

# WPA2-PSK and Open Authentication with Cisco 5760 WLC Configuration Example



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## Introduction

This document explains the advantages of the use of Wi-Fi Protected Access 2 (WPA2) in a Wireless LAN (WLAN). The document provides two configuration examples for the implementation of WPA2 on a WLAN:

- Configuration of a WPA2 Pre-Shared Key (PSK)
- Configuration of open authentication

## Prerequisites

### Requirements

Cisco recommends that you have knowledge of these topics:

- Wireless Protected Access (WPA)
- WLAN security solutions

### Components Used

The information in this document is based on these software and hardware versions:

- A Cisco 5700 Series Wireless LAN Controller (WLC) with Cisco IOS® XE Software, Release 3.3
- Cisco Aironet 3600 Series Lightweight Access Point
- Microsoft Windows 7 native wireless supplicant

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure

that you understand the potential impact of any command.

## Configure

**Note:** Use the Command Lookup Tool (registered customers only) in order to obtain more information on the commands used in this section.

## Network Diagram

This illustration displays the network diagram:

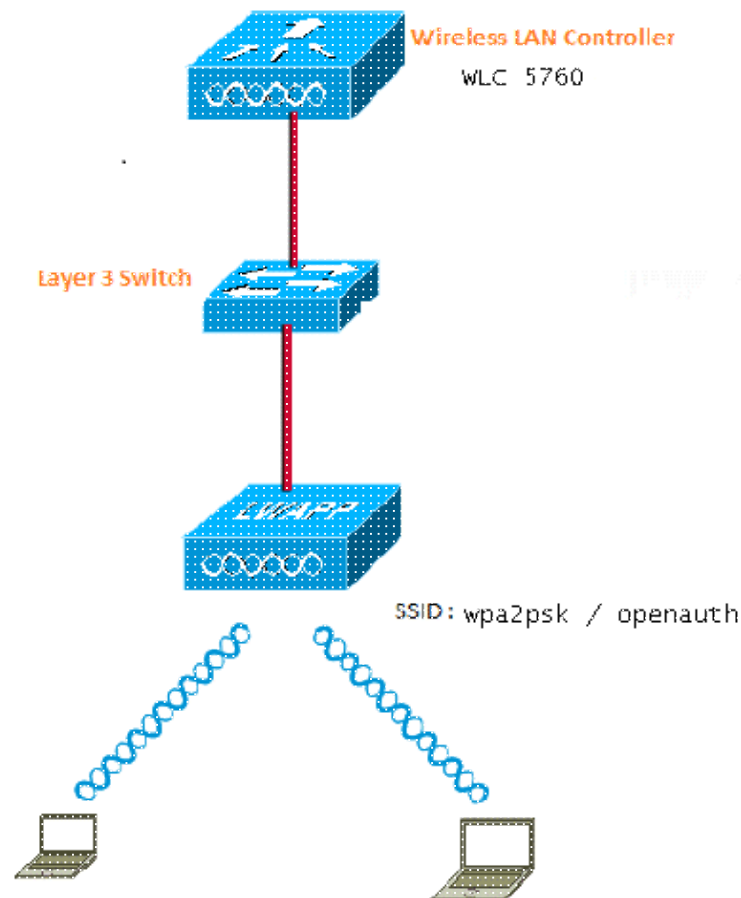


Figure 1. Network Diagram

## WPA2-PSK Configuration with CLI

This example describes the procedure to use the command-line interface (CLI) in order to configure DHCP snooping for the VLANs that are used for clients.

VLAN20 is used for clients and the pool is configured on the same WLC. The TenGigabitEthernet1/0/1 from the Cisco 5700 WLC is connected to the uplink switch. If the DHCP server is configured on the server beyond the WLC or on an external DHCP server, you must trust DHCP snooping and relay information.

```
ip device tracking
ip dhcp snooping vlan 12,20,30,40
ip dhcp snooping
```

```

!
ip dhcp pool vlan20
 network 20.20.20.0 255.255.255.0
 default-router 20.20.20.1

interface Vlan20
 ip address 20.20.20.1 255.255.255.0

interface TenGigabitEthernet1/0/1
 switchport trunk native vlan 12
 switchport mode trunk
 ip dhcp relay information trusted
 ip dhcp snooping trust

wlan wpa2psk 1 wpa2psk
 client vlan 20
 no security wpa akm dot1x
 security wpa akm psk set-key ascii 0 Cisco123
 no shutdown

```

**Note:** If your configuration contains a space in the PSK password, then use the format "password PSK". The same format should be used if you configure with the GUI also.

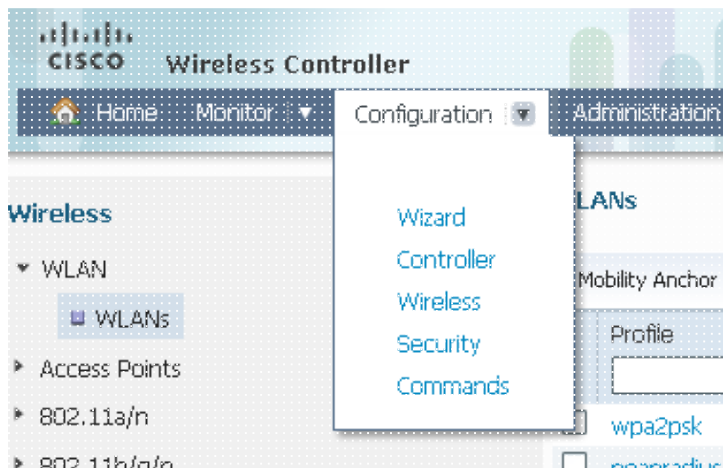
### Example

```
security wpa akm psk set-key ascii 0 "Cisco 123"
```

## WPA2-PSK Configuration with GUI

Complete these steps in order to configure a WPA2 PSK in the WLC GUI:

1. Navigate to **Configuration > Wireless > WLAN > WLANs**, and create a new WLAN:



2. Enable WPA2, and map it to the desired interface:

**WLAN**  
WLAN > Edit

General Security QOS Advanced

Profile Name wpa2psk

Type WLAN

SSID wpa2psk

Status

Security Policies [WPA2][Auth(PSK)]  
(Modifications done under security tab will appear after applying the changes.)

Radio Policy All ▾

Interface/Interface Group(G) default ▾

Broadcast SSID

Multicast VLAN Feature

3. Click the **Security** tab, check the **WPA2 Policy** checkbox, and select **AES** as the **WPA2 Encryption**. In the **Auth Key Mgmt** drop-down list, select **PSK**. Enter the PSK that the client will use in order to connect:

**WLAN**  
WLAN > Edit

General Security QOS Advanced

Layer2 Layer3 AAA Server

Layer 2 Security WPA + WPA2 ▾

MAC Filtering

**WPA+WPA2 Parameters**

WPA Policy

WPA2 Policy

WPA2 Encryption  AES  TKIP

Auth Key Mgmt PSK ▾

PSK Format ASCII ▾

## Open Authentication Configuration with CLI

This is an example of how to use the CLI in order to configure DHCP snooping for the VLANs that are being used for clients; in this example, VLAN20 is used for clients. The pool is configured on the same WLC.

TenGigabitEthernet1/0/1 from the 5760 WLC is connected to the uplink switch. If you have the DHCP server configured on the server beyond the WLC or on an external DHCP server, you must trust DHCP snooping and relay information.

```
ip device tracking
ip dhcp snooping vlan 12,20,30,40
ip dhcp snooping
!
ip dhcp pool vlan20
 network 20.20.20.0 255.255.255.0
 default-router 20.20.20.1

interface Vlan20
 ip address 20.20.20.1 255.255.255.0

interface TenGigabitEthernet1/0/1
 switchport trunk native vlan 12
 switchport mode trunk
 ip dhcp relay information trusted
 ip dhcp snooping trust

wlan open 5 open
 client vlan VLAN0020
 no security wpa
 no security wpa akm dot1x
 no security wpa wpa2
 no security wpa wpa2 ciphers aes
 session-timeout 1800
 no shutdown
```

## Open Authentication Configuration with GUI

This procedure describes how to configure open authentication in the WLC GUI:

1. Navigate to **Configuration > Wireless > WLAN > WLANs**, and create a new WLAN:



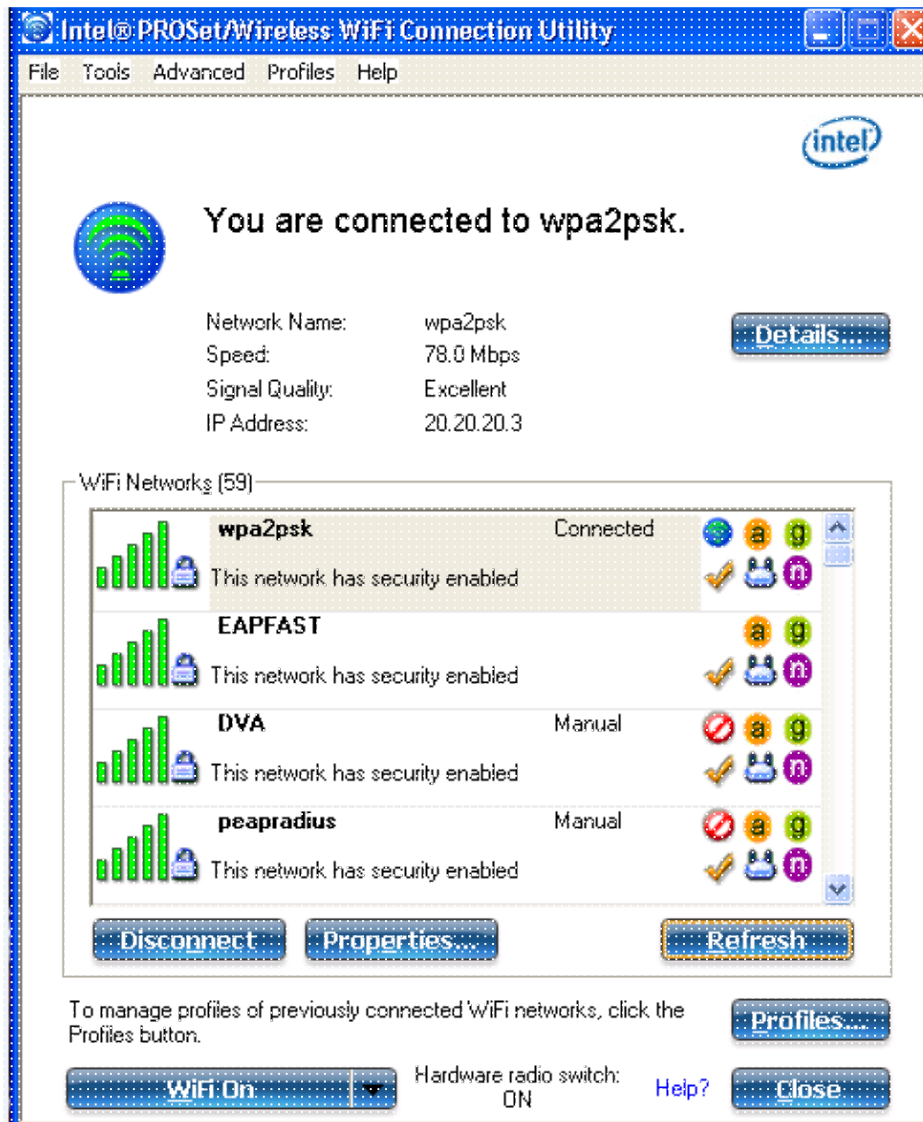
2. Click the **Security** tab. Under the **Layer2** tab and the **Layer3** tab, set everything to none. This is an example of the configuration results:

<input type="checkbox"/> open	5	open	20	Enabled
-------------------------------	---	------	----	---------

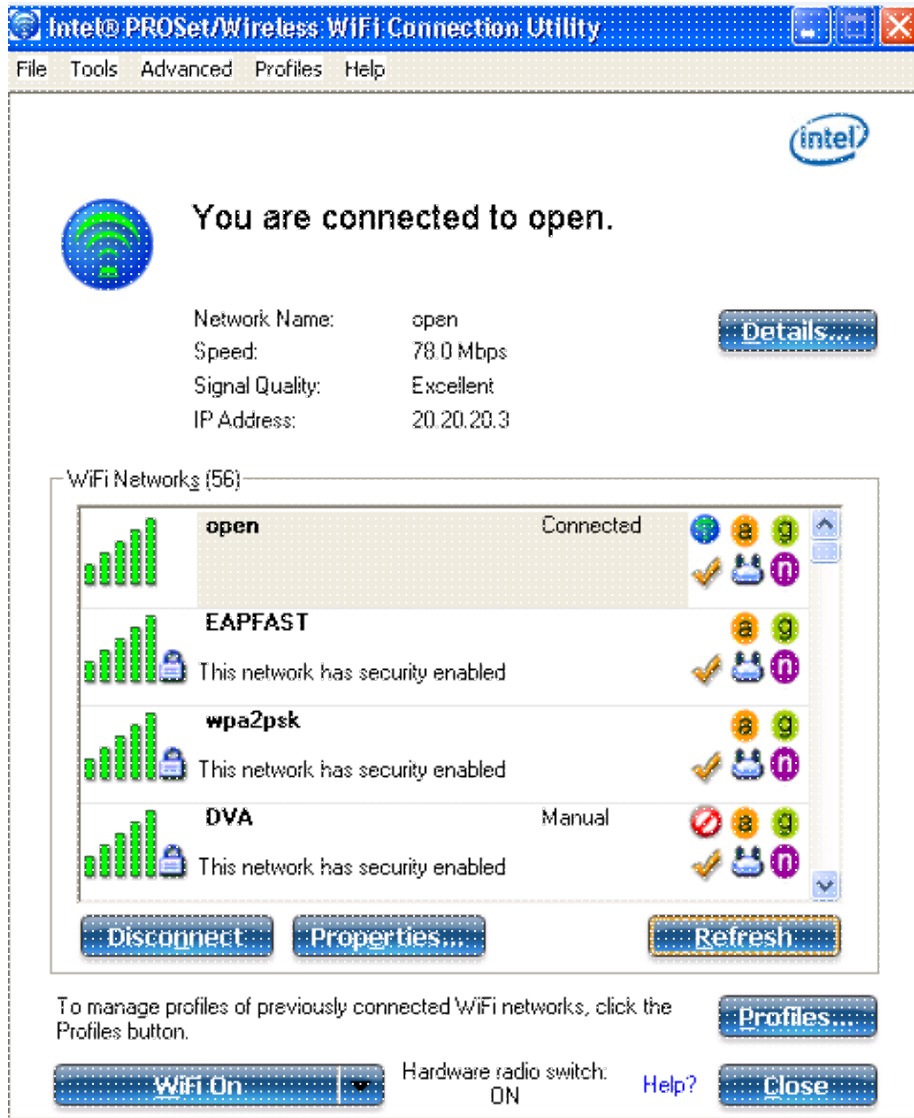
## Verify

Use this section to confirm that your configuration works properly.

Confirm that the WPA2-PSK client is connected:



Confirm that the client is connected to open authentication:



## Troubleshoot

This section provides information you can use to troubleshoot your configuration.

### Notes:

The Output Interpreter Tool (registered customers only) supports certain **show** commands. Use the Output Interpreter Tool in order to view an analysis of **show** command output.

Refer to Important Information on Debug Commands before you use **debug** commands.

This is an example of output from useful **debug** and **trace** commands:

```
debug client mac XXXX.XXXX.XXXX
```

```
Controller#sh debugging
Nova Platform:
```

```
dot11/state debugging is on
pem/events debugging is on
client/mac-addr debugging is on
dot11/detail debugging is on
mac/ filters[string 0021.5c8c.c761] debugging is on
dot11/error debugging is on
```

dot11/mobile debugging is on  
pem/state debugging is on

```
set trace group-wireless-client filter mac XXXX.XXXX.XXXX
set trace wcm-dot1x event filter mac XXXX.XXXX.XXXX
set trace wcm-dot1x aaa filter mac XXXX.XXXX.XXXX
set trace aaa wireless events filter mac XXXX.XXXX.XXXX
set trace access-session core sm filter mac XXXX.XXXX.XXXX
set trace access-session method dot1x filter XXXX.XXXX.XXXX
```

```
*Sep 1 05:55:01.321: 0021.5C8C.C761 Association received from mobile on AP
C8F9.F983.4260 1 wcm: i.D^Iw for client
*Sep 1 05:55:01.321: 0021.5C8C.C761 qos upstream policy is unknown and
downstream policy is unknown 1 wcm: r client
*Sep 1 05:55:01.321: 0021.5C8C.C761 apChanged 0 wlanChanged 1 mscb ipAddr
20.20.20.3, apf RadiusOverride 0x0, numIPv6Addr=0 1 wcm: nJ^Iwy_status 0
attr len^G$8\227v^K
*Sep 1 05:55:01.321: 0021.5C8C.C761 Applying WLAN policy on MSCB. 1 wcm:
ipAddr 20.20.20.3, apf RadiusOverride 0x0, numIPv6Addr=0
*Sep 1 05:55:01.321: 0021.5C8C.C761 Scheduling deletion of Mobile Station: 1
wcm: (callerId: 50) in 1 seconds
*Sep 1 05:55:01.321: 0021.5C8C.C761 Disconnecting client due to switch of
WLANS from 6(wep) to 5(open) 1 wcm:
*Sep 1 05:55:02.193: 0021.5C8C.C761 apfMsExpireCallback (apf_ms.c: 1 wcm: 664)
Expiring Mobile!
*Sep 1 05:55:02.193: 0021.5C8C.C761 apfMsExpireMobileStation (apf_ms.c: 1 wcm:
6953) Changing state for mobile 0021.5C8C.C761 on AP C8F9.F983.4260 from
Associated to Disassociated
*Sep 1 05:55:02.193: 0021.5C8C.C761 Sent Deauthenticate to mobile on BSSID
C8F9.F983.4260 slot 1(caller apf_ms.c: 1 wcm: 7036)
*Sep 1 05:55:02.193: 0021.5C8C.C761 apfMsExpireMobileStation (apf_ms.c: 1 wcm:
7092) Changing state for mobile 0021.5C8C.C761 on AP C8F9.F983.4260 from
Disassociated to Idle
*Sep 1 05:55:02.193: 0021.5C8C.C761 20.20.20.3 RUN (20) Deleted mobile LWAPP
rule on AP [ C8F9.F983.4260 ] 1 wcm: 5C8C.C761 on AP C8F9.F983.4260 from
Disassociated to Idle
*Sep 1 05:55:02.193: 0021.5C8C.C761 20.20.20.3 RUN (20) FastSSID for the
client [ C8F9.F983.4260 ] NOTENABLED 1 wcm: C.C761 on AP C8F9.F983.4260
from Disassociated to Idle
*Sep 1 05:55:02.193: 0021.5C8C.C761 Incrementing the Reassociation Count 1 for
client (of interface VLAN0020) 1 wcm: D
*Sep 1 05:55:02.193: 0021.5C8C.C761 Clearing Address 20.20.20.3 on mobile 1
wcm: for client (of interface VLAN0020)
*Sep 1 05:55:02.193: PEM rcv processing msg Del SCB(4) 1 wcm: 0.20.3 on
mobile
*Sep 1 05:55:02.193: 0021.5C8C.C761 20.20.20.3 RUN (20) Skipping TMP rule
add 1 wcm: lient (of interface VLAN0020)
*Sep 1 05:55:02.193: 0021.5C8C.C761 20.20.20.3 RUN (20) Change state to
DHCP_REQD (7) last state RUN (20) 1 wcm:
*Sep 1 05:55:02.193: 0021.5C8C.C761 WCDB_CHANGE: 1 wcm: Client 1 m_vlan 20
Radio iif id 0xbfcdc00000003a bssid iif id 0x8959800000004a, bssid
C8F9.F983.4260
*Sep 1 05:55:02.193: 0021.5C8C.C761 WCDB_AUTH: 1 wcm: Adding opt82 len 0
*Sep 1 05:55:02.193: 0021.5C8C.C761 WCDB_CHANGE: 1 wcm: Suppressing SPI
(client pending deletion) pemstate 7 state LEARN_IP(2) vlan 20 client_id
0xac70800000004b mob=Local(1) ackflag 2 dropd 0, delete 1
*Sep 1 05:55:02.193: 0021.5C8C.C761 Sending SPI spi_epm_epm_terminate_session
successfull 1 wcm: pemstate 7 state LEARN_IP(2) vlan 20 client_id
0xac70800000004b mob=Local(1) ackflag 2 dropd 0, delete 1
*Sep 1 05:55:02.194: 0021.5C8C.C761 Sending SPI spi_epm_epm_terminate_session
successfull 1 wcm: pemstate 7 state LEARN_IP(2) vlan 20 client_id
0xac70800000004b mob=Local(1) ackflag 2 dropd 0, delete 1
*Sep 1 05:55:02.194: 0021.5C8C.C761 Deleting wireless client; Reason code 0,
Preset 1, AAA cause 1 1 wcm: 7 state LEARN_IP(2) vlan 20 client_id
0xac70800000004b mob=Local(1) ackflag 2 dropd 0, delete 1
*Sep 1 05:55:02.194: 0021.5C8C.C761 WCDB_DEL: 1 wcm: Successfully sent
```



\*Sep 1 05:55:02.194: 0021.5C8C.C761 Expiring mobile state delete 1 wcm: on code 0, Preset 1, AAA cause 1

\*Sep 1 05:55:02.194: 0021.5C8C.C761 0.0.0.0 DHCP\_REQD (7) Handling pemDelScb Event skipping delete 1 wcm: state LEARN\_IP(2) vlan 20 client\_id 0xac708000000004b mob=Local(1) ackflag 2 dropd 0, delete 1

\*Sep 1 05:55:02.197: 0021.5C8C.C761 WCDB SPI response msg handler client code 1 mob state 1 1 wcm: g delete

\*Sep 1 05:55:02.197: 0021.5C8C.C761 apfProcessWcdbClientDelete: 1 wcm: Delete ACK from WCDB.

\*Sep 1 05:55:02.197: 0021.5C8C.C761 WCDB\_DELACK: 1 wcm: wcdbAckRecvdFlag updated

\*Sep 1 05:55:02.197: 0021.5C8C.C761 WCDB\_DELACK: 1 wcm: Client IIF Id dealloc SUCCESS w/ 0xac708000000004b.

\*Sep 1 05:55:02.197: 0021.5C8C.C761 Invoked platform delete and cleared handle 1 wcm: w/ 0xac708000000004b.

\*Sep 1 05:55:02.197: 0021.5C8C.C761 Deleting mobile on AP C8F9.F983.4260 (1) 1 wcm: w/ 0xac708000000004b.

\*Sep 1 05:55:02.197: 0021.5C8C.C761 Unlinked and freed mscb 1 wcm: 8F9.F983.4260 (1)

\*Sep 1 05:55:02.197: WCDB\_IIF: 1 wcm: Ack Message ID: 0xac708000000004b code 1003

\*Sep 1 05:55:02.379: 0021.5C8C.C761 Adding mobile on LWAPP AP C8F9.F983.4260 (1) 1 wcm: xac7080000.D^Iwb.

\*Sep 1 05:55:02.379: 0021.5C8C.C761 Creating WL station entry for client - rc 0 1 wcm:

\*Sep 1 05:55:02.379: 0021.5C8C.C761 Association received from mobile on AP C8F9.F983.4260 1 wcm: 0.D^Iwb.

\*Sep 1 05:55:02.379: 0021.5C8C.C761 qos upstream policy is unknown and downstream policy is unknown 1 wcm:

\*Sep 1 05:55:02.379: 0021.5C8C.C761 apChanged 0 wlanChanged 0 mscb ipAddr 0.0.0.0, apf RadiusOverride 0x0, numIPv6Addr=0 1 wcm: \2105H nJ^Iwlient\_id 0xac708000^G\$8\227v^K

\*Sep 1 05:55:02.379: 0021.5C8C.C761 Applying WLAN policy on MSCB. 1 wcm: ipAddr 0.0.0.0, apf RadiusOverride 0x0, numIPv6Addr=0

\*Sep 1 05:55:02.379: 0021.5C8C.C761 Applying WLAN ACL policies to client 1 wcm: 0.0.0.0, apf RadiusOverride 0x0, numIPv6Addr=0

\*Sep 1 05:55:02.379: 0021.5C8C.C761 No Interface ACL used for Wireless client in WCM(NGWC) 1 wcm: usOverride 0x0, numIPv6Addr=0

\*Sep 1 05:55:02.379: 0021.5C8C.C761 Applying site-specific IPv6 override for station 0021.5C8C.C761 - vapId 5, site 'default-group', interface 'VLAN0020' 1 wcm:

\*Sep 1 05:55:02.379: 0021.5C8C.C761 Applying local bridging Interface Policy for station 0021.5C8C.C761 - vlan 20, interface 'VLAN0020' 1 wcm: erface 'VLAN0020'

\*Sep 1 05:55:02.379: 0021.5C8C.C761 STA - rates (8): 1 wcm: 140 18 152 36 176 72 96 108 0 0 0 0 0 0 0

\*Sep 1 05:55:02.379: 0021.5C8C.C761 new capwap\_wtp\_iif\_id b68180000000038, sm capwap\_wtp\_iif\_id 0 1 wcm: 8C.C761 - vlan 20, interface 'VLAN0020'

\*Sep 1 05:55:02.379: 0021.5C8C.C761 WCDB\_ADD: 1 wcm: Radio IIFID 0xbfcfdc00000003a, BSSID IIF Id 0xbb30c0000000046, COS 4

\*Sep 1 05:55:02.379: Load Balancer: 1 wcm: Success, Resource allocated are: Active Switch number: 1, Active Asic number : 0, Reserve Switch number 0 Reserve Asic number 0. AP Asic num 0

\*Sep 1 05:55:02.379: 0021.5C8C.C761 WCDB\_ADD: 1 wcm: Anchor Sw 1, Doppler 0

\*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB\_ALLOCATE: 1 wcm: Client IIF Id alloc SUCCESS w/ client 8e7bc000000004d (state 0).

\*Sep 1 05:55:02.380: 0021.5C8C.C761 iifid Clearing Ack flag 1 wcm: F Id alloc SUCCESS w/ client 8e7bc000000004d (state 0).

\*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB\_ADD: 1 wcm: Adding opt82 len 0

\*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB\_ADD: 1 wcm: Cleaering Ack flag

\*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB\_ADD: 1 wcm: ssid open bssid C8F9.F983.4260 vlan 20 auth=ASSOCIATION(0) wlan(ap-group/global) 5/5 client 0 assoc 1 mob=Unassoc(0) radio 1 m\_vlan 20 ip 0.0.0.0 src 0xb68180000000038 dst 0x0 cid 0x8e7bc000000004d glob rsc id 14dhcpsrv 0.0.0.0 ty

\*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB\_ADD: 1 wcm: mscb iifid

```
0x8e7bc00000004d msinfo iifid 0x0
*Sep 1 05:55:02.380: 0021.5C8C.C761 0.0.0.0 START (0) Initializing policy 1
wcm: info iifid 0x0
*Sep 1 05:55:02.380: 0021.5C8C.C761 0.0.0.0 START (0) Change state to
AUTHCHECK (2) last state AUTHCHECK (2) 1 wcm: -group/global) 5/5 client 0
assoc 1 mob=Unassoc(0) radio 1 m_vlan 20 ip 0.0.0.0 src 0xb6818000000038
dst 0x0 cid 0x8e7bc00000004d glob rsc id 14dhcpsrv 0.0.0.0 ty
*Sep 1 05:55:02.380: 0021.5C8C.C761 0.0.0.0 AUTHCHECK (2) Change state to
L2AUTHCOMPLETE (4) last state L2AUTHCOMPLETE (4) 1 wcm: 5/5 client 0 assoc
1 mob=Unassoc(0) radio 1 m_vlan 20 ip 0.0.0.0 src 0xb6818000000038 dst 0x0
cid 0x8e7bc00000004d glob rsc id 14dhcpsrv 0.0.0.0 ty
*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB_CHANGE: 1 wcm: Client 1 m_vlan 20
Radio iif id 0xbfcdc00000003a bssid iif id 0xbb30c000000046, bssid
C8F9.F983.4260
*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB_AUTH: 1 wcm: Adding opt82 len 0
*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB_LLM: 1 wcm: NoRun Prev Mob 0, Curr
Mob 0 llmReq 1, return False
*Sep 1 05:55:02.380: 0021.5C8C.C761 auth state 1 mob state 0 setWme 0 wme 1
roam_sent 0 1 wcm: rn False
*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB_CHANGE: 1 wcm: auth=L2_AUTH(1) vlan
20 radio 1 client_id 0x8e7bc00000004d mobility=Unassoc(0) src_int
0xb6818000000038 dst_int 0x0 ackflag 0 reassoc_client 0 llm_notif 0 ip
0.0.0.0 ip_learn_type UNKNOWN
*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB_CHANGE: 1 wcm: In L2 auth but l2ack
waiting lflag not set, so set
*Sep 1 05:55:02.380: 0021.5C8C.C761 0.0.0.0 L2AUTHCOMPLETE (4) DHCP Not
required on AP C8F9.F983.4260 vapId 5 apVapId 5 for this client 1 wcm:
6818000000038 dst_int 0x0 ackflag 0 reassoc_client 0 llm_notif 0 i$=6v.0.0.0
it^_Dv^\7HnP6v^D6Hl5Ht^_Dv$6H8^ r^D6H>&5v8^ r^D6H>&5v^D6Ht^M^Lw^\7H8^ r
*Sep 1 05:55:02.380: WCDB_IIF: 1 wcm: Ack Message ID: 0x8e7bc00000004d code
1001
*Sep 1 05:55:02.380: 0021.5C8C.C761 Not Using WMM Compliance code qosCap 00 1
wcm: quired on AP C8F9.F983.4260 vapId 5 apVapId 5 for this client
*Sep 1 05:55:02.380: 0021.5C8C.C761 0.0.0.0 L2AUTHCOMPLETE (4) Plumbed
mobile LWAPP rule on AP C8F9.F983.4260 vapId 5 apVapId 5 1 wcm: client
*Sep 1 05:55:02.380: 0021.5C8C.C761 0.0.0.0 L2AUTHCOMPLETE (4) Change state
to DHCP_REQD (7) last state DHCP_REQD (7) 1 wcm: apVapId 5
*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB_CHANGE: 1 wcm: Client 1 m_vlan 20
Radio iif id 0xbfcdc00000003a bssid iif id 0xbb30c000000046, bssid
C8F9.F983.4260
*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB_AUTH: 1 wcm: Adding opt82 len 0
*Sep 1 05:55:02.380: 0021.5C8C.C761 WCDB_CHANGE: 1 wcm: Suppressing SPI
(Mobility state not known) pemstate 7 state LEARN_IP(2) vlan 20 client_id
0x8e7bc00000004d mob=Unassoc(0) ackflag 1 dropd 0
*Sep 1 05:55:02.380: 0021.5C8C.C761 Incrementing the Reassociation Count 1 for
client (of interface VLAN0020) 1 wcm: EARN_IP(2) vlan 20 client_id
0x8e7bc00000004d mob=Unassoc(0) ackflag 1 dropd 0
*Sep 1 05:55:02.380: 0021.5C8C.C761 apfPemAddUser2 (apf_policy.c: 1 wcm: 161)
Changing state for mobile 0021.5C8C.C761 on AP C8F9.F983.4260 from Idle
to Associated
*Sep 1 05:55:02.380: 0021.5C8C.C761 Scheduling deletion of Mobile Station: 1
wcm: (callerId: 49) in 1800 seconds
*Sep 1 05:55:02.380: 0021.5C8C.C761 Ms Timeout = 1800, Session Timeout = 1800
1 wcm: llerId: 49) in 1800 seconds
*Sep 1 05:55:02.381: 0021.5C8C.C761 Sending Assoc Response to station on BSSID
C8F9.F983.4260 (status 0) ApVapId 5 Slot 1 1 wcm: .F983.4260 from Idle to
Associated
*Sep 1 05:55:02.381: 0021.5C8C.C761 apfProcessAssocReq (apf_80211.c: 1 wcm:
5260) Changing state for mobile 0021.5C8C.C761 on AP C8F9.F983.4260
from Associated to Associated
*Sep 1 05:55:02.381: 0021.5C8C.C761 0.0.0.0 DHCP_REQD (7) pemAdvanceState2:
1 wcm: MOBILITY-INCOMPLETE with state 7.
*Sep 1 05:55:02.381: 0021.5C8C.C761 0.0.0.0 DHCP_REQD (7) pemAdvanceState2:
1 wcm: MOBILITY-INCOMPLETE with state 7.
*Sep 1 05:55:02.381: 0021.5C8C.C761 0.0.0.0 DHCP_REQD (7) pemAdvanceState2:
1 wcm: MOBILITY-COMplete with state 7.
```

\*Sep 1 05:55:02.381: 0021.5C8C.C761 0.0.0.0 DHCP\_REQD (7) State Update from Mobility-Incomplete to Mobility-Complete, mobility role=Local, client state=APF\_MS\_STATE\_ASSOCIATED 1 wcm: 1 dropd 0

\*Sep 1 05:55:02.381: 0021.5C8C.C761 0.0.0.0 DHCP\_REQD (7) pemAdvanceState2 3611, Adding TMP rule 1 wcm: o Mobility-Complete, mobility role=Local, client state=APF\_MS\_STATE\_ASSOCIATED

\*Sep 1 05:55:02.381: 0021.5C8C.C761 0.0.0.0 DHCP\_REQD (7) Adding Fast Path rule on AP C8F9.F983.4260 , slot 1 802.1P = 0 1 wcm: role=Local, client state=APF\_MS\_STATE\_ASSOCIATED

\*Sep 1 05:55:02.381: 0021.5C8C.C761 0.0.0.0 DHCP\_REQD (7) Successfully plumbed mobile rule 1 wcm: F9.F983.4260 , slot 1 802.1P = 0^M

\*Sep 1 05:55:02.381: 0021.5C8C.C761 WCDB\_CHANGE: 1 wcm: Client 1 m\_vlan 20 Radio iif id 0xbfcdc00000003a bssid iif id 0xbb30c000000046, bssid C8F9.F983.4260

\*Sep 1 05:55:02.381: 0021.5C8C.C761 WCDB\_AUTH: 1 wcm: Adding opt82 len 0

\*Sep 1 05:55:02.381: 0021.5C8C.C761 WCDB\_LLM: 1 wcm: NoRun Prev Mob 0, Curr Mob 1 llmReq 1, return False

\*Sep 1 05:55:02.381: 0021.5C8C.C761 WCDB\_CHANGE: 1 wcm: Suppressing SPI (ACK message not recvd) pemstate 7 state LEARN\_IP(2) vlan 20 client\_id 0x8e7bc00000004d mob=Local(1) ackflag 1 dropd 1

\*Sep 1 05:55:02.381: 0021.5C8C.C761 Error updating wcdb on mobility complete 1 wcm: not recvd) pemstate 7 state LEARN\_IP(2) vlan 20 client\_id 0x8e7bc00000004d mob=Local(1) ackflag 1 dropd 1

\*Sep 1 05:55:02.381: PEM rcv processing msg Epm spi response(12) 1 wcm: complete

\*Sep 1 05:55:02.381: 0021.5C8C.C761 aaa attribute list length is 79 1 wcm: complete

\*Sep 1 05:55:02.381: 0021.5C8C.C761 Sending SPI spi\_epm\_epm\_session\_create successfull 1 wcm: ) pemstate 7 state LEARN\_IP(2) vlan 20 client\_id 0x8e7bc00000004d mob=Local(1) ackflag 1 dropd 1

\*Sep 1 05:55:02.381: PEM rcv processing msg Add SCB(3) 1 wcm: pm\_session\_create successfull

\*Sep 1 05:55:02.381: 0021.5C8C.C761 0.0.0.0, auth\_state 7 mmRole Local !!! 1 wcm: successfull

\*Sep 1 05:55:02.381: 0021.5C8C.C761 0.0.0.0, auth\_state 7 mmRole Local, updating wcdb not needed 1 wcm: 7 state LEARN\_IP(2) vlan 20 client\_id 0x8e7bc00000004d mob=Local(1) ackflag 1 dropd 1

\*Sep 1 05:55:02.381: 0021.5C8C.C761 Tclas Plumb needed: 1 wcm: 0

\*Sep 1 05:55:02.384: EPM: 1 wcm: Session create resp - client handle 8e7bc00000004d session b8000020

\*Sep 1 05:55:02.384: EPM: 1 wcm: Netflow session create resp - client handle 8e7bc00000004d sess b8000020

\*Sep 1 05:55:02.384: PEM rcv processing msg Epm spi response(12) 1 wcm: le 8e7bc00000004d sess b8000020

\*Sep 1 05:55:02.384: 0021.5C8C.C761 Received session\_create\_response for client handle 40105511256850509 1 wcm: LEARN\_IP(2) vlan 20 client\_id 0x8e7bc00000004d mob=Local(1) ackflag 1 dropd 1

\*Sep 1 05:55:02.384: 0021.5C8C.C761 Received session\_create\_response with EPM session handle 3087007776 1 wcm:

\*Sep 1 05:55:02.384: 0021.5C8C.C761 Send request to EPM 1 wcm: ate\_response with EPM session handle 3087007776

\*Sep 1 05:55:02.384: 0021.5C8C.C761 aaa attribute list length is 5 1 wcm: e with EPM session handle 3087007776

\*Sep 1 05:55:02.384: 0021.5C8C.C761 Sending Activate request for session handle 3087007776 successful 1 wcm: 6

\*Sep 1 05:55:02.384: 0021.5C8C.C761 Post-auth policy request sent! Now wait for post-auth policy ACK from EPM 1 wcm: N\_IP(2) vlan 20 client\_id 0x8e7bc00000004d mob=Local(1) ackflag 1 dropd 1

\*Sep 1 05:55:02.384: 0021.5C8C.C761 WCDB SPI response msg handler client code 0 mob state 0 1 wcm: licy ACK from EPM

\*Sep 1 05:55:02.384: 0021.5C8C.C761 WcdbClientUpdate: 1 wcm: L2 Auth ACK from WCDB

\*Sep 1 05:55:02.384: 0021.5C8C.C761 WCDB\_L2ACK: 1 wcm: wcdbAckRecvdFlag updated

\*Sep 1 05:55:02.384: 0021.5C8C.C761 WCDB\_CHANGE: 1 wcm: Client 1 m\_vlan 20 Radio iif id 0xbfcdc00000003a bssid iif id 0xbb30c000000046, bssid

C8F9.F983.4260

\*Sep 1 05:55:02.384: 0021.5C8C.C761 WCDB\_AUTH: 1 wcm: Adding opt82 len 0

\*Sep 1 05:55:02.384: 0021.5C8C.C761 WCDB\_LLM: 1 wcm: NoRun Prev Mob 0, Curr Mob 1 llmReq 1, return False

\*Sep 1 05:55:02.385: 0021.5C8C.C761 auth state 2 mob state 1 setWme 0 wme 1 roam\_sent 0 1 wcm: rn False

\*Sep 1 05:55:02.385: 0021.5C8C.C761 WCDB\_CHANGE: 1 wcm: auth=LEARN\_IP(2) vlan 20 radio 1 client\_id 0x8e7bc00000004d mobility=Local(1) src\_int 0xb6818000000038 dst\_int 0x0 ackflag 2 reassoc\_client 0 llm\_notif 0 ip 0.0.0.0 ip\_learn\_type UNKNOWN

\*Sep 1 05:55:02.385: EPM: 1 wcm: Init feature, client handle 8e7bc00000004d session b8000020 authz ec00000e

\*Sep 1 05:55:02.385: EPM: 1 wcm: Activate feature client handle 8e7bc00000004d sess b8000020 authz ec00000e

\*Sep 1 05:55:02.385: PEM rcv processing msg Epm spi response(12) 1 wcm: 004d sess b8000020 authz ec00000e

\*Sep 1 05:55:02.385: 0021.5C8C.C761 Received activate\_features\_resp for client handle 40105511256850509 1 wcm: 004d mobility=Local(1) src\_int 0xb6818000000038 dst\_int 0x0 ackflag 2 reassoc\_client 0 llm\_notif 0 ip\$=6v0.0.0 ipt^\_Dv^\_7HnP6v^D6H15Ht^\_Dv\$6H8^ r^D6H>&5v8^ r^D6H>&5v^D6Ht^M^Lw^\_7H8^ r

\*Sep 1 05:55:02.385: 0021.5C8C.C761 Received activate\_features\_resp for EPM session handle 3087007776 1 wcm: 9

\*Sep 1 05:55:02.385: EPM: 1 wcm: Policy enforcement - client handle 8e7bc00000004d session 2800000e authz ec00000e

\*Sep 1 05:55:02.385: EPM: 1 wcm: Netflow policy enforcement - client handle 8e7bc00000004d sess 2800000e authz ec00000e msg\_type 0 policy\_status 0 attr len 0

\*Sep 1 05:55:02.385: PEM rcv processing msg Epm spi response(12) 1 wcm: e 8e7bc00000004d sess 2800000e authz ec00000e msg\_type 0 policy\_status 0 attr len 0

\*Sep 1 05:55:02.385: 0021.5C8C.C761 Received policy\_enforcement\_response for client handle 40105511256850509 1 wcm: 00e msg\_type 0 policy\_status 0 attr len 0

\*Sep 1 05:55:02.385: 0021.5C8C.C761 Received policy\_enforcement\_response for EPM session handle 671088654 1 wcm: 09

\*Sep 1 05:55:02.385: 0021.5C8C.C761 Received response for \_EPM\_SPI\_ACTIVATE\_FEATURES request sent for client 1 wcm: 00e msg\_type 0 policy\_status 0 attr len 0

\*Sep 1 05:55:02.385: 0021.5C8C.C761 Received \_EPM\_SPI\_STATUS\_SUCCESS for request sent for client 1 wcm: for client

\*Sep 1 05:55:02.385: 0021.5C8C.C761 Post-auth policy ACK recvd from EPM, unset flag on MSCB 1 wcm: ient

\*Sep 1 05:55:02.400: 0021.5C8C.C761 WCDB\_IP\_BIND: 1 wcm: w/ IPv4 20.20.20.3 ip\_learn\_type DHCP add\_delete 1, options\_length 0

\*Sep 1 05:55:02.400: 0021.5C8C.C761 WcdbClientUpdate: 1 wcm: IP Binding from WCDB ip\_learn\_type 1, add\_or\_delete 1

\*Sep 1 05:55:02.400: 0021.5C8C.C761 IPv4 Addr: 1 wcm: 20:20:20:3

\*Sep 1 05:55:02.400: 0021.5C8C.C761 MS got the IP, resetting the Reassociation Count 0 for client 1 wcm: \_delete 1

\*Sep 1 05:55:02.400: 0021.5C8C.C761 20.20.20.3 DHCP\_REQD (7) Change state to RUN (20) last state RUN (20) 1 wcm: length 0

\*Sep 1 05:55:02.400: 0021.5C8C.C761 WCDB\_CHANGE: 1 wcm: Client 1 m\_vlan 20 Radio iif id 0xbfcdc00000003a bssid iif id 0xbb30c000000046, bssid C8F9.F983.4260

\*Sep 1 05:55:02.400: 0021.5C8C.C761 WCDB\_AUTH: 1 wcm: Adding opt82 len 0

\*Sep 1 05:55:02.401: 0021.5C8C.C761 WCDB\_LLM: 1 wcm: prev Mob state 1 curr Mob State 1 llReq flag 0

\*Sep 1 05:55:02.401: 0021.5C8C.C761 auth state 4 mob state 1 setWme 0 wme 1 roam\_sent 0 1 wcm: g 0

\*Sep 1 05:55:02.401: 0021.5C8C.C761 WCDB\_CHANGE: 1 wcm: auth=RUN(4) vlan 20 radio 1 client\_id 0x8e7bc00000004d mobility=Local(1) src\_int 0xb6818000000038 dst\_int 0x0 ackflag 2 reassoc\_client 0 llm\_notif 0 ip 20.20.20.3 ip\_learn\_type DHCP

\*Sep 1 05:55:02.401: 0021.5C8C.C761 20.20.20.3 RUN (20) Reached PLUMBFASPATH: 1 wcm: from line 4430

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*Sep 1 05:55:02.401: 0021.5C8C.C761 20.20.20.3 RUN (20) Replacing Fast Path
rule on AP C8F9.F983.4260 , slot 1 802.1P = 0
1 wcm: 0xb6818000000038 dst_int 0x0 ackflag 2 reassoc_client 0 llm_notif 0 ip
20.$=6v0.3 ip_lt^_Dv^\7HnP6v^D6H15Ht^_Dv$6H8^ r^D6H>&5v8^
r^D6H>&5v^D6Ht^M^Lw^\7H8^ r
*Sep 1 05:55:02.401: 0021.5C8C.C761 20.20.20.3 RUN (20) Successfully plumbed
mobile rule 1 wcm: C8F9.F983.4260 , slot 1 802.1P = 0^M
*Sep 1 05:55:02.401: 0021.5C8C.C761
Sending IPv4 update to Controller 10.105.135.176 1 wcm: e
*Sep 1 05:55:02.401: 0021.5C8C.C761 Assigning Address 20.20.20.3 to mobile 1
wcm: 05.135.176
*Sep 1 05:55:02.401: PEM recv processing msg Add SCB(3) 1 wcm: 20.20.3 to
mobile
*Sep 1 05:55:02.401: 0021.5C8C.C761 20.20.20.3, auth_state 20 mmRole Local !!!
1 wcm: 135.176
*Sep 1 05:55:02.401: 0021.5C8C.C761 20.20.20.3, auth_state 20 mmRole Local,
updating wcdb not needed 1 wcm: 3.4260 , slot 1 802.1P = 0^M
*Sep 1 05:55:02.401: 0021.5C8C.C761 Tclas Plumb needed: 1 wcm: 0
*Sep 1 05:55:20.083: 0021.5C8C.C761
Client stats update: 1 wcm: Time now in sec 1378014920, Last Acct Msg Sent at
1378014902 sec
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