

WiFi driver Compilation Test

1. Linux kernel

① L6.1.55

<https://mirrors.edge.kernel.org/pub/linux/kernel/v6.x/linux-6.1.55.tar.gz>

② L5.10.211

<https://mirrors.edge.kernel.org/pub/linux/kernel/v5.x/linux-5.10.211.tar.gz>

③ L6.1.80

<https://mirrors.edge.kernel.org/pub/linux/kernel/v6.x/linux-6.1.80.tar.gz>

2. WiFi driver version

```
#git clone https://github.com/nxp-imx/mwififix.git
```

```
#cd mwififix
```

```
#git tag
```

```
#git checkout lf-6.6.3_1.0.0
```

Version: 17.92.1.p149.131-17.92.1.p149.131-MM6X17437.P3-GPL

3. CPU ARCH

For x86

4. Compilation

(1) For L6.1.55 kernel

① Building Kernel

[weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55\\$ make menuconfig](weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55$ make menuconfig)

Save & Exit

To avoid compilation errors, run the following commands before building kernel

```
CC      certs/system_keyring.o
make[2]: *** No rule to make target 'debian/canonical-certs.pem', needed by 'certs/x509_certificate_list'. Stop.
make[1]: *** [scripts/Makefile.build:500: certs] Error 2
make: *** [Makefile:2014: .] Error 2
```

[weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55\\$ scripts/config --disable SYSTEM_TRUSTED_KEYS](weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55$ scripts/config --disable SYSTEM_TRUSTED_KEYS)

[weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55\\$ scripts/config --disable SYSTEM_REVOCATION_KEYS](weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55$ scripts/config --disable SYSTEM_REVOCATION_KEYS)

[weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55\\$ make -j4](weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55$ make -j4)

if encountering the inquiries below, press Enter Key. Then wait until compilation is done.

```
* Restart config...
*
* Certificates for signature checking
File name or PKCS#11 URI of module signing key (MODULE_SIG KEY) [certs/signing_key.pem] certs/signing_key.pem
Type of module signing key to be generated
> 1. RSA (MODULE SIG KEY TYPE RSA)
2. ECDSA (MODULE SIG KEY TYPE ECDSA)
choice[1-2?]: 1
Provide system-wide ring of trusted keys (SYSTEM TRUSTED KEYRING) [Y/?] y
Additional X.509 keys for default system keyring (SYSTEM TRUSTED KEY) [] (NEW) Reserve area for inserting a certificate without recompiling (SYSTEM_EXTRA_CERTIFICATE) [Y/n/?] y
Number of bytes to reserve for the extra certificate (SYSTEM_EXTRA_CERTIFICATE_SIZE) [4096] 4096
Provide a keyring to which extra trustable keys may be added (SECONDARY TRUSTED KEYRING) [Y/n/?] y
Provide system-wide ring of blacklisted keys (SYSTEM BLACKLIST KEYRING) [Y/n/?] y
Hashes to be preloaded into the system blacklist keyring (SYSTEM BLACKLIST HASH LIST) []
Provide system-wide ring of revocation certificates (SYSTEM REVOCATION LIST) [Y/n/?] y
X.509 certificates to be preloaded into the system blacklist keyring (SYSTEM REVOCATION KEYS) [] (NEW) []
```

OK, done.

```
weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55$ ls
arch      certs      crypto      fs      io_uring      Kconfig      LICENSES      mm      modules.order      README      scripts      tools      vmlinux.a
block     COPYING     Documentation     include     ipc      kernel      MAINTAINERS    modules.builtin   Module.symvers  rust      security      usr      vmlinux-gdb.py
built-in.a CREDITS     drivers      init      Kbuild     lib      Makefile     modules.builtin.modinfo  net      samples      sound      virt      vmlinux.o
weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.55$
```

② Building FP92 driver for the kernel version

```
# cd ~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wifiex/wlan_src  
Tune Makefile using gedit  
# gedit Makefile
```

```
.....  
#CONFIG_COMPATDIR=n  
ifeq ($(CONFIG_COMPATDIR), y)  
#COMPATDIR=/lib/modules/$(KERNELVERSION_X86)/build/compat-wireless-3.2-rc1-1/include  
#CC ?= $(CROSS_COMPILE)gcc -I$(COMPATDIR)  
#endif  
  
#LD ?= $(CROSS_COMPILE)ld  
CC=gcc  
LD=id  
  
BACKUP= /root/backup  
YMD=`date +%Y%m%d%H%M`  
.....  
default:  
# $(MAKE) -C $(KERNELDIR) M=$(PWD) ARCH=$(ARCH) CROSS_COMPILE=$(CROSS_COMPILE) modules  
$(MAKE) -C $(KERNELDIR) M=$(PWD) modules  
.....
```

Save & Exit.

```
# export KERNELDIR=/home/weidong/Linux-Open-Source-Kernel/linux-6.1.55  
# make build
```

OK, done. No errors occurred.

```
make[1]: Leaving directory '/home/weidong/Linux-Open-Source-Kernel/linux-6.1.55'  
cp -f wlan.ko ./bin/wlan/mlan.ko  
cp -f moal.ko ./bin/wlan/moal.ko  
cp -rpf script/load ./bin/wlan/  
cp -rpf script/unload ./bin/wlan/  
cp -f README ./bin/wlan  
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wifiex/wlan_src$ ls  
Module.symvers README script  
Mlofile wlan.ko mlan.mod mlan.mod.o mlan.o mlinux moal.ko moal.mod moal.mod.c moal.mod.o moal.o modules.order Module.symvers README script  
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wifiex/wlan_src$ ls ./bin/wlan/  
bin/wlan wlan.scr  
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wifiex/wlan_src$ ls ./bin/wlan/  
load mlan.ko moal.ko README unload  
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wifiex/wlan_src$ file ./bin/wlan/mlan.ko  
./bin/wlan/mlan.ko: ELF 64-bit LSB relocatable, x86-64, version 1 (SYSV), BuildID[sha1]=18e802c1f5ccb3fdc23044789e94c5f56bd4da52, with debug_info, not stripped  
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wifiex/wlan_src$
```

bin_wlan directory will be created in wlan_src. Check it, we can find 2 .ko files: mlan.ko & moal.ko, which are driver's binary files.

So building the version of Wi-Fi driver for L6.1.55 is no problem.

(2) For Kernel L5.10.211

① Building Kernel

```
# cd ~/Linux-Open-Source-Kernel/linux-5.10.211  
# make menuconfig  
Save & Exit  
# scripts/config --disable SYSTEM_TRUSTED_KEYS  
# scripts/config --disable SYSTEM_REVOCATION_KEYS  
# make -j4
```

```
weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-5.10.211$ make -j4  
SYNC include/config/auto.conf.cmd  
HOSTCC scripts/basic/fixdep  
HOSTCC scripts/kconfig/conf.o  
HOSTCC scripts/kconfig/confdata.o  
HOSTCC scripts/kconfig/expr.o  
LEX scripts/kconfig/lexer.lex.c  
YACC scripts/kconfig/parser.tab.[ch]  
HOSTCC scripts/kconfig/preprocess.o  
HOSTCC scripts/kconfig/symbol.o  
HOSTCC scripts/kconfig/util.o  
HOSTCC scripts/kconfig/lexer.lex.o  
HOSTCC scripts/kconfig/parser.tab.o  
HOSTLD scripts/kconfig/conf  
  
*  
* Restart config...  
*  
*  
* Certificates for signature checking  
*  
File name or PKCS#11 URI of module signing key (MODULE SIG KEY) [certs/signing_key.pem] certs/signing_key.pem  
Provide system-wide ring of trusted keys (SYSTEM TRUSTED KEYRING) [Y/?] y  
Additional X.509 keys for default system keyring (SYSTEM_TRUSTED_KEYS) [] (NEW)
```

Press Enter Key to continue. Then wait until compilation is done.

OK, done.

```
weidong@ubuntu:~/Linux-Open-Source-Kernel/Linux-5.10.211$ ls  
arch COPYING Documentation include inc kernel MAINTAINERS modules.built-in modules.order README security tools vmlinux vmlinux.symvers  
block CREDITS drivers init Kbuild lib Makefile modules.built-in.modinfo Module.symvers net samples sound usr vmlinux-gdb.py  
certs crypto fs ioURING Kconfig LICENSES mm modules-only.symvers net scripts System.map virt vmlinux.o  
weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-5.10.211$
```

② Building FP92 driver for the kernel version

```
# cd ~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src
```

Modification of Makefile has been ready, so don't need to tune it again.

```
# export KERNELDIR=/home/weidong/Linux-Open-Source-Kernel/linux-5.10.211  
# make clean  
# rm -rf ./bin_wlan  
# make build
```

```
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src$ make build  
make -C /home/weidong/Linux-Open-Source-Kernel/linux-5.10.211 M=/home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src modules  
make[1]: Entering directory '/home/weidong/Linux-Open-Source-Kernel/linux-5.10.211'  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_shim.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_txrx.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_txrx.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_cmddevt.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_misc.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_cfp.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_module.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_wmm.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_sdio.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_pcie.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_eggr.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_llreorder.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_lln.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_llac.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_llax.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_lld.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_lln.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_meas.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_scan.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_ioctl.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_sta_rx.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_sta_tx.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_sta_event.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_sta_cmd.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_sta_cmddesp.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_join.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_uap_ioctl.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_uap_cmdevent.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlan/mlan_uap_txrx.o  
LD [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlinux/mlinux.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlinux/mlol_main.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlinux/mlol_locl.o  
CC [M] /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlinux/mlol_shim.o  
/home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlinux/mlol_shim.c: In function 'mlol_recv_event':  
/home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlinux/mlol_shim.c:2850:12: error: invalid application of 'sizeof' to incomplete type 'char[]'  
2850 |     sizeof(wrqu.ap_addr.sa_data); |  
make[2]: *** [scripts/Makefile.build:206: /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src/mlinux/mlol_shim.o] Error 1  
make[1]: *** [Makefile:1932: /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src] Error 2  
make: *** [Makefile:595: default] Error 2  
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwiflex/mxm_wiflex/wlan_src$
```

```

make -C /home/weidong/Linux-Open-Source-Kernel/linux-5.10.21 M=/home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/wlan_src modules
make[1]: Entering directory '/home/weidong/Linux-Open-Source-Kernel/linux-5.10.21'
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_shim.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_init.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_txrx.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_txrx_o.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_misc.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_cfp.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_module.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_wmm.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_sdio.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_pcie.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_lln_aggr.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_lln_reorder.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_lln_o.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_llac.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_llax.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_lld.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_llh.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_meas.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_scan.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_stabase.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_sta_rx.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_sta_tx.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_sta_event.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/mian_sta_cmd.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/man_sta_cmddesp.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/man_join.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/man_uap_ioctl.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/man_uap_cmdevent.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian/man_uap_txrx.o
LD [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/mian.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/linux/moal_main.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/linux/moal_iocctl.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/linux/moal_shim.o
CC [M] /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/linux/moal_eth_iocctl.o
/home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/linux/moal_eth_iocctl.c: In function 'woal_priv_get_ap':
/home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/linux/moal_eth_iocctl.c:6189:1: error: invalid application of 'sizeof' to incomplete type 'char[]'
6189     sizeof(mr->u.wlan_data));
make[2]: *** [/scripts/Makefile.build:286: /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src/linux/moal_eth_iocctl.o] Error 1
make[1]: *** [/Makefile:1832: /home/weidong/Wifi-driver/mxm_lf-6.6.3_1.0.0/mwifieux/mxm_wifieux/vlan_src] Error 2
make[1]: Leaving directory '/home/weidong/Linux-Open-Source-Kernel/linux-5.10.21'
make: *** [Makefile:59: default] Error 2

```

So there are conditional compilation errors in these files.

```

- mlinux/moal_shim.c:2850
2847 /*#if LINUX_VERSION_CODE >= KERNEL_VERSION(6, 2, 0)*/
2848 #if LINUX_VERSION_CODE >= KERNEL_VERSION(5, 10, 211)
2849                                         sizeof(wrqu.ap_addr.sa_data_min));
2850 #else
2851                                         sizeof(wrqu.ap_addr.sa_data));
2852#endif

- mlinux/moal_ioctl.c:6189
6186 /*#if LINUX_VERSION_CODE >= KERNEL_VERSION(6, 2, 0)*/
6187 #if LINUX_VERSION_CODE >= KERNEL_VERSION(5, 10, 211)
6188                                         sizeof(mwr->u.ap_addr.sa_data_min));
6189 #else
6190                                         sizeof(mwr->u.ap_addr.sa_data));
6191#endif

- mlinux/moal_wext.c:591
587 /*#if LINUX_VERSION_CODE >= KERNEL_VERSION(6, 2, 0)*/
588 #if LINUX_VERSION_CODE >= KERNEL_VERSION(5, 10, 211)
589                                         MLAN_MAC_ADDR_LENGTH,
590                                         sizeof(awrq->sa_data_min));
591 #else
592                                         MLAN_MAC_ADDR_LENGTH, sizeof(awrq->sa_data));
593#endif

- mlinux/moal_wext.c:3038
3036 /*#if LINUX_VERSION_CODE >= KERNEL_VERSION(6, 2, 0)*/
3037 #if LINUX_VERSION_CODE >= KERNEL_VERSION(5, 10, 211)
3038                                         sizeof(iwe.u.ap_addr.sa_data_min));
3039 #else
3040                                         sizeof(iwe.u.ap_addr.sa_data));
3041#endif

- mlinux/moal_uap_wext.c:234
231 /*#if LINUX_VERSION_CODE >= KERNEL_VERSION(6, 2, 0)*/
232 #if LINUX_VERSION_CODE >= KERNEL_VERSION(5, 10, 211)
233                                         sizeof(awrq->sa_data_min));
234 #else
235                                         sizeof(awrq->sa_data));
236#endif

```

Change KERNEL_VERSION(6, 2, 0) to KERNEL_VERSION(5, 10, 211), then compilation was successful.

```

weidong@ubuntu:/Wifi-driver/mxm-lf-6.6.3.1.0.0/mwifiex/mxm_wifiex/wlan_src$ ls ..bin_wlan/
load_mlan.ko moal.ko README unload
weidong@ubuntu:/Wifi-driver/mxm-lf-6.6.3.1.0.0/mwifiex/mxm_wifiex/wlan_src$ file ..bin_wlan/moal.ko
./bin wlan/moal.ko: ELF 64-bit LSB relocatable, x86-64, version 1 (SYSV), BuildID[sha1]=d3cc8b1d749e524cc70377a2decd3ecb6459a77, not stripped
weidong@ubuntu:/Wifi-driver/mxm-lf-6.6.3.1.0.0/mwifiex/mxm_wifiex/wlan_src$ 

```

(3) For Kernel L6.1.80

① Building Kernel

```

# cd ~/Linux-Open-Source-Kernel/linux-6.1.80
# make menuconfig
    Save & Exit
# scripts/config --disable SYSTEM_TRUSTED_KEYS
# scripts/config --disable SYSTEM_REVOCATION_KEYS
# make -j4
* Certificates for signature checking
*
File name or PKCS#11 URI of module signing key (MODULE_SIG_KEY) [certs/signing_key.pem] certs/signing_key.pem
Type of module signing key to be generated
> 1. RSA (MODULE_SIG_KEY_TYPE_RSA)
  2. ECDSA (MODULE_SIG_KEY_TYPE_ECDSA)
choice[1-2?]: 1
Provide system-wide ring of trusted keys (SYSTEM_TRUSTED_KEYRING) [Y/?] y
    Additional X.509 keys for default system keyring (SYSTEM_TRUSTED_KEYS) [] (NEW) 

```

Press Enter key to continue. Then wait until compilation is done.

OK, done.

```
weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.80$ ls
arch    certs  crypto   fs    io_uring  Kconfig  LICENSES  mm          modules.order  README  scripts  tools  vmlinux.a
block   COPYING  Documentation  include  ipc    kernel   MAINTAINERS  modules.builtin  Module.symvers  rust    security  usr   vmlinux-gdb.py
built-in.a CREDITS  drivers   init    Kbuild  lib     Makefile   modules.builtin.modinfo  net      samples  sound   virt   vmlinux.o
weidong@ubuntu:~/Linux-Open-Source-Kernel/linux-6.1.80$
```

② Building FP92 driver for the kernel version

```
# cd ~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src
```

Modification of Makefile has been ready, so don't need to tune it again. And based on the previously modified conditional compilation parts.

```
# export KERNELDIR=/home/weidong/Linux-Open-Source-Kernel/linux-6.1.80
```

```
# make clean
```

```
# rm -rf ..//bin_wlan
```

```
# make build
```

```
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src$ make build
make -C /home/weidong/Linux-Open-Source-Kernel/linux-6.1.80 M=/home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src modules
make[1]: Entering directory '/home/weidong/Linux-Open-Source-Kernel/linux-6.1.80'
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan_shim.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_init.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_txrx.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_cdevt.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_misc.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_cfp.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_module.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_wmm.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_sdio.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_pcie.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_lln_aggr.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_rxreorder.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_lln.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_llac.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_llmnl.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_lld.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_llh.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_meas.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_scan.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_sta.ioclt.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_sta_rx.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_sta_tx.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_sta_event.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_sta_cmd.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_sta_cmdresp.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_join.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_uap.ioclt.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_uap.cmdvntent.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan/mlan_uap_txrx.o
  LD [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_main.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_ioclt.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_shim.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_eth.ioclt.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_init.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_priv.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_wext.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_uap.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_uap_priv.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_uap_wext.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_cfg80211.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_cfg80211.util.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_sta.cfg80211.o
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao_uap.cfg80211.o
  LD [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlnxo/mlao.o
  MODPOST /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/Module.symvers
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan.mod.o
  LD [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan.ko
  CC [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan.mod.o
  LD [M]  /home/weidong/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src/mlan.ko
  cp -f README ..//bin_wlan
  cp -f wlan ..//bin_wlan
  weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src$ ls ..//bin_wlan/
load_mlan.ko moal.ko README unload
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src$ file ..//bin_wlan.moal.ko
..//bin_wlan.moal.ko: ELF 64-bit LSB relocatable, x86-64, version 1 (SYSV), BuildID[sha1]=e9b73c13cbc064e0817b61c6435c2607c8f2e562, with debug_info, not stripped
weidong@ubuntu:~/Wifi-driver/mxm-lf-6.6.3_1.0.0/mwififix/mxm_wifix/wlan_src$
```

According to the previous compilation test, it is a compilation error caused by conditional compilation.

Connectivity Team of NXP TIC

Weidong Sun

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