OptimaSaverPi

User Guide

January 2017

Version 1.0

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What is OptimaSaverPi

Greetings!!! The Optima Saver Team presenting you their latest groundbreaking product which will break the chain of costly PC & Monitor dependency for operating your setup and we call it **OptimaSaverPi**.

Why OptimaSaverPi

★ Low power consumption (2.5 A , 5V).

★ Price less than 40$.

★ Size of a Credit Card.

★ All advantage of PC Based Optima Saver.

★ Stronger than router based solution (RAM, CPU, Bandwidth Optimization, Tunneling are much better here).

★ No display/monitor needed to run the setup.

★ Easily portable.

Requirement

System Requirement
1. **Raspberry Pi 3, model B with 2.5A, 5V USB Power Supply Adapter & microUSB cable.**
2. **microSD Card , 8GB (min) , class 10.**
3. **Clear Raspberry Pi 3 Casing.(optional)**
4. **2 Heat Sinks. (optional)**

Installation Requirement(First time)
1. **PC with monitor**
2. **USB Card Reader(microSD) / Adapter.**
3. **Router with internet.**

System Preparation Gist

1. Insert microSD card into USB Card Reader, then insert the USB Card Reader into PC. Then format the microSD card with "SD Formatter", link HERE.
2. Download the OptimaSaverPi image zip file from HERE & unzip it, then burn the OptimaSaverPi image into microSD card with "Win32DiskImager", link HERE.
3. Insert the microSD into OptimaSaverPi machine's microSD card slot.
4. Connect the microUSB cable from power adapter to microUSB port of the OptimaSaverPi machine.
5. Connect the PC, OptimaSaverPi, Gateway(lan) under same router via lan.
6. Get the MAC address of OptimaSaverPi and IP of Gateway for further configuration from DHCP client list of router management page.
7. Get an IP from our SALES team and config your Client Panel.

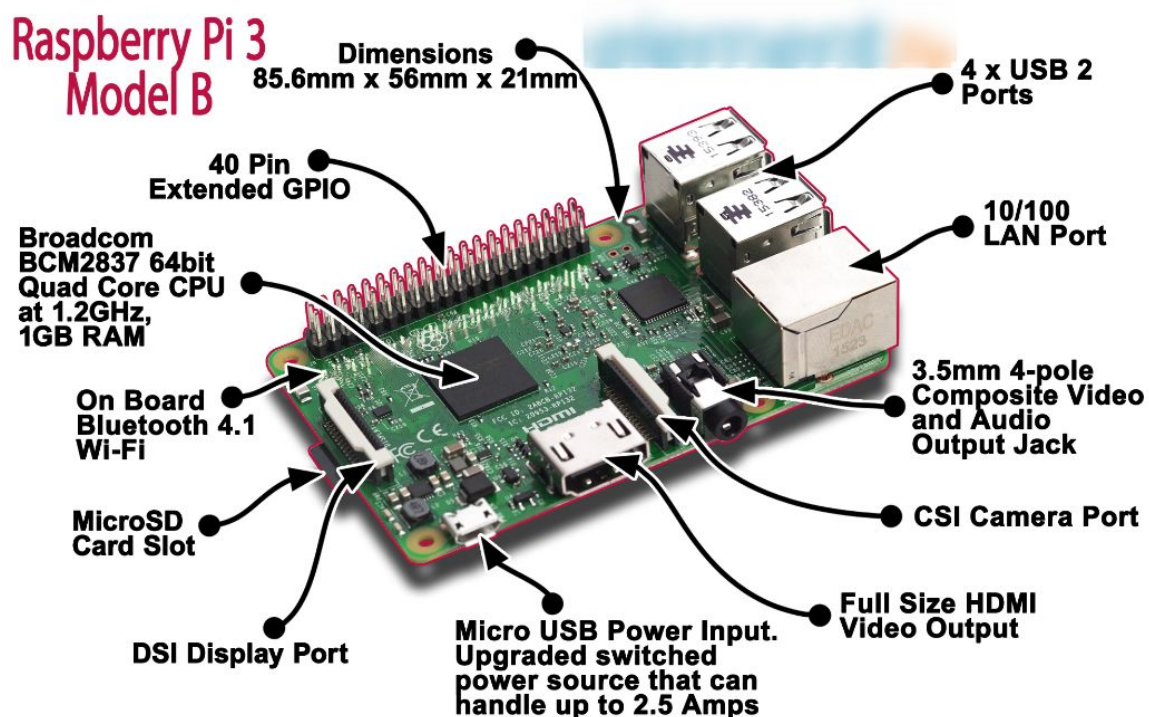Now we will explain these steps in details later One by One.

Figure: Raspberry P3i machine.

Setup Details

A guide to setting up your **OptimaSaverPi**

ESSENTIAL (FOR GENERAL USE)

- Device
    - optimapi Pi, Version 3, Model B recommended.

- microSD Card
    - We recommend 8GB ,CLASS 10 **microSD Card** (version 3, model B)
    - The card class determines the sustained write speed for the card; a class 4 card will be able to write at 4MB/s, whereas a class 10 should be able to attain 10 MB/s.
    - The OptimaSaverPi requires microSD cards, which can be used with a built-in SD card reader or USB SD card reader for image burning process from PC.
    - Make sure you are using a genuine microSD card. There are many cheap microSD cards available which card space are actually smaller than advertised or which will not last very long.

- Ethernet (network) cable
    - An Ethernet cable is used to connect your OptimaSaverPi to a local network and the internet through a router/ switch.
    - Should use any router which must be configured as DHCP for distributing internet via ethernet. If you one wants to use switch, then our support team may configure the ip manually.
- Power supply
    - The OptimaSaverPi is powered by a microUSB power supply which can supply at least 2.5A at 5V for the model/version 3.

OPTIONAL

- Keyboard and mouse
    - Any standard USB keyboard and mouse will work with your OptimaSaverPi.
CONNECTIVITY
    - You may connect through 3G Modem/ LAN / WLAN with OptimaSaverPi machine for internet connectivity. For wifi/ wlan connectivity, you have to knock our support for manual configuration.

Here We will guide you the installation procedure of OptimaSaverPi OS into microSD card.

Formatting the microSD Card

We recommend to Format the microSD Card. In some cases to re-use a microSD card you might find the usable capacity is less than you were expecting. This can be due to partitions previously configured and some "format" utilities can't remove them.
OptimaSaverPi previously used ,microSD cards will often only appear to have a capacity of 56MB in windows but that is because it can't see the much larger Linux partition.

In order to ensure your microSD cards are completely blank and has no partitions that may be hidden from Windows, we always recommend to erase it with "SD Formatter" on your PC first. This is a tool created by the SD Association. Download the installer from HERE for Windows.

Step 1 – Run
Insert your microSD card and run the SDFormatter application :
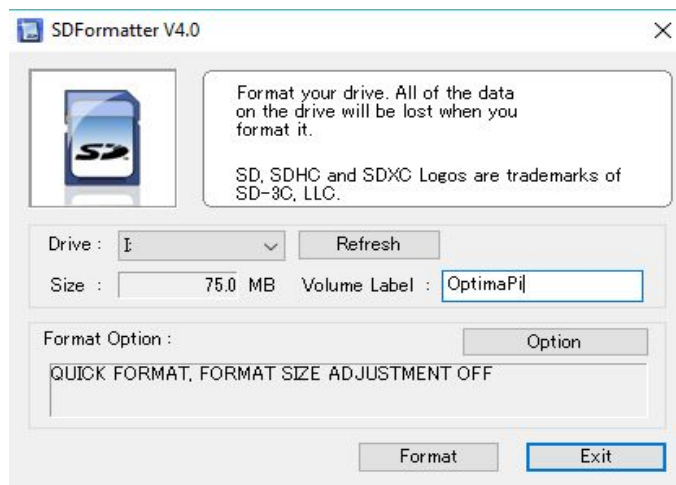
N.B : Here the card may only appears to have a capacity of 75MB despite being a 8GB card

Double check the drive letter. Then check it again. You do not want to format another device by accident!
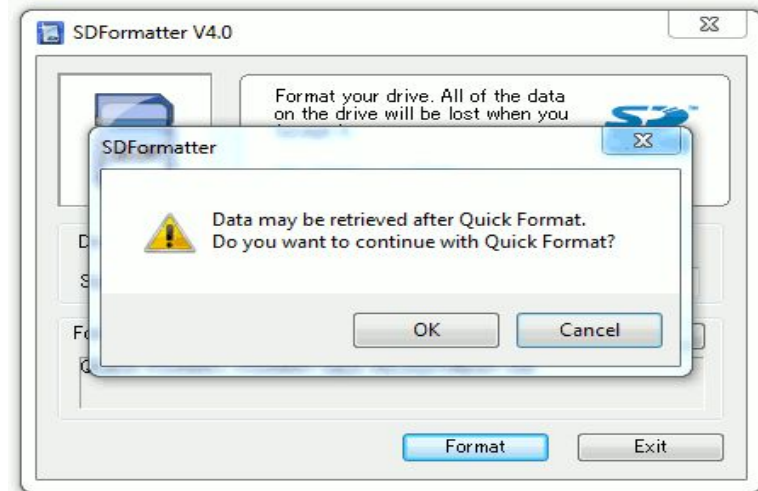
Step 2 – Enable Size Adjustment

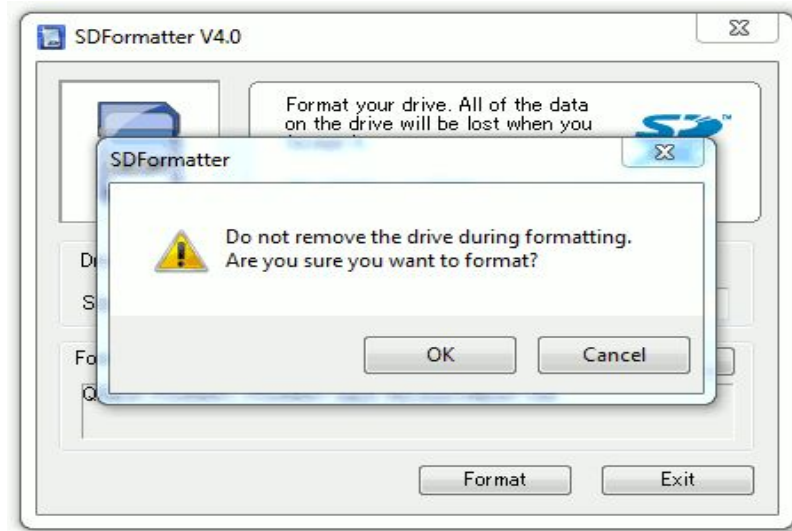As we are specifically interested in restoring the true capacity of the card click "Option" and
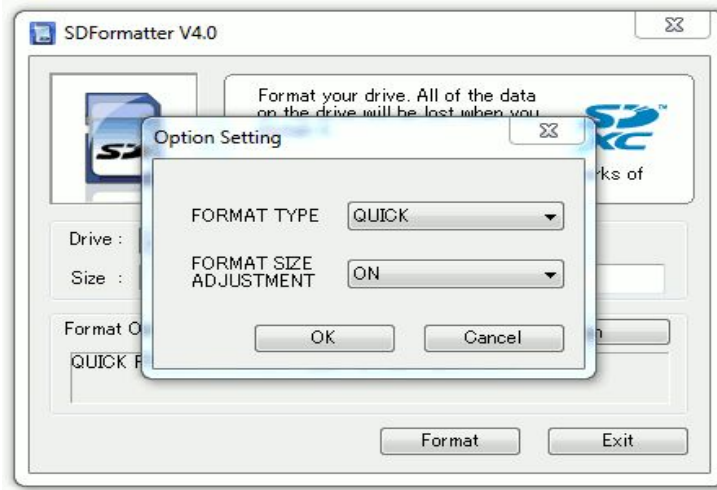
turn "Format Size Adjustment" to "ON", Click "OK".

Step 3 – Format

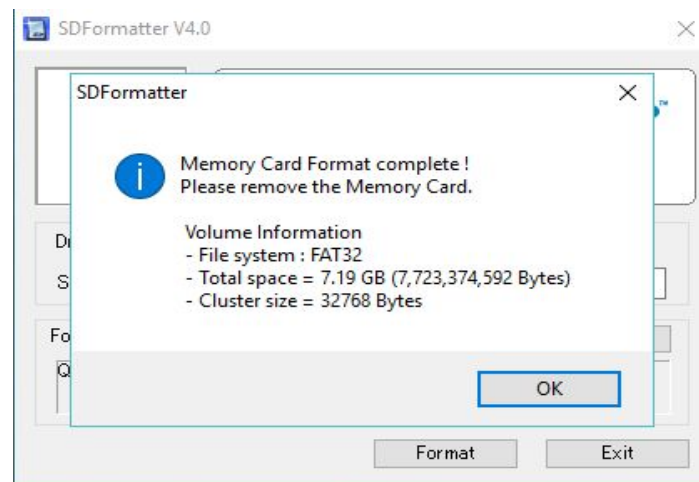Click "Format" to start the process.

Click "OK" to proceed.

Click "OK" to proceed.

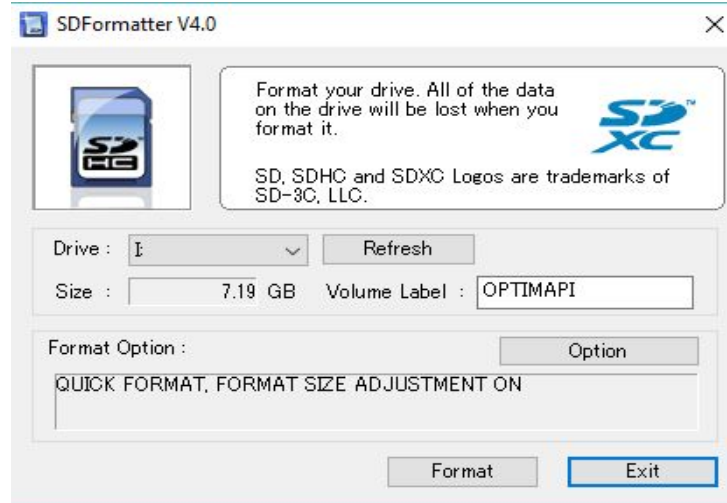The process should start and it should only take a few seconds.

Step 4 – Finish

When the process finishes it will provide a summary of the cards capacity.

In our example the 8GB card has a capacity of 7.19GB which sounds right. Certainly an improvement on the 75MB that appeared before.

You can now click "Exit". Eject your microSD card as normal.

Now you are ready to Install a new OptimaSaverPi image to it which is explained in the next segment.

Installing OptimaSaverPi Image

This resource will explain how to install a OptimaSaverPi operating system image in a microSD card. You will need a pc with an SD card reader build-in or you may use USB SD card reader which is available in the market, to write the image.

Downloading the Image:

Official image of OptimaSaverPi is available to download from HERE. Use Bitcomet for downloading the image which will check MD5 checksum to ensure the image has been downloaded with no data loss.

After downloading the .zip file, right click in the zip file and click extract all to unzip it to get the image file (.img) for writing to your microSD card. This unzipping procedure may take 1 min maximum. You may use any third party application to unzip, like: 7-zip (32 Bit or 64 Bit)

Writing an image to the microSD card:

With the image file of the distribution of your choice, you need to use an image writing tool to install it on your microSD card. See our guide for your system with windows below:

- Insert the microSD card into your SD card reader and check which drive letter was assigned from windows explorer carefully.
- Download the Win32DiskImager.exe utility from the HERE and install it.
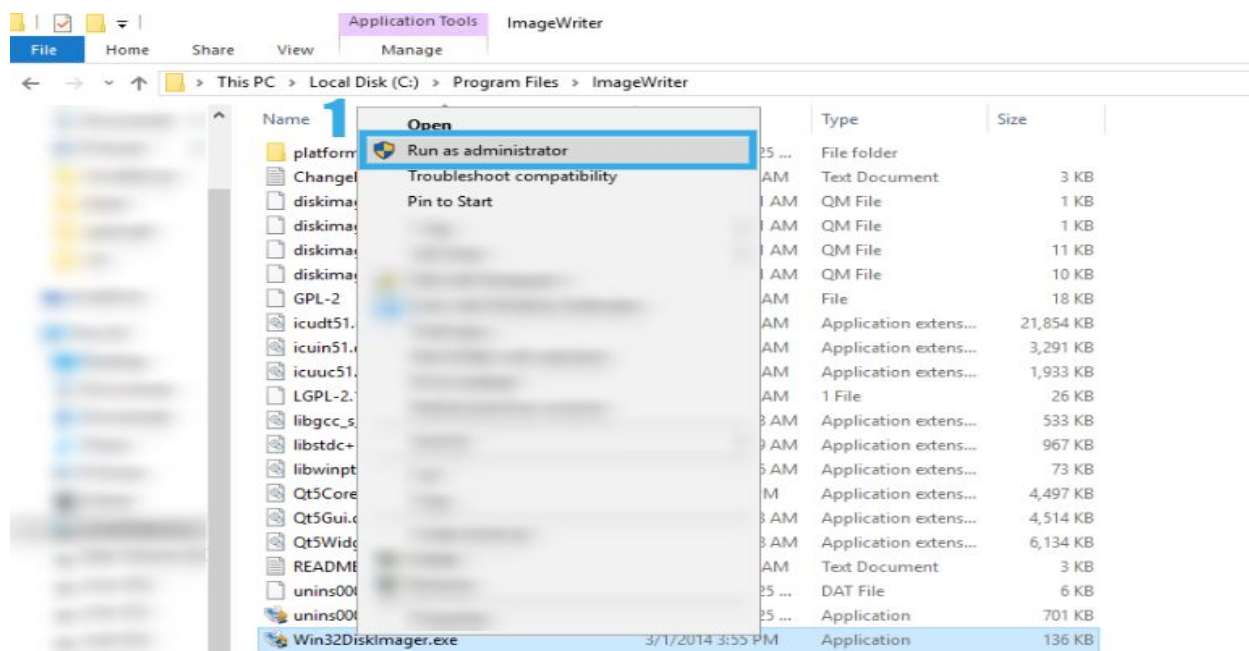
- Run the Win32DiskImager executable utility; you may need to run this as administrator. Right-click on the file, and select Run as administrator(1).
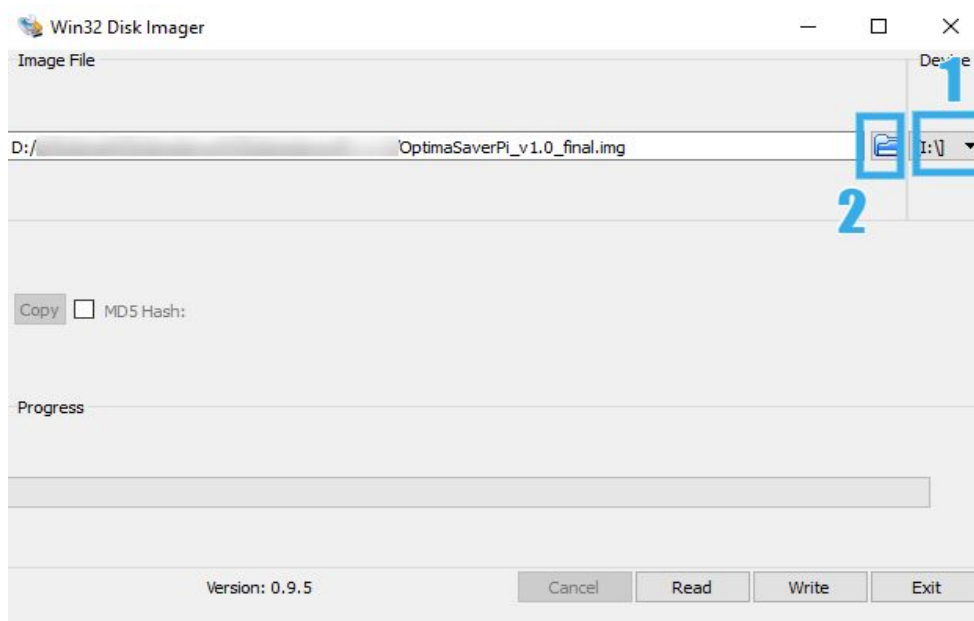
- Select the drive letter of the SD card in the device box(1). Be careful to select the correct drive; if you get the wrong one you can destroy the data on your computer's hard disk! If you are using an SD card slot in your computer and can't see the drive in the Win32DiskImager window, try using an external USB SD card adapter.
- Select the image file you extracted earlier(2).
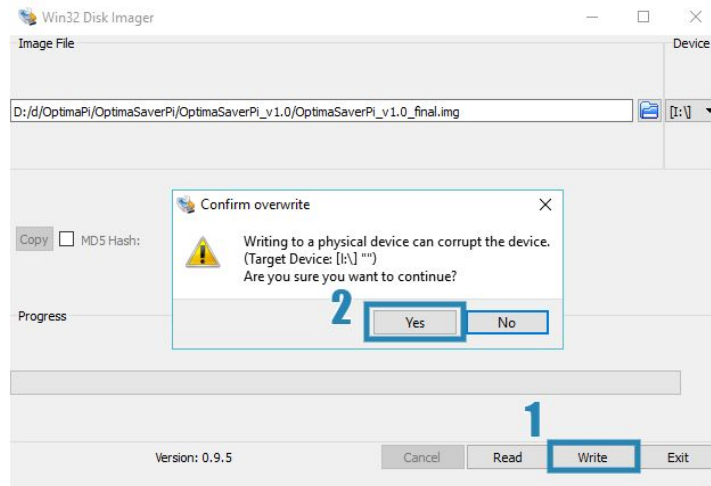
- Click Write(1) then click yes (2) to start and wait for the write to complete.
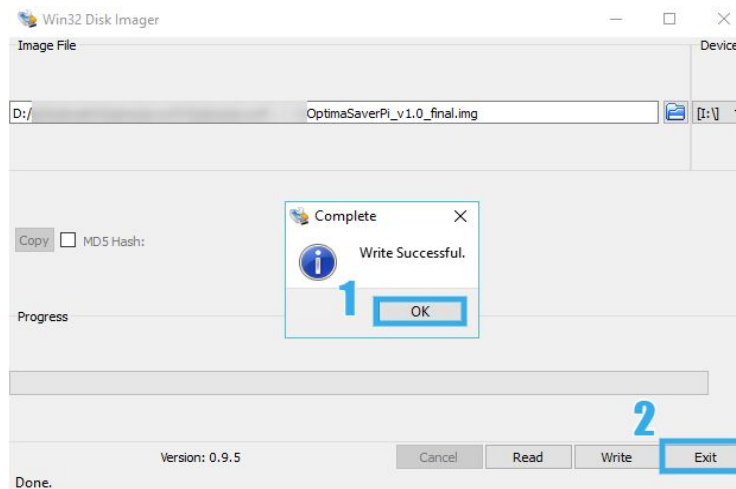
- If Write is Successful(1), exit(2) the Win32 Disk Imager.

- Select the device(1) & eject(2) the microSD card safely always. This image writing procedure may take min 4 mins to maximum 12 mins, depending upon your microSD card quality and pc performance.

Getting Set Up Ready

After you write the OptimaSaverPi image into the microSD card, insert the card into OptimaSaverPi machine properly, shown in below pic.

Now we will guide you step by step for getting your setup ready.

1. OptimaSaverPi, MAC Address discovery from router.
2. Gateway IP discovery for further configuration.

you will be needing a windows pc and a router, where OptimaSaverPi and the gateway will be connected with lan ports of the same router.
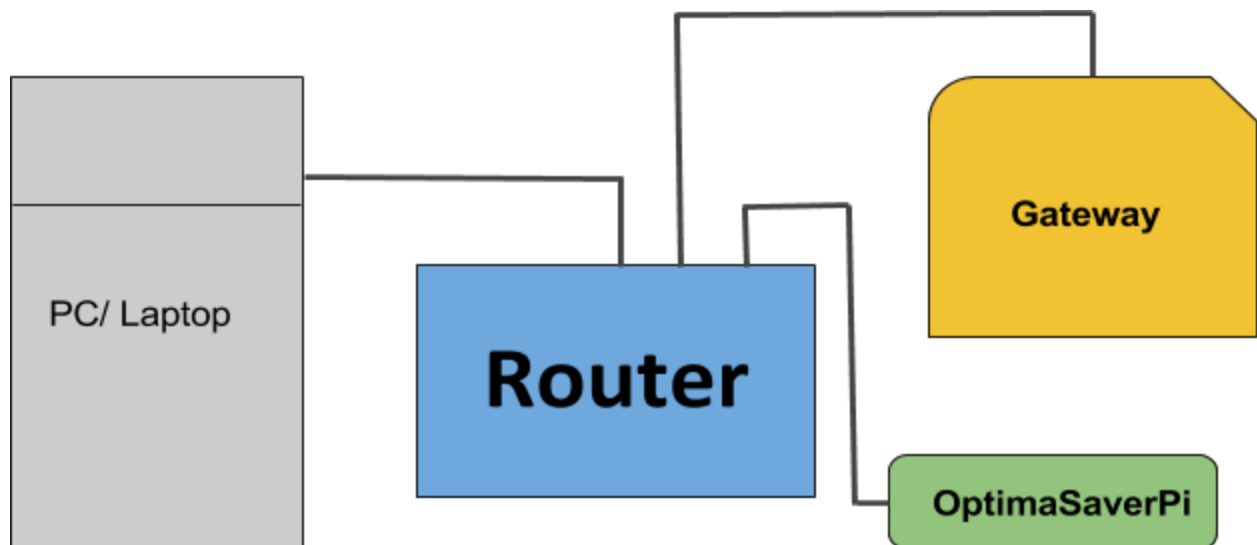
Lan design for configuration purpose only.

Then you have to login to router management page with default ip e.g 192.168.0.1 and goto DHCP client list page, e.g:

Figure 1 : OptimaSaverPi Mac Address & Gateway ip discovery

Here you may see the OptimaSaverPi device MAC Address e.g: B8-27-EB-XX-XX-XX , note it down for further configuration and also you may need to find your gateway dhcp ip, e.g. 192.168.0.101 here, which will need later to config the gateway (shown Figure 1).
Now it's time to ready your system after gateway configuration with default ip series, e.g: 192.168.101.xxx of OptimaSaverPi.
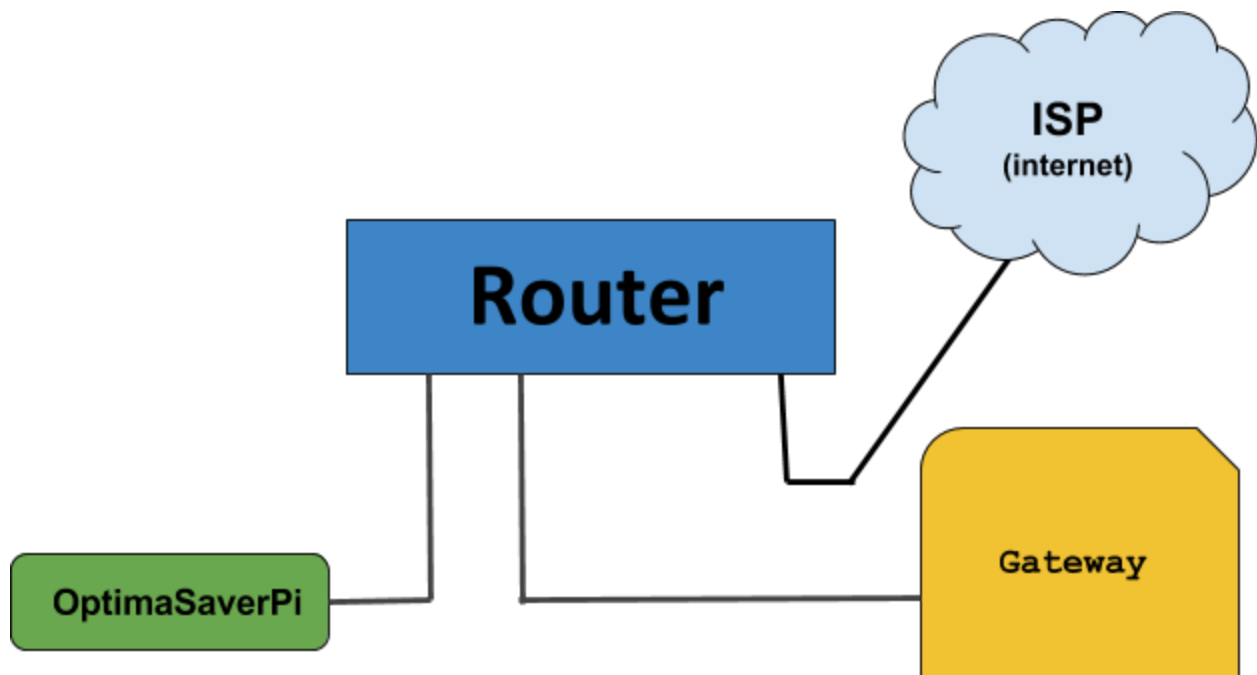
N.B: if your mobile device is connected under same router, then you may also access your router from your mobile's browser and get your desired info.

Lan Design Requirement to run setup

- Router
- Lan Cables
- OptimaSaverPi
- Gateway
- ISP (Internet)

Lan Design:

OptimaSaverPi **====(lan)====>>** ROUTER **<<====(lan)====** Gateway

Lan Design to run the setup

With a lan cable, >> connect OptimaSaverPi and Router,

then with another lan cable << connect Router and Gateway.

Now you are ready to run the OptimaSaverPi.

Starting OptimaSaverPi

After connecting power with OptimaSaverPi properly, the machine will start instantly.
If you can connect OptimaSaverPi with the monitor via HDMI directly or via HDMI to VGA converter, then after starting OptimaSaverPi successfully you will see a welcome screen(shown Figure 2)
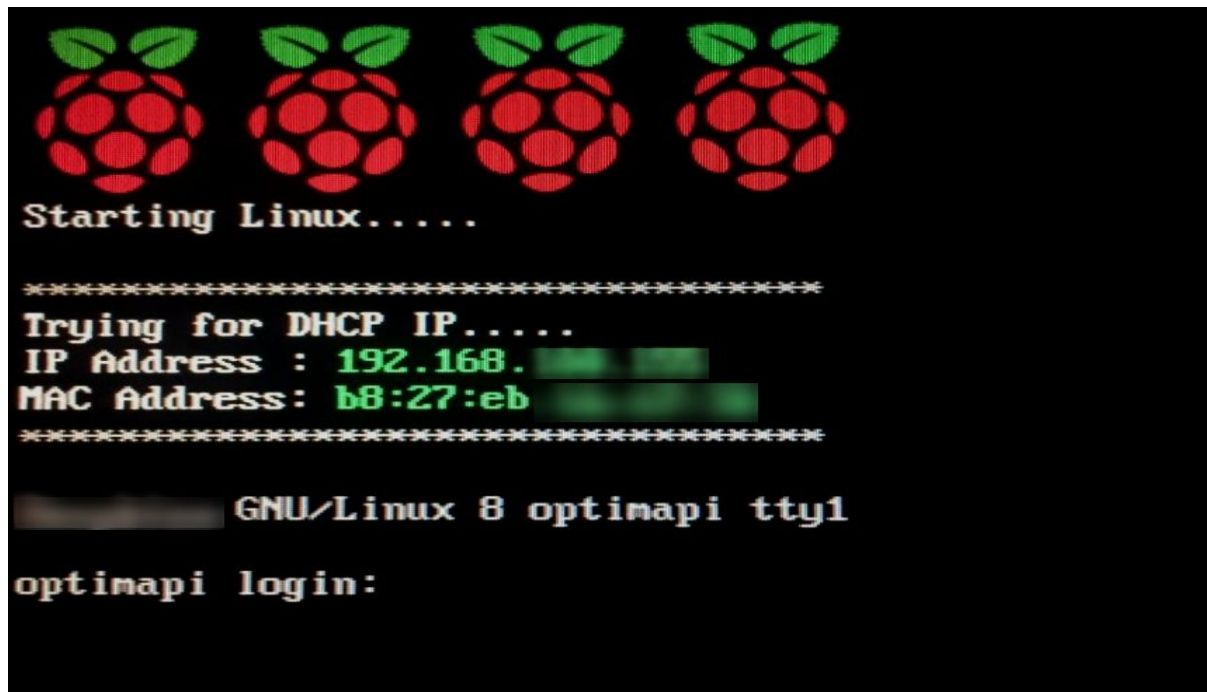

Figure 2: OptimaSaverPi login welcome screen.

Login name: optima , pass: optima to manage the system with some limited command line, like:

- xmac.optima (to see the mac address of OptimaSaverPi machine.
- ifconfig (to see the interface wise ip list)
- reboot.
- poweroff.
- Ping.
- wvdial (for 3G Modem)

You may also type sudo (space) + Tab to see the available command list.

N.B. All shell commands must be executed with sudo, e.g: sudo poweroff.

Manual IP Config(STATIC)

You may also configure OptimaSaverPi machine LAN IP manually as per your requirement, which is described below:
Type in the shell like below, here we have set 192.168.1.10 ip for an example, you may set ip as per your configuration.

```
sudo ifconfig eth0 192.168.1.10 netmask 255.255.255.0 up
```

but this is a temporary process. If you restart the machine the config will be removed. To make this permanent, please knock our support mentioning the ip(192.168.1.10) that you have assigned manually.

OptimaSaverPi Terminal Remote Access

Now It's time to take an OptimaSaver Server IP from our SALES (Skype: sales.improlabs) team with the Optima Saver Client Panel link where you need to config the panel with some required info. You may also access OptimaSaverPi terminal remotely from OptimaSaver Client Panel. I will explain you in short how you may access the terminal step by step:

    A. From Optima Client Panel, go to Gateway tab, then:
        1. Fill up the required info shown in figure 3, page no 16.
        2. Click on update.
        3. Click on the grey icon shown in figure 3, page no 16.
        4. Click ok on the dialog box.
        5. When the ip color turns blue from grey, click on the ip to access the terminal, shown in figure 3, page no 16.

    B. Now enter the login name: *optima*, password: *optima* , to access the terminal, where you should type sudo (space) (tab) to see the available commands for you, shown in figure 4, page no 16.
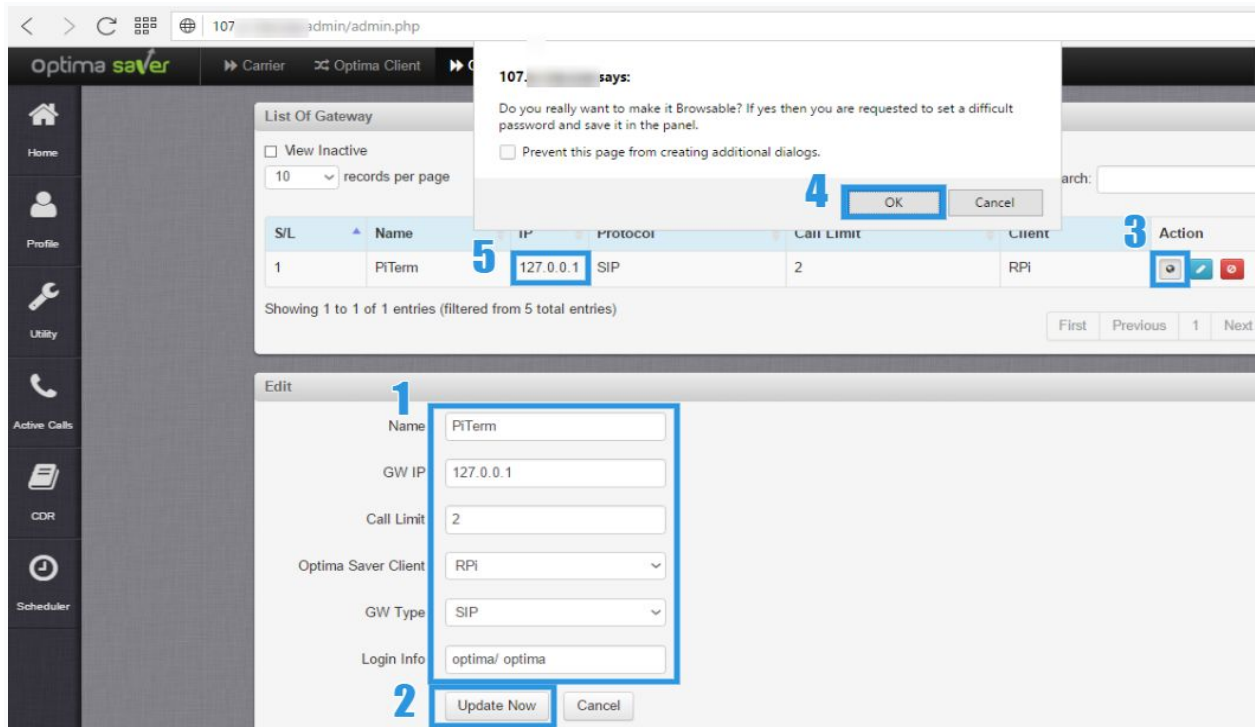
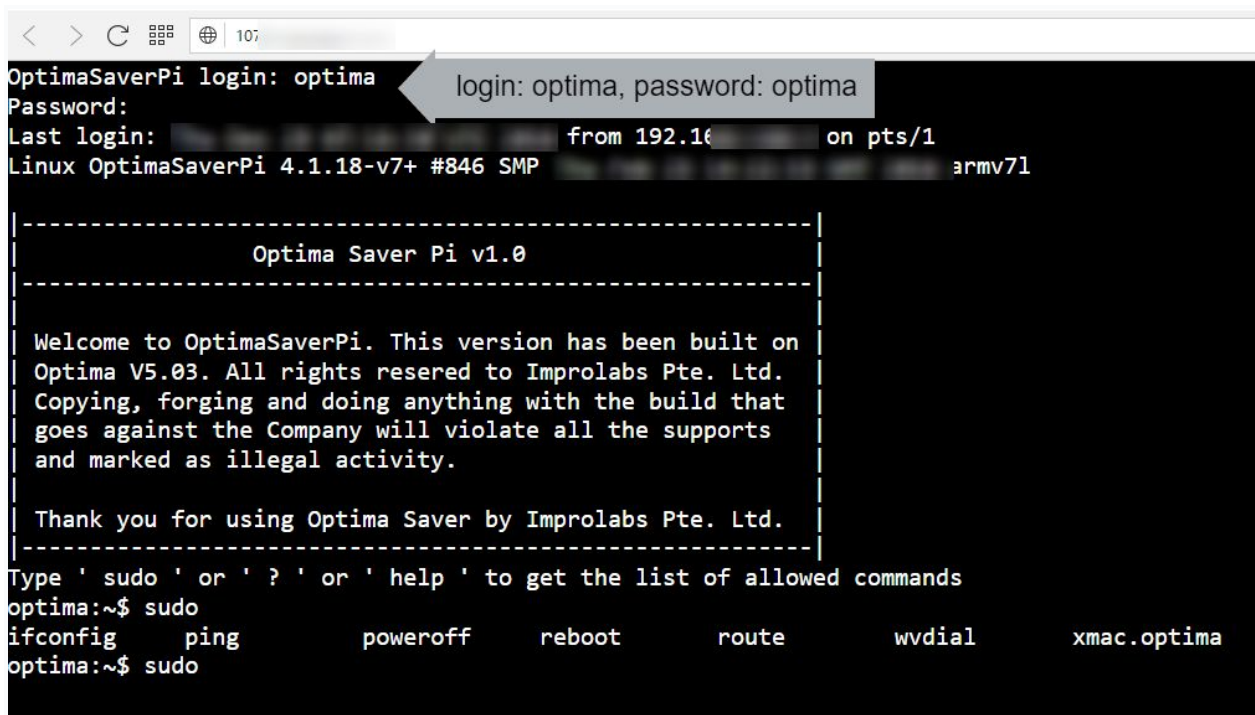**Figure 3 : OptimaSaverPi terminal remote access.**

Figure 4: OptimaSaverPi terminal remote access.

Optima Saver Client Panel

From **HERE** you may access OptimaSaver Client Panel configure guideline.

Common Issues

- If your OptimaSaverPi don't get any ip at the welcome screen then you need to check the dhcp settings in router also check that it's connected with lan ports of both. If all are ok, then OptimaSaverPi will automatically get the ip and show you in the welcome screen. For further assistance you may knock our support team.
- If you can't see any welcome screen, make sure your SD or microSD is properly inserted into OptimaSaverPi Machine.
- If you see any rainbow sign after starting OptimaSaverPi in the screen, that means 2.5 A was not provided properly to the machine, you may need to change the power adapter.
- Make sure you are using a good quality power supply. You can check your power supply by measuring the voltage between TP1 and TP2 on the OptimaSaverPi; if this drops below 4.75V when doing complex tasks then it is most likely unsuitable.
- Make sure you are using a good quality USB cable for the power supply. When using a high quality power supply, the TP1->TP2 voltage can drop below 4.75V. This is generally due to the resistance of the wires in the USB power cable; to save money, USB cables have as little copper in them as possible, and as much as 1V (or 1W) can be lost over the length of the cable.
- Make sure you are shutting your OptimaSaverPi down properly before powering it off. Type sudo poweroff and wait for the Pi to signal it is ready to be powered off by flashing the activity LED.
- Don't use a cheap rate/ quality microSD reader, it may damage your microSD for good.

Download Links

- ★ SD Formatter
- ★ Win32 Disk Image Creator
- ★ OptimaSaverPi ISO
- ★ UNZIP
- ★ Downloader