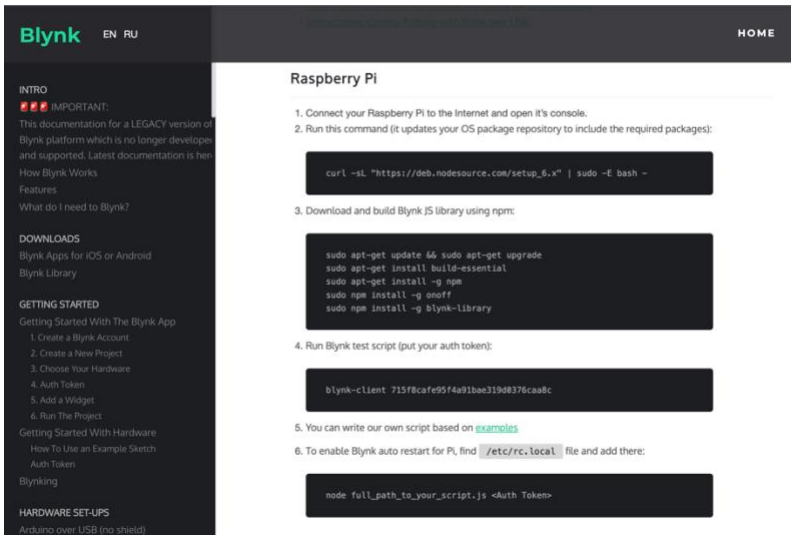
- Installing Blynk on Raspberry Pi
- Host the Blynk server on the mobile device
- Launch Blynk on to the Raspberry Pi
- Connect the Blynk widgets
- Deploy the program

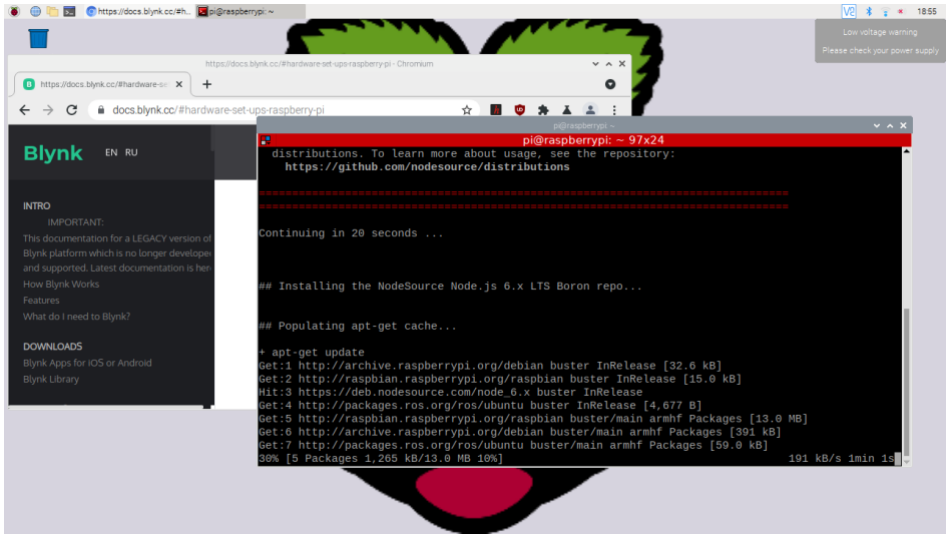
Installing Node-RED on Raspberry Pi

To initiate the process , we must create a new project on the Blynk mobile app and receive the Auth Token from the email address that we provide.



We must install Blynk on Raspberry Pi: http://docs.blynk.cc/#hardware-set-ups-raspberry-pi




Blynk
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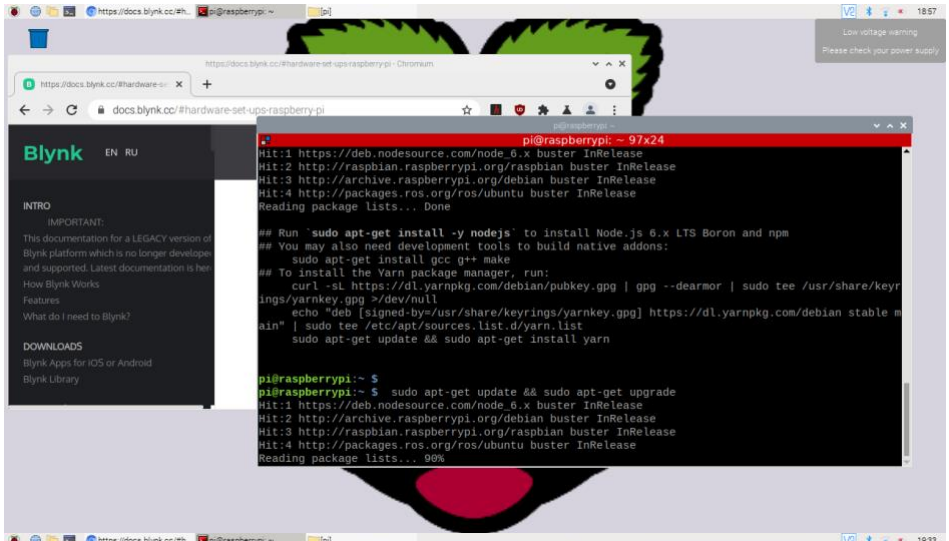
INTRO
IMPORTANT:
DOWNLOADS
Blynk Apps for iOS or Android
Blynk Library
pi@raspberrypi: ~ 97x24
distributions. To learn more about usage, see the repository:
https://github.com/nodesource/distributions
Continuing in 20 seconds ...
Installing the NodeSource Node.js 6.x LTS Boron repo...
Populating apt-get cache...
+ apt-get update
Get:1 http://archive.raspberrypi.org/debian buster InRelease [32.6 kB]
Get:2 http://raspbian.raspberrypi.org/raspbian buster InRelease [15.0 kB]
Hit:3 https://deb.nodesource.com/node_6.x buster InRelease
Get:4 http://packages.ros.org/ros/ubuntu buster InRelease [4,677 B]
Get:5 http://raspbian.raspberrypi.org/raspbian buster/main armhf Packages [13.0 MB]
Get:6 http://archive.raspberrypi.org/debian buster/main armhf Packages [391 kB]
Get:7 http://packages.ros.org/ros/ubuntu buster/main armhf Packages [59.0 kB]
30% [5 Packages 1,265 kB/13.0 MB 10%] 191 kB/s 1min 1s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DOWNLOADS
Blynk Apps for iOS or Android
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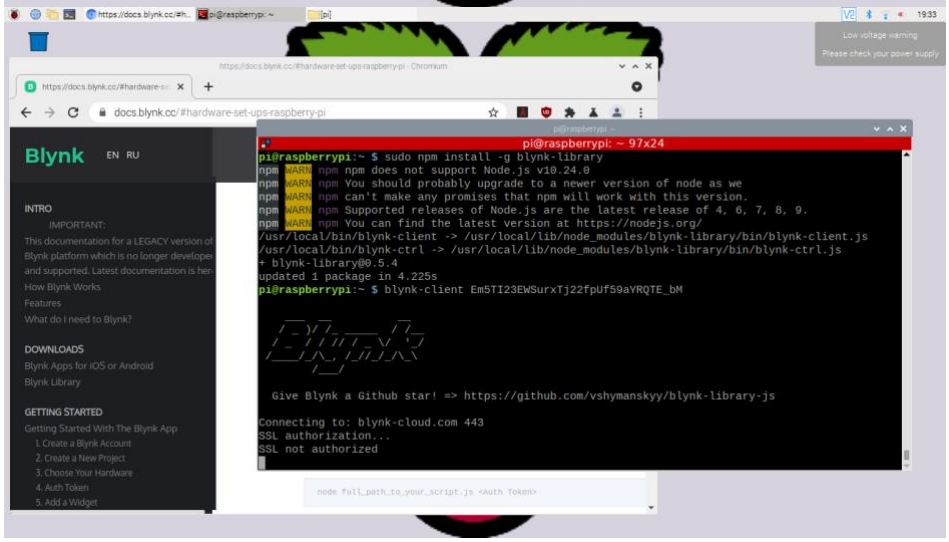
pi@raspberrypi: ~ 97x24
Hit:1 https://deb.nodesource.com/node_6.x buster InRelease
Hit:2 http://raspbian.raspberrypi.org/raspbian buster InRelease
Hit:3 http://archive.raspberrypi.org/debian buster InRelease
Hit:4 http://packages.ros.org/ros/ubuntu buster InRelease
Reading package lists... Done
Run `sudo apt-get install -y nodejs` to install Node.js 6.x LTS Boron and npm
You may also need development tools to build native addons:
sudo apt-get install gcc g++ make
To install the Yarn package manager, run:
curl -sL https://dl.yarnpkg.com/debian/pubkey.gpg | gpg --dearmor | sudo tee /usr/share/keyr
ings/yarnkey.gpg >/dev/null
echo "deb [signed-by=/usr/share/keyrings/yarnkey.gpg] https://dl.yarnpkg.com/debian stable m
ain" | sudo tee /etc/apt/sources.list.d/yarn.list
sudo apt-get update && sudo apt-get install yarn
pi@raspberrypi:~ $
pi@raspberrypi:~ $ sudo apt-get update && sudo apt-get upgrade
Hit:1 https://deb.nodesource.com/node_6.x buster InRelease
Hit:2 http://archive.raspberrypi.org/debian buster InRelease
Hit:3 http://raspbian.raspberrypi.org/raspbian buster InRelease
Hit:4 http://packages.ros.org/ros/ubuntu buster InRelease
Reading package lists... 90%


Blynk
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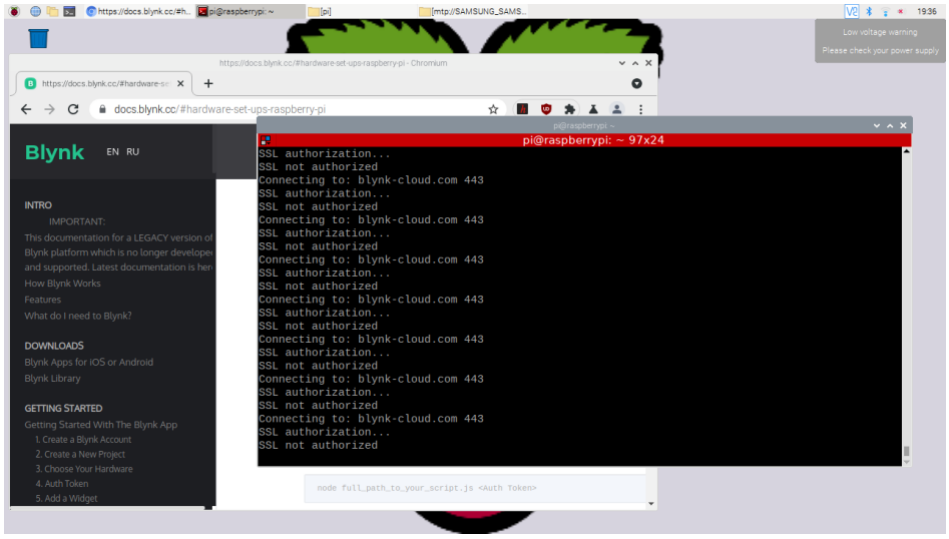
INTRO
DOWNLOADS
Blynk Apps for iOS or Android
Blynk Library
GETTING STARTED
Getting Started With The Blynk App
1. Create a Blynk Account
2. Create a New Project
3. Choose Your Hardware
4. Auth Token
5. Add a Widget
pi@raspberrypi: ~ 97x24
pi@raspberrypi:~ $ sudo npm install -g blynk-library
npm WARN npm npm does not support Node.js v10.24.0
npm WARN npm You should probably upgrade to a newer version of node as we
npm WARN npm can't make any promises that npm will work with this version.
npm WARN npm Supported releases of Node.js are the latest release of 4, 6, 7, 8, 9.
npm WARN npm You can find the latest version at https://nodejs.org/
/usr/local/bin/blynk-client -> /usr/local/lib/node_modules/blynk-library/bin/blynk-client.js
/usr/local/bin/blynk-ctrl -> /usr/local/lib/node_modules/blynk-library/bin/blynk-ctrl.js
+ blynk-library@0.5.4
updated 1 package in 4.225s
pi@raspberrypi:~ $ blynk-client Em5TI23EWSurxTj22fpUf59aYRQTE_bM
Give Blynk a Github star! => https://github.com/vshymanskyy/blynk-library-js
Connecting to: blynk-cloud.com 443
SSL authorization...
SSL not authorized
node full_path_to_your_script.js <Auth Token>

SSL Error Loop




```
Connecting to: blynk-cloud.com 433
SSL authorization…
SSL not authorized
```

After updating and installing all the necessary dependencies using the terminal, we execute the program using the Authentication token that was sent by email. However, the software was never able to get authorization of SSL. Even after referring to the Blynk community [1], the problem was unable to be resolved.

Conclusion

With Blynk, it would be possible to control and monitor IOT devices such as a Raspberry Pi. However, after gathering all the components and connecting them to the Raspberry Pi, the SSL communication was unable to be authorized regardless of all the troubleshooting.

Reference

[1] "SSL not authorized," Blynk Community, 1 March 2021. [Online]. Available: https://community.blynk.cc/t/ssl-not-authorized/52056.