

ليجمع يلع CWA قفدت مهف

تايوت حمل

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قمدم ل

CWA ل WLAN ككش ب لاصت ال دنع يئاهن ل ليمع ل قفدت دنتم سمل اذه فصي

قيساس أال تابل طتم ل

تابل طتم ل

ب: قيساس أ قفرعم كيدل نوكت نأب Cisco ي صوت

- Cisco نم 9800 Series (WLC) قكلس الال LAN ككش ي ف مكحتل اذحو
- (ISE) قيوه ل تامدخ كرحم يلع اهنيوكتو (CWA) قيزكرم ل بيولا ققداصل مل ماعل مهف ل

قمدمت سمل تانوك ل

قغيص زاهجو قيوه ل اذه يلع ققو و اذه ي قمو ل عم ل سس أ

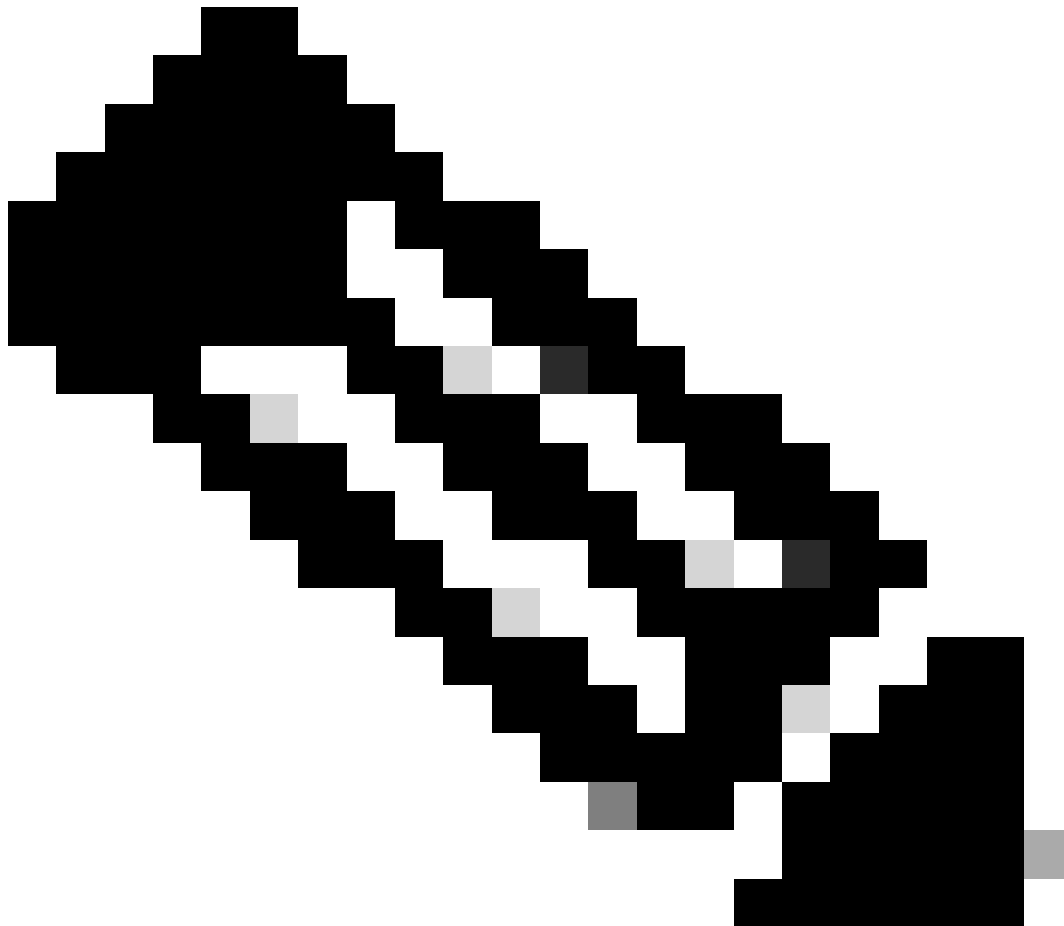
- 9800-CL WLC
- cisco ap 3802
- 9800 WLC Cisco IOS® XE v17.3.6
- Identity Service Engine (ISE) v3.1

قصاخ قيلمعم قئيب ي ف اذحو و مل ازه جال نم دنتم سمل اذه ي ف اذحو و مل ازه جال اءاشن ا م ت ت ناك اذ ا. (يضا رت ف ا) حوسمم نيوكت ب دنتم سمل اذه ي ف اذحو و مل ازه جال اءاشن ا م ت اذ ب رما يال لم ت حمل ل ري ثا ل ل كم هف نم دكا ت ف ، لي غش ت ل دي ق ككش ب

قيساس أ تامول عم

ةيحلحملا ةكبشلا يف مكحتلا رصنع ىلع هنيوكت نكمي SSID ةقداصم نم عون وه CWA مسا لاخداب لاصتالا لواحي يذلا يئاهنلا ليمعلا ةبلاطم متي شيح (WLC) ةيكلساللا ليمعلا قفدت متي ، راصتخابو . هيلإ مدقي بيو لخدم ىلإ هب ةصاخلا رورملا ةملاكومدختسملا (WLAN) ةيكلساللا ةيحلحملا ةكبشلاب لاصتالا نوكي امدنع يئاهنلا

1. هزاهج ىلع رهاظلا SSID فرع مبي يئاهنلا ليمعلا لصتي .
2. هب ةصاخلا دامتعالا تانايب لاخدإل بيولا ةباوب ىلإ يئاهنلا ليمعلا هيجوت ةداعإ متت .
3. اهلاخدإ مت يتلا دامتعالا تانايب عم ISE ةطساوب يئاهنلا ليمعلا ةقداصم متت .
4. تمت هنإ اللق (WLC) ةيكلساللا ةيحلحملا ةكبشلا يف مكحتلا رصنع ىلع ISE دري . ىلع بجي يتلا ةيفاضإلا تامسلا ضع ب ISE عفدي نأ نكمي . يئاهنلا ليمعلا ةقداصم (ACL) لوصولا يف مكحتلا مئاقو لثم) ةكبشلا ىلإ لوصولا دنع اهلاثما ليمعلا (ةدحمل)
5. ىلإ لوصولا ىلع لصحي اريخأو ، هتقداصم ةداعإو يئاهنلا ليمعلا نارثقا ةداعإ متت ةكبشلا



نوكي نيترم هتقداصم متت يذلا يئاهنلا ليمعلا نأ ةظحالم مهملا نم : ةظحالم يئاهنلا ليمعلا افافش

ىلإ يساسأ لكش ب لي م ع ل ا ه ب رم ي نأ ب ج ي ي ت ل ا ة ي س ا س أ ل ا ة ي ل م ع ل ا م ي س ق ت م ت ي و
درج م ب ا ه س ف ن ة ك ب ش ل ا ب ل ي م ع ل ا ن م ر خ أ ل ا ص ت ا و ، ISE م د ا خ ي ل ا ل ي م ع ل ا ن م ل ا ص ت ا : ن ي ت ي ل م ع
ل و ك و ت و ر ب ل ا ل خ ن م ض ع ب ل ا ا ه ض ع ب ع م ا م ئ ا د ISE ر ا ي ع م و م ك ح ت ل ا ة د ح و ل ص ا و ت ت . ه ت ق د ا ص م
RADIUS. (EPC) م ز ح ل ا ط ا ق ت ل ا ل ا ة ج م د م ة ز ي م و (RA) ع ش م ع ب ت ت ل ق م ع ت م ل ي ل ح ت ، ا ن ا د ا .

م ر ا س م (RA) ي ع ا ع ش ا ل ا ع ب ت ت ل ا - CWA

ة ي ل م ع ل ا ض ر ع ي و ه و . ن ي ع م ل ي م ع ل ا ه ط ا ق ت ل ا م ت ي ت ل ا ت ا ل ج س ل ا ن م ة و م ج م و ه RA ع ب ت ت
ي ه ا م ع ت ا م و ل ع م ل ا ن م د ي ز م ل . WLAN ة ك ب ش ب ل ا ص ت ا ل ا ا ن ث ا ل ي م ع ل ا ا ه ب ر م ي ي ت ل ا ة ل م ا ك ل ل
ع ي م ج ت و ة ي ك ل س ل ل ا ل ا ا ط ا خ ا ل ا ح ي ح ص ت م ه ف ة ر ا ي ز ي ج ر ي ، RA ر ا ث ا د ا د ر ت س ا ة ي ف ي ك و ه ي ل ع
[Catalyst 9800 ة ي ك ل س ل ل ا ل ا ة ي ل ح م ل ا ة ك ب ش ل ا ي ف م ك ح ت ل ا ت ا د ح و ي ل ع ل ج س ل ل ا](#)

ISE م د ا خ ي ل ا ل ي م ع : ل و ا ل ا ل ا ص ت ا ل ا

ا ذ ا ة ك ب ش ل ا ب ل ا ص ت ا ل ا ب (WLC) ة ي ك ل س ل ل ا ل ا ة ي ل ح م ل ا ة ك ب ش ل ا ي ف م ك ح ت ل ا ر ص ن ع ح م س ت ا ل
ISE ل ب ق ن م ا ل و خ م ل ي م ع ل ا ن ك ي م ل .

WLAN ة ك ب ش ب ط ا ب ت ر ا ل ا

ي ف ل ي م ع ل ا ة ب غ ر ن ع (WLC) ة ي ك ل س ل ل ا ل ا ة ي ل ح م ل ا ة ك ب ش ل ا ي ف م ك ح ت ل ا ر ص ن ع ف ش ك ت
م ت ي و "cwa-policy-profile" ج ه ن ل ا ف ي ر ع ت ف ل م ب ا ه ط ب ر م ت ي ت ل ا ، "cwa" WLAN ة ك ب ش ب ن ا ر ت ق ا ل ا
"BC-3802" ل و ص و ل ا ة ط ق ن ب ل ا ص ت ا ل ا

<#root>

[client-orch-sm] [17558]: (note): MAC: 4203.9522.e682

Association received.

BSSID dc8c.37d0.83af,

WLAN cwa

, Slot 1 AP dc8c.37d0.83a0, BC-3802

[client-orch-sm] [17558]: (debug): MAC: 4203.9522.e682 Received Dot11 association request. Processing s

SSID: cwa

,

Policy profile: cwa-policy-profile

,

AP Name: BC-3802

, Ap Mac Address: dc8c.37d0.83a0 BSSID MAC0000.0000.0000 wlan ID: 1RSSI: -46, SNR: 40

[client-orch-state] [17558]: (note): MAC: 4203.9522.e682 Client state transition:

s_CO_INIT -> s_CO_ASSOCIATING

[dot11-validate] [17558]: (info): MAC: 4203.9522.e682 WiFi direct: Dot11 validate P2P IE. P2P IE not pr

MAC Address

ISE Internal State

نمط ارتباط الـ WLC (WLC) الذي يحمل الـ MAC (MAC) الذي صرنا نستخدمه، ليتم العمل على اتصالات الـ MAC التي لم يتم العمل على الـ MAC من قِبل الـ WLC. الـ MAC الذي صرنا نستخدمه، ليتم العمل على اتصالات الـ MAC التي لم يتم العمل على الـ MAC من قِبل الـ WLC.

<#root>

[dot11] [17558]: (info): MAC: 4203.9522.e682 DOT11 state transition:

S_DOT11_INIT -> S_DOT11_MAB_PENDING <-- The WLC is waiting for ISE to authenticate the user. It does not

[client-orch-state] [17558]: (note): MAC: 4203.9522.e682 Client state transition: S_CO_ASSOCIATING -> S

[client-auth] [17558]: (note): MAC: 4203.9522.e682 MAB Authentication initiated.

Policy VLAN 0, AAA override = 1, NAC = 1 <-- no VLAN is assigned as ISE can do that

[sanet-shim-translate] [17558]: (ERR): 4203.9522.e682 wlan_profile Not Found : Device information attri

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] Session Start event called from SANET-SHIM

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] Wireless session sequence, create context

[auth-mgr-feat_wireless] [17558]: (info): [4203.9522.e682:capwap_90000005] -

authc_list: cwa_authz <-- Authentication method list used

[auth-mgr-feat_wireless] [17558]: (info): [4203.9522.e682:capwap_90000005] - authz_list: Not present un

[client-auth] [17558]: (info): MAC: 4203.9522.e682 Client auth-interface state transition: S_AUTHIF_INI

[auth-mgr] [17558]: (info): [4203.9522.e682:unknown] auth mgr attr change notification is received for .

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] auth mgr attr change notification is recei

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] auth mgr attr change notification is recei

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] auth mgr attr change notification is recei

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] Retrieved Client IIF ID 0x530002f1

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] Allocated audit session id 0E1E140A0000000

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] Applying policy for WlanId: 1, bssid : dc8

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] Wlan vlan-id from bssid hd1 0

[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] SM Reauth Plugin: Received valid timeout=

[mab] [17558]: (info): [4203.9522.e682:capwap_90000005]

MAB authentication started for 4203.9522.e682

[client-auth] [17558]: (info): MAC: 4203.9522.e682 Client auth-interface state transition: S_AUTHIF_AWA

[ewlc-infra-evq] [17558]: (note): Authentication Success. Resolved Policy bitmap:11 for client 4203.952

[client-auth] [17558]: (info): MAC: 4203.9522.e682 Client auth-interface state transition: S_AUTHIF_MAB

[mab] [17558]: (info): [4203.9522.e682:capwap_90000005] Received event '

MAB_CONTINUE

' on handle 0x8A000002

<-- ISE server connectivity has been tested, the WLC is about to send the MAC address to ISE

[caaa-author] [17558]: (info): [CAAA:AUTHOR:92000002] DEBUG: mlist=cwa_authz for type=1

WLC إلى ابلط لسري ISE

نأ ديري نأ نوبزلنا نم MAC ناو نع لىع يوتحي ISE إلى طبر ببلط WLC RADIUS ل لسري
WLAN إلى قدصي.

```
<#root>
```

```
[radius] [17558]: (info): RADIUS: Send
```

```
Access-Request
```

```
to
```

```
<ise-ip-addr>:1812
```

```
id 0/
```

```
28
```

```
, len 415
```

```
<-- The packet is traveling via RADIUS port 1812. The "28" is the session ID and it is unique for every
```

```
[radius] [17558]: (info): RADIUS: authenticator e7 85 1b 08 31 58 ee 91 - 17 46 82 79 7d 3b c4 30
```

```
[radius] [17558]: (info): RADIUS: User-Name [1] 14 "
```

```
42039522e682
```

```
"
```

```
<-- MAC address that is attempting to authenticate
```

```
[radius] [17558]: (info): RADIUS: User-Password [2] 18 *
```

```
[radius] [17558]: (info): RADIUS: Cisco AVpair [1] 25 "
```

```
service-type=Call Check
```

```
"
```

```
<-- This indicates a MAC filtering process
```

```
[radius] [17558]: (info): RADIUS: Framed-MTU [12] 6 1485
```

```
[radius] [17558]: (info): RADIUS: Message-Authenticator[80] 18 ...
```

```
[radius] [17558]: (info): RADIUS: EAP-Key-Name [102] 2 *
```

```
[radius] [17558]: (info): RADIUS: Cisco AVpair [1] 43 "audit-session-id=0E1E140A0000000C8E2
```

```
[radius] [17558]: (info): RADIUS: Cisco AVpair [1] 12 "
```

```
method=mab
```

```
"
```

```
<-- Controller sends an AVpair with MAB method
```

```
[radius] [17558]: (info): RADIUS: Cisco AVpair [1] 26 "client-iif-id=1392509681"
```

```
[radius] [17558]: (info): RADIUS: Cisco AVpair [1] 14 "vlan-id=1000"
```

```
[radius] [17558]: (info): RADIUS: NAS-IP-Address [4] 6
```

```
<wmi-ip-addr> <-- WLC WMI IP address
```

```
[radius] [17558]: (info): RADIUS: NAS-Port-Id [87] 17 "capwap_90000005"
```

```
[radius] [17558]: (info): RADIUS: NAS-Port-Type [61] 6 802.11 wireless [19]
[radius] [17558]: (info): RADIUS: Cisco AVpair [1] 30 "
```

```
cisco-wlan-ssid=cwa
```

```
"
```

```
<-- SSID and WLAN the client is attempting to connect
```

```
[radius] [17558]: (info): RADIUS: Cisco AVpair [1] 32 "
```

```
wlan-profile-name=cwa
```

```
"
```

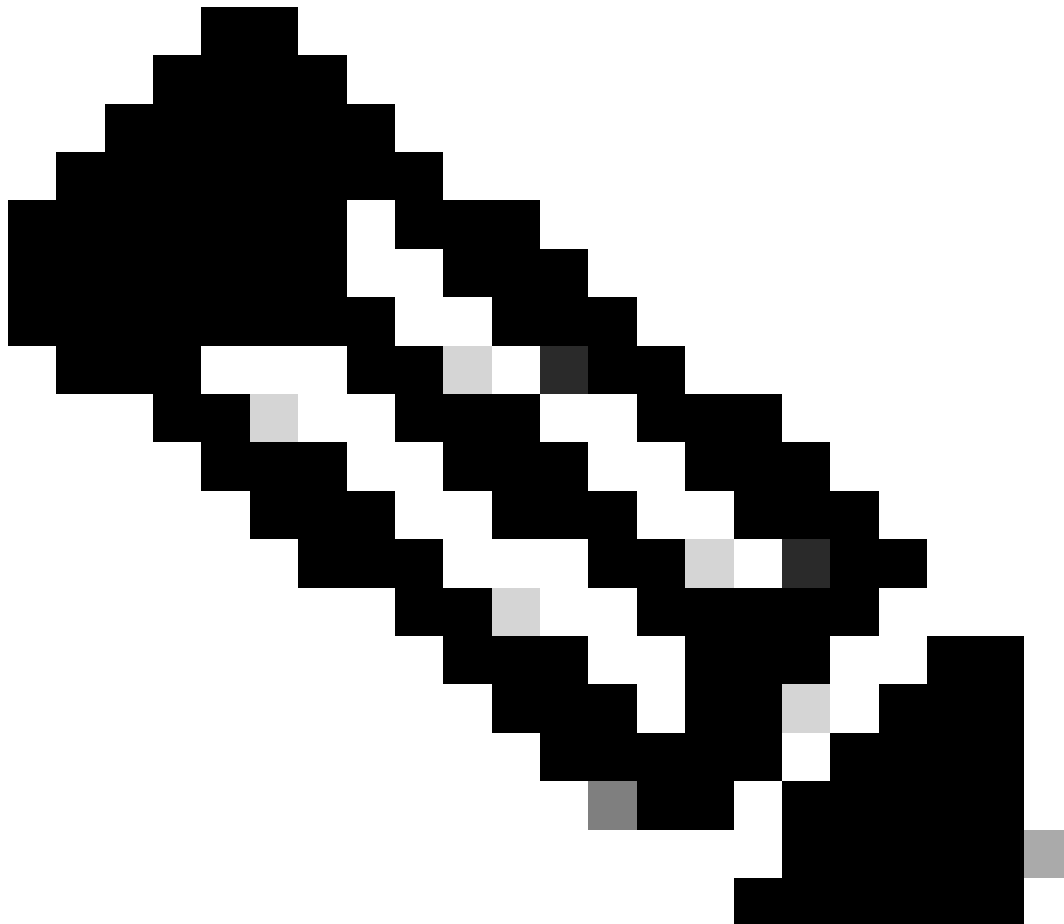
```
[radius] [17558]: (info): RADIUS: Called-Station-Id [30] 32 "dc-8c-37-d0-83-a0:cwa"
```

```
[radius] [17558]: (info): RADIUS: Calling-Station-Id [31] 19 "42-03-95-22-e6-82"
```

```
[radius] [17558]: (info): RADIUS: Airespace-WLAN-ID [1] 6 1
```

```
[radius] [17558]: (info): RADIUS: Nas-Identifier [32] 9 "BC-9800"
```

```
[radius] [17558]: (info): RADIUS: Started 5 sec timeout
```



آسأسأ ةمق ةنن و. ISE لبق نم مدختسم ل "attribute-value" و AV جوز: ةظالم

ةكبشلا يف مكحتلا رصنع ل اهل اسرا نكمي يتلا اق بس م ةدح م لا تامول عم لل
هذه دح م لا ليمع لا ك لذ ل ع مي ق لا هذه قي بطت متي (WLC) ةي ك لس ال ةي ل م لا
ةدح م لا ةسل ج لا.

AV جاوزا ل ع ةلثمأ:

- ACL لوصولا يف مكحتلا ةمئاق مسا
- URL هي جوت ةداع
- VLAN ةيره اظلا ةي ل م لا ةكبشلا ني عت
- لمع ل ةسل ج ةلهم ءاهتنا تاعاس
- ةقداص م لا ةداع تاتقؤم

(WLC) ةي ك لس ال ةي ل م لا ةكبشلا يف مكحتلا رصنع بل طل ISE بي جت ست

ةي ل م لا ةكبشلا يف مكحتلا رصنع ةطساوب هلا سرا مت يذلا MAC ناو نع لوبق مت اذا
Access-Accept RADIUS ةمزح ل اسراب ISE موق ي ذئ دن ع ف، ISE ل بق نم (WLC) ةي ك لس ال
اذا. قف دتلا ةعبات م و ه لوبق ISE ل ع بج ي، فور عم ريغ MAC ناو نع ناك اذا، ISE ني وك ت بس ح
لكش ب ه ني وك ت متي مل ائيش كانه نأ ينع ي اذه ف، (لوصولا ض ف ر) Access-Reject تي أ ر
هنم ققحتلا مزلي ISE ل ع حي حص.

<#root>

[radius] [17558]: (info): RADIUS: Received from id

1812

/

28

<ise-ip-addr>

:0,

Access-Accept

, len 334

<-- The packet is traveling via RADIUS port 1812 and is has a session ID of 28 (as a response to the abo

[radius] [17558]: (info): RADIUS: authenticator 14 0a 6c f7 01 b2 77 6a - 3d ba f0 ed 92 54 9b d6

[radius] [17558]: (info): RADIUS: User-Name [1] 19 "

42-03-95-22-E6-82

"

<-- MAC address of the client that was authorized by ISE

[radius] [17558]: (info): RADIUS: Class [25] 51 ...

[radius] [17558]: (info): RADIUS: Message-Authenticator[80] 18 ...

[radius] [17558]: (info): RADIUS: Cisco AVpair [1] 31 "

```

url-redirect-acl=cwa-acl
"
<-- ACL to be applied to the client

[radius] [17558]: (info): RADIUS: Cisco AVpair [1] 183 "
url-redirect=https://<ise-ip-addr>:8443/portal/[...]
"
<-- Redirection URL for the client

[radius] [17558]: (info): Valid Response Packet, Free the identifier
[eap-auth] [17558]: (info): SUCCESS for EAP method name: Identity on handle 0xB0000039
[mab] [17558]: (info): [4203.9522.e682:capwap_90000005]

MAB received an Access-Accept

for 0x8A000002
[mab] [17558]: (info): [4203.9522.e682:capwap_90000005] Received event '
MAB_RESULT

' on handle 0x8A000002
[auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] Authc success from MAB,
Auth event success

```

ISE نم ةاقل لمل تامول عمل ل WLC تايلملع

نم ةدراول تامول عمل اعيمج (WLC) ةيكل سلال ةيكل حمل ةكبش لاي فمكحت لارصنع جلاع ي ةل سرمل ل ISE تانايب عم لصال اي ف هاشنأ يذل مدخت سمل فيرعت فلم هب قبطي وهو ISE. في مكحت ةمئاق نبيعتب (WLC) ةيكل سلال ةيكل حمل ةكبش لاي فمكحت لارصنع موقت لىل AAA زواجت نيكمت متي مل اذا لامل لىبس لىل عم، مدخت سمل ل ةديج (ACL) لوصول ةيكل حمل ةكبش لاي فمكحت لارصنع ةطساوب ةجل اعمل هذه ثدحت ال ف WLAN ةكبش لال (WLC) ةيكل سلال.

```
<#root>
```

```

{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< username 0 "42-03-95-22-E6-82">> <-- Processing username received from ISE

{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< class 0 43 41 43 53 3a 30 45 31 45 31 34 30 41 30 30 30 30 30 30 43 38 45 32 44 41 36 34 32 3a 62
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<<Message-Authenticator 0 <hidden>>>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<<

url-redirect-acl 0 "cwa-acl"
>>

<-- Processing ACL redirection received from ISE

```



```
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<<
url-redirect 0 "https://<ise-ip-addr>:8443/portal/[...]"
>>
<-- Processing URL redirection received from ISE

{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< dnis 0 "DC-8C-37-D0-83-A0">>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< formatted-clid 0 "42-03-95-22-E6-82">>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< audit-session-id 0 "0E1E140A0000000C8E2DA642">>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< method 0 2 [mab]>>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< clid-mac-addr 0 42 03 95 22 e6 82 >>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< intf-id 0 2415919109 (0x90000005)>>
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] auth mgr attr change not
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005]

Received User-Name 42-03-95-22-E6-82

for client 4203.9522.e682
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005]

User profile is to be applied

. Authz mlist is not present,

Authc mlist cwa_authz

,session push flag is unset
{wncd_x_R0-0}{1}: [webauth-dev] [17558]: (info): Central Webauth URL Redirect,

Received a request to create a CWA session

for a mac [42:03:95:22:e6:82]
{wncd_x_R0-0}{1}: [auth-mgr-feat_wireless] [17558]: (info): [0000.0000.0000:unknown] Retrieved zone id
{wncd_x_R0-0}{1}: [webauth-dev] [17558]: (info): No parameter map is associated with mac 4203.9522.e682
{wncd_x_R0-0}{1}: [epm-redirect] [17558]: (info): [0000.0000.0000:unknown]

URL-Redirect-ACL = cwa-acl

{wncd_x_R0-0}{1}: [epm-redirect] [17558]: (info): [0000.0000.0000:unknown]

URL-Redirect = https://<ise-ip-addr>:8443/portal/[...]

{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005]

User Profile applied

successfully

for 0x92000002 -

REPLACE
```

<-- WLC replaces the user profile it had originally created

MAB ةقداصم ءاهتنا

MAC ناونع ةقداصم نم WLC يهتنت ،حاجنب ليمعملل مدختسملا فيرعت فلم ليدعت دعب
يلع ةدوجوم ISE نم ةملمتسملا (ACL) لوصولا في مكحتلا ةمئاق نكت مل اذا .ليمعملاب صاخلا
ةكبشلا في مكحتلا رصنع نإف ،(WLC) ةيكلساللا ةيلحملا ةكبشلا في مكحتلا رصنع
ءارجا لش في لالاتلابو ،تامولعملل هذبه هلمع بجي ام فرعي ال (WLC) ةيكلساللا ةيلحملا
ةقداصملا ليمعملل رذعتي .اضيأ MAB ةقداصم لش في ببستلا في امامت REPLACE

<#root>

```
{wncd_x_R0-0}{1}: [mm-client] [17558]: (debug): MAC: 0000.0000.0000 Sending pmk_update of XID (0) to (M
{wncd_x_R0-0}{1}: [client-auth] [17558]: (note): MAC: 4203.9522.e682
```

MAB Authentication success

```
{wncd_x_R0-0}{1}: [client-auth] [17558]: (info): MAC: 4203.9522.e682 Client auth-interface state transi
```

S_AUTHIF_MAB_AUTH_DONE

```
{wncd_x_R0-0}{1}: [client-orch-sm] [17558]: (debug): MAC: 4203.9522.e682 Processing MAB authentication
```

CO_AUTH_STATUS_SUCCESS

ليمعملل لارتنقا ةباجتسا WLC لسري

(ACL) لوصولا في مكحتلا ةمئاق قيبتو ISE ةطساوب ليمعملل ةقداصم دعب نألا
ةباجتسا اريخأ (WLC) ةيكلساللا ةيلحملا ةكبشلا في مكحتلا ةدحو لسرت ،ةحجحصلا
ةكبشلاب لاصتالا في رارمتسالا مدختسملل نكمي ،نألا .ليمعملل لارتنقا

<#root>

```
{wncd_x_R0-0}{1}: [client-orch-state] [17558]: (note): MAC: 4203.9522.e682 Client state transition: S_C
{wncd_x_R0-0}{1}: [dot11] [17558]: (debug): MAC: 4203.9522.e682 dot11 send association response.
```

Sending association response

with resp_status_code: 0

```
{wncd_x_R0-0}{1}: [dot11] [17558]: (debug): MAC: 4203.9522.e682 Dot11 Capability info byte1 1, byte2: 1
```

```
{wncd_x_R0-0}{1}: [dot11-frame] [17558]: (info): MAC: 4203.9522.e682 WiFi direct: skip build Assoc Resp
```

```
{wncd_x_R0-0}{1}: [dot11] [17558]: (info): MAC: 4203.9522.e682 dot11 send association response. Sending
```

```
{wncd_x_R0-0}{1}: [dot11] [17558]: (note): MAC: 4203.9522.e682 Association success. AID 1, Roaming = Fa
```

```
{wncd_x_R0-0}{1}: [dot11] [17558]: (info): MAC: 4203.9522.e682 DOT11 state transition: S_DOT11_MAB_PEND
```

S_DOT11_ASSOCIATED

```
{wncd_x_R0-0}{1}: [client-orch-sm] [17558]: (debug): MAC: 4203.9522.e682
```

Station Dot11 association is successful.

L2 قداصم

ةيكلسال ةيلحم ةكبشبه طابترا دنع ليمعلا اول عضخي نأ بجي يتلا ةيلمعلل اقو قداصم ببسب لعفلاب L2 قداصم ءارج مت ، عقاولا يف ، كلذ عمو . L2 قداصم أدبت ، (WLAN) روفلا ىلع L2 قداصم لامكإب ليمعلا موقى . لبق نم اهؤارج مت يتلا MAB

<#root>

```
{wncd_x_R0-0}{1}: [client-orch-sm] [17558]: (debug): MAC: 4203.9522.e682
```

Starting L2 authentication

```
. Bssid in state machine:dc8c.37d0.83af Bssid in request is:dc8c.37d0.83af
```

```
{wncd_x_R0-0}{1}: [client-orch-state] [17558]: (note): MAC: 4203.9522.e682 Client state transition: S_C
```

```
{wncd_x_R0-0}{1}: [client-auth] [17558]: (note): MAC: 4203.9522.e682 L2 WEBAUTH Authentication Successf
```

```
{wncd_x_R0-0}{1}: [client-auth] [17558]: (info): MAC: 4203.9522.e682 Client auth-interface state transi
```

```
S_AUTHIF_L2_WEBAUTH_DONE
```

```
{wncd_x_R0-0}{1}: [client-orch-sm] [17558]: (debug): MAC: 4203.9522.e682
```

L2 Authentication of station is successful

```
., L3 Authentication : 1
```

تانايبالا رامطم

ليمعل دراوملا نييعتب (WLC) ةيكلسال ةيلحملا ةكبشلا يف مكحتلا ءدحو موقت ةكبشلا ربع قفدتت نأ تانايبالا رورم ةكرحل نكمي ىتح لاصتالا

<#root>

```
{wncd_x_R0-0}{1}: [client-orch-sm] [17558]: (note): MAC: 4203.9522.e682 Mobility discovery triggered. C
```

```
{wncd_x_R0-0}{1}: [client-orch-state] [17558]: (note): MAC: 4203.9522.e682 Client state transition: S_C
```

```
{wncd_x_R0-0}{1}: [mm-transition] [17558]: (info): MAC: 4203.9522.e682 MMIF FSM transition: S_MA_INIT ->
```

```
{wncd_x_R0-0}{1}: [mm-client] [17558]: (info): MAC: 4203.9522.e682 Invalid transmitter ip in build clie
```

```
{wncd_x_R0-0}{1}: [mm-client] [17558]: (debug): MAC: 4203.9522.e682 Sending mobile_announce of XID (0) .
```

```
{mobilityd_R0-0}{1}: [mm-client] [18482]: (debug): MAC: 4203.9522.e682 Received mobile_announce, sub ty
```

```
{mobilityd_R0-0}{1}: [mm-transition] [18482]: (info): MAC: 4203.9522.e682 MMFSM transition: S_MC_INIT ->
```

```
{mobilityd_R0-0}{1}: [mm-client] [18482]: (debug): MAC: 4203.9522.e682 Add MCC by tdl mac: client_ifid (
```

```
{mobilityd_R0-0}{1}: [mm-client] [18482]: (debug): MAC: 4203.9522.e682 Sending capwap_msg_unknown (100)
```

```
{mobilityd_R0-0}{1}: [mm-client] [18482]: (debug): MAC: 0000.0000.0000 Sending mobile_announce_nak of X
```

```
{wncd_x_R0-0}{1}: [mm-client] [17558]: (debug): MAC: 4203.9522.e682 Received mobile_announce_nak, sub t
```

```
{wncd_x_R0-0}{1}: [mm-transition] [17558]: (info): MAC: 4203.9522.e682 MMIF FSM transition: S_MA_INIT.W
```

```
{wncd_x_R0-0}{1}: [mm-client] [17558]: (info): MAC: 4203.9522.e682 Roam type changed - None -> None
```

```
{wncd_x_R0-0}{1}: [mm-client] [17558]: (info): MAC: 4203.9522.e682 Mobility role changed - Unassoc -> L
```

```
{wncd_x_R0-0}{1}: [mm-client] [17558]: (note): MAC: 4203.9522.e682 Mobility Successful. Roam Type None,
```

```
{wncd_x_R0-0}{1}: [client-orch-sm] [17558]: (debug): MAC: 4203.9522.e682 Processing mobility response f
```

```
{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 Client QoS add mobile cb
{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 No QoS PM Name or QoS Level re
{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 No QoS PM Name or QoS Level re
{wncd_x_R0-0}{1}: [client-auth] [17558]: (note): MAC: 4203.9522.e682 ADD MOBILE sent. Client state flag
{wncd_x_R0-0}{1}: [client-orch-state] [17558]: (note): MAC: 4203.9522.e682 Client state transition: S_C
```

S_CO_DPATH_PLUMB_IN_PROGRESS

```
{wncd_x_R0-0}{1}: [dot11] [17558]: (note): MAC: 4203.9522.e682
```

Client datapath entry params

```
- ssid:training_cwa,slot_id:1 bssid ifid: 0x0, radio_ifid: 0x90000003, wlan_ifid: 0xf0400001
{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 Client QoS dpath create params
{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 No QoS PM Name or QoS Level re
{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 No QoS PM Name or QoS Level re
{wncd_x_R0-0}{1}: [avc-afc] [17558]: (debug): AVC enabled for client 4203.9522.e682
{wncd_x_R0-0}{1}: [dpath_svc] [17558]: (note): MAC: 4203.9522.e682
```

Client datapath entry created

for ifid 0xa0000001

مدخستسملل IP ناونع نييعت مت

اذا DHCP مديلمعمل عرضت. ككبشال ربع لقننتلل IP ناونع لى لى ائاهنلل مدخستسملل جاتحي DHCP مديلمعمل يطخت متيسف، هب صاخلل IP ناونع ركذتيو لبق نم الصتم مدخستسملل ناك لخدم ضرع نم يئاهنلل مدخستسملل نكمتي نلف، IP ناونع يقلت مدخستسملل لى رذعت اذا لىة: لالتل تاوخلال ربع ريسف فوس انهاف الو. بوي

1. ةرفومت DHCP مداوخ ي لى روثعلل ثبكب لاصتالا ليمع نم فاشتك امةزح لاسرا متي
2. لى ضرعلل يوتحي. ضرع عم بيحتسي لدان DHCP لى، رفوتى لدان DHCP كانه نى لى امو، راجىالا تقوو، لاصتملل ليمعلل لى هنييعت متيس يذل IP ناونع لثم تامولعم DHCP مداوخ نم اهيقلت مت يتل ضرعلال نم ديدعلال كانه نوكي نأ نكمي. كذلذ ةفلتخملل
3. هددحي يذل IP ناونع بلطل بيحتسيو مداوخلال دحاً نم اضرع ليمعلل لبقى
4. هب صاخلل ديدخلال IP ناونع نييعت عم ليمعلل لى رارق امةزح DHCP مداخ لسرى، ارىخاً

اهب ملتسا يتل اةقيرطال (WLC) ةيكلسالل اةلحمل اةكبشال لى فمكحتلل رصنع لىجس هب صاخلل IP ناونع ليمعلل

<#root>

```
{wncd_x_R0-0}{1}: [client-orch-state] [17558]: (note): MAC: 4203.9522.e682 Client state transition: S_C
```

S_CO_IP_LEARN_IN_PROGRESS

```
{wncd_x_R0-0}{1}: [client-iplearn] [17558]: (info): MAC: 4203.9522.e682 IP-learn state transition: S_IP
{wncd_x_R0-0}{1}: [client-auth] [17558]: (info): MAC: 4203.9522.e682 Client auth-interface state transi
{wncd_x_R0-0}{1}: [auth-mgr-feat_dsensor] [17558]: (info): [4203.9522.e682:capwap_90000005] Skipping DH
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): RX: DHCPv4 from interface capwap_90000005 on vlan 1000
```

SISF_DHCPDISCOVER

```
, giaddr: 0.0.0.0, yiaddr: 0.0.0.0, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): TX: DHCPv4 from interface capwap_90000005 on vlan 1000

SISF_DHCPDISCOVER

, giaddr: 0.0.0.0, yiaddr: 0.0.0.0, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [auth-mgr-feat_dsensor] [17558]: (info): [4203.9522.e682:capwap_90000005] Skipping DHCP
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): RX: DHCPv4 from interface capwap_90000005 on vlan 1000

SISF_DHCPDISCOVER

, giaddr: 0.0.0.0, yiaddr: 0.0.0.0, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): TX: DHCPv4 from interface capwap_90000005 on vlan 1000

SISF_DHCPDISCOVER

, giaddr: 0.0.0.0, yiaddr: 0.0.0.0, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): RX: DHCPv4 from interface Tw0/0/0 on vlan 1000 Src MAC

SISF_DHCPOFFER

, giaddr: 0.0.0.0, yiaddr: <end-user-ip-addr>, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): TX: DHCPv4 from interface Tw0/0/0 on vlan 1000 Src MAC

SISF_DHCPOFFER,

    giaddr: 0.0.0.0, yiaddr: <end-user-ip-addr>, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): RX: DHCPv4 from interface Tw0/0/0 on vlan 1000 Src MAC

SISF_DHCPOFFER

, giaddr: 0.0.0.0, yiaddr: <end-user-ip-addr>, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): TX: DHCPv4 from interface Tw0/0/0 on vlan 1000 Src MAC

SISF_DHCPOFFER

, giaddr: 0.0.0.0, yiaddr: <end-user-ip-addr>, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [auth-mgr-feat_dsensor] [17558]: (info): [4203.9522.e682:capwap_90000005] Skipping DHCP
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): RX: DHCPv4 from interface capwap_90000005 on vlan 1000

SISF_DHCPREQUEST

, giaddr: 0.0.0.0, yiaddr: 0.0.0.0, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): TX: DHCPv4 from interface capwap_90000005 on vlan 1000

SISF_DHCPREQUEST

, giaddr: 0.0.0.0, yiaddr: 0.0.0.0, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): RX: DHCPv4 from interface Tw0/0/0 on vlan 1000 Src MAC

SISF_DHCPACK

, giaddr: 0.0.0.0, yiaddr: <end-user-ip-addr>, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (info): TX: DHCPv4 from interface Tw0/0/0 on vlan 1000 Src MAC

SISF_DHCPACK

, giaddr: 0.0.0.0, yiaddr: <end-user-ip-addr>, CMAC: 4203.9522.e682
{wncd_x_R0-0}{1}: [client-iplearn] [17558]: (note): MAC: 4203.9522.e682

Client IP learn successful. Method: DHCP

    IP: <end-user-ip-addr>
{wncd_x_R0-0}{1}: [epm] [17558]: (info): [0000.0000.0000:unknown] HDL = 0x0 vlan 1000 fail count 0 dirt
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] auth mgr attr change not
{wncd_x_R0-0}{1}: [client-iplearn] [17558]: (info): MAC: 4203.9522.e682 IP-learn state transition: S_IP
{wncd_x_R0-0}{1}: [client-orch-sm] [17558]: (debug): MAC: 4203.9522.e682 Received ip learn response. me
```

IPLEARN_METHOD_DHCP

L3 ةقداصم ادب

مت يتي ال CWA مادختساب L3 ةقداصم ادبت ، IP ناو نع يئاهنلا مدختسملا يقلت نا دعب نال ةقداصم لل ةبولطم ةقيرطك اهنع فشكلا.

<#root>

```
{wncd_x_R0-0}{1}: [client-orch-sm] [17558]: (debug): MAC: 4203.9522.e682 Triggered L3 authentication. s
{wncd_x_R0-0}{1}: [client-orch-state] [17558]: (note): MAC: 4203.9522.e682 Client state transition: S_C
{wncd_x_R0-0}{1}: [client-auth] [17558]: (note): MAC: 4203.9522.e682
```

L3 Authentication initiated. CWA

ةم يلسل IP نيوانع تارابتخا

ARP نم نيبلط ذيفنت ليمعلا يلع بجي ، لاصتالا ي ف ام دق ي ضم لل

1. مدختسم لل IP ناو نع ARP در كانه ناك اذا . رخآ صخش ي أب صاخ IP ناو نع دوجو مدع نم ققحت .
رركم IP ناو نع نوكي ذئنيح ، يئاهنلا

2. يلع ليمعلا ةردق نامض يلا كلذ فدهيو . ةباوبلا يلا لوصولا ةي ناكم ا ءحص نم ققحتلا .
ةباوبلا نم ARP در نوكي نا بجي . ةكبشلا ةرداغم

<#root>

```
{wncd_x_R0-0}{1}: [client-auth] [17558]: (info): MAC: 4203.9522.e682 Client auth-interface state transi
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): RX: ARP from interface capwap_90000005 on vlan 1000 S
```

ARP REQUEST

```
, ARP sender MAC: 4203.9522.e682 ARP target MAC: 0000.0000.0000 ARP sender IP: 0.0.0.0, ARP target IP:
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): TX: ARP from interface capwap_90000005 on vlan 1000 S
```

ARP REQUEST

```
, ARP sender MAC: 4203.9522.e682 ARP target MAC: 0000.0000.0000 ARP sender IP: 0.0.0.0, ARP target IP:
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): RX: ARP from interface capwap_90000005 on vlan 1000 S
```

ARP REQUEST

```
, ARP sender MAC: 4203.9522.e682 ARP target MAC: 0000.0000.0000 ARP sender IP: 0.0.0.0, ARP target IP:
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): TX: ARP from interface capwap_90000005 on vlan 1000 S
```

ARP REQUEST

```
, ARP sender MAC: 4203.9522.e682 ARP target MAC: 0000.0000.0000 ARP sender IP: 0.0.0.0, ARP target IP:
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): RX: ARP from interface capwap_90000005 on vlan 1000 S
```

ARP REQUEST,

```
ARP sender MAC: 4203.9522.e682 ARP target MAC: 0000.0000.0000 ARP sender IP: 0.0.0.0, ARP target IP: <
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): TX: ARP from interface capwap_90000005 on vlan 1000 S
```


REPLY,

ARP sender MAC: dca6.32d2.e93f ARP target MAC: 4203.9522.e682 ARP sender IP: <dhcp-server-ip-addr>, ARP t
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): RX: ARP from interface capwap_90000005 on vlan 1000 S

ARP REQUEST,

ARP sender MAC: 4203.9522.e682 ARP target MAC: 0000.0000.0000 ARP sender IP: <end-user-ip-addr>, ARP t
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): TX: ARP from interface capwap_90000005 on vlan 1000 S

ARP REQUEST,

ARP sender MAC: 4203.9522.e682 ARP target MAC: 0000.0000.0000 ARP sender IP: <end-user-ip-addr>, ARP t
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): RX: ARP from interface Tw0/0/0 on vlan 1000 Source MA

ARP REPLY,

ARP sender MAC: 64cc.2284.ae10 ARP target MAC: 4203.9522.e682 ARP sender IP: <default-gateway-ip-addr>
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): TX: ARP from interface Tw0/0/0 on vlan 1000 Source MA

ARP REPLY,

ARP sender MAC: 64cc.2284.ae10 ARP target MAC: 4203.9522.e682 ARP sender IP: <default-gateway-ip-addr>
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): RX: ARP from interface capwap_90000005 on vlan 1000 S

ARP REQUEST,

ARP sender MAC: 4203.9522.e682 ARP target MAC: 0000.0000.0000 ARP sender IP: <end-user-ip-addr>, ARP t
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): TX: ARP from interface capwap_90000005 on vlan 1000 S

ARP REQUEST,

ARP sender MAC: 4203.9522.e682 ARP target MAC: 0000.0000.0000 ARP sender IP: <end-user-ip-addr>, ARP t
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): RX: ARP from interface Tw0/0/0 on vlan 1000 Source MA

ARP REPLY,

ARP sender MAC: 000c.290e.1c37 ARP target MAC: 4203.9522.e682 ARP sender IP: 10.20.30.17, ARP target I
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): TX: ARP from interface Tw0/0/0 on vlan 1000 Source MA

ARP REPLY,

ARP sender MAC: 000c.290e.1c37 ARP target MAC: 4203.9522.e682 ARP sender IP: 10.20.30.17, ARP target I
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): RX: ARP from interface Tw0/0/0 on vlan 1000 Source MA

ARP REQUEST,

ARP sender MAC: dca6.32d2.e93f ARP target MAC: 0000.0000.0000 ARP sender IP: <dhcp-server-ip-addr>, AR
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): TX: ARP from interface Tw0/0/0 on vlan 1000 Source MA

ARP REQUEST,

ARP sender MAC: dca6.32d2.e93f ARP target MAC: 0000.0000.0000 ARP sender IP: <dhcp-server-ip-addr>, AR
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): RX: ARP from interface capwap_90000005 on vlan 1000 S

ARP REPLY,

ARP sender MAC: 4203.9522.e682 ARP target MAC: dca6.32d2.e93f ARP sender IP: <end-user-ip-addr>, ARP t
{wncd_x_R0-0}{1}: [sisf-packet] [17558]: (debug): TX: ARP from interface capwap_90000005 on vlan 1000 S

ARP REPLY,

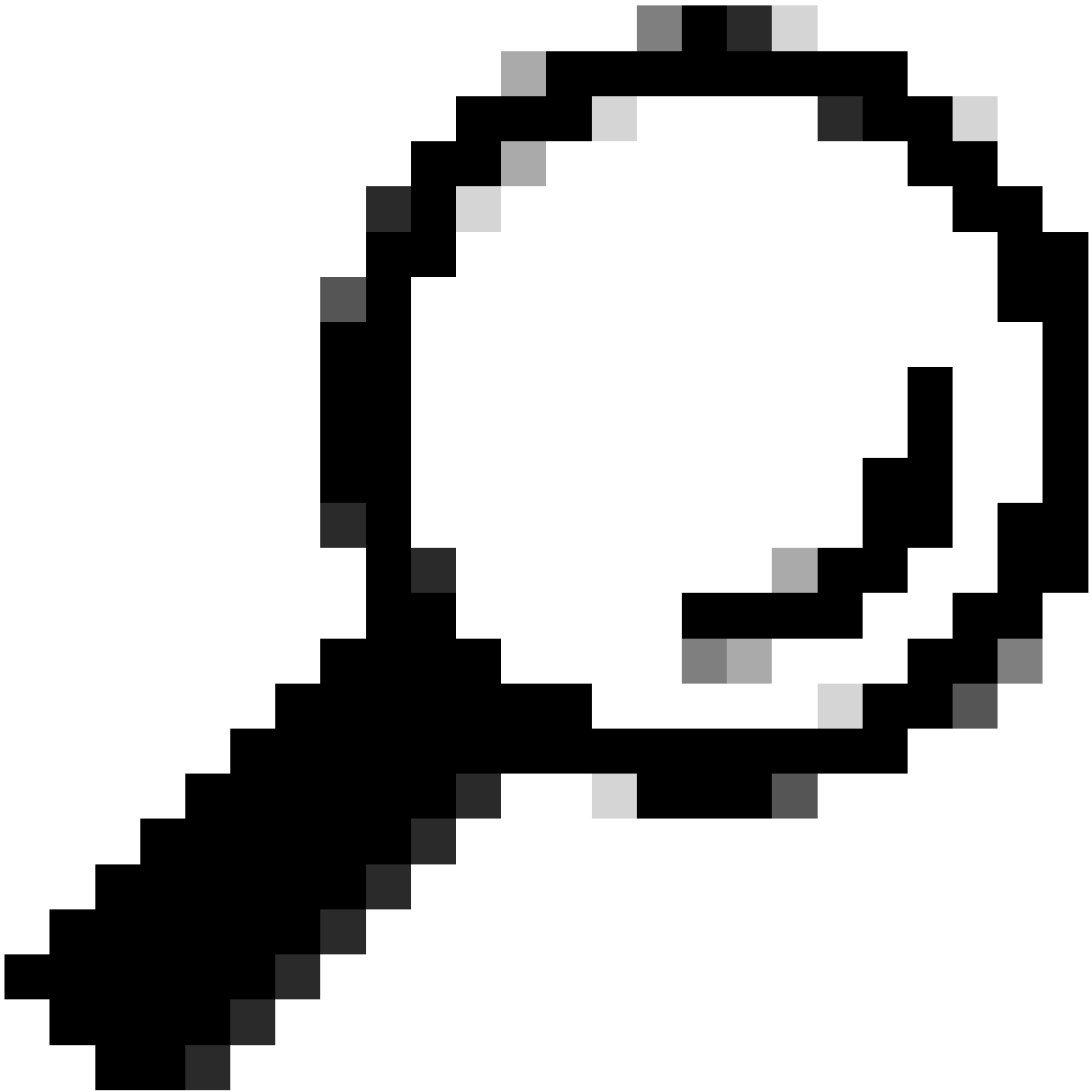
ARP sender MAC: 4203.9522.e682 ARP target MAC: dca6.32d2.e93f ARP sender IP: <end-user-ip-addr>, ARP t

ةكبش ىل لىم ع: يناثلا لاصتالا

صاخال MAC ناونع لالخال نم ISE دض يئاهنلا مدختسملل ةقداصم نألل تمت ،ةطقنلا هذه دنع ةكبشلا يف مكحتلا رصنع ريشي نأ بجي .نألل ىتح لمالكلا هليوخت متي مل نكلو ،هب هذه دنع .ةكبشلا لاصتالاب ليمعلل حامسلل ىرخأ ةرم ISE لىل (WLC) ةيكلساللا ةيلحملا مسا مدختسملل مسا لخدني نأ بجي شيح مدختسملل لىل ةباوبلا ميوقت متي ،ةطقنلا ةيلحملا ةكبشلا يف مكحتلا رصنع لىل .هب نىصاخال رورملا ةملاك و مدختسملل "ببولل ةقداصم قىلعت" ةلاح يف يئاهنلا مدختسملل رهظي ،(WLC) ةيكلساللا

(CoA) ضيوفتلا ريغت

مادختسلا مت ،ةطقنلا هذه ىتح .لوعفملا ذفان حبصي WLC نيوكت يف "CoA معد" شيح انه ةمئاق دعت مل ،ةباوبلا يئاهنلا ليمعلل ري نأ دعب .(ACL) لوصولل يف مكحتلا ةمئاق لىل ليمعلل هيجوت ةداع وه هب ماق ام لك ناك شيح ،ةمدختسمل (ACL) لوصولل يف مكحتلا لوخدلا ليجستل هب ةصاخال دامتعالا تانايب لاداب ليمعلل موقبي ،ةطقنلا هذه دنع .ةباوبلا ةيلحملا ةكبشلا يف مكحتلا ةدحو موقت .ليمعلل ةقداصم ةداع او CoA ةيلمعا دبل لىل ISE لىل اههيجوت ةداع او اهلاسرا متيس يتلا ةمزحلا دادعاب (WLC) ةيكلساللا



ة.امحل رادج ةطساوب روظحم ريغ هنا نم دكأت. 1700 ذفنم ل CoA مدختسي :خملت

<#root>

{wncd_x_R0-0}{1}: [caaa-ch] [17558]: (info): [CAAA:COMMAND HANDLER:92000002]

Processing CoA request

under CH-ctx.

<-- ISE requests the client to reauthenticate

{wncd_x_R0-0}{1}: [caaa-ch] [17558]: (info): [CAAA:COMMAND HANDLER:92000002] Reauthenticate request (0x

{wncd_x_R0-0}{1}: [mab] [17558]: (info): [4203.9522.e682:capwap_90000005]

MAB re-authentication started

for 2315255810 (4203.9522.e682)

<-- ISE requests the WLC to reauthenciate the CoA

```
{wncd_x_R0-0}{1}: [aaa-coa] [17558]: (info): radius coa proxy relay coa resp(wncd)
{wncd_x_R0-0}{1}: [aaa-coa] [17558]: (info):
```

CoA Response Details

```
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info): << ssg-command-code 0 32 >>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info): << formatted-clid 0 "4203.9522.e682">>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info): << error-cause 0 1 [
```

Success

]>>

<-- The WLC responds with a success after processing the packet to be sent to ISE

```
[aaa-coa] [17558]: (info): server:10.20.30.14 cfg_saddr:10.20.30.14 udpport:64016 sport:0, tableid:0ide
[caaa-ch] [17558]: (info): [CAAA:COMMAND HANDLER]
```

CoA response sent <-- The WLC sends the CoA response to ISE

ISE لة ناثاللة قداصلم

AV Paris وأو دعاوق قة بة نكة مة CoA. قوق هه هه رفصلل نم ة ناثاللة قداصلم اءة ال
ءاعإل URL ناونعو (ACL) لوصولل هه مءءاللة ةمءاق عفء مءه مل. مءءءسملل لء ةءهء
نأل ءعب ههءاللة مءءءسملل لوصولل وبق لول لء هه قءل مء ههءاللة

ISE لة لبلط لسره WLC

RADIOaccess- (WLC) ةمءة لة لسلاللة ةءبشلال هه مءءءاللة رصنع لسره
RequestPacket لءءءمءه لة رورمءة مءءءسملل مساة ةومءمءءءسءاب ISE لة ةءهء
بءهف، لءفلالل لمءل فرعه ISE نأل ارظنو، ةءهءء MAB قداصلم لءهءشء لة اءه هءو
(لوصولل قءءنمء، لءءاللل لءبس لءع) ةءهءءءاسل ةومءمءه قة بة

<#root>

```
{wncd_x_R0-0}{1}: [mab] [17558]: (info): [4203.9522.e682:capwap_90000005] Received event '
```

MAB_REAUTHENTICATE

```
' on handle 0x8A000002
```

```
{wncd_x_R0-0}{1}: [caaa-author] [17558]: (info): [CAAA:AUTHOR:92000002] DEBUG: mlist=cwa_authz for type
```

```
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Send
```

Access-Request

to

<ise-ip-addr>:1812

id 0/

29

, len 421

<-- The packet is traveling via RADIUS port 1812. The "29" is the session ID and it is unique for every

{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: authenticator c6 ae ab d5 55 c9 65 e2 - 4d 28 01 75
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS:

User-Name

[1] 14 "

42039522e682

"

<-- MAC address that is attempting to authenticate

{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: User-Password [2] 18 *
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS:

Cisco AVpair

[1] 25

"service-type=Call Check" <-- This indicates a MAC filtering process

{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Framed-MTU [12] 6 1485
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Message-Authenticator [80] 18 ...
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: EAP-Key-Name [102] 2 *
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Cisco AVpair [1] 43 "audit-session-id=0
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS:

Cisco AVpai

r [1] 12

"method=mab" <-- Controller sends an AVpair with MAB method

{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Cisco AVpair [1] 26 "client-iif-id=1392
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Cisco AVpair [1] 14

"

vlan-id=200"

{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS:

NAS-IP-Address

[4] 6

<wmi-ip-addr> <-- WLC WMI IP address

{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: NAS-Port-Id [87] 17 "capwap_90000005"
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: NAS-Port-Type [61] 6 802.11 wireless [19
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS:

Cisco AVpair

[1] 30

"cisco-wlan-ssid=cwa" <-- SSID and WLAN the client is attempting to connect

{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS:

Cisco AVpair

```
"wlan-profile-name=cwa"
```

```
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Called-Station-Id [30] 32 "dc-8c-37-d0-83-a0:
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Calling-Station-Id [31] 19 "42-03-95-22-e6-82"
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Airespace-WLAN-ID [1] 6 1
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Nas-Identifier [32] 9 "BC-9800"
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Started 5 sec timeout
```

WLC) ةيكل سلال ةيكل حملا ةكبش لاي ف مكحتل رصنع بلطل ISE بيحتست

قباطي هيقلت مت يذلا مدختسملا مسا ناك اذوا، هب صاخلا جهنلا نع ثحب عارجاب ISE موقري لوبق ينعني امم، ىرخأ ةرم WLC بل لاصلتال ةداعاب ISE موقري ذئذنعف، ةسايسلا فيرعت فلم اهنيوكت مت اذإ. يئاهنلا مدختسملل مدختسملا مسا عجرت WLAN. ةكبش بل لمعلا لاصلتال لعل اهتيؤر نكميو مدختسملا لعل AV جاوزا وأو ةيافاضا دعاقق قيبطت نكمي، ISE لعل لوصول لوبق.

```
<#root>
```

```
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Received from id
1812/29
```

```
<ise-ip-addr>
```

```
:0,
```

```
Access-Accept
```

```
, len 131
```

```
<-- The packet is traveling via RADIUS port 1812 and is has a session ID of 29 (as a response to the abo
```

```
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: authenticator a3 b0 45 d6 e5 1e 38 4a - be 15 fa 6b
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS:
```

```
User-Name
```

```
[1] 14 "
```

```
cwa-username
```

```
"
```

```
<-- Username entered by the end client on the portal that was shown
```

```
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Class [25] 51 ...
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Message-Authenticator[80] 18 ...
{wncd_x_R0-0}{1}: [radius] [17558]: (info): RADIUS: Cisco AVpair [1] 22 "profile-name=Unknown"
{wncd_x_R0-0}{1}: [radius] [17558]: (info): Valid Response Packet, Free the identifier
{wncd_x_R0-0}{1}: [eap-auth] [17558]: (info): SUCCESS for EAP method name: Identity on handle 0xEE00003
{wncd_x_R0-0}{1}: [mab] [17558]: (info): [4203.9522.e682:capwap_90000005]
```

```
MAB received an Access-Accept
```

```
for 0x8A000002
{wncd_x_R0-0}{1}: [mab] [17558]: (info): [4203.9522.e682:capwap_90000005] Received event '
MAB_RESULT
' on handle 0x8A000002
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] Authc success from
MAB, Auth event success
```

ISE نم ةاقلتم ل تامولعمل ل WLC تايلعملع

تامولعملع ل ةجل اعلمب (WLC) ةيكل سلال ةيكل حمل ةكبشل لا يف مكحتل لرصنع موقت ،يرخأ ةرم ميقلاب مءختسمل لا لعل رخآ ل ادبتس إءارء ذيفن تب موقبي وهو . ISE لبق نم اهيقلمت مت يتلل ISE نم ةاقلتم ل ةديءلل

<#root>

```
[aaa-attr-inf] [17558]: (info):
```

```
<< username 0 "cwa-username">> <-- Processing username received from ISE
```

```
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< class 0 43 41 43 53 3a 30 45 31 45 31 34 30 41 30 30 30 30 30 30 43 38 45 32 44 41 36 34 32 3a 62
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<<Message-Authenticator 0 <hidden>>>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< dnis 0 "DC-8C-37-D0-83-A0">>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< formatted-clid 0 "42-03-95-22-E6-82">>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< audit-session-id 0 "0E1E140A0000000C8E2DA642">>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< method 0 2 [mab]>>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< clid-mac-addr 0 42 03 95 22 e6 82 >>
{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info):
<< intf-id 0 2415919109 (0x90000005)>>
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] auth mgr attr change not
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005] auth mgr attr change not
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005]
```

Received User-Name cwa-username

```
for client 4203.9522.e682
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005]
```

User profile is to be applied.

Authz mlist is not present,

Authc mlist cwa_authz

```
,session push flag is unset
{wncd_x_R0-0}{1}: [auth-mgr] [17558]: (info): [4203.9522.e682:capwap_90000005]
```

User Profile applied

successfully

for 0x92000002 -

REPLACE <-- WLC replaces the user profile it had originally created

L3 ةقداصم ءاهتنا

ةقداصم (م) L3 ةقداصم تهتنا. ةدحمل تانايب ل عم يئاهن ل مدختس م ل ةقداصم ن آل ا تمت (ب ي و ل).

<#root>

{wncd_x_R0-0}{1}: [client-auth] [17558]: (note): MAC: 4203.9522.e682

L3 Authentication Successful

. ACL: []

{wncd_x_R0-0}{1}: [client-auth] [17558]: (info): MAC: 4203.9522.e682 Client auth-interface state transi

S_AUTHIF_WEBAUTH_DONE

{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 Client QoS add mobile cb

{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 No QoS PM Name or QoS Level re

{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 No QoS PM Name or QoS Level re

{wncd_x_R0-0}{1}: [client-auth] [17558]: (note): MAC: 4203.9522.e682 ADD MOBILE sent. Client state flag

{wncd_x_R0-0}{1}: [errmsg] [17558]: (info): %CLIENT_ORCH_LOG-6-CLIENT_ADDED_TO_RUN_STATE: Username entr

cwa-username

) joined with ssid (

cwa

) for device with MAC: 4203.9522.e682 <-- End user "cwa-username" has joined the WLAN "cwa"

{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info): [Applied attribute : username 0 "

cwa-username

"]

{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info): [Applied attribute : class 0 43 41

{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info): [Applied attribute : bsn-vlan-interface-name 0 "MGMT"

{wncd_x_R0-0}{1}: [aaa-attr-inf] [17558]: (info): [Applied attribute : timeout 0 1800 (0x708)]

{wncd_x_R0-0}{1}: [ewlc-qos-client] [17558]: (info): MAC: 4203.9522.e682 Client QoS run state handler

ةي ل ح م ل ة ك ب ش ل ا ي ف م ك ح ت ل ا ر ص ن ع ي ل ع ل ي غ ش ت ل ا ة ل ا ح ي ل ا ي ئ ا ه ن ل ا م د خ ت س م ل ا ل ص ي ة ق د ا ص م (WLC) ة ي ك ل س ل ل ا

WLAN. ة ك ب ش ب ه ن ا ر ت ق و ا م د خ ت س م ل ا ة ق د ا ص م م ت ، ا ر ي خ أ

<#root>

{wncd_x_R0-0}{1}: [rog-proxy-capwap] [17558]: (debug):

Managed client RUN state

notification: 4203.9522.e682

{wncd_x_R0-0}{1}: [client-orch-state] [17558]: (note): MAC: 4203.9522.e682 Client state transition: S_CO_RUN

ةنمضملا ةمزحلا طاقتلا - CWA قفدت (EPC)

ةيلحملا ةكبشلا يف مكحتلا رصنع نم ةرشابم اهدادرتسا نكمي ةمزح طاقتلا وه EPC ةكبشلا يف مكحتلا رصنع ربع رمت يتلا مزحلا عيمج رهظي يذلا (WLC) ةيكلساللا نم ديزم ىلع لوصحلل .هنم اهيلع لوصحلل متي يتلا وأ (WLC) ةيكلساللا ةيلحملا [ةيكلساللا عايطخأل احي حصت مهف](#) ةرايز ىجري ،اهدادرتسا ةيفيكيو يه ام لوح تامولعملا [Catalyst 9800](#) ةيكلساللا ةيلحملا ةكبشلا يف مكحتلا تادحو ىلع لچسلا عيمجتو

ISE مداخ ىلا ليمع :لوالا لاصتالا



و ئىيە ىلە اھضەرە م تى . ەم زحال طاق تال روص ىلە ەدووم ال IP نى وانە ف دح م ت : رى دح ت

ISE م داخ ىلە ل س ر م ل ا ب ل ط ل ا و WLAN ە ك ب ش ب ن ا ر ت ق ا ل ل

No.	Time	Source	Destination	BSS Id	Seq#	Protocol	Length	Info
21	2022-10-16 20:05:26.000000	Apple_ecid3:99	Cisco_31:77:0f	3c:41:0e:31:77:0f	2586	802.11	320	Association Request, SN=2586, FN=0, Flags=....., SSID="cwa"
22	2022-10-16 20:05:26.002990	<source-ip-address>	<destination-ip-address>			RADIUS	416	Access-Request Id=1
23	2022-10-16 20:05:26.056908	<source-ip-address>	<destination-ip-address>			RADIUS	379	Access-Accept Id=1
24	2022-10-16 20:05:26.058987	Cisco_31:77:0f	Apple_ecid3:99	3c:41:0e:31:77:0f	0	802.11	251	Association Response, SN=0, FN=0, Flags=.....

ىل و ا ل م ر ح ل

ل ي م ع ل ا ب (WLC) ە ي ك ل س ال ل ا ە ي ل ح م ل ا ە ك ب ش ل ا ي ف م ك ح ت ل ا ر ص ن ع ن م ن ا ر ت ق ا ل ل ط

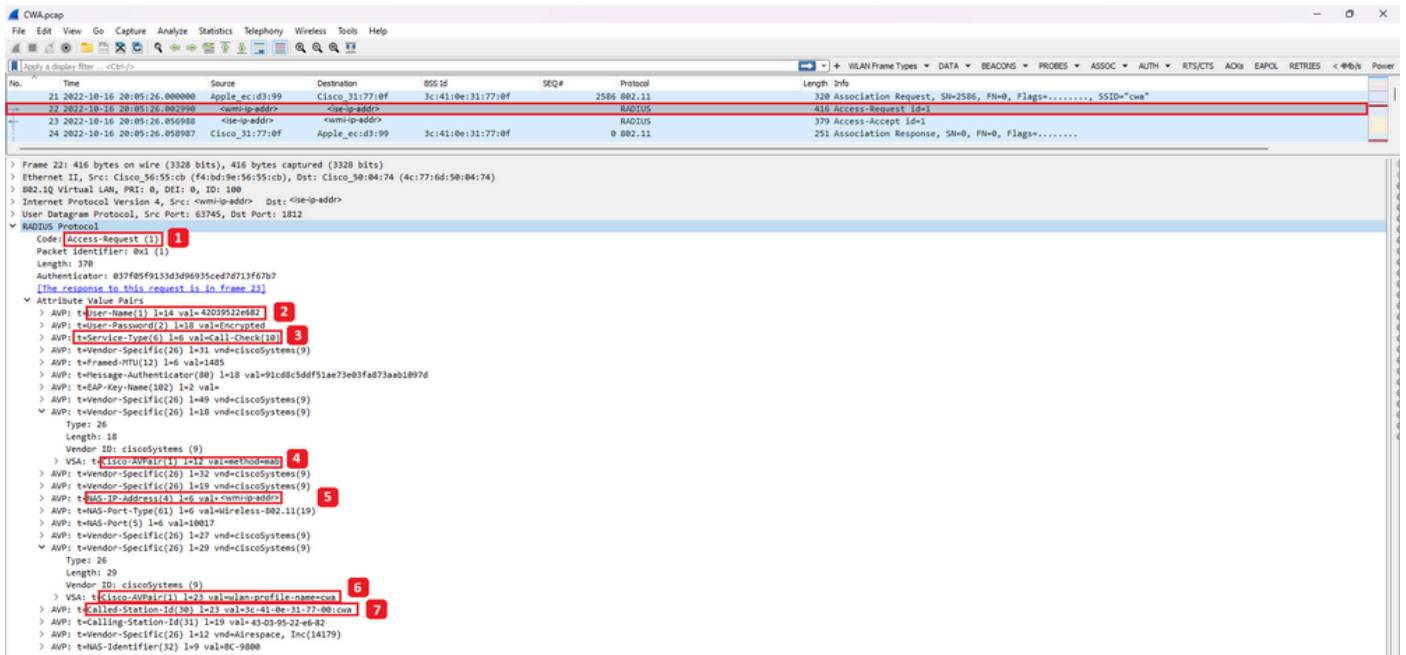
ن و ك ت ي ت ل ا ە ز ه ج ال ل MAC ن ي و ا ن ع ە ي ف ر ك ن ك م ي " ن ا ر ت ق ا ل ا ب ل ط " ل و ا ل ا ە م ز ح ل ا ل ل ا ر ظ ن ل ا ب ە ي ل م ع ل ا ل ه ذ ه ي ف ە ك ر ت ش م

```
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Apply a display filter: <Ctrl-F>
WLANFrameTypes | DATA | BEACONS | PROBES | ASSOC | AUTH | RTS/CTS | ACK | EAPOL | RETRIES | <Ctrl-P>
No. Time Source Destination BSS Id Seq# Protocol Length Info
21 2022-10-16 20:05:26.000000 Apple_ecid3:99 Cisco_31:77:0f 3c:41:0e:31:77:0f 2586 802.11 320 Association Request, SN=2586, FN=0, Flags=....., SSID="cwa"
22 2022-10-16 20:05:26.002990 <src-ip> <dst-ip> <src-ip> <dst-ip> RADIUS 416 Access-Request Id=1
23 2022-10-16 20:05:26.056908 <src-ip> <dst-ip> RADIUS 379 Access-Accept Id=1
24 2022-10-16 20:05:26.058987 Cisco_31:77:0f Apple_ecid3:99 3c:41:0e:31:77:0f 0 802.11 251 Association Response, SN=0, FN=0, Flags=.....
> Frame 21: 320 bytes on wire (2560 bits), 320 bytes captured (2560 bits) on interface 0
  Ethernet II, Src: Cisco_50:04:74 (4c:77:6d:50:04:74), Dst: Cisco_36:55:cb (f4:bd:9e:56:55:cb)
  802.1Q Virtual LAN, PVID: 0, DEI: 0, TD: 100
  Internet Protocol Version 4, Src: <source-ip>, Dst: <destination-ip>
  User Datagram Protocol, Src Port: 5278, Dst Port: 5247
  Control And Provisioning of Wireless Access Points - Data
  IEEE 802.11 Association Request, Flags: .....
    Type/Subtype: Association Request (0x0000)
    > Frame Control Field: 0x0000 (Snapped)
      0000 0001 0000 = Duration: 48 microseconds
      Receiver address: Cisco_31:77:0f (3c:41:0e:31:77:0f)
      Destination address: Cisco_31:77:0f (3c:41:0e:31:77:0f)
      Transmitter address: Apple_ecid3:99 (08:0e:dc:ec:d3:99)
      Source address: Apple_ecid3:99 (08:0e:dc:ec:d3:99)
      BSS ID: Cisco_31:77:0f (3c:41:0e:31:77:0f)
      .... .. 0000 = Fragment number: 0
      1010 0001 1010 .... = Sequence number: 2586
  IEEE 802.11 Wireless Management
```

ن ا ر ت ق ا ل ا ب ل ط

(WLC) ە ي ك ل س ال ل ا ە ي ل ح م ل ا ە ك ب ش ل ا ي ف م ك ح ت ل ا ر ص ن ع ن م ل و ص و ل ا ب ل ط ە م ز ح ل ل ا س ر ا م ت ل ل ا ISE

ە ي ك ل س ال ل ا ە ي ل ح م ل ا ە ك ب ش ل ا ي ف م ك ح ت ل ا ر ص ن ع ە ط س ا و ب ن ا ر ت ق ا ل ا ب ل ط ە ج ل ا ع م درج م ل و ص و ل ا ب ل ط ە م ز ح (WLC) ە ي ك ل س ال ل ا ە ي ل ح م ل ا ە ك ب ش ل ا ي ف م ك ح ت ل ا ر ص ن ع ل س ر ي ، (WLC) ل ل ا ISE م داخ ىلە

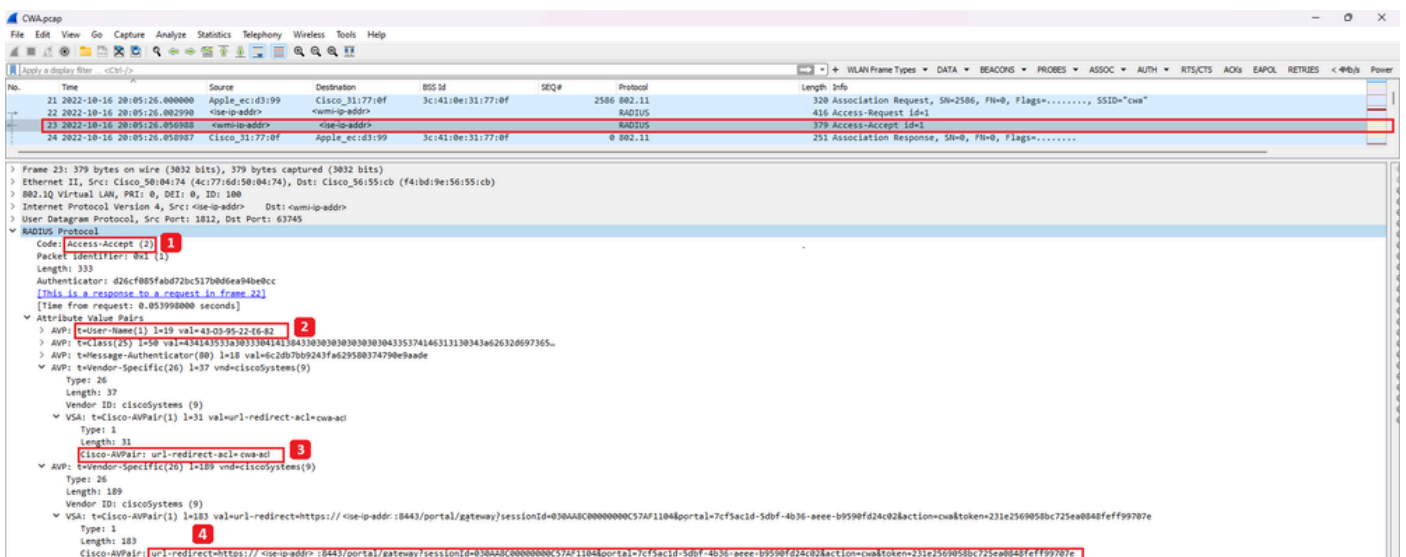


لوصول ب ل ط م ز ح ل ي ل ح ت

1. م ز ح ل م س ا .
2. ق د ا ص م ل ل و ا ح ي ي ذ ل ا M A C ن ا و ن ع .
3. م A C ة ي ف ص ت ل ي ل ر ي ش ي ا ذ ه .
4. ة ي ل م ع ل ي ل ة ر ا ش ل ل I S E ل ي ل م ك ح ت ل ا ة ح و ة ط س ا و ب و ي د ي ف ل / ت و ص ل ا ج و ز ل ل س ر ا م ت ي .
5. م A C ة ي ف ص ت .
6. W L C ب ص ا خ ل ال IP ن ا و ن ع .
7. ه ب ل ا ص ت ال ل ي م ع ل ل و ا ح ي ي ذ ل ا S S I D .
8. ا ه ب ل ا ص ت ال ل ي م ع ل ل و ا ح ي ي ت ال (W L A N) ة ي ك ل ل س ال ل ا ة ي ل ح م ل ا ة ك ب ش ل م س ا .

(WLC) ة ي ك ل ل س ال ل ا ة ي ل ح م ل ا ة ك ب ش ل ل ي ف م ك ح ت ل ا ر ص ن ع ن م ة ل س ر م ل ل و ص و ل ل ل و ب ق ة م ز ح ل ي ل I S E

ن ا ك ا ذ ل ل و ص و ل ل ل و ب ق ع م ب ي ح ت س ي ه ن ا ف ، ل و ص و ل ل ل و ب ق ة م ز ح ل ا ع م ب I S E م و ق ي ن ا ة ر ج م ب ا ن ك م ن ك ي م ل ا ذ ل ل و ص و ل ل ا ض ف ر م ا د خ ت س ا ب و ا ا ح ج ا ن



لوصول لوبق ةمزم ليلحت

1. ةمزم لال مسا.
2. ناونع ةقداصم تمت.
3. اهقبيبطت بولطملا (ACL) لوصولا يف مكحتلا ةمئاق.
4. هيلل مدختسملا هيجوت ةداعلا URL ناونع.

ليعملل (WLC) ةيكلساللا ةيلحملا ةكبشلا يف مكحتلا رصنع نم نارقتالا ةباجتسالا

No.	Time	Source	Destination	BSS Id	SEQ#	Protocol	Length	Info
21	2022-10-16 20:05:26.000000	Apple_ecid3:99	Cisco_31:77:0f	3c:41:0e:31:77:0f	2586	802.11	320	Association Request, SN=2586, FH=0, Flags=....., SSID="cwa"
22	2022-10-16 20:05:26.002990	<wm-ip-addr>	<wm-ip-addr>			RADIUS	416	Access-Request id=1
23	2022-10-16 20:05:26.050900	<wm-ip-addr>	<wm-ip-addr>			RADIUS	379	Access-Accept id=1
24	2022-10-16 20:05:26.055987	Cisco_31:77:0f	Apple_ecid3:99	3c:41:0e:31:77:0f	0	802.11	251	Association Response, SN=0, FH=0, Flags=.....

```

> Frame 24: 251 bytes on wire (2000 bits), 251 bytes captured (2000 bits)
> Ethernet II, Src: Cisco_56:55:cb (f4:bd:9e:56:55:cb), Dst: Cisco_50:04:74 (4c:77:6d:50:04:74)
> 802.1Q Virtual LAN, PVID: 0, DEI: 0, ID: 100
> Internet Protocol Version 4, Src: <source-ip> Dst: <destination-ip>
> User Datagram Protocol, Src Port: 5247, Dst Port: 5270
> Control And Provisioning of Wireless Access Points - Data
w IEEE 802.11 Association Response Flags: .....
  Type/Subtype: Association Response (0x0001)
  Frame Control Field: 0x0010 (Swapped)
  .000 0000 0000 0000 = Duration: 0 microseconds
  Receiver address: Apple_ecid3:99 (08:0e:dc:ec:d3:99)
  Destination address: Apple_ecid3:99 (08:0e:dc:ec:d3:99)
  Transmitter address: Cisco_31:77:0f (3c:41:0e:31:77:0f)
  Source address: Cisco_31:77:0f (3c:41:0e:31:77:0f)
  BSS Id: Cisco_31:77:0f (3c:41:0e:31:77:0f)
  ..... 0000 = Fragment number: 0
  0000 0000 0000 .... = Sequence number: 0
> IEEE 802.11 Wireless Management
    
```

نارقتالا لالخنم ةباجتسالا

DHCP ةيلمع

47	2022-10-16 20:05:28.241976	0.0.0.0	255.255.255.255	3c:41:0e:31:77:00	2833	DHCP	424	DHCP Discover - Transaction ID 0x35aa7cde
48	2022-10-16 20:05:28.241976	0.0.0.0	255.255.255.255			DHCP	346	DHCP Discover - Transaction ID 0x35aa7cde
49	2022-10-16 20:05:28.290970	Cisco_31:77:00	Cisco_31:77:00	3c:41:0e:31:77:00	16	WLCCP	132	U, func=UI; SNAP, OUI 0x004096 (Cisco Systems, Inc), PID 0x0000
50	2022-10-16 20:05:28.290970	Cisco_31:77:00	Cisco_31:77:00	3c:41:0e:31:77:00	16	WLCCP	132	U, func=UI; SNAP, OUI 0x004096 (Cisco Systems, Inc), PID 0x0000
51	2022-10-16 20:05:28.307982	<dhcp-server-ip-addr>	<assigned-ip-addr>			DHCP	355	DHCP Offer - Transaction ID 0x35aa7cde
52	2022-10-16 20:05:28.308074	<dhcp-server-ip-addr>	<assigned-ip-addr>			0	425	DHCP Offer - Transaction ID 0x35aa7cde
72	2022-10-16 20:05:29.489064	0.0.0.0	255.255.255.255	3c:41:0e:31:77:00	3089	DHCP	424	DHCP Request - Transaction ID 0x35aa7cde
73	2022-10-16 20:05:29.490971	0.0.0.0	255.255.255.255			DHCP	346	DHCP Request - Transaction ID 0x35aa7cde
74	2022-10-16 20:05:29.491963	<dhcp-server-ip-addr>	<assigned-ip-addr>			DHCP	355	DHCP ACK - Transaction ID 0x35aa7cde
75	2022-10-16 20:05:29.491963	<dhcp-server-ip-addr>	<assigned-ip-addr>			0	425	DHCP ACK - Transaction ID 0x35aa7cde

DHCP ةيلمع

متي ةدحاو نأل طقف كلذ نكلو ،ةرركم مزحلا ةدهاشم متي ،ادعاصف نأل نم :ةظحالمة هفيلغت متي ال رخآالو CAPWAP في لغت

ARP

78	2022-10-16 20:05:29.496968	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	3345	ARP	124 who has <assigned-ip-addr> (ARP Probe)
79	2022-10-16 20:05:29.496968	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	3681	ARP	60 who has <assigned-ip-addr> (ARP Probe)
80	2022-10-16 20:05:29.847948	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	3681	ARP	124 who has <assigned-ip-addr> (ARP Probe)
81	2022-10-16 20:05:29.847948	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	3857	ARP	60 who has <assigned-ip-addr> (ARP Probe)
82	2022-10-16 20:05:30.142982	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	3857	ARP	124 who has <assigned-ip-addr> (ARP Probe)
83	2022-10-16 20:05:30.142982	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	17	ARP	60 who has <assigned-ip-addr> (ARP Probe)
84	2022-10-16 20:05:30.464972	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	17	ARP	124 ARP Announcement for <assigned-ip-addr>
85	2022-10-16 20:05:30.465064	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	785	ARP	60 ARP Announcement for <assigned-ip-addr>
88	2022-10-16 20:05:30.790944	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	785	ARP	124 ARP Announcement for <assigned-ip-addr>
89	2022-10-16 20:05:30.790944	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	1041	ARP	60 ARP Announcement for <assigned-ip-addr>
90	2022-10-16 20:05:31.115991	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	1041	ARP	124 ARP Announcement for <assigned-ip-addr>
91	2022-10-16 20:05:31.116983	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	1297	ARP	60 ARP Announcement for <assigned-ip-addr>
92	2022-10-16 20:05:31.117990	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	1297	ARP	124 who has 192.168.20.1 Tell <assigned-ip-addr>
93	2022-10-16 20:05:31.117990	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	64	ARP	60 who has 192.168.20.1 Tell <assigned-ip-addr>
94	2022-10-16 20:05:31.118981	Cisco_S0:04:74	Apple_ecd3:99	3c:41:0e:31:77:0f	0	ARP	64 192.168.20.1 is at 4c:77:6d:50:04:74
95	2022-10-16 20:05:31.118981	Cisco_S0:04:74	Apple_ecd3:99	3c:41:0e:31:77:0f	0	ARP	134 192.168.20.1 is at 4c:77:6d:50:04:74
97	2022-10-16 20:05:31.192083	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	1809	ARP	124 who has 192.168.20.1 Tell <assigned-ip-addr>
98	2022-10-16 20:05:31.193974	Apple_ecd3:99	Broadcast	3c:41:0e:31:77:00	1809	ARP	60 who has 192.168.20.1 Tell <assigned-ip-addr>
99	2022-10-16 20:05:31.193974	Cisco_S0:04:74	Apple_ecd3:99	3c:41:0e:31:77:0f	0	ARP	64 192.168.20.1 is at 4c:77:6d:50:04:74
100	2022-10-16 20:05:31.194981	Cisco_S0:04:74	Apple_ecd3:99	3c:41:0e:31:77:0f	0	ARP	134 192.168.20.1 is at 4c:77:6d:50:04:74

ةبوابللو هب صاخال IP ناو نعل ل لمي عمل ARPing

لاصتال رابتخا

ةحص نم ققحتلل صحف عارجب لاصتال لواح يذلا زاغال موقى ، ARP ةي لمع اهاتنا درجم

اهدف ، تنرتن إلاب لاصتا دجوي ال هن إ زاهجلا لاق اذا . قيقدتلاب اضيأ فرعي اذهو ، لخدم ليعغشت مل زاهجلا نأ وأ (ادبأ اهيلع درت مل ةبوابلا ، لاثملا ليعبس يلع) تلشف ARP ةيلمع نأ ينعني قيقحتلا عارجا نم نكمتي .

هذه ريفوت يلع رداقلا ديحولوا وه EPC نأ ال RA ، راثأ يلع يري ال عيش وه قيقدتلا اذه زاهج ناك لاثملا اذه يف ، لاصتالا لواحي يذلا زاهجلا يلع رابتخالا مالعتسا دمتعي . تامولعمل روسأمل Apple لخدم هاجت ةرشابم قيقدتلا عارجا مت كلذل ، Apple زاهج رابتخالا

مداخ يلع رذعت اذا ، كلذل . اذه URL لحل بولطم DNS نإف ، URL مادختساب متي قيقدتلا نأ امب متي ال و URL نعل مالعتسالا يف ليعملا رمتسي ، ليعملا تامالعتسالا ةباجتسالا DNS ضرعتسم يف ISE مداخ صاخلا IP ناووع لاخدا مت اذا ، ةطقنلا هذه دنع . ادبأ لخدملا ةدهاشم يف ةلكشم دجوتف ، كلذك رمألا ناك اذا . ةيئرم ةبوابلا نوكت نأ بجيف ، يف رطالا زاهجلا بيو مداخ DNS .

101	2022-10-16 20:05:31.198979	<device-ip-addr>	<dns-server-ip-addr>	3c:41:0e:31:77:00	2065	DNS	159 Standard query 0xc1489 HTTPS <apple-captive-portal>
102	2022-10-16 20:05:31.198979	<device-ip-addr>	<dns-server-ip-addr>	3c:41:0e:31:77:00	0	DNS	81 Standard query 0xc1489 HTTPS <apple-captive-portal>
103	2022-10-16 20:05:31.198979	<device-ip-addr>	<dns-server-ip-addr>	3c:41:0e:31:77:00	2321	DNS	159 Standard query 0x9964 A <apple-captive-portal>
104	2022-10-16 20:05:31.198979	<device-ip-addr>	<dns-server-ip-addr>	3c:41:0e:31:77:00	0	DNS	81 Standard query 0x9964 A <apple-captive-portal>
110	2022-10-16 20:05:31.332975	<device-ip-addr>	<dns-server-ip-addr>	3c:41:0e:31:77:00	0	DNS	225 Standard query response 0x9964 A <apple-captive-portal> CHAVE <apple-captive-portal>
119	2022-10-16 20:05:31.332975	<device-ip-addr>	<dns-server-ip-addr>	3c:41:0e:31:77:00	0	DNS	295 Standard query response 0x9964 A <apple-captive-portal> CHAVE <apple-captive-portal>

متباجا و DNS مالعتسا - ليعملا نم لاصتالا رابتخا

هلح مت يذلا DNS ناووع

DNS مداخ ةطساوب هلح مت يذلا IP ناووع ةيؤر كنكمتي ، DNS مالعتسا ةباجتسا صحف دنع

No.	Time	Source	Destination	OSI#	Seq#	Protocol	Length	Info
1	118	2022-10-16 20:05:31.332975	<device-ip-addr>	<dns-server-ip-addr>	3c:41:0e:31:77:00	DNS	225	Standard query response 0x9964 A <apple-captive-portal> CHAVE <apple-captive-portal>
	119	2022-10-16 20:05:31.332975	<device-ip-addr>	<dns-server-ip-addr>	3c:41:0e:31:77:00	DNS	295	Standard query response 0x9964 A <apple-captive-portal> CHAVE <apple-captive-portal>

Frame 119: 295 bytes on wire (2304 bits), 295 bytes captured (2304 bits) on Ethernet II, Src: Cisco-803510c (f4:0d:0e:16:53:0c), Dst: Cisco-3040174 (4c:77:6d:5b:04:74)
 802.1Q Virtual LAN, PVID: 0, DEI: 0, D0: 100
 Internet Protocol Version 4, Src: <device-ip-addr>, Dst: <dns-server-ip-addr>
 User Datagram Protocol, Src Port: 5247, Dst Port: 5278
 Control and Provisioning of Wireless Access Points - Data
 IEEE 802.11 QoS Data, Flags:F.
 Logical-Link Control
 Internet Protocol Version 4, Src: <device-ip-addr>, Dst: <dns-server-ip-addr>
 User Datagram Protocol, Src Port: 53, Dst Port: 55482
 Message Name System (response)
 Transaction ID: 0x9964
 Flags: 0x0100 Standard query response, No error
 Questions: 1
 Answer RRs: 5
 Authority RRs: 0
 Additional RRs: 0
 Queries
 Answers
 > captive.apple.com: type CHAVE, class IN, name <apple-captive-portal>
 > captive-cdn-origin-apple.com.akadns.net: type CHAVE, class IN, name <apple-captive-portal>
 > captive-cdn-origin-apple.com.akadns.net: type CHAVE, class IN, name <apple-captive-portal>
 > captive.g.mplinq.com: type A, class IN, addr [7.293.127.213]
 > captive.g.mplinq.com: type A, class IN, addr [7.293.127.213]
 [Ctrl+click to view details]

DNS مداخ ةطساوب IP ناووع لخدم مت

هاجتالا يثالث لاصتا ديكتأت

ليعمل او لخدملا نيب هاجتالا ةيئالا TCP ةحفاصم عاشن متي ، IP DNS ناووع لخدم نألا . اهلم مت يذلا IP نيوانع نم ناووع يأ وه مدختسمل IP ناووع

120	2022-10-16 20:05:31.338971	<device-ip-addr>	<resolved-ip-addr>	3c:41:0e:31:77:00	3601	TCP	160	59806 -> 80 [SYN, ECE, CWR] Seq=0 Min=65535 Len=0 MSS=1250 WS=64 TSval=2766384854 TSecr=0 SACK_PERM
121	2022-10-16 20:05:31.338971	<device-ip-addr>	<resolved-ip-addr>	3c:41:0e:31:77:00	0	TCP	140	80 -> 59806 [SYN, ACK, ECE] Seq=0 Ack=1 Win=65160 Len=0 PWS=1460 SACK_PERM TSval=2051166700 TSecr=2766384854
122	2022-10-16 20:05:31.340970	<device-ip-addr>	<resolved-ip-addr>	3c:41:0e:31:77:00	287	TCP	140	59806 -> 80 [ACK] Seq=1 Ack=1 Win=131200 Len=0 TSval=2766384857 TSecr=2051166700

هاجتالا ةيئالا ةحفاصم ءاشنم

ةلاعف ةطقن يلع لوصحلا

اهل لوصولا ةلواجمو ةبوابلا صحفب ليعملا موقوي ، TCP لمع ةسلج عاشن درجمب

123	2022-10-16 20:05:31.341977	<device-ip-addr>	<device-ip-addr>	3c:41:0e:31:77:00	272	HTTP	279	GET /hotspot-detect.html HTTP/1.0
124	2022-10-16 20:05:31.341977	<dns-resolved-ip-addr>	<dns-resolved-ip-addr>	3c:41:0e:31:77:00	0	TCP	140	80 -> 59806 [ACK] Seq=1 Ack=132 Win=65152 Len=0 TSval=2051166703 TSecr=2766384857

ةلاعف ةطقن لىلع لوصحلا

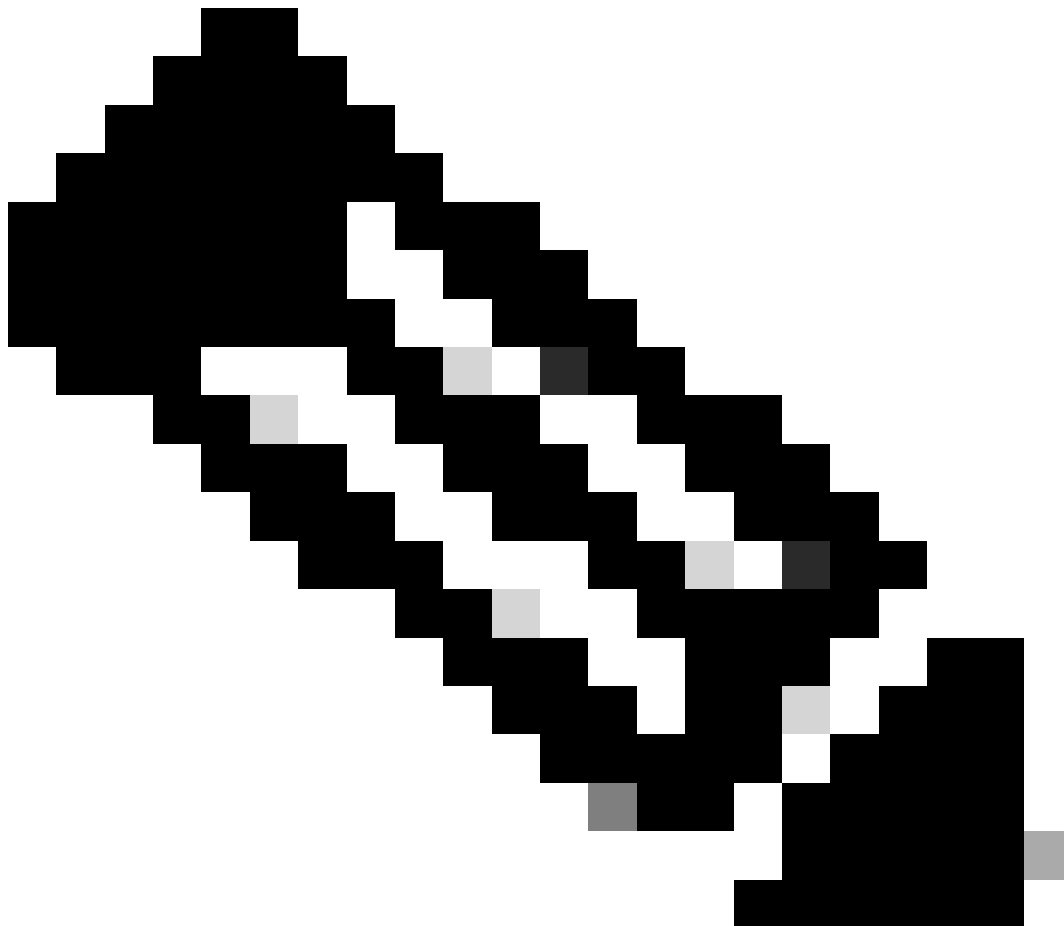
طبر OK

ههلا لىمعال هيجوت ةداعإ بجي يذلا ISE لخدم لىلع OK ةمزحلا يوتحت

No.	Time	Source	Destination	OSID	SEQ#	Protocol	Length	Info
124	2022-10-16 20:05:31.341977	<dns-resolved-ip-addr>	<device-ip-addr>	3c:41:0e:31:77:0f	0	TCP	140	80 → 59886 [ACK] Seq=132 Win=65152 Len=0 TSval=2051166703 TSecr=2766384857
125	2022-10-16 20:05:31.341977	<dns-resolved-ip-addr>	<device-ip-addr>	3c:41:0e:31:77:0f	0	HTTP	988	HTTP/1.1 200 OK (text/html)
126	2022-10-16 20:05:31.341977	<dns-resolved-ip-addr>	<device-ip-addr>	3c:41:0e:31:77:0f	0	TCP	140	80 → 59886 [FIN, ACK] Seq=849 Ack=132 Win=65152 Len=0 TSval=2051166703 TSecr=2766384857

```
> Frame 125: 988 bytes on wire (7904 bits), 988 bytes captured (7904 bits) on interface 0/0
> Ethernet II, Src: Cisco_56:55:cb (f4:bd:9e:56:55:cb), Dst: Cisco_58:04:74 (4c:77:6d:58:04:74)
> 802.1Q Virtual LAN, PRI: 0, DEI: 0, ID: 100
> Internet Protocol Version 4, Src: <source-ip-addr>, Dst: <destination-ip-addr>
> User Datagram Protocol, Src Port: 5247, Dst Port: 5270
> Control And Provisioning of Wireless Access Points - Data
> IEEE 802.11 QoS Data, Flags: .....F.
> Logical-Link Control
> Internet Protocol Version 4, Src: <dns-resolved-addr>, Dst: <device-ip-addr>
> Transmission Control Protocol, Src Port: 80, Dst Port: 59886, Seq: 1, Ack: 132, Len: 848
> Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n
    Location: https://<ise-ip-addr>:8443/portal/gateway?sessionId=030AAB0C00000000C57AF1104&portal=7cf5ac1d-5dbf-4b36-aeec-b9590fd24c02&action=cwa&token=231e2569058bc725ea0848eff99707e&redirect=http://captive.apple.com/hotspot-detect.html\r\n
    Content-Type: text/html\r\n
    Content-Length: 549\r\n
    \r\n
    [HTTP response 1/1]
    [Time since request: 0.000000000 seconds]
    [Request in frames: 3/2]
    [Request URI: http://captive.apple.com/hotspot-detect.html]
    File Data: 549 bytes
  > Line-based text data: text/html (9 lines)
```

طبر OK



بجي، كذلذ. OK ةمزحلا ي هعاجرا مت رخآ URL ناو نع مهيدل صاخشألا مظعم :ةطحال م

ي.ئاهنل IP ناوع ىلع لوصحلل رخ DNS مالعستسا عارج

ةديج TCP لمع ةسلج عاشن

ةياهنل ي ف نكلو، مزحلل نم دي دعال لدابت متي، لخدملاب صاخل IP ناوع فاشتك دع ب نأل يتل (DNS ةطساوب اهلح مت وأ) OK ةمزحلل ي ف اهعارجا مت يتل ةهوجل IP عم ةمزح لدابت متي ةبوابل ىل اهؤاشن متي ةديج TCP لمع ةسلج رهظتو، ISE ب صاخل IP ناوع قباطت

No.	Time	Source	Destination	ISS ID	SEQ#	Protocol	Length	Info
184	2022-10-16 20:05:32.705957	<device-ip-addr>	<ise-portal-ip-addr>	3c:41:0e:13:177:00		3089 TCP	168	51852 → 8443 [SYN, ECE, CWR] Seq=0 Win=65535 Len=0 MSS=1250 ID=64 TSval=3764242470 TSecr=0 SACK_PERM=0
185	2022-10-16 20:05:32.705957	<device-ip-addr>	<ise-portal-ip-addr>			TCP	0	[TCP Retransmission] [TCP Port Number] 51852 → 8443 [SYN, ECE, CWR] Seq=0 Win=65535 Len=0 MSS=1250
186	2022-10-16 20:05:32.705957	<device-ip-addr>	<ise-portal-ip-addr>			TCP	78	8443 → 51852 [SYN, ACK, ECE] Seq=0 Ack=1 Win=22068 Len=0 MSS=1460 SACK_PERM=0 TSval=15099122 TSecr=15440
187	2022-10-16 20:05:32.705957	<device-ip-addr>	<ise-portal-ip-addr>	3c:41:0e:13:177:0f		0 TCP	148	[TCP Retransmission] 8443 → 51852 [SYN, ACK, ECE] Seq=0 Ack=1 Win=22068 Len=0 MSS=1460 SACK_PERM=0 TSval=15099122 TSecr=15440
188	2022-10-16 20:05:32.788962	<device-ip-addr>	<ise-ip-addr>	3c:41:0e:13:177:00		285 TCP	148	51852 → 8443 [ACK] Seq=1 Ack=1 Win=131200 Len=0 TSval=3764242473 TSecr=1548966322

ISE لخدمل ىل ةديج TCP ةسلجو ي نائل لاصتال

مدختسم لل لخدمل اضرع متي

ي ف امكو. ليمع ال اضرع تسم اضرع تسم ىلع اريخ ISE لخدمل اضرع متي، ةطقنل هذه دنعو ابجرمو ليمع ال ابجرم لثم عايشأ، زاهجل او ISE ن ب مزحلل نم دي دعال لدابت متي، قباسل دونبل لوبق وأ، رورم ال ةمكلو مدختسم ال مسا ليمع ال نم ISE بلطي ثيح انهو. اذكهو مداخل اب ISE مداخ ىلع هنيوكت مت عيش ي وأ طورشل او

CoA رارق / CoA بلط

ةدحو ىل CoA نم ابلط ISE لسري، ةبولطم ال تانا ي بل عيمجل مدختسم ال لخدمل درجمبو ةكبشل ي ف مكحتل رصنع ىلع عيش لك نيوكت مت اذا. مدختسم ال ليوخت ريغي تمل مكحتل نإف، كلذ ىل امو CoA معدو NAC ةلود دوجو لثم، عقوتم وه امك (WLC) ةيكللس ال ةيكللس ال رصنع ال، او (CoA ACK) CoA رارق لسري (WLC) ةيكللس ال ةيكللس ال ي ف مكحتل رصنع (CoA NACK) فارتعا معد CoA ةيكللس ال ةيكللس ال ي ف مكحتل ةدحو لسرت نأ نكمي CoA ACK ىتح لسرت ال اهنا ةطاسبب وأ

No.	Time	Source	Destination	ISS ID	SEQ#	Protocol	Length	Info
1752	2022-10-16 20:05:45.824954	10.20.30.14	192.168.10.3			RADIUS	248	CoA-Request id=1
1753	2022-10-16 20:05:45.825946	192.168.10.3	10.20.30.14			RADIUS	115	CoA-ACK id=1

CoA رارق او بلط

ةكبش ىل ليمع: ي نائل لاصتال

ديج لوصو بلط

ىل ةديج لوصو بلط ةمزح (WLC) ةيكللس ال ةيكللس ال ي ف مكحتل رصنع لسري ISE.

```
80203 Protocol  
Code: Access-Request (1) 1  
Packet Identifier: 02 (2)  
Length: 376  
Authenticator: 080f76c2b2284c08030422f2038049  
[Time: 2022-10-24 20:05:45.830933 from 1755]  
▼ Attribute Value Pairs  
w RADIUS Attribute: Cisco-Check (2) 2  
Type: 4  
Length: 34  
User-Name: 8086c0cd399  
> AUP: t=User-Password(2) 1=18 val=encrypted  
> AUP: t=Service-Type(4) 1=8 val=all-check(18)  
Type: 6  
Length: 6  
Service-Type: Ext-Check (18) 1  
> AUP: t=Vendor-Specific(28) 1=11 vnd=ciscoSystem(9)  
> AUP: t=Vendor-Specific(28) 1=12 vnd=ciscoSystem(9)  
> AUP: t=Message-Authenticator(80) 1=18 val=d6767b401240e808025d8f62cbab30  
> AUP: t=CAP-Wrap-Name(182) 1=2 val=0  
> AUP: t=Vendor-Specific(28) 1=40 vnd=ciscoSystem(9)  
> AUP: t=Vendor-Specific(28) 1=18 vnd=ciscoSystem(9)  
Type: 26  
Length: 18  
Vendor ID: ciscoSystem (8)  
> VSA: t=Cisco-OPN(1) 1=1 vnd=ciscoSystem(8) 1  
> AUP: t=Vendor-ID-Address(1) 1=4 val=192.168.2.1  
> AUP: t=Vendor-Specific(28) 1=12 vnd=ciscoSystem(9)  
> AUP: t=Vendor-Specific(28) 1=19 vnd=ciscoSystem(9)  
Type: 26  
Length: 18  
Vendor ID: ciscoSystem (8)  
> VSA: t=Cisco-OPN(1) 1=3 val=1=lan-lb-200  
> AUP: t=Vendor-ID-Address(1) 1=4 val=192.168.18.3  
Type: 4  
Length: 4  
> VSA: t=CAP-Port-Configuration(1) 1=1 val=0  
> AUP: t=MQ-Port-Type(83) 1=4 val=wireless-802.11(19)  
> AUP: t=MQ-Port(1) 1=4 val=80211  
> AUP: t=Vendor-Specific(28) 1=27 vnd=ciscoSystem(9)  
Type: 26  
Length: 27  
Vendor ID: ciscoSystem (8)  
> VSA: t=Cisco-OPN(1) 1=21 val=cisco-wlan-ssidName  
> AUP: t=Vendor-Specific(28) 1=29 vnd=ciscoSystem(9)  
Type: 26  
Length: 26  
Vendor ID: ciscoSystem (8)  
> VSA: t=Cisco-OPN(1) 1=23 val=wlan-profile-name  
> AUP: t=Called-Station-ID(30) 1=27 val=3c-41-de-31-77-80-c0  
> AUP: t=Calling-Station-ID(1) 1=18 val=08-8e-4e-ec-43-99  
> AUP: t=Vendor-Specific(28) 1=13 vnd=ciscoSystem(9)  
> AUP: t=MQ-Identifier(12) 1=8 val=MC-9000
```

ةديجال لوصول بلط ةمزح ليلحت

1. ةمزال مسأ.
2. ةقداصملا لواحي يذلا MAC ناوع .
3. MAC ةيفصت ىلإ ريشي اذه .
4. ةيلمع ىلإ ةراشإلل ISE ىلإ مكحتلا ةدحو ةطساوب ويديفال/وصولل جوز لاسرأ متي ةيفصت .
5. WLC ب صاخلا IP WMI ناوع .
6. هب لاصتالا ليمعلا لواحي يذلا SSID .
7. اهب لاصتالا ليمعلا لواحي يتلا (WLAN) ةيكلساللا ةيلحمللا ةكبشللا مسأ .

ديجال لوصول لوبق

ىلإ ةديجال لوصول بلط ةمزح (WLC) ةيكلساللا ةيلحمللا ةكبشللا في مكحتلا رصنع لسري ISE.

```
80203 Protocol  
Code: Access-Request (1) 1  
Packet Identifier: 02 (2)  
Length: 127  
Authenticator: 7077f4f062232166900ff8920f6  
[Time: 2022-10-24 20:05:45.830933 from 1755]  
[Time From request: 0.82097008 seconds]  
▼ Attribute Value Pairs  
w RADIUS Attribute: Cisco-Check (2) 2  
Type: 4  
Length: 4  
User-Name: cba-username  
> AUP: t=Cisco-Check(2) 1=8 val=cb45151a08150a158130f0f0308030803080308151714813136943d2632609796.  
> AUP: t=Message-Authenticator(80) 1=18 val=2386e18f1266a8156ca8790c75e6  
> AUP: t=Vendor-Specific(28) 1=13 vnd=ciscoSystem(9)
```

ةديجال لوصول لوبق ةمزح ليلحت

1. ةمزال مسأ.
2. اهضرع مت يتلا ةباوبلا ىلإ عيئاننلا ليمعلا ةطساوب هلإخدا مت يذلا مدختسملا مسأ .

هيدل نأ ليمعلا دكؤي نأ درجمب . ليمعلا نم ديدج قيقت لاصتا راب تخا عارج متي ، ىرخأ ةرم زاھجلاب سح ، ايقاقتل اھقالغ نكمي) ةباوبلا قالغ نأل انكمي ، تنرتنإلاب لاصتا ةكبشللاب نألا لصتم ليمعلا . (مدختسملا

ةمچرتل هذه ل و ح

ةلأل تاي نقتل ن م ة و مچ م ا د خ ت س ا ب د ن ت س م ل ا ا ذ ه Cisco ت مچرت
م ل ا ع ل ا ا ح ن ا ع م چ ي ف ن ي م د خ ت س م ل ل م ع د ي و ت ح م م ي د ق ت ل ة ي ر ش ب ل و
ا م ك ة ق ي ق د ن و ك ت ن ل ة ي ل ا ة مچرت ل ض ف ا ن ا ة ظ ح ا ل م ي ج ر ي . ة ص ا خ ل ا م ه ت غ ل ب
Cisco ي ل خ ت . ف ر ت ح م مچرت م ا ه م د ق ي ي ت ل ا ة ي ف ا ر ت ح ا ل ا ة مچرت ل ا ع م ل ا ح ل ا و ه
ي ل ا م ا ة ا د ع و چ ر ل ا ب ي ص و ت و ت ا مچرت ل ا ه ذ ه ة ق د ن ع ا ه ت ي ل و ئ س م Cisco
Systems (ر ف و ت م ط ب ا ر ل ا) ي ل ص ا ل ا ي ز ي ل ج ن ا ل ا د ن ت س م ل ا