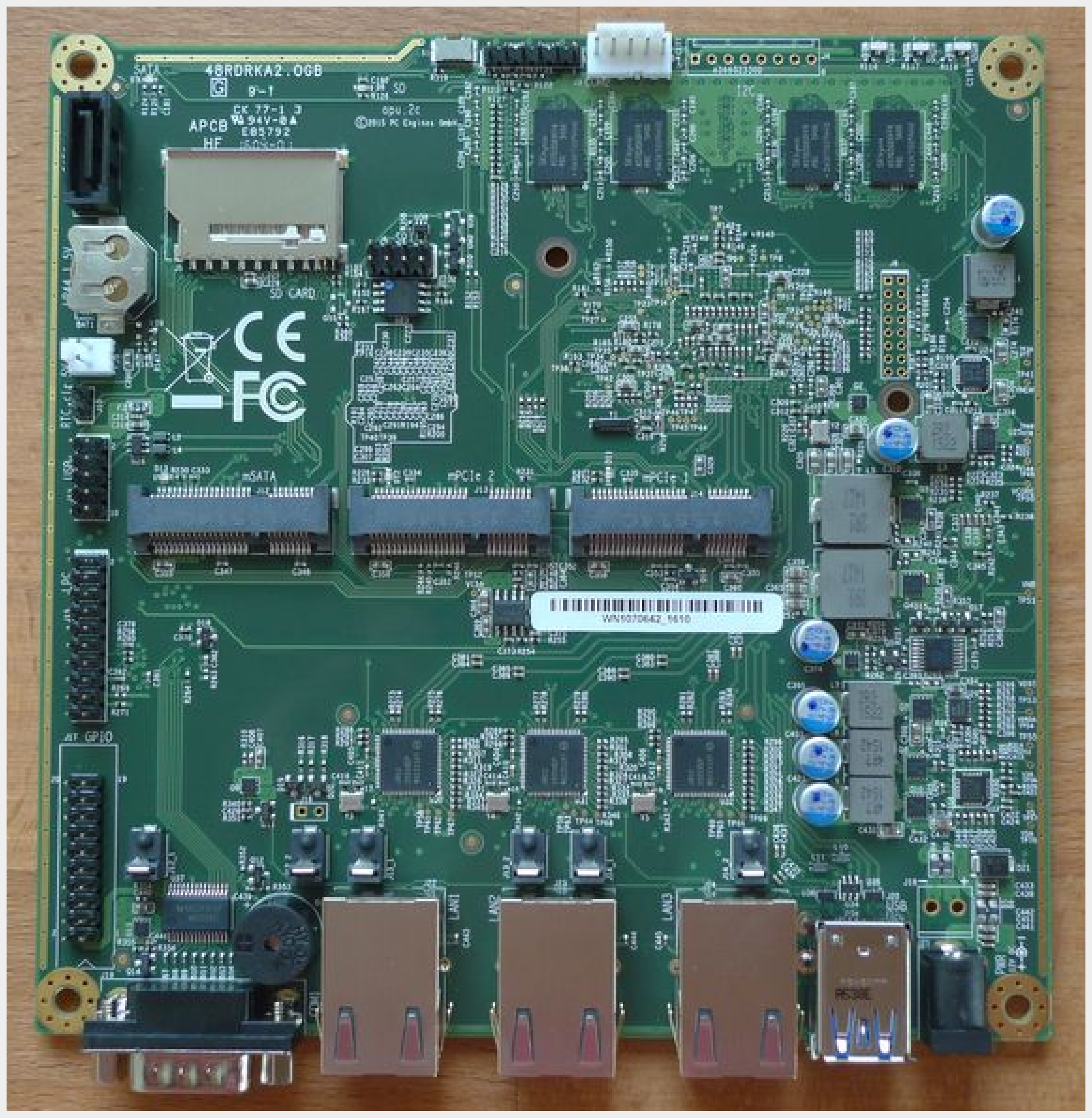
IPFire

Hardware

- PC Engines APU2


SATA
48RDRKA2.OGB
APCB
HF
E85792
SD
apu2c
I2C
SD CARD
mSATA
mPCIe 2
mPCIe 1
LPC
GPIO
LAN1
LAN2
LAN3
WN1070642_1610

Use cases

- Firewall for home use
- Routing

Pros

- Faster than pfSense due to multi-core routing
- Easy to use
- Lower Resources (runs on PI4)
- Frequent updates (more than pfSense)
- Great docs

Cons

- Limited features (compared to pfSense)
- Dated UI

Why did I switch?

- pfSense on an APU2 couldn't handle my new internet speed

Speed	1000/50mbps service

- IPFire does because of the multi-core routing
- Speed difference (speedtest)

Device	ver	firmware	DL	UP
pfSense	2.6.0	v4.0.11	315	47
IPFire	2.27	v4.0.11	897	47

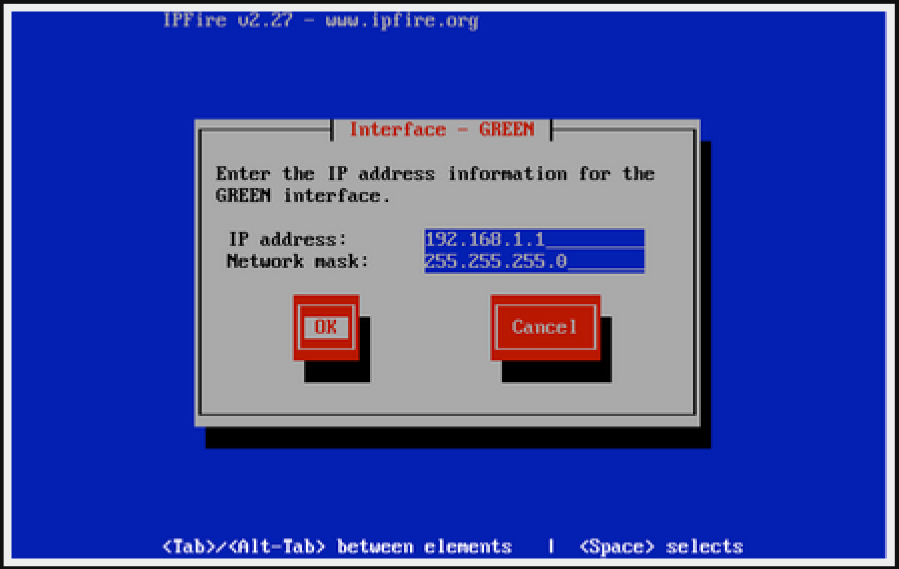
Installing

Prepare

1. Download ISO $x86_{64}$
2. Flash to USB
3. Connect serial (APU2 hardware)
4. Boot
5. Install
6. Reboot

Install through ncurses

Setup looks like this;



IPFire v2.27 - www.ipfire.org

Interface - GREEN

Enter the IP address information for the GREEN interface.

IP address: 192.168.1.1
Network mask: 255.255.255.0

<Tab>/<Alt-Tab> between elements | <Space> selects

Config over serial Part1

1. Select keyboard = US
2. Select Timezone = Australia/Melbourne
3. Select Network Config = GREEN + RED
    1. Assign Cards

GREEN	00:0d:b9:41:e0:f0
RED	00:0d:b9:41:e0:f1

    2. Assign IPs

GREEN	10.1.1.1
RED	DHCP

Config over serial Part2

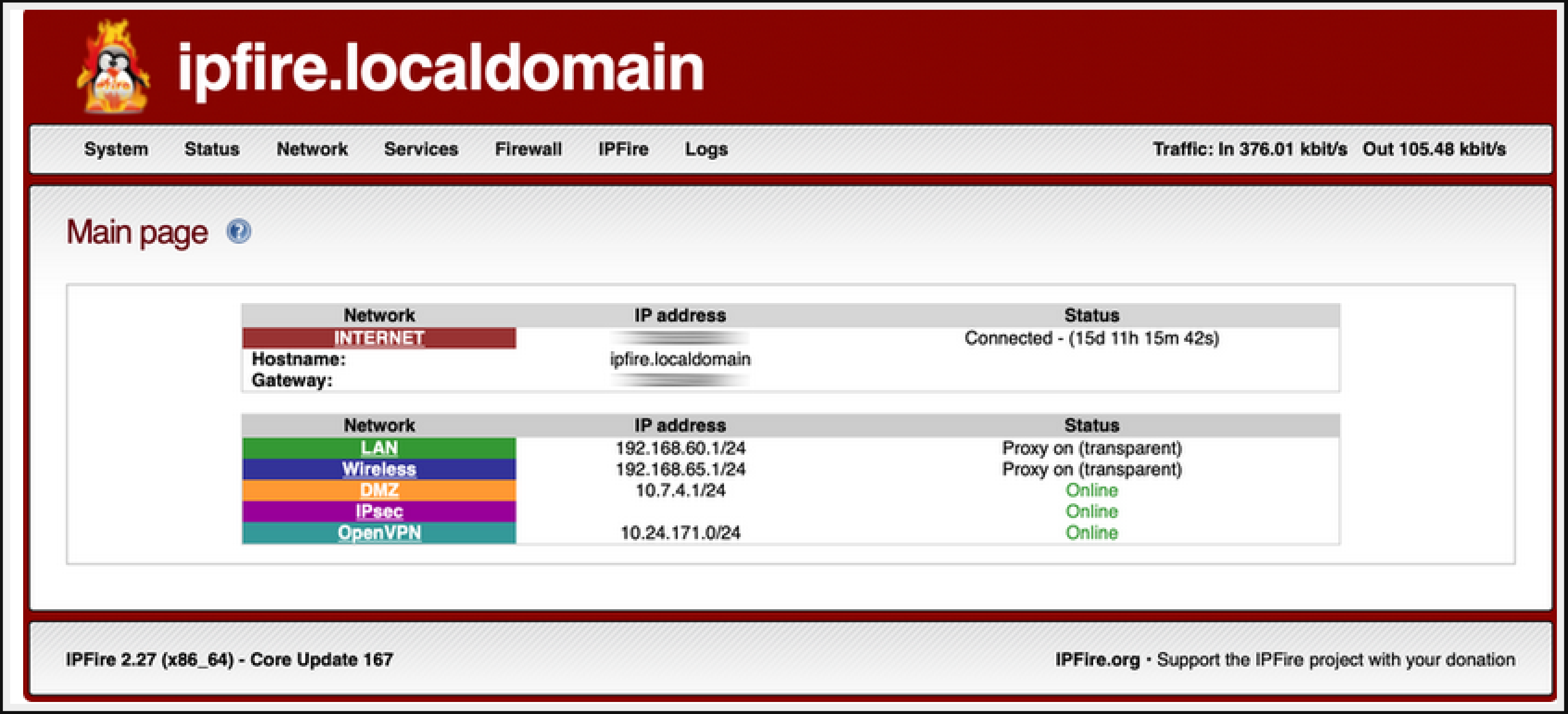
1. DHCP server config
    1. Enable
    2. Config

start	10.1.1.100
end	10.1.1.200
Primary	10.1.1.1
Secondary	8.8.8.8
lease	60
max	120
domain	localdomain

Config through web interface

1. Connect up to NBN & LAN equipment
2. Power off and on the NBN, then boot IPFire
   This is required to bond with the new router.
3. Connect to https://ipfire:444 to config
4. Update version

Web interface look



Traffic: In 376.01 kbit/s Out 105.48 kbit/s

Main page

Network	IP address	Status
INTERNET	[redacted]	Connected - (15d 11h 15m 42s)
Hostname:	ipfire.localdomain	
Gateway:	[redacted]	

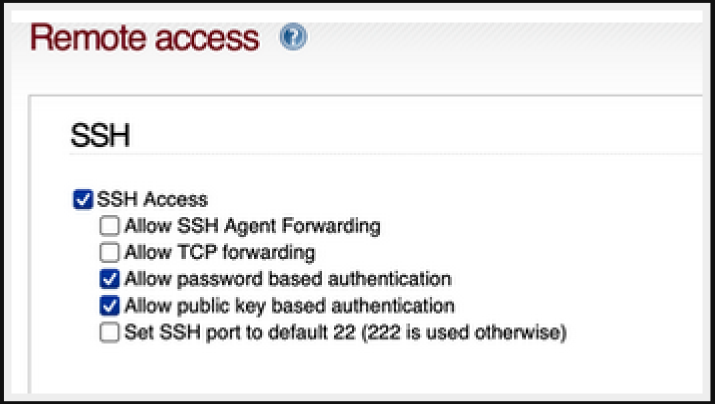
Network	IP address	Status
LAN	192.168.60.1/24	Proxy on (transparent)
Wireless	192.168.65.1/24	Proxy on (transparent)
DMZ	10.7.4.1/24	Online
IPsec		Online
OpenVPN	10.24.171.0/24	Online

IPFire 2.27 (x86_64) - Core Update 167

IPFire.org · Support the IPFire project with your donation

Use

Allow SSH



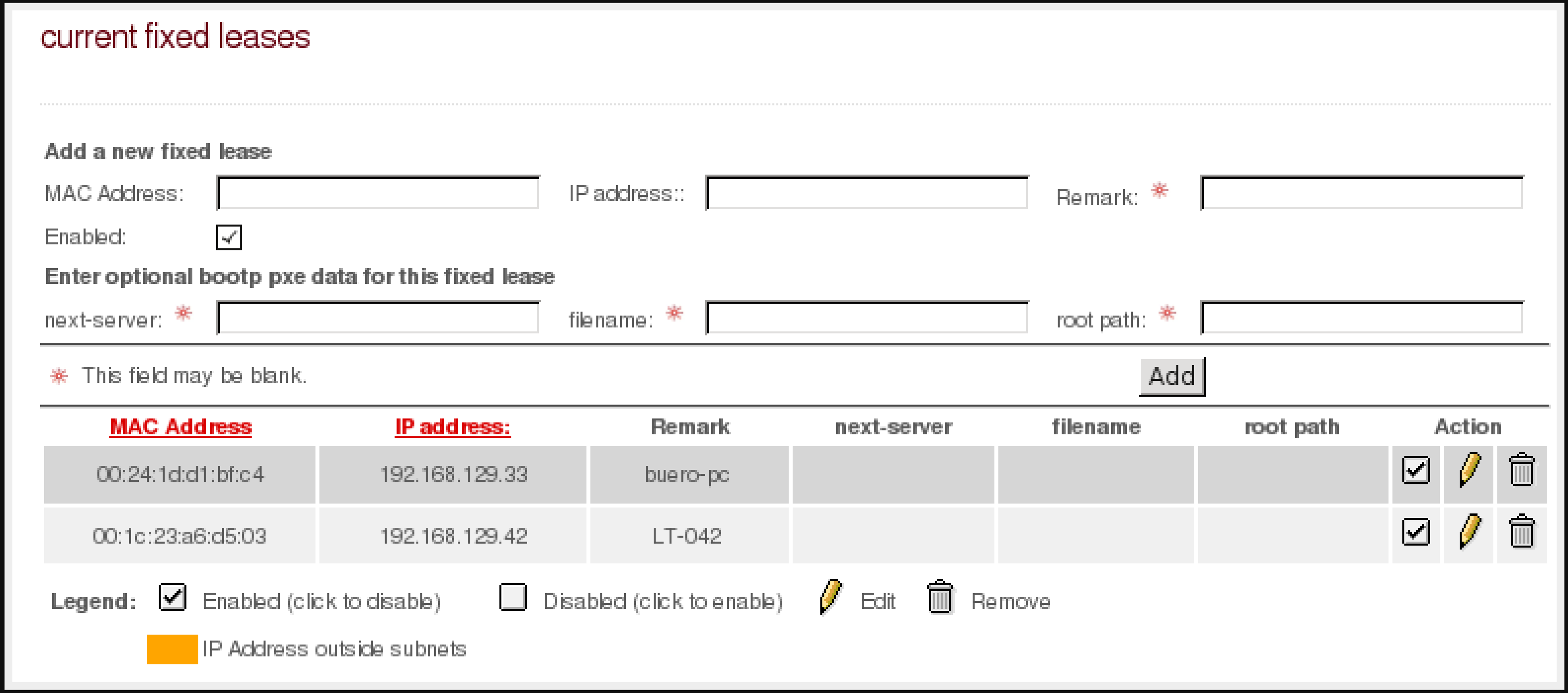
Remote access

SSH

☑ SSH Access
- □ Allow SSH Agent Forwarding
- □ Allow TCP forwarding
- ☑ Allow password based authentication
- ☑ Allow public key based authentication
- □ Set SSH port to default 22 (222 is used otherwise)

Set Static IP addresses through DHCP

wiki.ipfire.org - DHCP Server



current fixed leases

Add a new fixed lease

MAC Address: ______ IP address:: ______ Remark: * ______

Enabled: ☑

Enter optional bootp pxe data for this fixed lease

next-server: * ______ filename: * ______ root path: * ______

* This field may be blank.

Add

MAC Address	IP address:	Remark	next-server	filename	root path	Action
00:24:1d:d1:bf:c4	192.168.129.33	buero-pc				☑ ✎ 🗑
00:1c:23:a6:d5:03	192.168.129.42	LT-042				☑ ✎ 🗑

Legend: ☑ Enabled (click to disable) ☐ Disabled (click to enable) ✎ Edit 🗑 Remove

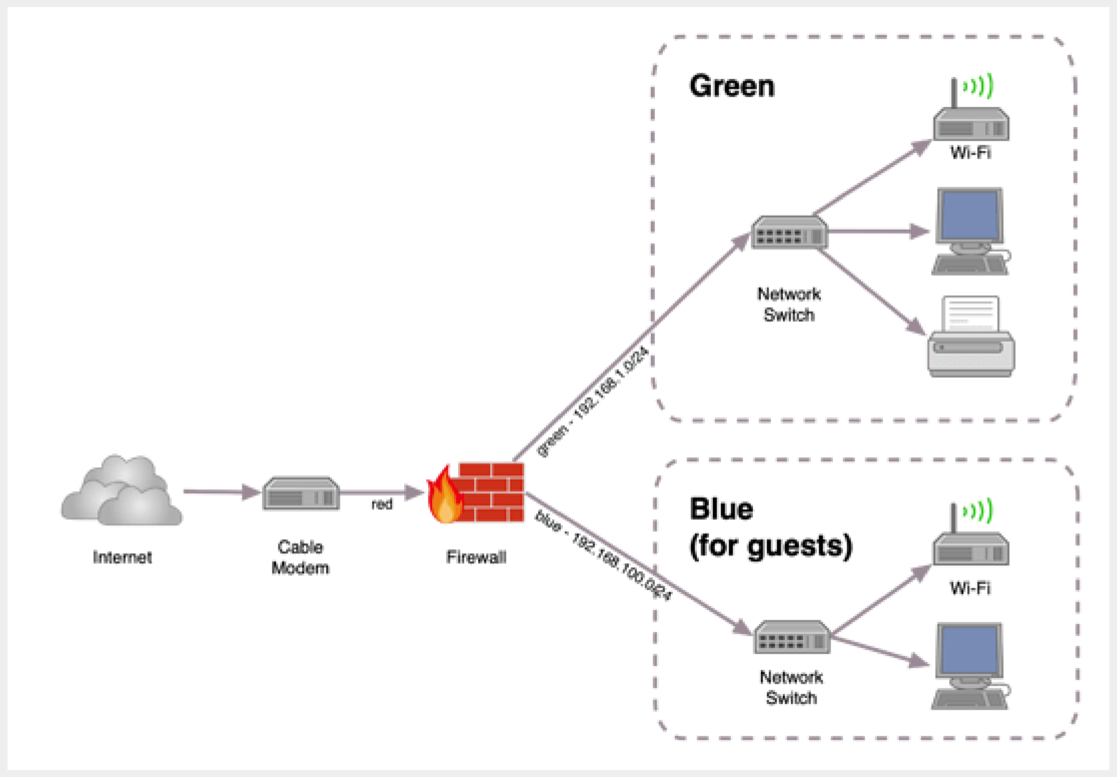
🟧 IP Address outside subnets

Set firewall rules

Ref: wiki.ipfire.org - Creating a Port-Forward Rule

1. Firewall > Firewall Rules
2. Click "New rule"
3. Select Protocol TCP
4. Source RED
5. Select 'Destination Nat (port forwarding)'
6. Destination GREEN
7. Set port as 80 or 443
8. Done

Guest port


Green
Wi-Fi
Network
Switch
green - 192.168.1.0/24
Internet
Cable
Modem
red
Firewall
blue - 192.168.100.0/24
Blue
(for guests)
Wi-Fi
Network
Switch

Internet NAT redirection

https://community.ipfire.org/t/hairpinning-or-net-loopback-or-internet-nat-redirection/730

Allow computers on the LAN to hit the external domain name. It's possible, I just haven't done it yet.

Addons

Interesting Addons

- tftpd (thinclients/PXE boot)
- Wireless Access Point (maybe)
- BorgBackup
- Guardian (protection from brute force attacks)
- mtr,nmap,bwm-ng,iperf (network tools)
- nut (UPS monitor)
- ffmpeg (why?)

Demo

[Show firewall hardware]

References

https://www.ipfire.org/

Questions

Email	map7@fastmail.com
Github	github: map7