

# How to port wireless driver to Google Chromium OS

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## Introduction

This guide describes things about porting Realtek wireless driver to Google chromium OS. We assume x86-generic is our target board. ChromiumOS 33.0.1709.2(235044).

## Install Chromium OS

Please visit Google Chromium web page for Chromium OS installation.

<http://www.chromium.org/chromium-os>

Following Chromium user guide to build Chromium OS and make sure it works correctly on your target board.

## Install Realtek wireless driver

Decompress wireless driver.

```
$ cd chromiumos/src/third_party/kernel/files/drivers/net/wireless/
```

```
$ tar zxvf rtl8821AS_linux_v4.2.x_xxxx.xxxxxxxx.tar.gz
```

```
$ vim chromiumos/src/third_party/kernel/files/drivers/net/wireless/Makefile
```

Adds following information to Makefile.

```
obj-$(CONFIG_RTL8821AU) += rtk_wifi_driver/
```

```
$ vim chromiumos/src/third_party/kernel/files/drivers/net/wireless/Kconfig
```

Adds following information to Kconfig

```
.
    source "drivers/net/wireless/rtk_wifi_driver/Kconfig"
```

Enable CFG80211 in autoconf.h

```
$ vim
```

```
chromiumos/src/third_party/kernel/files/drivers/net/wireless/rtk_wifi_driver/includ
```

```
e/autoconf.h
```

```
#define CONFIG_IOCTL_CFG80211 1
```

```
$ vim
```

```
chromiumos/src/third_party/kernel/files/drivers/net/wireless/rtk_wif_driver/Makefile
```

```
CONFIG_PLATFORM_I386_PC = y
```

## Compiler

```
$ cd chromiumos
```

```
$ ./chromite/bin/cros_sdk
```

```
# create local copy of kernel source
```

```
$ cros_workon --board=x86-generic start sys-kernel/chromeos-kernel
```

```
$ repo sync
```

```
$ cd ~/trunk/src/third_party/kernel/files
```

```
$ chromeos/scripts/kernelconfig oldconfig (select m on wireless driver. ie., rtl8821)
```

Build Packages and Image

```
$ cd ~/trunk/src/scripts
```

```
$ ./build_packages --board=x86-generic
```

```
$ ./build_image --board=x86-generic
```

Copy the image to a USB key

```
./image_to_usb.sh --board="x86-generic"
```

## Connect to AP

Boots up Chromium OS login to the Chrome browser. Press Ctrl-Alt-T to open a terminal. Type "shell" on terminal to launch a shell environment. Type "/sbin/ifconfig" to make sure wlanx (usually wlan0) is up.

If wlanx exists. Click Settings soft key on right side bottom to configure wireless card. You may observe an off-line status in Wi-Fi network. Click to select your favorite AP and connect to it. Enjoy!

Note: If Wi-Fi network display “Disable”, it means Network manager reject to inform UI the wireless hardware is ready. Network manager locates in chromiumos/src/platform/shill.

To build local copy of shill, you have to enable following packages:

```
$ cros_workon --board=x86-generic start chromeos-base/shill
```

```
$ cros_workon --board=x86-generic start chromeos-base/platform2
```