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Freifunk Lëtzebuerg konfiguréieren



Des Säit ass nach ënner Bearbechtung an/oder veraalt

Basics bei der Terminal konfig

Elei eng kleng Kuerzfaassung vun dem wichtege, weider Detailer kënnen am [gluon wiki](#) no gesicht gin.

Sollt nach keen SSH Passwuert / Key hannerluecht si, kann een duerch laangt drécken vum Knäppchen ob der Récksäit vum Router derfir suergen dass den Config Mode geboot geet. No dem Booten ass (wie bei der Ersteinrichtung) iwwert den Webfrontend matt der IP 192.168.1.1 errechbar. Do kann en bei Expertenastellungen e Passwuert oder den SSH Key hannerleeën.

Nokucke weieng gluon Versioun installéiert ass

```
Gluon version (example: "v2017.1.5")
cat /lib/gluon/gluon-version
Build version (example: "2016.1.5-stable-2016-06.05")
cat /lib/gluon/release
```

Autoupdater Branch wieslen

```
uci set autoupdater.settings.enabled=1
uci set autoupdater.settings.branch=stable
```

```
uci commit autoupdater
```

Router Firmware aktualiséieren (autoupdater)

```
autoupdater -f
```

Router Firmware aktualiséieren (manuell)

Wann den Node internet zougang huet

```
cd /tmp/  
echo 3 > /proc/sys/vm/drop_caches  
wget [FIRMWAREURL]  
echo 3 > /proc/sys/vm/drop_caches  
sysupgrade [NAMEOFFIRMWAREFILE]
```

Ouni direkten Internet Zougang -> SCP

Di passend Firmware eroflueden an vum der Lokaler Maschinn méttels SCP ob den FFLUX AP erop lueden.

```
scp {Dateiname} root@[IPv6]:/tmp/
```

Duerno iwwer SSH login ob den FFLUX AP aloggen.

```
cd /tmp/  
echo 3 > /proc/sys/vm/drop_caches  
sysupgrade [NAMEOFFIRMWAREFILE]
```

Am Config-Modus neistarten

```
uci set gluon-setup-mode.@setup_mode[0].enabled=1  
uci commit gluon-setup-mode  
reboot
```

Add SSH key

```
cat ~/.ssh/your_public_rsa_key.pub | ssh root@$ROUTER_IP 'cat >>  
/etc/dropbear/authorized_keys'
```

Node Informatioun

Lokalisatiouns Parmeter

```
uci set gluon-node-info.@location[0].latitude=53.834470
uci set gluon-node-info.@location[0].longitude=10.702518
uci set gluon-node-info.@location[0].altitude=11.51
uci set gluon-node-info.@location[0].share_location=1
uci commit gluon-node-info
```

Astellungen nokucken

```
uci show gluon-node-info

gluon-node-info.@location[0]=location
gluon-node-info.@location[0].share_location=1
gluon-node-info.@location[0].latitude=53.834470
gluon-node-info.@location[0].longitude=10.702518
gluon-node-info.@location[0].altitude=11.51
```

Hostname / Nodenumm

Hostname änneren

```
$ pretty-hostname newhostname-with-utf8-support
...
root@newhostname-with-utf8-support:~#
```

Hostname nokucken

```
$ pretty-hostname
....
hostname-with-utf8-support
```

Kontakt Donnéeën androen

```
uci get gluon-node-info.@owner[0] || uci add gluon-node-info owner
uci set gluon-node-info.@owner[0].contact=example@example.com
uci commit gluon-node-info
```

Astellungen nokucken

```
uci show gluon-node-info
....
gluon-node-info.@owner[0]=owner
```

```
gluon-node-info.@owner[0].contact=example@example.com
```

Bandbreit begrenzen

```
uci set simple-tc.mesh_vpn.limit_egress=800 # upload 0.8 Mbit/s
uci set simple-tc.mesh_vpn.limit_ingress=5000 # download 5.0 Mbit/s
uci set simple-tc.mesh_vpn.enabled=1
uci commit simple-tc
/etc/init.d/fastd restart
```

Mesh on LAN

Aktivieren

```
uci set network.mesh_lan.auto=1
for ifname in $(cat /lib/gluon/core/sysconfig/lan_ifname); do
    uci del_list network.client.ifname=$ifname
done
uci commit network
/etc/init.d/network restart
```

Desaktivieren

```
uci set network.mesh_lan.auto=0
for ifname in $(cat /lib/gluon/core/sysconfig/lan_ifname); do
    uci del_list network.client.ifname=$ifname
done
uci commit network
/etc/init.d/network restart
```

Mesh on WAN

Aktivieren

```
uci set network.mesh_wan.disabled=0
uci commit network
/etc/init.d/network restart
```

Desaktivieren

```
uci set network.mesh_wan.disabled=1
uci commit network
/etc/init.d/network restart
```

1. If you now connect your WAN port to your Home Router too and don't configure some additional VLAN, the whole mesh traffic will also be pushed into your local network, which might cause problems.
2. Be sure to have VPN disabled, otherwise this connection would build up another fastd tunnel inside the Freifunk net.

witch to legacy mode (without VXLAN)

```
uci set network.mesh_wan.legacy='1'  
uci commit network  
/etc/init.d/network restart
```

IBSS/Ad-Hoc Mesh (Gluon >=2016.1.x)

Wann den Router nëmmen 2.4GHz oder 5GHz kann

Desaktivéieren

```
uci set wireless.ibss_radio0.disabled=1  
uci commit wireless  
wifi
```

Aktivéieren

```
uci set wireless.ibss_radio0.disabled=0  
uci commit wireless  
wifi
```

Wann den Router 2.4GHz an 5GHz kann

Desaktivéieren

```
uci set wireless.ibss_radio0.disabled=1  
uci set wireless.ibss_radio1.disabled=1  
uci commit wireless  
wifi
```

Aktivéieren

```
uci set wireless.ibss_radio0.disabled=0  
uci set wireless.ibss_radio1.disabled=0  
uci commit wireless  
wifi
```

802.11s Mesh Netzwerk

Wann den Router nëmmen 2.4GHz oder 5GHz kann

Desaktivéieren

```
uci set wireless.mesh_radio0.disabled=1
uci commit wireless
wifi
```

Aktivéieren

```
uci set wireless.mesh_radio0.disabled=0
uci commit wireless
wifi
```

Wann den Router 2.4GHz an 5GHz kann

Desaktivéieren

```
uci set wireless.mesh_radio0.disabled=1
uci set wireless.mesh_radio1.disabled=1
uci commit wireless
wifi
```

Aktivéieren

```
uci set wireless.mesh_radio0.disabled=0
uci set wireless.mesh_radio1.disabled=0
uci commit wireless
wifi
```

Mesh only Router

An verschidden Fäll ass et noudwendeg, dass den Router keng Clients akzeptiert an just dovir do ass, vir ze meshen.

Erausfannen weivill Frequenzen den Router kann

```
uci show wireless
```

No radio device sichen

Wann den Router nëmmen 2.4GHz oder nëmmen 5GHz kann

deactiveieren

```
uci set wireless.client_radio0.disabled=1
uci commit wireless
wifi
```

activeieren

```
uci set wireless.client_radio0.disabled=0
uci commit wireless
wifi
```

Wann den Router 2.4GHz an 5GHz kann

deactiveieren

```
uci set wireless.client_radio0.disabled=1
uci commit wireless
wifi
```

```
uci set wireless.client_radio1.disabled=1
uci commit wireless
wifi
```

activeieren

```
uci set wireless.client_radio0.disabled=0
uci commit wireless
wifi
```

```
uci set wireless.client_radio1.disabled=0
uci commit wireless
wifi
```

nokucken op weiangem Port en Kabel Ugeschloss ass

```
swconfig dev switch0 show | grep 'link:'
```

weivill clients sinn um Router verbonnen

```
grep -cEo "\[.*W.*\]+" /sys/kernel/debug/batman_adv/bat0/transtable_local
```

Offloader

Bei Offloader muss net nëmmen den Offloader agestellt ginn, mee och nach all FreiFunk node, den iwwert hien meshen soll.

Um Offloader muss een den Mesh on LAN aschalten.

```
uci set network.mesh_lan.auto=1
for ifname in $(cat /lib/gluon/core/sysconfig/lan_ifname); do
    uci del_list network.client.ifname=$ifname
done
uci commit network
/etc/init.d/network restart
```

Un all Nodes vir dei den Offloader den VPN rechnen soll, muss een den Mesh ON WAN aschalten.

```
uci set network.mesh_wan.disabled=0
uci commit network
/etc/init.d/network restart
```

Private WLAN

Et ass méiglech en privaten WLAN ze aktivéieren den den WAN port deelt an esou den Traffic separat zu mesh Netzwierk as. Dëss astellung iwwersteet och en autoupdate ouni dass den Privaten WLAN verlueren geet.

W.e.g. an dësem Fall muss mesh_on_WAN ausgeschalt sin ! Den freifunk node / Private WLAN muss en direkten Internet Uschloss hunn.

Den Private WLAN iwwert den ssh Fernzougrëff konfiguréieren a aktivéieren:

```
uci set wireless.wan_radio0=wifi-iface
uci set wireless.wan_radio0.device=radio0
uci set wireless.wan_radio0.network=wan
uci set wireless.wan_radio0.mode=ap
uci set wireless.wan_radio0.encryption=psk2
uci set wireless.wan_radio0.ssid="$SSID"
uci set wireless.wan_radio0.key="$KEY"
uci set wireless.wan_radio0.disabled=0
uci commit
wifi
```

Am Beispill \$SSID duerch den WLAN Numm an \$KEY duerch e Passwuert (8-63 Charakter) ersetzen. Bei zwou Frequenzen (z.b. 2.4 an 5 GHz) muss en radio0 an radio1 uginn.

Den Private WLAN iwwert den config modus aktivéieren

Alternativ kann en an den config Modus nei starten, an ënner WLAN den Privaten WLAN astellen. An ofspäicheren.

Private WLAN desaktivéieren

```
uci set wireless.wan_radio0.disabled=1
uci commit
wifi
```

Original Router Firmware zereck flashen

An speziellen Fäll kann et vir kommen, dass en muss déi original Router Firmware erëm zeréck flashen well oder muss.

Iwwert SSH

Folgendes muss en dovir hunn:

- original Router Firmware, fënnt en normalerweis um Website vum Hiersteller
- ssh Zougang
- 10 Minutten Zäit

Vir d'eischte den Freifunk node booten loossen an en Uplink ginn. Iwert Kabel oder WLAN ass onrelevant. Duerno testen op een ssh Zougang och huet.

Als Beispill huelen mir elo den TP-Link WR940n V4.

Wann een elo d'Firmware vum Hiersteller um Laptop huet, muss kontrolléiert ginn ob am Numm boot steet.

```
wr940nv4_eu_3_16_9_up_boot(160620).bin
```

Dat muss erausgeholl ginn, dovir gëtt folgend Kommandozeil geholl. Wann dat net dran steet, kann den nächsten Schrëtt iwwersprongen ginn.

```
dd if=wr940nv4_eu_3_16_9_up_boot\160620\*.bin of=wr940nv4_eu__stripped.bin
skip=257 bs=512
```

Resultat ass eng nei Datei **wr940nv4_eu__stripped.bin**

Des Datei kennt elo mat scp ob eisen Node.

```
scp {Dateiname} root@[IPv6]:/tmp/
```

Elo erëm iwwert ssh um node aloggen an sech mat cd an den tmp folder setzen.

```
ssh root@[IPV6]
```

```
cd /tmp/
```

Dann muss den cache eidel gemaach ginn an d'Software installéiert ginn.

```
echo 3 > /proc/sys/vm/drop_caches  
sysupgrade [NAMEOFFIRMWAREFILE]
```

Dësen Schrëtt kann och am Webinterface am config-modus gemaach ginn. Dofir einfach Firmware Update maachen an dobäi eis nei erstallten original Firmware benotzen.

Duerno start den Router erëm mat original Firmware.

TFTP

Wann en un dësem Punkt bis ukomm ass, ass den Router gebrickt an et misst en den Router ob maachen, Kabel verleiden vir en ze retten. Mat TFTP muss et awer net esou wäit kommen. Et ass den leschten Schrëtt, éier en sech entscheiden muss tëschen Kabelen verleiden oder neien Router kafen.

Logs op engem Node liesen

```
logread
```

SSH Keys vun dem Team

Fir Fernwartung: hei lo eis Public Keys sou dass jiddereen dei beim Flashen kann hannerleeën (wann gewollt). [öffentliche SSH Schlüssel](#)

Sendeleeschtung

[Transit power zb Ubiquiti](#)

MAC Adress Filter

https://ffmuc.net/wiki/p/Routerkonfiguration_via_SSH#MAC_Filter

Et fënnt en och vill weider Infoen am freifunk.net wiki.

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