

# RADIUS 서버가 있는 다이얼 인터페이스에 액세스 목록을 적용하는 방법

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## [소개](#)

이 문서에서는 RADIUS 서버와의 다이얼 인터페이스에 액세스 목록을 적용하는 방법을 보여 줍니다. 두 가지 방법이 있습니다.

- 라우터에서 번호가 지정된 액세스 목록을 정의한 다음 RADIUS 서버에서 번호가 지정된 액세스 목록을 참조합니다. 대부분의 Cisco IOS® 소프트웨어 릴리스는 이를 지원합니다. 예를 들어, 라우터에서 번호가 지정된 액세스 목록을 정의하고 서버에서 이를 참조합니다.
- 서버에서 전체 액세스 목록을 정의합니다. 이 사용자별 방법은 Cisco IOS Software 릴리스 11.3 이상이 필요합니다. 예를 들어 NAS가 아닌 RADIUS 서버에서 액세스 목록을 정의합니다. 통화가 연결되면 NAS는 RADIUS 서버로 통화를 인증합니다. 서버는 모든 인증 정보와 함께 액세스 목록을 NAS에 반환하고 그 다음 다이얼 인터페이스에 적용합니다.

**참고:** ISDN의 경우 사용자별 방법을 사용해야 하며 라우터에서 가상 프로필을 구성해야 합니다. 이러한 내용은 Configuring Virtual Profiles(가상 프로파일 구성)의 Cisco IOS Software 릴리스 11.3에 대해 설명합니다.

## [사전 요구 사항](#)

### [요구 사항](#)

이 문서에 대한 특정 조건이 없습니다.

## 사용되는 구성 요소

이 문서의 정보는 이러한 소프트웨어 및 하드웨어 버전을 기반으로 합니다.

- Cisco IOS Software 릴리스 11.1 이상(라우터에 액세스 목록 정의)
- Cisco IOS Software 릴리스 11.3 이상(서버에서 액세스 목록 정의)
- Cisco Secure ACS UNIX 또는 Cisco Secure ACS for Windows 2.x 또는 Livingston RADIUS 또는 Merit RADIUS

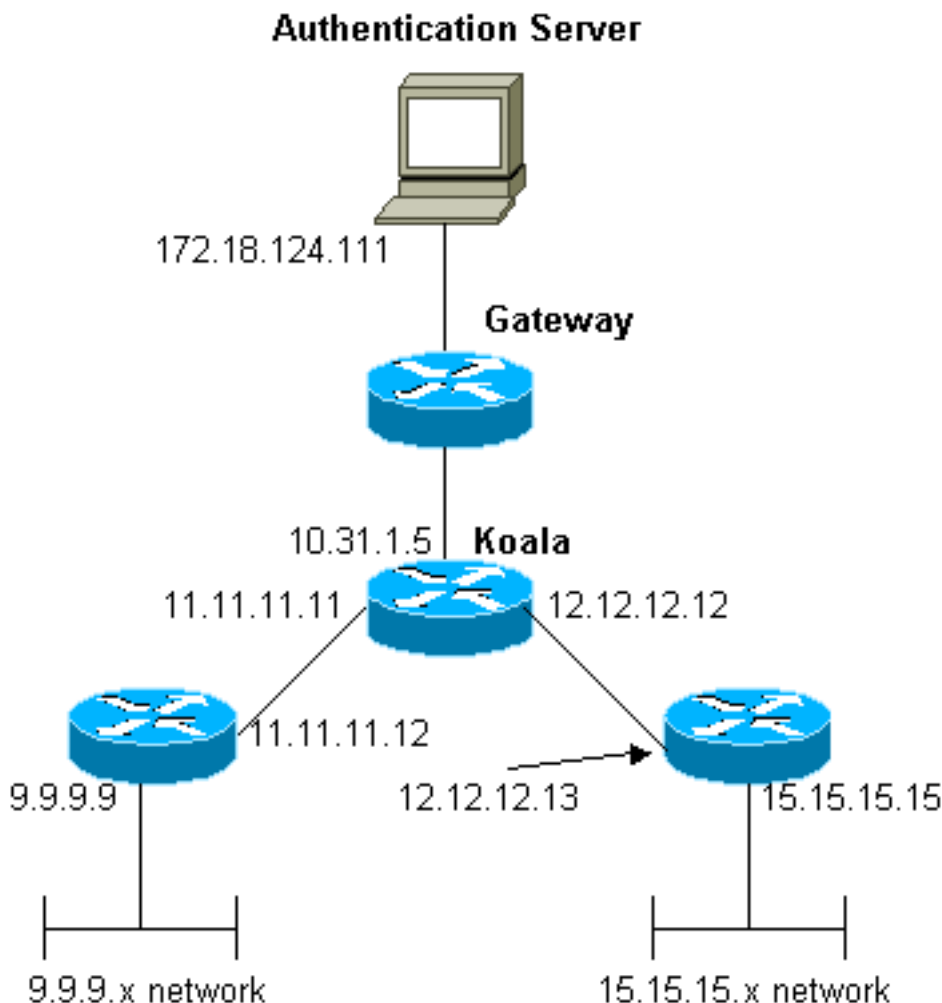
이 문서의 정보는 특정 랩 환경의 디바이스를 토대로 작성되었습니다. 이 문서에 사용된 모든 디바이스는 초기화된(기본) 컨피그레이션으로 시작되었습니다. 라이브 네트워크에서 작업하는 경우, 사용하기 전에 모든 명령의 잠재적인 영향을 이해해야 합니다.

## 표기 규칙

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

## 네트워크 다이어그램

이 네트워크는 두 가지 예에서 모두 사용됩니다.



## 라우터에서 번호가 지정된 액세스 목록 정의

### 라우터 컨피그레이션

```
Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname koala
!
aaa new-model
!
!--- The following three lines of the configuration !---
!are specific to Cisco IOS Software Release 12.0.5.T and
!later. !--- See below this configuration for commands !-
!-- for other Cisco IOS Software Releases. ! aaa
authentication login default local group radius
aaa authentication ppp default if-needed group radius
aaa authorization network default group radius
enable secret 5 $1$mnZQ$g6XdsgVnnYjEa.17v.Pijl
enable password ww
!
username john password 0 doe
!
ip subnet-zero
!
cns event-service server
!
interface Ethernet0
ip address 10.31.1.5 255.255.255.0
no ip directed-broadcast
no mop enabled
!
interface Serial0
ip address 11.11.11.11 255.255.255.0
no ip directed-broadcast
no ip mroute-cache
no fair-queue
!
interface Serial1
ip address 12.12.12.12 255.255.255.0
no ip directed-broadcast
!
interface Async1
ip unnumbered Ethernet0
no ip directed-broadcast
encapsulation ppp
no ip route-cache
no ip mroute-cache
async mode dedicated
peer default ip address pool mypool
fair-queue 64 16 0
no cdp enable
ppp authentication chap
!
ip local pool mypool 1.1.1.1 1.1.1.5
ip classless
ip route 0.0.0.0 0.0.0.0 10.31.1.1
```

```

ip route 9.9.9.0 255.255.255.0 11.11.11.12
ip route 15.15.15.0 255.255.255.0 12.12.12.13
no ip http server
!
access-list 101 permit icmp 1.1.1.0 0.0.0.255 9.9.9.0
0.0.0.255
access-list 101 permit tcp 1.1.1.0 0.0.0.255 15.15.15.0
0.0.0.255
!--- This is the access-list that is specified by the
RADIUS server. dialer-list 1 protocol ip permit dialer-
list 1 protocol ipx permit ! radius-server host
172.18.124.111 auth-port 1645 acct-port 1646 radius-
server key cisco ! line con 0 transport input none line
1 modem InOut transport input all stopbits 1 speed
115200 flowcontrol hardware line 2 16 line aux 0 line
vty 0 4 password ww ! end

```

## [기타 Cisco IOS 소프트웨어 릴리스에 대한 명령](#)

**참고:** 이 명령을 사용하려면 위의 컨피그레이션에서 굵은 글꼴로 명령을 제거하고 Cisco IOS 소프트웨어 릴리스에 따라 이 명령을 에 붙여넣습니다.

## [Cisco IOS Software 릴리스 11.3.3.T~12.0.5.T](#)

```

aaa authentication login default radius local
aaa authentication ppp default if-needed radius local
aaa authorization network default radius

```

## [Cisco IOS Software 릴리스 11.1~11.3.3.T](#)

```

aaa authentication login default radius
aaa authentication ppp default if-needed radius
aaa authorization network radius

```

## [서버 구성 - 라우터의 액세스 목록](#)

이 절차에서는 라우터에 액세스 목록 자체의 컨피그레이션을 수행합니다. RADIUS 서버는 적용되는 액세스 목록 번호로 구성됩니다. 통화가 인증되면 RADIUS 서버는 액세스 목록 번호를 NAS에 반환하고, 그러면 해당 액세스 목록을 적용합니다.

## [서버 구성 - Windows 2.X용 Cisco Secure ACS - RADIUS](#)

다음 단계를 수행하십시오.

1. 사용자 설정에서 이름과 암호를 입력합니다.
2. Group Settings(그룹 설정)에서 다음을 선택합니다.속성 6 - 프레임특성 7 - PPP특성 11 - Filter-Id. 아래 영역에서 101.in을 입력합니다.**참고:** Attribute 11은 액세스 목록 101이 적용되도록 지정합니다. access-list 101이 라우터에 구성되어 있는지 확인합니다.

## [서버 구성 - Cisco Secure ACS UNIX - RADIUS](#)

```
rtp-evergreen# ./ViewProfile -p 9900 -u chaptr
```

#### User Profile Information

```
user = chaprtr{
profile_id = 51
profile_cycle = 1
radius=Cisco {
check_items= {
2="chaprtr"
}
reply_attributes= {
6=2
7=1
11=101.in
}
}
}
```

**참고:** Attribute 11은 access-list 101이 적용되도록 지정합니다. access-list 101이 라우터에 구성되어 있는지 확인합니다.

### 서버 구성 - Livingston RADIUS

```
chaprtr Password = chaprtr
User-Service-Type = Framed-User,
Framed-Protocol = PPP,
Framed-Filter-Id = 101.in
```

**참고:** access-list 101이 적용되도록 지정합니다. access-list 101이 라우터에 구성되어 있는지 확인합니다.

### 샘플 라우터 디버그

```
koala#show debug
```

```
General OS:
```

```
AAA Authentication debugging is on
```

```
AAA Authorization debugging is on
```

```
PPP:
```

```
PPP protocol negotiation debugging is on
```

```
Radius protocol debugging is on
```

```
koala#
```

```
*Mar 1 00:55:36.307: As1 LCP: I CONFREQ [Closed] id 0 len 23
*Mar 1 00:55:36.311: As1 LCP: ACCM 0x00000000 (0x020600000000)
*Mar 1 00:55:36.311: As1 LCP: MagicNumber 0x00004CDD (0x050600004CDD)
*Mar 1 00:55:36.315: As1 LCP: PFC (0x0702)
*Mar 1 00:55:36.319: As1 LCP: ACFC (0x0802)
*Mar 1 00:55:36.319: As1 LCP: Callback 6 (0x0D0306)
*Mar 1 00:55:36.323: As1 LCP: Lower layer not up, Fast Starting
*Mar 1 00:55:36.323: As1 PPP: Treating connection as a dedicated line
*Mar 1 00:55:36.327: As1 PPP: Phase is ESTABLISHING,
Active Open [0 sess, 0 load]
*Mar 1 00:55:36.331: As1 AAA/AUTHOR/FSM: (0): LCP succeeds trivially
*Mar 1 00:55:36.335: As1 LCP: O CONFREQ [Closed] id 26 len 25
*Mar 1 00:55:36.339: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
*Mar 1 00:55:36.343: As1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 1 00:55:36.343: As1 LCP: MagicNumber 0xE0512B4A (0x0506E0512B4A)
*Mar 1 00:55:36.347: As1 LCP: PFC (0x0702)
*Mar 1 00:55:36.347: As1 LCP: ACFC (0x0802)
*Mar 1 00:55:36.355: As1 LCP: O CONFREQ [REQsent] id 0 len 7
```

```
*Mar 1 00:55:36.355: As1 LCP: Callback 6 (0x0D0306)
00:55:36: %LINK-3-UPDOWN: Interface Async1, changed state to up
*Mar 1 00:55:36.479: As1 LCP: I CONFACK [REQsent] id 26 len 25
*Mar 1 00:55:36.483: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
*Mar 1 00:55:36.483: As1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 1 00:55:36.487: As1 LCP: MagicNumber 0xE0512B4A (0x0506E0512B4A)
*Mar 1 00:55:36.491: As1 LCP: PFC (0x0702)
*Mar 1 00:55:36.491: As1 LCP: ACFC (0x0802)
*Mar 1 00:55:36.495: As1 LCP: I CONFREQ [ACKrcvd] id 1 len 20
*Mar 1 00:55:36.499: As1 LCP: ACCM 0x00000000 (0x020600000000)
*Mar 1 00:55:36.503: As1 LCP: MagicNumber 0x00004CDD (0x050600004CDD)
*Mar 1 00:55:36.503: As1 LCP: PFC (0x0702)
*Mar 1 00:55:36.507: As1 LCP: ACFC (0x0802)
*Mar 1 00:55:36.511: As1 LCP: O CONFACK [ACKrcvd] id 1 len 20
*Mar 1 00:55:36.515: As1 LCP: ACCM 0x00000000 (0x020600000000)
*Mar 1 00:55:36.515: As1 LCP: MagicNumber 0x00004CDD (0x050600004CDD)
*Mar 1 00:55:36.519: As1 LCP: PFC (0x0702)
*Mar 1 00:55:36.519: As1 LCP: ACFC (0x0802)
*Mar 1 00:55:36.523: As1 LCP: State is Open
*Mar 1 00:55:36.527: As1 PPP: Phase is AUTHENTICATING,
    by this end [0 sess, 1 load]
*Mar 1 00:55:36.531: As1 CHAP: O CHALLENGE id 8 len 26 from "koala"
*Mar 1 00:55:36.647: As1 LCP: I IDENTIFY [Open] id 2 len 18
    magic 0x00004CDD MSRASV4.00
*Mar 1 00:55:36.651: As1 LCP: I IDENTIFY [Open] id 3 len 21
    magic 0x00004CDD MSRAS-1-ZEKIE
*Mar 1 00:55:36.655: As1 CHAP: I RESPONSE id 8 len 28 from "chaptrtr"
*Mar 1 00:55:36.663: AAA: parse name=Async1 idb type=10 tty=1
*Mar 1 00:55:36.667: AAA: name=Async1 flags=0x11 type=4 shelf=0
    slot=0 adapter=0 port=1 channel=0
*Mar 1 00:55:36.671: AAA/MEMORY: create_user (0x4E9DF4) user='chaptrtr'
    ruser='' port='Async1' rem_addr='async'
    authen_type=CHAP service=PPP priv=1
*Mar 1 00:55:36.675: AAA/AUTHEN/START (128288046): port='Async1'
    list='' action=LOGIN service=PPP
*Mar 1 00:55:36.675: AAA/AUTHEN/START (128288046): using "default" list
*Mar 1 00:55:36.679: AAA/AUTHEN (128288046): status = UNKNOWN
*Mar 1 00:55:36.679: AAA/AUTHEN/START (128288046): Method=radius (radius)
*Mar 1 00:55:36.683: RADIUS: ustruct sharecount=1
*Mar 1 00:55:36.687: RADIUS: Initial Transmit Async1
    id 8 172.18.124.111:1645, Access-Request, len 78
*Mar 1 00:55:36.691: Attribute 4 6 0A1F0105
*Mar 1 00:55:36.695: Attribute 5 6 00000001
*Mar 1 00:55:36.695: Attribute 61 6 00000000
*Mar 1 00:55:36.695: Attribute 1 9 63686170
*Mar 1 00:55:36.699: Attribute 3 19 08E468A8
*Mar 1 00:55:36.699: Attribute 6 6 00000002
*Mar 1 00:55:36.703: Attribute 7 6 00000001
*Mar 1 00:55:36.835: RADIUS: Received from
    id 8 172.18.124.111:1645, Access-Accept, len 40
*Mar 1 00:55:36.839: Attribute 6 6 00000002
*Mar 1 00:55:36.843: Attribute 7 6 00000001
*Mar 1 00:55:36.843: Attribute 11 8 3130312E
*Mar 1 00:55:36.851: AAA/AUTHEN (128288046): status = PASS
*Mar 1 00:55:36.855: As1 AAA/AUTHOR/LCP: Authorize LCP
*Mar 1 00:55:36.855: As1 AAA/AUTHOR/LCP (821299011):
    Port='Async1' list='' service=NET
*Mar 1 00:55:36.859: AAA/AUTHOR/LCP: As1 (821299011) user='chaptrtr'
*Mar 1 00:55:36.859: As1 AAA/AUTHOR/LCP (821299011):
    send AV service=ppp
*Mar 1 00:55:36.863: As1 AAA/AUTHOR/LCP (821299011):
    send AV protocol=lcp
*Mar 1 00:55:36.863: As1 AAA/AUTHOR/LCP (821299011):
    found list "default"
```

\*Mar 1 00:55:36.867: As1 AAA/AUTHOR/LCP (821299011):  
Method=radius (radius)

\*Mar 1 00:55:36.871: As1 AAA/AUTHOR (821299011): Post  
authorization status = PASS\_REPL

\*Mar 1 00:55:36.871: As1 AAA/AUTHOR/LCP: Processing  
AV service=ppp

\*Mar 1 00:55:36.879: As1 CHAP: O SUCCESS id 8 len 4

\*Mar 1 00:55:36.883: As1 PPP: Phase is UP [0 sess, 1 load]

\*Mar 1 00:55:36.887: As1 AAA/AUTHOR/FSM: (0): Can we  
start IPCP?

\*Mar 1 00:55:36.887: As1 AAA/AUTHOR/FSM (3701006396):  
Port='Async1' list='' service=NET

\*Mar 1 00:55:36.891: AAA/AUTHOR/FSM: As1 (3701006396)  
user='chaptrtr'

\*Mar 1 00:55:36.891: As1 AAA/AUTHOR/FSM (3701006396):  
send AV service=ppp

\*Mar 1 00:55:36.895: As1 AAA/AUTHOR/FSM (3701006396):  
send AV protocol=ip

\*Mar 1 00:55:36.899: As1 AAA/AUTHOR/FSM (3701006396):  
found list "default"

\*Mar 1 00:55:36.899: As1 AAA/AUTHOR/FSM (3701006396):  
Method=radius (radius)

\*Mar 1 00:55:36.903: As1 AAA/AUTHOR (3701006396):  
Post authorization status = PASS\_REPL

\*Mar 1 00:55:36.907: As1 AAA/AUTHOR/FSM: We can start IPCP

\*Mar 1 00:55:36.915: As1 IPCP: O CONFREQ [Closed] id 5 len 10

\*Mar 1 00:55:36.915: As1 IPCP: Address 10.31.1.5 (0x03060A1F0105)

\*Mar 1 00:55:36.923: As1 AAA/AUTHOR/FSM: (0): Can we start CDPCP?

\*Mar 1 00:55:36.923: As1 AAA/AUTHOR/FSM (3075092411):  
Port='Async1' list='' service=NET

\*Mar 1 00:55:36.927: AAA/AUTHOR/FSM: As1 (3075092411) user='chaptrtr'

\*Mar 1 00:55:36.931: As1 AAA/AUTHOR/FSM (3075092411):  
send AV service=ppp

\*Mar 1 00:55:36.931: As1 AAA/AUTHOR/FSM (3075092411):  
send AV protocol=cdp

\*Mar 1 00:55:36.935: As1 AAA/AUTHOR/FSM (3075092411):  
found list "default"

\*Mar 1 00:55:36.935: As1 AAA/AUTHOR/FSM (3075092411):  
Method=radius (radius)

\*Mar 1 00:55:36.939: RADIUS: unknown proto "cdp" in acl-check

\*Mar 1 00:55:36.943: RADIUS: Filter-Id 101 out of range  
for protocol cdp. Ignoring.

\*Mar 1 00:55:36.943: As1 AAA/AUTHOR (3075092411): Post  
authorization status = PASS\_REPL

\*Mar 1 00:55:36.947: As1 AAA/AUTHOR/FSM: We can start CDPCP

\*Mar 1 00:55:36.951: As1 CDPCP: O CONFREQ [Closed] id 5 len 4

\*Mar 1 00:55:36.987: As1 CCP: I CONFREQ [Not negotiated] id 4 len 12

\*Mar 1 00:55:36.991: As1 CCP: OUI (0x0002)

\*Mar 1 00:55:36.991: As1 CCP: MS-PPC supported bits  
0x00007080 (0x120600007080)

\*Mar 1 00:55:36.999: As1 LCP: O PROTREJ [Open] id 27 len 18  
protocol CCP (0x80FD0104000C0002120600007080)

\*Mar 1 00:55:37.003: As1 IPCP: I CONFREQ [REQsent] id 5 len 40

\*Mar 1 00:55:37.007: As1 IPCP: CompressType VJ 15 slots  
CompressSlotID (0x0206002D0F01)

\*Mar 1 00:55:37.011: As1 IPCP: Address 0.0.0.0 (0x030600000000)

\*Mar 1 00:55:37.015: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)

\*Mar 1 00:55:37.019: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)

\*Mar 1 00:55:37.023: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)

\*Mar 1 00:55:37.027: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)

\*Mar 1 00:55:37.027: As1 AAA/AUTHOR/IPCP: Start. Her  
address 0.0.0.0, we want 0.0.0.0

\*Mar 1 00:55:37.031: As1 AAA/AUTHOR/IPCP: Processing AV service=ppp

**\*Mar 1 00:55:37.035: As1 AAA/AUTHOR/IPCP: Processing AV inacl=101**

```
!--- Note that acl 101 is applied to the dialer interface. *Mar 1 00:55:37.035: As1
AAA/AUTHOR/IPCP: Authorization succeeded *Mar 1 00:55:37.039: As1 AAA/AUTHOR/IPCP: Done. Her
address 0.0.0.0, we want 0.0.0.0 *Mar 1 00:55:37.043: As1 IPCP: Pool returned 1.1.1.1 *Mar 1
00:55:37.047: As1 IPCP: O CONFREJ [REQsent] id 5 len 28 *Mar 1 00:55:37.051: As1 IPCP:
CompressType VJ 15 slots CompressSlotID (0x0206002D0F01) *Mar 1 00:55:37.055: As1 IPCP:
PrimaryWINS 0.0.0.0 (0x820600000000) *Mar 1 00:55:37.059: As1 IPCP: SecondaryDNS 0.0.0.0
(0x830600000000) *Mar 1 00:55:37.063: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000) *Mar 1
00:55:37.067: As1 IPCP: I CONFACK [REQsent] id 5 len 10 *Mar 1 00:55:37.071: As1 IPCP: Address
10.31.1.5 (0x03060A1F0105) *Mar 1 00:55:37.075: As1 LCP: I PROTREJ [Open] id 6 len 10 protocol
CDPCP (0x820701050004) *Mar 1 00:55:37.079: As1 CDPCP: State is Closed *Mar 1 00:55:37.183: As1
IPCP: I CONFREQ [ACKrcvd] id 7 len 16 *Mar 1 00:55:37.187: As1 IPCP: Address 0.0.0.0
(0x030600000000) *Mar 1 00:55:37.191: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000) *Mar 1
00:55:37.191: As1 AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0, we want 1.1.1.1 *Mar 1
00:55:37.195: As1 AAA/AUTHOR/IPCP: Processing AV service=ppp *Mar 1 00:55:37.199: As1
AAA/AUTHOR/IPCP: Processing AV inacl=101 *Mar 1 00:55:37.199: As1 AAA/AUTHOR/IPCP: Authorization
succeeded *Mar 1 00:55:37.203: As1 AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we want 1.1.1.1
*Mar 1 00:55:37.207: As1 IPCP: O CONFNAK [ACKrcvd] id 7 len 16 *Mar 1 00:55:37.211: As1 IPCP:
Address 1.1.1.1 (0x030601010101) *Mar 1 00:55:37.215: As1 IPCP: PrimaryDNS 172.18.125.3
(0x8106AC127D03) *Mar 1 00:55:37.327: As1 IPCP: I CONFREQ [ACKrcvd] id 8 len 16 *Mar 1
00:55:37.331: As1 IPCP: Address 1.1.1.1 (0x030601010101) *Mar 1 00:55:37.335: As1 IPCP:
PrimaryDNS 172.18.125.3 (0x8106AC127D03) *Mar 1 00:55:37.335: As1 AAA/AUTHOR/IPCP: Start. Her
address 1.1.1.1, we want 1.1.1.1 *Mar 1 00:55:37.343: As1 AAA/AUTHOR/IPCP (408915304):
Port='Async1' list='' service=NET *Mar 1 00:55:37.347: AAA/AUTHOR/IPCP: As1 (408915304)
user='chaprtr' *Mar 1 00:55:37.347: As1 AAA/AUTHOR/IPCP (408915304): send AV service=ppp *Mar 1
00:55:37.351: As1 AAA/AUTHOR/IPCP (408915304): send AV protocol=ip *Mar 1 00:55:37.355: As1
AAA/AUTHOR/IPCP (408915304): send AV addr*1.1.1.1 *Mar 1 00:55:37.355: As1 AAA/AUTHOR/IPCP
(408915304): found list "default" *Mar 1 00:55:37.359: As1 AAA/AUTHOR/IPCP (408915304):
Method=radius (radius) *Mar 1 00:55:37.363: As1 AAA/AUTHOR (408915304): Post authorization
status = PASS_REPL *Mar 1 00:55:37.367: As1 AAA/AUTHOR/IPCP: Reject 1.1.1.1, using 1.1.1.1 *Mar
1 00:55:37.375: As1 AAA/AUTHOR/IPCP: Processing AV service=ppp *Mar 1 00:55:37.375: As1
AAA/AUTHOR/IPCP: Processing AV inacl=101 *Mar 1 00:55:37.379: As1 AAA/AUTHOR/IPCP: Processing AV
addr*1.1.1.1 *Mar 1 00:55:37.379: As1 AAA/AUTHOR/IPCP: Authorization succeeded *Mar 1
00:55:37.383: As1 AAA/AUTHOR/IPCP: Done. Her address 1.1.1.1, we want 1.1.1.1 *Mar 1
00:55:37.387: As1 IPCP: O CONFACK [ACKrcvd] id 8 len 16 *Mar 1 00:55:37.391: As1 IPCP: Address
1.1.1.1 (0x030601010101) *Mar 1 00:55:37.395: As1 IPCP: PrimaryDNS 172.18.125.3 (0x8106AC127D03)
*Mar 1 00:55:37.399: As1 IPCP: State is Open *Mar 1 00:55:37.727: As1 IPCP: Install route to
1.1.1.1 *Mar 1 00:55:37: %LINEPROTO-5-UPDOWN: Line protocol on Interface Async1, changed state
to up koala#
```

## 서버에서 액세스 목록 정의

**참고:** Route 문은 서버에서 라우터로 전달될 필요가 없습니다. 일반적으로 다이얼 사용자는 라우터에서 경로를 선택합니다. 라우터에 경로 문이 있는 것은 서버에서 경로를 전달할지 라우터에서 경로를 선택할지 여부에 따라 달라집니다. 그러나 이 예에서는 액세스 목록과 경로 문이 전달됩니다.

```
ip route 9.9.9.0 255.255.255.0 11.11.11.12
ip route 15.15.15.0 255.255.255.0 12.12.12.13
```

이 샘플 컨피그레이션에서는 서버에서 경로를 전달하는 것은 단지 그림 목적으로만 사용됩니다.

<pre>라우터 컨피그레이션  Current configuration: ! version 12.0 service timestamps debug uptime service timestamps log uptime no service password-encryption ! hostname koala !</pre>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



```
aaa new-model
!
!--- The following three lines of the configuration are
!--- specific to Cisco IOS Software Release 12.0.5.T and
!--- later. !--- See below this configuration for commands !-
-- for other Cisco IOS Software Releases. ! aaa
authentication login default group radius none
aaa authentication ppp default if-needed group radius
aaa authorization network default group radius
enable secret 5 $1$mnZQ$g6XdsgVnnYjEa.17v.Pijl
enable password ww
!
username john password 0 doe
!
ip subnet-zero
!
cns event-service server
!
interface Ethernet0
ip address 10.31.1.5 255.255.255.0
no ip directed-broadcast
no mop enabled
!
interface Serial0
ip address 11.11.11.11 255.255.255.0
no ip directed-broadcast
no ip mroute-cache
no fair-queue
!
interface Serial1
ip address 12.12.12.12 255.255.255.0
no ip directed-broadcast
!
interface Async1
ip unnumbered Ethernet0
no ip directed-broadcast
encapsulation ppp
no ip route-cache
no ip mroute-cache
async mode dedicated
peer default ip address pool mypool
fair-queue 64 16 0
no cdp enable
ppp authentication chap
!
ip local pool mypool 1.1.1.1 1.1.1.5
ip classless
ip route 0.0.0.0 0.0.0.0 10.31.1.1
ip route 172.17.192.0 255.255.255.0 10.31.1.1
ip route 172.18.124.0 255.255.255.0 10.31.1.1
ip route 172.18.125.0 255.255.255.0 10.31.1.1
no ip http server
!
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
!
radius-server host 172.18.124.111 auth-port 1645 acct-
port 1646
radius-server key cisco
!
line con 0
transport input none
line 1
autoselect during-login
```

```
autoselect ppp
modem InOut
transport input all
stopbits 1
speed 115200
flowcontrol hardware
line 2 16
line aux 0
line vty 0 4
password ww
!
end
```

## [기타 Cisco IOS 소프트웨어 릴리스에 대한 명령](#)

**참고:** 이 명령을 사용하려면 위의 컨피그레이션에서 굵은 글꼴로 명령을 제거하고 Cisco IOS 소프트웨어 릴리스에 따라 이 명령을 에 붙여넣습니다.

## [Cisco IOS Software 릴리스 11.3.3.T~12.0.5.T](#)

```
aaa authentication login default radius local
aaa authentication ppp default if-needed radius local
aaa authorization network default radius
```

## [Cisco IOS Software 릴리스 11.3~11.3.3.T](#)

```
aaa authentication login default radius
aaa authentication ppp default if-needed radius
aaa authorization network radius
```

## [서버 구성](#)

### [서버 구성 - Cisco Secure ACS UNIX - RADIUS](#)

```
# ./ViewProfile -p 9900 -u chaprtr
User Profile Information
user = chaprtr{
profile_id = 31
profile_cycle = 1
radius=Cisco {
check_items= {
2="chaprtr"
}
reply_attributes= {
6=2
7=1
9,1="ip:route#1=9.9.9.9 255.255.255.255 11.11.11.12"
9,1="ip:route#2=15.15.15.15 255.255.255.255 12.12.12.13"
9,1="ip:route#3=15.15.15.16 255.255.255.255 12.12.12.13"
9,1="ip:inacl#1=permit icmp 1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255"
9,1="ip:inacl#2=permit tcp 1.1.1.0 0.0.0.255 15.15.15.0 0.0.0.255"
!--- The access-list to be applied is specified. !--- Note that the number after inacl#
increments for each line of the access-list. } } }
```

### [서버 구성 - Windows 2.x용 Cisco Secure ACS - RADIUS](#)

다음 단계를 완료하십시오.

1. 사용자 설정에서 이름과 암호를 입력합니다.
2. Group Settings(그룹 설정)에서 다음을 선택합니다.속성 6 - 프레임특성 7 - PPP
3. Cisco RADIUS Attributes(Cisco RADIUS 특성) 아래에서 [009\001] AV-Pair(AV 쌍)를 선택하고 아래 상자에 다음 텍스트를 입력합니다.

```
ip:route#1=9.9.9.9 255.255.255.255 11.11.11.12
ip:route#2=15.15.15.15 255.255.255.255 12.12.12.13
ip:route#3=15.15.15.16 255.255.255.255 12.12.12.13
ip:inacl#1=permit icmp 1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255
ip:inacl#2=permit tcp 1.1.1.0 0.0.0.255 15.15.15.0 0.0.0.255
!--- The access-list to be applied is specified. !--- Note that the number after inacl#
increments for !--- each line of the access-list.
```

## 서버 구성 - 장점 RADIUS

**참고:** 이 컨피그레이션은 Cisco av-pair를 지원하는 Merit RADIUS 버전 3.6b 이상에 유효합니다.

```
chaprtr Password = "chaprtr",
Service-Type = Framed,
Framed-Protocol = PPP,
Framed-IP-Address = 255.255.255.254
Cisco:Avpair="ip:route#1=9.9.9.9 255.255.255.255 11.11.11.12"
Cisco:Avpair="ip:route#2=15.15.15.15 255.255.255.255 12.12.12.13"
Cisco:Avpair="ip:route#3=15.15.15.16 255.255.255.255 12.12.12.13"
Cisco:Avpair="ip:inacl#1=permit icmp 1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255"
Cisco:Avpair="ip:inacl#2=permit tcp 1.1.1.0 0.0.0.255 15.15.15.0 0.0.0.255"
!--- The access-list to be applied is specified. ! --- Note that the number after inacl#
increments for each line of the access-list.
```

## 샘플 라우터 디버그

아래 디버그에 대한 RADIUS 사용자 구성은 다음과 같습니다.

```
RADIUS user password = "radiususer",
Service-Type = Framed,
Framed-Protocol = PPP,
Framed-IP-Address = 255.255.255.254
cisco-avpair = "ip:route#1=9.9.9.0 255.255.255.0 11.11.11.12"
cisco-avpair = "ip:route#2=15.15.15.0 255.255.255.0 12.12.12.13"
cisco-avpair = "ip:inacl#1=permit icmp 1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255 log"
cisco-avpair = "ip:inacl#2=permit tcp 1.1.1.0 0.0.0.255 15.15.15 .0 0.0.0.255 log"
```

koala#

koala#

```
4d05h: As1 AAA/AUTHOR/FSM: (0): LCP succeeds trivially
4d05h: %LINK-3-UPDOWN: Interface Async1, changed state to up
4d05h: AAA: parse name=Async1 idb type=10 tty=1
4d05h: AAA: name=Async1 flags=0x11 type=4 shelf=0 slot=0
adapter=0 port=1 channel=0
4d05h: AAA/MEMORY: create_user (0x552AB4) user='radiususer'
ruser='' port='Async1' rem_addr='async' authen_type=CHAP
service=PPP priv=1
4d05h: AAA/AUTHEN/START (624846144): port='Async1' list=''
action=LOGIN service=PPP
4d05h: AAA/AUTHEN/START (624846144): using "default" list
```

```
4d05h: AAA/AUTHEN (624846144): status = UNKNOWN
4d05h: AAA/AUTHEN/START (624846144): Method=radius (radius)
4d05h: RADIUS: ustruct sharecount=1
4d05h: RADIUS: Initial Transmit Async1 id 9 172.18.124.111:1645,
    Access-Request, len 81
4d05h: Attribute 4 6 0A1F0105
4d05h: Attribute 5 6 00000001
4d05h: Attribute 61 6 00000000
4d05h: Attribute 1 12 72616469
4d05h: Attribute 3 19 1672E16F
4d05h: Attribute 6 6 00000002
4d05h: Attribute 7 6 00000001
4d05h: RADIUS: Received from id 9 172.18.124.111:1645,
    Access-Accept, len 287
4d05h: Attribute 6 6 00000002
4d05h: Attribute 7 6 00000001
4d05h: Attribute 8 6 FFFFFFFE
4d05h: Attribute 26 52 00000009012E6970
4d05h: Attribute 26 55 0000000901316970
4d05h: Attribute 26 70 0000000901406970
4d05h: Attribute 26 72 0000000901426970
4d05h: AAA/AUTHEN (624846144): status = PASS
4d05h: As1 AAA/AUTHOR/LCP: Authorize LCP
4d05h: As1 AAA/AUTHOR/LCP (3679631149): Port='Async1' list=''
    service=NET
4d05h: AAA/AUTHOR/LCP: As1 (3679631149) user='radiususer'
4d05h: As1 AAA/AUTHOR/LCP (3679631149): send AV service=ppp
4d05h: As1 AAA/AUTHOR/LCP (3679631149): send AV protocol=lcp
4d05h: As1 AAA/AUTHOR/LCP (3679631149): found list "default"
4d05h: As1 AAA/AUTHOR/LCP (3679631149): Method=radius (radius)
4d05h: RADIUS: cisco AVPair "ip:route#1=9.9.9.0 255.255.255.0
    11.11.11.12" not applied for lcp
4d05h: RADIUS: cisco AVPair "ip:route#2=15.15.15.0 255.255.255.0
    12.12.12.13" not applied for lcp
4d05h: RADIUS: cisco AVPair "ip:inacl#1=permit icmp 1.1.1.0 0.0.0.255
    9.9.9.0 0.0.0.255 log" not applied for lcp
4d05h: RADIUS: cisco AVPair "ip:inacl#2=permit tcp 1.1.1.0 0.0.0.255
    15.15.15.0 0.0.0.255 log" not applied for lcp
4d05h: As1 AAA/AUTHOR (3679631149): Post authorization
    status = PASS_REPL
4d05h: As1 AAA/AUTHOR/LCP: Processing AV service=ppp
4d05h: As1 AAA/AUTHOR/FSM: (0): Can we start IPCP?
4d05h: As1 AAA/AUTHOR/FSM (231623628): Port='Async1' list=''
    service=NET
4d05h: AAA/AUTHOR/FSM: As1 (231623628) user='radiususer'
4d05h: As1 AAA/AUTHOR/FSM (231623628): send AV service=ppp
4d05h: As1 AAA/AUTHOR/FSM (231623628): send AV protocol=ip
4d05h: As1 AAA/AUTHOR/FSM (231623628): found list "default"
4d05h: As1 AAA/AUTHOR/FSM (231623628): Method=radius (radius)
4d05h: RADIUS: Using NAS default peer
4d05h: RADIUS: Authorize IP address 0.0.0.0
4d05h: RADIUS: cisco AVPair "ip:route#1=9.9.9.0 255.255.255.0
    11.11.11.12"
4d05h: RADIUS: cisco AVPair "ip:route#2=15.15.15.0 255.255.255.0
    12.12.12.13"
4d05h: RADIUS: cisco AVPair "ip:inacl#1=permit icmp 1.1.1.0 0.0.0.255
    9.9.9.0 0.0.0.255 log"
4d05h: RADIUS: cisco AVPair "ip:inacl#2=permit tcp 1.1.1.0 0.0.0.255
    15.15.15.0 0.0.0.255 log"
!--- The access list is sent down from the RADIUS server. 4d05h: As1 AAA/AUTHOR (231623628):
Post authorization status = PASS_REPL 4d05h: As1 AAA/AUTHOR/FSM: We can start IPCP 4d05h: As1
AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0, we want 0.0.0.0 4d05h: As1 AAA/AUTHOR/IPCP:
Processing AV service=ppp 4d05h: As1 AAA/AUTHOR/IPCP: Processing AV addr=0.0.0.0 4d05h: As1
AAA/AUTHOR/IPCP: Processing AV route#1=9.9.9.0 255.255.255.0 11.11.11.12 4d05h: As1
```

```

AAA/AUTHOR/IPCP: Processing AV route#2=15.15.15.0 255.255.255.0 12.12.12.13 4d05h: As1
AAA/AUTHOR/IPCP: Processing AV inacl#1=permit icmp 1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255 log
4d05h: As1 AAA/AUTHOR/IPCP: Processing AV inacl#2=permit tcp 1.1.1.0 0.0.0.255 15.15.15.0
0.0.0.255 log 4d05h: As1 AAA/AUTHOR/IPCP: Authorization succeeded 4d05h: As1 AAA/AUTHOR/IPCP:
Done. Her address 0.0.0.0, we want 0.0.0.0 4d05h: As1 AAA/AUTHOR/IPCP: Start. Her address
0.0.0.0, we want 1.1.1.3 4d05h: As1 AAA/AUTHOR/IPCP: Processing AV service=ppp 4d05h: As1
AAA/AUTHOR/IPCP: Processing AV addr=0.0.0.0 4d05h: As1 AAA/AUTHOR/IPCP: Processing AV
route#1=9.9.9.0 255.255.255.0 11.11.11.12 4d05h: As1 AAA/AUTHOR/IPCP: Processing AV
route#2=15.15.15.0 255.255.255.0 12.12.12.13 4d05h: As1 AAA/AUTHOR/IPCP: Processing AV
inacl#1=permit icmp 1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255 log 4d05h: As1 AAA/AUTHOR/IPCP:
Processing AV inacl#2=permit tcp 1.1.1.0 0.0.0.255 15.15.15.0 0.0.0.255 log 4d05h: As1
AAA/AUTHOR/IPCP: Authorization succeeded 4d05h: As1 AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0,
we want 1.1.1.3 4d05h: As1 AAA/AUTHOR/IPCP: Start. Her address 1.1.1.3, we want 1.1.1.3 4d05h:
As1 AAA/AUTHOR/IPCP (2383669304): Port='Async1' list='' service=NET 4d05h: AAA/AUTHOR/IPCP: As1
(2383669304) user='radiususer' 4d05h: As1 AAA/AUTHOR/IPCP (2383669304): send AV service=ppp
4d05h: As1 AAA/AUTHOR/IPCP (2383669304): send AV protocol=ip 4d05h: As1 AAA/AUTHOR/IPCP
(2383669304): send AV addr*1.1.1.3 4d05h: As1 AAA/AUTHOR/IPCP (2383669304): found list "default"
4d05h: As1 AAA/AUTHOR/IPCP (2383669304): Method=radius (radius) 4d05h: RADIUS: Using NAS default
peer 4d05h: RADIUS: Authorize IP address 1.1.1.3 4d05h: RADIUS: cisco AVPair "ip:route#1=9.9.9.0
255.255.255.0 11.11.11.12" 4d05h: RADIUS: cisco AVPair "ip:route#2=15.15.15.0 255.255.255.0
12.12.12.13" 4d05h: RADIUS: cisco AVPair "ip:inacl#1=permit icmp 1.1.1.0 0.0.0.255 9.9.9.0
0.0.0.255 log" 4d05h: RADIUS: cisco AVPair "ip:inacl#2=permit tcp 1.1.1.0 0.0.0.255 15.15.15.0
0.0.0.255 log" 4d05h: As1 AAA/AUTHOR (2383669304): Post authorization status = PASS_REPL 4d05h:
As1 AAA/AUTHOR/IPCP: Processing AV service=ppp 4d05h: As1 AAA/AUTHOR/IPCP: Processing AV
addr=1.1.1.3 4d05h: As1 AAA/AUTHOR/IPCP: Processing AV route#1=9.9.9.0 255.255.255.0 11.11.11.12
4d05h: As1 AAA/AUTHOR/IPCP: Processing AV route#2=15.15.15.0 255.255.255.0 12.12.12.13 4d05h:
As1 AAA/AUTHOR/IPCP: Processing AV inacl#1=permit icmp
1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255 log
4d05h: As1 AAA/AUTHOR/IPCP: Processing AV inacl#2=permit tcp
1.1.1.0 0.0.0.255 15.15.15.0 0.0.0.255 log
!--- Access list from the RADIUS server is applied. 4d05h: As1 AAA/AUTHOR/IPCP: Authorization
succeeded 4d05h: As1 AAA/AUTHOR/IPCP: Done. Her address 1.1.1.3, we want 1.1.1.3 4d05h: As1
AAA/AUTHOR/PER-USER: Event IP_UP 4d05h: As1 AAA/AUTHOR: IP_UP 4d05h: As1 AAA/PER-USER:
processing author params. 4d05h: As1 AAA/AUTHOR: Parse 'IP route 9.9.9.0 255.255.255.0
11.11.11.12' 4d05h: As1 AAA/AUTHOR: Parse returned ok (0) 4d05h: As1 AAA/AUTHOR: enqueue peruser
IP txt=no IP route 9.9.9.0 255.255.255.0 11.11.11.12 4d05h: As1 AAA/AUTHOR: Parse 'IP route
15.15.15.0 255.255.255.0 12.12.12.13' 4d05h: As1 AAA/AUTHOR: Parse returned ok (0) 4d05h: As1
AAA/AUTHOR: enqueue peruser IP txt=no IP route 15.15.15.0 255.255.255.0 12.12.12.13 4d05h: As1
AAA/AUTHOR: Parse 'ip access-list extended Async1#0' 4d05h: As1 AAA/AUTHOR: Parse returned ok
(0) 4d05h: As1 AAA/AUTHOR: Parse 'permit icmp 1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255 log' 4d05h:
As1 AAA/AUTHOR: Parse returned ok (0) 4d05h: As1 AAA/AUTHOR: Parse 'permit tcp 1.1.1.0 0.0.0.255
15.15.15.0 0.0.0.255 log' 4d05h: As1 AAA/AUTHOR: Parse returned ok (0) 4d05h: As1 AAA/AUTHOR:
enqueue peruser IP txt=no ip access-list extended Async1#0 4d05h: As1 AAA/AUTHOR: Parse
'interface Async1' 4d05h: %LINEPROTO-5-UPDOWN: Line protocol on Interface Async1, changed state
to up 4d05h: As1 AAA/AUTHOR: Parse returned ok (0) 4d05h: As1 AAA/AUTHOR: Parse 'IP access-group
Async1#0 in' 4d05h: As1 AAA/AUTHOR: Parse returned ok (0) 4d05h: As1 AAA/AUTHOR: enqueue peruser
IP txt=interface Async1 no IP access-group Async1#0 in koala#show ip access-list
Extended IP access list 101
permit icmp 1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255 log (5 matches)
permit tcp 1.1.1.0 0.0.0.255 15.15.15.0 0.0.0.255 log (11 matches)
Extended IP access list Async1#0 (per-user)
permit icmp 1.1.1.0 0.0.0.255 9.9.9.0 0.0.0.255 log
permit tcp 1.1.1.0 0.0.0.255 15.15.15.0 0.0.0.255 log
!--- Verify that the access list is applied to the AS1 dial interface. koala#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route

```

Gateway of last resort is 10.31.1.1 to network 0.0.0.0

```
1.0.0.0/32 is subnetted, 1 subnets
C 1.1.1.3 is directly connected, Async1
172.17.0.0/24 is subnetted, 1 subnets
S 172.17.192.0 [1/0] via 10.31.1.1
172.18.0.0/24 is subnetted, 2 subnets
S 172.18.124.0 [1/0] via 10.31.1.1
S 172.18.125.0 [1/0] via 10.31.1.1
9.0.0.0/24 is subnetted, 1 subnets
U 9.9.9.0 [1/0] via 11.11.11.12
!--- The static user route specified by the RADIUS server is applied. 10.0.0.0/24 is subnetted,
1 subnets C 10.31.1.0 is directly connected, Ethernet0 11.0.0.0/24 is subnetted, 1 subnets C
11.11.11.0 is directly connected, Serial0 12.0.0.0/24 is subnetted, 1 subnets C 12.12.12.0 is
directly connected, Serial1 15.0.0.0/24 is subnetted, 1 subnets U 15.15.15.0 [1/0] via
12.12.12.13
!--- The static user route specified by the RADIUS server is applied. S* 0.0.0.0/0 [1/0] via
10.31.1.1
```

## 디버그 명령

- **debug aaa authentication** - AAA 인증에 대한 정보를 표시합니다.
- **debug aaa authorization** - AAA 권한 부여에 대한 정보를 표시합니다.
- **debug aaa per-user** - AAA 서버에서 전송된 라우터 또는 액세스 서버의 사용자별 컨피그레이션 설정에 대한 정보를 표시합니다.
- **debug radius** - RADIUS와 관련된 자세한 디버깅 정보를 표시합니다.
- **debug ppp negotiation** - PPP 시작 중에 전송된 PPP 패킷을 표시합니다. 여기서 PPP 옵션은 협상됩니다.

문제 해결 정보는 [다이얼 인터페이스의 액세스 목록 문제 해결을 참조하십시오.](#)

## 관련 정보

- [Cisco Secure ACS for UNIX 설명서](#)
- [Cisco Secure ACS for Windows 지원 페이지](#)
- [Cisco Secure ACS for Windows 설명서](#)
- [RADIUS 지원 페이지](#)
- [RADIUS 구성](#)
- [RFC\(Request for Comments\)](#)