

# 802.1X 및 웹 인증을 위한 LDAP 인증을 사용하여 Catalyst 9800 WLC 구성

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## 소개

이 문서에서는 LDAP 서버를 사용자 자격 증명용 데이터베이스로 사용하여 클라이언트를 인증하도록 Catalyst 9800을 구성하는 방법에 대해 설명합니다.

## 사전 요구 사항

### 요구 사항

다음 주제에 대한 지식을 보유하고 있으면 유용합니다.

- Microsoft Windows 서버
- Active Directory 또는 기타 LDAP 데이터베이스

### 사용되는 구성 요소

Cisco IOS®-XE 버전 17.3.2a를 실행하는 C9100 AP(액세스 포인트)의 C9800 EWC

LDAP 데이터베이스 역할을 하는 QNAP NAS(Network Access Storage)가 포함된 Microsoft AD(Active Directory) 서버

이 문서의 정보는 특정 랩 환경의 디바이스를 토대로 작성되었습니다. 이 문서에 사용된 모든 디바이스는 초기화된(기본) 컨피그레이션으로 시작되었습니다. 현재 네트워크가 작동 중인 경우 모든 명령의 잠재적인 영향을 미리 숙지하시기 바랍니다.

## Webauth SSID로 LDAP 구성

### 네트워크 다이어그램

이 글자는 매우 간단한 설정을 기반으로 작성되었습니다.

IP 192.168.1.15가 포함된 EWC AP 9115

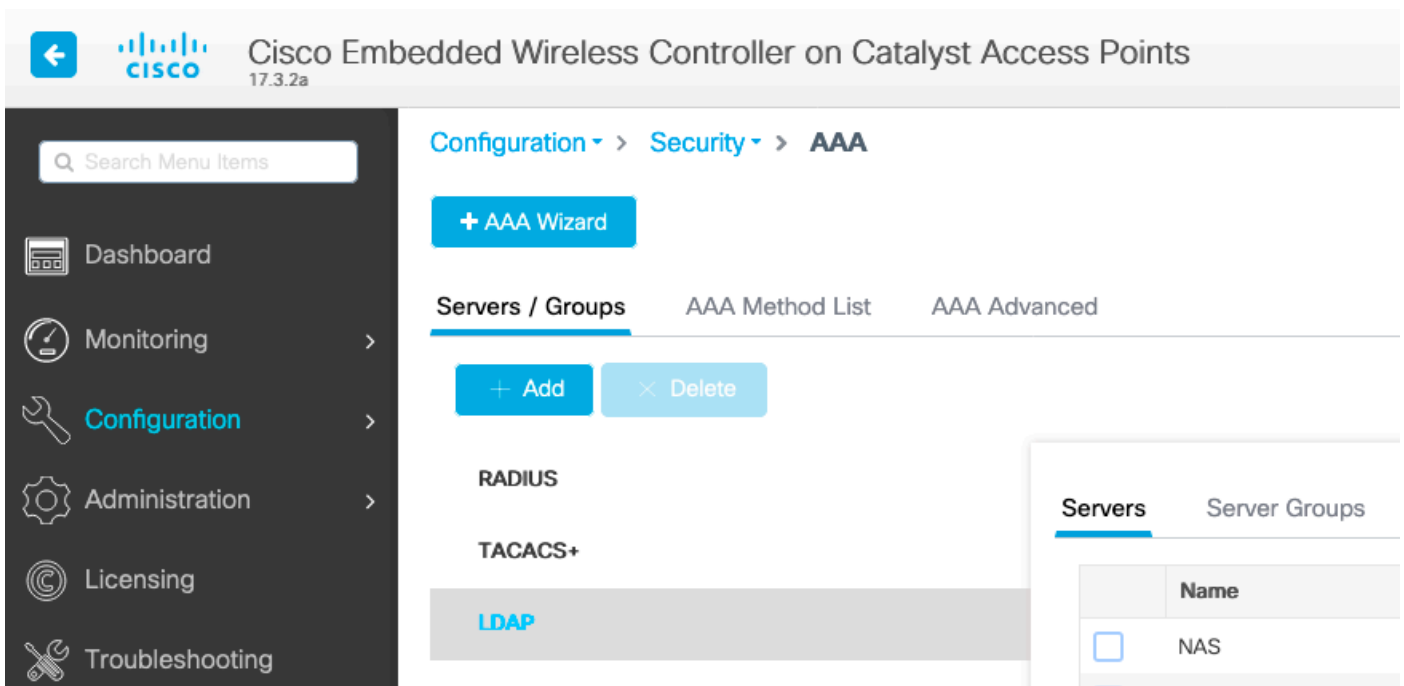
IP 192.168.1.192를 사용하는 Active Directory 서버

EWC의 내부 AP에 연결하는 클라이언트

### 컨트롤러 구성

1단계. LDAP 서버 구성

Configuration(컨피그레이션) > Security(보안) > AAA > Servers/Groups(서버/그룹) > LDAP로 이동하고 + Add(추가)를 클릭합니다



LDAP 서버의 이름을 선택하고 세부 정보를 입력합니다. 각 필드에 대한 설명은 이 문서의 "LDAP 서버 세부사항 이해" 섹션을 참조하십시오.

|                        |  |                                  |
|------------------------|--|----------------------------------|
| Server Name*           | <input type="text" value="AD"/>                    |                                  |
| Server Address*        | <input type="text" value="192.168.1.192"/>         | ⚠ Provide a valid Server address |
| Port Number*           | <input type="text" value="389"/>                   |                                  |
| Simple Bind            | <input type="text" value="Authenticated"/>         |                                  |
| Bind User name*        | <input type="text" value="Administrator@lab.cor"/> |                                  |
| Bind Password *        | <input type="text" value="."/>                     |                                  |
| Confirm Bind Password* | <input type="text" value="."/>                     |                                  |
| User Base DN*          | <input type="text" value="CN=Users,DC=lab,DC:"/>   |                                  |
| User Attribute         | <input type="text"/>                               |                                  |
| User Object Type       | <input type="text"/>                               | +                                |

| User Object Type | Remove |
|------------------|--------|
| Person           | X      |

|                          |                                      |
|--------------------------|--------------------------------------|
| Server Timeout (seconds) | <input type="text" value="0-65534"/> |
| Secure Mode              | <input type="checkbox"/>             |
| Trustpoint Name          | <input type="text"/>                 |

Update and apply to device(업데이트 및 디바이스에 적용)를 클릭하여 저장합니다.

CLI 명령:

```
ldap server AD ipv4 192.168.1.192 bind authenticate root-dn Administrator@lab.com password 6
WCGYHKTDQPV]DeaHLSFF_GZ[E_MNi_AAB base-dn CN=Users,DC=lab,DC=com search-filter user-object-type
Person
```

2단계. LDAP 서버 그룹을 구성합니다.

Configuration(컨피그레이션) > Security(보안) > AAA > Servers/Groups(서버/그룹) > LDAP > Server Groups(서버 그룹)로 이동하고 +ADD(추가)를 클릭합니다

+ AAA Wizard

Servers / Groups

AAA Method List

AAA Advanced

+ Add

× Delete

RADIUS

TACACS+

LDAP

Servers **Server Groups**

| Name                            | Server 1 | Ser |
|---------------------------------|----------|-----|
| <input type="checkbox"/> Idapgr | AD       | N/A |

1 10 items per page

이름을 입력하고 이전 단계에서 구성한 LDAP 서버를 추가합니다.

Name\*

Idapgr

Group Type

LDAP

Available Servers

Assigned Servers

NAS

AD

>

<

»

«

↖

↗

⏴

⏵

Update and apply(업데이트 및 적용)를 클릭하여 저장합니다.

CLI 명령:

```
aaa group server ldap ldapgr server AD
```

3단계. AAA 인증 방법 구성

Configuration(컨피그레이션) > Security(보안) > AAA > AAA method List(AAA 방법 목록) > Authentication(인증)으로 이동하고 +Add(추가)를 클릭합니다

+ AAA Wizard

**Authentication**

Authorization

Accounting

+ Add
× Delete

|                          | Name     | Type  | Group Type | Group1 |
|--------------------------|----------|-------|------------|--------|
| <input type="checkbox"/> | default  | login | local      | N/A    |
| <input type="checkbox"/> | ldapauth | login | group      | ldapgr |

이름을 입력하고 로그인 유형을 선택한 다음 이전에 구성된 LDAP 서버 그룹을 가리킵니다.

### Quick Setup: AAA Authentication

Method List Name\*

Type\*  ⓘ

Group Type  ⓘ

Fallback to local

**Available Server Groups**

radius

ldap

tacacs+

>

<

>>

<<

**Assigned Server Groups**

ldapgr

CLI 명령:

```
aaa authentication login ldapauth group ldapgr
```

4단계. AAA 권한 부여 방법 구성

Configuration(컨피그레이션) > Security(보안) > AAA > AAA method list(AAA 메서드 목록) > Authorization(권한 부여)으로 이동하고 +Add(추가)를 클릭합니다

+ AAA Wizard

Servers / Groups    **AAA Method List**    AAA Advanced

Authentication

Authorization

Accounting

+ Add
× Delete

|                          | Name     | Type                | Group Type | Group1 |
|--------------------------|----------|---------------------|------------|--------|
| <input type="checkbox"/> | default  | credential-download | group      | ldapgr |
| <input type="checkbox"/> | ldapauth | credential-download | group      | ldapgr |

1 / 10 items per page

선택한 이름의 credential-download 유형 규칙을 생성하고 이전에 생성한 LDAP 서버 그룹을 가리킵니다

### Quick Setup: AAA Authorization

Method List Name\*

Type\*  ⓘ

Group Type  ⓘ

Fallback to local

Authenticated

**Available Server Groups**

radius  
 ldap  
 tacacs+

**Assigned Server Groups**

ldapgr

CLI 명령:

```
aaa authorization credential-download ldapauth group ldapgr
```

#### 5단계. 로컬 인증 구성

Configuration(컨피그레이션) > Security(보안) > AAA > AAA Advanced(AAA 고급) > Global Config(전역 컨피그레이션)로 이동합니다.

로컬 인증 및 로컬 권한 부여를 방법 목록으로 설정하고 이전에 구성한 인증 및 권한 부여 방법을 선택합니다.

[+ AAA Wizard](#)

Servers / Groups    AAA Method List    **AAA Advanced**

---

**Global Config**

- RADIUS Fallback
- Attribute List Name
- Device Authentication
- AP Policy
- Password Policy
- AAA Interface

|                            |  |
|----------------------------|--|
| Local Authentication       | Method List ▾                                |
| Authentication Method List | ldapauth ▾                                   |
| Local Authorization        | Method List ▾                                |
| Authorization Method List  | ldapauth ▾                                   |
| Radius Server Load Balance | <input checked="" type="checkbox"/> DISABLED |
| Interim Update             | <input type="checkbox"/>                     |

[Show Advanced Settings >>>](#)

CLI 명령:

```
aaa local authentication ldapauth authorization ldapauth
```

6단계. webauth 매개변수 맵을 구성합니다

Configuration(컨피그레이션) > Security(보안) > Web Auth(웹 인증)로 이동하고 전역 맵을 편집합니다

Configuration > Security > **Web Auth**

[+ Add](#)    [× Delete](#)

|                          | Parameter Map Name |
|--------------------------|--------------------|
| <input type="checkbox"/> | global             |

◀ ◁ 1 ▷ ▶ 10 ▾ items per page

192.0.2.1과 같은 가상 IPv4 주소를 구성해야 합니다(특정 IP/서브넷은 라우팅 불가 가상 IP에 예약됨).

## Edit Web Auth Parameter

General

Advanced

|                                   |  |
|-----------------------------------|--|
| Parameter-map name                | <input type="text" value="global"/>  |
| Banner Type                       | <input checked="" type="radio"/> None <input type="radio"/> Banner Text <input type="radio"/> Banner Title <input type="radio"/> File Name |
| Maximum HTTP connections          | <input type="text" value="100"/>   |
| Init-State Timeout(secs)          | <input type="text" value="120"/>   |
| Type                              | <input type="text" value="webauth"/>   |
| Virtual IPv4 Address              | <input type="text" value="192.0.2.1"/>   |
| Trustpoint                        | <input type="text" value="--- Select ---"/>  |
| Virtual IPv4 Hostname             | <input type="text"/>   |
| Virtual IPv6 Address              | <input type="text" value=":::~::~"/>   |
| Web Auth intercept HTTPs          | <input type="checkbox"/>   |
| Watch List Enable                 | <input type="checkbox"/>   |
| Watch List Expiry Timeout(secs)   | <input type="text" value="600"/>   |
| Captive Bypass Portal             | <input type="checkbox"/>   |
| Disable Success Window            | <input type="checkbox"/>   |
| Disable Logout Window             | <input type="checkbox"/>   |
| Disable Cisco Logo                | <input type="checkbox"/>   |
| Sleeping Client Status            | <input type="checkbox"/>   |
| Sleeping Client Timeout (minutes) | <input type="text" value="720"/>   |

Apply(적용)를 클릭하여 저장합니다.

CLI 명령:

```
parameter-map type webauth global type webauth virtual-ip ipv4 192.0.2.1
```

7단계. webauth WLAN 구성



Configuration(컨피그레이션) > WLANs(WLAN)로 이동하고 +Add(추가)를 클릭합니다

### Edit WLAN

⚠ Changing WLAN parameters while it is enabled will result in loss of connectivity for clients connected to it.

**General** Security Add To Policy Tags

⚠ Please add the WLANs to Policy Tags for them to broadcast.

|               |   |                |   |
|---------------|---|----------------|---|
| Profile Name* | <input type="text" value="webauth"/>        | Radio Policy   | <input type="text" value="All"/>            |
| SSID*         | <input type="text" value="webauth"/>        | Broadcast SSID | <input checked="" type="checkbox"/> ENABLED |
| WLAN ID*      | <input type="text" value="2"/>              |                |   |
| Status        | <input checked="" type="checkbox"/> ENABLED |                |   |

이름을 구성하고 활성화 상태인지 확인한 다음 보안 탭으로 이동합니다.

레이어 2 하위 탭에서 보안이 없으며 빠른 전환이 비활성화되어 있는지 확인합니다.

### Edit WLAN

⚠ Changing WLAN parameters while it is enabled will result in loss of connectivity for clients connected to it.

General **Security** Add To Policy Tags

**Layer2** Layer3 AAA

|                       |                                   |                       |                                       |
|-----------------------|-----------------------------------|-----------------------|---------------------------------------|
| Layer 2 Security Mode | <input type="text" value="None"/> | Lobby Admin Access    | <input type="checkbox"/>              |
| MAC Filtering         | <input type="checkbox"/>          | Fast Transition       | <input type="text" value="Disabled"/> |
| OWE Transition Mode   | <input type="checkbox"/>          | Over the DS           | <input type="checkbox"/>              |
|                       |                                   | Reassociation Timeout | <input type="text" value="20"/>       |

Layer3 탭에서 웹 정책을 활성화하고 매개변수 맵을 global로 설정하고 인증 목록을 이전에 구성한 aaa 로그인 방법으로 설정합니다.

⚠ Changing WLAN parameters while it is enabled will result in loss of connectivity for clients connected to it.

General **Security** Add To Policy Tags

Layer2 **Layer3** AAA

[Show Advanced Settings >>>](#)

Web Policy

Web Auth Parameter Map

Authentication List  ⓘ

*For Local Login Method List to work, please make sure the configuration 'aaa authorization network default local' exists on the device*

Apply(적용)를 클릭하여 저장합니다

CLI 명령:

```
wlan webauth 2 webauth no security ft adaptive no security wpa no security wpa wpa2 no security wpa wpa2 ciphers aes no security wpa akm dot1x security web-auth security web-auth authentication-list ldapauth security web-auth parameter-map global no shutdown
```

**8단계. SSID가 브로드캐스트되는지 확인합니다**

Configuration(컨피그레이션) > Tags(태그)로 이동하고 SSID가 현재 SSID로 서비스하는 정책 프로파일에 포함되어 있는지 확인합니다(아직 태그를 구성하지 않은 경우 새 새 컨피그레이션의 기본 정책 태그). 기본적으로 default-policy-tag는 수동으로 포함할 때까지 생성한 새 SSID를 브로드캐스트하지 않습니다.

이 문서에서는 정책 프로파일의 컨피그레이션을 다루지 않으며 컨피그레이션의 해당 부분에 대해 잘 알고 있다고 가정합니다.

## dot1x SSID로 LDAP 구성(로컬 EAP 사용)

9800에서 802.1X SSID에 대한 LDAP를 구성하려면 일반적으로 로컬 EAP도 구성해야 합니다. RADIUS를 사용하는 경우 LDAP 데이터베이스와의 연결을 설정하는 RADIUS 서버이며 이 문서의 범위를 벗어납니다. 이 구성을 시도하기 전에 먼저 WLC에 구성된 로컬 사용자로 로컬 EAP를 구성하는 것이 좋습니다. 이 문서의 끝에 있는 참조 섹션에 구성 예가 나와 있습니다. 완료되면 사용자 데이터베이스를 LDAP로 이동할 수 있습니다.

**1단계. 로컬 EAP 프로파일 구성**

Configuration(컨피그레이션) > Local EAP(로컬 EAP)로 이동하고 +Add(추가)를 클릭합니다



Search Menu Items



Dashboard



Monitoring



Configuration



Administration



Licensing



Troubleshooting

Configuration > Security > Local EAP

Local EAP Profiles

EAP-FAST Parameters

+ Add

× Delete

|                          | Profile Name |
|--------------------------|--------------|
| <input type="checkbox"/> | PEAP         |

1 10 items per page

프로필의 이름을 선택합니다. 적어도 PEAP를 활성화하고 신뢰 지점 이름을 선택합니다. 기본적으로 WLC에는 자체 서명 인증서만 있으므로 어떤 인증서를 선택하든(일반적으로 TP-self-signed-xxxx가 가장 적합한 것) 문제가 되지 않지만 새로운 스마트폰 OS 버전에서 자체 서명 인증서를 신뢰하는 횟수가 줄어들기 때문에 신뢰할 수 있는 공개 서명 인증서 설치를 고려하십시오.

## Edit Local EAP Profiles

Profile Name\*

PEAP

LEAP

EAP-FAST

EAP-TLS

PEAP

Trustpoint Name

TP-self-signed-3059

CLI 명령:

eap profile PEAP method peap pki-trustpoint TP-self-signed-3059261382

## 2단계. LDAP 서버 구성

Configuration(컨피그레이션) > Security(보안) > AAA > Servers/Groups(서버/그룹) > LDAP로 이동하고 + Add(추가)를 클릭합니다

The screenshot shows the Cisco Embedded Wireless Controller configuration interface. The breadcrumb navigation is Configuration > Security > AAA. The current page is 'Servers / Groups' under the 'AAA' section. There are three tabs: 'Servers / Groups', 'AAA Method List', and 'AAA Advanced'. The 'Servers / Groups' tab is active. Below the tabs, there are '+ Add' and 'x Delete' buttons. Underneath, there are sections for 'RADIUS', 'TACACS+', and 'LDAP'. The 'LDAP' section is highlighted. On the right side, there is a table with the following structure:

| Servers                  |      | Server Groups |  |
|--------------------------|------|---------------|--|
|                          | Name |               |  |
| <input type="checkbox"/> | NAS  |               |  |
| <input type="checkbox"/> |      |               |  |

LDAP 서버의 이름을 선택하고 세부 정보를 입력합니다. 각 필드에 대한 설명은 이 문서의 "LDAP 서버 세부사항 이해" 섹션을 참조하십시오.

| Server Name*             | <input type="text" value="AD"/>   |                                |                  |        |        |  |
|--------------------------|---|--------------------------------|------------------|--------|--------|--|
| Server Address*          | <input type="text" value="192.168.1.192"/>  | Provide a valid Server address |                  |        |        |  |
| Port Number*             | <input type="text" value="389"/>  |                                |                  |        |        |  |
| Simple Bind              | <input type="text" value="Authenticated"/>  |                                |                  |        |        |  |
| Bind User name*          | <input type="text" value="Administrator@lab.cor"/>  |                                |                  |        |        |  |
| Bind Password *          | <input type="password" value="."/>  |                                |                  |        |        |  |
| Confirm Bind Password*   | <input type="password" value="."/>  |                                |                  |        |        |  |
| User Base DN*            | <input type="text" value="CN=Users,DC=lab,DC:"/>  |                                |                  |        |        |  |
| User Attribute           | <input type="text"/>  |                                |                  |        |        |  |
| User Object Type         | <input type="text"/>  |                                |                  |        |        |  |
|                          | <table border="1"> <thead> <tr> <th>User Object Type</th> <th>Remove</th> </tr> </thead> <tbody> <tr> <td>Person</td> <td></td> </tr> </tbody> </table> |                                | User Object Type | Remove | Person |  |
| User Object Type         | Remove  |                                |                  |        |        |  |
| Person                   |   |                                |                  |        |        |  |
| Server Timeout (seconds) | <input type="text" value="0-65534"/>  |                                |                  |        |        |  |
| Secure Mode              | <input type="checkbox"/>  |                                |                  |        |        |  |
| Trustpoint Name          | <input type="text"/>  |                                |                  |        |        |  |

Update and apply to device(업데이트 및 디바이스에 적용)를 클릭하여 저장합니다.

```
ldap server AD ipv4 192.168.1.192 bind authenticate root-dn Administrator@lab.com password 6 WCGYHKTDQPV]DeaHLSPF_GZ[E_MNi_AAB base-dn CN=Users,DC=lab,DC=com search-filter user-object-type Person
```

3단계. LDAP 서버 그룹을 구성합니다.

Configuration(컨피그레이션) > Security(보안) > AAA > Servers/Groups(서버/그룹) > LDAP > Server Groups(서버 그룹)로 이동하고 +ADD(추가)를 클릭합니다

+ AAA Wizard

Servers / Groups    AAA Method List    AAA Advanced

+ Add

× Delete

RADIUS

TACACS+

LDAP

Servers    **Server Groups**

| Name                            | Server 1 | Ser |
|---------------------------------|----------|-----|
| <input type="checkbox"/> Idapgr | AD       | N/A |

1    10 items per page

이름을 입력하고 이전 단계에서 구성한 LDAP 서버를 추가합니다.

Name\*

Idapgr

Group Type

LDAP

Available Servers

Assigned Servers

NAS

>

AD

<

>>

<<

↖

↗

⏚

⏚

Update and apply(업데이트 및 적용)를 클릭하여 저장합니다.

CLI 명령:

```
aaa group server ldap ldapgr server AD
```

4단계. AAA 인증 방법 구성

Configuration(컨피그레이션) > Security(보안) > AAA > AAA Method List(AAA 방법 목록) > Authentication(인증)으로 이동하고 +Add(추가)를 클릭합니다

dot1x 유형 인증 방법을 구성하고 로컬로만 지정합니다. LDAP 서버 그룹을 가리키고 싶겠지만 여기서 802.1X 인증자 역할을 하는 것은 WLC 자체입니다(사용자 데이터베이스가 LDAP에 있지만 권

한 부여 방법 작업).

## Quick Setup: AAA Authentication

Method List Name\*

ldapauth

Type\*

dot1x



Group Type

local



Available Server Groups

radius  
ldap  
tacacs+  
ldapgr



Assigned Server Groups



CLI 명령:

```
aaa authentication dot1x ldapauth local
```

**5단계. AAA 권한 부여 방법 구성**

Configuration(컨피그레이션) > Security(보안) > AAA > AAA Method List(AAA 메서드 목록) > Authorization(권한 부여)으로 이동하고 +Add(+추가)를 클릭합니다

인증 방법의 credential-download 유형을 생성하고 LDAP 그룹을 가리키도록 합니다.

## Quick Setup: AAA Authorization

Method List Name\*

ldapauth

Type\*

credential-download ▼



Group Type

group ▼



Fallback to local

Authenticated

Available Server Groups

radius  
ldap  
tacacs+



Assigned Server Groups

ldapgr



CLI 명령:

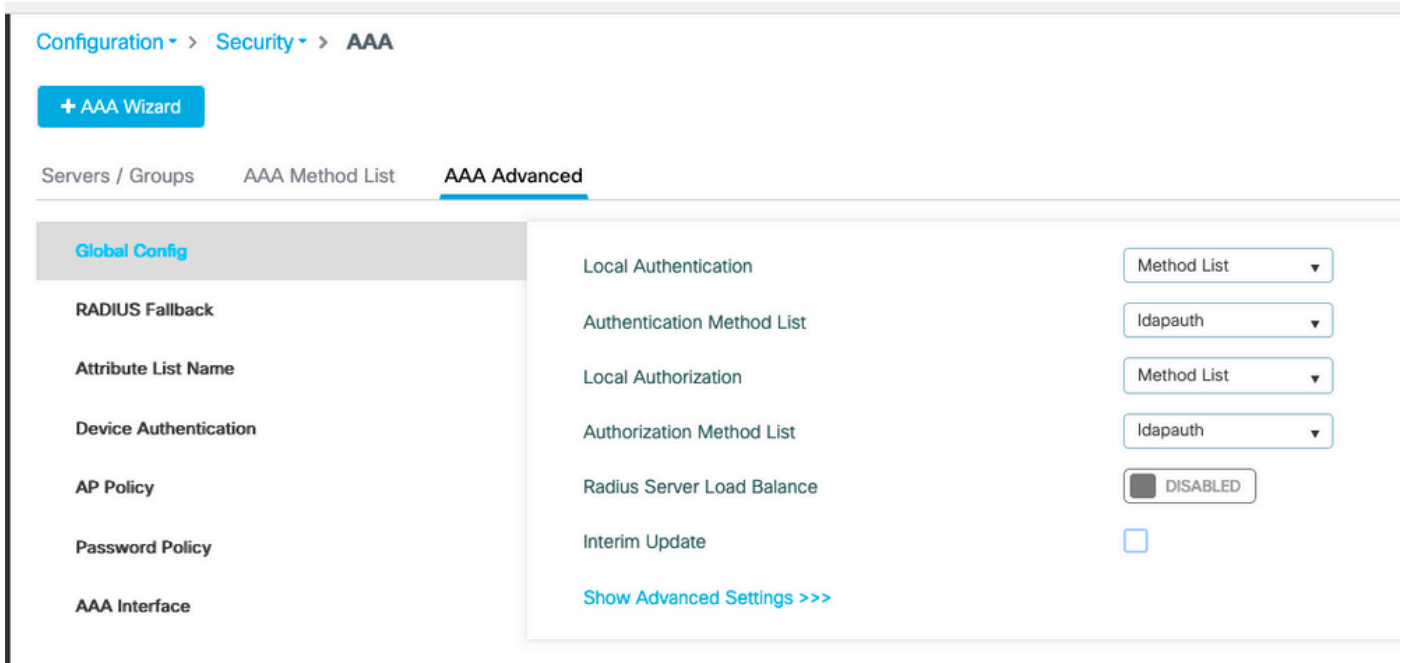
```
aaa authorization credential-download ldapauth group ldapgr
```

**6단계. 로컬 인증 세부 정보 구성**

Configuration(컨피그레이션) > Security(보안) > AAA > AAA Method List(AAA 메서드 목록) > AAA advanced(AAA 고급)로 이동합니다

인증과 권한 부여를 모두 위해 Method List(방법 목록)를 선택하고 로컬로 가리키는 dot1x 인증 방법과 LDAP로 향하는 credential-download 권한 부여 방법을 선택합니다





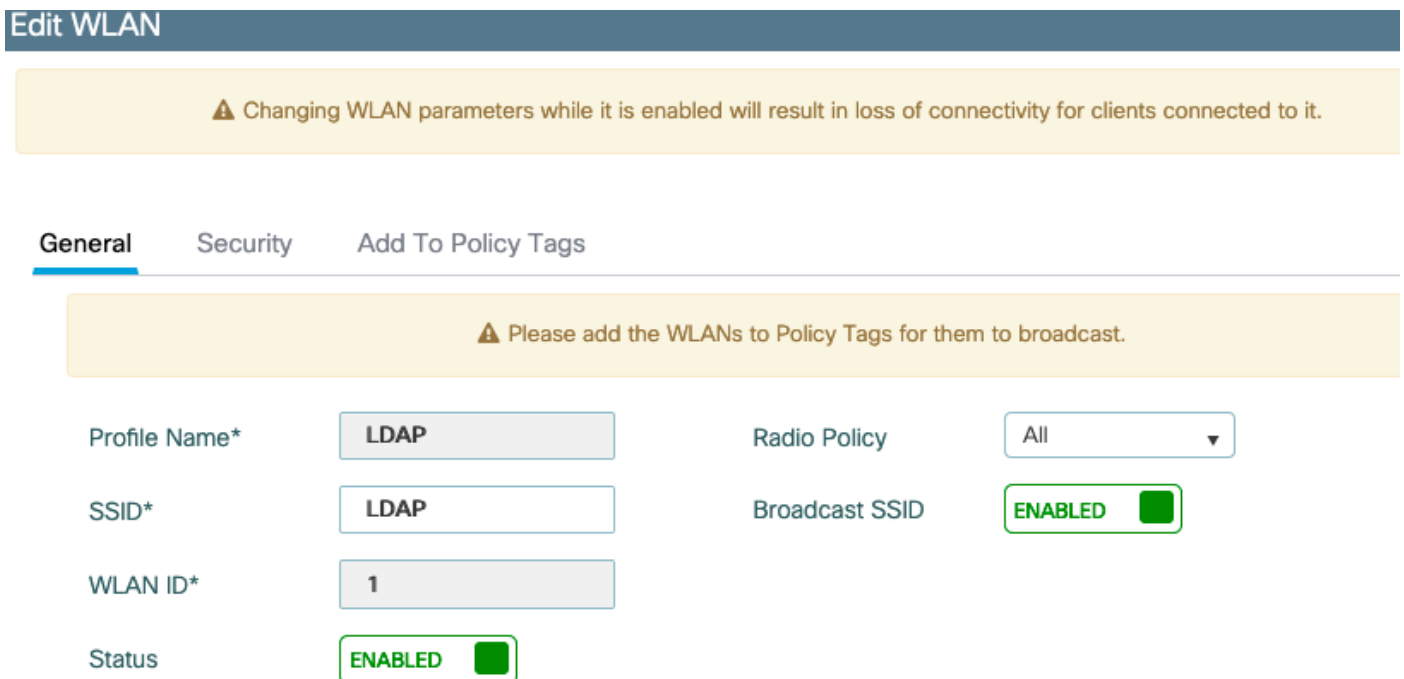
CLI 명령:

```
aaa local authentication ldapauth authorization ldapauth
```

7단계. dot1x WLAN 구성

Configuration(컨피그레이션) > WLAN(WLAN)으로 이동하고 +Add(추가)를 클릭합니다

프로파일 및 SSID 이름을 선택하고 활성화되었는지 확인합니다.



레이어 2 보안 탭으로 이동합니다.

## WPA+WPA2를 레이어 2 보안 모드로 선택

WPA 매개변수에서 WPA2 및 AES가 활성화되어 있는지 확인하고 802.1X를 활성화합니다

### Edit WLAN

⚠ Changing WLAN parameters while it is enabled will result in loss of connectivity for clients connected to it.

General **Security** Add To Policy Tags

**Layer2** Layer3 AAA

Layer 2 Security Mode

MAC Filtering

#### Protected Management Frame

PMF

#### WPA Parameters

WPA Policy

WPA2 Policy

GTK Randomize

OSEN Policy

WPA2 Encryption  AES(CCMP128)

CCMP256

GCMP128

GCMP256

Auth Key Mgmt  802.1x

PSK

CCKM

FT + 802.1x

FT + PSK

802.1x-SHA256

PSK-SHA256

Lobby Admin Access

Fast Transition

Over the DS

Reassociation Timeout

#### MPSK Configuration

MPSK

AAA 하위 탭으로 이동합니다.

이전에 생성한 dot1x 인증 방법을 선택하고 로컬 EAP 인증을 활성화한 다음 첫 번째 단계에서 구성된 EAP 프로파일을 선택합니다.

## Edit WLAN

⚠ Changing WLAN parameters while it is enabled will result in loss of connectivity for clients connected to it.

General **Security** Add To Policy Tags

Layer2 Layer3 **AAA**

Authentication List

ldapauth ▼ ⓘ

Local EAP Authentication



EAP Profile Name

PEAP ▼

Apply(적용)를 클릭하여 저장합니다.

CLI 명령:

```
wlan LDAP 1 LDAP local-auth PEAP security dot1x authentication-list ldapauth no shutdown
```

**8단계.** WLAN이 브로드캐스트되는지 확인합니다.

Configuration(컨피그레이션) > Tags(태그)로 이동하고 SSID가 현재 SSID로 서비스하는 정책 프로파일에 포함되어 있는지 확인합니다(아직 태그를 구성하지 않은 경우 새 새 컨피그레이션의 기본 정책 태그). 기본적으로 default-policy-tag는 수동으로 포함할 때까지 생성한 새 SSID를 브로드캐스트하지 않습니다.

이 문서에서는 정책 프로파일의 컨피그레이션을 다루지 않으며 컨피그레이션의 해당 부분에 대해 잘 알고 있다고 가정합니다.

Active Directory를 사용하는 경우 "userPassword" 특성을 전송하도록 AD 서버를 구성해야 합니다. 이 특성을 WLC로 전송해야 합니다. AD 서버가 아닌 WLC가 검증을 하기 때문입니다. 비밀번호가 일반 텍스트로 전송되지 않으므로 LDAP 데이터베이스를 사용하여 확인할 수 없으므로 PEAP-mschapv2 메서드로 인증하는 데 문제가 있을 수도 있습니다. PEAP-GTC 메서드만 특정 LDAP 데이터베이스에서 작동합니다.

## LDAP 서버 세부사항 이해

### 9800 웹 UI의 필드 이해

다음은 9800에 구성된 LDAP 서버로 작동하는 매우 기본적인 Active Directory의 예입니다

| Server Name*             | <input type="text" value="AD"/>  |                                  |                  |        |        |   |
|--------------------------|--|----------------------------------|------------------|--------|--------|---|
| Server Address*          | <input type="text" value="192.168.1.192"/>   | ⚠ Provide a valid Server address |                  |        |        |   |
| Port Number*             | <input type="text" value="389"/>   |                                  |                  |        |        |   |
| Simple Bind              | <input type="text" value="Authenticated"/>   | ▼                                |                  |        |        |   |
| Bind User name*          | <input type="text" value="Administrator@lab.cor"/>   |                                  |                  |        |        |   |
| Bind Password *          | <input type="text" value="."/>   |                                  |                  |        |        |   |
| Confirm Bind Password*   | <input type="text" value="."/>   |                                  |                  |        |        |   |
| User Base DN*            | <input type="text" value="CN=Users,DC=lab,DC:"/>   |                                  |                  |        |        |   |
| User Attribute           | <input type="text"/>   | ▼                                |                  |        |        |   |
| User Object Type         | <input type="text"/>   | +                                |                  |        |        |   |
|                          | <table border="1"> <thead> <tr> <th>User Object Type</th> <th>Remove</th> </tr> </thead> <tbody> <tr> <td>Person</td> <td>✕</td> </tr> </tbody> </table> |                                  | User Object Type | Remove | Person | ✕ |
| User Object Type         | Remove   |                                  |                  |        |        |   |
| Person                   | ✕  |                                  |                  |        |        |   |
| Server Timeout (seconds) | <input type="text" value="0-65534"/>   |                                  |                  |        |        |   |
| Secure Mode              | <input type="checkbox"/>   |                                  |                  |        |        |   |
| Trustpoint Name          | <input type="text"/>   | ▼                                |                  |        |        |   |

이름과 IP는 충분히 설명이 가능합니다.

포트: 389는 LDAP의 기본 포트이지만 서버에서 다른 포트를 사용할 수 있습니다.

단순 바인딩: 현재 인증되지 않은 바인드를 지원하는 LDAP 데이터베이스가 있는 경우는 매우 드뭅니다(즉, 인증 양식 없이 누구나 LDAP 검색을 수행할 수 있습니다). 인증된 단순 바인딩은 가장 일반적인 인증 유형이며 Active Directory에서 기본적으로 허용하는 것입니다. 관리자 계정 이름과 암호를 입력하여 사용자 데이터베이스에서 검색할 수 있습니다.

바인드 사용자 이름: Active Directory에서 관리자 권한이 있는 사용자 이름을 가리켜야 합니다. AD는 "user@domain" 형식을 허용하지만 다른 많은 LDAP 데이터베이스에서는 사용자 이름에 "CN=xxx,DC=xxx" 형식을 사용합니다. AD가 아닌 다른 LDAP 데이터베이스의 예는 이 문서의 뒷부

분에 나와 있습니다.

바인딩 암호: 이전에 입력한 관리자 사용자 이름의 비밀번호를 입력합니다.

사용자 기본 DN: 여기에 검색이 시작되는 LDAP 트리의 위치인 "search root(검색 루트)"를 입력합니다. 이 예에서는 LDAP 도메인의 예가 lab.com이므로 DN이 "CN=Users,DC=lab,DC=com"인 "Users" 그룹 아래에 모든 사용이 있습니다. 이 사용자 기본 DN을 찾는 방법의 예는 이 섹션의 뒷부분에서 제공됩니다.

사용자 특성: 이는 비워둘 수도 있고 어떤 LDAP 필드가 LDAP 데이터베이스의 사용자 이름으로 간주되는지를 나타내는 LDAP 특성 맵을 가리킬 수도 있습니다. 그러나 Cisco 버그 ID로 인해 [CSCv11813](#) 그러나 WLC는 CN 필드와의 인증을 시도합니다.

사용자 개체 유형: 이렇게 하면 사용자로 간주되는 객체의 유형이 결정됩니다. 일반적으로 이것은 "사람"입니다. AD 데이터베이스가 있고 컴퓨터 계정을 인증하면 "컴퓨터"일 수 있지만, LDAP에서 많은 사용자 지정을 제공합니다.

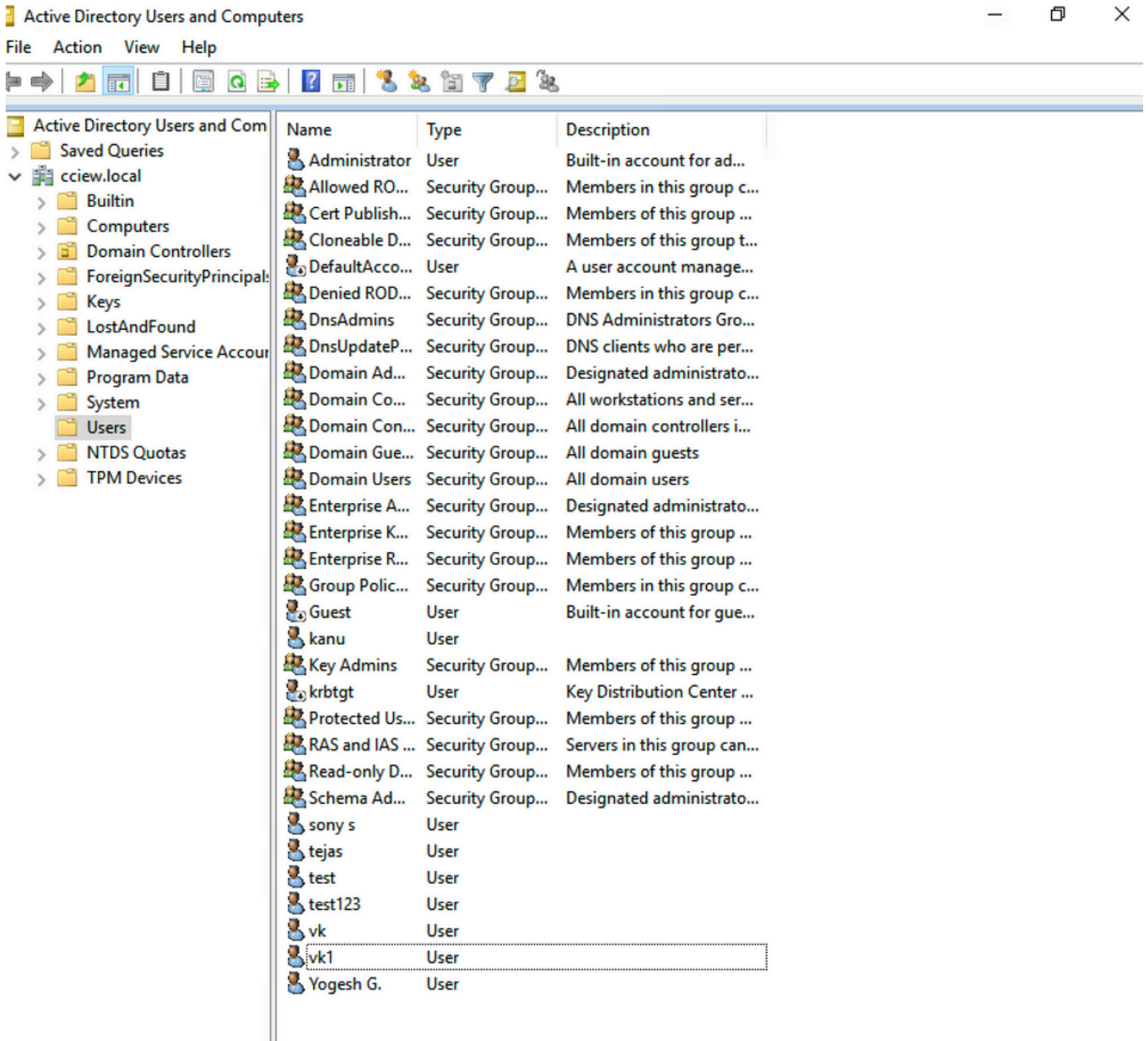
보안 모드에서는 Secure LDAP over TLS를 활성화하며 TLS 암호화에 인증서를 사용하려면 9800에서 신뢰 지점을 선택해야 합니다.

## sAMAaccountName 특성을 사용하는 LDAP 802.1x 인증

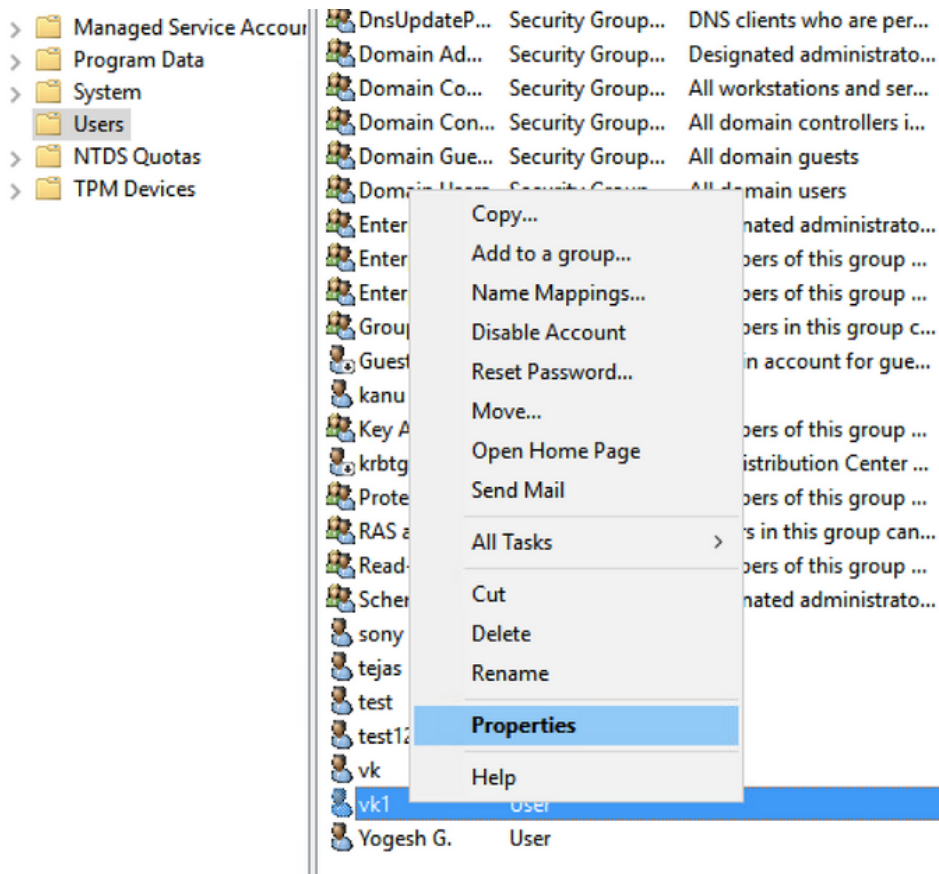
이 개선 사항은 17.6.1 버전에 도입되었습니다.

사용자에 대해 "userPassword" 특성을 구성합니다.

1단계. Windows 서버에서 ActiveDirectory 사용자 및 컴퓨터로 이동합니다.



2단계. 해당 사용자 이름을 마우스 오른쪽 버튼으로 클릭하고 속성을 선택합니다



3단계. 속성 창에서 속성 편집기를 선택합니다

|                                 |             |                      |                |                  |              |
|---------------------------------|-------------|----------------------|----------------|------------------|--------------|
| Published Certificates          | Member Of   | Password Replication | Dial-in        | Object           |              |
| Security                        | Environment | Sessions             | Remote control |                  |              |
| General                         | Address     | Account              | Profile        | Telephones       | Organization |
| Remote Desktop Services Profile |             |                      | COM+           | Attribute Editor |              |

## Attributes:

| Attribute          | Value                               |
|--------------------|-------------------------------------|
| uid                | <not set>                           |
| uidNumber          | <not set>                           |
| unicodePwd         | <not set>                           |
| unixHomeDirectory  | <not set>                           |
| unixUserPassword   | <not set>                           |
| url                | <not set>                           |
| userAccountControl | 0x10200 = ( NORMAL_ACCOUNT   DONT_I |
| userCert           | <not set>                           |
| userCertificate    | <not set>                           |
| userParameters     | <not set>                           |
| userPassword       | <not set>                           |
| userPKCS12         | <not set>                           |
| userPrincipalName  | vk1@cciew.local                     |
| userSharedFolder   | <not set>                           |

Edit

Filter

OK

Cancel

Apply

Help

4단계. "userPassword" 특성을 구성합니다. 16진수 값으로 구성해야 하는 사용자의 비밀번호입니



다.

vk1 Properties



|                        |             |                      |                |              |
|------------------------|-------------|----------------------|----------------|--------------|
| Published Certificates | Member Of   | Password Replication | Dial-in        | Object       |
| Security               | Environment | Sessions             | Remote control |              |
| General                | Address     | Account              | Profile        | Telephones   |
|                        |             |                      |                | Organization |

### Multi-valued Octet String Editor



Attribute: userPassword

Values:

Add

Remove

Edit

OK

Cancel

The screenshot shows a 'Multi-valued Octet String Editor' dialog box with the following details:

- Attribute: userPassword
- Value format: Hexadecimal
- Value: 43 69 73 63 6F 31 32 33

Buttons visible include 'Clear', 'OK', and 'Cancel'. The 'OK' button is highlighted with a blue border. Below this dialog, another dialog box is partially visible with 'OK', 'Cancel', 'Apply', and 'Help' buttons.

확인을 클릭하여 올바른 비밀번호가 표시되는지 확인합니다

Published Certificates Member Of Password Replication Dial-in Object  
Security Environment Sessions Remote control  
General Address Account Profile Telephones Organization

## Multi-valued Octet String Editor X

Attribute: userPassword

Values:

Cisco123

Add

Remove

Edit

OK

Cancel

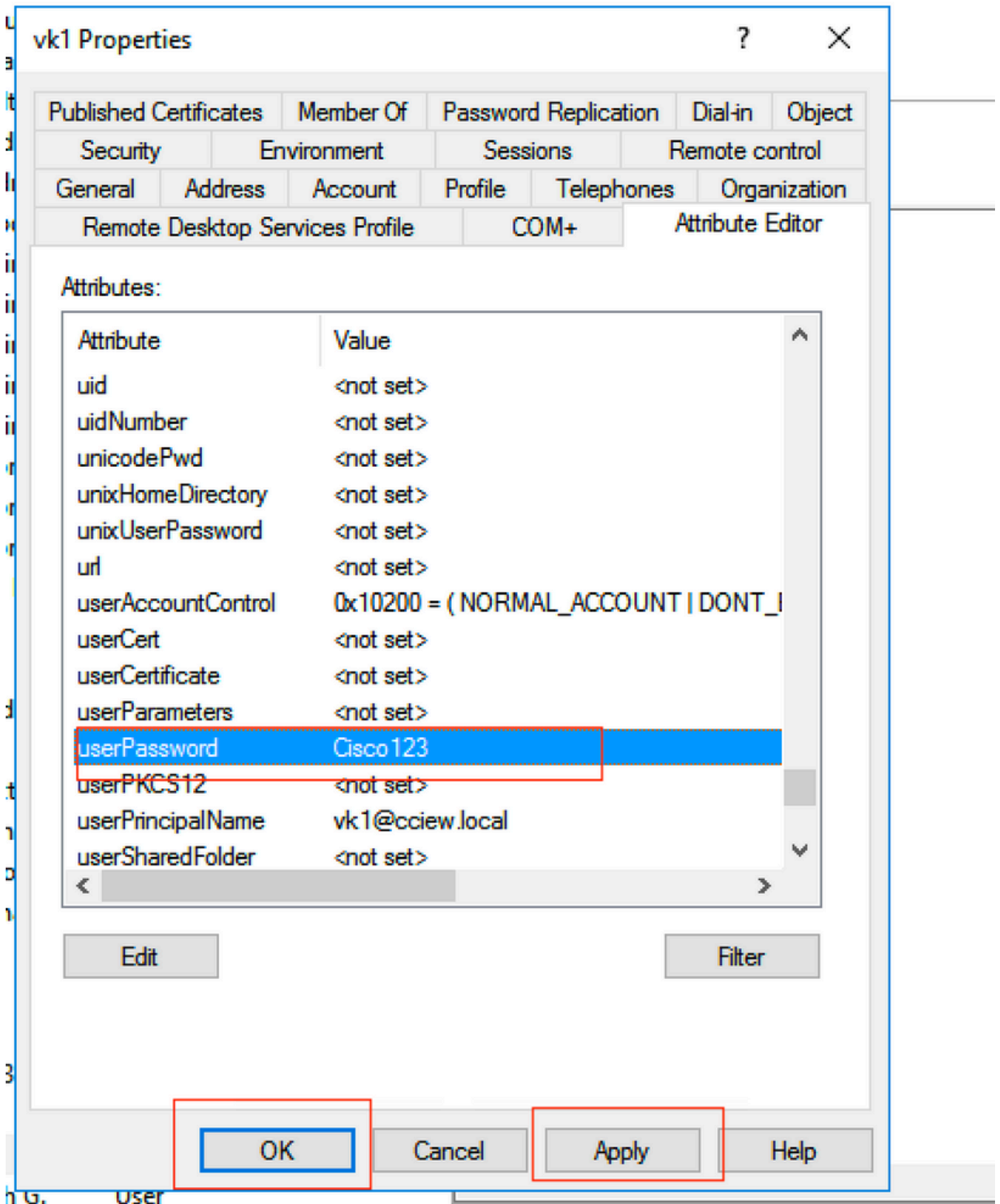
OK

Cancel

Apply

Help

5단계. Apply(적용)를 클릭한 다음 OK(확인)를 클릭합니다



6단계. 사용자에게 대한 "sAMAccountName" 특성 값을 확인하고 인증을 위한 사용자 이름을 지정합니다.

|                                 |             |                      |                  |            |              |
|---------------------------------|-------------|----------------------|------------------|------------|--------------|
| Published Certificates          | Member Of   | Password Replication | Dial-in          | Object     |              |
| Security                        | Environment | Sessions             | Remote control   |            |              |
| General                         | Address     | Account              | Profile          | Telephones | Organization |
| Remote Desktop Services Profile |             | COM+                 | Attribute Editor |            |              |

Attributes:

| Attribute            | Value                             |
|----------------------|-----------------------------------|
| sAMAccountName       | vkokila                           |
| sAMAccountType       | 805306368 = (NORMAL_USER_ACCOUNT) |
| scriptPath           | <not set>                         |
| secretary            | <not set>                         |
| securityIdentifier   | <not set>                         |
| seeAlso              | <not set>                         |
| serialNumber         | <not set>                         |
| servicePrincipalName | <not set>                         |
| shadowExpire         | <not set>                         |
| shadowFlag           | <not set>                         |
| shadowInactive       | <not set>                         |
| shadowLastChange     | <not set>                         |
| shadowMax            | <not set>                         |
| shadowMin            | <not set>                         |

Buttons: Edit, Filter, OK, Cancel, Apply, Help

G. User

WLC 구성:

1단계. LDAP 특성 맵 생성

2단계. "sAMAccountName" 특성을 구성하고 "username"으로 입력합니다.

3단계. LDAP 서버 컨피그레이션에서 생성된 특성 MAP을 선택합니다.

```
ldap attribute-map VK
```

```
map type sAMAccountName username
```

```
ldap server ldap
```

```
ipv4 10.106.38.195
```

```
attribute map VK
```

```
bind authenticate root-dn vk1 password 7 00271A1507545A545C
```

```
base-dn CN=users,DC=cciew,DC=local
```

```
search-filter user-object-type Person
```

## 웹 인터페이스에서 확인:

The screenshot shows the Cisco Catalyst 9800-40 Wireless Controller configuration interface. The breadcrumb navigation is Configuration > Security > AAA. The left sidebar contains navigation options: Dashboard, Monitoring, Configuration, Administration, Licensing, and Troubleshooting. The main content area is titled 'Servers / Groups' and includes a '+ AAA Wizard' button. Below this, there are tabs for 'Servers / Groups', 'AAA Method List', and 'AAA Advanced'. The 'Servers' tab is active, showing a table of configured servers. The table has columns for Name, Server Address, Port Number, and Simple Bind. One server is listed with Name 'ldap', Server Address '10.106.38.195', Port Number '389', and Simple Bind 'Authenticated'. The table is paginated to show 1 of 1 items.

| Name | Server Address | Port Number | Simple Bind   |
|------|----------------|-------------|---------------|
| ldap | 10.106.38.195  | 389         | Authenticated |

Last login NA ...

### Edit AAA LDAP Server

Server Name\*

Server Address\*

Port Number\*

Simple Bind

Bind User name\*

Bind Password\*

Confirm Bind Password\*

User Base DN\*

User Attribute

User Object Type

| User Object Type | Remove |
|------------------|--------|
| Person           | ×      |

Server Timeout (seconds)

## 다음을 확인합니다.

컨피그레이션을 확인하려면 이 문서의 명령과 함께 CLI 명령을 다시 확인하십시오.

LDAP 데이터베이스는 일반적으로 인증 로그를 제공하지 않으므로 진행 상황을 알기 어려울 수 있습니다. LDAP 데이터베이스에 대한 연결이 설정되어 있는지 확인하기 위해 추적 및 스니퍼 캡처를 수행하는 방법을 보려면 이 문서의 Troubleshoot(문제 해결) 섹션을 참조하십시오.

## 문제 해결

이 문제를 해결하려면 이를 두 부분으로 나누는 것이 좋습니다. 첫 번째 부분은 로컬 EAP 부분의 유효성을 검사하는 것입니다. 두 번째는 9800이 LDAP 서버와 제대로 통신하는지 확인하는 것입니다.

### 컨트롤러에서 인증 프로세스를 확인하는 방법

클라이언트 연결의 "디버그"를 가져오기 위해 방사성 추적을 수집할 수 있습니다.

Troubleshooting(트러블슈팅) > **Radioactive Trace(방사능 추적)**로 이동합니다. 클라이언트 MAC 주소를 추가하고(클라이언트가 자체 MAC이 아닌 임의의 MAC을 사용할 수 있다는 점에 유의하십시오. 클라이언트 장치 자체의 SSID 프로파일에서 이를 확인할 수 있습니다) start를 누릅니다.

연결 시도를 재현한 후에는 "Generate(생성)"를 클릭하여 마지막 X분 동안의 로그를 얻을 수 있습니다. 일부 LDAP 로그 라인이 표시되지 않으므로 **internal**을 클릭해야 합니다.

다음은 웹 인증 SSID에서 성공적으로 인증한 클라이언트의 무선 추적 예입니다. 명확성을 위해 일부 불필요한 부품이 제거되었습니다.

2021/01/19 21:57:55.890953 {wncd\_x\_R0-0}{1}: [client-orch-sm] [9347]: (note): MAC: 2elf.3a65.9c09 Association received. BSSID f80f.6f15.66ae, WLAN webauth, Slot 1 AP f80f.6f15.66a0, AP7069-5A74-933C 2021/01/19 21:57:55.891049 {wncd\_x\_R0-0}{1}: [client-orch-sm] [9347]: (debug): MAC: 2elf.3a65.9c09 Received Dot11 association request. Processing started,SSID: webauth, Policy profile: LDAP, AP Name: AP7069-5A74-933C, Ap Mac Address: f80f.6f15.66a0 BSSID MAC0000.0000.0000 wlan ID: 2RSSI: -45, SNR: 0 2021/01/19 21:57:55.891282 {wncd\_x\_R0-0}{1}: [client-orch-state] [9347]: (note): MAC: 2elf.3a65.9c09 Client state transition: S\_CO\_INIT -> S\_CO\_ASSOCIATING 2021/01/19 21:57:55.891674 {wncd\_x\_R0-0}{1}: [dot11-validate] [9347]: (info): MAC: 2elf.3a65.9c09 WiFi direct: Dot11 validate P2P IE. P2P IE not present. 2021/01/19 21:57:55.892114 {wncd\_x\_R0-0}{1}: [dot11] [9347]: (debug): MAC: 2elf.3a65.9c09 dot11 send association response. Sending association response with resp\_status\_code: 0 2021/01/19 21:57:55.892182 {wncd\_x\_R0-0}{1}: [dot11-frame] [9347]: (info): MAC: 2elf.3a65.9c09 WiFi direct: skip build Assoc Resp with P2P IE: Wifi direct policy disabled 2021/01/19 21:57:55.892248 {wncd\_x\_R0-0}{1}: [dot11] [9347]: (info): MAC: 2elf.3a65.9c09 dot11 send association response. Sending assoc response of length: 179 with resp\_status\_code: 0, DOT11\_STATUS: DOT11\_STATUS\_SUCCESS 2021/01/19 21:57:55.892467 {wncd\_x\_R0-0}{1}: [dot11] [9347]: (note): MAC: 2elf.3a65.9c09 Association success. AID 2, Roaming = False, WGB = False, llr = False, llw = False 2021/01/19 21:57:55.892497 {wncd\_x\_R0-0}{1}: [dot11] [9347]: (info): MAC: 2elf.3a65.9c09 DOT11 state transition: S\_DOT11\_INIT -> S\_DOT11\_ASSOCIATED 2021/01/19 21:57:55.892616 {wncd\_x\_R0-0}{1}: [client-orch-sm] [9347]: (debug): MAC: 2elf.3a65.9c09 Station Dot11 association is successful. 2021/01/19 21:57:55.892730 {wncd\_x\_R0-0}{1}: [client-orch-sm] [9347]: (debug): MAC: 2elf.3a65.9c09 Starting L2 authentication. Bssid in state machine:f80f.6f15.66ae Bssid in request is:f80f.6f15.66ae 2021/01/19 21:57:55.892783 {wncd\_x\_R0-0}{1}: [client-orch-state] [9347]: (note): MAC: 2elf.3a65.9c09 Client state transition: S\_CO\_ASSOCIATING -> S\_CO\_L2\_AUTH\_IN\_PROGRESS 2021/01/19 21:57:55.892896 {wncd\_x\_R0-0}{1}: [client-auth] [9347]: (note): MAC: 2elf.3a65.9c09 L2 Authentication initiated. method WEBAUTH, Policy VLAN 1,AAA override = 0 2021/01/19 21:57:55.893115 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Session Start event called from SANET-SHIM with conn\_hdl 14, vlan: 0 2021/01/19 21:57:55.893154 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Wireless session sequence, create context with method WebAuth 2021/01/19 21:57:55.893205 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_wireless] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] - authc\_list: ldapauth 2021/01/19 21:57:55.893211 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_wireless] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] - authz\_list: Not present under wlan configuration 2021/01/19 21:57:55.893254 {wncd\_x\_R0-0}{1}: [client-auth] [9347]: (info): MAC: 2elf.3a65.9c09 Client auth-interface state transition: S\_AUTHIF\_INIT -> S\_AUTHIF\_AWAIT\_L2\_WEBAUTH\_START\_RESP 2021/01/19 21:57:55.893461 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:unknown] auth mgr attr change notification is received for attr (952) 2021/01/19 21:57:55.893532 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (1263) 2021/01/19 21:57:55.893603 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (220) 2021/01/19 21:57:55.893649 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (952) 2021/01/19 21:57:55.893679 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Retrieved Client IIF ID 0xd3001364 2021/01/19 21:57:55.893731 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Allocated audit session id 000000000000009C1CA610D7 2021/01/19 21:57:55.894285 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type found in cache Samsung Galaxy S10e 2021/01/19 21:57:55.894299 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type for the session is detected as Samsung Galaxy S10e and old device-type not classified earlier &Device name for the session is detected as Unknown Device and old device-name not classified earlier & Old protocol map 0 and new is 1057 2021/01/19 21:57:55.894551 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (1337) 2021/01/19 21:57:55.894587 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Check aaa acct configured 2021/01/19 21:57:55.894593 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [0000.0000.0000:capwap\_90000004] access\_session\_acct\_filter\_spec is NULL 2021/01/19 21:57:55.894827 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (1337) 2021/01/19 21:57:55.894858 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Check aaa acct configured 2021/01/19 21:57:55.894862 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [0000.0000.0000:capwap\_90000004]



access\_session\_acct\_filter\_spec is NULL 2021/01/19 21:57:55.895918 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_wireless] [9347]: (info): [0000.0000.0000:unknown] retrieving vlanid from name failed 2021/01/19 21:57:55.896094 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] SM Reauth Plugin: Received valid timeout = 86400 2021/01/19 21:57:55.896807 {wncd\_x\_R0-0}{1}: [webauth-sm] [9347]: (info): [ 0.0.0.0]Starting Webauth, mac [2e:1f:3a:65:9c:09], IIF 0 , audit-ID 00000000000009C1CA610D7 2021/01/19 21:57:55.897106 {wncd\_x\_R0-0}{1}: [webauth-acl] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 0.0.0.0]Applying IPv4 intercept ACL via SVM, name: IP-Adm-V4-Int-ACL-global, priority: 50, IIF-ID: 0 2021/01/19 21:57:55.897790 {wncd\_x\_R0-0}{1}: [epm-redirect] [9347]: (info): [0000.0000.0000:unknown] URL-Redirect-ACL = IP-Adm-V4-Int-ACL-global 2021/01/19 21:57:55.898813 {wncd\_x\_R0-0}{1}: [webauth-acl] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 0.0.0.0]Applying IPv6 intercept ACL via SVM, name: IP-Adm-V6-Int-ACL-global, priority: 52, IIF-ID: 0 2021/01/19 21:57:55.899406 {wncd\_x\_R0-0}{1}: [epm-redirect] [9347]: (info): [0000.0000.0000:unknown] URL-Redirect-ACL = IP-Adm-V6-Int-ACL-global 2021/01/19 21:57:55.903552 {wncd\_x\_R0-0}{1}: [client-auth] [9347]: (info): MAC: 2elf.3a65.9c09 Client auth-interface state transition: S\_AUTHIF\_AWAIT\_L2\_WEBAUTH\_START\_RESP -> S\_AUTHIF\_L2\_WEBAUTH\_PENDING 2021/01/19 21:57:55.903575 {wncd\_x\_R0-0}{1}: [ewlc-infra-evq] [9347]: (note): Authentication Success. Resolved Policy bitmap:11 for client 2elf.3a65.9c09 2021/01/19 21:57:55.903592 {wncd\_x\_R0-0}{1}: [client-auth] [9347]: (info): MAC: 2elf.3a65.9c09 Client auth-interface state transition: S\_AUTHIF\_L2\_WEBAUTH\_PENDING -> S\_AUTHIF\_L2\_WEBAUTH\_PENDING 2021/01/19 21:57:55.903709 {wncd\_x\_R0-0}{1}: [client-auth] [9347]: (info): MAC: 2elf.3a65.9c09 Client auth-interface state transition: S\_AUTHIF\_L2\_WEBAUTH\_PENDING -> S\_AUTHIF\_L2\_WEBAUTH\_DONE 2021/01/19 21:57:55.903774 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type for the session is detected as Samsung Galaxy S10e and old Samsung Galaxy S10e &Device name for the session is detected as Unknown Device and old Unknown Device & Old protocol map 1057 and new is 1025 2021/01/19 21:57:55.903858 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type for the session is detected as Samsung Galaxy S10e and old Samsung Galaxy S10e &Device name for the session is detected as Unknown Device and old Unknown Device & Old protocol map 1057 and new is 1025 2021/01/19 21:57:55.903924 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type for the session is detected as Samsung Galaxy S10e and old Samsung Galaxy S10e &Device name for the session is detected as Unknown Device and old Unknown Device & Old protocol map 1057 and new is 1025 2021/01/19 21:57:55.904005 {wncd\_x\_R0-0}{1}: [client-orch-sm] [9347]: (debug): MAC: 2elf.3a65.9c09 L2 Authentication of station is successful., L3 Authentication : 1 2021/01/19 21:57:55.904173 {wncd\_x\_R0-0}{1}: [client-orch-sm] [9347]: (note): MAC: 2elf.3a65.9c09 Mobility discovery triggered. Client mode: Flex - Local Switching 2021/01/19 21:57:55.904181 {wncd\_x\_R0-0}{1}: [client-orch-state] [9347]: (note): MAC: 2elf.3a65.9c09 Client state transition: S\_CO\_L2\_AUTH\_IN\_PROGRESS -> S\_CO\_MOBILITY\_DISCOVERY\_IN\_PROGRESS 2021/01/19 21:57:55.904245 {wncd\_x\_R0-0}{1}: [mm-transition] [9347]: (info): MAC: 2elf.3a65.9c09 MMIF FSM transition: S\_MA\_INIT -> S\_MA\_MOBILITY\_DISCOVERY\_PROCESSED\_TR on E\_MA\_MOBILITY\_DISCOVERY 2021/01/19 21:57:55.904410 {wncd\_x\_R0-0}{1}: [mm-client] [9347]: (info): MAC: 2elf.3a65.9c09 Invalid transmitter ip in build client context 2021/01/19 21:57:55.904777 {wncd\_x\_R0-0}{1}: [mm-client] [9347]: (debug): MAC: 2elf.3a65.9c09 Received mobile\_announce, sub type: 0 of XID (0) from (WNCID[0]) 2021/01/19 21:57:55.904955 {wncd\_x\_R0-0}{1}: [mm-client] [9347]: (debug): MAC: 2elf.3a65.9c09 Add MCC by tdl mac: client\_ifid 0x90000006 is assigned to client 2021/01/19 21:57:55.905072 {wncd\_x\_R0-0}{1}: [mm-client] [9347]: (debug): MAC: 0000.0000.0000 Sending mobile\_announce\_nak of XID (0) to (WNCID[0]) 2021/01/19 21:57:55.905157 {wncd\_x\_R0-0}{1}: [mm-client] [9347]: (debug): MAC: 2elf.3a65.9c09 Received mobile\_announce\_nak, sub type: 1 of XID (0) from (WNCID[0]) 2021/01/19 21:57:55.905267 {wncd\_x\_R0-0}{1}: [mm-transition] [9347]: (info): MAC: 2elf.3a65.9c09 MMIF FSM transition: S\_MA\_INIT\_WAIT\_ANNOUNCE\_RSP -> S\_MA\_NAK\_PROCESSED\_TR on E\_MA\_NAK\_RCVD 2021/01/19 21:57:55.905283 {wncd\_x\_R0-0}{1}: [mm-client] [9347]: (info): MAC: 2elf.3a65.9c09 Roam type changed - None -> None 2021/01/19 21:57:55.905317 {wncd\_x\_R0-0}{1}: [mm-client] [9347]: (info): MAC: 2elf.3a65.9c09 Mobility role changed - Unassoc -> Local 2021/01/19 21:57:55.905515 {wncd\_x\_R0-0}{1}: [mm-client] [9347]: (note): MAC: 2elf.3a65.9c09 Mobility Successful. Roam Type None, Sub Roam Type MM\_SUB\_ROAM\_TYPE\_NONE, Client IFID: 0x900000006, Client Role: Local PoA: 0x90000004 PoP: 0x0 2021/01/19 21:57:55.905570 {wncd\_x\_R0-0}{1}: [client-orch-sm] [9347]: (debug): MAC: 2elf.3a65.9c09 Processing mobility response from MMIF. Client ifid: 0x900000006, roam type: None, client role: Local 2021/01/19 21:57:55.906210 {wncd\_x\_R0-0}{1}: [ewlc-qos-client] [9347]: (info): MAC: 2elf.3a65.9c09 Client QoS add mobile cb 2021/01/19 21:57:55.906369 {wncd\_x\_R0-0}{1}: [ewlc-qos-client] [9347]: (info): MAC: 2elf.3a65.9c09 No QoS PM Name or QoS Level received from SANet for pm\_dir:0. Check client is fastlane, otherwise set pm name to none 2021/01/19 21:57:55.906399 {wncd\_x\_R0-0}{1}: [ewlc-qos-client] [9347]: (info): MAC: 2elf.3a65.9c09 No QoS PM Name or QoS Level received from SANet for pm\_dir:1. Check client is fastlane, otherwise set pm name to none 2021/01/19 21:57:55.906486

{wncd\_x\_R0-0}{1}: [client-auth] [9347]: (note): MAC: 2elf.3a65.9c09 ADD MOBILE sent. Client state flags: 0x12 BSSID: MAC: f80f.6f15.66ae capwap IFID: 0x90000004 2021/01/19 21:57:55.906613

{wncd\_x\_R0-0}{1}: [client-orch-state] [9347]: (note): MAC: 2elf.3a65.9c09 Client state transition: S\_CO\_MOBILITY\_DISCOVERY\_IN\_PROGRESS -> S\_CO\_DPATH\_PLUMB\_IN\_PROGRESS 2021/01/19 21:57:55.907326

{wncd\_x\_R0-0}{1}: [dot11] [9347]: (note): MAC: 2elf.3a65.9c09 Client datapath entry params - ssid:webauth,slot\_id:1 bssid ifid: 0x0, radio\_ifid: 0x90000002, wlan\_ifid: 0xf0400002 2021/01/19 21:57:55.907544

{wncd\_x\_R0-0}{1}: [ewlc-qos-client] [9347]: (info): MAC: 2elf.3a65.9c09 Client QoS dpath create params 2021/01/19 21:57:55.907594

{wncd\_x\_R0-0}{1}: [avc-afc] [9347]: (debug): AVC enabled for client 2elf.3a65.9c09 2021/01/19 21:57:55.907701

{wncd\_x\_R0-0}{1}: [dpath\_svc] [9347]: (note): MAC: 2elf.3a65.9c09 Client datapath entry created for ifid 0x90000006 2021/01/19 21:57:55.908229

{wncd\_x\_R0-0}{1}: [client-orch-state] [9347]: (note): MAC: 2elf.3a65.9c09 Client state transition: S\_CO\_DPATH\_PLUMB\_IN\_PROGRESS -> S\_CO\_IP\_LEARN\_IN\_PROGRESS 2021/01/19 21:57:55.908704

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 IP-learn state transition: S\_IPLEARN\_INIT -> S\_IPLEARN\_IN\_PROGRESS 2021/01/19 21:57:55.918694

{wncd\_x\_R0-0}{1}: [client-auth] [9347]: (info): MAC: 2elf.3a65.9c09 Client auth-interface state transition: S\_AUTHIF\_L2\_WEBAUTH\_DONE -> S\_AUTHIF\_L2\_WEBAUTH\_DONE 2021/01/19 21:57:55.922254

{wncd\_x\_R0-0}{1}: [dot11k] [9347]: (info): MAC: 2elf.3a65.9c09 Neighbor AP fc5b.3984.8220 lookup has failed, ap contextnot available on this instance 2021/01/19 21:57:55.922260

{wncd\_x\_R0-0}{1}: [dot11k] [9347]: (info): MAC: 2elf.3a65.9c09 Neighbor AP 88f0.3169.d390 lookup has failed, ap contextnot available on this instance 2021/01/19 21:57:55.962883

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (note): MAC: 2elf.3a65.9c09 Client IP learn successful. Method: IP Snooping IP: 192.168.1.17 2021/01/19 21:57:55.963827

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 Client IP learn successful. Method: IPv6 Snooping IP: fe80::2c1f:3aff:fe65:9c09 2021/01/19 21:57:55.964481

{wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (8) 2021/01/19 21:57:55.965176

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 IP-learn state transition: S\_IPLEARN\_IN\_PROGRESS -> S\_IPLEARN\_COMPLETE 2021/01/19 21:57:55.965550

{wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (10) 2021/01/19 21:57:55.966127

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 IP-learn state transition: S\_IPLEARN\_COMPLETE -> S\_IPLEARN\_COMPLETE 2021/01/19 21:57:55.966328

{wncd\_x\_R0-0}{1}: [client-orch-sm] [9347]: (debug): MAC: 2elf.3a65.9c09 Received ip learn response. method: IPLEARN\_METHOD\_IP\_SNOOPING 2021/01/19 21:57:55.966413

{wncd\_x\_R0-0}{1}: [client-orch-sm] [9347]: (debug): MAC: 2elf.3a65.9c09 Triggered L3 authentication. status = 0x0, Success 2021/01/19 21:57:55.966424

{wncd\_x\_R0-0}{1}: [client-orch-state] [9347]: (note): MAC: 2elf.3a65.9c09 Client state transition: S\_CO\_IP\_LEARN\_IN\_PROGRESS -> S\_CO\_L3\_AUTH\_IN\_PROGRESS 2021/01/19 21:57:55.967404

{wncd\_x\_R0-0}{1}: [client-auth] [9347]: (note): MAC: 2elf.3a65.9c09 L3 Authentication initiated. LWA 2021/01/19 21:57:55.967433

{wncd\_x\_R0-0}{1}: [client-auth] [9347]: (info): MAC: 2elf.3a65.9c09 Client auth-interface state transition: S\_AUTHIF\_L2\_WEBAUTH\_DONE -> S\_AUTHIF\_WEBAUTH\_PENDING 2021/01/19 21:57:55.968312

{wncd\_x\_R0-0}{1}: [sisf-packet] [9347]: (debug): RX: ARP from interface capwap\_90000004 on vlan 1 Source MAC: 2elf.3a65.9c09 Dest MAC: ffff.ffff.ffff ARP REQUEST, ARP sender MAC: 2elf.3a65.9c09 ARP target MAC: ffff.ffff.ffff ARP sender IP: 192.168.1.17, ARP target IP: 192.168.1.17, 2021/01/19 21:57:55.968519

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 iplearn receive client learn method update. Prev method (IP Snooping) Cur method (ARP) 2021/01/19 21:57:55.968522

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 Client IP learn method update successful. Method: ARP IP: 192.168.1.17 2021/01/19 21:57:55.968966

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 IP-learn state transition: S\_IPLEARN\_COMPLETE -> S\_IPLEARN\_COMPLETE 2021/01/19 21:57:57.762648

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 iplearn receive client learn method update. Prev method (ARP) Cur method (IP Snooping) 2021/01/19 21:57:57.762650

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 Client IP learn method update successful. Method: IP Snooping IP: 192.168.1.17 2021/01/19 21:57:57.763032

{wncd\_x\_R0-0}{1}: [client-iplearn] [9347]: (info): MAC: 2elf.3a65.9c09 IP-learn state transition: S\_IPLEARN\_COMPLETE -> S\_IPLEARN\_COMPLETE 2021/01/19 21:58:00.992597

{wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]GET rcvd when in INIT state 2021/01/19 21:58:00.992617

{wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]HTTP GET request 2021/01/19 21:58:00.992669

{wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Parse GET, src [192.168.1.17] dst [192.168.1.15] url [http://connectivitycheck.gstatic.com/generate\_204] 2021/01/19 21:58:00.992694

{wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Retrieved user-agent = Mozilla/5.0 (X11; Linux x86\_64) AppleWebKit/537.36 (KHTML, like Gecko)

Chrome/60.0.3112.32 Safari/537.36 2021/01/19 21:58:00.993558 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (1248) 2021/01/19 21:58:00.993637 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Check aaa acct configured 2021/01/19 21:58:00.993645 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [0000.0000.0000:capwap\_90000004] access\_session\_acct\_filter\_spec is NULL 2021/01/19 21:58:00.996320 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type for the session is detected as Linux-Workstation and old Samsung Galaxy S10e &Device name for the session is detected as Unknown Device and old Unknown Device & Old protocol map 1057 and new is 1057 2021/01/19 21:58:00.996508 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] DC Profile-name has been changed to Linux-Workstation 2021/01/19 21:58:00.996524 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] update event: Policy is not applied for this Handle 0xB7000080 2021/01/19 21:58:05.808144 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]HTTP GET request 2021/01/19 21:58:05.808226 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Parse GET, src [192.168.1.17] dst [192.168.1.15] url [http://connectivitycheck.gstatic.com/generate\_204] 2021/01/19 21:58:05.808251 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Retrieved user-agent = Mozilla/5.0 (X11; Linux x86\_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/60.0.3112.32 Safari/537.36 2021/01/19 21:58:05.860465 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]GET rcvd when in GET\_REDIRECT state 2021/01/19 21:58:05.860483 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]HTTP GET request 2021/01/19 21:58:05.860534 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Parse GET, src [192.168.1.17] dst [192.168.1.15] url [http://connectivitycheck.gstatic.com/generate\_204] 2021/01/19 21:58:05.860559 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Retrieved user-agent = Mozilla/5.0 (X11; Linux x86\_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/60.0.3112.32 Safari/537.36 2021/01/19 21:58:06.628209 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]GET rcvd when in GET\_REDIRECT state 2021/01/19 21:58:06.628228 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]HTTP GET request 2021/01/19 21:58:06.628287 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Parse GET, src [192.168.1.17] dst [192.0.2.1] url [https://192.0.2.1:443/login.html?redirect=http://connectivitycheck.gstatic.com/generate\_204] 2021/01/19 21:58:06.628316 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Retrieved user-agent = Mozilla/5.0 (Linux; Android 11; SM-G970F) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/87.0.4280.141 Mobile Safari/537.36 2021/01/19 21:58:06.628832 {wncd\_x\_R0-0}{1}: [webauth-page] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Sending Webauth login form, len 8077 2021/01/19 21:58:06.629613 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (1248) 2021/01/19 21:58:06.629699 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Check aaa acct configured 2021/01/19 21:58:06.629709 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [0000.0000.0000:capwap\_90000004] access\_session\_acct\_filter\_spec is NULL 2021/01/19 21:58:06.633058 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type for the session is detected as Samsung Galaxy S10e and old Linux-Workstation &Device name for the session is detected as Unknown Device and old Unknown Device & Old protocol map 1057 and new is 1057 2021/01/19 21:58:06.633219 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] DC Profile-name has been changed to Samsung Galaxy S10e 2021/01/19 21:58:06.633231 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] update event: Policy is not applied for this Handle 0xB7000080 2021/01/19 21:58:06.719502 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]GET rcvd when in LOGIN state 2021/01/19 21:58:06.719521 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]HTTP GET request 2021/01/19 21:58:06.719591 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Parse GET, src [192.168.1.17] dst [192.0.2.1] url [https://192.0.2.1:443/favicon.ico] 2021/01/19 21:58:06.719646 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Retrieved user-agent = Mozilla/5.0 (Linux; Android 11; SM-G970F) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/87.0.4280.141 Mobile Safari/537.36 2021/01/19 21:58:06.720038 {wncd\_x\_R0-0}{1}: [webauth-error] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Parse logo GET, File "/favicon.ico" not found 2021/01/19 21:58:06.720623 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info):

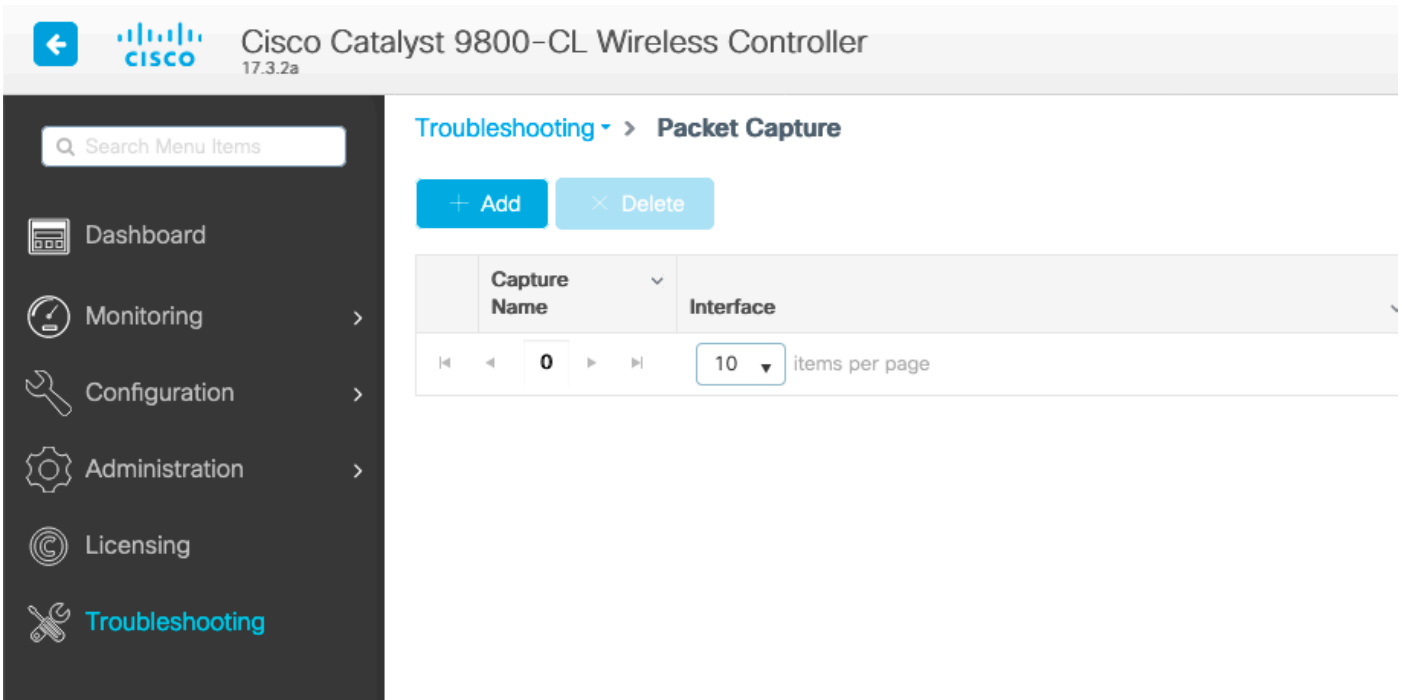
[2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (1248) 2021/01/19 21:58:06.720707 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Check aaa acct configured 2021/01/19 21:58:06.720716 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [0000.0000.0000:capwap\_90000004] access\_session\_acct\_filter\_spec is NULL 2021/01/19 21:58:06.724036 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type for the session is detected as Samsung Galaxy S10e and old Samsung Galaxy S10e & Device name for the session is detected as Unknown Device and old Unknown Device & Old protocol map 1057 and new is 1057 2021/01/19 21:58:06.746127 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]GET rcvd when in LOGIN state 2021/01/19 21:58:06.746145 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]HTTP GET request 2021/01/19 21:58:06.746197 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Parse GET, src [192.168.1.17] dst [192.0.2.1] url [https://192.0.2.1:443/favicon.ico] 2021/01/19 21:58:06.746225 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Retrieved user-agent = Mozilla/5.0 (Linux; Android 11; SM-G970F) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/87.0.4280.141 Mobile Safari/537.36 2021/01/19 21:58:06.746612 {wncd\_x\_R0-0}{1}: [webauth-error] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Parse logo GET, File "/favicon.ico" not found 2021/01/19 21:58:06.747105 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (1248) 2021/01/19 21:58:06.747187 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Check aaa acct configured 2021/01/19 21:58:06.747197 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [0000.0000.0000:capwap\_90000004] access\_session\_acct\_filter\_spec is NULL 2021/01/19 21:58:06.750598 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type for the session is detected as Samsung Galaxy S10e and old Samsung Galaxy S10e & Device name for the session is detected as Unknown Device and old Unknown Device & Old protocol map 1057 and new is 1057 2021/01/19 21:58:15.902342 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]GET rcvd when in LOGIN state 2021/01/19 21:58:15.902360 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]HTTP GET request 2021/01/19 21:58:15.902410 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Parse GET, src [192.168.1.17] dst [192.168.1.15] url [http://connectivitycheck.gstatic.com/generate\_204] 2021/01/19 21:58:15.902435 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]Retrieved user-agent = Mozilla/5.0 (X11; Linux x86\_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/60.0.3112.32 Safari/537.36 2021/01/19 21:58:15.903173 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] auth mgr attr change notification is received for attr (1248) 2021/01/19 21:58:15.903252 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Check aaa acct configured 2021/01/19 21:58:15.903261 {wncd\_x\_R0-0}{1}: [auth-mgr-feat\_template] [9347]: (info): [0000.0000.0000:capwap\_90000004] access\_session\_acct\_filter\_spec is NULL 2021/01/19 21:58:15.905950 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Device type for the session is detected as Linux-Workstation and old Samsung Galaxy S10e & Device name for the session is detected as Unknown Device and old Unknown Device & Old protocol map 1057 and new is 1057 2021/01/19 21:58:15.906112 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] DC Profile-name has been changed to Linux-Workstation 2021/01/19 21:58:15.906125 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] update event: Policy is not applied for this Handle 0xB7000080 2021/01/19 21:58:16.357093 {wncd\_x\_R0-0}{1}: [webauth-httpd] [9347]: (info): capwap\_90000004[2elf.3a65.9c09][ 192.168.1.17]POST rcvd when in LOGIN state 2021/01/19 21:58:16.357443 {wncd\_x\_R0-0}{1}: [sadb-attr] [9347]: (info): Removing ipv6 addresses from the attr list -1560276753,sm\_ctx = 0x50840930, num\_ipv6 = 1 2021/01/19 21:58:16.357674 {wncd\_x\_R0-0}{1}: [caaa-authen] [9347]: (info): [CAAA:AUTHEN:b7000080] DEBUG: mlist=ldapauth for type=0 2021/01/19 21:58:16.374292 {wncd\_x\_R0-0}{1}: [auth-mgr] [9347]: (info): [2elf.3a65.9c09:capwap\_90000004] Authc success from WebAuth, Auth event success 2021/01/19 21:58:16.374412 {wncd\_x\_R0-0}{1}: [ewlc-infra-evq] [9347]: (note): Authentication Success. Resolved Policy bitmap:0 for client 2elf.3a65.9c09 2021/01/19 21:58:16.374442 {wncd\_x\_R0-0}{1}: [client-auth] [9347]: (info): MAC: 2elf.3a65.9c09 Client auth-interface state transition: S\_AUTHIF\_WEBAUTH\_PENDING -> S\_AUTHIF\_WEBAUTH\_PENDING 2021/01/19 21:58:16.374568 {wncd\_x\_R0-0}{1}: [aaa-attr-inf] [9347]: (info): << username 0 "Nico">> 2021/01/19 21:58:16.374574 {wncd\_x\_R0-0}{1}: [aaa-attr-inf] [9347]: (info): << sam-account-name 0 "Nico">> 2021/01/19 21:58:16.374584 {wncd\_x\_R0-0}{1}: [aaa-attr-inf] [9347]: (info): << method 0 1 [webauth]>> 2021/01/19 21:58:16.374592 {wncd\_x\_R0-0}{1}: [aaa-attr-inf] [9347]: (info): << clid-mac-addr 0

```
2e 1f 3a 65 9c 09 >> 2021/01/19 21:58:16.374597 {wncd_x_R0-0}{1}: [aaa-attr-inf] [9347]: (info):
<< intf-id 0 2415919108 (0x90000004)>> 2021/01/19 21:58:16.374690 {wncd_x_R0-0}{1}: [auth-mgr]
[9347]: (info): [2elf.3a65.9c09:capwap_90000004] auth mgr attr change notification is received
for attr (450) 2021/01/19 21:58:16.374797 {wncd_x_R0-0}{1}: [auth-mgr] [9347]: (info):
[2elf.3a65.9c09:capwap_90000004] Received User-Name Nico for client 2elf.3a65.9c09 2021/01/19
21:58:16.375294 {wncd_x_R0-0}{1}: [webauth-acl] [9347]: (info): capwap_90000004[2elf.3a65.9c09][
192.168.1.17]Applying IPv4 logout ACL via SVM, name: IP-Adm-V4-LOGOUT-ACL, priority: 51, IIF-ID:
0 2021/01/19 21:58:16.376120 {wncd_x_R0-0}{1}: [epm-redirect] [9347]: (info):
[0000.0000.0000:unknown] URL-Redirect-ACL = IP-Adm-V4-LOGOUT-ACL 2021/01/19 21:58:16.377322
{wncd_x_R0-0}{1}: [webauth-page] [9347]: (info): capwap_90000004[2elf.3a65.9c09][
192.168.1.17]HTTP/1.0 200 OK 2021/01/19 21:58:16.378405 {wncd_x_R0-0}{1}: [client-auth] [9347]:
(note): MAC: 2elf.3a65.9c09 L3 Authentication Successful. ACL:[ ] 2021/01/19 21:58:16.378426
{wncd_x_R0-0}{1}: [client-auth] [9347]: (info): MAC: 2elf.3a65.9c09 Client auth-interface state
transition: S_AUTHIF_WEBAUTH_PENDING -> S_AUTHIF_WEBAUTH_DONE 2021/01/19 21:58:16.379181
{wncd_x_R0-0}{1}: [ewlc-qos-client] [9347]: (info): MAC: 2elf.3a65.9c09 Client QoS add mobile cb
2021/01/19 21:58:16.379323 {wncd_x_R0-0}{1}: [ewlc-qos-client] [9347]: (info): MAC:
2elf.3a65.9c09 No QoS PM Name or QoS Level received from SANet for pm_dir:0. Check client is
fastlane, otherwise set pm name to none 2021/01/19 21:58:16.379358 {wncd_x_R0-0}{1}: [ewlc-qos-
client] [9347]: (info): MAC: 2elf.3a65.9c09 No QoS PM Name or QoS Level received from SANet for
pm_dir:1. Check client is fastlane, otherwise set pm name to none 2021/01/19 21:58:16.379442
{wncd_x_R0-0}{1}: [client-auth] [9347]: (note): MAC: 2elf.3a65.9c09 ADD MOBILE sent. Client
state flags: 0x8 BSSID: MAC: f80f.6f15.66ae capwap IFID: 0x90000004 2021/01/19 21:58:16.380547
{wncd_x_R0-0}{1}: [errmsg] [9347]: (info): %CLIENT_ORCH_LOG-6-CLIENT_ADDED_TO_RUN_STATE:
Username entry (Nico) joined with ssid (webauth) for device with MAC: 2elf.3a65.9c09 2021/01/19
21:58:16.380729 {wncd_x_R0-0}{1}: [aaa-attr-inf] [9347]: (info): [ Applied attribute :bsn-vlan-
interface-name 0 "1" ] 2021/01/19 21:58:16.380736 {wncd_x_R0-0}{1}: [aaa-attr-inf] [9347]:
(info): [ Applied attribute : timeout 0 86400 (0x15180) ] 2021/01/19 21:58:16.380812 {wncd_x_R0-
0}{1}: [aaa-attr-inf] [9347]: (info): [ Applied attribute : url-redirect-acl 0 "IP-Adm-V4-
LOGOUT-ACL" ] 2021/01/19 21:58:16.380969 {wncd_x_R0-0}{1}: [ewlc-qos-client] [9347]: (info):
MAC: 2elf.3a65.9c09 Client QoS run state handler 2021/01/19 21:58:16.381033 {wncd_x_R0-0}{1}:
[rog-proxy-capwap] [9347]: (debug): Managed client RUN state notification: 2elf.3a65.9c09
2021/01/19 21:58:16.381152 {wncd_x_R0-0}{1}: [client-orch-state] [9347]: (note): MAC:
2elf.3a65.9c09 Client state transition: S_CO_L3_AUTH_IN_PROGRESS -> S_CO_RUN 2021/01/19
21:58:16.385252 {wncd_x_R0-0}{1}: [ewlc-qos-client] [9347]: (info): MAC: 2elf.3a65.9c09 Client
QoS dpath run params 2021/01/19 21:58:16.385321 {wncd_x_R0-0}{1}: [avc-afc] [9347]: (debug): AVC
enabled for client 2elf.3a65.9c09
```

## 9800에서 LDAP 연결을 확인하는 방법

LDAP로 향하는 트래픽을 확인하기 위해 9800에 내장된 캡처를 사용할 수 있습니다.

WLC에서 캡처를 가져오려면 Troubleshooting(문제 해결) > Packet Capture(패킷 캡처)로 이동하고 +Add(추가)를 클릭합니다. 업링크 포트를 선택하고 캡처를 시작합니다.



다음은 사용자 Nico에 대한 성공 인증 예입니다

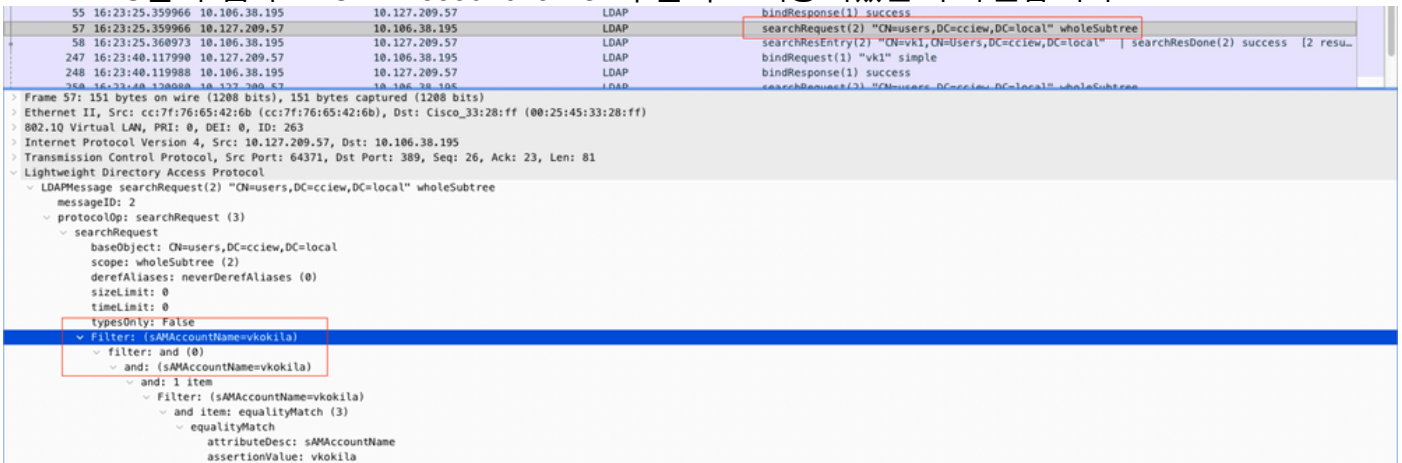
| Time | Source          | Destination   | Protocol      | Length | La | Info   |
|------|-----------------|---------------|---------------|--------|----|--|
| 8696 | 22:58:16.412748 | 192.168.1.15  | 192.168.1.192 | 108    |    | bindRequest(1) "Administrator@lab.com" simple  |
| 8697 | 22:58:16.414425 | 192.168.1.192 | 192.168.1.15  | 88     |    | bindResponse(1) success  |
| 8699 | 22:58:16.419645 | 192.168.1.15  | 192.168.1.192 | 128    |    | searchRequest(2) "CN=Users,DC=lab,DC=com" wholeSubtree                                   |
| 8700 | 22:58:16.420536 | 192.168.1.192 | 192.168.1.15  | 1260   |    | searchResEntry(2) "CN=Nico,CN=Users,DC=lab,DC=com"   searchResDone(2) success [1 result] |
| 8701 | 22:58:16.422383 | 192.168.1.15  | 192.168.1.192 | 117    |    | bindRequest(3) "CN=Nico,CN=Users,DC=lab,DC=com" simple                                   |
| 8702 | 22:58:16.423513 | 192.168.1.192 | 192.168.1.15  | 88     |    | bindResponse(3) success  |

처음 2개의 패킷은 LDAP DB에 대한 WLC 바인딩을 나타냅니다. 즉, 검색을 수행하기 위해 admin 사용자로 데이터베이스에 인증하는 WLC입니다.

이 2개의 LDAP 패킷은 기본 DN(여기서 CN=Users,DC=lab,DC=com)에서 검색을 수행하는 WLC를 나타냅니다. 패킷의 내부에는 사용자 이름에 대한 필터가 포함되어 있습니다(여기서 "Nico"). LDAP 데이터베이스는 사용자 특성을 성공으로 반환합니다

마지막 2개의 패킷은 해당 사용자 비밀번호로 인증하려고 시도하는 WLC를 나타냅니다.

### 1. EPC를 수집하고 "sAMAccountName"이 필터로 적용되었는지 확인합니다.



필터에 "cn"이 표시되고 "sAMAccountName"이 사용자 이름으로 사용 중인 경우 인증이 실패합니다

WLC cli에서 ldap 맵 특성을 다시 구성합니다.

## 2. 서버에서 일반 텍스트로 "userPassword"를 반환하지 않으면 인증이 실패합니다.

```
1197 16:25:05.708962 10.127.209.57 10.106.38.195 LDAP searchRequest(3) "CN=users,DC=cciew,DC=local" wholeSubtree
1198 16:25:05.709954 10.106.38.195 10.127.209.57 LDAP searchResEntry(3) "CN=vk1,ON=Users,DC=cciew,DC=local" | searchResDone(3) success [2 res...
  ~ PartialAttributeList item userPassword
    type: userPassword
    ~ vals: 1 item
      AttributeValue: Cisco123
  ~ PartialAttributeList item givenName
    type: givenName
    ~ vals: 1 item
      AttributeValue: vk1
  ~ PartialAttributeList item distinguishedName
    type: distinguishedName
    ~ vals: 1 item
      AttributeValue: CN=vk1,ON=Users,DC=cciew,DC=local
  ~ PartialAttributeList item instanceType
    type: instanceType
    ~ vals: 1 item
      AttributeValue: 4
  ~ PartialAttributeList item whenCreated
    type: whenCreated
```

## 3. 서버에서 ldap.exe 도구를 사용하여 기본 DN 정보를 검증합니다.



FileZilla Client



Best match



Idp

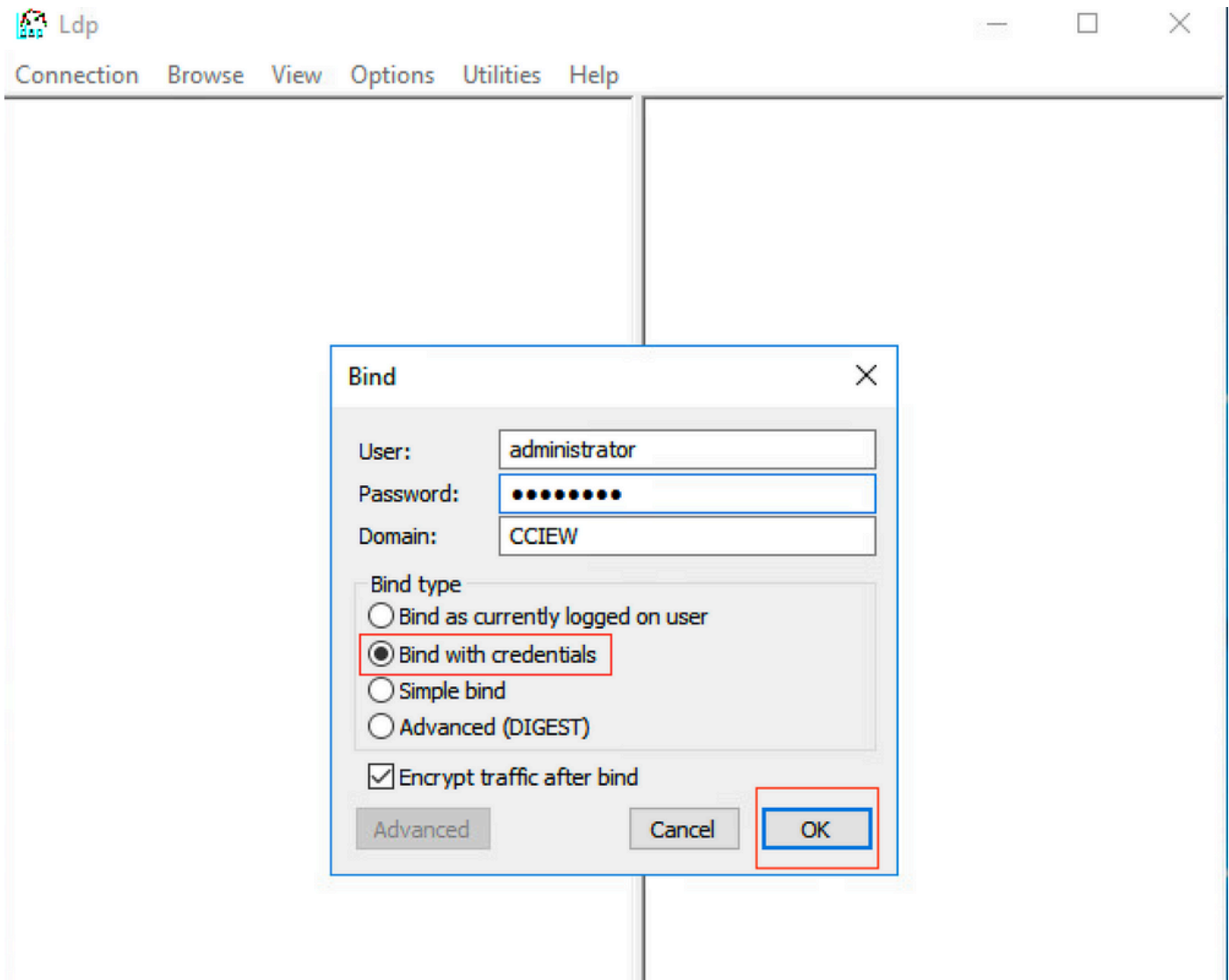
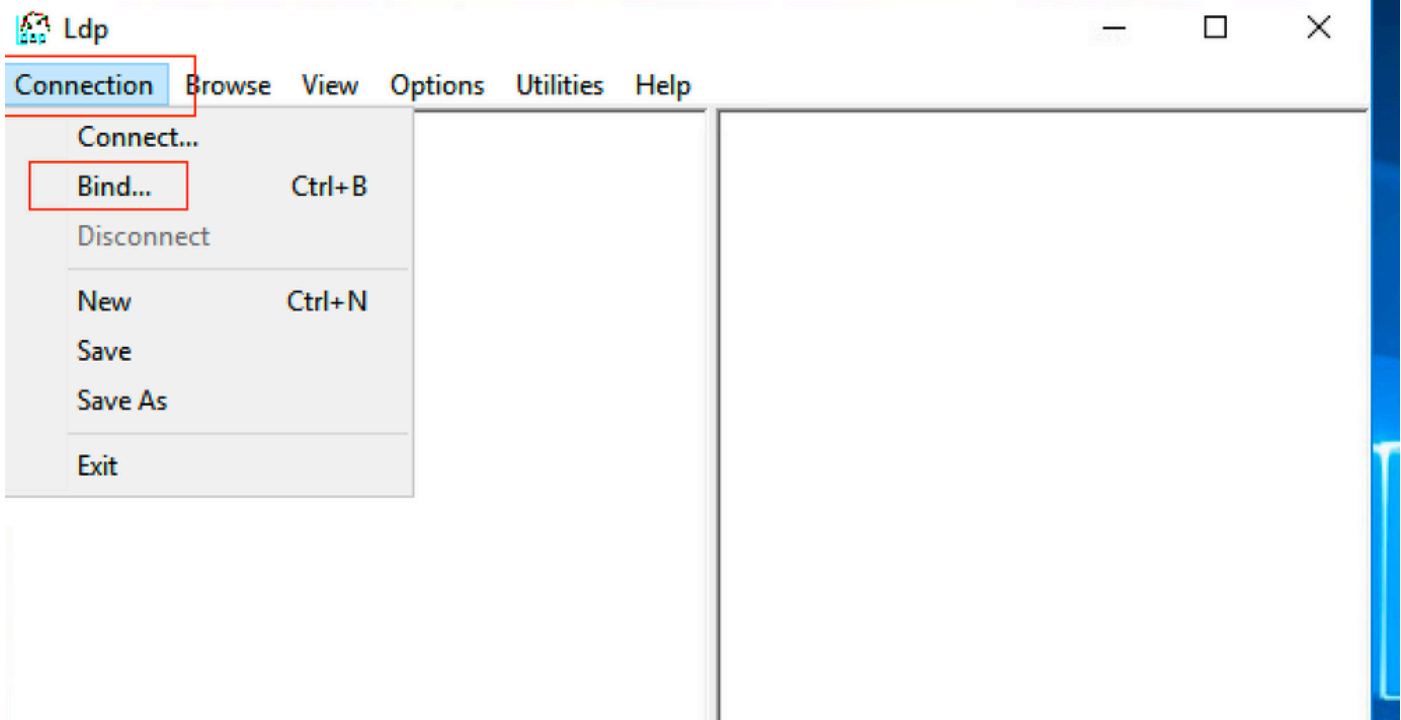
Run command



Idp







Idap://WIN-3JGG5JOCSVC.cciew.local/DC=cciew,DC=local

Connection Browse **View** Options Utilities Help

Tree Ctrl+T  
Enterprise Configuration  
 Status Bar  
Set Font...

POLICY\_HINTS\_DEPRECATED );  
1.2.840.113556.1.4.2090 = ( DIRSYNC\_EX );  
1.2.840.113556.1.4.2205 = ( UPDATE\_STATS  
); 1.2.840.113556.1.4.2204 = (  
TREE\_DELETE\_EX ); 1.2.840.113556.1.4.2206  
= ( SEARCH\_HINTS );  
1.2.840.113556.1.4.2211 = (  
EXPECTED\_ENTRY\_COUNT );  
1.2.840.113556.1.4.2239 = ( POLICY\_HINTS  
); 1.2.840.113556.1.4.2255;  
1.2.840.113556.1.4.2256;  
1.2.840.113556.1.4.2309;  
supportedLDAPPolicies (20): MaxPoolThreads;  
MaxPercentDirSyncRequests;  
MaxDatagramRecv; MaxReceiveBuffer;  
InitRecvTimeout; MaxConnections;  
MaxConnIdleTime; MaxPageSize;  
MaxBatchReturnMessage;

Idap://WIN-3JGG5JOCSVC.cciew.local/DC=cciew,DC=local

Connection Browse View **Options** Utilities Help

POLICY\_HINTS\_DEPRECATED );  
1.2.840.113556.1.4.2090 = ( DIRSYNC\_EX );  
1.2.840.113556.1.4.2205 = ( UPDATE\_STATS  
); 1.2.840.113556.1.4.2204 = (  
TREE\_DELETE\_EX ); 1.2.840.113556.1.4.2206  
= ( SEARCH\_HINTS );  
1.2.840.113556.1.4.2211 = (  
EXPECTED\_ENTRY\_COUNT );  
1.2.840.113556.1.4.2239 = ( POLICY\_HINTS  
); 1.2.840.113556.1.4.2255;  
1.2.840.113556.1.4.2256;  
1.2.840.113556.1.4.2309;  
supportedLDAPPolicies (20): MaxPoolThreads;  
MaxPercentDirSyncRequests;  
MaxReceiveBuffer;  
MaxDatagramRecv; MaxReceiveBuffer;  
InitRecvTimeout; MaxConnections;  
MaxConnIdleTime; MaxRange;  
MaxBatchReturnMessage;  
maxValueRangeTransitive; ThreadMemoryLimit;  
SystemMemoryLimitPercent;  
supportedLDAPVersion (2): 3; 2;

**Tree View**

BaseDN: DC=cciew,DC=local

Cancel OK

Connection Browse View Options Utilities Help

- DC=cciew,DC=local
- ... CN=Builtin,DC=cciew,DC=local
- ... CN=Computers,DC=cciew,DC=local
- ... OU=Domain Controllers,DC=cciew,DC=local
- ... CN=ForeignSecurityPrincipals,DC=cciew,DC=local
- ... CN=Infrastructure,DC=cciew,DC=local
- ... CN=Keys,DC=cciew,DC=local
- ... CN=LostAndFound,DC=cciew,DC=local
- ... CN=Managed Service Accounts,DC=cciew,DC=local
- ... CN=NTDS Quotas,DC=cciew,DC=local
- ... CN=Program Data,DC=cciew,DC=local
- ... CN=System,DC=cciew,DC=local
- ... CN=TPM Devices,DC=cciew,DC=local
- CN=Users,DC=cciew,DC=local**
- ... CN=Administrator,CN=Users,DC=cciew,DC=local
- ... CN=Allowed RODC Password Replication Group,CN=Users,DC=cciew,DC=local
- ... CN=Cert Publishers,CN=Users,DC=cciew,DC=local
- ... CN=Cloneable Domain Controllers,CN=Users,DC=cciew,DC=local
- ... CN=DefaultAccount,CN=Users,DC=cciew,DC=local
- ... CN=Denied RODC Password Replication Group,CN=Users,DC=cciew,DC=local
- ... CN=DnsAdmins,CN=Users,DC=cciew,DC=local
- ... CN=DnsUpdateProxy,CN=Users,DC=cciew,DC=local
- ... CN=Domain Admins,CN=Users,DC=cciew,DC=local
- ... CN=Domain Computers,CN=Users,DC=cciew,DC=local
- ... CN=Domain Controllers,CN=Users,DC=cciew,DC=local
- ... CN=Domain Guests,CN=Users,DC=cciew,DC=local
- ... CN=Domain Users,CN=Users,DC=cciew,DC=local
- ... CN=Enterprise Admins,CN=Users,DC=cciew,DC=local
- ... CN=Enterprise Key Admins,CN=Users,DC=cciew,DC=local
- ... CN=Enterprise Read-only Domain Controllers,CN=Users,DC=cciew,DC=local
- ... CN=Group Policy Creator Owners,CN=Users,DC=cciew,DC=local
- ... CN=Guest,CN=Users,DC=cciew,DC=local
- ... CN=kanu,CN=Users,DC=cciew,DC=local
- ... CN=Key Admins,CN=Users,DC=cciew,DC=local
- ... CN=krbtgt,CN=Users,DC=cciew,DC=local

```

adminCount: 1;
badPasswordTime: 0 (never);
badPwdCount: 0;
cn: vk1;
codePage: 0;
countryCode: 0;
displayName: vk1;
distinguishedName: CN=vk1,CN=Users,DC=cciew,DC=local;
dSCorePropagationData (2): 29-09-2021 15:16:40 India Standard Time; 0x0 = ( );
givenName: vk1;
instanceType: 0x4 = ( WRITE );
lastLogoff: 0 (never);
lastLogon: 0 (never);
logonCount: 0;
memberOf (4): CN=Domain Admins,CN=Users,DC=cciew,DC=local; CN=Enterprise Admins,CN=Users,DC=cciew,DC=local; CN=Schema Admins,CN=Users,DC=cciew,DC=local; CN=Administrators,CN=Builtin,DC=cciew,DC=local;
name: vk1;
objectCategory: CN=Person,CN=Schema,CN=Configuration,DC=cciew,DC=local;
objectClass (4): top; person; organizationalPerson; user;
objectGUID: 1814f794-025e-4378-abad-66ff778a4a4d3;
objectSid: S-1-5-21-1375146846-274930181-3003521951-1120;
primaryGroupID: 513 = ( GROUP_RID_USERS );
pwdLastSet: 27-09-2021 22:56:11 India Standard Time;
sAMAccountName: vkokila;
sAMAccountType: 805306368 = ( NORMAL_USER_ACCOUNT );
userAccountControl: 0x10200 = ( NORMAL_ACCOUNT | DONT_EXPIRE_PASSWORD );
userPassword: Cisco123;
userPrincipalName: vk1@cciew.local;
uSNChanged: 160181;
uSNCreated: 94284;
whenChanged: 29-09-2021 15:16:40 India Standard Time;
whenCreated: 25-12-2020 16:25:53 India Standard Time;
-----
Expanding base 'CN=Users,DC=cciew,DC=local'...
Getting 1 entries:
Dn: CN=Users,DC=cciew,DC=local
cn: Users;
description: Default container for upgraded user accounts;
distinguishedName: CN=Users,DC=cciew,DC=local;
dSCorePropagationData (2): 29-09-2019 01:09:51 India Standard Time; 0x1 = ( NEW_SD );
instanceType: 0x4 = ( WRITE );
isCriticalSystemObject: TRUE;
name: Users;
objectCategory: CN=Container,CN=Schema,CN=Configuration,DC=cciew,DC=local;

```

```

... CN=Users,DC=cciew,DC=local
... CN=Administrator,CN=Users,DC=cciew,DC=local
... CN=Allowed RODC Password Replication Group,CN=Users,DC=cciew,DC=local
... CN=Cert Publishers,CN=Users,DC=cciew,DC=local
... CN=Cloneable Domain Controllers,CN=Users,DC=cciew,DC=local
... CN=DefaultAccount,CN=Users,DC=cciew,DC=local
... CN=Denied RODC Password Replication Group,CN=Users,DC=cciew,DC=local
... CN=DnsAdmins,CN=Users,DC=cciew,DC=local
... CN=DnsUpdateProxy,CN=Users,DC=cciew,DC=local
... CN=Domain Admins,CN=Users,DC=cciew,DC=local
... CN=Domain Computers,CN=Users,DC=cciew,DC=local
... CN=Domain Controllers,CN=Users,DC=cciew,DC=local
... CN=Domain Guests,CN=Users,DC=cciew,DC=local
... CN=Domain Users,CN=Users,DC=cciew,DC=local
... CN=Enterprise Admins,CN=Users,DC=cciew,DC=local
... CN=Enterprise Key Admins,CN=Users,DC=cciew,DC=local
... CN=Enterprise Read-only Domain Controllers,CN=Users,DC=cciew,DC=local
... CN=Group Policy Creator Owners,CN=Users,DC=cciew,DC=local
... CN=Guest,CN=Users,DC=cciew,DC=local
... CN=kanu,CN=Users,DC=cciew,DC=local
... CN=Key Admins,CN=Users,DC=cciew,DC=local
... CN=krbtgt,CN=Users,DC=cciew,DC=local
... CN=Protected Users,CN=Users,DC=cciew,DC=local
... CN=RAS and IAS Servers,CN=Users,DC=cciew,DC=local
... CN=Read-only Domain Controllers,CN=Users,DC=cciew,DC=local
... CN=Schema Admins,CN=Users,DC=cciew,DC=local
... CN=sony s,CN=Users,DC=cciew,DC=local
... CN=tejas,CN=Users,DC=cciew,DC=local
... CN=test,CN=Users,DC=cciew,DC=local
... CN=test123,CN=Users,DC=cciew,DC=local
... CN=vk,CN=Users,DC=cciew,DC=local
... CN=vk1,CN=Users,DC=cciew,DC=local
... No children
... CN=Yogesh G.,CN=Users,DC=cciew,DC=local

```

```

showInAdvancedViewOnly: FALSE,
systemFlags: 0x8C000000 = ( DISALLOW_DELETE | DOMAIN_DISALLOW_REI
uSNChanged: 5888;
uSNCreated: 5888;
whenChanged: 29-09-2019 01:08:06 India Standard Time;
whenCreated: 29-09-2019 01:08:06 India Standard Time;

```

Expanding base 'CN=vk1,CN=Users,DC=cciew,DC=local'...  
Getting 1 entries:

```

Dn: CN=vk1,CN=Users,DC=cciew,DC=local
  accountExpires: 9223372036854775807 (never);
  adminCount: 1;
  badPasswordTime: 0 (never);
  badPwdCount: 0;
  cn: vk1;
  codePage: 0;
  countryCode: 0;
  displayName: vk1;
  distinguishedName: CN=vk1,CN=Users,DC=cciew,DC=local;
  dSCorePropagationData (2): 29-09-2021 15:16:40 India Standard Time; 0x0 =
  givenName: vk1;
  instanceType: 0x4 = ( WRITE );
  lastLogoff: 0 (never);
  lastLogon: 0 (never);
  logonCount: 0;
  memberOf (4): CN=Domain Admins,CN=Users,DC=cciew,DC=local; CN=Enterp
    Admins,CN=Users,DC=cciew,DC=local; CN=Administrators,CN=Builtin,DC=
    name: vk1;
  objectCategory: CN=Person,CN=Schema,CN=Configuration,DC=cciew,DC=loc
  objectClass (4): top; person; organizationalPerson; user;
  objectGUID: 1814f794-025e-4378-abad-66ff78a4a4d3;
  objectSid: S-1-5-21-1375146846-274930181-3003521951-1120;
  primaryGroupID: 513 = ( GROUP_RID_USERS );
  pwdLastSet: 27-09-2021 22:56:11 India Standard Time;
  sAMAccountName: vkokila;
  sAMAccountType: 805306368 = ( NORMAL_USER_ACCOUNT );
  userAccountControl: 0x10200 = ( NORMAL_ACCOUNT | DONT_EXPIRE_PASS
  userPassword: Cisco123;
  userPrincipalName: vk1@cciew.local;
  uSNChanged: 160181;
  uSNCreated: 94284;
  whenChanged: 29-09-2021 15:16:40 India Standard Time;
  whenCreated: 25-12-2020 16:25:53 India Standard Time;

```

#### 4. 서버 통계 및 특성 MAP 확인

```
C9800-40-K9#show ldap server all
```

```
Server Information for ldap
```

```
=====
```

```

Server name           :ldap
Server Address        :10.106.38.195
Server listening Port :389
Bind Root-dn         :vk1
Server mode           :Non-Secure
Cipher Suite          :0x00
Authentication Seq    :Search first. Then Bind/Compare password next
Authentication Procedure:Bind with user password

```

Base-Dn :CN=users,DC=cciew,DC=local  
Object Class :Person  
Attribute map :VK  
Request timeout :30  
Deadtime in Mins :0  
State :ALIVE

-----

\* LDAP STATISTICS \*

Total messages [Sent:2, Received:3]  
Response delay(ms) [Average:2, Maximum:2]  
Total search [Request:1, ResultEntry:1, ResultDone:1]  
Total bind [Request:1, Response:1]  
Total extended [Request:0, Response:0]  
Total compare [Request:0, Response:0]  
Search [Success:1, Failures:0]  
Bind [Success:1, Failures:0]  
Missing attrs in Entry [0]  
Connection [Closes:0, Aborts:0, Fails:0, Timeouts:0]

-----

No. of active connections :0

-----

## 참조

[9800 컨피그레이션의 로컬 EAP 예](#)

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