



How to configure a wlan interface on hotspot mode

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STMicroelectronics Confidential

A quality version of this page, approved on *3 February 2020*, was based off this revision.



1 Configure a wlan interface on hotspot mode

- Configure the wlan interface for systemd/networkd

Add the following rule on /lib/systemd/network/

```
Board $> cat /lib/systemd/network/hostapd.network
[Match]
Name=wlan0

[Network]
Address=192.168.72.1/24
DHCPserver=yes
IPForward=ipv4
IPMasquerade=yes
```

192.168.72.1/24: ip address affected to the hotspot device.

This configuration supports dhcpserver, ip forward and ip masquerade for this wlan interface: wlan0.

- Create the hotspot configuration by replacing /etc/hostapd.conf content by the following lines

```
Board $> cat /etc/hostapd.conf
interface=wlan0
driver=nl80211
# mode Wi-Fi (a = IEEE 802.11a, b = IEEE 802.11b, g = IEEE 802.11g)
hw_mode=g
ssid=STExampleNetwork
channel=7
wmm_enabled=0
macaddr_acl=0
# Wi-Fi closed, need an authentication
auth_algs=1
ignore_broadcast_ssid=0
wpa=2
wpa_passphrase=ExamplePassphareNetwork
wpa_key_mgmt=WPA-PSK
wpa_pairwise=TKIP
rsn_pairwise=CCMP
```

STExampleNetwork is the visible name of the new wlan hotspot (SSID).

ExamplePassphareNetwork is the passphrase associated to the wlan hotspot (SSID).

- Correct one issue with systemd-networkd.service which does not enable the wifi link by default

Add the highlighted line in /lib/systemd/system/hostapd.service file

```
Board $> cat /lib/systemd/system/hostapd.service
[Service]
ExecStartPre=/sbin/ip link set wlan0 up
ExecStart=/usr/sbin/hostapd /etc/hostapd.conf -P /run/hostapd.pid -B
```

- Enable systemd service

```
Board $> systemctl enable hostapd
```



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2 How to configure a gateway configuration

For this example of configuration, the setup is:

- wlan0: wireless interface connected to SSID_NETWORK with DHCP
- eth0: ethernet interface with static IP which also have a DHCPserver on it
- forward of packet are activated between the two network interfaces.

2.1 Configure wireless interface

```
Board $> cat /lib/systemd/network/wlan0.network
[Match]
Name=wlan0

[Network]
DHCP=ipv4
IPForward=ipv4
```

IPForward

permit to forward all network packet from wireless network to other network.

Configure wireless interface for SSID_NETWORK network:

```
Board $> mkdir -p /etc/wpa_supplicant/
echo "ctrl_interface=/var/run/wpa_supplicant" > /etc/wpa_supplicant/wpa_supplicant-wlan0.conf
echo "eapol_version=1" >> /etc/wpa_supplicant/wpa_supplicant-wlan0.conf
echo "ap_scan=1" >> /etc/wpa_supplicant/wpa_supplicant-wlan0.conf
echo "fast_reauth=1" >> /etc/wpa_supplicant/wpa_supplicant-wlan0.conf
echo "" >> /etc/wpa_supplicant/wpa_supplicant-wlan0.conf
wpa_passphrase SSID_NETWORK PASSWORD_NETWORK >> /etc/wpa_supplicant/wpa_supplicant-wlan0.conf
or
wpa_passphrase SSID_NETWORK >> /etc/wpa_supplicant/wpa_supplicant-wlan0.conf
```

Where **SSID_NETWORK** **PASSWORD_NETWORK** correspond to the SSID and password of wireless network.

Enable the wireless configuration (to be take into account after reboot):

```
Board $> systemctl enable wpa_supplicant@wlan0.service
systemctl restart systemd-networkd.service
systemctl restart wpa_supplicant@wlan0.service
```

technology for wireless local area networking with devices based on the IEEE 802.11 standards

Dynamic Host Configuration Protocol (See https://en.wikipedia.org/wiki/Dynamic_Host_Configuration_Protocol for more details)