

# openWRT (Wireless) Repeater

## Walktrhough

1. Network
  2. Interfaces
  3. LAN
  4. General Setup -> Alter the third byte to a number that is **non-identical** with the one of your host network you will connect to. (i.e.: FritzBox gives you 192.168.178.XXX, so you give 192.168.0.XXX)
  5. Save & Apply
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1. Network
  2. Wifi
  3. 'Wireless Overview' -> Hit 'Scan' button
  4. Choose your network and hit the 'Join network' button
  5. Underneath 'Device Configuration' on the right hand side you will see the channel your Host AP is using. Select **the same value** for the Channel option within the same tab.
  6. Under 'Interface Configuration' select the wwan port.
  7. Save & Apply
  8. Under 'Wireless Security' in the Interface configuration tab enter all necessary access details. (Choose exact crypto cipher if known)
  9. Save & Apply

Connect to your openWRT AP with a network cable and surf the Internet. To know how to extend this to a wireless repeater, read on.

1. Network
2. Wifi
3. Underneath 'Wireless Overview' select 'Add' button
4. Under 'Interface Configuration' rename the ESSIDE of your virtual openWRT AP (i.e. FritzBox Repeater)
5. On the 'Network' option select 'lan' and the 'Mode' remains with 'Access Point'
6. (Optionally you can still configure some security parameters in the 'Wirless Security' tab)
7. Save & Apply

Hit the roads of the Internet. If you encounter any troubles, read the Troubleshooting section or compare the configs.

## configs

### **/etc/config/network**

```
config 'switch' 'eth0'  
    option 'enable' '1'  
config 'switch_vlan' 'eth0_0'
```

```
option 'device' 'eth0'
option 'vlan' '0'
option 'ports' '0 1 2 3 5'
config 'switch_vlan' 'eth0_1'
option 'device' 'eth0'
option 'vlan' '1'
option 'ports' '4 5'
config 'interface' 'loopback'
option 'ifname' 'lo'
option 'proto' 'static'
option 'ipaddr' '127.0.0.1'
option 'netmask' '255.0.0.0'
config 'interface' 'lan'
option 'type' 'bridge'
option 'ifname' 'eth0.0'
option 'proto' 'static'
option 'netmask' '255.255.255.0'
option 'ipaddr' '192.168.0.1'
config 'interface' 'wan'
option 'ifname' 'eth0.1'
option 'proto' 'dhcp'
config 'interface' 'wwan'
option 'proto' 'dhcp'
```

## **/etc/config/wireless**

```
config 'wifi-device' 'wl0'
option 'type' 'broadcom'
option 'txpower' '18'
option 'hwmode' '11bg'
option 'channel' '11'
config 'wifi-iface'
option 'ssid' 'f00b4r'
option 'device' 'wl0'
option 'mode' 'sta'
option 'network' 'wwan'
option 'key' '(4xx3ss-2-the-d0me)'
option 'encryption' 'psk2+tkip+ccmp'
config 'wifi-iface'
option 'device' 'wl0'
option 'mode' 'ap'
option 'encryption' 'none'
option 'ssid' 'OpenWrt-Repeater'
option 'network' 'lan'
```

## **/etc/config/dhcp**

```
cconfig dnsmasq
option domainneeded 1
option boguspriv 1
```

```
option filterwin2k 0 # enable for dial on demand
option localise_queries 1
option rebind_protection 1 # disable if upstream must serve RFC1918
addresses
option rebind_localhost 1 # enable for RBL checking and similar
services
#list rebind_domain example.lan # whitelist RFC1918 responses for
domains
option local '/lan/'
option domain 'lan'
option expandhosts 1
option nonegcache 0
option authoritative 1
option readethers 1
option leasefile '/tmp/dhcp.leases'
option resolvfile '/tmp/resolv.conf.auto'
#list server '/mycompany.local/1.2.3.4'
#option nonwildcard 1
#list interface br-lan
#list notinterface lo
#list bogusnxdomain '64.94.110.11'
config dhcp lan
option interface lan
option start 100
option limit 150
option leasetime 12h
config dhcp wan
option interface wan
option ignore 1
```

## **/etc/config/firewall**

```
config 'defaults'
option 'syn_flood' '1'
option 'input' 'ACCEPT'
option 'output' 'ACCEPT'
option 'forward' 'REJECT'
config 'zone'
option 'name' 'lan'
option 'network' 'lan'
option 'input' 'ACCEPT'
option 'output' 'ACCEPT'
option 'forward' 'REJECT'
config 'zone'
option 'name' 'wan'
option 'input' 'REJECT'
option 'output' 'ACCEPT'
option 'forward' 'REJECT'
option 'masq' '1'
option 'mtu_fix' '1'
```

```
option 'network' 'wan wwan'
config 'forwarding'
option 'src' 'lan'
option 'dest' 'wan'
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-DHCPv6'
option 'src' 'wan'
option 'proto' 'udp'
option 'src_ip' 'fe80::/10'
option 'src_port' '547'
option 'dest_ip' 'fe80::/10'
option 'dest_port' '546'
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' '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'
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' '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 'include'
option 'path' '/etc/firewall.user'
```

### **/etc/config/ucitrack**

```
config network
option init network
list affects dhcp
list affects radvd
config wireless
list affects network
config firewall
option init firewall
list affects luci-splash
list affects qos
list affects miniupnpd
config olsr
option init olsrd
config dhcp
option init dnsmasq
config dropbear
option init dropbear
config httpd
option init httpd
config fstab
option init fstab
config qos
option init qos
config system
option init led
list affects luci_statistics
config luci_splash
option init luci_splash
config upnpd
option init miniupnpd
config ntpclient
option init ntpclient
config samba
option init samba
config tinyproxy
option init tinyproxy
```

# Troubleshooting

## 1. What if openWRT constantly disconnects from the host access point?

This might be related to the fact, that your access points uses the same ESSID on the 2.4GHz as 5GHz channel. The fix is either to disable one of them on your host AP, reconnect 'til it works or check for another openWRT version for your device.

It might also be that the openWRT wireless host is not on the same channel as the host AP.

## 2. The 'Associated Stations' shows a '?' below the IP Address field of an entry.

Looks like a bug in the openWRT GUI. Ignore it an verify it via ssh on the access point.

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