

# Problemas inalámbricos comunes de la chuleta

## Contenido

[Introducción](#)

[Componentes usados](#)

[Estado abreviado PEM en la salida del cliente de la demostración](#)

[Escenario 1: Passphrase mis configurado para WPA/WPA2 la autenticación del PSK en el cliente](#)

[Escenario 2: Teléfono inalámbrico Handsets\(792x/9971\) que no puede asociarse a la Tecnología inalámbrica de la "que sale área de servicio"](#)

[Escenario 3: Cliente configurado para el WPA pero el AP configurados solamente para el WPA2](#)

[Escenario 4: Códigos de la vuelta o de la respuesta del análisis AAA.](#)

[Escenario 5: Fall del cliente a asociarse al AP](#)

[Escenario 6: Desasociación del cliente debido al tiempo de inactividad](#)

[Escenario 7: Desasociación del cliente debido al tiempo de espera de la sesión](#)

[Escenario 8: Desasociación del cliente debido a los cambios de la red inalámbrica \(WLAN\)](#)

[Escenario 9: Desasociación del cliente debido a la Eliminación manual del WLC](#)

[Escenario 10: Desasociación del cliente debido al descanso de la autenticación](#)

[Escenario 11: Desasociación del cliente debido a la radio AP reajustada \(poder/canal\)](#)

[Escenario 12: Problemas de cliente de Symantec con el 802.1x "timeoutEvt"](#)

[Escenario 13: Servicio de la impresión del aire que no aparece para los clientes con el snooping del mDNS girado](#)

[Escenario 14: El cliente IOS de Apple "incapaz de unirse a la red" debida inhabilitó el cambio rápido SSID](#)

[Escenario 15: Asociación acertada del cliente LDAP](#)

[Escenario 16: Autenticación de cliente fallada en el LDAP](#)

[Escenario 17: Los problemas de la asociación del cliente debido al LDAP son mis configurados en el WLC](#)

[Escenario 18: Problemas de la asociación del cliente cuando el servidor LDAP es inalcanzable](#)

[Escenario 19: Problemas de itinerancia del cliente de Apple debido a faltar la configuración de itinerancia Sticky](#)

[Escenario 20: Verificar la Rápido-Seguro-itinerancia \(FSR\) con el CCKM](#)

[Escenario 21: Verificar la Rápido-Seguro-itinerancia \(FSR\) con el almacenamiento en memoria inmediata WPA2 PMKID](#)

[Escenario 22: Verificar la itinerancia Rápido-segura con el almacenamiento en memoria inmediata dominante dinámico](#)

[Escenario 23: Verificar la Rápido-Seguro-itinerancia \(FSR\) con 802.11r](#)

## Introducción

Esto es una chuleta para analizar con los debugs (generalmente "cliente del debug < >") del MAC address para los problemas inalámbricos comunes. El análisis a través del "cliente de la demostración" y los debugs nos requerirán a primero entienden algunos estados PEM y los estados APF.

## Componentes usados

Este documento se aplica igualmente a todos los reguladores de "AireOS". Ésos son, en la época de escribir este documento, el 440x, los 5508, 5520, 75xx,85xx, 2504 y vWLC así como Wisms. Aunque muchos conceptos sean idénticos en los reguladores y el Switches convergidos del acceso IOS-XE, este documento no se aplica a ellos como salidas y los debugs son radicalmente diferentes.

## Estado abreviado PEM en la salida del cliente de la demostración

- **COMIENZO** — Estatus inicial para la nueva entrada del cliente.
- **AUTHCHECK** — La red inalámbrica (WLAN) tiene una política de autenticación L2 a aplicar.
- **8021X\_REQD** — El cliente debe completar la autenticación del 802.1x.
- **L2AUTHCOMPLETE** — El cliente ha acabado con éxito la directiva L2. El proceso puede ahora proceder a las directivas L3 (aprendizaje de dirección, auth de la red, etc). El regulador envía aquí el aviso de la movilidad para aprender la información L3 de otros reguladores si esto es un cliente de itinerancia en el mismo grupo de la movilidad.
- **WEP\_REQD** — El cliente debe completar la autenticación WEP.
- **DHCP\_REQD** — El regulador necesita aprender el direccionamiento L3 del cliente, que es hecho por el pedido ARP, pedido de DHCP o renueva, o por la información aprendida del otro regulador en el grupo de la movilidad. Si el DHCP requerido se marca en la red inalámbrica (WLAN), sólo se utiliza el DHCP o la información de la movilidad.
- **WEBAUTH\_REQD** — El cliente debe completar la autenticación Web. (Directiva L3)
- **CENTRAL\_WEBAUTH\_REQD** -- El cliente debe completar el login CWA, WLC está esperando para recibir el CoA
- **EJECÚTESE** — El cliente ha completado con éxito las directivas requeridas L2 y L3 y puede ahora transmitir el tráfico a la red.

Los escenarios siguientes mostrarán las líneas dominantes del debug para las configuraciones erróneas más comunes en las configuraciones inalámbricas, resaltando los parámetros dominantes en intrépido.

## Escenario 1: Passphrase mis configurado para WPA/WPA2 la autenticación del PSK en el cliente

```
(Cisco Controller) >show client detail 24:77:03:19:fb:70

Client MAC Address..... 24:77:03:19:fb:70

Client Username ..... N/A

AP MAC Address..... ec:c8:82:a4:5b:c0

AP Name..... Shankar_AP_1042

AP radio slot Id..... 1

Client State..... Associated

Client NAC OOB State..... Access
```

Wireless LAN Id..... 5  
Hotspot (802.11u)..... Not Supported  
**BSSID..... ec:c8:82:a4:5b:cb**  
Connected For ..... 0 secs  
Channel..... 44  
IP Address..... Unknown  
Gateway Address..... Unknown  
Netmask..... Unknown  
Association Id..... 1  
Authentication Algorithm..... Open System  
Reason Code..... 1  
Status Code..... 0  
Session Timeout..... 0  
Client CCX version..... 4  
Client E2E version..... 1  
QoS Level..... Silver  
Avg data Rate..... 0  
Burst data Rate..... 0  
Avg Real time data Rate..... 0  
Burst Real Time data Rate..... 0  
802.1P Priority Tag..... 2  
CTS Security Group Tag..... Not Applicable  
KTS CAC Capability..... No  
WMM Support..... Enabled  
    APSD ACs..... BK BE VI VO  
Power Save..... OFF  
Current Rate..... m15  
Supported Rates..... 6.0,9.0,12.0,18.0,24.0,36.0,  
    ..... 48.0,54.0  
Mobility State..... None  
Mobility Move Count..... 0  
Security Policy Completed..... No

```

Policy Manager State..... 8021X_REQD
//This proves client is struggling to clear Layer-2 authentication.
It means we have to move to debug to understand where in L-2 we are failing
Policy Manager Rule
Created..... Yes Audit Session ID..... none AAA
Role Type..... none Local Policy
Applied..... none IPv4 ACL Name..... none
FlexConnect ACL Applied Status..... Unavailable IPv4 ACL Applied
Status..... Unavailable IPv6 ACL Name.....
none IPv6 ACL Applied Status..... Unavailable Layer2 ACL
Name..... none Layer2 ACL Applied Status.....
Unavailable mDNS Status..... Enabled mDNS Profile
Name..... default-mdns-profile No. of mDNS Services
Advertised..... 0 Policy Type..... WPA2
Authentication Key Management..... PSK Encryption
Cipher..... CCMP (AES) Protected Management Frame
..... No Management Frame Protection..... No EAP
Type..... Unknown
Interface..... vlan21
VLAN..... 21 Quarantine
VLAN..... 0 Access VLAN..... 21
Client Capabilities: CF Pollable..... Not implemented CF Poll
Request..... Not implemented Short Preamble.....
Not implemented PBCC..... Not implemented Channel
Agility..... Not implemented Listen Interval.....
10 Fast BSS Transition..... Not implemented Client Wifi Direct Capabilities:
WFD capable..... No Manged WFD capable..... No
Cross Connection Capable..... No Support Concurrent Operation..... No
Fast BSS Transition Details: Client Statistics: Number of Bytes Received..... 423
Number of Bytes Sent..... 429 Number of Packets Received..... 3
Number of Packets Sent..... 4 Number of Interim-Update Sent..... 0
Number of EAP Id Request Msg Timeouts..... 0 Number of EAP Id Request Msg Failures..... 0
Number of EAP Request Msg Timeouts..... 0 Number of EAP Request Msg Failures..... 0
Number of EAP Key Msg Timeouts..... 0 Number of EAP Key Msg Failures..... 0
Number of Data Retries..... 0 Number of RTS Retries..... 0
Number of Duplicate Received Packets..... 0 Number of Decrypt Failed Packets..... 0
Number of Mic Failed Packets..... 0 Number of Mic Missing Packets..... 0
Number of RA Packets Dropped..... 0 Number of Policy Errors..... 0
Radio Signal Strength Indicator..... -18 dBm Signal to Noise Ratio.....
40 dB Client Rate Limiting Statistics: Number of Data Packets Recieved..... 0 Number of
Data Rx Packets Dropped..... 0 Number of Data Bytes Recieved..... 0 Number of Data
Rx Bytes Dropped..... 0 Number of Realtime Packets Recieved..... 0 Number of Realtime
Rx Packets Dropped..... 0 Number of Realtime Bytes Recieved..... 0 Number of Realtime Rx
Bytes Dropped..... 0 Number of Data Packets Sent..... 0 Number of Data Tx Packets
Dropped..... 0 Number of Data Bytes Sent..... 0 Number of Data Tx Bytes
Dropped..... 0 Number of Realtime Packets Sent..... 0 Number of Realtime Tx
Packets Dropped..... 0 Number of Realtime Bytes Sent..... 0 Number of Realtime Tx
Bytes Dropped..... 0 Nearby AP Statistics: Shankar_AP_1602(slot 0) antenna0: 0 secs
ago..... -25 dBm antennal: 0 secs ago..... -40 dBm
Shankar_AP_1602(slot 1) antenna0: 1 secs ago..... -41 dBm antennal: 1 secs
ago..... -27 dBm Shankar_AP_3502(slot 0) antenna0: 0 secs
ago..... -90 dBm antennal: 0 secs ago..... -83 dBm
Shankar_AP_1042(slot 0) antenna0: 0 secs ago..... -32 dBm antennal: 0 secs
ago..... -41 dBm Shankar_AP_1042(slot 1) antenna0: 0 secs
ago..... -50 dBm antennal: 0 secs ago..... -42 dBm DNS Server
details: DNS server IP ..... 0.0.0.0 DNS server IP
..... 0.0.0.0 Assisted Roaming Prediction List details: Client Dhcp
Required: False Allowed (URL)IP Addresses -----

```

## Análisis del cliente del debug

(Cisco Controller) >debug client 24:77:03:19:fb:70

**\*apfMsConnTask\_4: May 07 17:03:56.060: 24:77:03:19:fb:70 Association received from mobile on BSSID 08:cc:68:67:1f:fb //Client has initiated association for AP with BSSID 08:cc:68:67:1f:fb**

\*apfMsConnTask\_4: May 07 17:03:56.060: 24:77:03:19:fb:70 Global 200 Clients are allowed to AP radio

\*apfMsConnTask\_4: May 07 17:03:56.060: 24:77:03:19:fb:70 Max Client Trap Threshold: 0 cur: 0

\*apfMsConnTask\_4: May 07 17:03:56.060: 24:77:03:19:fb:70 Rf profile 600 Clients are allowed to AP wlan

\*apfMsConnTask\_4: May 07 17:03:56.060: 24:77:03:19:fb:70 Applying Interface policy on Mobile, role Unassociated. Ms NAC State 2 Quarantine Vlan 0 Access Vlan 21

\*apfMsConnTask\_4: May 07 17:03:56.060: 24:77:03:19:fb:70 Re-applying interface policy for client

\*apfMsConnTask\_4: May 07 17:03:56.060: 24:77:03:19:fb:70 0.0.0.0 START (0) Changing IPv4 ACL 'none' (ACL ID 255) ==> 'none' (ACL ID 255) --- (caller apf\_policy.c:2202)

\*apfMsConnTask\_4: May 07 17:03:56.060: 24:77:03:19:fb:70 0.0.0.0 START (0) Changing IPv6 ACL 'none' (ACL ID 255) ==> 'none' (ACL ID 255) --- (caller apf\_policy.c:2223)

\*apfMsConnTask\_4: May 07 17:03:56.060: 24:77:03:19:fb:70 apfApplyWlanPolicy: Apply WLAN Policy over PMIPv6 Client Mobility Type

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 In processSsidIE:4795 setting Central switched to TRUE

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 In processSsidIE:4798 apVapId = 5 and Split Acl Id = 65535

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 Applying site-specific Local Bridging override for station 24:77:03:19:fb:70 - vapId 5, site 'default-group', interface 'vlan21'

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 Applying Local Bridging Interface Policy for station 24:77:03:19:fb:70 - vlan 21, interface id 14, interface 'vlan21'

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 processSsidIE statusCode is 0 and status is 0

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 processSsidIE ssid\_done\_flag is 0 finish\_flag is 0

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 STA - rates (8): 140 18 24 36 48 72 96 108 0 0 0 0 0 0 0

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 suppRates statusCode is 0 and gotSuppRatesElement is 1

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 Processing RSN IE type 48, length 22 for mobile 24:77:03:19:fb:70

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 pemApfDeleteMobileStation2:

APF\_MS\_PEM\_WAIT\_L2\_AUTH\_COMPLETE = 0.

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 0.0.0.0 START (0) Deleted mobile LWAPP rule on AP [ec:c8:82:a4:5b:c0]

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 Updated location for station old AP ec:c8:82:a4:5b:c0-1, new AP 08:cc:68:67:1f:f0-1

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 Updating AID for REAP AP Client 08:cc:68:67:1f:f0 - AID ==> 1

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 0.0.0.0 START (0) Initializing policy

\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 0.0.0.0 START (0) Change state to AUTHCHECK (2) last state START (0)

**\*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 0.0.0.0 AUTHCHECK (2) Change state to 8021X\_REQD (3) last state AUTHCHECK (2)//**

**Client entering L2 authentication stage** \*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 Central switch is TRUE \*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 Not Using WMM Compliance code qosCap 00 \*apfMsConnTask\_4: May 07 17:03:56.061: 24:77:03:19:fb:70 0.0.0.0 8021X\_REQD (3) Plumbed mobile LWAPP rule on AP 08:cc:68:67:1f:f0 vapId 5 apVapId 5 flex-acl-name: \*apfMsConnTask\_4: May 07 17:03:56.062: 24:77:03:19:fb:70 apfMsAssoStateInc \*apfMsConnTask\_4: May 07 17:03:56.062: 24:77:03:19:fb:70 apfPemAddUser2 (apf\_policy.c:333) Changing state for mobile 24:77:03:19:fb:70 on AP 08:cc:68:67:1f:f0 from Disassociated to Associated \*apfMsConnTask\_4: May 07 17:03:56.062: 24:77:03:19:fb:70 apfPemAddUser2:session timeout forstation 24:77:03:19:fb:70 - Session Tout 0, apfMsTimeOut '0' and sessionTimerRunning flag is 0 \*apfMsConnTask\_4: May 07 17:03:56.062: 24:77:03:19:fb:70 Stopping deletion of Mobile Station: (callerId: 48) \*apfMsConnTask\_4: May 07 17:03:56.062: 24:77:03:19:fb:70 Func: apfPemAddUser2, Ms Timeout = 0, Session Timeout = 0 \*apfMsConnTask\_4: May 07 17:03:56.062: 24:77:03:19:fb:70 Sending Assoc Response to station on BSSID 08:cc:68:67:1f:fb (status 0) ApVapId 5 Slot 1 \*apfMsConnTask\_4: May 07 17:03:56.062: 24:77:03:19:fb:70 apfProcessAssocReq (apf\_80211.c:8292) Changing state for mobile 24:77:03:19:fb:70 on AP 08:cc:68:67:1f:f0 from Associated to Associated \*spamApTask3: May 07 17:03:56.065: 24:77:03:19:fb:70 Sent 1x initiate message to multi thread task for mobile 24:77:03:19:fb:70 \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.065: 24:77:03:19:fb:70 Creating a PKC PMKID Cache entry for station 24:77:03:19:fb:70 (RSN 2) \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Resetting MSCB PMK Cache Entry 0 for station 24:77:03:19:fb:70 \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Removing BSSID ec:c8:82:a4:5b:cb from PMKID cache of station 24:77:03:19:fb:70 \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Setting active key cache index 0 --- > 8 \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Setting active key cache index 8 ---> 0 \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Adding BSSID 08:cc:68:67:1f:fb to PMKID cache at index 0 for station 24:77:03:19:fb:70 \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: New PMKID: (16) \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: [0000] d7 57 8e ff 2b 27 01 4e 93 39 0b 1c 1f 46 d2 da \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Initiating RSN PSK to mobile 24:77:03:19:fb:70 \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 EAP-PARAM Debug - eap-params for Wlan-Id :5 is disabled - applying Global eap timers and retries \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 dot1x - moving mobile 24:77:03:19:fb:70 into Force Auth state \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 EAPOL Header: \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 00000000: 02 03 00 5f ... \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Found an cache entry for BSSID 08:cc:68:67:1f:fb in PMKID cache at index 0 of station 24:77:03:19:fb:70 \*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: **24:77:03:19:fb:70 Found an cache entry for BSSID 08:cc:68:67:1f:fb in PMKID cache at index 0 of station 24:77:03:19:fb:70**

**\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: Including PMKID in M1 (16)**

**\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: [0000] d7 57 8e ff 2b 27 01 4e 93 39 0b 1c 1f 46 d2 da**

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Starting key exchange to mobile 24:77:03:19:fb:70, data packets will be dropped

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Sending EAPOL-Key Message to mobile 24:77:03:19:fb:70

state INITPMK (message 1), replay counter 00.00.00.00.00.00.00.00

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Sending EAPOL-Key Message to mobile 24:77:03:19:fb:70

state INITPMK (message 1), replay counter 00.00.00.00.00.00.00.00

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 Allocating EAP Pkt for retransmission to mobile 24:77:03:19:fb:70

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 mscb->apfMsLwappLradNhMac = b0:fa:eb:b8:f5:12 mscb->apfMsLradSlotId = 1 mscb->apfMsLradJumbo = 0 mscb->apfMsintIfNum = 1

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 mscb->apfMsBssid = 08:cc:68:67:1f:f0 mscb->apfMsAddress = 24:77:03:19:fb:70 mscb->apfMsApVapId = 5

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 dot1xcb->snapOrg = 00 00 00 dot1xcb->eapolWepBit = 0 mscb->apfMsLwappLradVlanId = 0 mscb->apfMsLwappMwarInet.ipv4.addr = 181004965

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.066: 24:77:03:19:fb:70 mscb->apfMsLwappMwarPort = 5246 mscb->apfMsLwappLradInet.ipv4.addr = 181004985 mscb->apfMsLwappLradPort = 36690

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.069: 24:77:03:19:fb:70 Received EAPOL-Key from mobile 24:77:03:19:fb:70

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.069: 24:77:03:19:fb:70 Ignoring invalid EAPOL version (1) in EAPOL-key message from mobile 24:77:03:19:fb:70

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.069: 24:77:03:19:fb:70 Received EAPOL-key in PTK\_START state (message 2) from mobile 24:77:03:19:fb:70

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.069: 24:77:03:19:fb:70 Received EAPOL-key M2 with invalid MIC from mobile 24:77:03:19:fb:70 version 2

**\*osapiBsnTimer: May 07 17:03:56.364: 24:77:03:19:fb:70 802.1x 'timeoutEvt' Timer expired for station 24:77:03:19:fb:70 and for message = M2**

**!--- MIC error due to wrong preshared key**

**\*dot1xMsgTask: May 07 17:03:56.364: 24:77:03:19:fb:70 Retransmit 1 of EAPOL-Key M1 (length 121) for mobile 24:77:03:19:fb:70**

\*dot1xMsgTask: May 07 17:03:56.364: 24:77:03:19:fb:70 mscb->apfMsLwappLradNhMac = b0:fa:eb:b8:f5:12 mscb->apfMsLradSlotId = 1 mscb->apfMsLradJumbo = 0 mscb->apfMsintIfNum = 1

\*dot1xMsgTask: May 07 17:03:56.364: 24:77:03:19:fb:70 mscb->apfMsBssid = 08:cc:68:67:1f:f0 mscb->apfMsAddress = 24:77:03:19:fb:70 mscb->apfMsApVapId = 5

\*dot1xMsgTask: May 07 17:03:56.365: 24:77:03:19:fb:70 dot1xcb->snapOrg = 00 00 00 dot1xcb->eapolWepBit = 0 mscb->apfMsLwappLradVlanId = 0 mscb->apfMsLwappMwarInet.ipv4.addr = 181004965

\*dot1xMsgTask: May 07 17:03:56.365: 24:77:03:19:fb:70 mscb->apfMsLwappMwarPort = 5246 mscb->apfMsLwappLradInet.ipv4.addr = 181004985 mscb->apfMsLwappLradPort = 36690

\*Dot1x\_NW\_MsgTask\_0: May 07 17:03:56.366: 24:77:03:19:fb:70 Received EAPOL-Key from mobile 24:77:03:19:fb:70

```
*Dot1x_NW_MsgTask_0: May 07 17:03:56.366: 24:77:03:19:fb:70 Ignoring invalid EAPOL version (1)
in EAPOL-key message from mobile 24:77:03:19:fb:70
```

```
*Dot1x_NW_MsgTask_0: May 07 17:03:56.366: 24:77:03:19:fb:70 Received EAPOL-key in PTK_START
state (message 2) from mobile 24:77:03:19:fb:70
```

```
*Dot1x_NW_MsgTask_0: May 07 17:03:56.366: 24:77:03:19:fb:70 Received EAPOL-key M2 with invalid
MIC from mobile 24:77:03:19:fb:70 version 2
```

```
*osapiBsnTimer: May 07 17:03:56.764: 24:77:03:19:fb:70 802.1x 'timeoutEvt' Timer expired for
station 24:77:03:19:fb:70 and for message = M2
!--- MIC error due to wrong preshared key
```

## Conclusión extraída

Aunque el “timeoutEvt” para la clave M2 podría también ser debido a los errores driver/NIC, uno de la mayoría del problema frecuente no puede usuario que ingresa las credenciales incorrectas para los cahacters de la contraseña del PSK (con diferenciación entre mayúsculas y minúsculas faltada/especial etc...) y conectar.

## Escenario 2: Teléfono inalámbrico Handsets(792x/9971) que no puede asociarse a la Tecnología inalámbrica de la “que sale área de servicio”

Referencia: <https://supportforums.cisco.com/document/12068061/7925g-handsets-failing-association-ap-call-failed-tspec-qos-policy-does-not-match>

### Topología

red inalámbrica (WLAN) con los Teléfonos IP del Cisco Unified Wireless

### Detalles del problema

AIR-CT5508-50-K9 //actualizó el firmware para los teléfonos y el regulador inalámbrico no validará los registros de teléfono

### Debugs y registros

```
apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx Association received from mobile on AP
3x:xx:cx:9x:x0:x0
```

```
*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx 0.0.0.0 START (0) Changing IPv4 ACL
'none' (ACL ID xxx) ==> 'none' (ACL ID xxx) --- (caller apf_policy.c:1x09)
```

```
*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx 0.0.0.0 START (0) Changing IPv6 ACL
'none' (ACL ID xxx5) ==> 'none' (ACL ID xxx) --- (caller apf_policy.c:18x6)
```

```
*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx Applying site-specific Local Bridging
override for station 1x:xx:1x:xx:xx:xx - vapId 1, site 'default-group', interface 'xwirex'
```

```
*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx Applying Local Bridging Interface Policy
for station 1x:xx:1x:xx:xx:xx - vlan 510, interface id 12, interface 'xwirex'
```

```
*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx processSsidIE statusCode is 0 and
status is 0
```



```

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx processSsidIE  ssid_done_flag is 0
finish_flag is 0

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx STA - rates (4): 130 132 139 150 0 0 0 0
0 0 0 0 0 0 0

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx suppRates  statusCode is 0 and
gotSuppRatesElement is 1

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx STA - rates (12): 130 132 139 150 12 18
24 36 48 72 96 108 0 0 0 0

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx extSuppRates  statusCode is 0 and
gotExtSuppRatesElement is 1

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx Processing RSN IE type 48, length 22 for
mobile 1x:xx:1x:xx:xx:xx

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx CCKM: Mobile is using CCKM

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx Received RSN IE with 0 PMKIDs from
mobile 1x:xx:1x:xx:xx:xx

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx Setting active key cache index 8 ---> 8

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx unsetting PmkIdValidatedByAp

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx Sending Assoc Response to station on
BSSID 3x:xx:cx:9x:x0:x0 (status 201) ApVapId 1 Slot 0

*apfMsConnTask_1: xx xx xx:50:xx.xxx: 1x:xx:1x:xx:xx:xx Scheduling deletion of Mobile Station:
(callerId: 22) in 3 seconds

```

```

VoIP Call Failure: '1x:xx:1x:xx:xx:xx' client, detected by 'xx-xx-xx' AP on radio type
'802.11b/g'. Reason: 'Call failed: TSPEC QoS Policy does not match'.
Means platinum QoS was not configured on WLAN 1x:xx PM Client Excluded:
MACAddress:1x:xx:1x:xx:xx:xx Base Radio MAC :3x:xx:cx:9x:x0:x0 Slot: 1 User Name: dwpv\mtl7925
Ip Address: xx.xx.x.xx Reason:802.11 Association failed repeatedly. ReasonCode: 2

```

## Conclusión

El debug en el WLC mostró que el 7925G fallaba la asociación mientras que el AP devolvía un código de estado de la asociación de 201.

Esto es debido a una petición TSPEC (especificación del tráfico) del microteléfono que es rechazado debido a la configuración de la red inalámbrica (WLAN). La red inalámbrica (WLAN) que el 7925G intentaba conectar con fue configurada con un perfil de QoS de la plata (ENCIMA de 0,3), bastante que el platino (ENCIMA de 6,7) como sea necesario. Esto lleva a una discordancia TSPEC para el intercambio de la trama del tráfico de voz/de acción del microteléfono vía la red inalámbrica (WLAN), y en última instancia a un rechazo del AP.

Cree una nueva red inalámbrica (WLAN) con un perfil de QoS del platino específicamente para los microteléfonos 7925G y configurado según las mejores prácticas establecidas, y según lo definido en el Guía de despliegue 7925G:

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cuipph/7925g/7\\_0/english/deployment/guide/7925dply.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/cuipph/7925g/7_0/english/deployment/guide/7925dply.pdf)

Una vez que está configurado, el problema debe ser resuelto.

## Escenario 3: Cliente configurado para el WPA pero el AP configurados solamente para el WPA2

Addr> del <mac del cliente del debug

```
Wed May 7 10:51:37 2014: xx.xx.xx.xx.xx.xx Scheduling deletion of Mobile
```

```
Station: (callerId: 23) in 5 seconds
```

```
Wed May 7 10:51:37 2014: xx.xx.xx.xx.xx.xx apfProcessProbeReq
```

```
(apf_80211.c:4057) Changing state for mobile xx.xx.xx.xx.xx.xx on AP
```

```
from Idle to Probe
```

```
Controller adds the new client, moving into probing status Wed May 7 10:51:37 2014:
xx.xx.xx.xx.xx.xx Scheduling deletion of Mobile Station: (callerId: 24) in 5 seconds Wed May 7
10:51:38 2014: xx.xx.xx.xx.xx.xx Scheduling deletion of Mobile Station: (callerId: 24) in 5
seconds Wed May 7 10:51:38 2014: xx.xx.xx.xx.xx.xx Scheduling deletion of Mobile Station:
(callerId: 24) in 5 seconds AP is reporting probe activity every 500 ms as configured Wed May 7
10:51:41 2014: xx.xx.xx.xx.xx.xx Scheduling deletion of Mobile Station: (callerId: 24) in 5
seconds Wed May 7 10:51:41 2014: xx.xx.xx.xx.xx.xx Scheduling deletion of Mobile Station:
(callerId: 24) in 5 seconds Wed May 7 10:51:41 2014: xx.xx.xx.xx.xx.xx Scheduling deletion of
Mobile Station: (callerId: 24) in 5 seconds Wed May 7 10:51:41 2014: xx.xx.xx.xx.xx.xx
Scheduling deletion of Mobile Station: (callerId: 24) in 5 seconds Wed May 7 10:51:44 2014:
xx.xx.xx.xx.xx.xx Scheduling deletion of Mobile Station: (callerId: 24) in 5 seconds Wed May 7
10:51:44 2014: xx.xx.xx.xx.xx.xx Scheduling deletion of Mobile Station: (callerId: 24) in 5
seconds Wed May 7 10:51:44 2014: xx.xx.xx.xx.xx.xx Scheduling deletion of Mobile Station:
(callerId: 24) in 5 seconds Wed May 7 10:51:44 2014: xx.xx.xx.xx.xx.xx Scheduling deletion of
Mobile Station: (callerId: 24) in 5 seconds Wed May 7 10:51:49 2014: xx.xx.xx.xx.xx.xx
apfMsExpireCallback (apf_ms.c:433) Expiring Mobile! Wed May 7 10:51:49 2014: xx.xx.xx.xx.xx.xx
0.0.0.0 START (0) Deleted mobile LWAPP rule on AP [] Wed May 7 10:51:49 2014: xx.xx.xx.xx.xx.xx
Deleting mobile on AP (0) After 5 seconds of inactivity, client is deleted, never moved into
authentication or association phases.
```

## Escenario 4: Códigos de la vuelta o de la respuesta del análisis AAA.

Debugs requeridos QUE SE EJECUTARÁN para recoger los registros previstos:

(<mac> de las direcciones MAC del >debug del regulador de Cisco)

(Permiso de los eventos aaa del >debug del regulador de Cisco)

(O)

(<mac> del cliente del >debug del regulador de Cisco)

(Permiso de los eventos aaa del >debug del regulador de Cisco)

(Permiso de los errores aaa del >debug del regulador de Cisco)

La falla de conectividad AAA generará un SNMP trap, si se habilitan los desvíos.

<snipped> de la salida de los debugs del ejemplo

```
*radiusTransportThread: Mar 26 17:54:58.054: 70:f1:a1:69:7b:e7 Invalid RADIUS message
authenticator for mobile 70:f1:a1:69:7b:e7
```

```
*radiusTransportThread: Mar 26 17:54:58.054: 70:f1:a1:69:7b:e7 RADIUS message verification
```

```
failed from server 10.50.0.74 with id=213. Possible secret mismatch for mobile 70:f1:a1:69:7b:e7
*radiusTransportThread: Mar 26 17:54:58.054: 70:f1:a1:69:7b:e7 Returning AAA Error
'Authentication Failed' (-4) for mobile 70:f1:a1:69:7b:e7
*radiusTransportThread: Mar 26 17:54:58.054: AuthorizationResponse: 0x4259f944
```

**Returning AAA Error 'Success' (0) for mobile**

Successful Authentication happened, AAA returns access-accept prior to Success (0) to confirm the same. Returning AAA Error 'Out of Memory' (-2) for mobile it's the rare reason. [CSCud12582](#) Processing AAA Error 'Out of Memory' Returning AAA Error 'Authentication Failed' (-4) for mobile its the most common reason seen

### Razones posibles:

1. Cuenta de usuario y/o contraseña inválidas
2. Computadora no un miembro del dominio, problema en el lado AD.
3. Servicios de certificados que no trabajan correctamente
4. El certificado de servidor expiró o parado
5. RADIUS configurado incorrectamente
6. Clave del acceso ingresada incorrectamente - ES con diferenciación entre mayúsculas y minúsculas (así que es el SSID)
7. parches de Microsoft de la actualización.
8. Temporizadores EAP.
9. Método incorrecto del eap configurado en el cliente/el servidor.
10. El certificado del cliente es expirado o parado.

### Error de vuelta "descanso" AAA (-5) para el móvil

**Servidor de AAA inalcanzable, seguido por el deauth del cliente.**

### Ejemplo:

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to
155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile
00:13:CE:1A:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID
00:0b:85:76:d3:e0 slot 1(caller 1x_auth_pae.c:1033) Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41
Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds
```

### Error de vuelta "error interno" AAA (-6) para el móvil

**Discordancia del atributo. Atributo incorrecto/inadecuado del envío AAA (longitud incorrecta) que no está entendido/compatible con el WLC. El WLC envía el mensaje de Deauth seguido por el mensaje del "error interno". Ex: [CSCum83894](#) AAA "error interno" y atributos del fail w/unknown del auth en el acceso validan**

### Ejemplo:

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to
155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile
00:13:CE:1A:92:41
```

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID
00:0b:85:76:d3:e0 slot 1(caller 1x_auth_pae.c:1033) Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41
Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds
```

## Error de vuelta AAA ningún servidor (-7) para el móvil

**El radio no se configura correctamente y o configuración no admitida funcionando**

Ejemplo:

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to
155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile
00:13:CE:1A:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID
00:0b:85:76:d3:e0 slot 1(caller 1x_auth_pae.c:1033) Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41
Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds
```

## Escenario 5: Fall del cliente a asociarse al AP

El debug se ejecutó

addr> del <mac del cliente del debug

Registros a analizar

Envío de la respuesta de Assoc para colocar en el slot0 BSSID 00:26:cb:94:44:c0 (estatus 0)  
ApVapId 1

- Slot0 = B/G(2.4) radio

Slot1 = A(5) radio

- Enviando estado de respuesta de Assoc 0 = éxito

Cualquier cosa con excepción del estatus 0 es averiado

Los códigos de estado de la respuesta de la asociación común se pueden encontrar en  
<https://supportforums.cisco.com/document/141136/80211-association-status-80211-deauth-reason-codes>

## Escenario 6: Desasociación del cliente debido al tiempo de inactividad

El debug se ejecutó

addr> del <mac del cliente del debug

Registros a analizar

**Ocioso-descanso recibido de AP 00:26:cb:94:44:c0, slot0 para STA 00:1e:8c:0f:a4:57**

móvil del Scheduling del apfMsDeleteByMscb para la cancelación con el deleteReason 4, reasonCode 4

Cancelación del Scheduling de la estación móvil: (callerId: 30) en los segundos 1

¡móvil de expiración del apfMsExpireCallback (apf\_ms.c:608)!

**Deauthenticate enviado al móvil en el slot 0(caller apf\_ms.c:5094 BSSID 00:26:cb:94:44:c0)**

Condiciones

Ocurre después de ningún tráfico recibido del cliente

La duración predeterminada es 300 segundos

Solución Aternativa

Aumente el WLC GUI>>Controller>>General de la forma del tiempo de inactividad o global o por wlan del WLC GUI>>WLAN>>ID>>Advanced

## Escenario 7: Desasociación del cliente debido al tiempo de espera de la sesión

El debug se ejecutó

addr> del <mac del cliente del debug

Registros a analizar

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to 155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile 00:13:CE:1A:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID 00:0b:85:76:d3:e0 slot 1(caller 1x_auth_pae.c:1033)
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds
```

Condiciones

Ocurre en la duración programada (valor por defecto 1800 segundos)

Forzará al usuario WEBAUTH a WEBAUTH otra vez

Solución Aternativa

Aumente o inhabilite el tiempo de espera de la sesión por wlan del WLC  
GUI>>WLAN>>ID>>Advanced

## Escenario 8: Desasociación del cliente debido a los cambios de la red inalámbrica (WLAN)

El debug se ejecutó

addr> del <mac del cliente del debug

Registro a analizar

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to
155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile
00:13:CE:1A:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID
00:0b:85:76:d3:e0 slot 1(caller 1x_auth_pae.c:1033) Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41
Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds
```

Condiciones

Modificación de una red inalámbrica (WLAN) en de todos modos la red inalámbrica (WLAN) de las neutralizaciones y de Renables

Solución Aternativa

Esto es una conducta esperada. Cuando hay cambios wlan realizados, los clientes desasociarán y reasociarán.

## Escenario 9: Desasociación del cliente debido a la Eliminación manual del WLC

El debug se ejecutó

addr> del <mac del cliente del debug

Registro a analizar

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to
155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile
00:13:CE:1A:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID
```

00:0b:85:76:d3:e0 slot 1(caller 1x\_auth\_pae.c:1033) Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41  
Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds

Condiciones

Del GUI: Quite al cliente

Del CLI: deauthenticate < MAC address > del cliente de los config

## Escenario 10: Desasociación del cliente debido al descanso de la autenticación

El debug se ejecutó

addr> del <mac del cliente del debug

Registro a analizar

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to
155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile
00:13:CE:1A:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID
00:0b:85:76:d3:e0 slot 1(caller 1x_auth_pae.c:1033) Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41
Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds
```

Condiciones

MAX-retransmisiones de la autenticación o del intercambio de claves alcanzadas

Solución Alternativa

Marque/el driver de cliente de la actualización, los config de la Seguridad, los Certificados etc.

## Escenario 11: Desasociación del cliente debido a la radio AP reajustada (poder/canal)

El debug se ejecutó

addr> del <mac del cliente del debug

Registro a analizar

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to
155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile
00:13:CE:1A:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
```

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID
00:0b:85:76:d3:e0 slot 1(caller 1x_auth_pae.c:1033) Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41
Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds
```

Condiciones

El AP desasocia a los clientes pero el WLC no borra la entrada

Solución Alternativa

Conducta esperada.

## Escenario 12: Problemas de cliente de Symantec con el 802.1x “timeoutEvt”

Problema

Los clientes que funcionan con el software de Symantec desasocian con el temporizador del “timeoutEvt” del 802.1x del mensaje expiraron para la estación y para el mensaje = el M3

El proceso EAP/Eapol no está consiguiendo completado, con independencia de la radio A/G se utiliza en la Intel/el indicador luminoso LED amarillo de la placa muestra gravedad menor del Broadcom. ningún problema al usar el wep, WPA-PSK.

Condición

El código del WLC no importa.

AP - todo el modelo - todos en el modo local.

3 wlan - WPA2+802.1X PEAP + mshcapv2

se transmite el ssid.

Nps 2008 del servidor de RADIUS

El software del Symantec Antivirus está instalado en todos los PC

usando Asus, Braodcom, Intel - win7, triunfo-XP

**OS afectado - ventanas 7 y xp**

**Adaptador de red inalámbrica afectado - Intel(6205) y Broadcom**

**Driver afectado/supplicant - 15.2.0.19, usando el supplicant nativo.**

**Arreglo/Workaround: Inhabilite la protección y el Firewall de la red de Symantec en win7 y el xp. Es un problema de Symantec con el triunfo 7 y XP OS.**

Salida de los debugs

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to
155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile
00:13:CE:1A:92:41
```



```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID
00:0b:85:76:d3:e0 slot 1(caller 1x_auth_pae.c:1033) Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41
Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds
```

Nota:

Hay un síndrome en 15.2 (también visto en las versiones anteriores) que va como:

- el cliente consigue el M1 del AP
- el cliente envía el M2
- el cliente consigue el M3 del AP
- el cliente sondea la nueva en parejas clave antes de que envíe M4
- el cliente transmite el M4 cifrado con la nueva clave AP, cae el mensaje M4 como “error del decrypt”
- Del “demostración cliente del debug” del WLC que estamos midiendo el tiempo hacia fuera en las retransmisiones M3. Evidentemente, esto es un problema entre Microsoft y Symantec, no específico de Intel. El Workaround es quitar Symantec. Éste es realmente un bug que está probablemente en las ventanas, accionado por Symantec. Pellizcando el temporizador EAP no repara este problema

En relación con este problema, el TAC de Cisco remitirá a los clientes afectados a Symantec y a Microsoft.

## **Escenario 13: Ventile el servicio de la impresión que no aparece para los clientes con el snooping del mDNS girado**

Cliente no capaz de ver los dispositivos el proporcionar del servicio de AirPrint en los dispositivos del cliente handheld de Apple cuando se gira el snooping del mDNS.

Condiciones

5508 WLC que ejecutan 7.6.100.0.

Con el snooping del mDNS girado, tenemos los dispositivos que proporcionan los servicios de AirPrint enumerados bajo sección de los servicios en el WLC.

El perfil respectivo del mDNS fue asociado correctamente a la red inalámbrica (WLAN) y a la interfaz.

Capaz todavía incapaz de ver los dispositivos de AirPrint en el cliente.

El debug se ejecutó

addr> del <mac del cliente del debug

los mdns todos del debug habilitan

```
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Max retransmission of Access-Request (id 100) to
155.43.129.216 reached for mobile 00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 [Error] Client requested no retries for mobile
00:13:CE:1A:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Returning AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Processing AAA Error 'Timeout' (-5) for mobile
00:13:ce:1a:92:41
Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41 Sent Deauthenticate to mobile on BSSID
00:0b:85:76:d3:e0 slot 1(caller 1x_auth_pae.c:1033) Wed Oct 26 20:08:50 2011: 00:13:ce:1a:92:41
Scheduling deletion of Mobile Station: (callerId: 65) in 10 seconds
```

## Explicación

El cliente pediría para “. los \_ipps \_universal. \_tcp.local del \_sub.” o “. \_ipp \_universal. \_tcp.local del \_sub.” en vez del “\_ipp. \_tcp.local.” o “\_ipp. \_tcp.local.” cadena.

Tan agregar el servicio de AirPrint no trabajaría. Fue identificado la cadena pedida del servicio que se asociará a 'HP\_Photosmart\_Printer\_1

El mismo servicio fue agregado en el perfil asociado a la red inalámbrica (WLAN) y no había servicio enumerado para el dispositivo.

Fue encontrado que debido al Domain Name que es añadido al final del fichero y al cliente que pregunta para “dns-SD. \_udp.YVG.local.” con el Domain Name añadido al final del fichero el WLC no podía procesar el paquete de Bonjour como “dns-SD. \_udp.YVG.local.” no existe en la base de datos.

Identificó el bug siguiente de la mejora con respecto lo mismo - [CSCuj32157](#)

## Solución Alternativa

El único trabajo alrededor era inhabilitar la opción DHCP 15 (Domain Name) o eliminación del Domain Name del cliente.

## Escenario 14: El cliente IOS de Apple “incapaz de unirse a la red” debida inhabilitó el cambio rápido SSID

### Condición

La mayoría de los dispositivos IOS de Apple tienen problemas que se mueven a partir del uno wlan a otro en el mismo WLC de Cisco con el “cambio rápido predeterminado del ssid inhabilitado”.

La configuración causa a regulador al deauthenticate el cliente del wlan existente una vez que el cliente intenta asociarse a otro.

El resultado típico es “incapaz de unirse a un mensaje de la red” en el dispositivo IOS

### Muestre al cliente

resumen de la red del >show (jk-2504-116)

<snip>

## El cambio rápido SSID ..... inhabilitó

El debug se ejecutó

```
(jk-2504-116) >debug client 1c:e6:2b:cd:da:9d
```

```
(jk-2504-116) >*apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Association received
from mobile on BSSID 00:21:a0:e3:fd:be
Apple Client initiating switch from one wlan to another. *apfMsConnTask_7: Jan 30 21:33:14.544:
1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP radio *apfMsConnTask_7: Jan 30
21:33:14.544: 1c:e6:2b:cd:da:9d Max Client Trap Threshold: 0 cur: 1 *apfMsConnTask_7: Jan 30
21:33:14.544: 1c:e6:2b:cd:da:9d Rf profile 600 Clients are allowed to AP wlan *apfMsConnTask_7:
Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Deleting client immediately since WLAN has changed //WLC
removing apple client from original WLAN

*apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Scheduling deletion of Mobile Station:
(callerId: 50) in 1 seconds

*osapiBsnTimer: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireCallback (apf_ms.c:625)
Expiring Mobile!

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf_ms.c:6632)
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to
Disassociated

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Sent Deauthenticate to mobile on BSSID
00:21:a0:e3:fd:b0 slot 1(caller apf_ms.c:6726)

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Found an cache entry for BSSID
00:21:a0:e3:fd:bf in PMKID cache at index 0 of station 1c:e6:2b:cd:da:9d

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Removing BSSID 00:21:a0:e3:fd:bf from
PMKID cache of station 1c:e6:2b:cd:da:9d

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Resetting MSCB PMK Cache Entry 0 for
station 1c:e6:2b:cd:da:9d

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Setting active key cache index 0 ---> 8

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Deleting the PMK cache when de-
authenticating the client.

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Global PMK Cache deletion failed.

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsAssoStateDec

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf_ms.c:6764)
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Disassociated to Idle

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d pemApfDeleteMobileStation2:
APF_MS_PEM_WAIT_L2_AUTH_COMPLETE = 0.

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d 192.168.165.31 START (0) Deleted mobile
LWAPP rule on AP [00:21:a0:e3:fd:b0]

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d Deleting mobile on AP
```

00:21:a0:e3:fd:b0(1)

\*pemReceiveTask: Jan 30 21:33:15.377: 1c:e6:2b:cd:da:9d 192.168.165.31 Removed NPU entry.

\*apfMsConnTask\_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Adding mobile on LWAPP AP  
00:21:a0:e3:fd:b0(1)

No client activity for > 7 sec due to fast-ssid change disabled \*apfMsConnTask\_7: Jan 30

21:33:23.890: 1c:e6:2b:cd:da:9d Association received from mobile on BSSID 00:21:a0:e3:fd:bf

\*apfMsConnTask\_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP  
radio <Snip> \*apfMsConnTask\_7: Jan 30 21:33:23.891: 1c:e6:2b:cd:da:9d Sending Assoc Response to  
station on BSSID 00:21:a0:e3:fd:bf (status 0) ApVapId 1 Slot 1

\*apfMsConnTask\_7: Jan 30 21:33:23.892: 1c:e6:2b:cd:da:9d apfProcessAssocReq (apf\_80211.c:8292)  
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to  
Associated

## Solución Alternativa

Cambio de rápido-SSID del permiso del WLC GUI>>Controller>>General

# Escenario 15: Asociación acertada del cliente LDAP

Asegure las ayudas LDAP que aseguran la conexión entre el regulador y el servidor LDAP que usa TLS. Esta característica se soporta con la versión de software 7.6 del regulador y arriba.

Hay dos tipos de interrogaciones que se puedan enviar por el regulador al servidor LDAP:

### 1. Anónimo:

En este tipo el regulador envía un pedido de autenticación al servidor LDAP cuando un cliente necesita conseguir autenticación. El servidor LDAP entonces responderá con el resultado de la interrogación. Durante este intercambio toda la información incluyendo el nombre de usuario del cliente/la contraseña se está enviando en el texto claro. El servidor LDAP responderá a una interrogación de cualquier persona mientras se agregue el nombre de usuario/la contraseña del lazo.

### 2. Autenticado:

En este método el regulador se configura con un nombre de usuario y contraseña que utilice para autenticar sí mismo con el servidor LDAP. La contraseña se cifra con MD5 SASL y se envía al servidor LDAP durante el proceso de autenticación. Esto ayuda al servidor LDAP correctamente a identificar la fuente de los pedidos de autenticación. Sin embargo aunque la identidad del regulador se protege envían los detalles del cliente en el texto claro.

La necesidad real del LDAP sobre TLS vino debido a la vulnerabilidad de seguridad planteada por ambos estos dos métodos donde los datos de la autenticación de cliente y el resto de la transacción está sucediendo en el claro.

## Requisitos

WLC que funciona con la versión de software 7.6 y arriba

Servidor de Microsoft que hace el LDAP

El debug se ejecutó

## permiso del ldap aaa del debug

(jk-2504-116) >debug client 1c:e6:2b:cd:da:9d

```
(jk-2504-116) >*apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Association received
from mobile on BSSID 00:21:a0:e3:fd:be
Apple Client initiating switch from one wlan to another. *apfMsConnTask_7: Jan 30 21:33:14.544:
1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP radio *apfMsConnTask_7: Jan 30
21:33:14.544: 1c:e6:2b:cd:da:9d Max Client Trap Threshold: 0 cur: 1 *apfMsConnTask_7: Jan 30
21:33:14.544: 1c:e6:2b:cd:da:9d Rf profile 600 Clients are allowed to AP wlan *apfMsConnTask_7:
Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Deleting client immediately since WLAN has changed //WLC
removing apple client from original WLAN

*apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Scheduling deletion of Mobile Station:
(callerId: 50) in 1 seconds

*osapiBsnTimer: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireCallback (apf_ms.c:625)
Expiring Mobile!

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf_ms.c:6632)
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to
Disassociated

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Sent Deauthenticate to mobile on BSSID
00:21:a0:e3:fd:b0 slot 1(caller apf_ms.c:6726)

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Found an cache entry for BSSID
00:21:a0:e3:fd:bf in PMKID cache at index 0 of station 1c:e6:2b:cd:da:9d

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Removing BSSID 00:21:a0:e3:fd:bf from
PMKID cache of station 1c:e6:2b:cd:da:9d

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Resetting MSCB PMK Cache Entry 0 for
station 1c:e6:2b:cd:da:9d

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Setting active key cache index 0 ---> 8

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Deleting the PMK cache when de-
authenticating the client.

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Global PMK Cache deletion failed.

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsAssoStateDec

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf_ms.c:6764)
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Disassociated to Idle

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d pemApfDeleteMobileStation2:
APF_MS_PEM_WAIT_L2_AUTH_COMPLETE = 0.

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d 192.168.165.31 START (0) Deleted mobile
LWAPP rule on AP [00:21:a0:e3:fd:b0]

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d Deleting mobile on AP
00:21:a0:e3:fd:b0(1)
```

**\*pemReceiveTask: Jan 30 21:33:15.377: 1c:e6:2b:cd:da:9d 192.168.165.31 Removed NPU entry.**

\*apfMsConnTask\_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Adding mobile on LWAPP AP 00:21:a0:e3:fd:b0(1)

**No client activity for > 7 sec due to fast-ssid change disabled** \*apfMsConnTask\_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Association received from mobile on BSSID 00:21:a0:e3:fd:bf

\*apfMsConnTask\_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP radio <Snip> **\*apfMsConnTask\_7: Jan 30 21:33:23.891: 1c:e6:2b:cd:da:9d Sending Assoc Response to station on BSSID 00:21:a0:e3:fd:bf (status 0) ApVapId 1 Slot 1**

\*apfMsConnTask\_7: Jan 30 21:33:23.892: 1c:e6:2b:cd:da:9d apfProcessAssocReq (apf\_80211.c:8292) Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to Associated

## Escenario 16: Autenticación de cliente fallada en el LDAP

### Funcionamiento del debug

#### permiso del ldap aaa del debug

```
(jk-2504-116) >debug client 1c:e6:2b:cd:da:9d
```

```
(jk-2504-116) >*apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Association received from mobile on BSSID 00:21:a0:e3:fd:be  
Apple Client initiating switch from one wlan to another. *apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP radio *apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Max Client Trap Threshold: 0 cur: 1 *apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Rf profile 600 Clients are allowed to AP wlan *apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Deleting client immediately since WLAN has changed //WLC removing apple client from original WLAN
```

\*apfMsConnTask\_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Scheduling deletion of Mobile Station: (callerId: 50) in 1 seconds

\*osapiBsnTimer: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireCallback (apf\_ms.c:625) Expiring Mobile!

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf\_ms.c:6632) Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to Disassociated

**\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Sent Deauthenticate to mobile on BSSID 00:21:a0:e3:fd:b0 slot 1(caller apf\_ms.c:6726)**

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Found an cache entry for BSSID 00:21:a0:e3:fd:bf in PMKID cache at index 0 of station 1c:e6:2b:cd:da:9d

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Removing BSSID 00:21:a0:e3:fd:bf from PMKID cache of station 1c:e6:2b:cd:da:9d

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Resetting MSCB PMK Cache Entry 0 for station 1c:e6:2b:cd:da:9d

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Setting active key cache index 0 ---> 8

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Deleting the PMK cache when de-authenticating the client.

```

*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Global PMK Cache deletion failed.
*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsAssoStateDec
*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf_ms.c:6764)
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Disassociated to Idle

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d pemApfDeleteMobileStation2:
APF_MS_PEM_WAIT_L2_AUTH_COMPLETE = 0.

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d 192.168.165.31 START (0) Deleted mobile
LWAPP rule on AP [00:21:a0:e3:fd:b0]

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d Deleting mobile on AP
00:21:a0:e3:fd:b0(1)

*pemReceiveTask: Jan 30 21:33:15.377: 1c:e6:2b:cd:da:9d 192.168.165.31 Removed NPU entry.

*apfMsConnTask_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Adding mobile on LWAPP AP
00:21:a0:e3:fd:b0(1)
No client activity for > 7 sec due to fast-ssid change disabled *apfMsConnTask_7: Jan 30
21:33:23.890: 1c:e6:2b:cd:da:9d Association received from mobile on BSSID 00:21:a0:e3:fd:bf
*apfMsConnTask_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP
radio <Snip> *apfMsConnTask_7: Jan 30 21:33:23.891: 1c:e6:2b:cd:da:9d Sending Assoc Response to
station on BSSID 00:21:a0:e3:fd:bf (status 0) ApVapId 1 Slot 1

*apfMsConnTask_7: Jan 30 21:33:23.892: 1c:e6:2b:cd:da:9d apfProcessAssocReq (apf_80211.c:8292)
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to
Associated

```

## Solución Alternativa

Servidor LDAP del control por los motivos de rechazo.

# Escenario 17: Los problemas de la asociación del cliente debido al LDAP son mis configurados en el WLC

El debug se ejecutó

permiso del ldap aaa del debug

```
(jk-2504-116) >debug client 1c:e6:2b:cd:da:9d
```

```

(jk-2504-116) >*apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Association received
from mobile on BSSID 00:21:a0:e3:fd:be
Apple Client initiating switch from one wlan to another. *apfMsConnTask_7: Jan 30 21:33:14.544:
1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP radio *apfMsConnTask_7: Jan 30
21:33:14.544: 1c:e6:2b:cd:da:9d Max Client Trap Threshold: 0 cur: 1 *apfMsConnTask_7: Jan 30
21:33:14.544: 1c:e6:2b:cd:da:9d Rf profile 600 Clients are allowed to AP wlan *apfMsConnTask_7:
Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Deleting client immediately since WLAN has changed //WLC
removing apple client from original WLAN

*apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Scheduling deletion of Mobile Station:

```

(callerId: 50) in 1 seconds

\*osapiBsnTimer: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireCallback (apf\_ms.c:625)  
Expiring Mobile!

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf\_ms.c:6632)  
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to  
Disassociated

**\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Sent Deauthenticate to mobile on BSSID  
00:21:a0:e3:fd:b0 slot 1(caller apf\_ms.c:6726)**

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Found an cache entry for BSSID  
00:21:a0:e3:fd:bf in PMKID cache at index 0 of station 1c:e6:2b:cd:da:9d

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Removing BSSID 00:21:a0:e3:fd:bf from  
PMKID cache of station 1c:e6:2b:cd:da:9d

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Resetting MSCB PMK Cache Entry 0 for  
station 1c:e6:2b:cd:da:9d

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Setting active key cache index 0 ---> 8

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Deleting the PMK cache when de-  
authenticating the client.

\*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Global PMK Cache deletion failed.

\*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsAssoStateDec

\*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf\_ms.c:6764)  
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Disassociated to Idle

\*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d pemApfDeleteMobileStation2:  
APF\_MS\_PEM\_WAIT\_L2\_AUTH\_COMPLETE = 0.

\*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d 192.168.165.31 START (0) Deleted mobile  
LWAPP rule on AP [00:21:a0:e3:fd:b0]

\*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d Deleting mobile on AP  
00:21:a0:e3:fd:b0(1)

**\*pemReceiveTask: Jan 30 21:33:15.377: 1c:e6:2b:cd:da:9d 192.168.165.31 Removed NPU entry.**

\*apfMsConnTask\_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Adding mobile on LWAPP AP  
00:21:a0:e3:fd:b0(1)

No client activity for > 7 sec due to fast-ssid change disabled \*apfMsConnTask\_7: Jan 30  
21:33:23.890: 1c:e6:2b:cd:da:9d Association received from mobile on BSSID 00:21:a0:e3:fd:bf

\*apfMsConnTask\_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP  
radio <Snip> **\*apfMsConnTask\_7: Jan 30 21:33:23.891: 1c:e6:2b:cd:da:9d Sending Assoc Response to  
station on BSSID 00:21:a0:e3:fd:bf (status 0) ApVapId 1 Slot 1**

\*apfMsConnTask\_7: Jan 30 21:33:23.892: 1c:e6:2b:cd:da:9d apfProcessAssocReq (apf\_80211.c:8292)  
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to  
Associated

## Solución Alternativa

Verifique las credenciales a través de client/WLC y del servidor LDAP.



# Escenario 18: Problemas de la asociación del cliente cuando el servidor LDAP es inalcanzable

El debug se ejecutó

permiso del ldap aaa del debug

```
(jk-2504-116) >debug client 1c:e6:2b:cd:da:9d
```

```
(jk-2504-116) >*apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Association received from mobile on BSSID 00:21:a0:e3:fd:be  
Apple Client initiating switch from one wlan to another. *apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP radio *apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Max Client Trap Threshold: 0 cur: 1 *apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Rf profile 600 Clients are allowed to AP wlan *apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Deleting client immediately since WLAN has changed //WLC removing apple client from original WLAN
```

```
*apfMsConnTask_7: Jan 30 21:33:14.544: 1c:e6:2b:cd:da:9d Scheduling deletion of Mobile Station: (callerId: 50) in 1 seconds
```

```
*osapiBsnTimer: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireCallback (apf_ms.c:625)  
Expiring Mobile!
```

```
*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf_ms.c:6632)  
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to Disassociated
```

```
*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Sent Deauthenticate to mobile on BSSID 00:21:a0:e3:fd:b0 slot 1(caller apf_ms.c:6726)
```

```
*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Found an cache entry for BSSID 00:21:a0:e3:fd:bf in PMKID cache at index 0 of station 1c:e6:2b:cd:da:9d
```

```
*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Removing BSSID 00:21:a0:e3:fd:bf from PMKID cache of station 1c:e6:2b:cd:da:9d
```

```
*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Resetting MSCB PMK Cache Entry 0 for station 1c:e6:2b:cd:da:9d
```

```
*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Setting active key cache index 0 ---> 8
```

```
*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Deleting the PMK cache when de-authenticating the client.
```

```
*apfReceiveTask: Jan 30 21:33:15.375: 1c:e6:2b:cd:da:9d Global PMK Cache deletion failed.
```

```
*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsAssoStateDec
```

```
*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d apfMsExpireMobileStation (apf_ms.c:6764)  
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Disassociated to Idle
```

```
*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d pemApfDeleteMobileStation2:
APF_MS_PEM_WAIT_L2_AUTH_COMPLETE = 0.

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d 192.168.165.31 START (0) Deleted mobile
LWAPP rule on AP [00:21:a0:e3:fd:b0]

*apfReceiveTask: Jan 30 21:33:15.376: 1c:e6:2b:cd:da:9d Deleting mobile on AP
00:21:a0:e3:fd:b0(1)

*pemReceiveTask: Jan 30 21:33:15.377: 1c:e6:2b:cd:da:9d 192.168.165.31 Removed NPU entry.

*apfMsConnTask_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Adding mobile on LWAPP AP
00:21:a0:e3:fd:b0(1)
No client activity for > 7 sec due to fast-ssid change disabled *apfMsConnTask_7: Jan 30
21:33:23.890: 1c:e6:2b:cd:da:9d Association received from mobile on BSSID 00:21:a0:e3:fd:bf
*apfMsConnTask_7: Jan 30 21:33:23.890: 1c:e6:2b:cd:da:9d Global 200 Clients are allowed to AP
radio <Snip> *apfMsConnTask_7: Jan 30 21:33:23.891: 1c:e6:2b:cd:da:9d Sending Assoc Response to
station on BSSID 00:21:a0:e3:fd:bf (status 0) ApVapId 1 Slot 1

*apfMsConnTask_7: Jan 30 21:33:23.892: 1c:e6:2b:cd:da:9d apfProcessAssocReq (apf_80211.c:8292)
Changing state for mobile 1c:e6:2b:cd:da:9d on AP 00:21:a0:e3:fd:b0 from Associated to
Associated
```

## Solución Alternativa

WLC del control y problemas de conectividad de red del servidor LDAP.

# Escenario 19: Problemas de itinerancia del cliente de Apple debido a faltar la configuración de itinerancia Sticky

Condiciones

AIR-CT5508-K9/7.4.100.0

Los dispositivos de Apple están desconectando de la red inalámbrica que utiliza el siguiente:

Directiva WPA2

WPA2 cifrado AES

802.1x de la autenticación habilitado

Autenticación y autorización vía Cisco ISE

Los dispositivos de Apple desconectarán periódicamente del SSID transmitido. Un ejemplo es un iPhone caerá mientras que otro teléfono en la misma ubicación seguirá conectado. Por lo tanto, ocurre aleatoriamente (tiempo y el teléfono)

Los clientes de la laptop no están teniendo problemas. Están conectando con el mismo SSID

Este problema sucede durante el funcionamiento normal, ninguna itinerancia, ningún modo de reserva.

La red inalámbrica (WLAN) ha quitado ya todas las configuraciones posibles que podrían causar los problemas (la extensión del aironet)

El debug se ejecutó

addr> del <mac del cliente del debug

```
*apfMsConnTask_5: Jun 11 16:12:56.342: f0:d1:a9:bb:2d:fa Received RSN IE with 0 PMKIDs from mobile f0:d1:a9:bb:2d:fa
```

At 16:12:56 in the debugs we see a client re-association. From there the AP is expecting the client to present its old PMKID (Pairwise Master Key Identifiers).

At this point it doesn't! From the above message the AP/WLC didn't receive a PMKID from the iPhone.

This is kind of expected from this type of client.

Apple devices do not use the opportunistic key caching which allows clients to use the SAME PMKID at all Aps.

Apple devices use a key cache method of Sticky Key Caching.

This in turn means that the client has to build a PMKID at EACH AP in order to successfully roam to the AP.

As we can see the client didn't present a PMKID to use so we sent it through layer 2 security/EAP again.

The client then hits a snag in the EAP process where the client fails to respond to the EAP ID or request for credentials until the second attempt

```
*dot1xMsgTask: Jun 11 16:12:56.345: f0:d1:a9:bb:2d:fa Sending EAP-Request/Identity to mobile f0:d1:a9:bb:2d:fa (EAP Id 1)
```

```
*osapiBsnTimer: Jun 11 16:13:26.288: f0:d1:a9:bb:2d:fa 802.1x 'txWhen' Timer expired for station f0:d1:a9:bb:2d:fa and for message = MO After this snag the client is allowed back onto the network all in approx. 1.5 seconds.
```

This is going to be normal and EXPECTED behavior currently with Sticky key cache clients.

## Solución Alternativa

Qué podemos ahora hacer para los clientes que tienen los clientes SKC (clave Sticky que oculta) y también tener código 7.2 del WLC y más alto es el permiso vaga por el soporte para SKC (caché dominante Sticky).

Por abandono los soportes OKC (clave oportunista del WLC solamente que oculta). Para permitir que el cliente utilice su PMKIDs viejo que generó en cada AP tenemos que habilitarlo vía el WLC CLI.

permiso Sticky del caché del wpa wpa2 de la Seguridad de WLAN de los config <1>

Tenga por favor presente que esto no mejorará la inicial vaga por debido a la naturaleza de SKC; sin embargo, mejorará subsiguiente vaga por a los mismos Aps (hasta 8 por el libro). Imagine que recorre abajo de un vestíbulo con 8 Aps. El primer recorrido consistirá en los associations llenos en cada AP con alrededor de un segundo retraso 1-2. Cuando usted alcanza el extremo y el paseo detrás el cliente presentará a 8 PMKIDs único como se mueve de nuevo a los mismos Aps y no tendrá que pasar con una autenticación completa si se habilita el soporte SKC. Así la eliminación del retraso y del cliente aparecerá permanecer conectada.

## Escenario 20: Verificar la Rápido-Seguro-itinerancia (FSR) con el CCKM

<http://www.cisco.com/c/en/us/support/docs/wireless-mobility/wireless-lan-wlan/116493-technote-technology-00.html>

Funcionamiento del debug

addr> del <mac del cliente del debug

```
*apfMsConnTask_2: Jun 25 15:43:33.749: 00:40:96:b7:ab:5c CCKM: Received REASSOC REQ IE
```

\*apfMsConnTask\_2: Jun 25 15:43:33.749: 00:40:96:b7:ab:5c **Reassociation received from mobile on BSSID 84:78:ac:f0:2a:93**

\*apfMsConnTask\_2: Jun 25 15:43:33.750: 00:40:96:b7:ab:5c

Processing WPA IE type 221, length 22 for mobile 00:40:96:b7:ab:5c

\*apfMsConnTask\_2: Jun 25 15:43:33.750: 00:40:96:b7:ab:5c

**CCKM: Mobile is using CCKM**

**The Reassociation Request is received from the client, which provides the CCKM information needed in order to derive the new keys with a fast-secure roam.** \*apfMsConnTask\_2: Jun 25

15:43:33.750: 00:40:96:b7:ab:5c Setting active key cache index 0 ---> 8 \*apfMsConnTask\_2: Jun 25

15:43:33.750: 00:40:96:b7:ab:5c CCKM: Processing REASSOC REQ IE \*apfMsConnTask\_2: Jun 25

15:43:33.750: 00:40:96:b7:ab:5c **CCKM: using HMAC MD5 to compute MIC**

**WLC computes the MIC used for this CCKM fast-roaming exchange.** \*apfMsConnTask\_2: Jun 25

15:43:33.750: 00:40:96:b7:ab:5c CCKM: Received a valid REASSOC REQ IE \*apfMsConnTask\_2: Jun 25

15:43:33.751: 00:40:96:b7:ab:5c **CCKM: Initializing PMK cache entry with a new PTK**

**The new PTK is derived.** \*apfMsConnTask\_2: Jun 25 15:43:33.751: 00:40:96:b7:ab:5c Setting active

key cache index 8 ---> 8 \*apfMsConnTask\_2: Jun 25 15:43:33.751: 00:40:96:b7:ab:5c Setting active

key cache index 8 ---> 8 \*apfMsConnTask\_2: Jun 25 15:43:33.751: 00:40:96:b7:ab:5c Setting active

key cache index 8 ---> 0 \*apfMsConnTask\_2: Jun 25 15:43:33.751: 00:40:96:b7:ab:5c **Creating a PKC**

**PMKID Cache entry for station 00:40:96:b7:ab:5c (RSN 0) on BSSID 84:78:ac:f0:2a:93**

**The new PMKID cache entry is created for this new AP-to-client association.** \*apfMsConnTask\_2:

Jun 25 15:43:33.751: 00:40:96:b7:ab:5c CCKM: using HMAC MD5 to compute MIC \*apfMsConnTask\_2: Jun

25 15:43:33.751: 00:40:96:b7:ab:5c Including CCKM Response IE (length 62) in Assoc Resp to

mobile \*apfMsConnTask\_2: Jun 25 15:43:33.751: 00:40:96:b7:ab:5c **Sending Assoc Response to**

**station on BSSID 84:78:ac:f0:2a:93 (status 0) ApVapId 4 Slot 0**

**The Reassociation Response is sent from the WLC/AP to the client, which includes the CCKM**

**information required in order to confirm the new fast-roam and key derivation.** \*dot1xMsgTask:

Jun 25 15:43:33.757: 00:40:96:b7:ab:5c **Skipping EAP-Success to mobile 00:40:96:b7:ab:5c**

**EAP is skipped due to the fast roaming, and CCKM does not require further key handshakes. The**

**client is now ready to pass encrypted data frames on the new AP.**

Como se muestra, se realiza mientras que evita las tramas de la autenticación EAP y aún más apretones de manos 4-Way, porque las nuevas claves de encriptación todavía se derivan, pero se basa la itinerancia rápido-segura en el esquema de la negociación del CCKM. Esto se completa con las tramas de itinerancia de la reasociación y la información anterior-ocultadas por el cliente y el WLC.

## Escenario 21: Verificar la Rápido-Seguro-itinerancia (FSR) con el almacenamiento en memoria inmediata WPA2 PMKID

El debug se ejecutó

addr> del <mac del cliente del debug

\*apfMsConnTask\_0: Jun 22 00:26:40.787: ec:85:2f:15:39:32 **Reassociation received from mobile on BSSID 84:78:ac:f0:68:d2**

**This is the Reassociation Request from the client.** \*apfMsConnTask\_0: Jun 22 00:26:40.787:

ec:85:2f:15:39:32 **Processing RSN IE type 48, length 38 for mobile ec:85:2f:15:39:32**

**The WLC/AP finds an Information Element that claims PMKID Caching support on the Association**

**request that is sent from the client.** \*apfMsConnTask\_0: Jun 22 00:26:40.787: ec:85:2f:15:39:32

**Received RSN IE with 1 PMKIDs from mobile ec:85:2f:15:39:32**

**The Reassociation Request from the client comes with one PMKID.** \*apfMsConnTask\_0: Jun 22

00:26:40.787: Received PMKID: (16) \*apfMsConnTask\_0: Jun 22 00:26:40.788: [0000] c9 4d 0d 97 03

aa a9 0f 1b c8 33 73 01 f1 18 f5 **This is the PMKID that is received** \*apfMsConnTask\_0: Jun 22

00:26:40.788: ec:85:2f:15:39:32 **Searching for PMKID in MSCB PMKID cache for mobile**

**ec:85:2f:15:39:32**

**WLC searches for a matching PMKID on the database.** \*apfMsConnTask\_0: Jun 22 00:26:40.788:

ec:85:2f:15:39:32 Found an cache entry for BSSID 84:78:ac:f0:68:d2 in PMKID cache at index 0 of

station ec:85:2f:15:39:32 \*apfMsConnTask\_0: Jun 22 00:26:40.788: ec:85:2f:15:39:32 **Found a valid**

**PMKID in the MSCB PMKID cache for mobile ec:85:2f:15:39:32**

The WLC validates the PMKID provided by the client, and confirms that it has a valid PMK cache for this client-and-AP pair. \*apfMsConnTask\_0: Jun 22 00:26:40.788: ec:85:2f:15:39:32 Setting active key cache index 1 ---> 0 \*apfMsConnTask\_0: Jun 22 00:26:40.788: ec:85:2f:15:39:32 **Sending Assoc Response to station on BSSID 84:78:ac:f0:68:d2(status 0) ApVapId 3 Slot 0**

The Reassociation Response is sent to the client, which validates the fast-roam with SKC.

\*dotlMsgTask: Jun 22 00:26:40.795: ec:85:2f:15:39:32 **Initiating RSN with existing PMK to mobile ec:85:2f:15:39:32**

WLC initiates a Robust Secure Network association with this client-and-AP pair based on the cached PMK found. Hence, EAP is avoided as per the next message. \*dotlMsgTask: Jun 22 00:26:40.795: ec:85:2f:15:39:32 Skipping EAP-Success to mobile ec:85:2f:15:39:32 \*dotlMsgTask: Jun 22 00:26:40.795: ec:85:2f:15:39:32 Found an cache entry for BSSID 84:78:ac:f0:68:d2 in PMKID cache at index 0 of station ec:85:2f:15:39:32 \*dotlMsgTask: Jun 22 00:26:40.795: **Including PMKID in M1(16)**

The hashed PMKID is included on the Message-1 of the WPA/WPA2 4-Way handshake. \*dotlMsgTask: Jun 22 00:26:40.795: [0000] c9 4d 0d 97 03 aa a9 0f 1b c8 33 73 01 f1 18 f5 **The PMKID is hashed.** The next messages are the same WPA/WPA2 4-Way handshake messages described thus far that are used in order to finish the encryption keys generation/installation. \*dotlMsgTask: Jun 22 00:26:40.795: ec:85:2f:15:39:32 Sending EAPOL-Key Message to mobile ec:85:2f:15:39:32 state INITPMK (message 1), replay counter 00.00.00.00.00.00.00.00 \*DotlMsgTask\_2: Jun 22 00:26:40.811: ec:85:2f:15:39:32 Received EAPOL-Key from mobile ec:85:2f:15:39:32 \*DotlMsgTask\_2: Jun 22 00:26:40.812: ec:85:2f:15:39:32 Received EAPOL-key in PTK\_START state (message 2) from mobile ec:85:2f:15:39:32 \*DotlMsgTask\_2: Jun 22 00:26:40.812: ec:85:2f:15:39:32 PMK: Sending cache add \*DotlMsgTask\_2: Jun 22 00:26:40.812: ec:85:2f:15:39:32 Sending EAPOL-Key Message to mobile ec:85:2f:15:39:32 state PTKINITNEGOTIATING (message 3), replay counter 00.00.00.00.00.00.00.01 \*DotlMsgTask\_2: Jun 22 00:26:40.820: ec:85:2f:15:39:32 Received EAPOL-Key from mobile ec:85:2f:15:39:32 \*DotlMsgTask\_2: Jun 22 00:26:40.820: ec:85:2f:15:39:32 Received EAPOL-key in PTKINITNEGOTIATING state (message 4) from mobile ec:85:2f:15:39:32

## Escenario 22: Verificar la itinerancia Rápido-segura con el almacenamiento en memoria inmediata dominante dinámico

El debug se ejecutó

addr> del <mac del cliente del debug

\*apfMsConnTask\_2: Jun 21 21:48:50.562: 00:40:96:b7:ab:5c **Reassociation received from mobile on BSSID 84:78:ac:f0:2a:92**  
This is the Reassociation Request from the client. \*apfMsConnTask\_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Processing RSN IE type 48, length 38 for mobile 00:40:96:b7:ab:5c **The WLC/AP finds and Information Element that claims PMKID Caching support on the Association request that is sent from the client.** \*apfMsConnTask\_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Received RSN IE with 1 PMKIDs from mobile 00:40:96:b7:ab:5c **The Reassociation Request from the client comes with one PMKID.** \*apfMsConnTask\_2: Jun 21 21:48:50.563: Received PMKID: (16) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 91 65 c3 fb fc 44 75 48 67 90 d5 da df aa 71 e9 \*apfMsConnTask\_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Searching for PMKID in MSCB PMKID cache for mobile 00:40:96:b7:ab:5c \*apfMsConnTask\_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c No valid PMKID found in the MSCB PMKID cache for mobile 00:40:96:b7:ab:5 **As the client has never authenticated with this new AP, the WLC cannot find a valid PMKID to match the one provided by the client.** However, since the client performs PKC/OKC and not SKC (as per the following messages), the WLC computes a new PMKID based on the information gathered (the cached PMK, the client MAC address, and the new AP MAC address). \*apfMsConnTask\_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Trying to compute a PMKID from MSCB PMK cache for mobile 00:40:96:b7:ab:5c \*apfMsConnTask\_2: Jun 21 21:48:50.563: CCKM: Find PMK in cache: BSSID = (6) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 84 78 ac f0 2a 90 \*apfMsConnTask\_2: Jun 21 21:48:50.563: CCKM: Find PMK in cache: realAA = (6) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 84 78 ac f0 2a 92 \*apfMsConnTask\_2: Jun 21 21:48:50.563: CCKM: Find PMK in cache: PMKID = (16) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 91 65 c3 fb fc 44 75 48 67 90 d5 da df aa 71 e9 \*apfMsConnTask\_2: Jun 21 21:48:50.563: CCKM: AA (6) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 84 78 ac f0 2a 92 \*apfMsConnTask\_2:

```

Jun 21 21:48:50.563: CCKM: SPA (6) *apfMsConnTask_2: Jun 21 21:48:50.563: [0000] 00 40 96 b7 ab
5c *apfMsConnTask_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Adding BSSID 84:78:ac:f0:2a:92 to
PMKID cache at index 0 for station 00:40:96:b7:ab:5c *apfMsConnTask_2: Jun 21 21:48:50.563: New
PMKID: (16) *apfMsConnTask_2: Jun 21 21:48:50.563:[0000] 91 65 c3 fb fc 44 75 48 67 90 d5 da df
aa 71 e9 *apfMsConnTask_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Computed a valid PMKID from
MSCB PMK cache for mobile 00:40:96:b7:ab:5c The new PMKID is computed and validated to match the
one provided by the client, which is also computed with the same information. Hence, the fast-
secure roam is possible. *apfMsConnTask_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Setting active
key cache index 0 ---> 0 *apfMsConnTask_2: Jun 21 21:48:50.564: 00:40:96:b7:ab:5c Sending Assoc
Response to station on BSSID 84:78:ac:f0:2a:92 (status 0) ApVapId 3 Slot The Reassociation
response is sent to the client, which validates the fast-roam with PKC/OKC. *dot1xMsgTask: Jun
21 21:48:50.570: 00:40:96:b7:ab:5c Initiating RSN with existing PMK to mobile 00:40:96:b7:ab:5c
WLC initiates a Robust Secure Network association with this client-and AP pair with the cached
PMK found. Hence, EAP is avoided, as per the the next message. *dot1xMsgTask: Jun 21
21:48:50.570: 00:40:96:b7:ab:5c Skipping EAP-Success to mobile 00:40:96:b7:ab:5c *dot1xMsgTask:
Jun 21 21:48:50.570: 00:40:96:b7:ab:5c Found an cache entry for BSSID 84:78:ac:f0:2a:92 in PMKID
cache at index 0 of station 00:40:96:b7:ab:5c *dot1xMsgTask: Jun 21 21:48:50.570: Including
PMKID in M1 (16) The hashed PMKID is included on the Message-1 of the WPA/WPA2 4-Way handshake.
*dot1xMsgTask: Jun 21 21:48:50.570: [0000] 91 65 c3 fb fc 44 75 48 67 90 d5 da df aa 71 e9 The
PMKID is hashed. The next messages are the same WPA/WPA2 4-Way handshake messages described thus
far, which are used in order to finish the encryption keys generation/installation.
*dot1xMsgTask: Jun 21 21:48:50.570: 00:40:96:b7:ab:5c Sending EAPOL-Key Message to mobile
00:40:96:b7:ab:5c state INITPMK (message 1), replay counter 00.00.00.00.00.00.00.00
*Dot1x_NW_MsgTask_4: Jun 21 21:48:50.589: 00:40:96:b7:ab:5 Received EAPOL-Key from mobile
00:40:96:b7:ab:5c *Dot1x_NW_MsgTask_4: Jun 21 21:48:50.589: 00:40:96:b7:ab:5c Received EAPOL-key
in PTK_START state (message 2) from mobile 00:40:96:b7:ab:5c *Dot1x_NW_MsgTask_4: Jun 21
21:48:50.589: 00:40:96:b7:ab:5cPMK: Sending cache add *Dot1x_NW_MsgTask_4: Jun 21 21:48:50.590:
00:40:96:b7:ab:5c Sending EAPOL-Key Message to mobile 00:40:96:b7:ab:5c state PTKINITNEGOTIATING
(message 3), replay counter 00.00.00.00.00.00.00.01 *Dot1x_NW_MsgTask_4: Jun 21 21:48:50.610:
00:40:96:b7:ab:5c Received EAPOL-Key from mobile 00:40:96:b7:ab:5c *Dot1x_NW_MsgTask_4: Jun 21
21:48:50.610: 00:40:96:b7:ab:5c Received EAPOL-key in PTKINITNEGOTIATING state (message 4) from
mobile 00:40:96:b7:ab:5c

```

Como se muestra al principio de los debugs, el PMKID debe ser computado después de que la petición de la reasociación del cliente se reciba. Esto es necesario para validar el PMKID y confirmar que el PMK oculto está utilizado con el apretón de manos WPA2 4-Way para derivar las claves de encriptación y para acabar la itinerancia rápido-segura. No confunda las entradas del CCKM en los debugs; esto no se utiliza para realizar el CCKM, sino PKC/OKC, según lo explicado previamente. El CCKM aquí es simplemente un nombre usado por el WLC para esas salidas, tales como el nombre de una función que maneje los valores para computar el PMKID.

## Escenario 23: Verificar la Rápido-Seguro-itinerancia (FSR) con 802.11r

Funcionamiento del debug

addr> del <mac del cliente del debug

```

*apfMsConnTask_2: Jun 21 21:48:50.562: 00:40:96:b7:ab:5c Reassociation received from mobile on
BSSID 84:78:ac:f0:2a:92
This is the Reassociation Request from the client. *apfMsConnTask_2: Jun 21 21:48:50.563:
00:40:96:b7:ab:5c Processing RSN IE type 48, length 38 for mobile 00:40:96:b7:ab:5c The WLC/AP
finds and Information Element that claims PMKID Caching support on the Association request that
is sent from the client. *apfMsConnTask_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Received RSN
IE with 1 PMKIDs from mobile 00:40:96:b7:ab:5c The Reassociation Request from the client comes
with one PMKID. *apfMsConnTask_2: Jun 21 21:48:50.563:Received PMKID: (16) *apfMsConnTask_2: Jun
21 21:48:50.563: [0000] 91 65 c3 fb fc 44 75 48 67 90 d5 da df aa 71 e9 *apfMsConnTask_2: Jun 21
21:48:50.563: 00:40:96:b7:ab:5c Searching for PMKID in MSCB PMKID cache for mobile
00:40:96:b7:ab:5c *apfMsConnTask_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c No valid PMKID found

```

in the MSCB PMKID cache for mobile 00:40:96:b7:ab:5 As the client has never authenticated with this new AP, the WLC cannot find a valid PMKID to match the one provided by the client. However, since the client performs PKC/OKC and not SKC (as per the following messages), the WLC computes a new PMKID based on the information gathered (the cached PMK, the client MAC address, and the new AP MAC address). \*apfMsConnTask\_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Trying to compute a PMKID from MSCB PMK cache for mobile 00:40:96:b7:ab:5c \*apfMsConnTask\_2: Jun 21 21:48:50.563: CCKM: Find PMK in cache: BSSID = (6) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 84 78 ac f0 2a 90 \*apfMsConnTask\_2: Jun 21 21:48:50.563: CCKM: Find PMK in cache: realAA = (6) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 84 78 ac f0 2a 92 \*apfMsConnTask\_2: Jun 21 21:48:50.563: CCKM: Find PMK in cache: PMKID = (16) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 91 65 c3 fb fc 44 75 48 67 90 d5 da df aa 71 e9 \*apfMsConnTask\_2: Jun 21 21:48:50.563: CCKM: AA (6) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 84 78 ac f0 2a 92 \*apfMsConnTask\_2: Jun 21 21:48:50.563: CCKM: SPA (6) \*apfMsConnTask\_2: Jun 21 21:48:50.563: [0000] 00 40 96 b7 ab 5c \*apfMsConnTask\_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Adding BSSID 84:78:ac:f0:2a:92 to PMKID cache at index 0 for station 00:40:96:b7:ab:5c \*apfMsConnTask\_2: Jun 21 21:48:50.563: New PMKID: (16) \*apfMsConnTask\_2: Jun 21 21:48:50.563:[0000] 91 65 c3 fb fc 44 75 48 67 90 d5 da df aa 71 e9 \*apfMsConnTask\_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Computed a valid PMKID from MSCB PMK cache for mobile 00:40:96:b7:ab:5c The new PMKID is computed and validated to match the one provided by the client, which is also computed with the same information. Hence, the fast-secure roam is possible. \*apfMsConnTask\_2: Jun 21 21:48:50.563: 00:40:96:b7:ab:5c Setting active key cache index 0 ---> 0 \*apfMsConnTask\_2: Jun 21 21:48:50.564: 00:40:96:b7:ab:5c Sending Assoc Response to station on BSSID 84:78:ac:f0:2a:92 (status 0) ApVapId 3 Slot The Reassociation response is sent to the client, which validates the fast-roam with PKC/OKC. \*dot1xMsgTask: Jun 21 21:48:50.570: 00:40:96:b7:ab:5c Initiating RSN with existing PMK to mobile 00:40:96:b7:ab:5c WLC initiates a Robust Secure Network association with this client-and AP pair with the cached PMK found. Hence, EAP is avoided, as per the the next message. \*dot1xMsgTask: Jun 21 21:48:50.570: 00:40:96:b7:ab:5c Skipping EAP-Success to mobile 00:40:96:b7:ab:5c \*dot1xMsgTask: Jun 21 21:48:50.570: 00:40:96:b7:ab:5c Found an cache entry for BSSID 84:78:ac:f0:2a:92 in PMKID cache at index 0 of station 00:40:96:b7:ab:5c \*dot1xMsgTask: Jun 21 21:48:50.570: Including PMKID in M1 (16) The hashed PMKID is included on the Message-1 of the WPA/WPA2 4-Way handshake. \*dot1xMsgTask: Jun 21 21:48:50.570: [0000] 91 65 c3 fb fc 44 75 48 67 90 d5 da df aa 71 e9 The PMKID is hashed. The next messages are the same WPA/WPA2 4-Way handshake messages described thus far, which are used in order to finish the encryption keys generation/installation. \*dot1xMsgTask: Jun 21 21:48:50.570: 00:40:96:b7:ab:5c Sending EAPOL-Key Message to mobile 00:40:96:b7:ab:5c state INITPMK (message 1), replay counter 00.00.00.00.00.00.00.00 \*Dot1x\_NW\_MsgTask\_4: Jun 21 21:48:50.589: 00:40:96:b7:ab:5 Received EAPOL-Key from mobile 00:40:96:b7:ab:5c \*Dot1x\_NW\_MsgTask\_4: Jun 21 21:48:50.589: 00:40:96:b7:ab:5c Received EAPOL-key in PTK\_START state (message 2) from mobile 00:40:96:b7:ab:5c \*Dot1x\_NW\_MsgTask\_4: Jun 21 21:48:50.589: 00:40:96:b7:ab:5cPMK: Sending cache add \*Dot1x\_NW\_MsgTask\_4: Jun 21 21:48:50.590: 00:40:96:b7:ab:5c Sending EAPOL-Key Message to mobile 00:40:96:b7:ab:5c state PTKINITNEGOTIATING (message 3), replay counter 00.00.00.00.00.00.00.01 \*Dot1x\_NW\_MsgTask\_4: Jun 21 21:48:50.610: 00:40:96:b7:ab:5c Received EAPOL-Key from mobile 00:40:96:b7:ab:5c \*Dot1x\_NW\_MsgTask\_4: Jun 21 21:48:50.610: 00:40:96:b7:ab:5c Received EAPOL-key in PTKINITNEGOTIATING state (message 4) from mobile 00:40:96:b7:ab:5c