

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

1. Network
2. Wifi
3. 'Wireless Overview' -> Hit 'Scan' button
4. Choose your network and hit the 'Join network' button
5. Enter all needed security parameters. Select the wan option.
6. Save & Apply
7. 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.
8. Under 'Interface Configuration' select the wwan port.
9. Save & Apply
10. Under 'Wireless Security' in the Interface configuration tab enter all necessary access details. (Choose exact crypto cipher if known)
11. 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 ESSID 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 'Wireless 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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