

# Home Network

2021-11-27

## Hardware

### Cable Modem

TODO

### Router

**Hostname** openwrt.lan  
**Model** TP-Link Archer C5  
**Version** 21.02.3

### Updating

```
$ opkg update  
$ opkg list-upgradable  
$ opkg list-upgradable | cut -f 1 -d ' ' | xargs -r opkg upgrade
```

### Switch

TODO

### Wireless AP

**Model** TP-Link EAP610 V2

### NAS

**Hostname** nas.lan  
**Model** QNAP TS-251  
**Disk 1** WDC WD40EFRX-68WT0N0 4TB  
**Disk 2** WDC WD40EFRX-68WT0N0 4TB

### Printer

**Hostname** BRW1008B16E541A.lan  
**Model** Brother HL-L2340D  
**Unprintable Area (Margins)** 0.16"  
  
\$ yay brlaser

## Raspberry Pi Rack

### Io

**Hostname** io  
**Model** Raspberry Pi 4 Model B Rev 1.2

## Europa

**Hostname** europa

**Model** Raspberry Pi 4 Model B Rev 1.2

### Services

- Home Assistant

## Ganymede

**Hostname** ganymede

**Model** Raspberry Pi 3 Model B Rev 1.2

### Services

- Blink Comparator
- Telegram Bot
- Timelapse

## Callisto

**Hostname** callisto

**Model** Raspberry Pi Model B Rev 2

## Thebe

**Hostname** thebe

**Model** Raspberry Pi Model B Rev 2

## Misc.

```
$ ssh-copy-id -i ~/.ssh/id_rsa.pub kyle@io.lan
```

```
$ cat /sys/firmware/devicetree/base/model
```

## Network

### Static IPs

IP Address	Hostname	Description
10.0.0.1	openwrt.lan	Router
10.0.0.102	nas.lan	NAS
10.0.0.125	europa.lan	Home Assistant

### Trusted VNET

**IP Address** 10.0.0.1

**Network Address** 10.0.0.0

**Usable Host IP Range** 10.0.0.1 - 10.0.255.254

**Broadcast Address** 10.0.255.255

**Total Number of Hosts** 65,536

**Number of Usable Hosts** 65,534

**Subnet Mask** 255.255.0.0

**Wildcard Mask** 0.0.255.255

**Binary Subnet Mask** 11111111.11111111.00000000.00000000

**IP Class** B

**CIDR Notation** /16

**IP Type** Private

## Untrusted VNET

IP Address 10.1.0.1  
Network Address 10.1.0.0  
Usable Host IP Range 10.1.0.1 - 10.1.255.254  
Broadcast Address 10.1.255.255  
Total Number of Hosts 65,536  
Number of Usable Hosts 65,534  
Subnet Mask 255.255.0.0  
Wildcard Mask 0.0.255.255  
Binary Subnet Mask 11111111.11111111.00000000.00000000  
IP Class B  
CIDR Notation /16  
IP Type Private

## Configuration

### Router

/etc/config/system

```
config system
    option hostname 'OpenWrt'
    option timezone 'UTC'
    option ttylogin '0'
    option log_size '64'
    option urandom_seed '0'

config timeserver 'ntp'
    option enabled '1'
    option enable_server '0'
    list server '0.openwrt.pool.ntp.org'
    list server '1.openwrt.pool.ntp.org'
    list server '2.openwrt.pool.ntp.org'
    list server '3.openwrt.pool.ntp.org'
```

/etc/config/network

```
config interface 'loopback'
    option device 'lo'
    option proto 'static'
    option ipaddr '127.0.0.1'
    option netmask '255.0.0.0'

config globals 'globals'
    option ula_prefix 'fdbe:7046:3929::/48'

config device
    option name 'br-lan'
    option type 'bridge'
    list ports 'eth1.1'

config interface 'lan'
    option device 'br-lan'
    option proto 'static'
    option ipaddr '10.0.0.1'
    option netmask '255.255.0.0'
    option ip6assign '60'
    list dns '10.0.0.125'
```

```

config interface 'wan'
    option device 'eth0.2'
    option proto 'dhcp'

config interface 'wan6'
    option device 'eth0.2'
    option proto 'dhcpv6'

config interface 'iot'
    option device 'br-iot'
    option proto 'static'
    option ipaddr '10.1.0.1'
    option netmask '255.255.0.0'
    option ip6assign '60'

config switch
    option name 'switch0'
    option reset '1'
    option enable_vlan '1'

config switch_vlan
    option device 'switch0'
    option vlan '1'
    option vid '1'
    option ports '0t 2 3 4'
    option description 'LAN'

config switch_vlan
    option device 'switch0'
    option vlan '3'
    option vid '3'
    option ports '0t 5'
    option description 'IoT'

config switch_vlan
    option device 'switch0'
    option vlan '2'
    option ports '6t 1'
    option vid '2'
    option description 'WAN'

config device
    option name 'eth1.3'
    option type '8021q'
    option ifname 'eth1'
    option vid '3'

config device
    option type 'bridge'
    option name 'br-iot'
    list ports 'eth1.3'

/etc/config/dhcp

config dnsmasq
    option domainneeded '1'

```

```

option localise_queries '1'
option rebind_protection '1'
option rebind_localhost '1'
option local '/lan/'
option domain 'lan'
option expandhosts '1'
option readethers '1'
option leasefile '/tmp/dhcp.leases'
option resolvfile '/tmp/resolv.conf.d/resolv.conf.auto'
option ednspacket_max '1232'
option sequential_ip '1'
option authoritative '1'
option localservice '1'

config dhcp 'lan'
    option interface 'lan'
    option start '100'
    option limit '150'
    option leasetime '12h'
    option dhcpv4 'server'
    option dhcpv6 'server'
    option ra 'server'
    list ra_flags 'managed-config'
    list ra_flags 'other-config'

config dhcp 'wan'
    option interface 'wan'
    option ignore '1'

config odhcpd 'odhcpd'
    option maindhcp '0'
    option leasefile '/tmp/hosts/odhcpd'
    option leasetrigger '/usr/sbin/odhcpd-update'
    option loglevel '4'

config dhcp 'iot'
    option interface 'iot'
    option start '100'
    option limit '150'
    option leasetime '12h'
    option dhcpv4 'server'
    option dhcpv6 'server'
    option ra 'server'
    option ra_slaac '1'
    list ra_flags 'managed-config'
    list ra_flags 'other-config'

config host
    option ip '10.0.0.134'
    option mac '2C:AA:8E:2C:63:9A'

# Wyze Cam 1
config host
    option ip '10.0.0.136'
    option mac '2C:AA:8E:2F:7A:15'

# Wyze Cam 2

```

```

config host
    option ip '10.0.0.138'
    option mac '2C:AA:8E:2E:D8:86'

# Wyze Cam 3
config host
    option ip '10.0.0.167'
    option mac '2C:AA:8E:2F:7A:A8'

config host
    option name 'homeassistant'
    option ip '10.0.0.125'
    option mac 'DC:A6:32:D0:7D:0B'

/etc/config/wireless

config wifi-device 'radio0'
    option type 'mac80211'
    option path 'pci0000:00/0000:00:00.0'
    option channel '36'
    option band '5g'
    option htmode 'VHT80'
    option cell_density '0'
    option disabled '1'

config wifi-device 'radio1'
    option type 'mac80211'
    option path 'platform/ahb/18100000.wmac'
    option channel '1'
    option band '2g'
    option htmode 'HT20'
    option cell_density '0'

config wifi-iface 'wifinet2'
    option device 'radio0'
    option mode 'ap'
    option ssid 'OpenWrt'
    option encryption 'sae-mixed'
    option key '0n0kd1n8'
    option network 'lan'
    option disabled '1'

config wifi-iface 'wifinet1'
    option device 'radio1'
    option mode 'ap'
    option network 'iot'
    option encryption 'psk-mixed'
    option key '0n0kd1n8'
    option ssid 'K IoT'
    option hidden '1'

/etc/config/firewall

config defaults
    option input 'ACCEPT'
    option output 'ACCEPT'
    option forward 'REJECT'
    option synflood_protect '1'

```

```

config zone
    option name 'lan'
    list network 'lan'
    option input 'ACCEPT'
    option output 'ACCEPT'
    option forward 'ACCEPT'

config zone
    option name 'iot'
    option input 'ACCEPT'
    list network 'iot'
    option output 'ACCEPT'
    option forward 'ACCEPT'

config zone
    option name 'wan'
    list network 'wan'
    list network 'wan6'
    option input 'REJECT'
    option output 'ACCEPT'
    option forward 'REJECT'
    option masq '1'
    option mtu_fix '1'

config forwarding
    option src 'lan'
    option dest 'wan'

config rule
    option name 'Block Wyze'
    option dest 'wan'
    option target 'REJECT'
    option src 'lan'
    list src_mac '2C:AA:8E:2C:63:9A'
    list src_mac '2C:AA:8E:2E:D8:86'
    list src_mac '2C:AA:8E:2F:7A:15'
    list src_mac '2C:AA:8E:2F:7A:A8'

config rule
    option name 'Allow-DHCP-Renew'
    option src 'wan'
    option proto 'udp'
    option dest_port '68'
    option target 'ACCEPT'
    option family 'ipv4'

config rule
    option name 'Allow-Ping'
    option src 'wan'
    option proto 'icmp'
    option icmp_type 'echo-request'
    option family 'ipv4'
    option target 'ACCEPT'

config rule
    option name 'Allow-IGMP'

```

```

option src 'wan'
option proto 'igmp'
option family 'ipv4'
option target 'ACCEPT'

config rule
option name 'Allow-DHCPv6'
option src 'wan'
option proto 'udp'
option src_ip 'fc00::/6'
option dest_ip 'fc00::/6'
option dest_port '546'
option family 'ipv6'
option target 'ACCEPT'

config rule
option name 'Allow-MLD'
option src 'wan'
option proto 'icmp'
option src_ip 'fe80::/10'
list icmp_type '130/0'
list icmp_type '131/0'
list icmp_type '132/0'
list icmp_type '143/0'
option family 'ipv6'
option target 'ACCEPT'

config rule
option name 'Allow-ICMPv6-Input'
option src 'wan'
option proto 'icmp'
list icmp_type 'echo-request'
list icmp_type 'echo-reply'
list icmp_type 'destination-unreachable'
list icmp_type 'packet-too-big'
list icmp_type 'time-exceeded'
list icmp_type 'bad-header'
list icmp_type 'unknown-header-type'
list icmp_type 'router-solicitation'
list icmp_type 'neighbour-solicitation'
list icmp_type 'router-advertisement'
list icmp_type 'neighbour-advertisement'
option limit '1000/sec'
option family 'ipv6'
option target 'ACCEPT'

config rule
option name 'Allow-ICMPv6-Forward'
option src 'wan'
option dest '*'
option proto 'icmp'
list icmp_type 'echo-request'
list icmp_type 'echo-reply'
list icmp_type 'destination-unreachable'
list icmp_type 'packet-too-big'
list icmp_type 'time-exceeded'
list icmp_type 'bad-header'

```



```

list icmp_type 'unknown-header-type'
option limit '1000/sec'
option family 'ipv6'
option target 'ACCEPT'

config rule
option name 'Allow-IPSec-ESP'
option src 'wan'
option dest 'lan'
option proto 'esp'
option target 'ACCEPT'

config rule
option name 'Allow-ISAKMP'
option src 'wan'
option dest 'lan'
option dest_port '500'
option proto 'udp'
option target 'ACCEPT'

config rule
option name 'Support-UDP-Traceroute'
option src 'wan'
option dest_port '33434:33689'
option proto 'udp'
option family 'ipv4'
option target 'REJECT'
option enabled '0'

config include
option path '/etc/firewall.user'

config forwarding
option src 'lan'
option dest 'iot'

config rule
option name 'Allow mDNS'
list proto 'udp'
option src '*'
option src_port '5353'
list dest_ip '224.0.0.251'
option dest_port '5353'
option target 'ACCEPT'

config forwarding
option src 'iot'
option dest 'lan'

```