

Wi-Fi Hal 3.0 Support for RPI4

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Yocto Build steps

RPI4 Build steps

```
$ mkdir <workspace dir>
$ cd <workspace dir>
$ repo init -u https://code.rdkcentral.com/r/manifests -b dunfell -m rdkb-extsrc.xml
$ repo sync -j`nproc` --no-clone-bundle
$ MACHINE=raspberrypi4-rdk-broadband source meta-cmf-raspberrypi/setup-environment
$ bitbake rdk-generic-broadband-image
```

Wi-Fi Hal 3.0 Api's Implemented

Below are the list of new api's, are implemented in rpi platform to support the wifi hal 3.0 feature.

Wi-Fi Hal 3.0 api's

```
wifi_getRadioOperatingParameters
wifi_setRadioOperatingParameters
wifi_createVAP
wifi_getRadioVapInfoMap
wifi_getHalCapability
wifi_getApAssociatedDevice
wifi_getApSecurity
wifi_updateApSecurity
wifi_setApSecurity
wifi_setApWpsConfiguration
wifi_getApWpsConfiguration
```

Enabling CFLAGS - WIFI_HAL_VERSION_3

Below are the recipe's to enable the cflag to support the Wi-Fi Hal Version 3 Feature.

S. No	Recipe	CFLAG
1.	ccsp-wifi-agent.bbappend	CFLAGS_append = "\${@bb.utils.contains('DISTRO_FEATURES', 'halVersion3', '-DWIFI_HAL_VERSION_3', '', d)}"
2.	harvester_git.bbappend	
3.	hal-wifi-generic_git.bbappend	
4.	halinterface.bbappend	

Validated Functionalities

No	Feature	Supported
1	WAN Connected Devices-Wi-Fi 2G	✓
2	WAN Connected Devices-Wi-Fi 5G	✓
3	WPS	✓
4	Bridge Mode	✓
5	Factory Reset	✓
6	Captive Portal	✓
7	2.4 GHz Band Support	✓
8	5 GHz Band Support	✓
9	In WebUI , Gateway > Connection > Wi-Fi	✓
10	TR-181 Wi-Fi DM parameters are loaded properly during boot-up	✓
11	Internet and WebUI launch on Associated connected wireless clients	✓
12	SSID, pwd ,security mode, enable , disable etc are validated with dmcli as well as webui	✓
13	WebPA	✓