



WiFi As Wan Support on bcm963XX

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Revision History

Revision	Date	Change Description
0.1	03/09/2012	Initial release

Introduction:

The APSTA mode of WL driver is a variant of MBSSID that allows support for AP mode and STA mode operation simultaneously. By participating in one BSS as a STA and managing separate BSS as an AP, and with appropriate configuration, this feature is used to implement Travel Router(Routing mode) and Range Extender (Bridging mode) products. The main SSID which behaves like STA to associate other Upstream AP is used as layer2 interface of Wan service and the guest SSIDs are as AP associated by STAs.

Building WiFi As Wan Feature(To Be Modified)

To enable WiFi As Wan Support, Enable following options under “WLAN Selection” in make menuconfig

- Wireless Alternate Build: "apsta"
- [*] WiFi as WAN

Configuring WiFi As Wan:

For now, Wifi As Wan support two mode, Routing mode and Bridging mode.

1. Routing Mode

- Go to Wireless ---> Basic page, enter main SSID as the SSID of what the upstream AP will be associated, and enable/configure the first guest SSID

Broadcom
Enabling EVERYTHING

Device Info
Advanced Setup
Wireless
Basic
Security
MAC Filter
Wireless Bridge
Advanced
Station Info
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Management

Wireless -- Basic

This page allows you to configure basic features of the wireless LAN interface. You can enable or disable the wireless LAN interface, hide the network from active scans, set the wireless network name (also known as SSID) and restrict the channel set based on country requirements. Click "Apply/Save" to configure the basic wireless options.

☒ Enable Wireless

☐ Hide Access Point

☐ Clients Isolation

☐ Disable WMM Advertise

☐ Enable Wireless Multicast Forwarding (WMF)

SSID:

BSSID:

Country:

Max Clients:

Wireless - Guest/Virtual Access Points:

Enabled	SSID	Hidden	Isolate Clients	Disable WMM Advertise	Enable WMF	Max Clients	BSSID
<input checked="" type="checkbox"/>	<input type="text" value="wl0_Guest1"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="16"/>	<input type="text" value="02:10:18:99:88:7A"/>
<input type="checkbox"/>	<input type="text" value="wl0_Guest2"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="16"/>	<input type="text" value="N/A"/>

- Go to Advanced Setup ---> Layer2 Interface ----> WIFI Interface page, Add the main SSID interface wl0 as layer2 interface and Apply/Save

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Connecting
EVERYTHING

Device Info
Advanced Setup
Layer2 Interface
ATM Interface
PTM Interface
ETH Interface
WIFI Interface
WAN Service
LAN
NAT
Security
Parental Control
Quality of Service
Routing
DNS
DSL
UPnP
DNS Proxy
Print Server
Storage Service
Interface Grouping
IPSec
Certificate


Wifi WAN Interface Configuration

Choose Add, or Remove to configure WiFi WAN interfaces.
Allow one WiFi as layer 2 wan interface.

Interface/(Name)	Connection Mode	Remove
wl0/wlan0	VlanMuxMode	<input type="checkbox"/>

Remove

- Go to Advanced Setup ---> WAN Service page, configure the IP Over Ethernet Wan Service based on wl0 interface



Device Info
Advanced Setup
Layer2 Interface
ATM Interface
PTM Interface
ETH Interface
WIFI Interface
WAN Service
LAN
NAT
Security
Parental Control
Quality of Service
Routing
DHIS
DSL
UPnP
DHIS Proxy
Print Server
Storage Service
Interface Grouping
IPSec
Certificate


Wide Area Network (WAN) Service Setup

Choose Add, Remove or Edit to configure a WAN service over a selected interface.

Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	Remove	Edit
wifi0	ipoe_wl0	IPoE	N/A	N/A	Disabled	Enabled	Disabled	<input type="checkbox"/>	Edit

Add
Remove

- After the wl0 interface associated to the upstream AP, go to Device ---> WAN page to check if the the wan wifi interface wifi0 has been activated



Device Info
Summary
WAN
Statistics
Route
ARP
DHCP
Advanced Setup
Wireless
Diagnostics
Management

WAN Info

Interface	Description	Type	VlanMuxId	Igmp	NAT	Firewall	Status	IPv4 Address
wifi0	ipoe_wl0	IPoE	Disabled	Disabled	Enabled	Disabled	Connected	192.168.3.2

- Connect a wireless STA to the guest SSID and try if ping from STA to the upstream AP can be successfully

2. Bridging Mode

- Go to Wireless ---> Basic page, enter main SSID as the SSID of what the upstream AP will be associated, and enable some guest SSID
- Go to Advanced Setup ---> Layer2 Interface ----> WIFI Interface page, Add the main SSID interface wl0 as layer2 interface and Apply/Save
- Go to Advanced Setup ---> WAN Service page, configure the Bridging Service based on wl0 interface
- After the wl0 interface associated to the upstream AP, go to Device ---> WAN page to check if the wan wifi interface wifi0 has been activated
- Connect a wireless STA to the guest SSID and try if ping from STA to the upstream AP can be successfully

3. PPPOE Mode

TODO if necessary

NOTES:

- 1) Interface grouping for wifi wan interface is to be done
- 2) Authentication WPA/WPS2-PSK support for the main ssid when behaves as STA will be added
- 3) WPS support for the main ssid when behaves as STA will be added