

# 전화 접속 클라이언트에 대한 기본 AAA RADIUS 구성

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## 소개

이 문서에서는 액세스 서버를 사용하여 들어오는 아날로그 및 ISDN 연결을 수락하고 AAA(Remote Authentication Dial-in User Service) 서버를 사용하여 인증하는 샘플 컨피그레이션에 대해 설명합니다. AAA 및 RADIUS에 대한 자세한 내용은 다음 문서를 참조하십시오.

- [RADIUS 구성](#)
- [액세스 서버에서 기본 AAA 구성](#)

## 사전 요구 사항

### 요구 사항

이 컨피그레이션에서는 RADIUS 서버가 올바르게 설정되었다고 가정합니다. 이 컨피그레이션은 대부분의 상용 RADIUS 서버에서도 작동합니다. 적절한 서버 컨피그레이션에 대한 자세한 내용은 RADIUS 서버 설명서를 참조하십시오.

## 사용되는 구성 요소

이 문서의 정보는 아래 소프트웨어 및 하드웨어 버전을 기반으로 합니다.

- T1 PRI 및 48개의 디지털 모뎀이 포함된 Cisco AS5300 Cisco IOS® Software 릴리스 12.0(7)T를 실행하고 있습니다.
- CiscoSecure for Unix(CSU) 서버, 버전 2.3(3).

여기에 설명된 AAA 특정 컨피그레이션은 간단한 다이얼 시나리오에서도 사용할 수 있습니다. 액세스 서버가 수신 통화를 수락할 수 있는지 확인한 다음 아래 컨피그레이션에 표시된 대로 적절한 AAA 명령을 추가합니다.

이 문서의 정보는 특정 랩 환경의 디바이스를 토대로 작성되었습니다. 이 문서에 사용된 모든 디바이스는 초기화된(기본) 컨피그레이션으로 시작되었습니다. 라이브 네트워크에서 작업하는 경우, 사용하기 전에 모든 명령의 잠재적인 영향을 이해해야 합니다.

## 표기 규칙

문서 규칙에 대한 자세한 내용은 [Cisco 기술 팁 표기 규칙](#)을 참조하십시오.

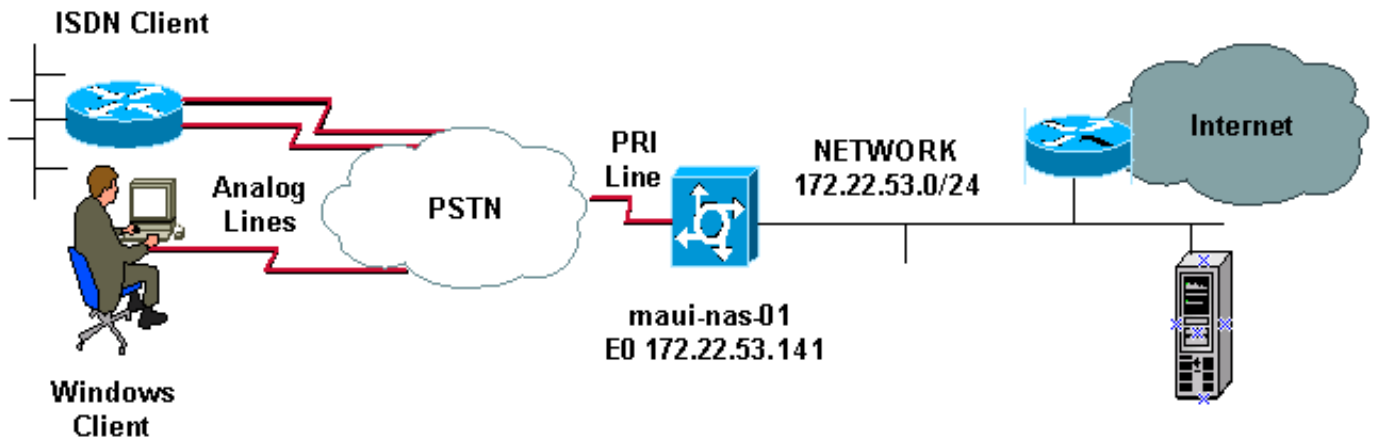
## 구성

이 섹션에는 이 문서에서 설명하는 기능을 구성하기 위한 정보가 표시됩니다.

**참고:** 이 문서에 사용된 명령에 대한 추가 정보를 찾으려면 [명령 조회 도구](#)(등록된 고객만 해당)를 사용합니다.

## 네트워크 다이어그램

이 문서에서는 아래 다이어그램에 표시된 네트워크 설정을 사용합니다.



## 구성

CSU 및 CiscoSecure NT(CSNT) 구성 및 NAS(Network Access Server) 구성은 아래에 나와 있습니다. 이 컨피그레이션에서는 간단한 다이얼링 시나리오를 설명하므로 ISDN 및 비동기 사용자에게 대한 CiscoSecure 컨피그레이션이 동일합니다. ISDN 클라이언트 컨피그레이션은 이 RADIUS 컨피그레이션과 관련이 없으므로 포함되지 않습니다.

CSU
<pre># ./ViewProfile -p 9900 -u async_client User Profile Information</pre>

```

user = async_client{
profile_id = 110
profile_cycle = 2
radius=Cisco {
check_items= {
2=cisco
!--- Password(2) is "cisco" } reply_attributes= { 6=2 !-
-- Service-Type(6) is Framed (2) 7=1 !--- Frame d-
Protocol(7) is PPP (1) } } } # ./ViewProfile -p 9900 -u
isdn_user
User Profile Information
user = isdn_user{
profile_id = 24
profile_cycle = 4
radius=Cisco {
check_items= {
2=cisco
! --- Password(2) is "cisco" } reply_attributes= { 6=2 !
--- Service-Type(6) is Framed (2) 7=1 ! --- Framed-
Protocol(7) is PPP (1) } } }

```

**참고:** 이 간단한 시나리오에서 비동기 및 ISDN 사용자의 구성은 동일합니다.

## CSNT RADIUS

CiscoSecure NT(CSNT) RADIUS를 구성하려면

1. isdn\_user 및 async\_client라는 새 사용자를 생성합니다.
2. User Setup 섹션에서 적절한 비밀번호를 구성합니다.
3. IETF(Internet Engineering Task Force) RADIUS Attributes(IETF(Internet Engineering Task Force) RADIUS 특성) 섹션의 풀다운 메뉴에서 다음 항목을 선택합니다. **Service-type (attribute 6) = Framed and Framed-Protocol (attribute 7)=PPP****참고:** 서비스 유형 및 프레임 프로토콜 속성 옆에 있는 확인란을 클릭해야 합니다.**참고:** 이 간단한 시나리오에서 비동기 및 ISDN 사용자의 구성은 동일합니다.

### 마우이-nas-01

```

maui-nas-01#show running-config
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname maui-nas-01
!
aaa new-model
!--- Initiates the AAA access control system. !--- This
command immediately locks down login and PPP
authentication. aaa authentication login default group
radius local !--- Exec login (for the list default) is
authenticated using methods !--- radius then local. The
router uses RADIUS for authentication at the !---
login(exec) prompt. If RADIUS returns an error, the user
is authenticated !--- using the local database. aaa
authentication login NO_AUTHEN none !--- Exec login (for

```

```

the list NO_AUTHEN) has authentication method none !---
(no authentication). Interfaces to which this list is
applied will not have !--- authentication enabled. Refer
to the console port (line con 0) configuration. aaa
authentication ppp default if-needed group radius local
!--- PPP authentication (for the list default) uses
methods radius then local. !--- The if-needed keyword
automatically permits ppp for users that have !---
successfully authenticated using exec mode. If the EXEC
facility has !--- authenticated the user, RADIUS
authentication for PPP is not performed. !---This is
necessary for clients that use terminal window after
dial. aaa authorization network default group radius
local !--- Authorization of network services (PPP
services) for the list default !--- uses methods radius
then local. This is necessary if you use RADIUS !---
for the client IP address, Access List assignment and so
on. enable secret 5 <deleted> ! username admin password
7 <deleted> !--- This username allows for access to the
router in situations where !--- connectivity to the
RADIUS server is lost. This is because the AAA !---
configuration for exec login has the alternate method
local. spe 2/0 2/7 firmware location
system:/ucode/mica_port_firmware ! resource-pool disable
! ip subnet-zero no ip finger ! isdn switch-type
primary-ni !--- Switch type is Primary NI-2. isdn voice-
call-failure 0 mta receive maximum-recipients 0 ! !
controller T1 0 !--- T1 0 controller configuration.
framing esf clock source line primary linecode b8zs pri-
group timeslots 1-24 ! controller T1 1 !--- T1 1 is
unused. clock source line secondary 1 ! controller T1 2
!--- T1 1 is unused. ! controller T1 3 !--- T1 1 is
unused. ! interface Ethernet0 ip address 172.22.53.141
255.255.255.0 no ip directed-broadcast ! interface
Serial0:23 !--- D-channel configuration for T1 0. no ip
address no ip directed-broadcast encapsulation ppp
dialer pool-member 23 !--- Assign Serial0:23 as member
of dialer pool 23. !--- Dialer pool 23 is specified in
interface Dialer 1. !--- Interface Dialer 1 will
terminate the ISDN calls. isdn switch-type primary-ni
isdn incoming-voice modem !--- Switch incoming analog
calls to the internal digital modems. no cdp enable !
interface FastEthernet0 no ip address no ip directed-
broadcast shutdown duplex auto speed auto ! interface
Group-Async0 !--- Async Group Interface for the modems.
ip unnumbered Ethernet0 !--- Unnumbered to the ethernet
interface. no ip directed-broadcast encapsulation ppp
async mode interactive !--- Configures interactive mode
on the asynchronous interfaces. !--- This allows users
to dial in and get to a shell or PPP session on !---
that line. If you want incoming users to only connect
using PPP configure !--- async mode dedicated instead.

peer default ip address pool ASYNC
!--- Use the ip pool named "ASYNC" to assign ip address
for !--- incoming connections. ppp authentication chap
group-range 1 48 !--- Lines(modems) 1 through 48 are in
this group async interface. ! interface Dialer1 !---
Dialer1 will terminate ISDN calls. ip unnumbered
Ethernet0 no ip directed-broadcast encapsulation ppp
dialer pool 23 !--- Dialer 1 uses dialer pool 23.
Interface Serial0:23 is !--- a member of this pool. peer
default ip address pool ISDN !--- Use the ip pool named
"ISDN" to assign ip address for !--- incoming

```

```

connections. no cdp enable ppp authentication chap ! ip
local pool ISDN 172.22.53.142 172.22.53.145 !--- IP
address pool named "ISDN". !--- This pool will be
assigned to connections on interface Dialer 1. ip local
pool ASYNC 172.22.53.146 172.22.53.149 !--- IP address
pool named "ASYNC". !--- This pool will be assigned to
incoming connections on Group-Async 0. !--- Note: This
address pool only has 4 addresses and is not sufficient
to !--- support all 48 modem lines. Configure your IP
pool with the address range !--- to support all
connections.

ip classless
no ip http server
!
no cdp run
!
radius-server host 172.22.53.201 auth-port 1645 acct-
port 1646 key cisco
!--- Radius-server host IP address and encryption key.
!--- The encryption key must match the one configured
on the RADIUS server. ! line con 0 exec-timeout 0 0
login authentication NO_AUTHEN !--- Specifies that the
AAA list name assigned to the console is !--- NO_AUTHEN.
From the AAA configuration above, the list NO_AUTHEN !--
- does not use authentication. transport input none line
1 48 autoselect during-login !--- Displays the
username:password prompt after modems connect. !---
Without this the user must press enter to receive a
prompt. autoselect ppp !--- When the NAS detects
incoming PPP packets, the PPP session !--- will be
launched. modem InOut transport preferred none transport
input all transport output none line aux 0 line vty 0 4
! end

```

## 다음을 확인합니다.

이 섹션에서는 구성을 확인하는 데 사용할 수 있는 정보를 제공합니다.

## 샘플 show output

```
maui-nas-01#show caller user async_client detail
```

```

User: async_client, line tty 5, service Async
Active time 00:01:04, Idle time 00:00:22
Timeouts:          Absolute  Idle      Idle
                   Session   Exec
Limits:           -         -         00:10:00
Disconnect in:   -         -         -
TTY: Line 5, running PPP on As5
Location: PPP: 172.22.53.148
!--- The IP address assigned from the the IP pool. DS0: (slot/unit/channel)=0/0/7 Line: Baud
rate (TX/RX) is 115200/115200, no parity, 1 stopbits, 8 databits Status: Ready, Active, No Exit
Banner, Async Interface Active HW PPP Support Active Capabilities: Hardware Flowcontrol In,
Hardware Flowcontrol Out Modem Callout, Modem RI is CD, Line usable as async interface,
Integrated Modem Modem State: Ready User: async_client, line As5, service PPP Active time
00:00:54, Idle time 00:00:23 Timeouts: Absolute Idle Limits: - - Disconnect in: - - PPP: LCP
Open, CHAP (<- AAA), IPCP
!--- CHAP authentication was performed by AAA. LCP: -> peer, ACCM, AuthProto, MagicNumber,

```

```
PCompression, ACCompression <- peer, ACCM, MagicNumber, PCompression, ACCompression NCP: Open
IPCP IPCP: <- peer, Address -> peer, Address IP: Local 172.22.53.141, remote 172.22.53.148
Counts: 40 packets input, 2769 bytes, 0 no buffer 1 input errors, 1 CRC, 0 frame, 0 overrun 24
packets output, 941 bytes, 0 underruns 0 output errors, 0 collisions, 0 interface resets maui-
nas-01#show caller user isdn_user detail
```

```
User: isdn_user, line Se0:8, service PPP
    Active time 00:01:22, Idle time 00:01:24
Timeouts:          Absolute Idle
Limits:            -          00:02:00
Disconnect in:    -          00:00:35
PPP: LCP Open, CHAP (<- AAA), IPCP
```

```
!--- CHAP authentication was performed by AAA. LCP: -> peer, AuthProto, MagicNumber <- peer,
MagicNumber NCP: Open IPCP IPCP: <- peer, Address -> peer, Address Dialer: Connected to ,
inbound Idle timer 120 secs, idle 84 secs Type is ISDN, group Dialer1
! -- The ISDN Call uses int Dialer1. IP: Local 172.22.53.141, remote 172.22.53.142
! -- The IP address was obtained from the local pool. Counts: 31 packets input, 872 bytes, 0 no
buffer 0 input errors, 0 CRC, 0 frame, 0 overrun 34 packets output, 1018 bytes, 0 underruns 0
output errors, 0 collisions, 5 interface resets
```

## 문제 해결

이 섹션에서는 컨피그레이션 문제를 해결하는 데 사용할 수 있는 정보를 제공합니다.

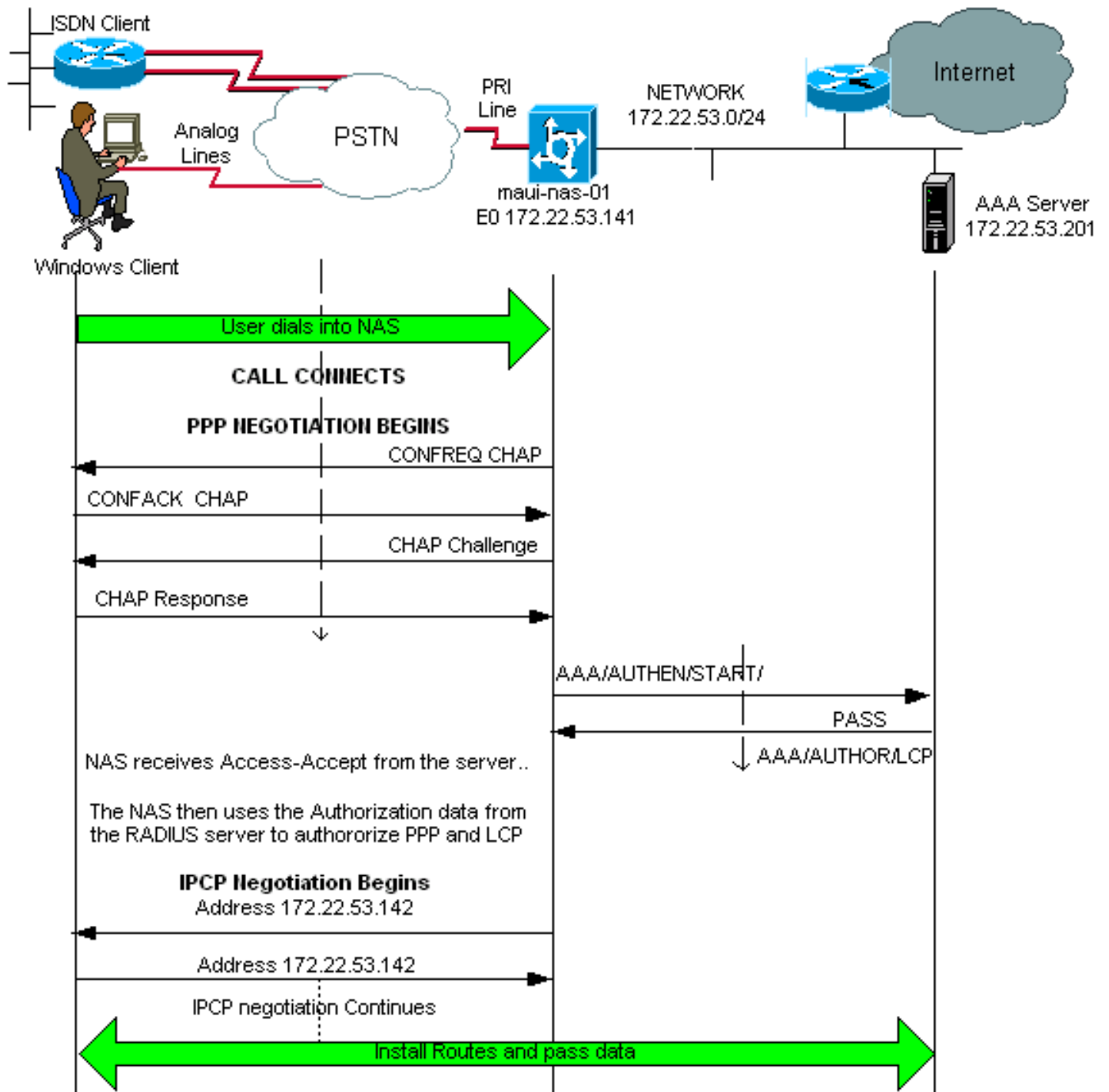
### 문제 해결 명령

일부 **show** 명령은 [출력 인터프리터 툴](#)에서 지원되는데(등록된 고객만), 이 툴을 사용하면 **show** 명령 출력의 분석 결과를 볼 수 있습니다.

참고: debug 명령을 실행하기 전에 [디버그 명령에 대한 중요 정보를 참조하십시오](#).

- **debug isdn q931** - 라우터와 ISDN 스위치 간의 ISDN 네트워크 연결(Layer 3)의 통화 설정 및 해제를 표시합니다.
- **디버그 모뎀** - 액세스 서버의 모뎀 회선 활동을 표시합니다.
- **debug ppp negotiation** - LCP(Link Control Protocol), 인증 및 NCP(Network Control Protocol)를 협상하는 동안 PPP 트래픽 및 교환에 대한 정보를 표시합니다. 성공적인 PPP 협상이 먼저 LCP 상태를 연 다음 NCP를 인증하고 마지막으로 협상합니다.
- **debug ppp authentication** - CHAP(Challenge Handshake Authentication Protocol) 패킷 교환 및 PAP>Password Authentication Protocol) 교환을 비롯한 PPP 인증 프로토콜 메시지를 표시합니다.
- **debug aaa authentication** - AAA/RADIUS 인증에 대한 정보를 표시합니다.
- **debug aaa authorization** - AAA/RADIUS 권한 부여에 대한 정보를 표시합니다.
- **debug radius** - RADIUS와 관련된 자세한 디버깅 정보를 표시합니다. Cisco 기술 지원 웹 사이트에서 [Output Interpreter Tool](#)(등록된 고객만 해당)을 사용하여 디버그 배경 메시지를 디코딩합니다. 예를 보려면 아래 표시된 디버그 출력을 참조하십시오. 협상되는 특성을 확인하려면 debug radius의 정보를 사용합니다. **참고:** 12.2(11)T의 디버그 반지름의 출력은 이미 디코딩되었으므로 출력을 디코딩하기 위해 출력 인터프리터를 사용할 필요가 없습니다. 자세한 내용은 문서 [RADIUS 디버그 개선 사항](#)을 참조하십시오.
- **show caller user** - 사용된 TTY 회선, 비동기 인터페이스(shelf, slot 또는 port), DS0 채널 번호, 모뎀 번호, 할당된 IP 주소, PPP 및 PPP 번들 매개변수 등의 특정 사용자에게 대한 매개변수를 표시합니다. 사용 중인 버전의 Cisco IOS 소프트웨어가 이 명령을 지원하지 않는 경우 **show user** 명령을 사용합니다.

## 디버그 출력 샘플



Cisco 디바이스에서 **debug radius** 명령의 출력이 있는 경우 잠재적인 문제 및 수정 사항을 표시합니다. 사용 [등록된](#) 고객이고 로그인되어 있으며 JavaScript를 활성화해야 합니다.

### 등록된

**참고:** 12.2(11)T의 디버그 반지름의 출력은 이미 디코딩되었으므로 출력 인터프리터를 사용하여 출력을 디코딩할 필요가 없습니다. 자세한 내용은 문서 [RADIUS 디버그 개선 사항](#)을 참조하십시오.

```
maui-nas-01#debug isdn q931
ISDN Q931 packets debugging is on
maui-nas-01#debug ppp negotiation
PPP protocol negotiation debugging is on
maui-nas-01#debug ppp authentication
PPP authentication debugging is on
```

maui-nas-01#**debug modem**

Modem control/process activation debugging is on

maui-nas-01#**debug aaa authentication**

AAA Authentication debugging is on

maui-nas-01#**debug aaa authorization**

AAA Authorization debugging is on

maui-nas-01#**debug radius**

RADIUS protocol debugging is on

maui-nas-01#

```
*Apr 5 11:05:07.031: ISDN Se0:23: RX <- SETUP pd = 8 callref = 0x20FC
!--- Setup message for incoming call. *Apr 5 11:05:07.031: Bearer Capability i = 0x8890218F *Apr
5 11:05:07.031: Channel ID i = 0xA18387 *Apr 5 11:05:07.031: Called Party Number i = 0xA1,
'81560' *Apr 5 11:05:07.035: %DIALER-6-BIND: Interface Serial0:6 bound to profile Dialer1 *Apr 5
11:05:07.035: ISDN Se0:23: TX -> CALL_PROC pd = 8 callref = 0xA0FC *Apr 5 11:05:07.035: Channel
ID i = 0xA98387 *Apr 5 11:05:07.043: %LINK-3-UPDOWN: Interface Serial0:6, changed state to up
*Apr 5 11:05:07.043: Se0:6 PPP: Treating connection as a callin *Apr 5 11:05:07.043: Se0:6 PPP:
Phase is ESTABLISHING, Passive Open *Apr 5 11:05:07.043: Se0:6 LCP: State is Listen *Apr 5
11:05:07.047: ISDN Se0:23: TX -> CONNECT pd = 8 callref = 0xA0FC *Apr 5 11:05:07.047: Channel ID
i = 0xA98387 *Apr 5 11:05:07.079: ISDN Se0:23: RX <- CONNECT_ACK pd = 8 callref = 0x20FC *Apr 5
11:05:07.079: ISDN Se0:23: CALL_PROGRESS: CALL_CONNECTED call id 0x2D, bchan -1, dsl 0 *Apr 5
11:05:07.499: Se0:6 LCP: I CONFREQ [Listen] id 28 len 10 *Apr 5 11:05:07.499: Se0:6 LCP:
MagicNumber 0x5078A51F (0x05065078A51F) *Apr 5 11:05:07.499: Se0:6 AAA/AUTHOR/FSM: (0): LCP
succeeds trivially *Apr 5 11:05:07.499: Se0:6 LCP: O CONFREQ [Listen] id 2 len 15 *Apr 5
11:05:07.499: Se0:6 LCP: AuthProto CHAP (0x0305C22305) *Apr 5 11:05:07.499: Se0:6 LCP:
MagicNumber 0xE05213AA (0x0506E05213AA) *Apr 5 11:05:07.499: Se0:6 LCP: O CONFACK [Listen] id 28
len 10 *Apr 5 11:05:07.499: Se0:6 LCP: MagicNumber 0x5078A51F (0x05065078A51F) *Apr 5
11:05:07.555: Se0:6 LCP: I CONFACK [ACKsent] id 2 len 15 *Apr 5 11:05:07.555: Se0:6 LCP:
AuthProto CHAP (0x0305C22305) *Apr 5 11:05:07.555: Se0:6 LCP: MagicNumber 0xE05213AA
(0x0506E05213AA) *Apr 5 11:05:07.555: Se0:6 LCP: State is Open *Apr 5 11:05:07.555: Se0:6 PPP:
Phase is AUTHENTICATING, by this end *Apr 5 11:05:07.555: Se0:6 CHAP: O CHALLENGE id 2 len 32
from "maui-nas-01" *Apr 5 11:05:07.631: Se0:6 CHAP: I RESPONSE id 2 len 30 from "isdn_user"
!--- Incoming CHAP response from "isdn_user". *Apr 5 11:05:07.631: AAA: parse name=Serial0:6 idb
type=12 tty=-1 *Apr 5 11:05:07.631: AAA: name=Serial0:6 flags=0x51 type=1 shelf=0 slot=0
adapter=0 port=0 channel=6 *Apr 5 11:05:07.631: AAA: parse name= idb type=-1 tty=-1 *Apr 5
11:05:07.631: AAA/MEMORY: create_user (0x619CEE28) user='isdn_user' ruser='' port='Serial0:6'
rem_addr='isdn/81560' authen_type=CHAP service=PPP priv=1 *Apr 5 11:05:07.631: AAA/AUTHEN/START
(2973699846): port='Serial0:6' list='' action=LOGIN service=PPP *Apr 5 11:05:07.631:
AAA/AUTHEN/START (2973699846): using "default" list *Apr 5 11:05:07.631: AAA/AUTHEN
(2973699846): status = UNKNOWN *Apr 5 11:05:07.631: AAA/AUTHEN/START (2973699846): Method=radius
(radius) !--- AAA authentication method is RADIUS. *Apr 5 11:05:07.631: RADIUS: ustruct
sharecount=1 *Apr 5 11:05:07.631: RADIUS: Initial Transmit Serial0:6 id 13 172.22.53.201:1645,
Access-Request, len 87
!--- Access-Request from the NAS to the AAA server. !--- Note the IP address in the Access-
Request matches the IP address !--- configured using the command: !--- radius-server host
172.22.53.201 key cisco *Apr 5 11:05:07.631: Attribute 4 6 AC16358D
*Apr 5 11:05:07.631: Attribute 5 6 00004E26
*Apr 5 11:05:07.631: Attribute 61 6 00000002
*Apr 5 11:05:07.631: Attribute 1 11 6973646E
*Apr 5 11:05:07.631: Attribute 30 7 38313536
*Apr 5 11:05:07.631: Attribute 3 19 0297959E
*Apr 5 11:05:07.631: Attribute 6 6 00000002
*Apr 5 11:05:07.631: Attribute 7 6 00000001
*Apr 5 11:05:07.635: RADIUS: Received from id 13 172.22.53.201:1645,
Access-Accept, len 32
*Apr 5 11:05:07.635: Attribute 6 6 00000002
*Apr 5 11:05:07.635: Attribute 7 6 00000001
```

NAS와 RADIUS 서버 간의 트랜잭션을 더 잘 이해하기 위해 debug radius 명령의 AVP(특성 값 쌍)를 디코딩해야 합니다.

참고: 12.2(11)T의 디버그 반지름의 출력은 이미 디코딩되었으므로 출력 인터프리터를 사용하여 출



력을 디코딩할 필요가 없습니다. 자세한 내용은 [RADIUS 디버그 개선 사항](#) 문서를 참조하십시오.

출력 인터프리터 도구를 사용하면 디버그 반지를 출력의 분석을 받을 수 있습니다.

기울임꼴로 표시되는 다음 출력은 [출력 인터프리터] 도구에서 얻은 결과입니다.

```
Access-Request 172.22.53.201:1645 id 13
Attribute Type 4:  NAS-IP-Address is 172.22.53.141
Attribute Type 5:  NAS-Port is 20006
Attribute Type 61: NAS-Port-Type is ISDN-Synchronous
Attribute Type 1:  User-Name is isdn
Attribute Type 30: Called-Station-ID(DNIS) is 8156
Attribute Type 3:  CHAP-Password is (encoded)
Attribute Type 6:  Service-Type is Framed
Attribute Type 7:  Framed-Protocol is PPP
Access-Accept 172.22.53.201:1645 id 13
Attribute Type 6:  Service-Type is Framed
Attribute Type 7:  Framed-Protocol is PPP
```

틀에서 디코딩된 디버그 출력에서 특성 유형 6이 있는지 확인합니다. Service-Type은 프레임 및 속성 유형 7입니다. Framed-Protocol은 PPP입니다. Attributes 6 또는 7이 표시된 대로 표시되지 않는 경우 RADIUS 서버에서 사용자 프로필을 수정합니다(Configuration(컨피그레이션) 섹션 참조). 또한 디버그 radius에 Access-Accept가 표시되어 RADIUS 서버가 사용자를 성공적으로 인증했음을 나타냅니다. 출력에 Access-Reject가 표시되면 사용자가 인증되지 않은 것이므로 RADIUS 서버에서 사용자 이름과 비밀번호 컨피그레이션을 확인해야 합니다. 확인할 또 다른 특성은 특성 유형 4입니다. NAS-IP 주소. Output Interpreter Tool에 표시되는 값이 RADIUS 서버에 구성된 NAS IP 주소와 일치하는지 확인합니다.

**참고:** Cisco IOS 제약 조건 및 다른 버전의 디버그 출력의 차이로 인해 일부 특성이 잘릴 수 있습니다(예: 사용자 이름, DNIS(Called-Station-ID)).

```
*Apr  5 11:05:07.635: AAA/AUTHEN (2973699846): status = PASS
!--- Authentication is successful *Apr  5 11:05:07.635: Se0:6 AAA/AUTHOR/LCP: Authorize LCP *Apr  5
11:05:07.635: Se0:6 AAA/AUTHOR/LCP (2783657211): Port='Serial0:6' list='' service=NET *Apr  5
11:05:07.635: AAA/AUTHOR/LCP: Se0:6 (2783657211) user='isdn_user' *Apr  5 11:05:07.635: Se0:6
AAA/AUTHOR/LCP (2783657211): send AV service=ppp *Apr  5 11:05:07.635: Se0:6 AAA/AUTHOR/LCP
(2783657211): send AV protocol=lcp *Apr  5 11:05:07.635: Se0:6 AAA/AUTHOR/LCP (2783657211): found
list "default" *Apr  5 11:05:07.635: Se0:6 AAA/AUTHOR/LCP (2783657211): Method=radius (radius)
*Apr  5 11:05:07.635: Se0:6 AAA/AUTHOR (2783657211): Post authorization status = PASS_REPL *Apr  5
11:05:07.639: Se0:6 AAA/AUTHOR/LCP: Processing AV service=ppp *Apr  5 11:05:07.639: Se0:6 CHAP: 0
SUCCESS id 2 len 4 *Apr  5 11:05:07.639: Se0:6 PPP: Phase is UP *Apr  5 11:05:07.639: Se0:6
AAA/AUTHOR/FSM: (0): Can we start IPCP? *Apr  5 11:05:07.639: Se0:6 AAA/AUTHOR/FSM (3184893369):
Port='Serial0:6' list='' service=NET *Apr  5 11:05:07.639: AAA/AUTHOR/FSM: Se0:6 (3184893369)
user='isdn_user' *Apr  5 11:05:07.639: Se0:6 AAA/AUTHOR/FSM (3184893369): send AV service=ppp
*Apr  5 11:05:07.639: Se0:6 AAA/AUTHOR/FSM (3184893369): send AV protocol=ip *Apr  5 11:05:07.639:
Se0:6 AAA/AUTHOR/FSM (3184893369): found list "default" *Apr  5 11:05:07.639: Se0:6
AAA/AUTHOR/FSM (3184893369): Method=radius (radius) *Apr  5 11:05:07.639: Se0:6 AAA/AUTHOR
(3184893369): Post authorization status = PASS_REPL *Apr  5 11:05:07.639: Se0:6 AAA/AUTHOR/FSM:
We can start IPCP *Apr  5 11:05:07.639: Se0:6 IPCP: 0 CONFREQ [Not negotiated] id 2 len 10 *Apr  5
11:05:07.639: Se0:6 IPCP: Address 172.22.53.141 (0x0306AC16358D) *Apr  5 11:05:07.675: Se0:6
IPCP: I CONFREQ [REQsent] id 13 len 10 *Apr  5 11:05:07.675: Se0:6 IPCP: Address 0.0.0.0
(0x030600000000) *Apr  5 11:05:07.675: Se0:6 AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0, we want
0.0.0.0 *Apr  5 11:05:07.675: Se0:6 AAA/AUTHOR/IPCP: Processing AV service=ppp *Apr  5
11:05:07.675: Se0:6 AAA/AUTHOR/IPCP: Authorization succeeded *Apr  5 11:05:07.675: Se0:6
AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we want 0.0.0.0 *Apr  5 11:05:07.675: Se0:6 IPCP:
Pool returned 172.22.53.142
!--- IP address for the peer obtained from the pool *Apr  5 11:05:07.675: Se0:6 IPCP: 0 CONFNAK
[REQsent] id 13 len 10 *Apr  5 11:05:07.675: Se0:6 IPCP: Address 172.22.53.142 (0x0306AC16358E)
```

```
*Apr 5 11:05:07.699: Se0:6 IPCP: I CONFACK [REQsent] id 2 len 10 *Apr 5 11:05:07.699: Se0:6
IPCP: Address 172.22.53.141 (0x0306AC16358D) *Apr 5 11:05:07.707: Se0:6 IPCP: I CONFREQ
[ACKrcvd] id 14 len 10 *Apr 5 11:05:07.707: Se0:6 IPCP: Address 172.22.53.142 (0x0306AC16358E)
*Apr 5 11:05:07.707: Se0:6 AAA/AUTHOR/IPCP: Start. Her address 172.22.53.142, we want
172.22.53.142 *Apr 5 11:05:07.707: Se0:6 AAA/AUTHOR/IPCP (3828612481): Port='Serial0:6' list=''
service=NET *Apr 5 11:05:07.707: AAA/AUTHOR/IPCP: Se0:6 (3828612481) user='isdn_user' *Apr 5
11:05:07.707: Se0:6 AAA/AUTHOR/IPCP (3828612481): send AV service=ppp *Apr 5 11:05:07.707: Se0:6
AAA/AUTHOR/IPCP (3828612481): send AV protocol=ip *Apr 5 11:05:07.707: Se0:6 AAA/AUTHOR/IPCP
(3828612481): send AV addr*172.22.53.142 *Apr 5 11:05:07.707: Se0:6 AAA/AUTHOR/IPCP
(3828612481): found list "default" *Apr 5 11:05:07.707: Se0:6 AAA/AUTHOR/IPCP (3828612481):
Method=radius (radius) *Apr 5 11:05:07.707: Se0:6 AAA/AUTHOR (3828612481): Post authorization
status = PASS_REPL *Apr 5 11:05:07.707: Se0:6 AAA/AUTHOR/IPCP: Reject 172.22.53.142, using
172.22.53.142 *Apr 5 11:05:07.707: Se0:6 AAA/AUTHOR/IPCP: Processing AV service=ppp *Apr 5
11:05:07.707: Se0:6 AAA/AUTHOR/IPCP: Processing AV addr*172.22.53.142 *Apr 5 11:05:07.707: Se0:6
AAA/AUTHOR/IPCP: Authorization succeeded *Apr 5 11:05:07.707: Se0:6 AAA/AUTHOR/IPCP: Done. Her
address 172.22.53.142, we want 172.22.53.142 *Apr 5 11:05:07.707: Se0:6 IPCP: O CONFACK
[ACKrcvd] id 14 len 10 *Apr 5 11:05:07.707: Se0:6 IPCP: Address 172.22.53.142 (0x0306AC16358E)
*Apr 5 11:05:07.707: Se0:6 IPCP: State is Open *Apr 5 11:05:07.711: Dial IPCP: Install route to
172.22.53.142
```

```
!--- IPCP state is open. A route to the remote peer is installed *Apr 5 11:05:08.639:
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0:6, changed state to up *Apr 5
11:05:13.043: %ISDN-6-CONNECT: Interface Serial0:6 is now connected to isdn_user maui-nas-01#
ISDN 클라이언트에 대한 협상을 완료합니다. 아래 출력은 비동기 통화에 대한 협상(예: Windows
클라이언트)을 보여줍니다.
```

maui-nas-01#

```
*Apr 5 11:05:53.527: ISDN Se0:23: RX <- SETUP pd = 8 callref = 0x21C5
!--- Incoming Setup message for Async Call. *Apr 5 11:05:53.527: Bearer Capability i = 0x9090A2
*Apr 5 11:05:53.527: Channel ID i = 0xA18388 *Apr 5 11:05:53.527: Progress Ind i = 0x8183 -
Origination address is non-ISDN *Apr 5 11:05:53.527: Called Party Number i = 0xA1, '81560' *Apr
5 11:05:53.531: ISDN Se0:23: TX -> CALL_PROC pd = 8 callref = 0xA1C5 *Apr 5 11:05:53.531:
Channel ID i = 0xA98388 *Apr 5 11:05:53.531: ISDN Se0:23: TX -> ALERTING pd = 8 callref = 0xA1C5
*Apr 5 11:05:53.667: ISDN Se0:23: TX -> CONNECT pd = 8 callref = 0xA1C5 *Apr 5 11:05:53.683:
ISDN Se0:23: RX <- CONNECT_ACK pd = 8 callref = 0x21C5 *Apr 5 11:05:53.687: ISDN Se0:23:
CALL_PROGRESS: CALL_CONNECTED call id 0x2E, bchan -1, dsl 0 *Apr 5 11:06:10.815: TTY5: DSR came
up *Apr 5 11:06:10.815: tty5: Modem: IDLE->(unknown) *Apr 5 11:06:10.815: TTY5: EXEC creation
*Apr 5 11:06:10.815: AAA: parse name=tty5 idb type=10 tty=5 *Apr 5 11:06:10.815: AAA: name=tty5
flags=0x11 type=4 shelf=0 slot=0 adapter=0 port=5 channel=0 *Apr 5 11:06:10.815: AAA: parse
name=Serial0:7 idb type=12 tty=-1 *Apr 5 11:06:10.815: AAA: name=Serial0:7 flags=0x51 type=1
shelf=0 slot=0 adapter=0 port=0 channel=7 *Apr 5 11:06:10.815: AAA/MEMORY: create_user
(0x614D4DBC) user='' ruser='' port='tty5' rem_addr='async/81560' authn_type=ASCII service=LOGIN
priv=1 *Apr 5 11:06:10.815: AAA/AUTHEN/START (2673527044): port='tty5' list='' action=LOGIN
service=LOGIN *Apr 5 11:06:10.815: AAA/AUTHEN/START (2673527044): using "default" list *Apr 5
11:06:10.815: AAA/AUTHEN/START (2673527044): Method=radius (radius) *Apr 5 11:06:10.815:
AAA/AUTHEN (2673527044): status = GETUSER *Apr 5 11:06:10.815: TTY5: set timer type 10, 30
seconds *Apr 5 11:06:13.475: TTY5: Autoselect(2) sample 7E *Apr 5 11:06:13.475: TTY5:
Autoselect(2) sample 7EFF *Apr 5 11:06:13.475: TTY5: Autoselect(2) sample 7EFF7D *Apr 5
11:06:13.475: TTY5: Autoselect(2) sample 7EFF7D23 *Apr 5 11:06:13.475: TTY5 Autoselect cmd: ppp
negotiate
```

```
!--- the router recongnizes the ppp packets and launches ppp. *Apr 5 11:06:13.475:
AAA/AUTHEN/ABORT: (2673527044) because Autoselected. *Apr 5 11:06:13.475: AAA/MEMORY: free_user
(0x614D4DBC) user='' ruser='' port='tty5' rem_addr='async/81560' authn_type=ASCII service=LOGIN
priv=1 *Apr 5 11:06:13.479: TTY5: EXEC creation *Apr 5 11:06:13.479: TTY5: create timer type 1,
600 seconds *Apr 5 11:06:13.607: TTY5: destroy timer type 1 (OK) *Apr 5 11:06:13.607: TTY5:
destroy timer type 0 *Apr 5 11:06:15.607: %LINK-3-UPDOWN: Interface Async5, changed state to up
*Apr 5 11:06:15.607: As5 PPP: Treating connection as a dedicated line *Apr 5 11:06:15.607: As5
PPP: Phase is ESTABLISHING, Active Open
```

```
!--- PPP negotiation begins. *Apr 5 11:06:15.607: As5 AAA/AUTHOR/FSM: (0): LCP succeeds
trivially *Apr 5 11:06:15.607: As5 LCP: O CONFREQ [Closed] id 1 len 25 *Apr 5 11:06:15.607: As5
LCP: ACCM 0x000A0000 (0x0206000A0000) *Apr 5 11:06:15.607: As5 LCP: AuthProto CHAP
(0x0305C22305) *Apr 5 11:06:15.607: As5 LCP: MagicNumber 0xE0531DB8 (0x0506E0531DB8) *Apr 5
11:06:15.607: As5 LCP: PFC (0x0702) *Apr 5 11:06:15.607: As5 LCP: ACFC (0x0802) *Apr 5
```

```

11:06:16.487: As5 LCP: I CONFREQ [REQsent] id 3 len 23 *Apr 5 11:06:16.487: As5 LCP: ACCM
0x000A0000 (0x0206000A0000) *Apr 5 11:06:16.487: As5 LCP: MagicNumber 0x65FFA5C7
(0x050665FFA5C7) *Apr 5 11:06:16.487: As5 LCP: PFC (0x0702) *Apr 5 11:06:16.487: As5 LCP: ACFC
(0x0802) *Apr 5 11:06:16.487: As5 LCP: Callback 6 (0x0D0306) *Apr 5 11:06:16.487: Unthrottle 5
*Apr 5 11:06:16.487: As5 LCP: O CONFREQ [REQsent] id 3 len 7 *Apr 5 11:06:16.487: As5 LCP:
Callback 6 (0x0D0306) *Apr 5 11:06:17.607: As5 LCP: TIMEOUT: State REQsent *Apr 5 11:06:17.607:
As5 LCP: O CONFREQ [REQsent] id 2 len 25 *Apr 5 11:06:17.607: As5 LCP: ACCM 0x000A0000
(0x0206000A0000) *Apr 5 11:06:17.607: As5 LCP: AuthProto CHAP (0x0305C22305) *Apr 5
11:06:17.607: As5 LCP: MagicNumber 0xE0531DB8 (0x0506E0531DB8) *Apr 5 11:06:17.607: As5 LCP: PFC
(0x0702) *Apr 5 11:06:17.607: As5 LCP: ACFC (0x0802) *Apr 5 11:06:17.735: As5 LCP: I CONFACK
[REQsent] id 2 len 25 *Apr 5 11:06:17.735: As5 LCP: ACCM 0x000A0000 (0x0206000A0000) *Apr 5
11:06:17.735: As5 LCP: AuthProto CHAP (0x0305C22305) *Apr 5 11:06:17.735: As5 LCP: MagicNumber
0xE0531DB8 (0x0506E0531DB8) *Apr 5 11:06:17.735: As5 LCP: PFC (0x0702) *Apr 5 11:06:17.735: As5
LCP: ACFC (0x0802) *Apr 5 11:06:19.479: As5 LCP: I CONFREQ [ACKrcvd] id 4 len 23 *Apr 5
11:06:19.479: As5 LCP: ACCM 0x000A0000 (0x0206000A0000) *Apr 5 11:06:19.479: As5 LCP:
MagicNumber 0x65FFA5C7 (0x050665FFA5C7) *Apr 5 11:06:19.479: As5 LCP: PFC (0x0702) *Apr 5
11:06:19.479: As5 LCP: ACFC (0x0802) *Apr 5 11:06:19.479: As5 LCP: Callback 6 (0x0D0306) *Apr 5
11:06:19.479: As5 LCP: O CONFREQ [ACKrcvd] id 4 len 7 *Apr 5 11:06:19.479: As5 LCP: Callback 6
(0x0D0306) *Apr 5 11:06:19.607: As5 LCP: TIMEOUT: State ACKrcvd *Apr 5 11:06:19.607: As5 LCP: O
CONFREQ [ACKrcvd] id 3 len 25 *Apr 5 11:06:19.607: As5 LCP: ACCM 0x000A0000 (0x0206000A0000)
*Apr 5 11:06:19.607: As5 LCP: AuthProto CHAP (0x0305C22305) *Apr 5 11:06:19.607: As5 LCP:
MagicNumber 0xE0531DB8 (0x0506E0531DB8) *Apr 5 11:06:19.607: As5 LCP: PFC (0x0702) *Apr 5
11:06:19.607: As5 LCP: ACFC (0x0802) *Apr 5 11:06:19.607: As5 LCP: I CONFREQ [REQsent] id 5 len
20 *Apr 5 11:06:19.607: As5 LCP: ACCM 0x000A0000 (0x0206000A0000) *Apr 5 11:06:19.607: As5 LCP:
MagicNumber 0x65FFA5C7 (0x050665FFA5C7) *Apr 5 11:06:19.607: As5 LCP: PFC (0x0702) *Apr 5
11:06:19.607: As5 LCP: ACFC (0x0802) *Apr 5 11:06:19.607: As5 LCP: O CONFACK [REQsent] id 5 len
20 *Apr 5 11:06:19.607: As5 LCP: ACCM 0x000A0000 (0x0206000A0000) *Apr 5 11:06:19.607: As5 LCP:
MagicNumber 0x65FFA5C7 (0x050665FFA5C7) *Apr 5 11:06:19.607: As5 LCP: PFC (0x0702) *Apr 5
11:06:19.607: As5 LCP: ACFC (0x0802) *Apr 5 11:06:19.719: As5 LCP: I CONFACK [ACKsent] id 3 len
25 *Apr 5 11:06:19.719: As5 LCP: ACCM 0x000A0000 (0x0206000A0000) *Apr 5 11:06:19.719: As5 LCP:
AuthProto CHAP (0x0305C22305) *Apr 5 11:06:19.719: As5 LCP: MagicNumber 0xE0531DB8
(0x0506E0531DB8) *Apr 5 11:06:19.719: As5 LCP: PFC (0x0702) *Apr 5 11:06:19.719: As5 LCP: ACFC
(0x0802) *Apr 5 11:06:19.719: As5 LCP: State is Open *Apr 5 11:06:19.719: As5 PPP: Phase is
AUTHENTICATING, by this end *Apr 5 11:06:19.719: As5 CHAP: O CHALLENGE id 1 len 32 from "maui-
nas-01" *Apr 5 11:06:19.863: As5 CHAP: I RESPONSE id 1 len 33 from "async_client"
!--- Incoming CHAP response from "async_client". *Apr 5 11:06:19.863: AAA: parse name=Async5 idb
type=10 tty=5 *Apr 5 11:06:19.863: AAA: name=Async5 flags=0x11 type=4 shelf=0 slot=0 adapter=0
port=5 channel=0 *Apr 5 11:06:19.863: AAA: parse name=Serial0:7 idb type=12 tty=-1 *Apr 5
11:06:19.863: AAA: name=Serial0:7 flags=0x51 type=1 shelf=0 slot=0 adapter=0 port=0 channel=7
*Apr 5 11:06:19.863: AAA/MEMORY: create_user (0x6195AE40) user='async_client' ruser=''
port='Async5' rem_addr='async/81560' authen_type=CHAP service=PPP priv=1 *Apr 5 11:06:19.863:
AAA/AUTHEN/START (2673347869): port='Async5' list='' action=LOGIN service=PPP *Apr 5
11:06:19.863: AAA/AUTHEN/START (2673347869): using "default" list *Apr 5 11:06:19.863:
AAA/AUTHEN (2673347869): status = UNKNOWN *Apr 5 11:06:19.863: AAA/AUTHEN/START (2673347869):
Method=radius (radius) *Apr 5 11:06:19.863: RADIUS: ustruct sharecount=1 *Apr 5 11:06:19.867:
RADIUS: Initial Transmit Async5 id 14 172.22.53.201:1645,
Access-Request, len 90
*Apr 5 11:06:19.867: Attribute 4 6 AC16358D
*Apr 5 11:06:19.867: Attribute 5 6 00000005
*Apr 5 11:06:19.867: Attribute 61 6 00000000
*Apr 5 11:06:19.867: Attribute 1 14 6173796E
*Apr 5 11:06:19.867: Attribute 30 7 38313536
*Apr 5 11:06:19.867: Attribute 3 19 01B8292F
*Apr 5 11:06:19.867: Attribute 6 6 00000002
*Apr 5 11:06:19.867: Attribute 7 6 00000001
*Apr 5 11:06:19.867: RADIUS: Received from id 14 172.22.53.201:1645,
Access-Accept, len 32
*Apr 5 11:06:19.867: Attribute 6 6 00000002
*Apr 5 11:06:19.871: Attribute 7 6 00000001

```

NAS와 RADIUS 서버 간의 트랜잭션을 더 잘 이해하려면 debug radius 명령의 AVP를 디코딩해야 합니다.

**참고:** 12.2(11)T의 디버그 반지름의 출력은 이미 디코딩되었으므로 출력 인터프리터를 사용하여 출력을 디코딩할 필요가 없습니다. 자세한 내용은 문서 [RADIUS 디버그 개선 사항](#)을 참조하십시오.

출력 인터프리터 도구를 사용하면 디버그 반지름 출력의 분석을 받을 수 있습니다.

기울임꼴로 표시되는 다음 출력은 [출력 인터프리터] 도구에서 얻은 결과입니다.

```
Access-Request 172.22.53.201:1645 id 14
Attribute Type 4:  NAS-IP-Address is 172.22.53.141
Attribute Type 5:  NAS-Port is 5
Attribute Type 61: NAS-Port-Type is Asynchronous
Attribute Type 1:  User-Name is asyn
Attribute Type 30: Called-Station-ID(DNIS) is 8156
Attribute Type 3:  CHAP-Password is (encoded)
Attribute Type 6:  Service-Type is Framed
Attribute Type 7:  Framed-Protocol is PPP
      Access-Accept 172.22.53.201:1645 id 14
Attribute Type 6:  Service-Type is Framed
Attribute Type 7:  Framed-Protocol is PPP
```

틀에서 디코딩된 디버그 출력에서 특성 유형 6이 있는지 확인합니다. Service-Type은 프레임 및 속성 유형 7입니다. Framed-Protocol은 PPP입니다. Attributes 6 또는 7이 표시된 대로 표시되지 않는 경우 RADIUS 서버에서 사용자 프로필을 수정합니다(Configuration(컨피그레이션) 섹션 참조). 또한 디버그 radius에 Access-Accept가 표시되어 RADIUS 서버가 사용자를 성공적으로 인증했음을 나타냅니다. 출력에 Access-Reject가 표시되면 사용자가 인증되지 않은 것이므로 RADIUS 서버에서 사용자 이름과 비밀번호 컨피그레이션을 확인해야 합니다. 확인할 또 다른 특성은 특성 유형 4입니다. NAS-IP 주소. Output Interpreter Tool에 표시되는 값이 RADIUS 서버에 구성된 NAS IP 주소와 일치하는지 확인합니다.

**참고:** Cisco IOS 제약 조건 및 다른 버전의 디버그 출력의 차이로 인해 일부 특성이 잘릴 수 있습니다(예: 사용자 이름, DNIS(Called-Station-ID)).

```
*Apr  5 11:06:19.871: AAA/AUTHEN (2673347869): status = PASS
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/LCP: Authorize LCP
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/LCP (3232903941): Port='Async5' list=''
service=NET
*Apr  5 11:06:19.871: AAA/AUTHOR/LCP: As5 (3232903941) user='async_client'
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/LCP (3232903941): send AV service=ppp
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/LCP (3232903941): send AV protocol=lcp
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/LCP (3232903941): found list "default"
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/LCP (3232903941): Method=radius (radius)
*Apr  5 11:06:19.871: As5 AAA/AUTHOR (3232903941): Post authorization status
= PASS_REPL
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/LCP: Processing AV service=ppp
*Apr  5 11:06:19.871: As5 CHAP: O SUCCESS id 1 len 4
*Apr  5 11:06:19.871: As5 PPP: Phase is UP
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/FSM: (0): Can we start IPCP?
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/FSM (1882093345): Port='Async5' list=''
service=NET
*Apr  5 11:06:19.871: AAA/AUTHOR/FSM: As5 (1882093345) user='async_client'
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/FSM (1882093345): send AV service=ppp
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/FSM (1882093345): send AV protocol=ip
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/FSM (1882093345): found list "default"
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/FSM (1882093345): Method=radius (radius)
*Apr  5 11:06:19.871: As5 AAA/AUTHOR (1882093345): Post authorization status
= PASS_REPL
*Apr  5 11:06:19.871: As5 AAA/AUTHOR/FSM: We can start IPCP
*Apr  5 11:06:19.875: As5 IPCP: O CONFREQ [Closed] id 1 len 10
```

```

*Apr 5 11:06:19.875: As5 IPCP: Address 172.22.53.141 (0x0306AC16358D)
*Apr 5 11:06:19.991: As5 IPCP: I CONFREQ [REQsent] id 1 len 34
*Apr 5 11:06:19.991: As5 IPCP: Address 0.0.0.0 (0x030600000000)
*Apr 5 11:06:19.991: As5 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
*Apr 5 11:06:19.991: As5 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
*Apr 5 11:06:19.991: As5 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
*Apr 5 11:06:19.991: As5 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
*Apr 5 11:06:19.991: As5 AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0,
we want 172.22.53.148
!--- The address for the peer obtained from the pool. *Apr 5 11:06:19.991: As5 AAA/AUTHOR/IPCP:
Processing AV service=ppp *Apr 5 11:06:19.991: As5 AAA/AUTHOR/IPCP: Authorization succeeded *Apr 5
11:06:19.991: As5 AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we want 172.22.53.148 *Apr 5
11:06:19.991: As5 IPCP: O CONFREQ [REQsent] id 1 len 22 *Apr 5 11:06:19.991: As5 IPCP:
PrimaryWINS 0.0.0.0 (0x820600000000) *Apr 5 11:06:19.995: As5 IPCP: SecondaryDNS 0.0.0.0
(0x830600000000) *Apr 5 11:06:19.995: As5 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000) *Apr 5
11:06:20.007: As5 IPCP: I CONFACK [REQsent] id 1 len 10 *Apr 5 11:06:20.007: As5 IPCP: Address
172.22.53.141 (0x0306AC16358D) *Apr 5 11:06:20.119: As5 IPCP: I CONFREQ [ACKrcvd] id 2 len 16
*Apr 5 11:06:20.119: As5 IPCP: Address 0.0.0.0 (0x030600000000) *Apr 5 11:06:20.119: As5 IPCP:
PrimaryDNS 0.0.0.0 (0x810600000000) *Apr 5 11:06:20.119: As5 AAA/AUTHOR/IPCP: Start. Her address
0.0.0.0, we want 172.22.53.148 *Apr 5 11:06:20.119: As5 AAA/AUTHOR/IPCP: Processing AV
service=ppp *Apr 5 11:06:20.119: As5 AAA/AUTHOR/IPCP: Authorization succeeded *Apr 5
11:06:20.119: As5 AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we want 172.22.53.148 *Apr 5
11:06:20.119: As5 IPCP: O CONFNAK [ACKrcvd] id 2 len 16 *Apr 5 11:06:20.119: As5 IPCP: Address
172.22.53.148 (0x0306AC163594) *Apr 5 11:06:20.119: As5 IPCP: PrimaryDNS 172.22.53.210
(0x8106AC1635D2) *Apr 5 11:06:20.231: As5 IPCP: I CONFREQ [ACKrcvd] id 3 len 16 *Apr 5
11:06:20.231: As5 IPCP: Address 172.22.53.148 (0x0306AC163594) *Apr 5 11:06:20.231: As5 IPCP:
PrimaryDNS 172.22.53.210 (0x8106AC1635D2) *Apr 5 11:06:20.231: As5 AAA/AUTHOR/IPCP: Start. Her
address 172.22.53.148, we want 172.22.53.148 *Apr 5 11:06:20.231: As5 AAA/AUTHOR/IPCP
(3727543204): Port='Async5' list='' service=NET *Apr 5 11:06:20.231: AAA/AUTHOR/IPCP: As5
(3727543204) user='async_client' *Apr 5 11:06:20.231: As5 AAA/AUTHOR/IPCP (3727543204): send AV
service=ppp *Apr 5 11:06:20.231: As5 AAA/AUTHOR/IPCP (3727543204): send AV protocol=ip *Apr 5
11:06:20.231: As5 AAA/AUTHOR/IPCP (3727543204): send AV addr*172.22.53.148 *Apr 5 11:06:20.231:
As5 AAA/AUTHOR/IPCP (3727543204): found list "default" *Apr 5 11:06:20.231: As5 AAA/AUTHOR/IPCP
(3727543204): Method=radius (radius) *Apr 5 11:06:20.235: As5 AAA/AUTHOR (3727543204): Post
authorization status = PASS_REPL *Apr 5 11:06:20.235: As5 AAA/AUTHOR/IPCP: Reject 172.22.53.148,
using 172.22.53.148 *Apr 5 11:06:20.235: As5 AAA/AUTHOR/IPCP: Processing AV service=ppp *Apr 5
11:06:20.235: As5 AAA/AUTHOR/IPCP: Processing AV addr*172.22.53.148 *Apr 5 11:06:20.235: As5
AAA/AUTHOR/IPCP: Authorization succeeded *Apr 5 11:06:20.235: As5 AAA/AUTHOR/IPCP: Done. Her
address 172.22.53.148, we want 172.22.53.148 *Apr 5 11:06:20.235: As5 IPCP: O CONFACK [ACKrcvd]
id 3 len 16 *Apr 5 11:06:20.235: As5 IPCP: Address 172.22.53.148 (0x0306AC163594) *Apr 5
11:06:20.235: As5 IPCP: PrimaryDNS 172.22.53.210 (0x8106AC1635D2) *Apr 5 11:06:20.235: As5 IPCP:
State is Open *Apr 5 11:06:20.235: As5 IPCP: Install route to 172.22.53.148
!--- Route to remote peer is installed. *Apr 5 11:06:20.871: %LINEPROTO-5-UPDOWN: Line protocol
on Interface Async5, changed state to up

```

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