FTD(Firepower Threat Defense)에서 AnyConnect LDAP 매핑 구성

목차

소개
사전 요구 사항
요구 사항
사용되는 구성 요소
구성
FTD의 구성
다음을 확인합니다.
문제 해결

소개

이 문서에서는 FMC(Firepower Management Center) FlexConfig 정책을 사용하여 FTD(Firepower Threat Defense)에서 AnyConnect 사용자를 위한 LDAP(Lightweight Directory Access Protocol) 매핑의 컨피그레이션 예를 제공합니다.이 구성은 AD(Active Directory) 그룹에 속한 특정 사용자가 VPN(Virtual Private Network) 연결을 설정하도록 허용하는 데 사용됩니다.맵에 정의되지 않은 다른 AD 그룹의 사용자는 동일한 프로필로 연결할 수 없습니다.

사전 요구 사항

요구 사항

Cisco에서는 다음 주제에 대한 지식을 얻을 것을 권장합니다.

- FMC의 AD 영역 컨피그레이션
- Windows Active Directory
- FMC의 AnyConnect(SSLVPN) 컨피그레이션
- FMC의 FlexConfig 객체에 대한 기본 지식

사용되는 구성 요소

- FMC(FirePower Manager Center) 버전 6.2.3 및 6.5.0
- FirePower FTD(Threat Defense) 버전 6.2.3 및 6.5.0
- Active Directory가 있는 Windows Server

구성

FTD의 구성

이 예에서 AD Group1에 속하는 사용자는 터널-전체 컨피그레이션을 사용하고 AD Group2에 속하

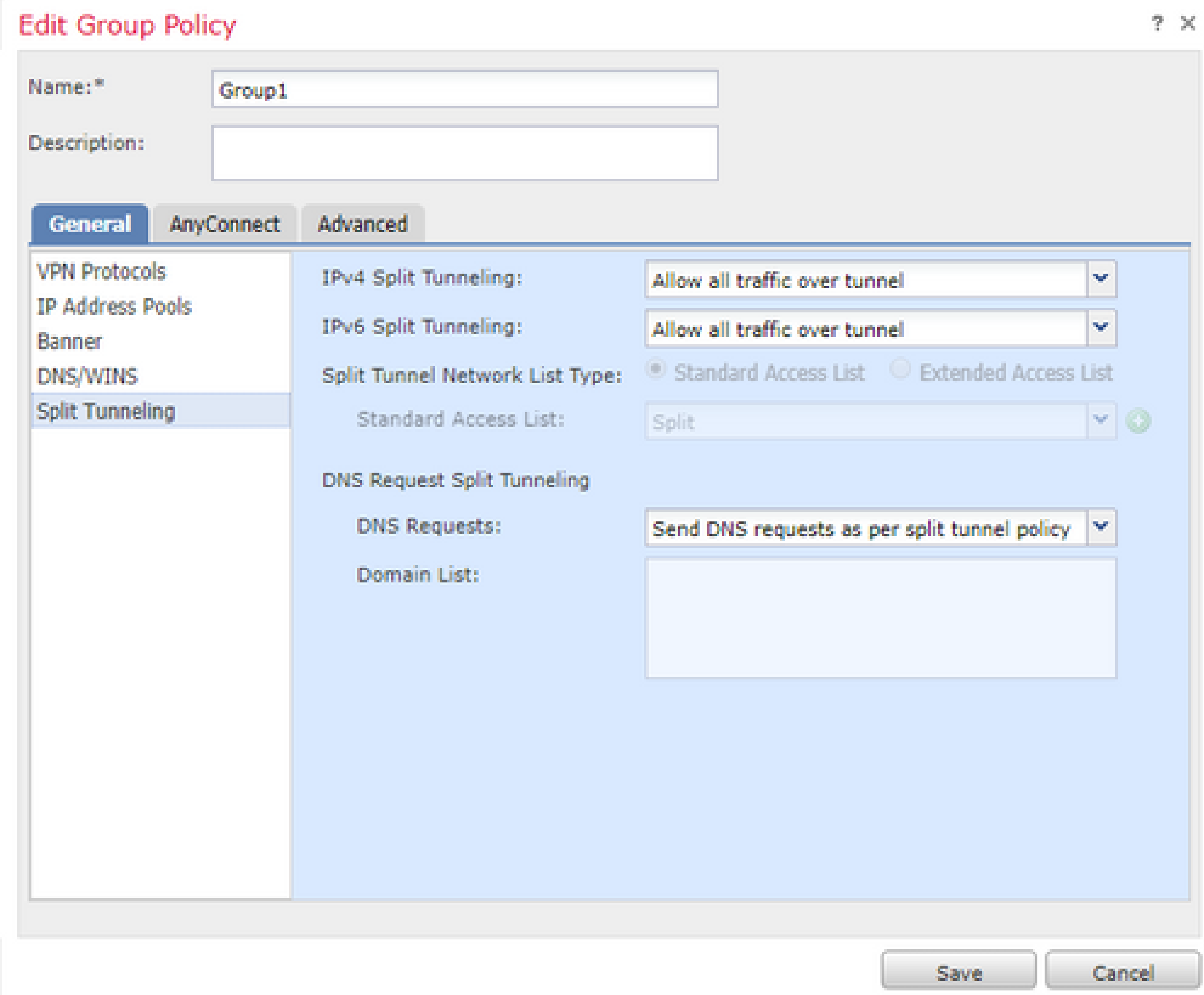
는 사용자는 특정 호스트에 대한 액세스가 제한됩니다.이 그룹에 속하지 않은 다른 모든 사용자는 인증할 수 없습니다.

1단계. LDAP 인증을 사용하여 AnyConnect를 구성하고 변경 사항을 구축합니다.이 가이드에 예제가 나와 있습니다.

2단계. Devices > Remote Access > Edit AnyConnect Policy > Advanced > Group Policies로 이동합니다.

3단계. 3개의 다른 그룹 정책을 생성합니다.

- Split Tunneling 컨피그레이션이 Allow **all traffic over tunnel로 설정된 Group1.**



Edit Group Policy

Name:* Group1

Description:

IPv4 Split Tunneling: Allow all traffic over tunnel

IPv6 Split Tunneling: Allow all traffic over tunnel

Split Tunnel Network List Type: ● Standard Access List ○ Extended Access List

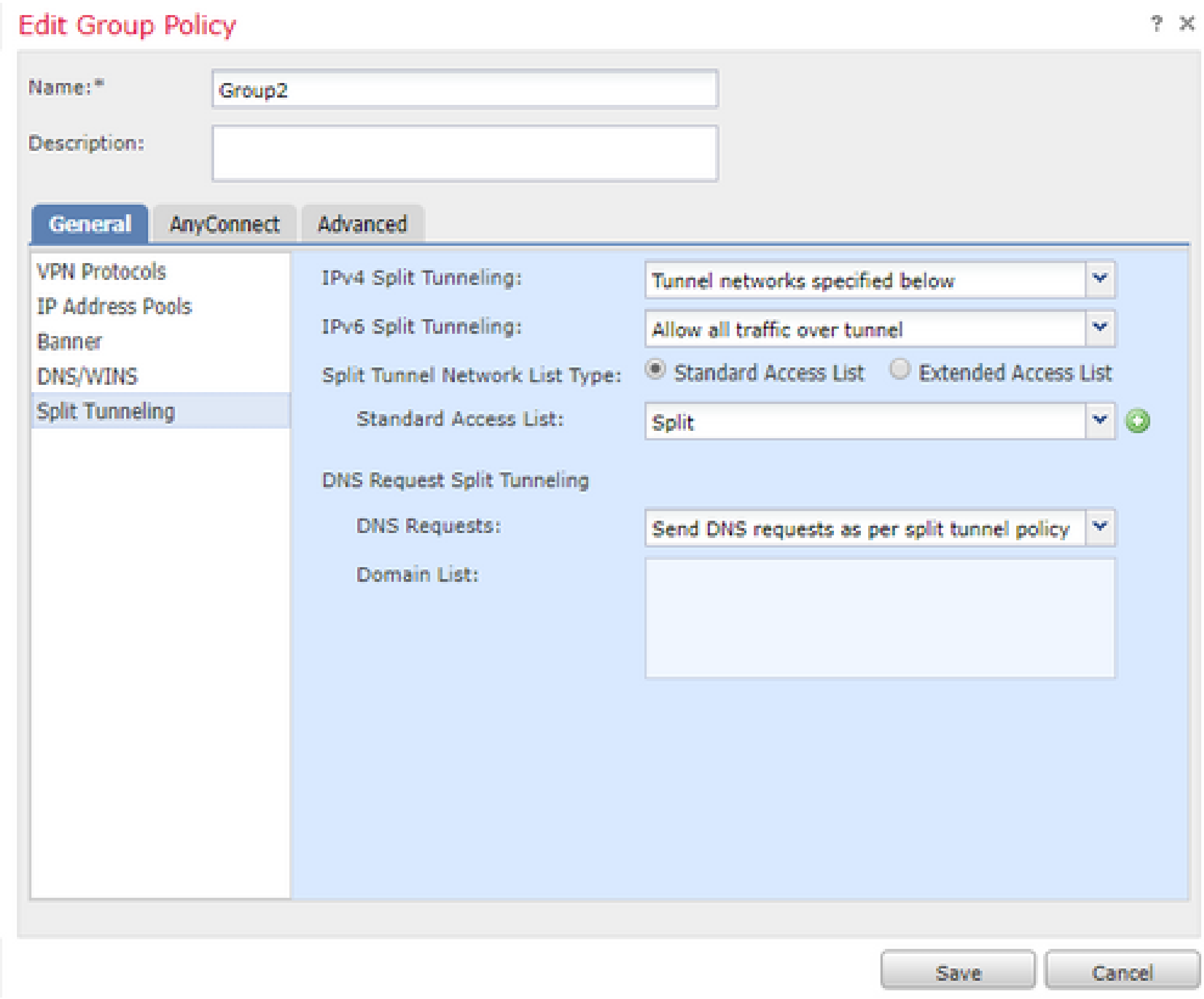
Standard Access List: Split

DNS Request Split Tunneling

DNS Requests: Send DNS requests as per split tunnel policy

Domain List:

- Split Tunneling 컨피그레이션이 Split로 설정된 Group2**입니다**.



Edit Group Policy

Name:* Group2

Description:

IPv4 Split Tunneling: Tunnel networks specified below

IPv6 Split Tunneling: Allow all traffic over tunnel

Split Tunnel Network List Type: ● Standard Access List ○ Extended Access List

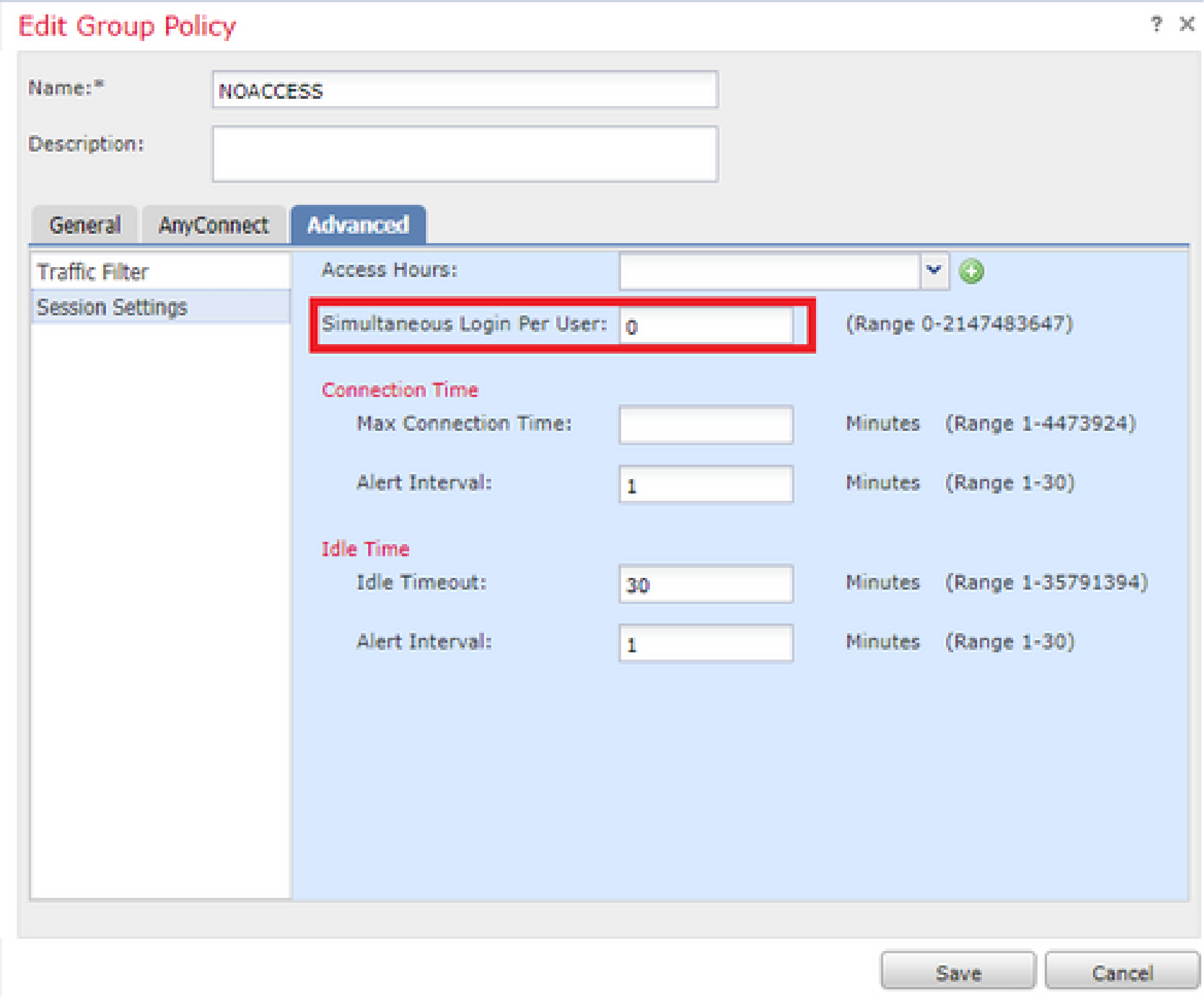
Standard Access List: Split

DNS Request Split Tunneling

DNS Requests: Send DNS requests as per split tunnel policy

Domain List:

- 이전 그룹에 속하지 않은 사용자의 NOACCESS 그룹입니다.Simultaneous **Login Per User** 필드는 0으로 설정해야 합니다.



Edit Group Policy

Name:* NOACCESS

Description:

General | AnyConnect | Advanced

Traffic Filter

Session Settings

Access Hours:

Simultaneous Login Per User: 0 (Range 0-2147483647)

Connection Time

Max Connection Time: Minutes (Range 1-4473924)

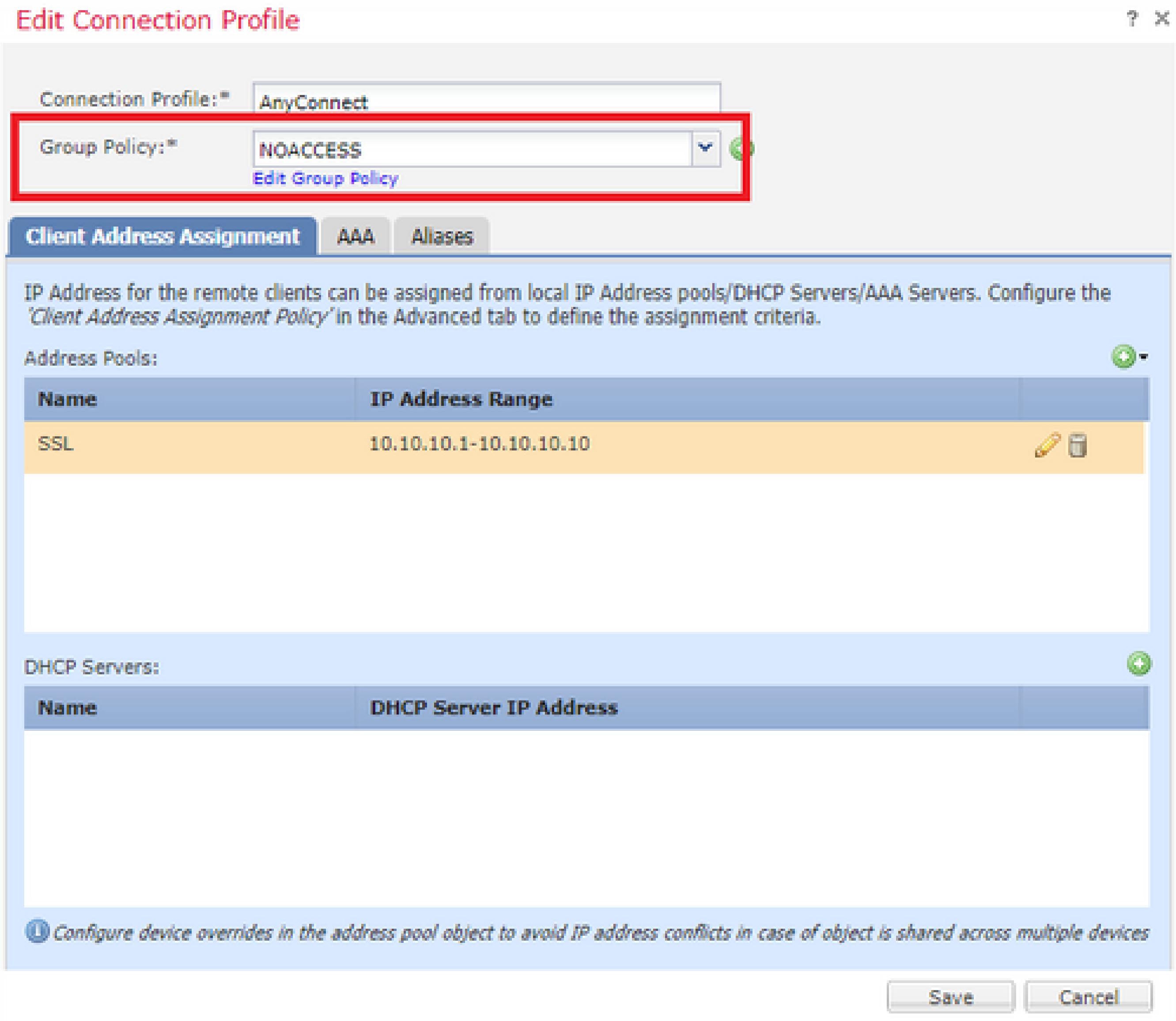
Alert Interval: 1 Minutes (Range 1-30)

Idle Time

Idle Timeout: 30 Minutes (Range 1-35791394)

Alert Interval: 1 Minutes (Range 1-30)

4단계. 연결 프로파일에 NOACCESS 그룹 정책을 할당합니다.



Edit Connection Profile

Connection Profile:* AnyConnect

Group Policy:* NOACCESS

Edit Group Policy

IP Address for the remote clients can be assigned from local IP Address pools/DHCP Servers/AAA Servers. Configure the *'Client Address Assignment Policy'* in the Advanced tab to define the assignment criteria.

Address Pools:

Name	IP Address Range	
SSL	10.10.10.1-10.10.10.10	

DHCP Servers:

Name	DHCP Server IP Address	

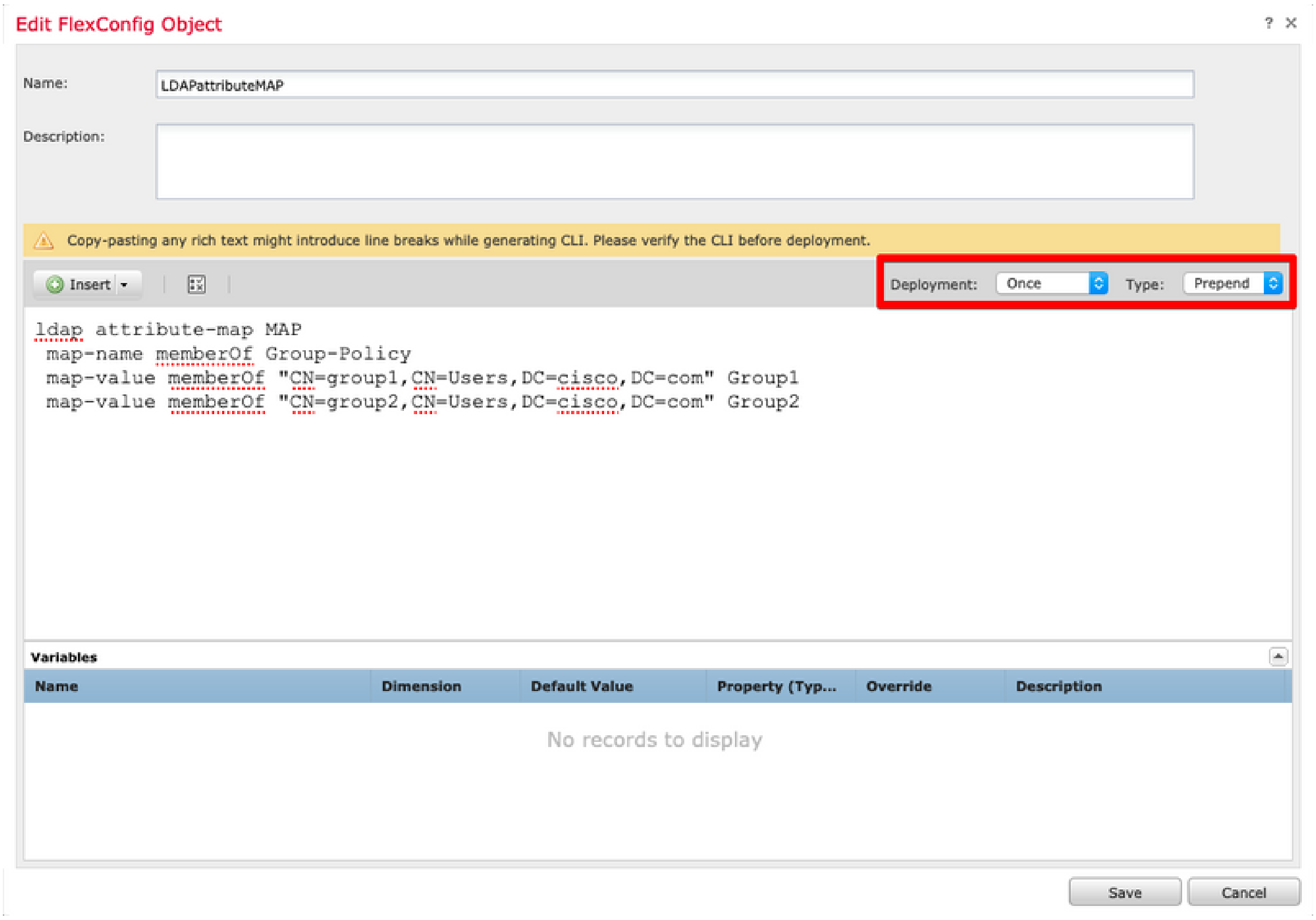
Configure device overrides in the address pool object to avoid IP address conflicts in case of object is shared across multiple devices

5단계. Object > Object Management > FlexConfig > FlexConfig Object > Add FlexConfig Object로 이동합니다.

6단계. LDAP 특성 맵 구성에 필요한 memberOf 값을 추가합니다. 서버에서 그룹 DN을 가져오려면 "dsquery sameid -group <group-name>" 명령을 사용할 수 있습니다.

Deployment(구축)는 Once(*한 번*)로 설정하고 Type(유형)을 Prepend(*앞에 추가)로 설정해야 합니다*.

팁:특성 이름 및 값은 대/소문자를 구분합니다.매핑이 제대로 수행되지 않을 경우 Cisco 및 LDAP 특성 이름 및 값에 대한 LDAP 특성 맵에서 올바른 맞춤법 및 대문자화가 사용되었는지 확인하십시오.



Edit FlexConfig Object
? ×
Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.
Insert
Variables
No records to display
Save
Cancel

Name: LDAPattributeMAP

Description:

Deployment: Once

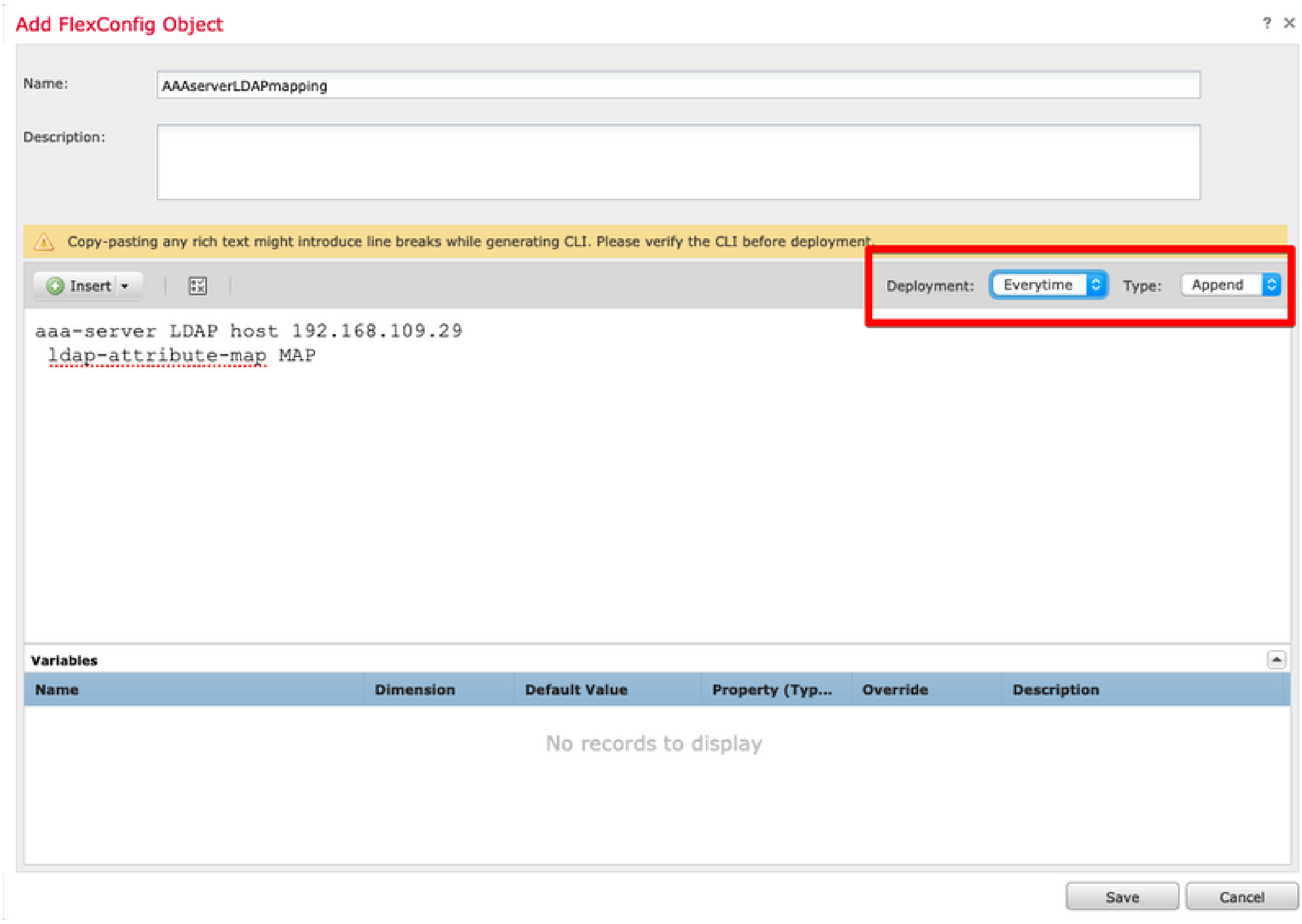
Type: Prepend

```
ldap attribute-map MAP
 map-name memberOf Group-Policy
 map-value memberOf "CN=group1,CN=Users,DC=cisco,DC=com" Group1
 map-value memberOf "CN=group2,CN=Users,DC=cisco,DC=com" Group2
```

Name	Dimension	Default Value	Property (Typ...	Override	Description

7단계. 다른 생성 AAAserverLDAPmapping이라는 FlexConfig 개체입니다.이 개체는 특성 맵을 aaa-server 컨피그레이션에 연결합니다.

구축 값은 Every time으로 설정하고 Type을 Append로 *설정해야* 합니다.



Name: AAAserverLDAPmapping

Description:

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Deployment: Everytime Type: Append

```
aaa-server LDAP host 192.168.109.29
 ldap-attribute-map MAP
```

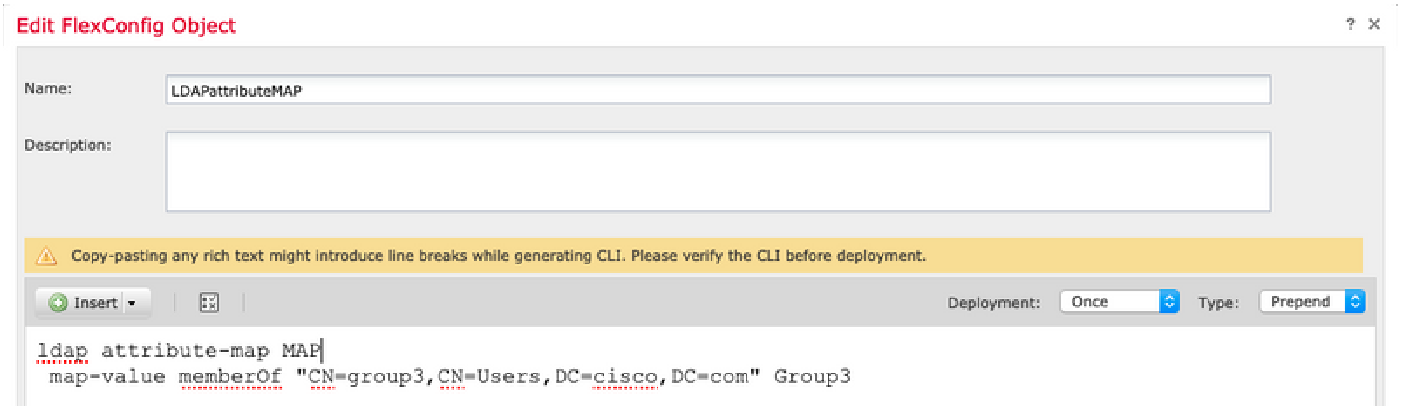
Name	Dimension	Default Value	Property (Typ...	Override	Description

No records to display

8단계. Devices > FlexConfig > Edit current FlexConfig로 이동합니다. FlexConfig Policy의 FlexConfig 객체 순서가 먼저 LDAP Attribute Map FlexConfig 객체 다음에 AAA-server 객체가 오는지 확인합니다.

9단계. 이 컨피그레이션을 관리되는 디바이스로 전송하려면 디바이스에 컨피그레이션을 구축합니다.

LDAP 맵에 추가 항목을 추가하려면 기존 FlexConfig LDAPAtributeMAP Object를 ONLY include the new map-value로 수정합니다.



Name: LDAPattributeMAP

Description:

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Deployment: Once Type: Prepend

```
ldap attribute-map MAP
 map-value memberOf "CN=group3,CN=Users,DC=cisco,DC=com" Group3
```

다음을 확인합니다.

FTD CLISH에 연결하고 이 명령을 실행하여 정의된 그룹의 사용자가 연결할 수 있도록 합니다.

```
> show vpn-sessiondb anyconnect

Session Type: AnyConnect

Username     : cisco1                 Index        : 25
Assigned IP  : 10.10.10.1             Public IP    : 192.168.109.80
Protocol     : AnyConnect-Parent SSL-Tunnel DTLS-Tunnel
License      : AnyConnect Premium
Encryption   : AnyConnect-Parent: (1)none  SSL-Tunnel: (1)AES-GCM-256  DTLS-Tunnel: (1)AES256
Hashing      : AnyConnect-Parent: (1)none  SSL-Tunnel: (1)SHA384  DTLS-Tunnel: (1)SHA1
Bytes Tx     : 15820                  Bytes Rx     : 160
Group Policy : Group1                 Tunnel Group : AnyConnect
Login Time   : 16:02:45 UTC Tue Oct 9 2018
Duration     : 0h:00m:38s
Inactivity   : 0h:00m:00s
VLAN Mapping : N/A                    VLAN         : none
Audt Sess ID : 000000000000190005bbcd125
Security Grp : none                   Tunnel Zone  : 0


> show vpn-sessiondb anyconnect

Session Type: AnyConnect

Username     : cisco2                 Index        : 26
Assigned IP  : 11.11.11.1             Public IP    : 192.168.109.80
Protocol     : AnyConnect-Parent SSL-Tunnel DTLS-Tunnel
License      : AnyConnect Premium
Encryption   : AnyConnect-Parent: (1)none  SSL-Tunnel: (1)AES-GCM-256  DTLS-Tunnel: (1)AES256
Hashing      : AnyConnect-Parent: (1)none  SSL-Tunnel: (1)SHA384  DTLS-Tunnel: (1)SHA1
Bytes Tx     : 15820                  Bytes Rx     : 442
Group Policy : Group2                 Tunnel Group : AnyConnect
Login Time   : 16:04:12 UTC Tue Oct 9 2018
Duration     : 0h:00m:14s
Inactivity   : 0h:00m:00s
VLAN Mapping : N/A                    VLAN         : none
Audt Sess ID : 000000000001a0005bbcd17c
Security Grp : none                   Tunnel Zone  : 0
```

문제 해결

디버깅:

LDAP 트랜잭션을 확인하려면 이러한 debug 명령을 사용할 수 있습니다.

```
> system support diagnostic-cli
debug ldap 250
debug aaa common 250
```

다음은 각 debug 명령에 대한 성공적인 출력의 예입니다.

```
firepower# debug ldap 250
debug ldap  enabled at level 250
firepower#
[49] Session Start
[49] New request Session, context 0x00002aaad332f100, reqType = Authentication
[49] Fiber started
[49] Creating LDAP context with uri=ldap://192.168.109.29:389
```

```
[49] Connect to LDAP server: ldap://192.168.109.29:389, status = Successful
[49] supportedLDAPVersion: value = 3
[49] supportedLDAPVersion: value = 2
[49] LDAP server 192.168.109.29 is Active directory
[49] Binding as AdminFTD
[49] Performing Simple authentication for AdminFTD to 192.168.109.29
[49] LDAP Search:
        Base DN = [DC=cisco,DC=com]
        Filter  = [samaccountname=cisco1]
        Scope   = [SUBTREE]
[49] User DN = [CN=cisco1,CN=Users,DC=cisco,DC=com]
[49] Talking to Active Directory server 192.168.109.29
[49] Reading password policy for cisco1, dn:CN=cisco1,CN=Users,DC=cisco,DC=com
[49] Read bad password count 1
[49] Binding as cisco1
[49] Performing Simple authentication for cisco1 to 192.168.109.29
[49] Processing LDAP response for user cisco1
[49] Message (cisco1):
[49] Authentication successful for cisco1 to 192.168.109.29
[49] Retrieved User Attributes:
[49]    objectClass: value = top
[49]    objectClass: value = person
[49]    objectClass: value = organizationalPerson
[49]    objectClass: value = user
[49]    cn: value = cisco1
[49]    givenName: value = cisco1
[49]    distinguishedName: value = CN=cisco1,CN=Users,DC=cisco,DC=com
[49]    instanceType: value = 4
[49]    whenCreated: value = 20181009153032.0Z
[49]    whenChanged: value = 20181009154032.0Z
[49]    displayName: value = cisco1
[49]    uSNCreated: value = 856333
[49]    memberOf: value = CN=group1,CN=Users,DC=cisco,DC=com
[49]            mapped to Group-Policy: value = Group1
[49]            mapped to LDAP-Class: value = Group1
[49]    uSNChanged: value = 856372
[49]    name: value = cisco1
[49]    objectGUID: value = .K.'..3N....Q...
[49]    userAccountControl: value = 66048
[49]    badPwdCount: value = 1
[49]    codePage: value = 0
[49]    countryCode: value = 0
[49]    badPasswordTime: value = 131835752510299209
[49]    lastLogoff: value = 0
[49]    lastLogon: value = 131835733331105504
[49]    pwdLastSet: value = 131835726324409149
[49]    primaryGroupID: value = 513
[49]    objectSid: value = ...........E1.E.G..9..@s...
[49]    adminCount: value = 1
[49]    accountExpires: value = 9223372036854775807
[49]    logonCount: value = 0
[49]    sAMAccountName: value = cisco1
[49]    sAMAccountType: value = 805306368
[49]    userPrincipalName: value = cisco1@cisco.com
[49]    objectCategory: value = CN=Person,CN=Schema,CN=Configuration,DC=cisco,DC=com
[49]    dSCorePropagationData: value = 20181009153316.0Z
[49]    dSCorePropagationData: value = 16010101000000.0Z
[49]    lastLogonTimestamp: value = 131835732321783732
[49] Fiber exit Tx=551 bytes Rx=2628 bytes, status=1
[49] Session End
```

```
firepower# debug aaa common 250
debug aaa common enabled at level 250
```

```
firepower# AAA API: In aaa_open
AAA session opened: handle = 31
AAA API: In aaa_process_async
aaa_process_async: sending AAA_MSG_PROCESS
AAA task: aaa_process_msg(0x00002b4ad7423b20) received message type 0
[31] AAA FSM: In AAA_StartAAATransaction
[31] AAA FSM: In AAA_InitTransaction

Initiating authentication to primary server (Svr Grp: LDAP-29)
------------------------------------------------
[31] AAA FSM: In AAA_BindServer
[31] AAA_BindServer: Using server: 192.168.109.29
[31] AAA FSM: In AAA_SendMsg
User: cisco1
Resp:
callback_aaa_task: status = 1, msg =
[31] AAA FSM: In aaa_backend_callback
aaa_backend_callback: Handle = 31, pAcb = 0x00002aaad352bc80
AAA task: aaa_process_msg(0x00002b4ad7423b20) received message type 1
[31] AAA FSM: In AAA_ProcSvrResp

Back End response:
------------------
Authentication Status: 1 (ACCEPT)

[31] AAA FSM: In AAA_NextFunction
AAA_NextFunction: i_fsm_state = IFSM_PRIM_AUTHENTICATE, auth_status = ACCEPT
AAA_NextFunction: authen svr = LDAP-29, author svr = <none>, user pol = Group1, tunn pol =
NOACCESS
AAA_NextFunction: New i_fsm_state = IFSM_USER_GRP_POLICY,
[31] AAA FSM: In AAA_InitTransaction
aaai_policy_name_to_server_id(Group1)
Got server ID 0 for group policy DB

Initiating user group policy lookup (Svr Grp: GROUP_POLICY_DB)
------------------------------------------------
[31] AAA FSM: In AAA_BindServer
[31] AAA_BindServer: Using server: <Internal Server>
[31] AAA FSM: In AAA_SendMsg
User: Group1
Resp:
grp_policy_ioctl(0x00002b4ad31fd460, 114698, 0x00002b4ad7423430)
grp_policy_ioctl: Looking up Group1
callback_aaa_task: status = 1, msg =
[31] AAA FSM: In aaa_backend_callback
aaa_backend_callback: Handle = 31, pAcb = 0x00002aaad352bc80
AAA task: aaa_process_msg(0x00002b4ad7423b20) received message type 1
[31] AAA FSM: In AAA_ProcSvrResp

Back End response:
------------------
User Group Policy Status: 1 (ACCEPT)

[31] AAA FSM: In AAA_NextFunction
AAA_NextFunction: i_fsm_state = IFSM_USER_GRP_POLICY, auth_status = ACCEPT
AAA_NextFunction: New i_fsm_state = IFSM_TUNN_GRP_POLICY,
[31] AAA FSM: In AAA_InitTransaction
aaai_policy_name_to_server_id(NOACCESS)
Got server ID 0 for group policy DB

Initiating tunnel group policy lookup (Svr Grp: GROUP_POLICY_DB)
------------------------------------------------
[31] AAA FSM: In AAA_BindServer
[31] AAA_BindServer: Using server: <Internal Server>
```

```
[31] AAA FSM: In AAA_SendMsg
User: NOACCESS
Resp:
grp_policy_ioctl(0x00002b4ad31fd460, 114698, 0x00002b4ad7423430)
grp_policy_ioctl: Looking up NOACCESS
callback_aaa_task: status = 1, msg =
[31] AAA FSM: In aaa_backend_callback
aaa_backend_callback: Handle = 31, pAcb = 0x00002aaad352bc80
AAA task: aaa_process_msg(0x00002b4ad7423b20) received message type 1
[31] AAA FSM: In AAA_ProcSvrResp

Back End response:
------------------
Tunnel Group Policy Status: 1 (ACCEPT)

[31] AAA FSM: In AAA_NextFunction
AAA_NextFunction: i_fsm_state = IFSM_TUNN_GRP_POLICY, auth_status = ACCEPT
dACL processing skipped: no ATTR_FILTER_ID found
AAA_NextFunction: New i_fsm_state = IFSM_DONE,
[31] AAA FSM: In AAA_ProcessFinal
Checking simultaneous login restriction (max allowance=3) for user cisco1
Class attribute created from LDAP-Class attribute
[31] AAA FSM: In AAA_Callback
user attributes:
  1     User-Name(1)      6    "cisco1"
  2     User-Password(2)     13    (hidden)
  3     Group-Policy(4121)      6    "Group1"
  4     AAA-AVP-Table(4243)    1639    "g[06][00][00]$[00][00][00]x[01][00][00][8F][01][00][00]"
  5     DAP class attribute required(20510)      4    1
  6     LDAP-Class(20520)      7    "Group1[00]"

User Access-Lists:
user_acl[0] = NULL
user_acl[1] = NULL
user policy attributes:                                    <--- Group-Policy Configuration (Group1)
  1     Filter-Id(11)      8    ""
  2     Session-Timeout(27)      4    0
  3     Idle-Timeout(28)      4    30
  4     Simultaneous-Logins(4098)      4    3
  5     Primary-DNS(4101)      4    IP: 0.0.0.0
  6     Secondary-DNS(4102)      4    IP: 0.0.0.0
  7     Primary-WINS(4103)      4    IP: 0.0.0.0
  8     Secondary-WINS(4104)      4    IP: 0.0.0.0
  9     Tunnelling-Protocol(4107)      4    96
 10     Banner(4111)      0    0x00002aaad49daa38   ** Unresolved Attribute **
 11     Split-Tunnel-Inclusion-List(4123)      8    ""
 12     Default-Domain-Name(4124)      0    0x00002aaad49daa41   ** Unresolved Attribute **
 13     Secondary-Domain-Name-List(4125)      0    0x00002aaad49daa42   ** Unresolved Attribute 
**
 14     Split-Tunneling-Policy(4151)      4    0
 15     Group-giaddr(4157)      4    IP: 0.0.0.0
 16     WebVPN SVC Keepalive interval(4203)      4    20
 17     WebVPN SVC Client DPD period(4204)      4    30
 18     WebVPN SVC Gateway DPD period(4205)      4    30
 19     WebVPN SVC Rekey period(4206)      4    0
 20     WebVPN SVC Rekey method(4207)      4    0
 21     WebVPN SVC Compression(4208)      4    0
 22     WebVPN SVC Firewall Rule(4211)     17    "public#,private#,"
 23     WebVPN SVC DTLS Compression(4213)      4    0
 24     WebVPN SVC DTLS enable(4219)      4    1
 25     WebVPN SVC MTU(4221)      4    1406
 26     CVC-Modules(4223)      4    "dart"
 27     CVC-Profile(4224)     11    "FTD03#user,"
 28     CVC-Ask(4227)      4    2
 29     CVC-Ask-Timeout(4228)      4    0
 30     VLAN ID(4236)      4    0
 31     WebVPN Idle timeout alert interval(4244)      4    1
 32     WebVPN Session timeout alert interval(4245)      4    1
 33     List of address pools to assign addresses from(4313)      3    "SSL"
 34     SVC ignore DF bit(4326)      4    0
 35     Configure the behaviour of DNS queries by the client when Split tunneling is
enabled(4328)      4    0
 36     Primary-IPv6-DNS(4329)     16    00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  37
Secondary-IPv6-DNS(4330)     16    00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  38
Client Bypass Protocol(4331)      4    0
 39     IPv6-Split-Tunneling-Policy(4332)      4    0

User Policy Access-Lists:
user_acl[0] = NULL
user_acl[1] = NULL
tunnel policy attributes:                                    <--- Default Group-Policy
attributes (NOACCESS)
  1     Filter-Id(11)      8    ""
  2     Session-Timeout(27)      4    0
  3     Idle-Timeout(28)      4    30
  4     Simultaneous-Logins(4098)      4    0
  5     Primary-DNS(4101)      4    IP: 0.0.0.0
  6     Secondary-DNS(4102)      4    IP: 0.0.0.0
  7     Primary-WINS(4103)      4    IP: 0.0.0.0
  8     Secondary-WINS(4104)      4    IP: 0.0.0.0
  9     Tunnelling-Protocol(4107)      4    96
 10     Banner(4111)      0    0x00002aaad2580328   ** Unresolved Attribute **
 11     Group-Policy(4121)      8    "NOACCESS"
 12     Split-Tunnel-Inclusion-List(4123)      8    ""
 13     Default-Domain-Name(4124)      0    0x00002aaad2580331   ** Unresolved Attribute **
 14     Secondary-Domain-Name-List(4125)      0    0x00002aaad2580332   ** Unresolved Attribute
**
 15     Split-Tunneling-Policy(4151)      4    0
 16     Group-giaddr(4157)      4    IP: 0.0.0.0
 17     WebVPN SVC Keepalive interval(4203)      4    20
 18     WebVPN SVC Client DPD period(4204)      4    30
 19     WebVPN SVC Gateway DPD period(4205)      4    30
 20     WebVPN SVC Rekey period(4206)      4    0
 21     WebVPN SVC Rekey method(4207)      4    0
 22     WebVPN SVC Compression(4208)      4    0
 23     WebVPN SVC Firewall Rule(4211)     17    "public#,private#,"
 24     WebVPN SVC DTLS Compression(4213)      4    0
 25     WebVPN SVC DTLS enable(4219)      4    1
 26     WebVPN SVC MTU(4221)      4    1406
 27     CVC-Modules(4223)      4    "dart"
 28     CVC-Profile(4224)     11    "FTD03#user,"
 29     CVC-Ask(4227)      4    2
 30     CVC-Ask-Timeout(4228)      4    0
 31     VLAN ID(4236)      4    0
 32     WebVPN Idle timeout alert interval(4244)      4    1
 33     WebVPN Session timeout alert interval(4245)      4    1
 34     SVC ignore DF bit(4326)      4    0
 35     Configure the behaviour of DNS queries by the client when Split tunneling is
enabled(4328)      4    0
 36     Primary-IPv6-DNS(4329)     16    00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  37
Secondary-IPv6-DNS(4330)     16    00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  38
Client Bypass Protocol(4331)      4    0
 39     IPv6-Split-Tunneling-Policy(4332)      4    0

Tunnel Policy Access-Lists:
user_acl[0] = NULL
user_acl[1] = NULL
```

```
Auth Status = ACCEPT
aaai_internal_cb: handle is 31, pAcb is 0x00002aaad352bc80, pAcb->tq.tqh_first is
0x0000000000000000
AAA API: In aaa_close
Checking simultaneous login restriction (max allowance=3) for user cisco1
AAA task: aaa_process_msg(0x00002b4ad7423b20) received message type 2
In aaai_close_session (31)
AAA API: In aaa_send_acct_start
```