



The bridge to possible

How to troubleshoot 9800- AireOS Mobility

Katya Aurora Torres Romo, Technical Consulting
Engineer

Ivan Dario Zamudio Gomez, Technical Consulting
Engineer

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Agenda

1. Introduction
2. Basic configuration
3. Problem Scenarios, Troubleshooting and Solutions
4. To Keep in Mind
5. TAC Tips
6. Summary

1. Introduction

Introduction

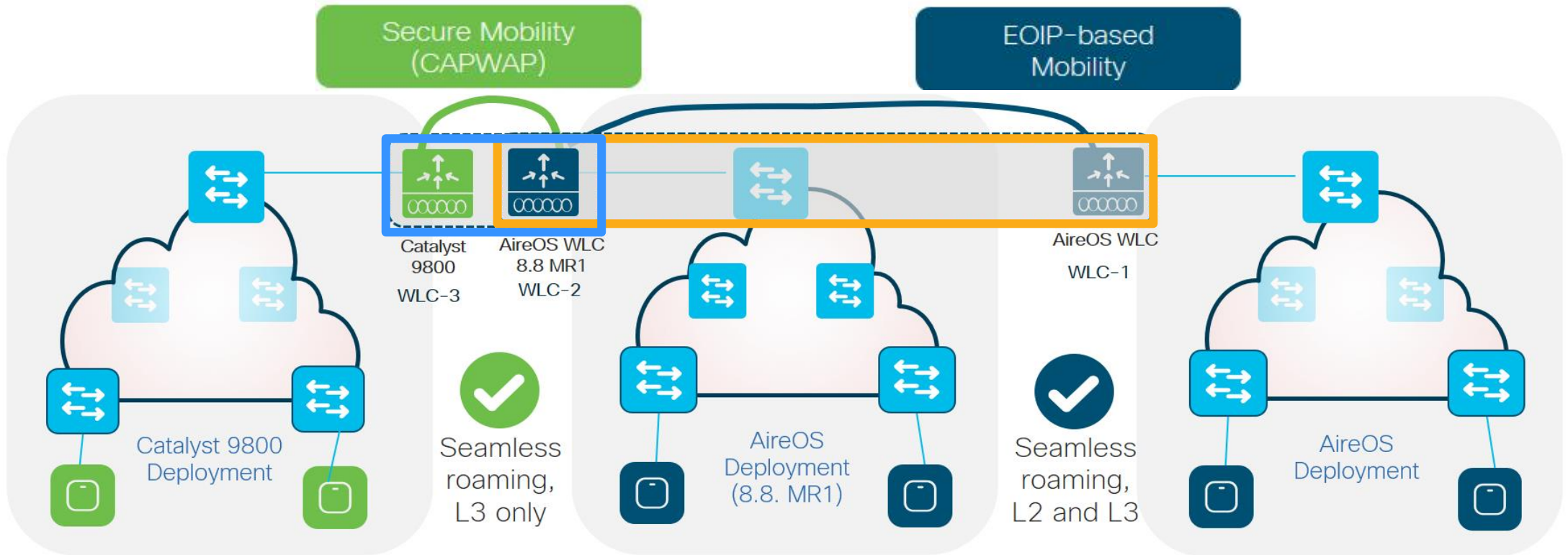
Mobility and roaming between AireOS and 9800

- ✓ What is the solution about?
 - Connecting legacy controllers with next-generation
 - Only Layer 3 roaming support
 - Guest/Auto Anchor support
- ✓ What is unique?
 - Different software is in use on each platform
 - Interoperability between features and supported hardware
- ✓ What is the challenge?
 - Special software required on legacy devices
 - DTLS negotiation and certificates in use
 - The differences in the configuration model make configuration tricky and cause error-prone

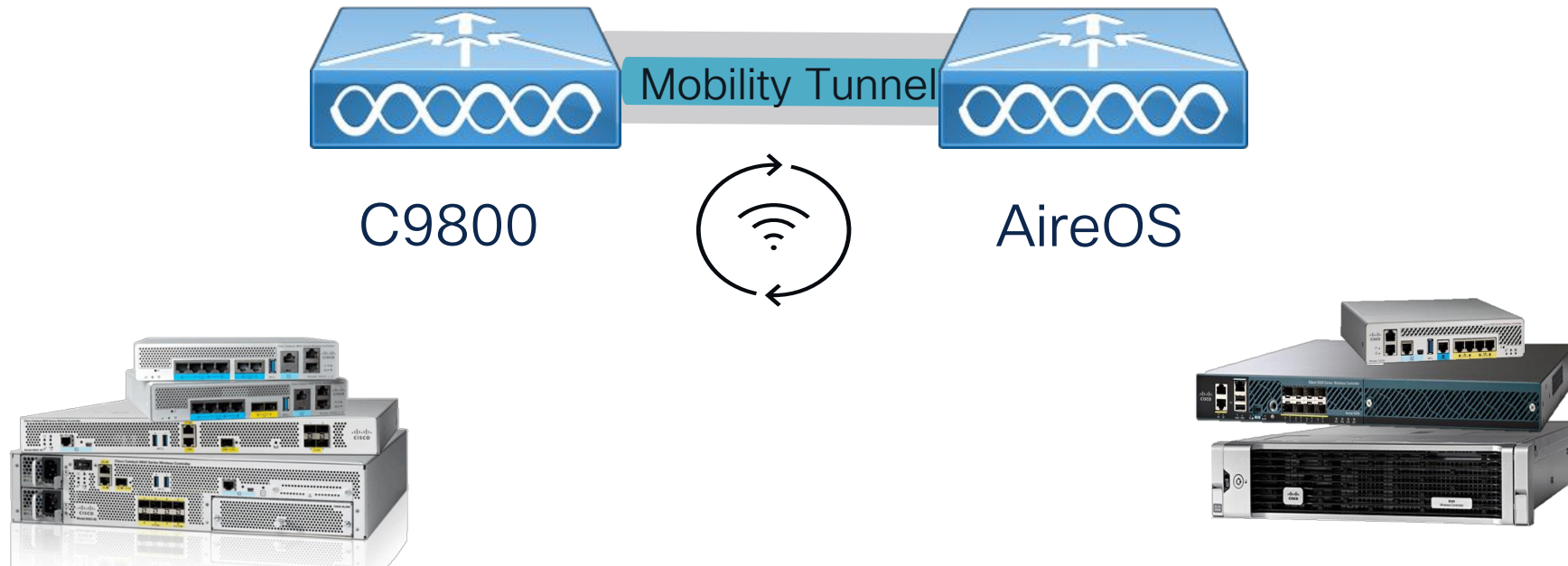


Introduction

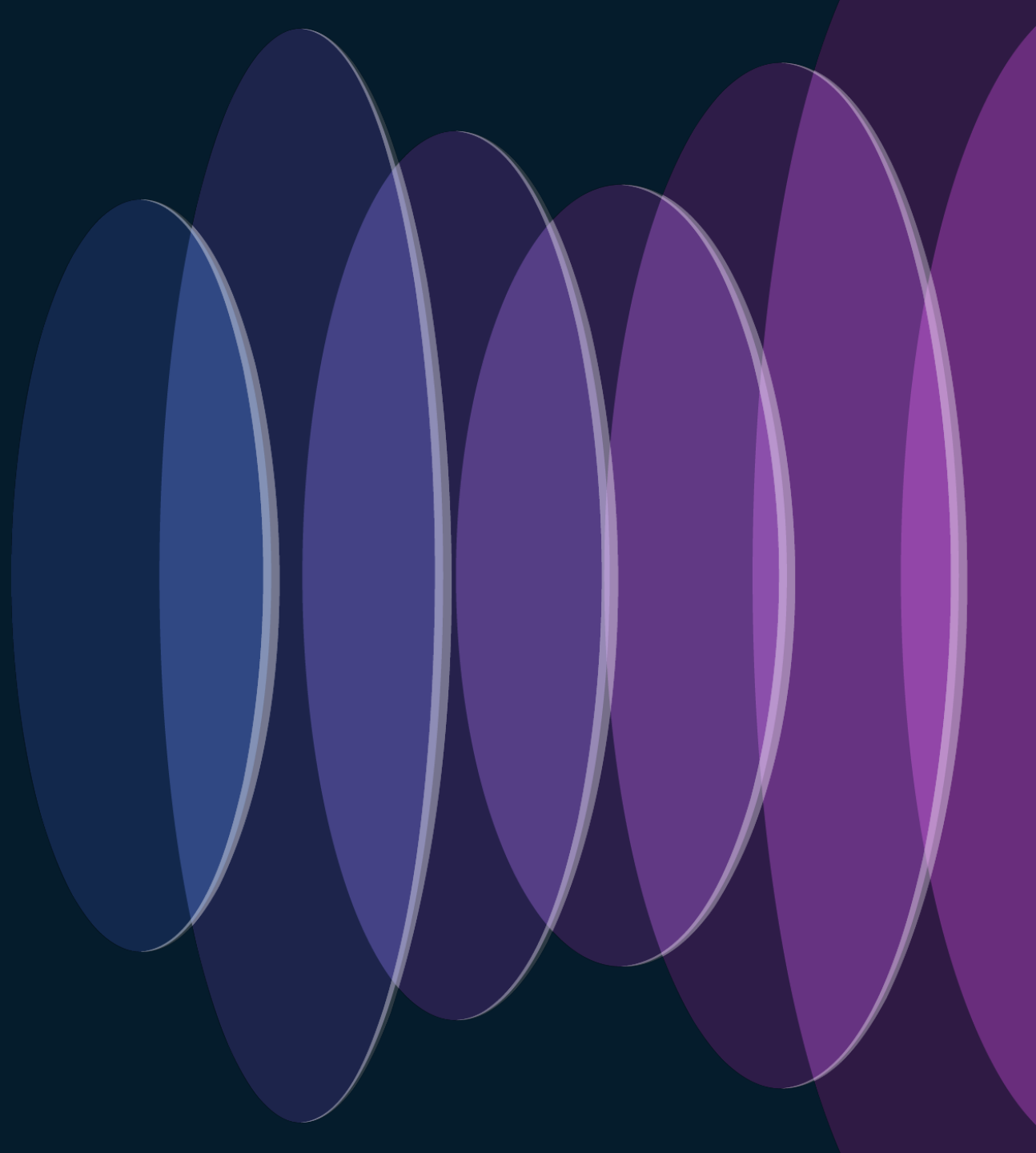
Mobility and Roaming between AireOS and 9800



Inter-Release Controller Mobility (IRCM) Topology



2. Basic Configuration



Prerequisites

AireOS

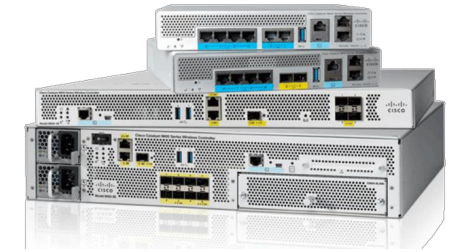
- 8.5 IRCM release, Not supported on 7510/2504/vWLC.
- Baseline 8.5 software does not support Secure Mobility.
- Any 8.8 or later releases support Secure Mobility for 3504/8540/5520.

C9800

- Cisco recommends any 17.3 or later release.
- Secure Mobility is enabled by default.

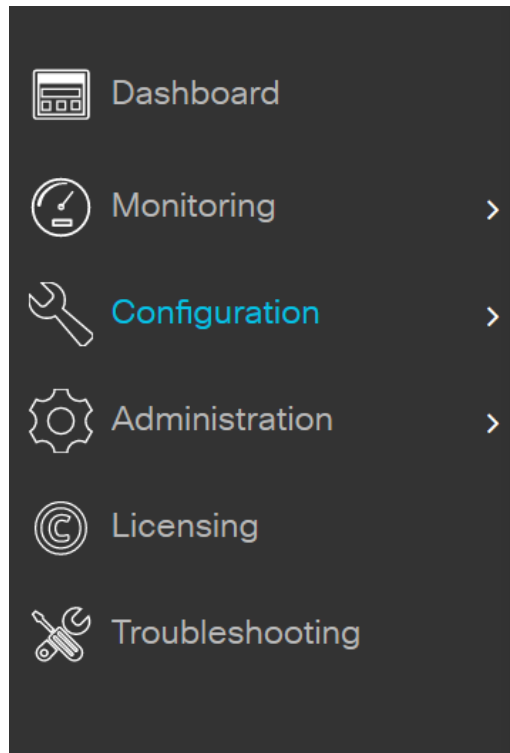
Basic Configuration

Mobility Tunnel between 9800 and AireOS

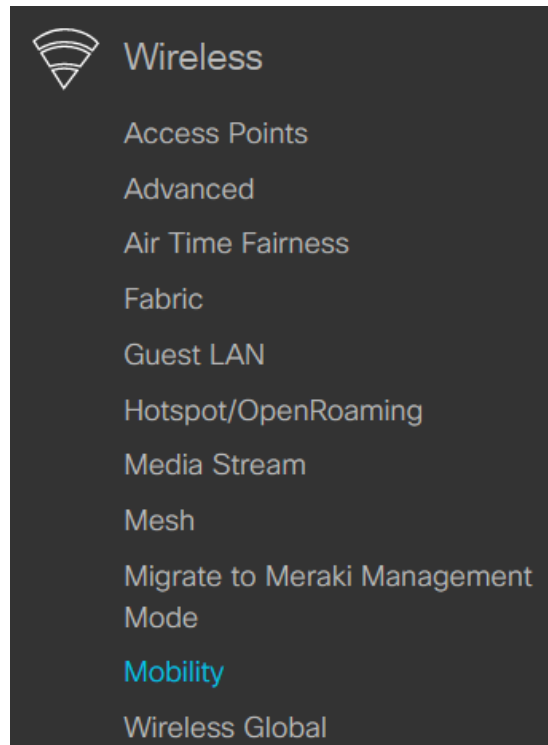


For 9800:

1



Wireless



2

Global Configuration

Peer Configuration

3

Basic Configuration

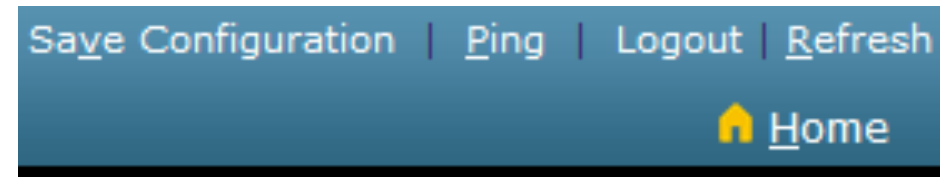
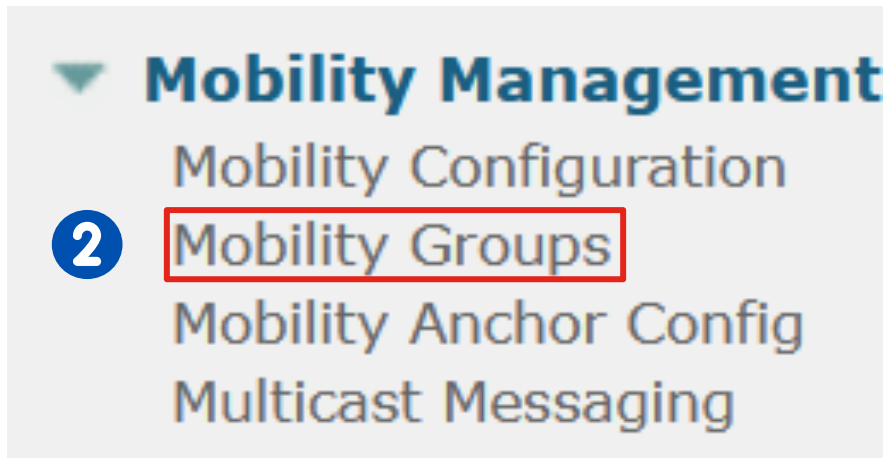
Mobility Tunnel between 9800 and AireOS



For AireOS:



1



New...

3

Basic Configuration

Mobility Tunnel between 9800 and AireOS

Configuration on 172.16.30.20 (9800)

Add Mobility Peer ✕

MAC Address*	<input type="text" value="0059.dcc3.d200"/>
Peer IPv4/IPv6 Address*	<input type="text" value="172.16.37.2"/>
Public IPv4/IPv6 Address	<input type="text" value="172.16.37.2"/>
Group Name*	<input type="text" value="default"/>
Data Link Encryption	<input type="checkbox"/> DISABLED
SSC Hash	<input type="text" value="Enter SSC Hash (must contain 40 characters)"/>

Configuration on 172.16.37.2 (AireOS)

Mobility Group Member > New

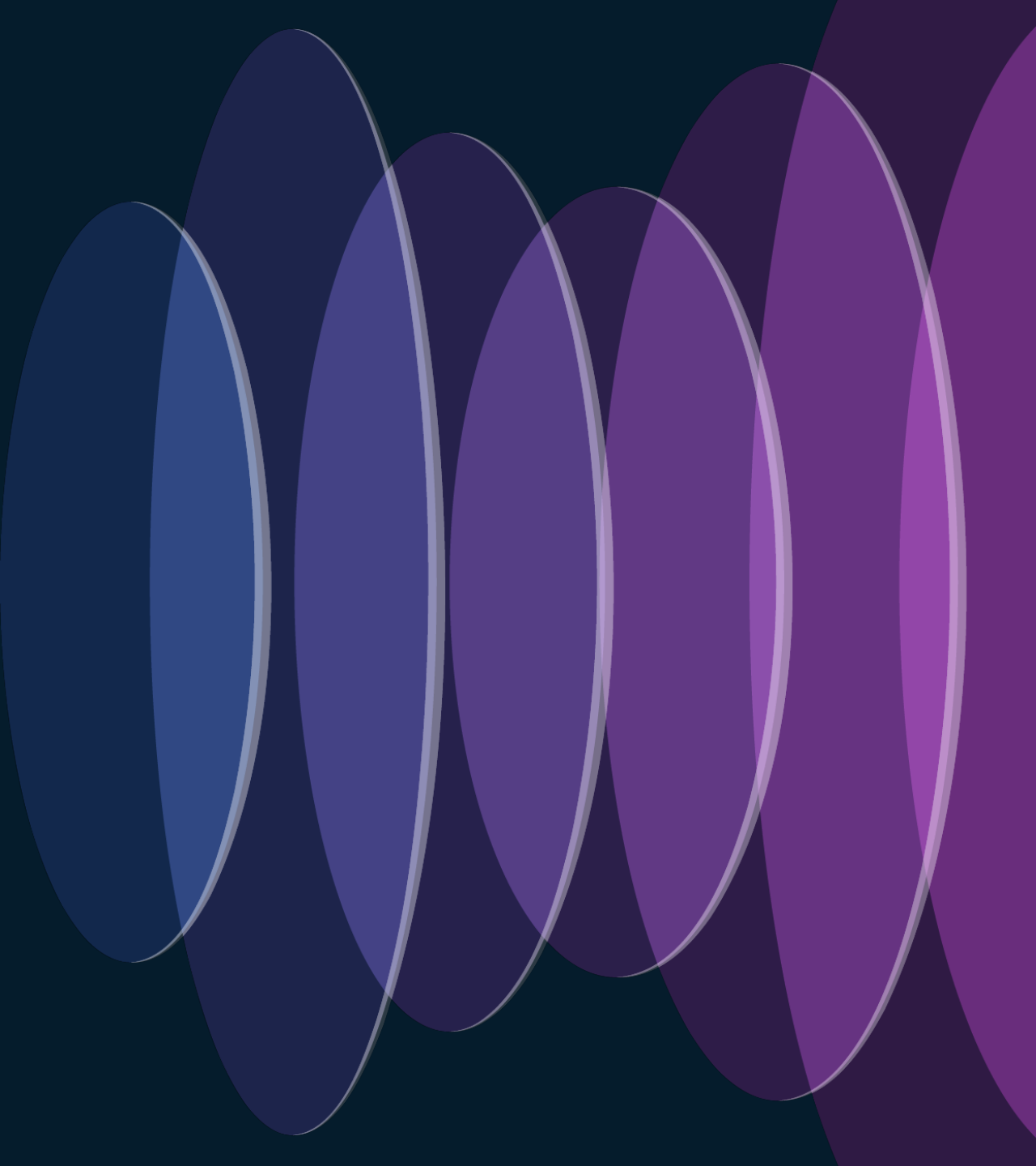
Member IP Address(Ipv4/Ipv6)	<input type="text" value="172.16.30.20"/>
Member MAC Address	<input type="text" value="d4:78:9b:3c:56:6b"/>
Group Name	<input type="text" value="default"/>
Secure Mobility	<input type="text" value="Enabled"/>
Data Tunnel Encryption	<input type="text" value="Disabled"/>
Hash	<input type="text" value="none"/>

1. Hash, Secure mobility and Data Tunnel Encryption are not supported for IPv6 members



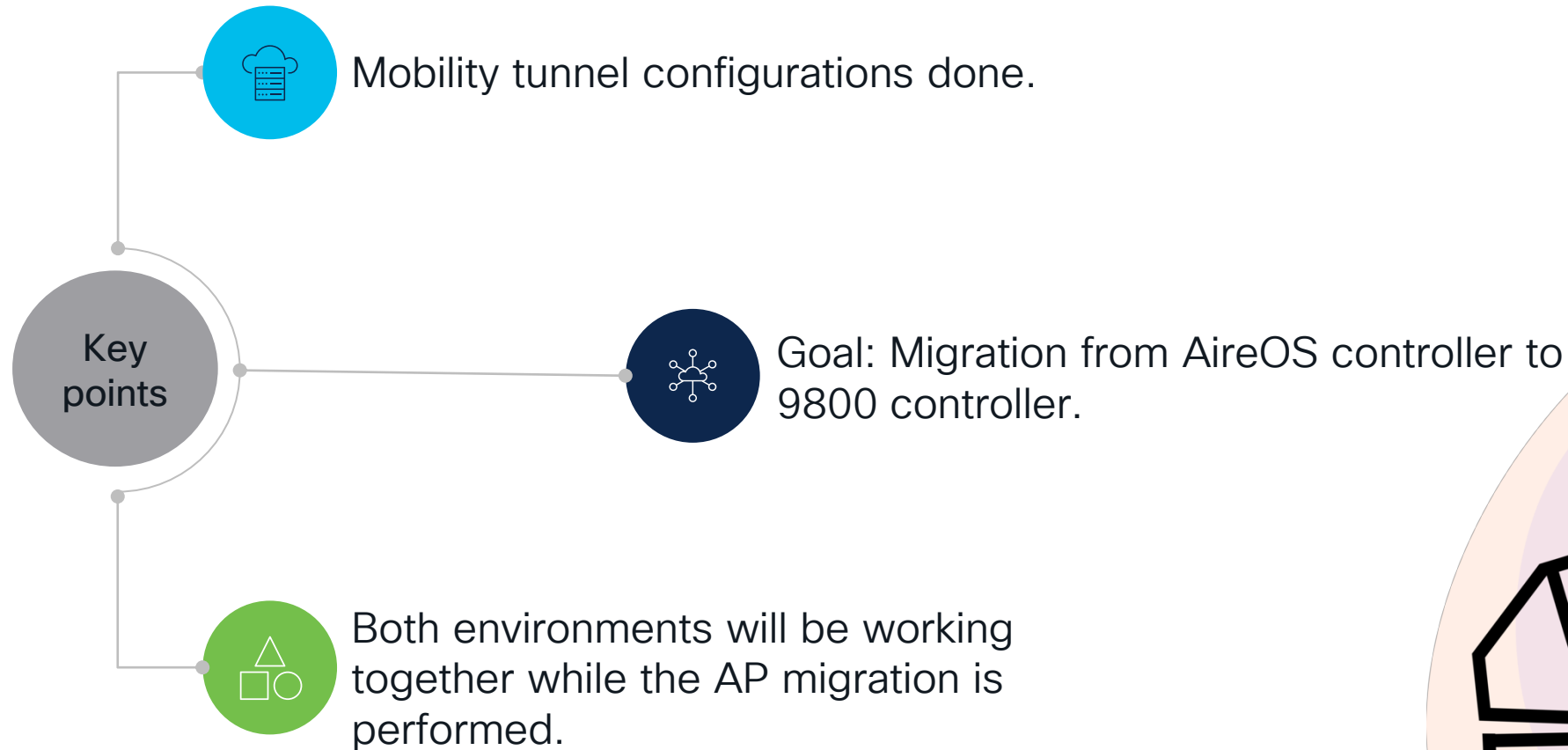
Note: Hash is only used when peer is 9800 Cloud Controller.

3. Problem Scenarios, Troubleshooting and Solutions



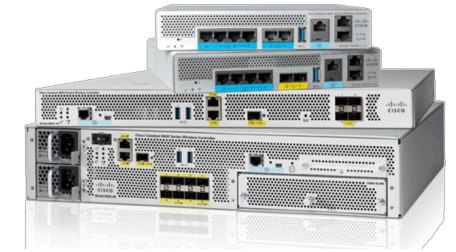
1. Problem Scenario

Mobility tunnel not coming up between AireOS and 9800



Check Tunnel Status in 9800

Mobility tunnel not coming up between AireOS and 9800



1

- Dashboard
- Monitoring >
- Configuration >
- Administration >
- Licensing
- Troubleshooting

2

- Wireless
 - Access Points
 - Advanced
 - Air Time Fairness
 - Fabric
 - Guest LAN
 - Hotspot/OpenRoaming
 - Media Stream
 - Mesh
 - Migrate to Meraki Management Mode
 - Mobility
 - Wireless Global

3

Global Configuration

Peer Configuration

MAC Address	IP Address	Public IP	Group Name	Multicast IPv4	Multicast IPv6	Status	PMTU	SSC Hash	Data Link Encryption
0059.dcc3.d200	172.16.37.2	↔ 172.16.37.2	RFWIRELESS	0.0.0.0	::	Control And Data Path Down ⚠️	1385		Disabled

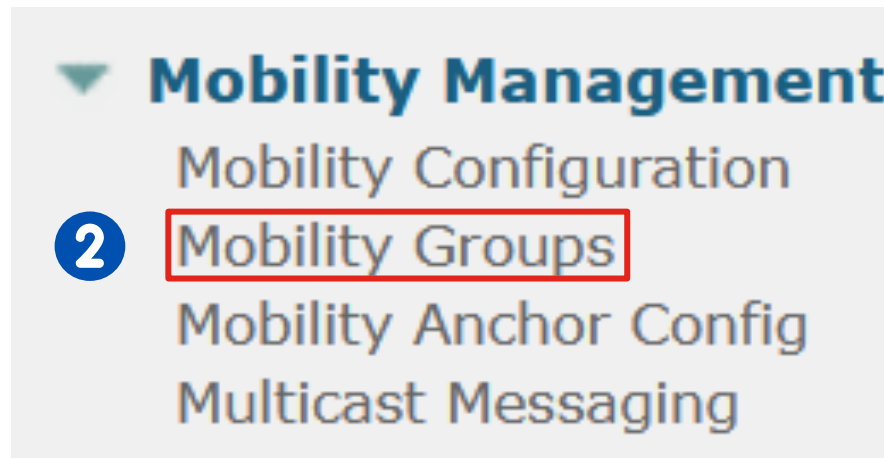
4

Check Tunnel Status in AireOS

Mobility tunnel not coming up between AireOS and 9800



1



2

MAC Address	IP Address(Ipv4/Ipv6)	Group Name	Multicast IP	Status	Hash Key	Secure Mobility Data Encryption
d4:78:9b:3c:56:6b	172.16.30.20	default	0.0.0.0	Control and Data Path Down	none	Enabled Disabled

3

Troubleshooting

Mobility tunnel not coming up between AireOS and 9800



- ✓ RadioActive traces and EPC on the 9800.
- ✓ Confirm the mobility ports are open (CAPWAP UDP 16666 and 16667).
- ✓ Verify the software version in use.
- ✓ Verify Management Certificates.



NOTE: We assume you know how to perform any type of packet capture!

The screenshot shows the 'Troubleshooting' menu with a search bar and a list of options: Dashboard, Monitoring, Configuration, Administration, Licensing, and Troubleshooting. The Troubleshooting section includes: Logs, Core Dump and System Report, Debug Bundle, Packet Capture (highlighted), Ping and Trace Route, and Radioactive Trace (highlighted). A note at the top right says 'Need help on what logs to collect for various scenarios?'.

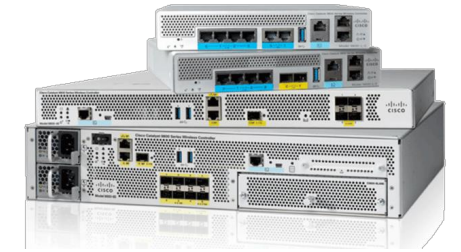
Troubleshooting > Radioactive Trace

Conditional Debug Global State: **Started**

+ Add × Delete ✓ Start ■ Stop

Verify Management Certificate

Mobility tunnel not coming up between AireOS and 9800



9800 CLI:

```
izamudio-9800#show crypto pki certificates
```

Certificate

Status: Available

Certificate Serial Number (hex): 02

Certificate Usage: General Purpose

Issuer:

o=Cisco Virtual Wireless LAN Controller

cn=CA-vWLC_izamudio-9800

Subject:

Name: izamudio-9800

Serial Number: 9BD83WK5DU0

serialNumber=9BD83WK5DU0+hostname=izamudio-9800

o=Cisco Virtual Wireless LAN Controller

cn=izamudio-9800_WLC_TP

Validity Date:

start date: 16:39:28 CST Apr 20 2023

end date: 16:39:24 CST Apr 19 2033

Associated Trustpoints: izamudio-9800_WLC_TP

Storage: nvram:CiscoVirtual#2.cer

Verify Management Certificate

Mobility tunnel not coming up between AireOS and 9800



AireOS CLI:

(Cisco Controller) >show certificate all

Certificate Name: Cisco SHA1 device cert

Subject Name :

C=US, ST=California, L=San Jose, O=Cisco Systems, CN=AIR-CT3504-K9-0059dcc3d200,
emailAddress=support@cisco.com

Issuer Name :

O=Cisco Systems, CN=Cisco Manufacturing CA

Serial Number (Hex):

16C3F62500000006240C

Validity :

Start : Sep 20 21:33:52 2017 GMT

End : Sep 20 21:43:52 2027 GMT

Signature Algorithm :

sha1WithRSAEncryption

Hash key :

SHA1 Fingerprint : ef:e1:3a:ce:94:9b:57:fc:b6:3b:b1:05:4e:68:4c:e5:1f:69:c0:27

SHA256 Fingerprint :

9b:19:74:d5:49:99:84:d4:e3:fd:1d:d3:b0:65:ef:77:ca:52:86:48:c8:dd:29:3c:dc:24:21:52:24:e3:f5:e5

Troubleshooting

Mobility tunnel not coming up between AireOS and 9800

9800 RA trace:

```
2024/05/09 21:03:53.250245907 {mobilityd_R0-0}{1}: [mm-client] [16207]: (ERR): Peer IP: 172.16.37.2 Peer Mobility NAT Entry Get:
Failed to get mobility nat cache record, error: No such file or directory.
2024/05/09 21:03:53.250246477 {mobilityd_R0-0}{1}: [mm-db] [16207]: (ERR): Peer IP: 172.16.37.2 Could not retrieve
mob_nat_peer_entry
2024/05/09 21:03:53.250246885 {mobilityd_R0-0}{1}: [mm-msg] [16207]: (ERR): Peer IP: 172.16.37.2 Port: 16666 Could not
retrieve peer private IP address
```

AireOS debug:

```
*mmMobility: May 09 14:58:30.443: Keepalive:Mobility Member 172.16.30.20 detected DOWN status 3, cleaning up client entries
*mmMobility: May 09 14:58:50.279 Keepalive:VALID:ETHOIP_OP_REQ:Sent
tp172.16.30.20:version=02:SeqNo=81:receiverStatusOnTransmitter=0
*mmMobility: May 09 14:58:50.279: mmUdpSendUnEncrypt Sending Non-encrypted mobility packet to peer: 172.16.30.20
```

AireOS is sending EoIP
instead of CAPWAP

Solution

Mobility tunnel not coming up between AireOS and 9800

Depending on the errors, we can:

- ✓ Match timers and retries on both platforms.
- ✓ Configure Mobility Mac for HA deployments.
- ✓ Add 9800-CL SSC Hash.
- ✓ Allow expired certificates on the 9800.
- ✓ Verify configuration to avoid typos.
- ✓ IRCM Platform compatibility.



Solution

Mobility tunnel not coming up between AireOS and 9800



How to configure timers and mobility mac on 9800?

1

- Dashboard
- Monitoring >
- Configuration** >
- Administration >
- Licensing
- Troubleshooting

2

- Wireless
- Access Points
- Advanced
- Air Time Fairness
- Fabric
- Guest LAN
- Hotspot/OpenRoaming
- Media Stream
- Mesh
- Migrate to Meraki Management Mode
- Mobility**
- Wireless Global

Global Configuration Peer Configuration

Mobility Group Name*	default
Multicast IPv4 Address	0.0.0.0
Multicast IPv6 Address	::
3 Keep Alive Interval (sec)*	10
Mobility Keep Alive Count*	3
Mobility DSCP Value*	48
4 Mobility MAC Address	d478.9b3c.566b
DTLS High Cipher Only*	<input type="checkbox"/> DISABLED

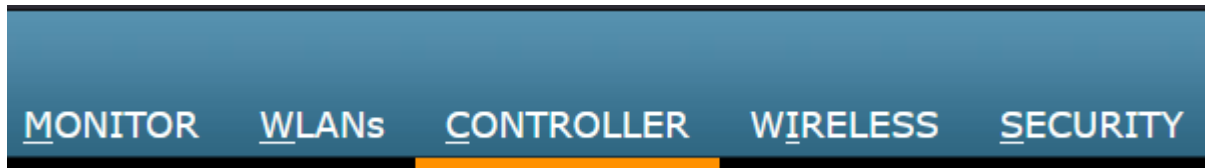
i

Solution

Mobility tunnel not coming up between AireOS and 9800

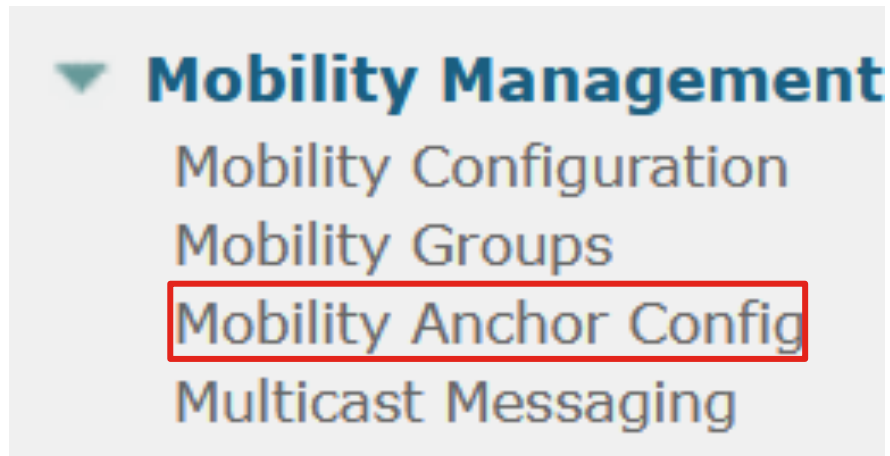


How to configure timers on AireOS?



1

2



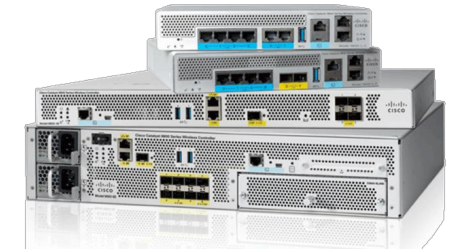
3

Mobility Anchor Config

Keep Alive Count	<input type="text" value="3"/>
Keep Alive Interval (1-30 seconds)	<input type="text" value="10"/>
Symmetric Mobility Tunneling mode	Enabled
DSCP Value	<input type="text" value="0"/>

Solution

Mobility tunnel not coming up between AireOS and 9800



Where is the SSC Hash of 9800?

1

- Dashboard
- Monitoring >
- Configuration >
- Administration >
- Licensing
- Troubleshooting

2

- Wireless
 - Access Points
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 - Guest LAN
 - Hotspot/OpenRoaming
 - Media Stream
 - Mesh
 - Migrate to Meraki Management Mode
 - Mobility

Global Configuration Peer Configuration

3

Mobility Peer Configuration

+ Add × Delete ↻

MAC Address	IP Address	Public IP	Group Name	Multicast IPv4	Multicast IPv6	Status	PMTU	SSC Hash
d478.9b3c.566b	172.16.30.20	N/A	default	0.0.0.0	::	N/A	N/A	0f6fed19b685a8ba148f53777d17a2525a144768



Solution

Mobility tunnel not coming up between AireOS and 9800

9800 RA trace:

```
2024/05/09 21:28:09.501738901 {mobilityd_R0-0}{1}: [mm-client] [16207]: (debug): MAC: 0059.dcc3.d200 Received  
keepalive_ctrl_req, sub type: 0 of XID (44839) from (ipv4: 172.16.37.2 )  
2024/05/09 21:28:09.501759757 {mobilityd_R0-0}{1}: [mm-dtls] [16207]: (debug): Peer IP: 172.16.37.2 Port: 16666, Local IP:  
172.16.30.20 Port: 16666 MM_KA_DTLS_START: Start DTLS connection of dgram type 0 for public peer ip 172.16.37.2  
2024/05/09 21:28:09.502006453 {mobilityd_R0-0}{1}: [mm-dtls] [16207]: (note): Peer IP: 172.16.37.2 Port: 16666, Local IP:  
172.16.30.20 Port: 16666 DTLS_CONNECT: DTLS connection initiated private IP address
```

AireOS debug:

```
*mmMobility: May 09 15:04:37.408: mmUdpSendUnEncrypt Sending Encrypted mobility packet to peer : 172.16.37.2  
*mmMobility: May 09 15:04:37.408: Keepalive:VALID:CAPWAP_OP_REQ: Sent to  
172.217.1.2:version=01:SeqNo=111231:receiverStatusOnTransmitter=0
```

Fixed by enabling Secure
Mobility in AireOS WLC

Solution

Mobility tunnel not coming up between AireOS and 9800

9800 GUI:

MAC Address	IP Address	Public IP	Group Name	Multicast IPv4	Multicast IPv6	Status	PMTU	SSC Hash	Data Link Encryption
0059.dcc3.d200	172.16.37.2	172.16.37.2	RFWIRELESS	0.0.0.0	::	Up	1385		Disabled



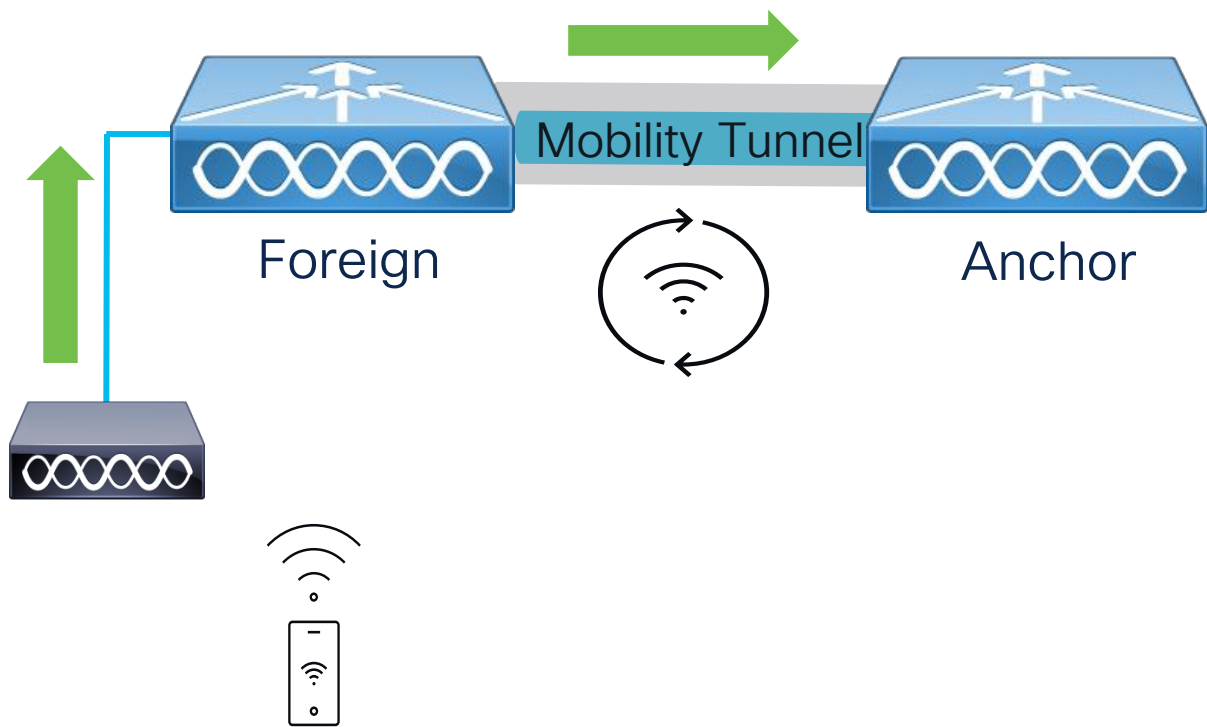
AireOS GUI:

Local Mobility Group RFWIRELESS

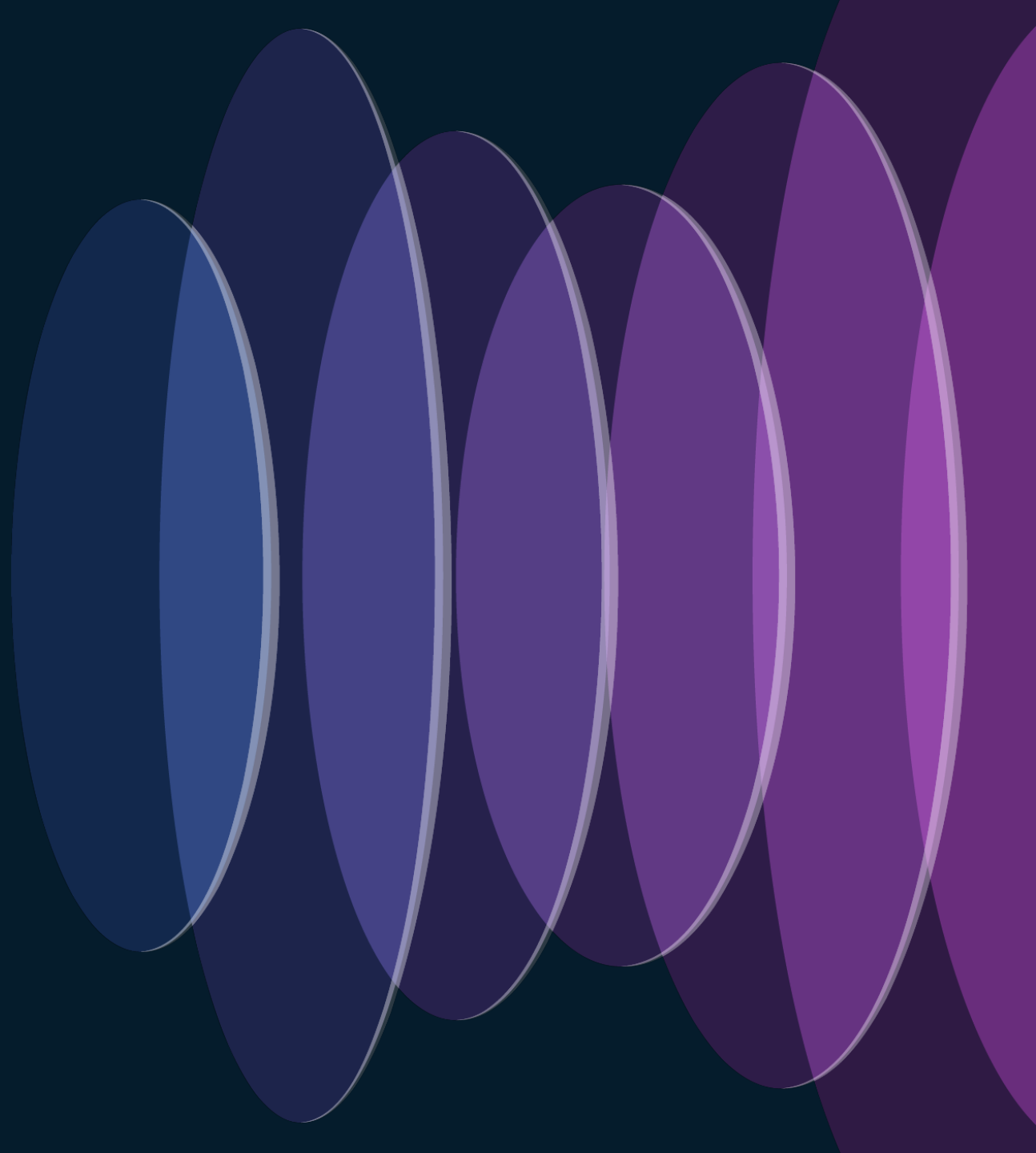
MAC Address	IP Address(Ipv4/Ipv6)	Group Name	Multicast IP	Status	Hash Key	Secure Mobility Data Encryption
d4:78:9b:3c:56:6b	172.16.30.20	default	0.0.0.0	Up	none	Enabled



What about the WLANs settings? What about L3 roaming and Guest anchor?



Guest Anchor Configuration



Guest Anchor Configuration

Requirements for Layer 3 Roaming and Guest Anchor

- WLAN Profile and SSID name on the AireOS must match WLAN Profile name and Policy Profile name on the 9800.

9800:

General Security Advanced Add To Policy

Profile Name*

SSID*

WLAN ID*

Status ENABLED

Broadcast SSID ENABLED

AireOS:

Profile Name

Type WLAN

SSID

Status Enabled

Guest Anchor Configuration

Requirements for Layer 3 Roaming and Guest Anchor

- AKMs and specific Advanced configurations related to roaming (11k,11r,11v, NAC state,etc) must match.

For 9800:

Fast Transition

Status

Over the DS

Reassociation Timeout *

Assisted Roaming (11k)

Prediction Optimization

Neighbor List

Dual Band Neighbor List

11v BSS Transition Support

Universal Admin

OKC

BSS Transition

Dual Neighbor List

BSS Max Idle Service

BSS Max Idle Protected

Directed Multicast Service

For AireOS:

Fast Transition

Fast Transition

11k

Neighbor List Enabled

Neighbor List Dual Band Enabled

11v BSS Transition Support

BSS Transition

Optimized Roaming Disassociation Timer(0 to 40 TBTT)

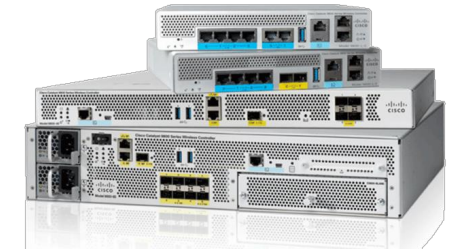
BSS Max Idle Service

Directed Multicast Service

Note: OKC is enabled in AireOS by default.

Guest Anchor Configuration

Requirements for Guest Anchor (9800 as Foreign)



Set AireOS WLC IP as Anchor under Mobility tab on the Policy Profile on the 9800 for the WLAN.

1

- Dashboard
- Monitoring
- Configuration**
- Administration
- Licensing
- Troubleshooting

2

- Tags & Profiles
 - AP Join
 - Calendar
 - EoGRE
 - Flex
 - Multi BSSID
 - Policy**
 - Power Profile
 - Remote LAN
 - RF/Radio
 - Tags
 - WLANs

Edit Policy Profile

⚠ Disabling a Policy or configuring it in 'Enabled' state, will result in loss of connectivity for clients associated with this Policy profile. There are anchors configured on the policy. Remove anchors before disabling Central Switching.

General Access Policies QoS and AVC **Mobility** Advanced

Mobility Anchors

Export Anchor

Static IP Mobility DISABLED

Adding Mobility Anchors will cause the enabled WLANs to momentarily disable and may result in loss of connectivity for some clients.

Drag and Drop/double click/click on the arrow to add/remove Anchors

Available (4)

Selected (1)

Anchor IP

Anchor IP

Anchor Priority

142.10.23.50

172.16.37.2

Primary (1)

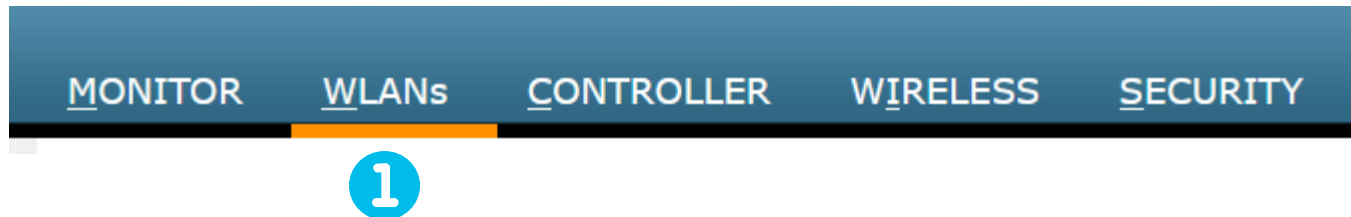
3

Guest Anchor Configuration

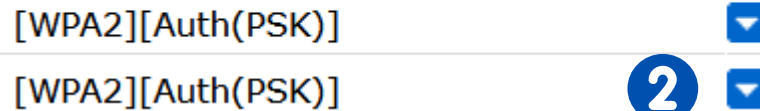
Requirements for Guest Anchor (AireOS as Anchor)



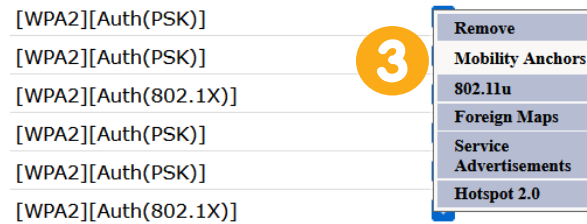
In the WLAN go to Mobility Anchors and set the option as Local for it to be configured as Anchor.



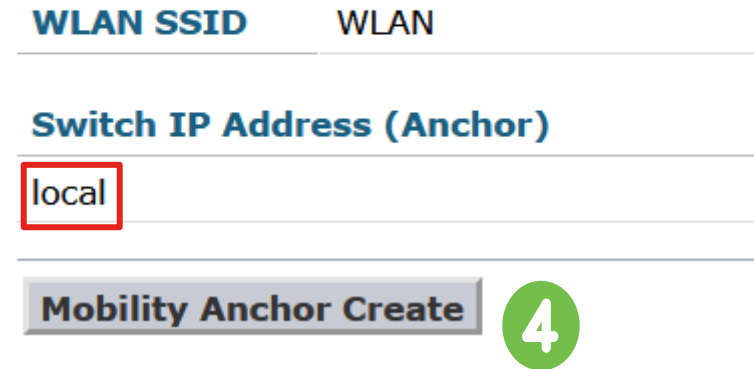
Security Policies



Security Policies



Mobility Anchors



Guest Anchor Configuration

Requirements for Guest Anchor (AireOS as Foreign)



Set the 9800 WLC IP Address on the Mobility Anchors settings

Switch IP Address (Anchor)

172.16.30.20

1

Priority ¹

1

Foot Notes

1. Priority number, 1=Highest priority and 3=Lowest priority(default).

2

Mobility Anchor Create

Mobility Anchors

WLAN SSID

WLAN

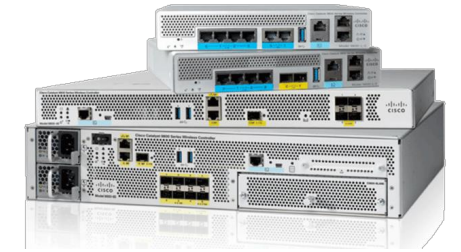
Switch IP Address (Anchor)

172.16.30.20

3

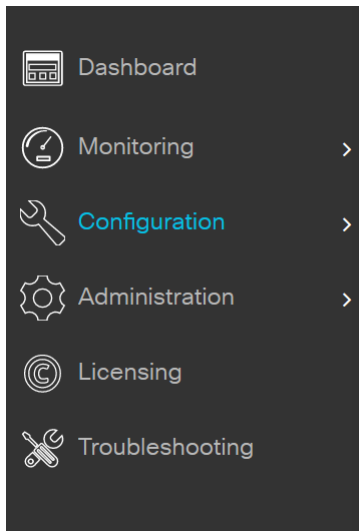
Guest Anchor Configuration

Requirements for Guest Anchor (9800 as Anchor)

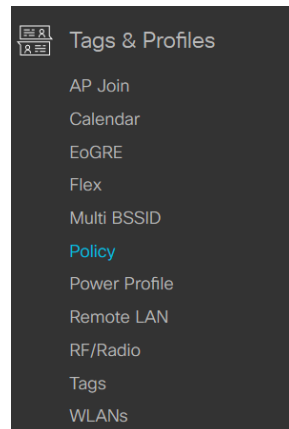


The Policy profile must be set as an Export Anchor for the WLAN.

1



2



General Access Policies QOS and AVC **Mobility** Advanced

Mobility Anchors

Export Anchor



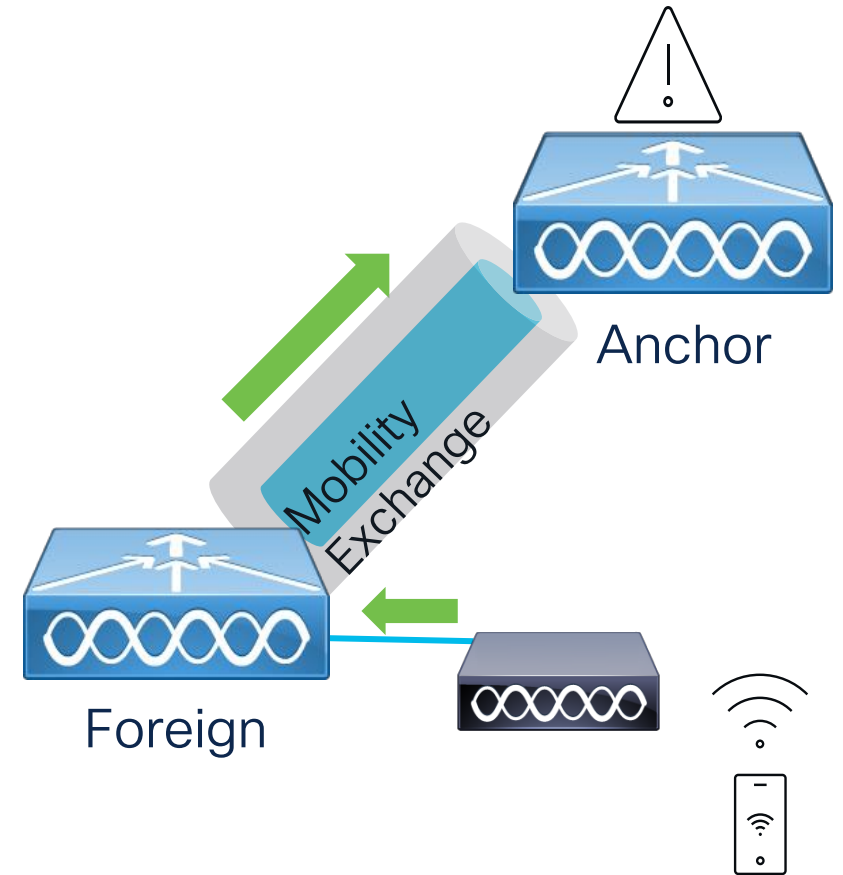
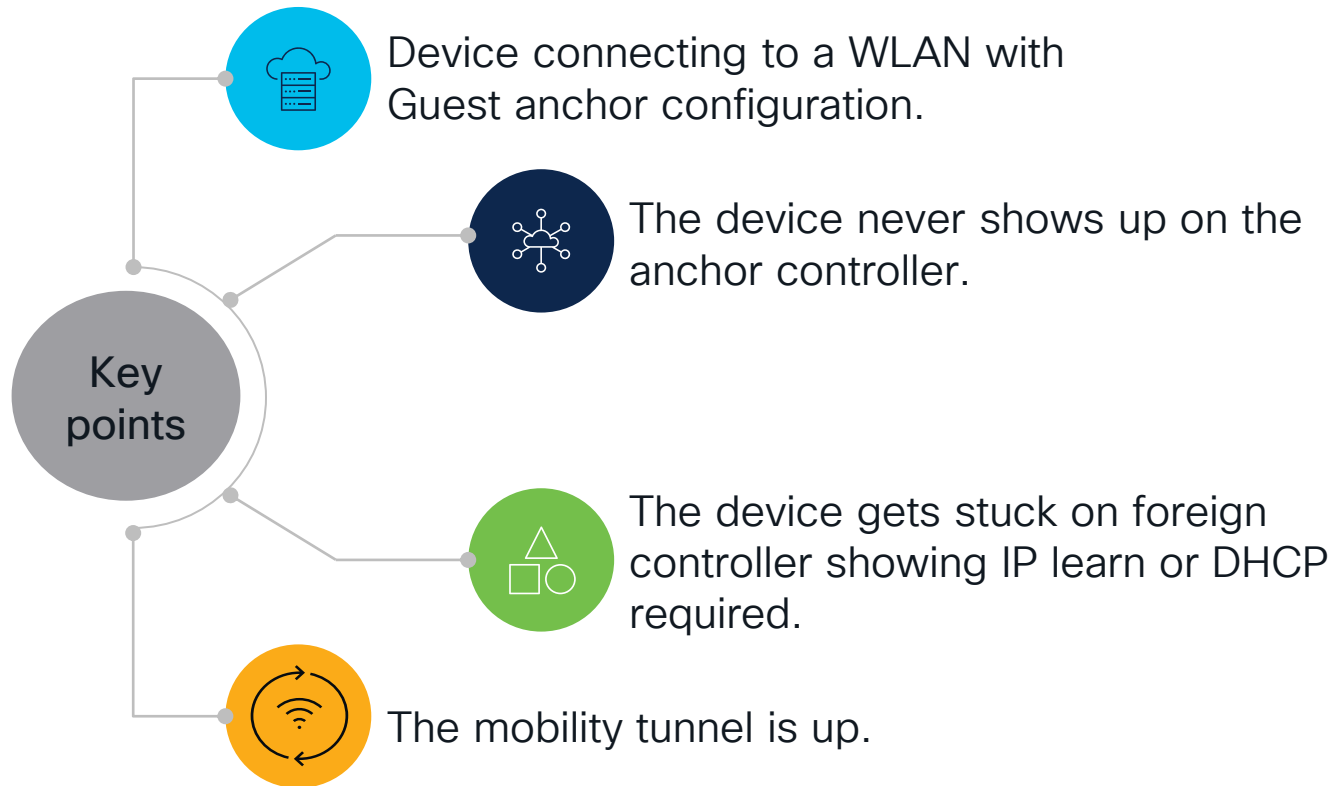
3

Static IP Mobility



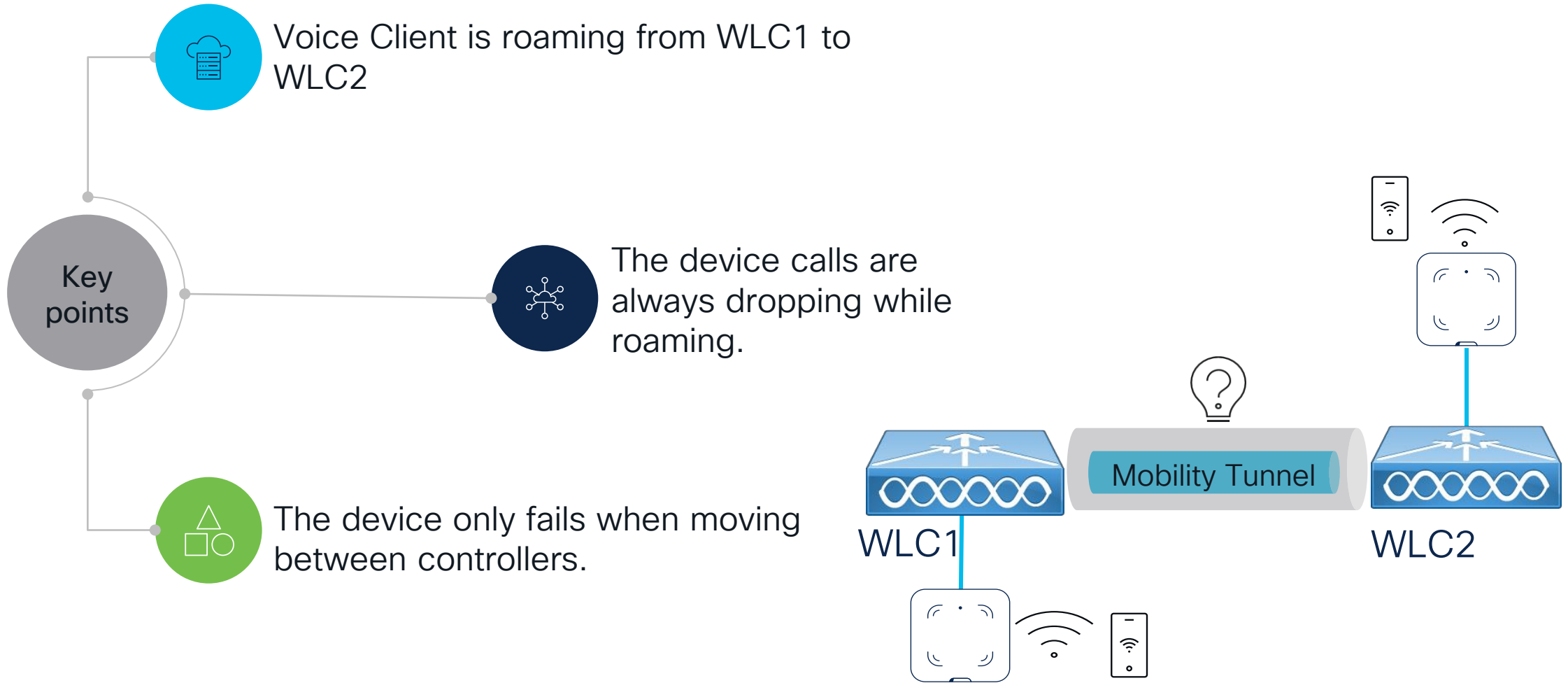
2a. Problem Scenario

Mobility errors/failures while setting guest anchor



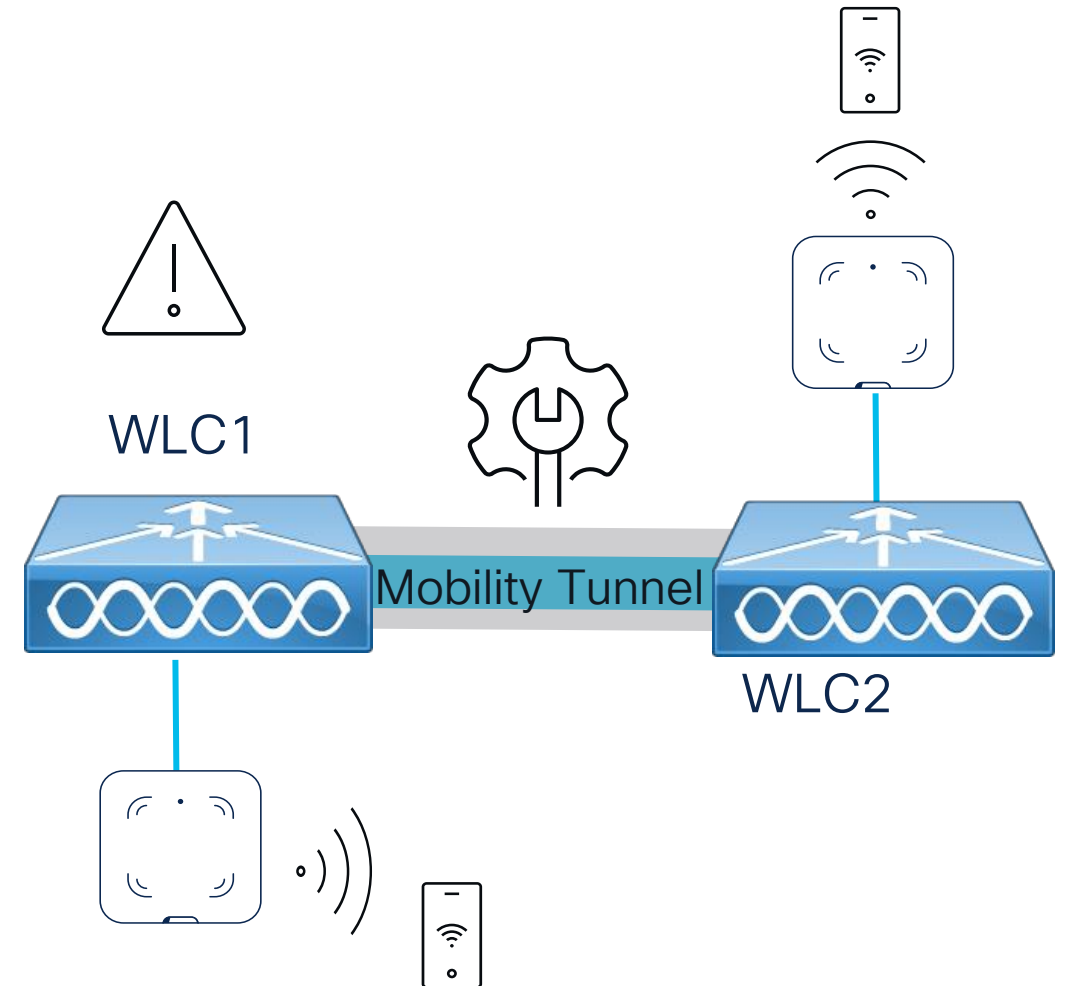
2b. Problem Scenario

Roaming incomplete when moving between AireOS and 9800 controllers



Troubleshooting

- ✓ Logs to collect:
 - ✓ Debug client on AireOS
 - ✓ RA trace on 9800
 - ✓ Controller syslog on 9800
- ✓ Looking for:
 - ✓ Mobility errors/failures/status
 - ✓ FT failures
 - ✓ Verify Additional AKMs in use



Troubleshooting

Mobility errors/failures for Guest anchor

Foreign controller times out the client handoff due to no response from peer

9800 RA trace:

```
2024/05/08 17:36:56.282918845 {mobilityd_R0-0}{1}: [mm-transition] [16207]: (info): MAC: 4629.f0ac.90b4 MMFSM transition: S_MC_WAIT_EXP_ANC_RSP -> S_MC_EXP_ANC_REQ_TIMEDOUT_PROCESSED_TR on E_MC_REQUEST_TIMEDOUT from WNCDC[0]
```

```
2024/05/08 17:36:56.282951361 {mobilityd_R0-0}{1}: [errmsg] [16207]: (info): %MM_LOG-6-MM_EXPORT_ANCHOR_FULL: R0/0: mobilityd: Export Anchor not responding, back off condition set (Client MAC: 46:29:f0:ac:90:b4, AnchorIP: IP: 172.16.37.2)
```

```
2024/05/08 17:36:56.282954901 {mobilityd_R0-0}{1}: [ewlc-infra-evq] [16207]: (ERR): Exp-MM: export_anchor_req: EXP_CLIENT_ANCHOR_TIMEOUT
```

9800 Logging:

```
*May 8 17:42:12.293: %MM_LOG-4-RETRIES_FAILED: Chassis 1 R0/0: mobilityd: MAC: 46:29:f0:ac:90:b4: All retries of export_anchor_req (XID: 103) to ipv4: 172.16.37.2 have been exhausted
```

```
*May 8 17:42:05.425: %MM_LOG-6-MM_EXPORT_ANCHOR_FULL: Chassis 1 R0/0: mobilityd: Export Anchor not responding, back off condition set (Client MAC: 46:29:f0:ac:90:b4, AnchorIP: IP: 172.16.37.2)
```

Troubleshooting

Mobility errors/failures for Guest anchor

AireOS debug client:

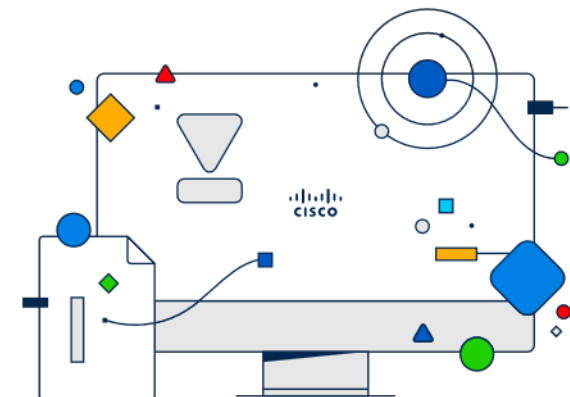
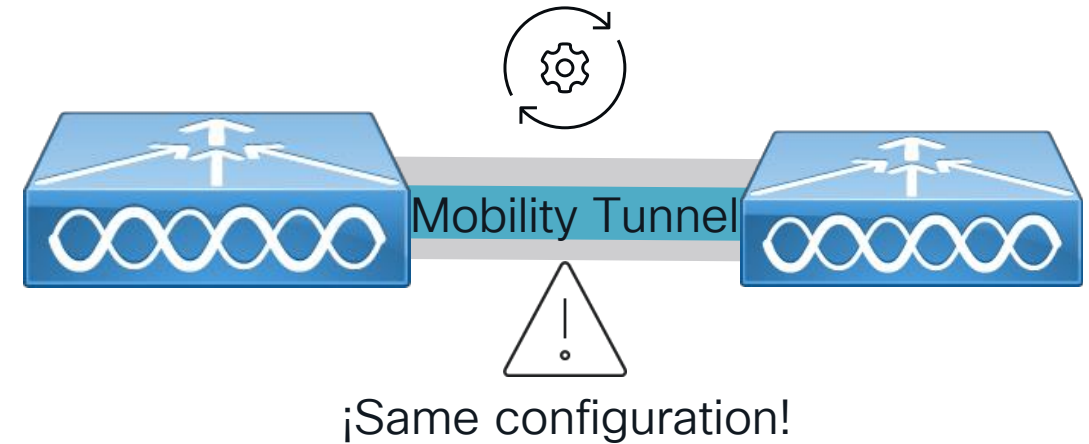
```
*Dot1x_NW_MsgTask_4: May 08 11:18:03.483: 46:29:f0:ac:90:b4 Received Handoff End request for client from 172.16.30.20
...
*Dot1x_NW_MsgTask_4: May 08 11:18:06.929: 46:29:f0:ac:90:b4 Anchor Export Request Recvd for mobile 46:29:f0:ac:90:b4 from
172.16.30.20 type : 16 subtype : 0 seq no : 0 xid : 93
*Dot1x_NW_MsgTask_4: May 08 11:18:06.929: 46:29:f0:ac:90:b4 mmAnchorExportRcv: Extracting mmPayloadExportForeignLradMac
...
*Dot1x_NW_MsgTask_4: May 08 11:18:06.929: 46:29:f0:ac:90:b4 mmAnchorExportRcv:, Mobility role is Unassoc
*Dot1x_NW_MsgTask_4: May 08 11:18:06.929: 46:29:f0:ac:90:b4 mmAnchorExportRcv Ssid=WLAN Security Policy=0x40006040
*Dot1x_NW_MsgTask_4: May 08 11:18:06.929: 46:29:f0:ac:90:b4 Scheduling deletion of Mobile Station: (callerId: 69) in 1 seconds
*osapiBsnTimer: May 08 11:18:07.837: 46:29:f0:ac:90:b4 aptMsExpireCallback (apt_ms.c:650) Expiring Mobile!
```

Anchor WLC deleting client due to missing configuration on AireOS mobility anchors.

Solution

Mobility errors/failures for Guest anchor

- ✓ It is usually related to misconfiguration from the policy profiles or the WLAN profile.
- ✓ Fix configuration based on the type of mobility failure/error.
- ✓ Ensure the right role was assigned on the policy profile on the 9800 WLC or WLAN mobility anchors on the AireOS.



Solution

Mobility errors/failures for Guest anchor

AireOS debug client:

```
*Dot1x_NW_MsgTask_4: May 08 11:19:01.591: 46:29:f0:ac:90:b4 Received Handoff End request for client from 172.16.30.20
...
*Dot1x_NW_MsgTask_4: May 08 11:27:06.215: 46:29:f0:ac:90:b4 Anchor Export Request Recvd for mobile 46:29:f0:ac:90:b4
from 172.16.30.20 type : 16 subtype : 0 seq no : 0 xid : 113
...
*Dot1x_NW_MsgTask_4: May 08 11:27:06.216: 46:29:f0:ac:90:b4 mmAnchorExportRcv:, Mobility role is Unassoc
*Dot1x_NW_MsgTask_4: May 08 11:27:06.216: 46:29:f0:ac:90:b4 mmAnchorExportRcv Ssid=WLAN Security Policy=0x40006000
*Dot1x_NW_MsgTask_4: May 08 11:27:06.216: 46:29:f0:ac:90:b4 mmAnchorExportRcv vapId= 12. Ssid=WLAN AnchorLocal=0x0
*Dot1x_NW_MsgTask_4: May 08 11:27:06.216: 46:29:f0:ac:90:b4 Applying Interface(izamudio-2664) policy on Mobile, role
Unassociated. Ms NAC State 2 Quarantine Vlan 0 Access Vlan 0
...
*Dot1x_NW_MsgTask_4: May 08 11:27:06.216: 46:29:f0:ac:90:b4 0.0.0.0 START (0) mobility role update request from
Unassociated to Export Anchor
Peer = 172.16.30.20, Old Anchor = 0.0.0.0, New Anchor = 172.16.37.2
*Dot1x_NW_MsgTask_4: May 08 11:27:06.216: 46:29:f0:ac:90:b4 mmAnchorExportRcv (mm_listen.c:7842) Changing state for
mobile 46:29:f0:ac:90:b4 on AP 00:00:00:00:00:00 from Idle to Associated
```

Controller adding the client after fixing role in Mobility Anchor configuration

Troubleshooting

Roaming incomplete when moving between AireOS and 9800 WLC

AireOS debug client:

```
*Dot1x_NW_MsgTask_6: May 09 14:06:08.258: a4:cf:99:48:4e:fe Mobile Announce recvd from 172.16.30.20
Vlan List payload not found, ignoring ...
*Dot1x_NW_MsgTask_6: May 09 14:06:09.258: a4:cf:99:48:4e:fe Mobile Announce recvd from 172.16.30.20
Vlan List payload not found, ignoring ...
*Dot1x_NW_MsgTask_6: May 09 14:06:09.258: a4:cf:99:48:4e:fe Mobile Announce recvd from 172.16.30.20
VNID payload not found...
*apfOpenDtlSocket: May 09 14:07:27.908: a4:cf:99:48:4e:fe Received management frame ASSOCIATION
REQUEST on BSSID f0:7f:06:e8:32:74 destination addr f0:7f:06:e8:32:74
...
```

Controller is not processing the announcement and creating a new association from scratch.

Troubleshooting

Roaming incomplete when moving between AireOS and 9800 WLC

9800 RA trace:

Controller detects configuration mismatch

2024/05/09 20:28:24.129156817 {mobilityd_R0-0}{1}: [mm-client] [16207]: (info): MAC: a4cf.9948.4efe Forwarding mobile announce, sub type: 0 of XID (44412) from (ipv4: 172.16.37.2) to (WNCD[0])

2024/05/09 20:28:24.129199643 {mobilityd_R0-0}{1}: [mm-client] [16207]: (debug): MAC: a4cf.9948.4efe Sending mobile_announce of XID (44412) to (WNCD[0])

2024/05/09 20:28:24.129430975 {wncd_x_R0-0}{1}: [mm-client] [15428]: (info): MAC: a4cf.9948.4efe Roam type changed - None -> L3 Forced

2024/05/09 20:28:24.129439727 {wncd_x_R0-0}{1}: [mm-client] [15428]: (info): MAC: a4cf.9948.4efe Sub Roam type changed - MM_SUB_ROAM_TYPE_NONE -> MM_SUB_ROAM_TYPE_INTER_CONTROLLER

2024/05/09 20:28:24.129469371 {wncd_x_R0-0}{1}: [client-orch-sm] [15428]: (ERR): Security Policy Mismatch, Local: [WPA/WPA2/WPA3 PSK], Remote: [WPA/WPA2/WPA3 NAC_POSTURE_REDIRECT PSK]

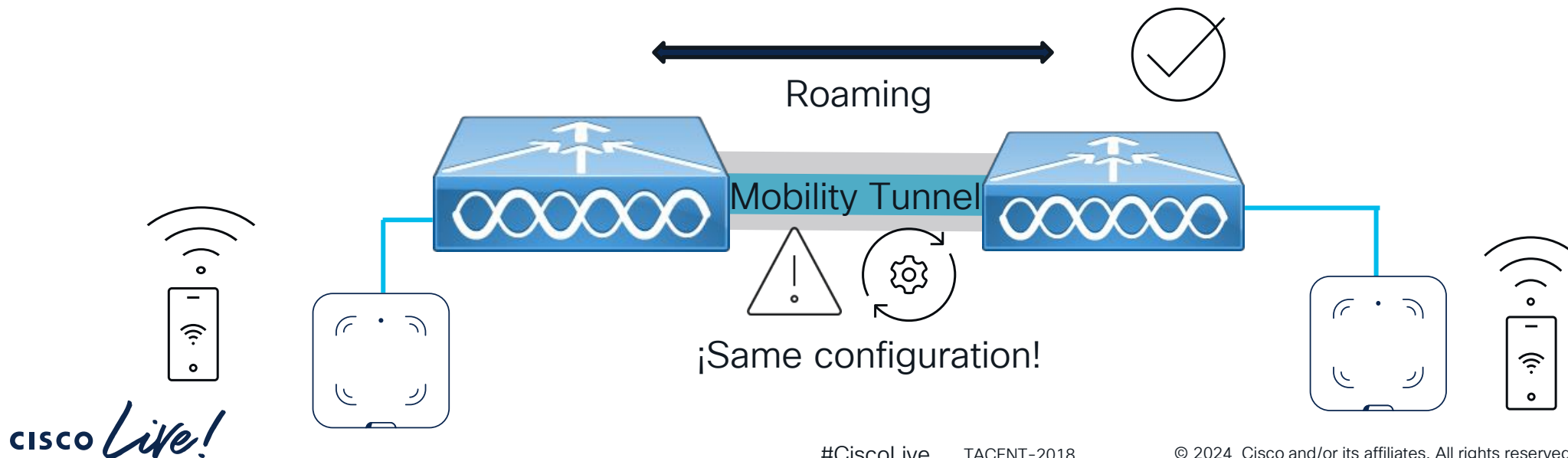
2024/05/09 20:28:24.129470007 {wncd_x_R0-0}{1}: [client-orch-sm] [15428]: (ERR): MAC: a4cf.9948.4efe Handoff Deny: Security Policy Mismatch ...

2024/05/09 20:28:24.129743025 {wncd_x_R0-0}{1}: [mm-client] [15428]: (debug): MAC: a4cf.9948.4efe Cannot handoff client, sending handoff failure. Subtype: MM_HANDOFF_SSID_MISMATCH

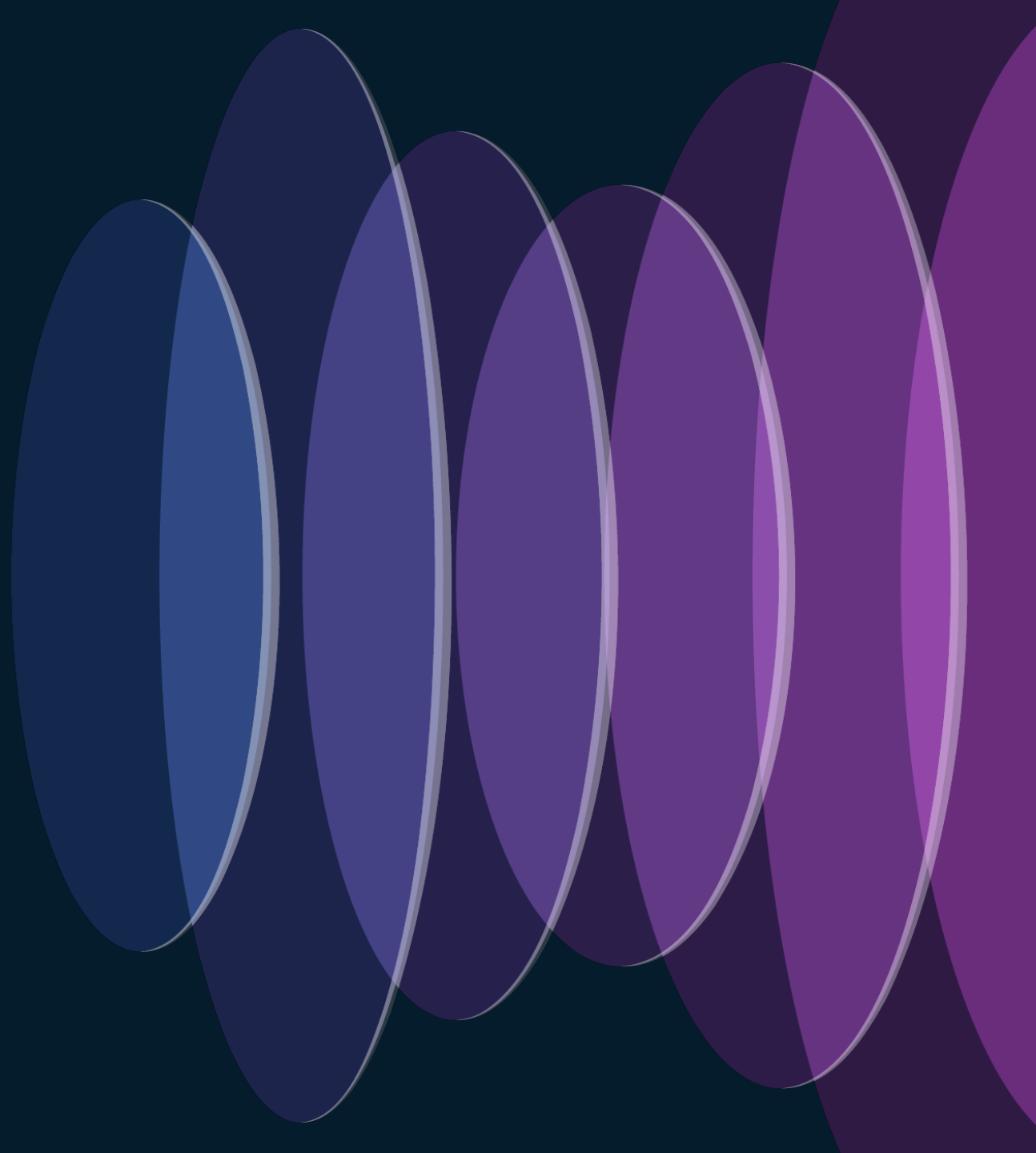
Solution

Roaming incomplete when moving between AireOS and 9800 WLC

- ✓ Match the AKMs in use.
- ✓ Verify client drivers and confirm client capabilities.
- ✓ Verify WLANs and Policy profiles as the configuration.
- ✓ Confirm Mobility tunnel status and mode.



4. To Keep in Mind

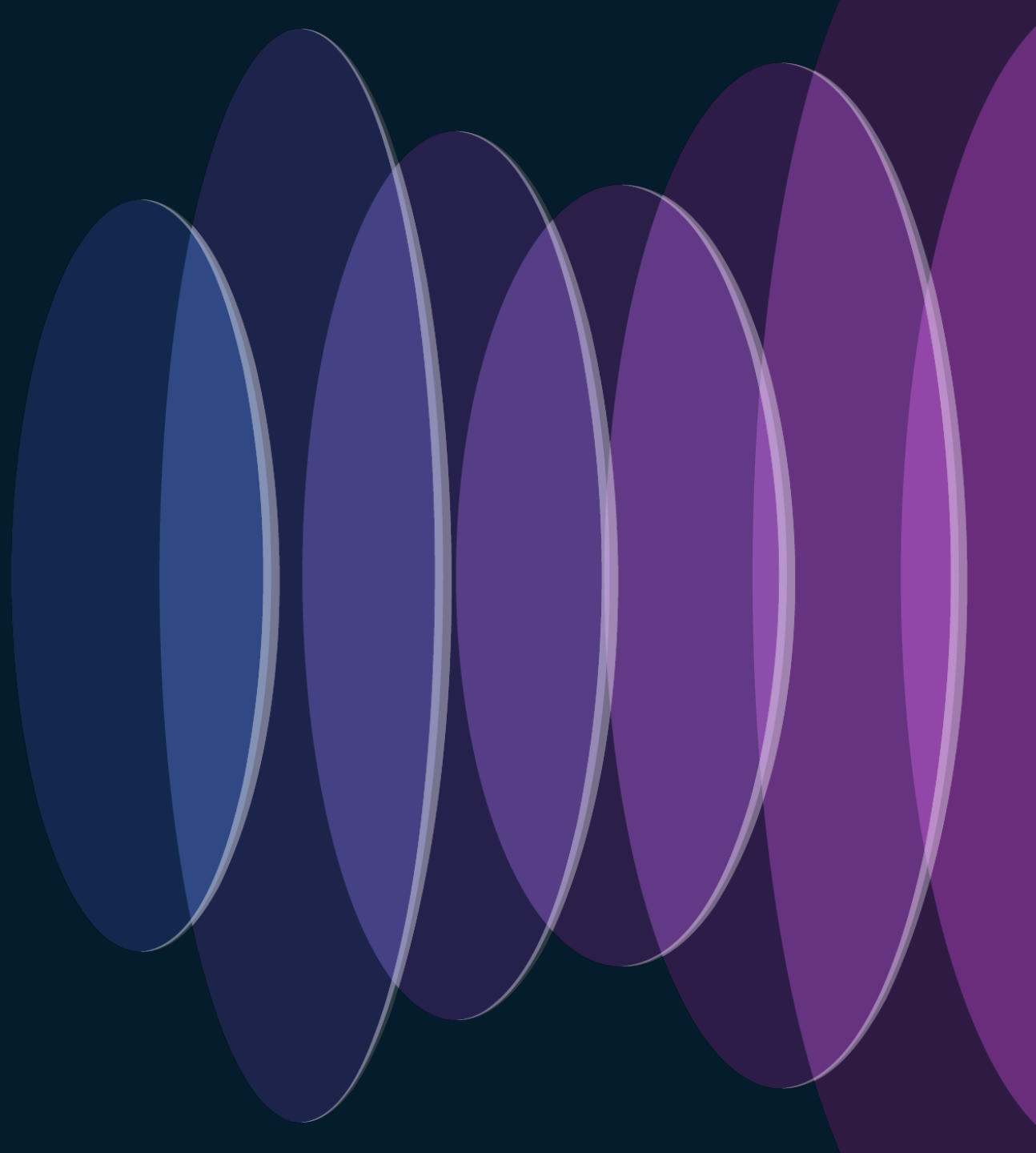


To Keep in Mind

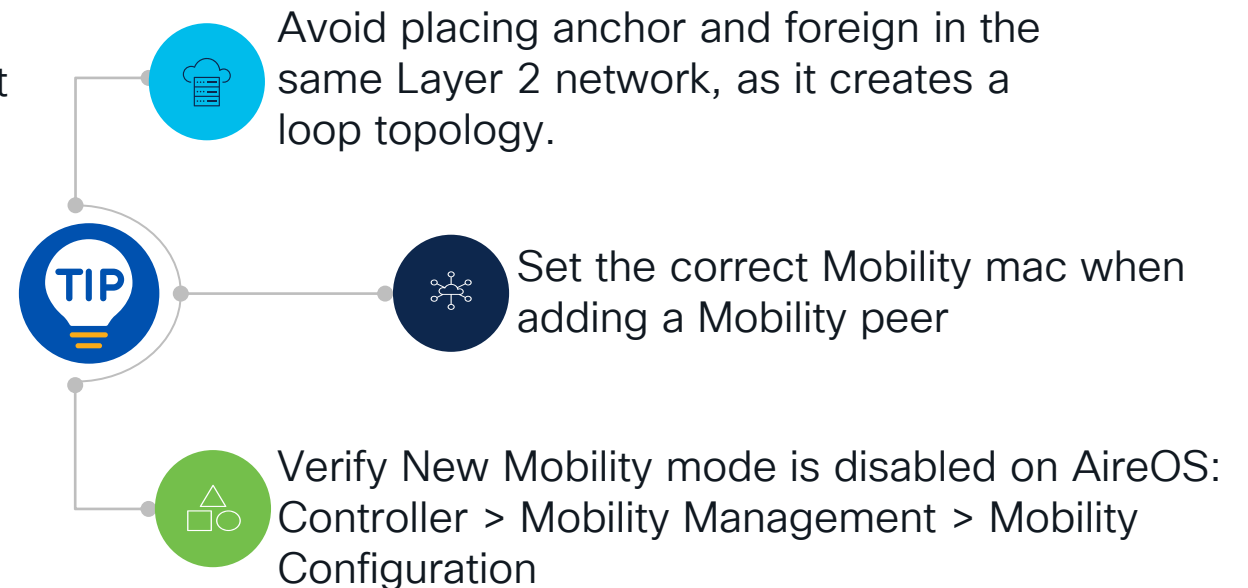
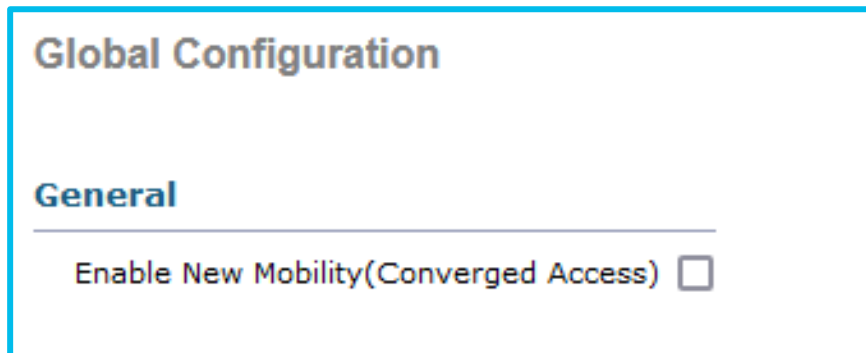
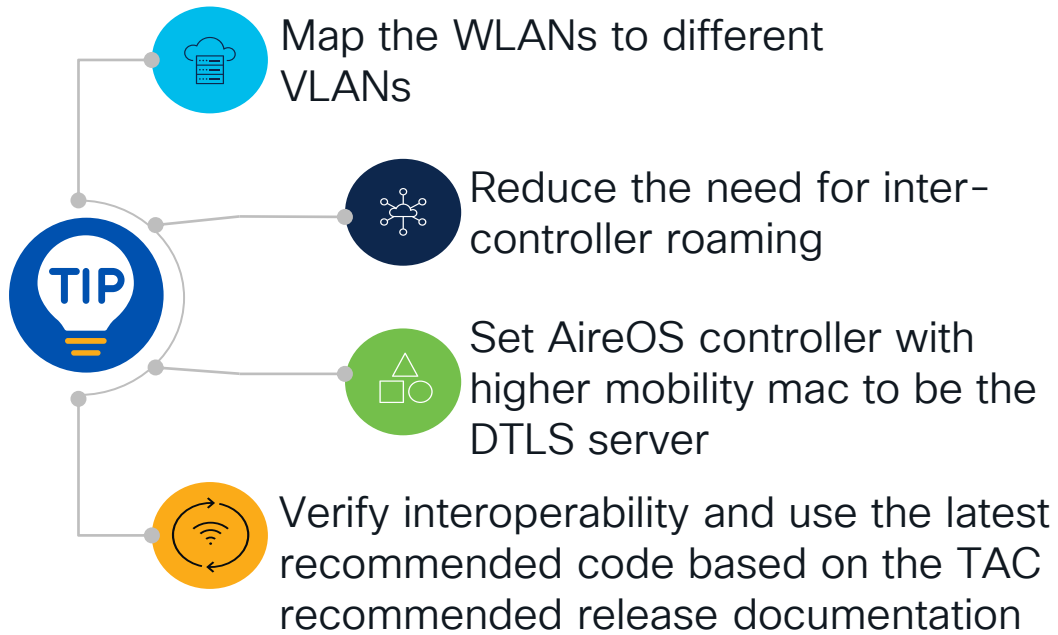


- ✓ Verify if your AireOS controller requires a special software
- ✓ IPv6 is supported for IRCM for non-fabric client roaming
- ✓ IPv6 Central Web Authentication (CWA) is not supported for IRCM
- ✓ Only eight IPv6 addresses are supported per client
- ✓ No static IP clients allowed
- ✓ Mobility group multicast is not supported
- ✓ Link-Local Bridging is not supported

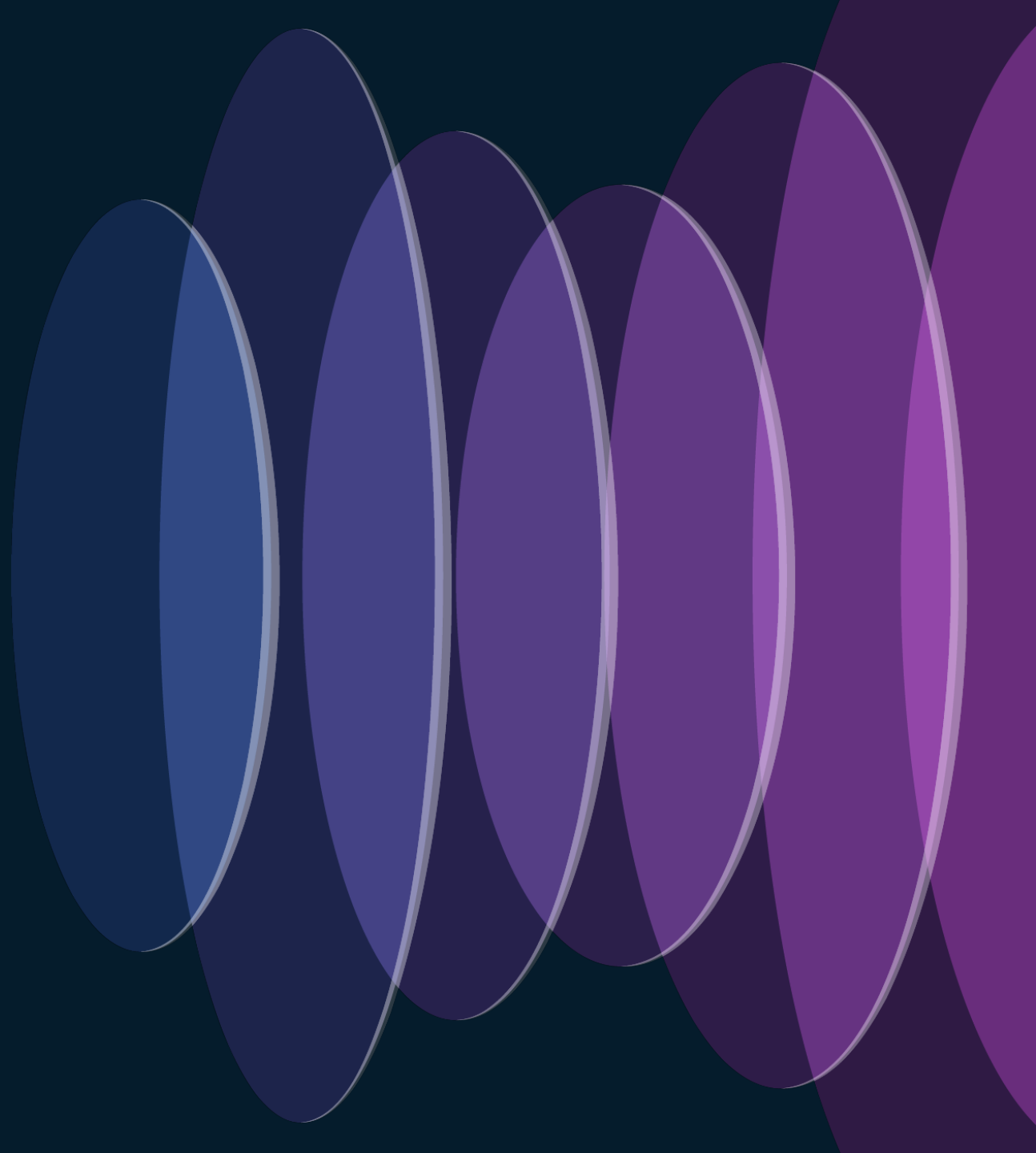
5. TAC Tips



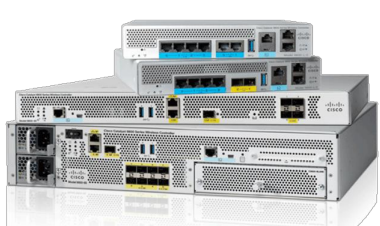
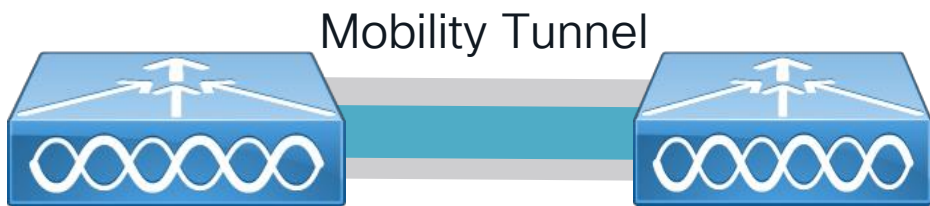
TAC Tips



6. Summary



Summary



- ✓ Configuration is important to match accross platforms
- ✓ C9800 controller logs a key point to troubleshoot any problem
- ✓ The equipment in use helps to define the right path to proceed with a migration

Continue your education

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Contact me at: katyator@cisco.com,
izamudio@cisco.com

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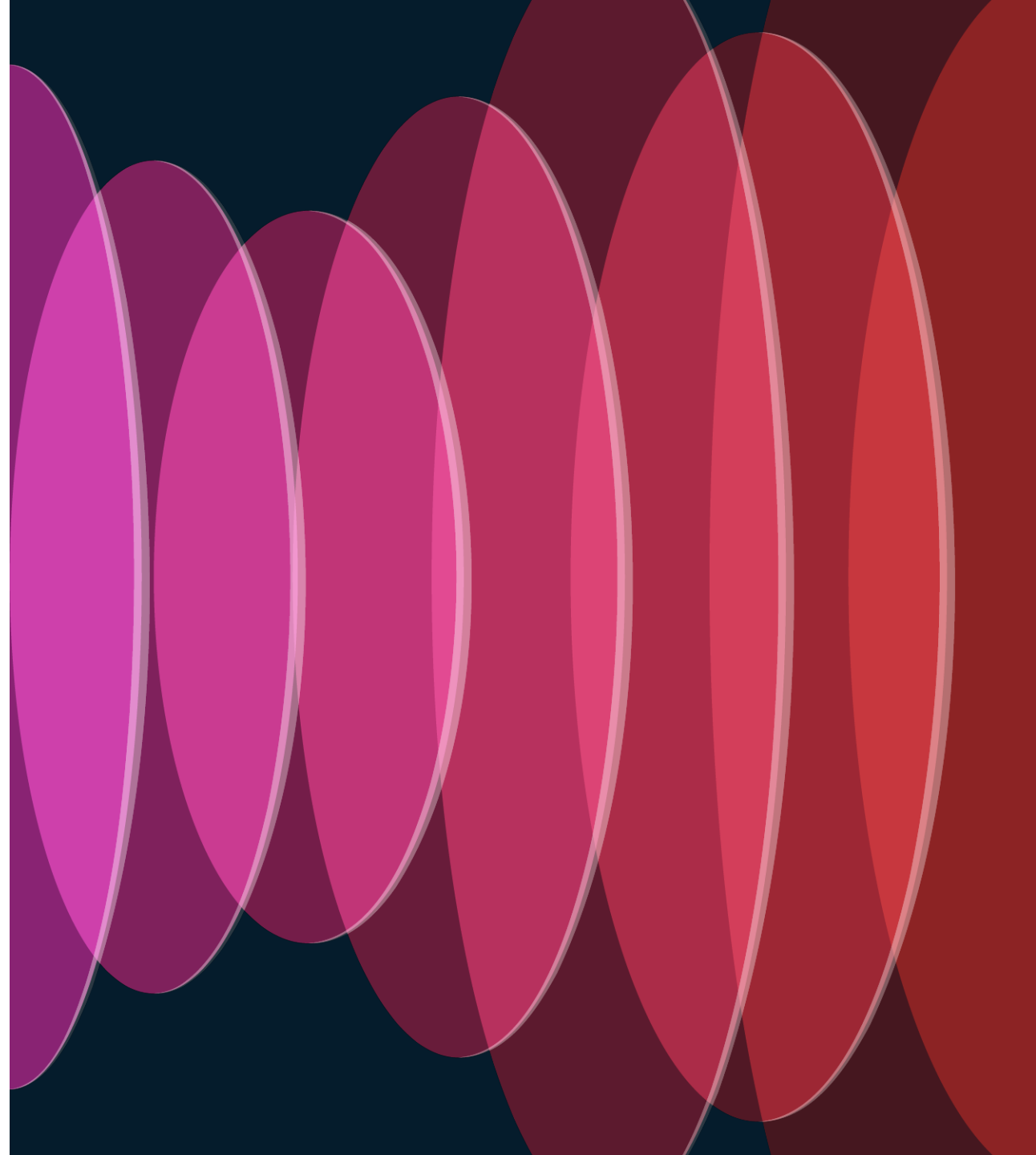


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The bridge to possible

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