

How to enable MBO function in Wi-Fi driver

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Introduction

WiFi Agile Multiband provides practical solutions for band steering, load balancing, and other related operational procedures. The extensions defined in this specification are band independent and are expected to be usable across all available unlicensed bands where Wi-Fi systems operate.

This document describes the requirements of software components including driver and wpa_supplicant for Multi Band Operation (MBO); also provides examples to setup connection by wpa_supplicant.

1 Software requirements

Below are the requirements of each software components which are needed to enable MBO function:

Software component	Requirements
Kernel	ver. >= 3.10
Driver	ver. >= 5.10
wpa_supplicant	ver. >= O_8.x_rtw_r33457

※ Only support MBO function with CFG80211

1.1 Driver configurations

Turn on the flag of CONFIG_RTW_MBO in Makefile

- CONFIG_RTW_MBO=y
 - CONFIG_RTW_80211R
 - CONFIG_RTW_WNM
 - CONFIG_RTW_BTM_ROAM
 - CONFIG_RTW_80211K

1.2 wpa_supplicant configurations

Set this configuration to y in wpa_supplicant/wpa_supplicant/.config to enable MBO function

- CONFIG_IEEE80211R=y
- CONFIG_WNM=y
- CONFIG_MBO=y

2 Setup MBO connection by wpa_supplicant.conf

Add FT-PSK to key_mgmt in network profile block in run time configuration file (for 802.11r FT only).

For example:

```
ctrl_interface=/var/run/wpa_supplicant
# non_pref_chan=<oper_class>:<chan>:<preference>:<reason>
#non_pref_chan="81:11:1:2 81:12:1:2 81:13:1:2"
```

```
#non_pref_chan=81:11:1:1
```

```
# 1 = Cellular data connection available
```

```
# 2 = Cellular data connection not available
```

```
# 3 = Not cellular capable (default) interworking=1
```

```
#mbo_cell_capa=3
```

```
# 0 = disabled (default unless changed with the global pmf parameter)
```

```
# 1 = optional
```

```
# 2 = required
```

```
pmf=1
```

```
#interworking=1
```

```
#hs20=1
```

```
network={  
    ssid="test"  
    proto=RSN WPA  
    key_mgmt= WPA-PSK FT-PSK  
    pairwise=CCMP TKIP  
    group=CCMP TKIP  
    psk="12345678"  
}
```