Notes for Raspberry Pi

Tips, hints, and tricks when working on Raspberry Pi

#notes #pi

Last update: 2021-06-10 12:52:12

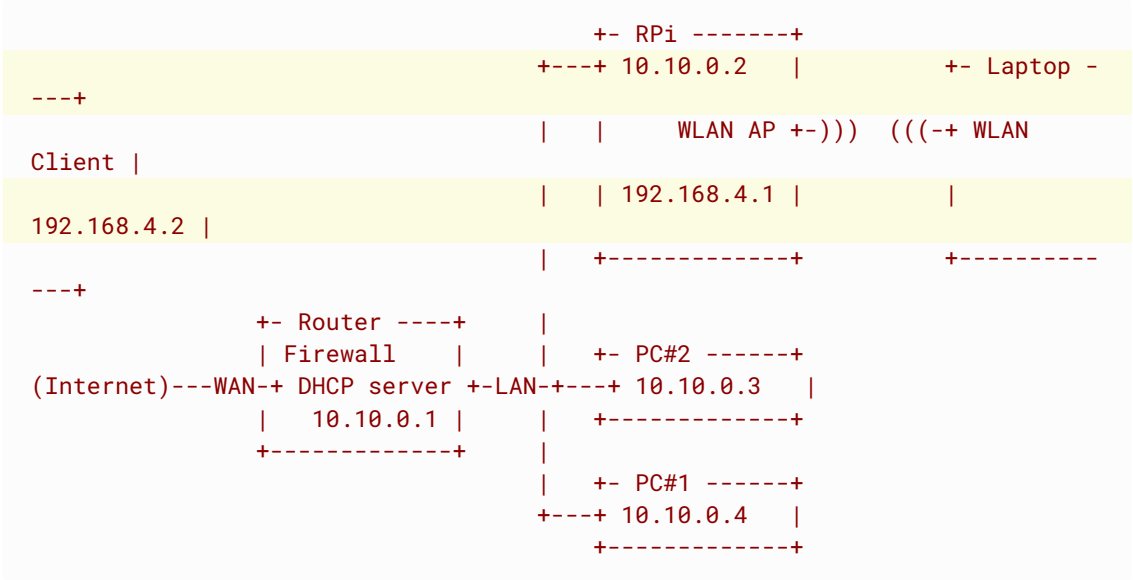
Setup Wireless

Refer to the official guide at Raspberry Pi Configuration.

Note that there are two type of access points:

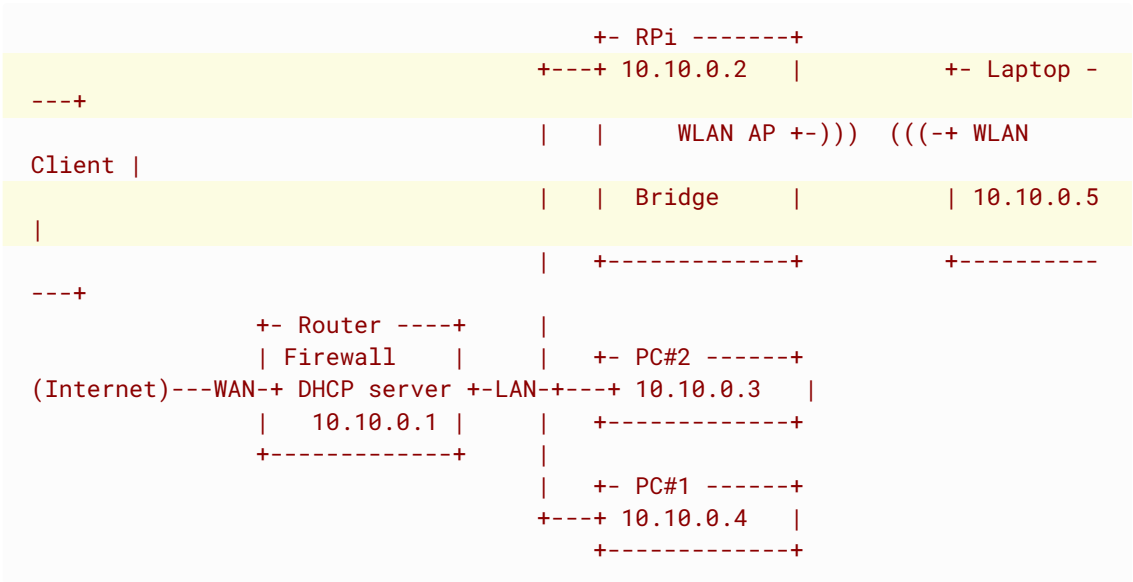
Routed wireless access point

Create a new local network, which is not connected any other existing network



Bridged wireless access point

Extend an existing Ethernet network to wireless computers and devices



Python packages

Most packages can be installed using `sudo apt-get install` followed by `python-<packagename>` /* for Python2 */ or `python3-<packagename>`.

In some cases, a package is not available on the OS package manager, so install that packages via `pip` from python package manager.

Install `pip` first:

```
sudo apt install python-pip python3-pip
```

Then install the target package. For example:

```
sudo apt install python-ws4py python3-ws4py
```

is equivalent to:

```
pip install ws4py # python2 package
pip3 install ws4py
```

Who is logged on?

Use `w` command from `procps` package.

```
    08:53:52 up  2:21,  2 users,  load average: 0.02, 0.06, 0.07
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
pi       pts/0    fe80::1936:b4d4: 06:34    0.00s  1.54s  0.05s w
```

Save power

Save power when running on battery by turning off unused peripherals, or features.

Turn OFF the USB chip:

```
echo '1-1' |sudo tee /sys/bus/usb/drivers/usb/unbind
```

Turn ON the USB chip:

```
echo '1-1' |sudo tee /sys/bus/usb/drivers/usb/bind
```

Turn OFF the HDMI output:

```
sudo /opt/vc/bin/tvservice -o
```

Turn ON the HDMI output:

```
sudo /opt/vc/bin/tvservice -p
```

Reduce the clock of the core by changing some parameters in the `/boot/config.txt` file:

/boot/config.txt

```
arm_freq_min=250
core_freq_min=100
sdram_freq_min=150
over_voltage_min=0
```

Disable Wi-Fi & Bluetooth

Starting from Raspberry Pi 3, WiFi and Bluetooth are added on hardware, so Raspbian has its method to control these signals in `/boot/config.txt` file:

/boot/config.txt

```
dtoverlay=pi3-disable-wifi
dtoverlay=pi3-disable-bt
```

> It's correct to use the word `pi3` in the params's value, for other version of RPi.

> The `rfkill` command can be used to soft-block the wireless connections:
>
> ```
> rfkill list              # displays the state of the modules
> rfkill block wifi
> rfkill block bluetooth
> ```
>
> but this does not completely turn off the hardware of the WiFi and the Bluetooth module. They will still draw a little power in the background.

Disable on-board LEDs

Add below params to the `/boot/config.txt` file:

/boot/config.txt

```
dtparam=act_led_trigger=none
dtparam=act_led_activelow=on
```

---

1. Add a form in markdown:

```
<form role="search" target="_blank" action="https://packages.debian.org/search">
<div>
    <input type="search" id="mySearch" name="keywords"
        placeholder="Enter package name..."
        aria-label="Search for a package name"
        style="border:1px solid gray; padding: .25em .5em;" >
    <button type="submit" class="md-button">Search</button>
</div>
</form>
```

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