openWRT (Wireless) Repeater

Walktrhough

1. Network
2. Interfaces
3. LAN
4. Generel 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. 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 theconfigs.

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.

From:
https://wiki.c3l.lu/ - **Chaos Computer Club Lëtzebuerg**

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Last update: **2015/07/15 21:54**