



Troubleshooting

This chapter provides information about troubleshooting.

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Debug Commands

- `debug wgb uplink state-machine {events | info | error | critical | all}`
- `debug wgb uplink scan {events | info | error | critical | all}`
- `debug wgb uplink security {events | info | error | critical | all}`
- `debug wgb uplink configuration {events | info | error | critical | all}`

WGB Show Commands

Use these commands to check WGB configurations:

- `show running-config`
- `show wgb dot11 association`

```
wgb#show wgb dot11 associations
Uplink Radio ID       : 1
Uplink Radio MAC      : E8:EB:34:AE:AA:EF
SSID Name             : B-thes-PSK
Parent AP Name        : ap9120-c01
Parent AP MAC         : 2C:57:41:93:0B:2C
Uplink State          : CONNECTED
Auth Type              : PSK
Key management Type   : WPA2
Dot11 type            : 11ax
Channel                : 36
Bandwidth              : 20 MHz
Current Datarate      : 6 Mbps
Max Datarate          : 286 Mbps
RSSI                  : 21
```

```

IP : 192.168.23.195/24
Default Gateway : 192.168.23.1
DNS Server1 : 192.168.71.2
Domain : iottest.local
IPV6 : 2001:dead:beef:2103:de33:3013:8126:a39b/128
Assoc timeout : 5000 Msec
Auth timeout : 5000 Msec
Dhcp timeout : 60 Sec
    
```

• **show wgb ssid**

```
wgb# show wgb ssid
```

Configured SSIDs details:

SSID-Profile	SSID	Authentication
sp	sp	PSK
B-thes-OP	B-thes-OP	OPEN
B-thes-1X	B-thes-1X	DOT1X
B-thes-PSK	B-thes-PSK	PSK

Connected SSIDs details:

```

Radio ID : 1
Radio Mode : WGB
BSSID : 2C:57:41:93:0B:2C
SSID : B-thes-PSK
Authentication : PSK
    
```

• **show wgb bridge**

```

wgb# show wgb bridge
      mac vap   port vlan_id   seen_ip confirm_ago fast_brg
6C:2B:FC:2C:18:37  0 wired0     0 100.100.220.31  11.320000 true
00:2B:2C:07:3F:11  0 wired0     0  0.0.0.0       1.960000 true
    
```

• **show wgb packet statistics**

uWGB Show Commands

Use these commands to check uWGB configurations:

- **show running-config**
- **show wgb dot11 association**
- **show wgb ssid**
- **show wgb packet statistics**

The following example shows the **show wgb dot11 association** command output. Note that the current state should be "uwgb" if uclient is active.

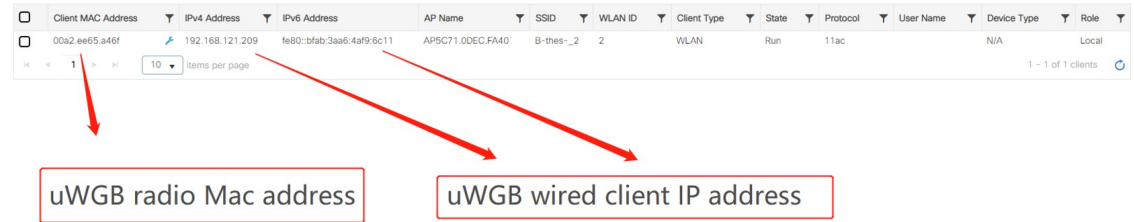
```

wgb#show wgb dot11 associations
Uplink Radio ID : 1
Uplink Radio MAC : 00:A2:EE:65:A4:6F
SSID Name : B-thes-_3
Parent AP MAC : 3C:41:0E:3B:02:0D
Uplink State : CONNECTED
Auth Type : DOT1X
EAP Method Name : FAST
Key management Type : WPA2
    
```

```

Uclient mac           : 00:50:56:A1:01:DC
Current state         : UWGB
Uclient timeout       : 60 Sec
Dot11 type            : 11ac
Channel               : 36
RSSI                  : 46
IP                    : 0.0.0.0
IPV6                  : ::/128
Assoc timeout         : 5000 Msec
Auth timeout          : 5000 Msec
Dhcp timeout          : 60 Sec
    
```

uWGB checkpoints on AP



WGB Debug Examples

This section provides WGB debug examples.

Figure 1: Preconfiguration for Hostapd and DOT11_UPLINK_CONFIG Before WGB Uplink Mode Started

```

DOT11_UPLINK_EV: Uplink state changed [DOT11_UPLINK_STOPPED] to [DOT11_UPLINK_SCAN_START]
DOT11_UPLINK_EV: Uplink state changed [DOT11_UPLINK_SCAN_START] to [DOT11_UPLINK_STOPPED]
DOT11_UPLINK_EV: DHCP: client process stopped
DOT11_UPLINK_CONFIG: Added WLAN Index : 0 to db
DOT11_UPLINK_CONFIG: Added Mac addr: E8:EB:34:AE:AA:EF to db
DOT11_UPLINK_EV: DHCP: clien--More--
WGB_UPLINK_SEC: WPA supplicant configuration file /etc/wpa_supplicant.conf created
systemd[1]: Starting WPA supplicant process...
systemd[1]: Started WPA supplicant process.
DOT11_UPLINK_CONFIG: WPAS started
WGB_UPLINK_SEC: wpas socket exists, but does not allow connections - assuming it was left over from process termination
WGB_UPLINK_SEC: Successfully replaced leftover socket '/var/run/wpa_supplicant/local'
WGB_UPLINK_SEC: wcp/wgb_sec :: Dot11UplinkSecurity: Error connecting to wpa supplicant socket for remote path /var/run/wpa_supplicant/wbridge1
WGB_UPLINK_SEC:
DOT11_UPLINK_CONFIG: Radio[1] configured for standard: 7
licant: FIPS Mode = disabled **
hostapd:wpa_supplicant v2.9
hostapd:random: Trying to read entropy from /dev/random
hostapd:Successfully initialized wpa_supplicant
hostapd:Initializing interface 'wbridge1' conf '/etc/wpa_supplicant.conf' driver 'wpas' ctrl_interface '/var/run/wpa_supplicant' bridge 'N/A'
hostapd:Configuration file '/etc/wpa_supplicant.conf' -> '/etc/wpa_supplicant.conf'
hostapd:Reading configuration file '/etc/wpa_supplicant.conf'
hostapd:ctrl_interface='/var/run/wpa_supplicant'
hostapd:update_config=1
hostapd:eapol_version=1
hostapd:ap_scan=0
hostapd:fast_reauth=1
hostapd:Line: 6 - start of a new network block
ssid = hexdump_ascii(len=10):
42 2d 74 68 65 73 2d 50 53 4b B-thes-PSK
hostapd:proto: 0x2
hostapd:key_mgmt: 0x2
PSK (ASCII passphrase) - hexdump_ascii(len=8): [REMOVED]
hostapd:pairwise: 0x10
hostapd:group: 0x10
PSK (from passphrase) - hexdump(len=32): [REMOVED]
hostapd:Priority group 0
hostapd: id=0 ssid='B-thes-PSK'
hostapd:driver_wpas: wpas_init
DOT11_UPLINK_CONFIG: current power level: 1
DOT11_UPLINK_CONFIG: set tx power level: 1
DOT11_UPLINK_CONFIG: 3 Antennas configured
DOT11_UPLINK_CONFIG: wcp/wgb_config :: Dot11UplinkConfig: push antenna config to driver TxAntenna 7 RxAntenna 7
    
```

Figure 2: WGB Uplink Mode Started -> Scan Started

```

** Uplink is disabled **
DOT11_UPLINK_DRIVER[1]: WGB uplink mode started
DOT11_UPLINK_EV: Scan Started
DOT11_UPLINK_EV: Uplink state changed [DOT11_UPLINK_STOPPED] to [DOT11_UPLINK_SCAN_START]
DOT11_UPLINK_SCAN: Uplink Scan Started in Dot11Radio1.

```

Figure 3: Parent selected

```

DOT11_UPLINK_EV: Calling RSSI get for 00:00:00:00:00:00
DOT11_UPLINK_EV: Last pkt RSSI: 0 0 0 0
DOT11_UPLINK_EV: Avg RSSI: 0 0 0 0
DOT11_UPLINK_EV: parent_rssi: 0, configured low rssi: -70
DOT11_UPLINK_EV: Found BSSID 2c:57:41:93:08:2C for SSID B-thes-PSK on channel 52
DOT11_UPLINK_EV: RSSI: -30
DOT11_UPLINK_EV: SNR: 35
DOT11_UPLINK_EV: load: 0
DOT11_UPLINK_EV: hops: 0
DOT11_UPLINK_EV: distance: 0
DOT11_UPLINK_EV: num assoc: 0
DOT11_UPLINK_EV: radio_type: 7
DOT11_UPLINK_EV: mdId: 0
DOT11_UPLINK_EV: ft_cap_policy: 0
DOT11_UPLINK_EV: channel width: 40
DOT11_UPLINK_EV: update_scan_result: it != NULL
DOT11_UPLINK_EV: update_scan_result: expired_time not initialized
DOT11_UPLINK_EV: update_scan_result: return
DOT11_UPLINK_EV: Scan Finished. Total BSS found 1.
DOT11_UPLINK_EV: find best ap bssid
DOT11_UPLINK_EV: Current BSS--More--
DOT11_UPLINK_EV: same node, skipping...
DOT11_UPLINK_EV: Best BSSID: 2C:57:41:93:08:2C
DOT11_UPLINK_EV: tgr_method: over-the-air
DOT11_UPLINK_SCAN: Uplink Scan stopped in Dot11Radio1
DOT11_UPLINK_EV: Uplink state changed [DOT11_UPLINK_SCAN_START] to [DOT11_UPLINK_SCAN_DONE]

```

Figure 4: Authenticating

```

DOT11_UPLINK_EV: existing channel 0, target channel 52
DOT11_UPLINK_EV: Starting Connection (uplink)addr1[E8:EB:34:AE:AA:EF], (bssid)addr2[2C:57:41:93:08:2C]
WGB_UPLINK_SEC: WPA supplicant configuration file /etc/wpa_supplicant.conf created
WGB_UPLINK_SEC: wpa socket exists, but does not allow connections - assuming it was left over from process termination
WGB_UPLINK_SEC: Successfully replaced leftover socket '/var/run/wpa_supplicant/local'
WGB_UPLINK_SEC: start socket to WPA supplicant
WGB_UPLINK_SEC: Re configuration command to wpa_supplicant sent successfully..
WGB_UPLINK_SEC: Bad response for RECONFIGURE from wpa_supplicant
WGB_UPLINK_SEC: Sending init--More--
WGB_UPLINK_SEC: Bad response for EAPOLINIT from wpa_supplicant
WGB_UPLINK_SEC: New roamed parent : 2C:57:41:93:08:2C
DOT11_UPLINK_EV: Uplink state changed [DOT11_UPLINK_SCAN_DONE] to [DOT11_UPLINK_AUTHENTICATING]
WGB Classifier: Dot11UplinkClassifier: Downstream packet fc b0 Len 30 MAC 2C:57:41:93:08:2C
WGB Classifier: Dot11UplinkClassifier: Tx sent to Uplink Access-Point b0
DOT11_UPLINK_EV: Auth request sent!
WGB_UPLINK_SEC: Uplink client state is invalid(3).Dropping the EAP packet.
hostapd:wpa_ether_send() res=1
hostapd:wbridge1: Control interface command 'RECONFIGURE'
hostapd:Reading configuration file '/etc/wpa_supplicant.conf'
hostapd:ctrl_interface='/var/run/wpa_supplicant'
hostapd:update_config=1
hostapd:eapol_version=1
hostapd:ap_scan=0
hostapd:fast_reauth=1
hostapd:Line: 6 - start of a new network block
ssid - hexdump_ascii(len=10):
 42 2d 74 68 65 73 2d 50 53 4b          B-thes-PSK
BSSID - hexdump(len=6): 2c 57 41 93 0b 2c
hostapd:proto: 0x2
hostapd:key_mgmt: 0x2
PSK (ASCII passphrase) - hexdump_ascii(len=8): [REMOVED]
hostapd:pairwise: 0x10
hostapd:group: 0x10
WGB Classifier: Dot11UplinkClassifier: Rx sent to WGB Uplink b0
DOT11_UPLINK_EV: Auth Response (uplink)addr1[E8:EB:34:AE:AA:EF], (bssid)addr2[2C:57:41:93:08:2C] status code [0]

```


Figure 9: DOT11 UPLINK ESTABLISHED

```
DOT11-UPLINK_ESTABLISHED: Interface Dot11Radio1, Associated To AP ap9120-c01 2C:57:41:93:0B:2C [WPA2 PSK]
hostapd:wbridge1: WPA: Key negotiation completed with 2c:57:41:93:0b:2c [PTK=CCMP GTK=CCMP]
hostapd:wbridge1: Cancelling authentication timeout
hostapd:wbridge1: State: GRO--More--
hostapd:wbridge1: CTRL-EVENT-CONNECTED - Connection to 2c:57:41:93:0b:2c completed [id=0 id_str=]
hostapd:EAPOL: External notification - portValid=1
hostapd:EAPOL: External notification - EAP success=1
hostapd:EAPOL: SUPP_PAE entering state AUTHENTICATING
hostapd:EAPOL: SUPP_BE entering state SUCCESS
hostapd:EAP: EAP entering state DISABLED
hostapd:EAPOL: SUPP_PAE entering state AUTHENTICATED
hostapd:EAPOL: Supplicant port status: Authorized
hostapd:EAPOL: SUPP_BE entering state IDLE
hostapd:EAPOL authentication completed - result=SUCCESS
hostapd:CTRL-DEBUG: ctrl_sock-sendto: sock=5 sndbuf=1048576 outq=704 send_len=3
WGB Classifier: Dot11UplinkClassifier: Rx sent to WGB Uplink d0
DOT11_UPLINK_EV: Invalid action frame received category:3 action:1
WGB Classifier: Dot11UplinkClassifier: Rx sent to WGB Uplink d0
DOT11_UPLINK_EV: Invalid action frame received category:3 action:1
DOT11_UPLINK_EV: Calling RSSI get for 2C:57:41:93:0B:2C
DOT11_UPLINK_EV: Last pkt RSSI: -30 -33 0 0
DOT11_UPLINK_EV: Avg RSSI: -30 -33 0 0
DOT11_UPLINK_EV: parent_rssi: -31, configured low rssi: -70
chatter: DHCP-EVT: Sending DHCP discover packet length 346 bytes
WGB Classifier: Dot11UplinkClassifier: Rx sent to WGB Uplink d0
DOT11_UPLINK_EV: Invalid action frame received category:3 action:0
```

Figure 10: DHCP -> Connected State

```
chatter: DHCP-EVT: DHCP client machine state: init
chatter: DHCP-EVT: Sending DHCP request packet length 346 bytes
chatter: DHCP-EVT: Received DHCP msg type: DHCP_ACK from server: 192.168.23.1
chatter: DHCP-EVT: DHCP client machine state: requesting
WGB Classifier: Dot11UplinkClassifier: Rx sent to WGB Uplink d0
DOT11_UPLINK_EV: Invalid action frame received category:3 action:0
hostapd:EAPOL: startWhen --> 0
hostapd:EAPOL: disable timer tick
route: SIOCADDRT: File exists
DOT11_UPLINK_EV: DHCP IP: [192.168.23.195], subnet [255.255.255.0]
gw [192.168.23.1], dns1 [192.168.71.2], dns2 [0.0.0.0]
domain [iottest.local] write to /data/platform/wbridge/wbridge_uplink_ip_info_1
DOT11_UPLINK_EV: DHCP finished
DOT11_UPLINK_EV: Uplink state changed [DOT11_UPLINK_DHCP] to [DOT11_UPLINK_CONNECTED]
DOT11_UPLINK_EV: DHCP finished, state changed to connected
DOT11_UPLINK_EV: Odhcp6c process started
```

Figure 11: DHCPv6

```
Apr 9 05:14:47 odhcp6c(31777): Starting SOLICIT transaction (timeout 4294807295s, max rc 0)
Apr 9 05:14:48 kernel: [44/89/2021 05:14:48.3340] DOT11_UPLINK_EV: Last pkt RS--More--
SI: -31 -33 0 0 kernel: [44/89/2021 05:14:48.3340] DOT11_UPLINK_EV: Avg RSSI: -30 -33 0 0
Apr 9 05:14:48 kernel: [44/89/2021 05:14:48.3340] DOT11_UPLINK_EV: parent_rssi: -31, configured low rssi: -70
Apr 9 05:14:48 odhcp6c(31777): Got a valid reply after 1055ms
Apr 9 05:14:49 odhcp6c(31777): Starting REQUEST transaction (timeout 4294807295s, max rc 10)
Apr 9 05:14:49 odhcp6c(31777): Send REQUEST message (elapsed 0ms, rc 0)
Apr 9 05:14:49 odhcp6c(31777): Got a valid reply after 8ms
Apr 9 05:14:49 odhcp6c(31777): entering stateful-mode on prcr2
Apr 9 05:14:49 odhcp6c(31777): Starting OFFER transaction (timeout 345600s, max rc 0)
Apr 9 05:14:51 ntp_mon_syslog: safe_read_select failed: (No such file or directory)
Apr 9 05:14:53 kernel: [44/89/2021 05:14:53.0560] ipd_popt prcr2, ipLocal t:, ip6 2001:dead:beef::2103:d033:1013:8126:a39b, plen 120, gw fe80::2591:dccf:fedc:5b44, gw_mac 00:59:DC:C6:5B:44, mtu 1500, vid 0, mode6 0(dhcp)
Apr 9 05:14:55 kernel: [44/89/2021 05:14:55.0030] hostapd:wbridge1: Control interface command 'LOG_LEVEL error'
Apr 9 05:14:55 kernel: [44/89/2021 05:14:55.0040] OK
Apr 9 05:14:57 kernel: [44/89/2021 05:14:57.0030] OK
```