

TACACS+, PAP 및 CHAP 디버깅의 일반적인 문제

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소개

참고: 이 문서의 정보는 Cisco IOS[®] Software 릴리스 11.2 이상을 기반으로 합니다.

이 문서에서는 PAP(Password Authentication Protocol) 또는 CHAP(Challenge Handshake Authentication Protocol)를 사용하는 경우 TACACS+에 대한 일반적인 디버깅 문제를 살펴봅니다. Microsoft Windows 95, Windows NT, Windows 98 및 Windows 2000에 대한 공통 PC 설정은 물론, 좋은 디버깅 및 잘못된 디버깅 구성과 예도 제공됩니다.

[사전 요구 사항](#)

[요구 사항](#)

이 문서에 대한 특정 요건이 없습니다.

[사용되는 구성 요소](#)

이 문서는 특정 소프트웨어 및 하드웨어 버전으로 한정되지 않습니다.

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

표기 규칙

문서 규칙에 대한 자세한 내용은 [Cisco 기술 팁 표기 규칙을 참고하십시오.](#)

일반 PC 설정

Windows 95

다음 단계를 완료하십시오.

1. Dialup Networking(전화 접속 네트워킹) 창에서 연결 이름을 선택한 다음 File(파일) > Properties(속성)를 선택합니다.
2. Server Type(서버 유형) 탭에서 Type of Dial-up Server(전화 접속 서버 유형) 아래의 **Require Encrypted Password(암호화된 비밀번호 필요)** 상자가 선택되어 있는지 확인합니다. 이 확인란을 선택하면 PC는 CHAP 인증만 허용합니다. 이 확인란을 선택하지 않으면 PC에서 PAP 또는 CHAP 인증을 수락합니다.

Windows NT

다음 단계를 완료하십시오.

1. Dial-Up Networking(전화 접속 네트워킹) 창에서 연결 이름을 선택한 다음 File(파일) > Properties(속성)를 선택합니다.
2. Security(보안) 탭에서 설정을 확인합니다. **일반 텍스트 상자를 포함한 모든 인증을 수락하는 경우 PC에서 PAP 또는 CHAP를 수락합니다. 암호화된 인증만 허용** 상자를 선택하면 PC는 CHAP 인증만 허용합니다.

Windows 98

다음 단계를 완료하십시오.

1. Dial-Up Networking(전화 접속 네트워킹) 창에서 연결 이름을 선택한 다음 속성을 선택합니다.
2. Server Types(서버 유형) 탭에서 Advanced Options(고급 옵션) 영역의 설정을 선택합니다. **.Require encrypted password(암호화된 암호 필요)** 상자를 선택하지 않으면 PC에서 PAP 또는 CHAP 인증을 수락합니다. **.Require encrypted password(암호화된 비밀번호 필요)** 상자를 선택하면 PC는 CHAP 인증만 허용합니다.

Windows 2000

다음 단계를 완료하십시오.

1. 네트워크 및 전화 접속 연결에서 연결 이름을 선택한 다음 속성을 선택합니다.
2. Security(보안) 탭의 **Advanced(고급) > Settings(설정) > Allow these protocols(다음 프로토콜**

허용) 영역에서 다음을 수행합니다.Unencrypted password (PAP)(암호화되지 않은 비밀번호 (PAP)) 상자를 선택하면 PC가 PAP를 수락합니다.Challenge Handshake Authentication Protocol (CHAP)(챌린지 핸드셰이크 인증 프로토콜(CHAP)) 상자를 선택하면 RFC 1994에 따라 CHAP를 수락합니다.Microsoft CHAP(MS-CHAP) 상자를 선택하면 PC는 MS-CHAP 버전 1을 수락하고 RFC 1994에 따라 CHAP를 승인하지 않습니다.

구성 및 디버그 예

구성 - TACACS+ 및 PAP

```
Current configuration:

!
version 11.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname rtpkrb
!
aaa new-model
!
!--- The following four lines of the !--- configuration
are specific to !--- Cisco IOS 11.2 and later, until
11.3.3.T. !--- See below this configuration !--- for
commands for other Cisco IOS releases. ! aaa
authentication login default tacacs+ local
aaa authentication ppp default if-needed tacacs+ local
aaa authorization exec tacacs+ if-authenticated
aaa authorization network tacacs+ if-authenticated
enable secret 5 $1$pkX.$JdAySRE1SbdbDe7bj0wyt0
enable password ww
!
username john password 0 doe
username cse password 0 csecse
ip host rtpkrb 10.31.1.5
ip domain-name RTP.CISCO.COM
ip name-server 171.68.118.103
!
interface Loopback0
ip address 1.1.1.1 255.255.255.0
!
interface Ethernet0
ip address 10.31.1.5 255.255.0.0
no mop enabled
!
interface Serial0
no ip address
no ip mroute-cache
shutdown
!
interface Serial1
no ip address
shutdown
!
interface Async1
ip unnumbered Ethernet0
```

```
encapsulation ppp
async mode dedicated
peer default ip address pool async
no cdp enable
ppp authentication pap
!
ip local pool async 15.15.15.15
ip classless
ip route 0.0.0.0 0.0.0.0 10.31.1.1
!
tacacs-server host 171.68.118.101
tacacs-server key cisco
snmp-server community public RW
snmp-server host 171.68.118.100 traps public
!
line con 0
line 1
session-timeout 20
exec-timeout 20 0
password ww
autoselect during-login
autoselect ppp
modem InOut
transport input all
stopbits 1
speed 38400
flowcontrol hardware
line 2
modem InOut
speed 38400
flowcontrol hardware
line 3 16
line aux 0
line vty 0 4
password ww
!
end
```

[기타 Cisco IOS 릴리스에 대한 명령](#)

참고: 이 명령을 사용하려면 컨피그레이션에서 굵은 글꼴로 명령을 제거하고 Cisco IOS 릴리스에 따라 이 명령에 붙여넣습니다.

[Cisco IOS 11.3.3.T - 12.0.5.T](#)

```
aaa authen login default tacacs+ local
aaa authen ppp default if-needed tacacs+ local
aaa authorization exec default tacacs+ if-authenticated
aaa authorization network default tacacs+ if-authenticated
```

[Cisco IOS 12.0.5.T 이상](#)

```
aaa authen login default group tacacs+ local
aaa authen ppp default if-needed group tacacs+ local
aaa authorization exec default group tacacs+ if-authenticated
aaa authorization network default group tacacs+ if-authenticated
```

[샘플 디버그 - TACACS+ 및 PAP](#)

참고: 디버그 출력에서 굵은 텍스트는 디버그의 문제를 강조 표시합니다. 일반 텍스트는 올바른 디버그를 나타냅니다.

```
rtprb#show debug
General OS:
TACACS access control debugging is on
AAA Authentication debugging is on
AAA Authorization debugging is on
PPP:
PPP authentication debugging is on
PPP protocol negotiation debugging is on
rtprb#
3d22h: %LINK-3-UPDOWN: Interface Async1, changed state to up
3d22h: As1 PPP: Treating connection as a dedicated line
3d22h: As1 PPP: Phase is ESTABLISHING, Active Open
3d22h: As1 LCP: O CONFREQ [Closed] id 14 len 24
3d22h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
3d22h: As1 LCP: AuthProto PAP (0x0304C023)
3d22h: As1 LCP: MagicNumber 0xF45FB7A7 (0x0506F45FB7A7)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
!--- PC insists on doing CHAP !--- ("accept encrypted authentication only"), !--- but router is
set up for PAP. As1 LCP: I CONFNAK [REQsent] id 27 len 12
As1 LCP: AuthProto 0xC123 (0x0308C12301000001)
As1 PPP: Closing connection because remote won't authenticate

3d22h: As1 LCP: Interface transitioned, discarding packet
3d22h: As1 LCP: I CONFACK [REQsent] id 14 len 24
3d22h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
3d22h: As1 LCP: AuthProto PAP (0x0304C023)
3d22h: As1 LCP: MagicNumber 0xF45FB7A7 (0x0506F45FB7A7)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: TIMEout: Time 0x14417CC4 State ACKrcvd
3d22h: As1 LCP: O CONFREQ [ACKrcvd] id 15 len 24
3d22h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
3d22h: As1 LCP: AuthProto PAP (0x0304C023)
3d22h: As1 LCP: MagicNumber 0xF45FB7A7 (0x0506F45FB7A7)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: I CONFACK [REQsent] id 15 len 24
3d22h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
3d22h: As1 LCP: AuthProto PAP (0x0304C023)
3d22h: As1 LCP: MagicNumber 0xF45FB7A7 (0x0506F45FB7A7)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: I CONFREQ [ACKrcvd] id 0 len 20
3d22h: As1 LCP: ACCM 0x00000000 (0x020600000000)
3d22h: As1 LCP: MagicNumber 0x000030A3 (0x0506000030A3)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: O CONFACK [ACKrcvd] id 0 len 20
3d22h: As1 LCP: ACCM 0x00000000 (0x020600000000)
3d22h: As1 LCP: MagicNumber 0x000030A3 (0x0506000030A3)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: State is Open
3d22h: As1 PPP: Phase is AUTHENTICATING, by this end
3d22h: As1 PAP: I AUTH-REQ id 4 len 20 from "papuser"
3d22h: As1 PAP: Authenticating peer papuser
3d22h: AAA/AUTHEN: create_user (0x16DAC0) user='papuser'
ruser='' port='Async1' rem_addr='async' authen_type=PAP
```

```
service=PPP priv=1
3d22h: AAA/AUTHEN/START (1190231344): port='Async1' list=''
  action=LOGIN service=PPP
3d22h: AAA/AUTHEN/START (1190231344): using "default" list
3d22h: AAA/AUTHEN (1190231344): status = UNKNOWN
3d22h: AAA/AUTHEN/START (1190231344): Method=TACACS+
3d22h: TAC+: send AUTHEN/START packet ver=193 id=1190231344
3d22h: TAC+: Using default tacacs server list.
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5

!--- The TAC+ server is down, producing an error. !--- Since the user is not in the local
database, !--- the failover to local fails. TAC+: TCP/IP open to 171.68.118.101/49 failed --
Connection refused by remote host
AAA/AUTHEN (866823886): status = ERROR
AAA/AUTHEN/START (866823886): Method=LOCAL
AAA/AUTHEN (866823886): status = FAIL
```

```
3d22h: TAC+: Opened TCP/IP handle 0x16C1F8 to 171.68.118.101/49
3d22h: TAC+: 171.68.118.101 (1190231344) AUTHEN/START/LOGIN/PAP queued
3d22h: TAC+: (1190231344) AUTHEN/START/LOGIN/PAP processed
```

```
!--- The key in the router does not match that of the server. TAC+: received bad AUTHEN packet:
length = 68, expected 67857
TAC+: Invalid AUTHEN/START packet (check keys)
AAA/AUTHEN (1771887965): status = ERROR
```

```
3d22h: TAC+: ver=192 id=1190231344 received AUTHEN status = GETPASS
3d22h: TAC+: Closing TCP/IP 0x16C1F8 connection to 171.68.118.101/49
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5
3d22h: TAC+: Opened TCP/IP handle 0x16EF4C to 171.68.118.101/49
3d22h: TAC+: Opened 171.68.118.101 index=1
3d22h: AAA/AUTHEN: create_user (0x16C5EC) user='papuser' ruser=''
port='Async1' rem_addr='async' authen_type=PAP service=PPP priv=1
3d22h: TAC+: rev0 inbound pap login for id=1190231344 using id=3112896669
3d22h: TAC+: 171.68.118.101 (3112896669) AUTHEN/START/LOGIN/PAP queued
3d22h: TAC+: (3112896669) AUTHEN/START/LOGIN/PAP processed
3d22h: TAC+: ver=192 id=3112896669 received AUTHEN status = GETPASS
3d22h: TAC+: send AUTHEN/CONT packet
3d22h: TAC+: 171.68.118.101 (3112896669) AUTHEN/CONT queued
3d22h: TAC+: (3112896669) AUTHEN/CONT processed
```

```
!--- The NT client sends the "DOMAIN\user" !--- and the TAC+ server expects "user". TAC+:
ver=192 id=260507389 received AUTHEN status = FAIL
TAC+: rev0 inbound pap completed for 1139034411 status=FAIL
AAA/AUTHEN: free_user (0x16CDD4) user='CISCO\papuser' ruser=''
port='Async1' rem_addr='async' authen_type=PAP service=PPP priv=1
```

```
!--- The TAC+ server refuses the user !--- because the user is set up for PAP. !--- The user
enters a bad password, !--- or both the username and password are bad. TAC+: ver=192
id=691012958 received AUTHEN status = FAIL
TAC+: rev0 inbound pap completed for 3917384959 status=FAIL
AAA/AUTHEN: free_user (0x15AD58) user='idochap' ruser=''
port='Async1' rem_addr='async' authen_type=PAP service=PPP priv=1
```

```
3d22h: TAC+: ver=192 id=3112896669 received AUTHEN status = PASS
3d22h: TAC+: rev0 inbound pap completed for 1190231344 status=PASS
3d22h: AAA/AUTHEN: free_user (0x16C5EC) user='papuser' ruser=''
port='Async1' rem_addr='async' authen_type=PAP service=PPP priv=1
3d22h: TAC+: Closing TCP/IP 0x16EF4C connection to 171.68.118.101/49
3d22h: AAA/AUTHEN (1190231344): status = PASS
3d22h: AAA/AUTHOR/LCP As1: Authorize LCP
3d22h: AAA/AUTHOR/LCP: Async1: (1061976769): user='papuser'
3d22h: AAA/AUTHOR/LCP: Async1: (1061976769): send AV service=ppp
3d22h: AAA/AUTHOR/LCP: Async1: (1061976769): send AV protocol=lcp
```

3d22h: AAA/AUTHOR/LCP: Async1: (1061976769): Method=TACACS+
3d22h: AAA/AUTHOR/TAC+: (1061976769): user=papuser
3d22h: AAA/AUTHOR/TAC+: (1061976769): send AV service=ppp
3d22h: AAA/AUTHOR/TAC+: (1061976769): send AV protocol=lcp
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5
3d22h: TAC+: Opened TCP/IP handle 0x16C9E0 to 171.68.118.101/49
3d22h: TAC+: Opened 171.68.118.101 index=1
3d22h: TAC+: 171.68.118.101 (1061976769) AUTHOR/START queued
3d22h: TAC+: (1061976769) AUTHOR/START processed

!--- The user passes authentication !--- (the username/password is good) !--- but fails authorization !--- (the profile is not set up to authorize PPP). TAC+: (1793875816): received
author response status = FAIL
TAC+: Closing TCP/IP 0x17054C connection to 171.68.118.101/49
AAA/AUTHOR (1793875816): Post authorization status = FAIL
AAA/AUTHOR/LCP As1: Denied

3d22h: TAC+: (1061976769): received author response status = PASS_ADD
3d22h: TAC+: Closing TCP/IP 0x16C9E0 connection to 171.68.118.101/49
3d22h: AAA/AUTHOR (1061976769): Post authorization status = PASS_ADD
3d22h: As1 PAP: O AUTH-ACK id 4 len 5
3d22h: As1 PPP: Phase is UP
3d22h: AAA/AUTHOR/FSM As1: (0): Can we start IPCP?
3d22h: AAA/AUTHOR/FSM: Async1: (3602788894): user='papuser'
3d22h: AAA/AUTHOR/FSM: Async1: (3602788894): send AV service=ppp
3d22h: AAA/AUTHOR/FSM: Async1: (3602788894): send AV protocol=ip
3d22h: AAA/AUTHOR/FSM: Async1: (3602788894): Method=TACACS+
3d22h: AAA/AUTHOR/TAC+: (3602788894): user=papuser
3d22h: AAA/AUTHOR/TAC+: (3602788894): send AV service=ppp
3d22h: AAA/AUTHOR/TAC+: (3602788894): send AV protocol=ip
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5
3d22h: %LINEPROTO-5-UPDOWN: Line protocol on Interface Async1,
changed state to up
3d22h: TAC+: Opened TCP/IP handle 0x17054C to 171.68.118.101/49
3d22h: TAC+: Opened 171.68.118.101 index=1
3d22h: TAC+: 171.68.118.101 (3602788894) AUTHOR/START queued
3d22h: As1 IPCP: I CONFREQ [Closed] id 1 len 34
3d22h: As1 IPCP: Address 0.0.0.0 (0x030600000000)
3d22h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
3d22h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
3d22h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
3d22h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
3d22h: TAC+: (3602788894) AUTHOR/START processed
3d22h: TAC+: (3602788894): received author response status = PASS_ADD
3d22h: TAC+: Closing TCP/IP 0x17054C connection to 171.68.118.101/49
3d22h: AAA/AUTHOR (3602788894): Post authorization status = PASS_ADD
3d22h: AAA/AUTHOR/FSM As1: We can start IPCP
3d22h: As1 IPCP: O CONFREQ [Closed] id 10 len 10
3d22h: As1 IPCP: Address 10.31.1.5 (0x03060A1F0105)
3d22h: As1 IPCP: I CONFACK [REQsent] id 10 len 10
3d22h: As1 IPCP: Address 10.31.1.5 (0x03060A1F0105)
3d22h: As1 IPCP: I CONFREQ [ACKrcvd] id 1 len 34
3d22h: As1 IPCP: Address 0.0.0.0 (0x030600000000)
3d22h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
3d22h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
3d22h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
3d22h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
3d22h: AAA/AUTHOR/IPCP As1: Start. Her address 0.0.0.0,
we want 0.0.0.0
3d22h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp
3d22h: AAA/AUTHOR/IPCP As1: Processing AV protocol=ip
3d22h: AAA/AUTHOR/IPCP As1: Authorization succeeded
3d22h: AAA/AUTHOR/IPCP As1: Done. Her address 0.0.0.0,
we want 0.0.0.0

```
3d22h: As1 IPCP: Using pool 'async'
3d22h: As1 IPCP: Pool returned 15.15.15.15
3d22h: As1 IPCP: O CONFREQ [ACKrcvd] id 1 len 22
3d22h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
3d22h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
3d22h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
3d22h: As1 IPCP: I CONFREQ [ACKrcvd] id 2 len 16
3d22h: As1 IPCP: Address 0.0.0.0 (0x030600000000)
3d22h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
3d22h: AAA/AUTHOR/IPCP As1: Start. Her address 0.0.0.0,
we want 15.15.15.15
3d22h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp
3d22h: AAA/AUTHOR/IPCP As1: Processing AV protocol=ip
3d22h: AAA/AUTHOR/IPCP As1: Authorization succeeded
3d22h: AAA/AUTHOR/IPCP As1: Done. Her address 0.0.0.0,
we want 15.15.15.15
3d22h: As1 IPCP: O CONFNAK [ACKrcvd] id 2 len 16
3d22h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)
3d22h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
3d22h: As1 IPCP: I CONFREQ [ACKrcvd] id 3 len 16
3d22h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)
3d22h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
3d22h: AAA/AUTHOR/IPCP As1: Start. Her address 15.15.15.15,
we want 15.15.15.15
3d22h: AAA/AUTHOR/IPCP: Async1: (3654974050): user='papuser'
3d22h: AAA/AUTHOR/IPCP: Async1: (3654974050): send AV service=ppp
3d22h: AAA/AUTHOR/IPCP: Async1: (3654974050): send AV protocol=ip
3d22h: AAA/AUTHOR/IPCP: Async1: (3654974050): send AV addr*15.15.15.15
3d22h: AAA/AUTHOR/IPCP: Async1: (3654974050): Method=TACACS+
3d22h: AAA/AUTHOR/TAC+: (3654974050): user=papuser
3d22h: AAA/AUTHOR/TAC+: (3654974050): send AV service=ppp
3d22h: AAA/AUTHOR/TAC+: (3654974050): send AV protocol=ip
3d22h: AAA/AUTHOR/TAC+: (3654974050): send AV addr*15.15.15.15
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5
3d22h: TAC+: Opened TCP/IP handle 0x16EF4C to 171.68.118.101/49
3d22h: TAC+: Opened 171.68.118.101 index=1
3d22h: TAC+: 171.68.118.101 (3654974050) AUTHOR/START queued
3d22h: TAC+: (3654974050) AUTHOR/START processed
3d22h: TAC+: (3654974050): received author response status = PASS_ADD
3d22h: TAC+: Closing TCP/IP 0x16EF4C connection to 171.68.118.101/49
3d22h: AAA/AUTHOR (3654974050): Post authorization status = PASS_ADD
3d22h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp
3d22h: AAA/AUTHOR/IPCP As1: Processing AV protocol=ip
3d22h: AAA/AUTHOR/IPCP As1: Processing AV addr*15.15.15.15
3d22h: AAA/AUTHOR/IPCP As1: Authorization succeeded
3d22h: AAA/AUTHOR/IPCP As1: Done. Her address 15.15.15.15,
we want 15.15.15.15
3d22h: As1 IPCP: O CONFACK [ACKrcvd] id 3 len 16
3d22h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)
3d22h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
3d22h: As1 IPCP: State is Open
3d22h: As1 IPCP: Install route to 15.15.15.15
```

rtpkrb#

구성 - TACACS+ 및 CHAP

Current configuration:

```
!
version 11.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
```



```
!  
hostname rtpkrb  
!  
aaa new-model  
!  
!--- The following four lines of the configuration !---  
are specific to Cisco IOS 11.2 and later, until  
11.3.3.T. !--- See below this configuration !--- for  
commands for other Cisco IOS releases. ! aaa  
authentication login default tacacs+ local  
aaa authentication ppp default if-needed tacacs+ local  
aaa authorization exec tacacs+ if-authenticated  
aaa authorization network tacacs+ if-authenticated  
enable secret 5 $1$pkX.$JdAysRE1SbdbDe7bj0wyt0  
enable password ww  
!  
username john password 0 doe  
username cse password 0 csecse  
ip host rtpkrb 10.31.1.5  
ip name-server 171.68.118.103  
!  
interface Loopback0  
ip address 1.1.1.1 255.255.255.0  
!  
interface Ethernet0  
ip address 10.31.1.5 255.255.0.0  
no mop enabled  
!  
interface Serial0  
no ip address  
no ip mroute-cache  
shutdown  
!  
interface Serial1  
no ip address  
shutdown  
!  
interface Async1  
ip unnumbered Ethernet0  
encapsulation ppp  
async mode dedicated  
peer default ip address pool async  
no cdp enable  
ppp authentication chap  
!  
ip local pool async 15.15.15.15  
ip classless  
ip route 0.0.0.0 0.0.0.0 10.31.1.1  
!  
tacacs-server host 171.68.118.101  
tacacs-server key cisco  
snmp-server community public RW  
snmp-server host 171.68.118.100 traps public  
!  
line con 0  
line 1  
session-timeout 20  
exec-timeout 20 0  
password ww  
autoselect during-login  
autoselect ppp  
modem InOut  
transport input all  
stopbits 1
```

```
speed 38400
flowcontrol hardware
line 2
modem InOut
speed 38400
flowcontrol hardware
line 3 16
line aux 0
line vty 0 4
password ww
!
end
```

[기타 Cisco IOS 릴리스에 대한 명령](#)

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

[Cisco IOS 11.3.3.T - 12.0.5.T](#)

```
aaa authen login default tacacs+ local
aaa authen ppp default if-needed tacacs+ local
aaa authorization exec default tacacs+ if-authenticated
aaa authorization network default tacacs+ if-authenticated
```

[Cisco IOS 12.0.5.T 이상](#)

```
aaa authen login default group tacacs+ local
aaa authen ppp default if-needed group tacacs+ local
aaa authorization exec default group tacacs+ if-authenticated
aaa authorization network default group tacacs+ if-authenticated
```

[샘플 디버그 - TACACS+ 및 CHAP](#)

참고: 디버그 출력에서 굵은 텍스트는 디버그의 문제를 강조 표시합니다.일반 텍스트는 올바른 디버그를 나타냅니다.

```
General OS:
TACACS access control debugging is on
AAA Authentication debugging is on
AAA Authorization debugging is on
PPP:
PPP authentication debugging is on
PPP protocol negotiation debugging is on
rtpkrb#
3d22h: As1 LCP: I CONFREQ [Closed] id 0 len 20
3d22h: As1 LCP: ACCM 0x00000000 (0x020600000000)
3d22h: As1 LCP: MagicNumber 0x000042C5 (0x0506000042C5)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: Lower layer not up, discarding packet
3d22h: %LINK-3-UPDOWN: Interface Async1, changed state to up
3d22h: As1 PPP: Treating connection as a dedicated line
3d22h: As1 PPP: Phase is ESTABLISHING, Active Open
3d22h: As1 LCP: O CONFREQ [Closed] id 12 len 25
3d22h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
3d22h: As1 LCP: AuthProto CHAP (0x0305C22305)
```

3d22h: As1 LCP: MagicNumber 0xF45D776F (0x0506F45D776F)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: I CONFACK [REQsent] id 12 len 25
3d22h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
3d22h: As1 LCP: AuthProto CHAP (0x0305C22305)
3d22h: As1 LCP: MagicNumber 0xF45D776F (0x0506F45D776F)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: I CONFREQ [ACKrcvd] id 0 len 20
3d22h: As1 LCP: ACCM 0x00000000 (0x020600000000)
3d22h: As1 LCP: MagicNumber 0x000042C5 (0x0506000042C5)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: O CONFACK [ACKrcvd] id 0 len 20
3d22h: As1 LCP: ACCM 0x00000000 (0x020600000000)
3d22h: As1 LCP: MagicNumber 0x000042C5 (0x0506000042C5)
3d22h: As1 LCP: PFC (0x0702)
3d22h: As1 LCP: ACFC (0x0802)
3d22h: As1 LCP: State is Open
3d22h: As1 PPP: Phase is AUTHENTICATING, by this end
3d22h: As1 CHAP: O CHALLENGE id 3 len 27 from "rtppkrb"
3d22h: As1 CHAP: I RESPONSE id 3 len 29 from "chapuser"
3d22h: AAA/AUTHEN: create_user (0x15B394) user='chapuser'
ruser='' port='Async1' rem_addr='async' authen_type=CHAP
service=PPP priv=1
3d22h: AAA/AUTHEN/START (2183639772): port='Async1' list=''
action=LOGIN service=PPP
3d22h: AAA/AUTHEN/START (2183639772): using "default" list
3d22h: AAA/AUTHEN (2183639772): status = UNKNOWN
3d22h: AAA/AUTHEN/START (2183639772): Method=TACACS+
3d22h: TAC+: send AUTHEN/START packet ver=193 id=2183639772
3d22h: TAC+: Using default tacacs server list.
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5

!--- The TAC+ server is down, producing an error. !--- Since the user is not in the local database, !--- the failover to local fails. TAC+: TCP/IP open to 171.68.118.101/49 failed --

Connection refused by remote host

AAA/AUTHEN (2546660185): status = ERROR

AAA/AUTHEN/START (2546660185): Method=LOCAL

AAA/AUTHEN (2546660185): status = FAIL

As1 CHAP: Unable to validate Response. Username chapuser: Authentication failure

3d22h: TAC+: Opened TCP/IP handle 0x17054C to 171.68.118.101/49
3d22h: TAC+: 171.68.118.101 (2183639772) AUTHEN/START/LOGIN/CHAP queued
3d22h: TAC+: (2183639772) AUTHEN/START/LOGIN/CHAP processed

!--- The key in the router does not match that of the server. TAC+: received bad AUTHEN packet: length = 68, expected 67857

TAC+: Invalid AUTHEN/START packet (check keys)

AAA/AUTHEN (1771887965): status = ERROR

3d22h: TAC+: ver=192 id=2183639772 received AUTHEN status = GETPASS
3d22h: TAC+: Closing TCP/IP 0x17054C connection to 171.68.118.101/49
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5
3d22h: TAC+: Opened TCP/IP handle 0x16EF4C to 171.68.118.101/49
3d22h: TAC+: Opened 171.68.118.101 index=1
3d22h: AAA/AUTHEN: create_user (0x170940) user='chapuser' ruser=''
port='Async1' rem_addr='async' authen_type=CHAP service=PPP priv=1
3d22h: TAC+: rev0 inbound chap for id=2183639772 using id=166703029
3d22h: TAC+: 171.68.118.101 (166703029) AUTHEN/START/SENDPASS/CHAP queued
3d22h: TAC+: (166703029) AUTHEN/START/SENDPASS/CHAP processed

!--- The NT client sends the "DOMAIN\user" !--- and the TAC+ server expects "user". TAC+:

ver=192 id=3373385106 received AUTHEN status = FAIL
TAC+: rev0 inbound chap FAIL for id=2082151566
AAA/AUTHEN: free_user (0x170940) user='CISCO\chapuser' ruser=''
port='Async1' rem_addr='async' authen_type=CHAP service=PPP priv=1

!--- The TAC+ server refuses the user !--- because the user is set up for PAP. !--- The user enters a bad password, !--- or both the username and password are bad. TAC+: ver=192

id=1989464562 received AUTHEN status = PASS
TAC+: rev0 inbound chap SENDPASS status=PASS for id=3657266965
TAC+: rev0 inbound chap MD5 compare FAILED
AAA/AUTHEN: free_user (0x170940) user='chapuser' ruser=''
port='Async1' rem_addr='async' authen_type=CHAP service=PPP priv=1
TAC+: Closing TCP/IP 0x16EF4C connection to 171.68.118.101/49
AAA/AUTHEN (2082151566): status = FAIL
As1 CHAP: Unable to validate Response. Username papuser: Authentication failure

3d22h: TAC+: ver=192 id=166703029 received AUTHEN status = PASS
3d22h: TAC+: rev0 inbound chap SENDPASS status=PASS for id=2183639772
3d22h: TAC+: rev0 inbound chap MD5 compare OK
3d22h: AAA/AUTHEN: free_user (0x170940) user='chapuser' ruser=''
port='Async1' rem_addr='async' authen_type=CHAP service=PPP priv=1
3d22h: TAC+: Closing TCP/IP 0x16EF4C connection to 171.68.118.101/49
3d22h: AAA/AUTHEN (2183639772): status = PASS
3d22h: AAA/AUTHOR/LCP As1: Authorize LCP
3d22h: AAA/AUTHOR/LCP: Async1: (683360936): user='chapuser'
3d22h: AAA/AUTHOR/LCP: Async1: (683360936): send AV service=ppp
3d22h: AAA/AUTHOR/LCP: Async1: (683360936): send AV protocol=lcp
3d22h: AAA/AUTHOR/LCP: Async1: (683360936): Method=TACACS+
3d22h: AAA/AUTHOR/TAC+: (683360936): user=chapuser
3d22h: AAA/AUTHOR/TAC+: (683360936): send AV service=ppp
3d22h: AAA/AUTHOR/TAC+: (683360936): send AV protocol=lcp
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5
3d22h: TAC+: Opened TCP/IP handle 0x16C1F8 to 171.68.118.101/49
3d22h: TAC+: Opened 171.68.118.101 index=1
3d22h: TAC+: 171.68.118.101 (683360936) AUTHOR/START queued
3d22h: TAC+: (683360936) AUTHOR/START processed

!--- The user passes authentication !--- (the username/password is good) !--- but fails authorization !--- (the profile is not set up to authorize PPP). TAC+: (3803447096): received

author response status = FAIL
TAC+: Closing TCP/IP 0x16C2A4 connection to 171.68.118.101/49
AAA/AUTHOR (3803447096): Post authorization status = FAIL
AAA/AUTHOR/LCP As1: Denied
AAA/AUTHEN: free_user (0x15B2E8) user='noauth' ruser='' port='Async1'
rem_addr='async' authen_type=CHAP service=PPP priv=1
As1 CHAP: O FAILURE id 9 len 24 msg is "Authorization failed"

3d22h: TAC+: (683360936): received author response status = PASS_ADD
3d22h: TAC+: Closing TCP/IP 0x16C1F8 connection to 171.68.118.101/49
3d22h: AAA/AUTHOR (683360936): Post authorization status = PASS_ADD
3d22h: As1 CHAP: O SUCCESS id 3 len 4
3d22h: As1 PPP: Phase is UP
3d22h: AAA/AUTHOR/FSM As1: (0): Can we start IPCP?
3d22h: AAA/AUTHOR/FSM: Async1: (977509495): user='chapuser'
3d22h: AAA/AUTHOR/FSM: Async1: (977509495): send AV service=ppp
3d22h: AAA/AUTHOR/FSM: Async1: (977509495): send AV protocol=ip
3d22h: AAA/AUTHOR/FSM: Async1: (977509495): Method=TACACS+
3d22h: AAA/AUTHOR/TAC+: (977509495): user=chapuser
3d22h: AAA/AUTHOR/TAC+: (977509495): send AV service=ppp
3d22h: AAA/AUTHOR/TAC+: (977509495): send AV protocol=ip
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5
3d22h: TAC+: Opened TCP/IP handle 0x16EF4C to 171.68.118.101/49
3d22h: TAC+: Opened 171.68.118.101 index=1
3d22h: TAC+: 171.68.118.101 (977509495) AUTHOR/START queued

```
3d22h: As1 IPCP: I CONFREQ [Closed] id 1 len 34
3d22h: As1 IPCP: Address 0.0.0.0 (0x030600000000)
3d22h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
3d22h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
3d22h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
3d22h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
3d22h: TAC+: (977509495) AUTHOR/START processed
3d22h: TAC+: (977509495): received author response status = PASS_ADD
3d22h: TAC+: Closing TCP/IP 0x16EF4C connection to 171.68.118.101/49
3d22h: AAA/AUTHOR (977509495): Post authorization status = PASS_ADD
3d22h: AAA/AUTHOR/FSM As1: We can start IPCP
3d22h: As1 IPCP: O CONFREQ [Closed] id 8 len 10
3d22h: As1 IPCP: Address 10.31.1.5 (0x03060A1F0105)
3d22h: As1 IPCP: I CONFACK [REQsent] id 8 len 10
3d22h: As1 IPCP: Address 10.31.1.5 (0x03060A1F0105)
3d22h: %LINEPROTO-5-UPDOWN: Line protocol on Interface Async1,
changed state to up
3d22h: As1 IPCP: I CONFREQ [ACKrcvd] id 1 len 34
3d22h: As1 IPCP: Address 0.0.0.0 (0x030600000000)
3d22h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
3d22h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
3d22h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
3d22h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
3d22h: AAA/AUTHOR/IPCP As1: Start. Her address 0.0.0.0,
we want 0.0.0.0
3d22h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp
3d22h: AAA/AUTHOR/IPCP As1: Processing AV protocol=ip
3d22h: AAA/AUTHOR/IPCP As1: Authorization succeeded
3d22h: AAA/AUTHOR/IPCP As1: Done. Her address 0.0.0.0,
we want 0.0.0.0
3d22h: As1 IPCP: Using pool 'async'
3d22h: As1 IPCP: Pool returned 15.15.15.15
3d22h: As1 IPCP: O CONFREQ [ACKrcvd] id 1 len 22
3d22h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
3d22h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
3d22h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
3d22h: As1 IPCP: I CONFREQ [ACKrcvd] id 2 len 16
3d22h: As1 IPCP: Address 0.0.0.0 (0x030600000000)
3d22h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
3d22h: AAA/AUTHOR/IPCP As1: Start. Her address 0.0.0.0,
we want 15.15.15.15
3d22h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp
3d22h: AAA/AUTHOR/IPCP As1: Processing AV protocol=ip
3d22h: AAA/AUTHOR/IPCP As1: Authorization succeeded
3d22h: AAA/AUTHOR/IPCP As1: Done. Her address 0.0.0.0,
we want 15.15.15.15
3d22h: As1 IPCP: O CONFNAK [ACKrcvd] id 2 len 16
3d22h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)
3d22h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
3d22h: As1 IPCP: I CONFREQ [ACKrcvd] id 3 len 16
3d22h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)
3d22h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
3d22h: AAA/AUTHOR/IPCP As1: Start. Her address 15.15.15.15,
we want 15.15.15.15
3d22h: AAA/AUTHOR/IPCP: Async1: (3918374858): user='chapuser'
3d22h: AAA/AUTHOR/IPCP: Async1: (3918374858): send AV service=ppp
3d22h: AAA/AUTHOR/IPCP: Async1: (3918374858): send AV protocol=ip
3d22h: AAA/AUTHOR/IPCP: Async1: (3918374858): send AV addr*15.15.15.15
3d22h: AAA/AUTHOR/IPCP: Async1: (3918374858): Method=TACACS+
3d22h: AAA/AUTHOR/TAC+: (3918374858): user=chapuser
3d22h: AAA/AUTHOR/TAC+: (3918374858): send AV service=ppp
3d22h: AAA/AUTHOR/TAC+: (3918374858): send AV protocol=ip
3d22h: AAA/AUTHOR/TAC+: (3918374858): send AV addr*15.15.15.15
3d22h: TAC+: Opening TCP/IP to 171.68.118.101/49 timeout=5
```

```
3d22h: TAC+: Opened TCP/IP handle 0x16C9E0 to 171.68.118.101/49
3d22h: TAC+: Opened 171.68.118.101 index=1
3d22h: TAC+: 171.68.118.101 (3918374858) AUTHOR/START queued
3d22h: TAC+: (3918374858) AUTHOR/START processed
3d22h: TAC+: (3918374858): received author response status = PASS_ADD
3d22h: TAC+: Closing TCP/IP 0x16C9E0 connection to 171.68.118.101/49
3d22h: AAA/AUTHOR (3918374858): Post authorization status = PASS_ADD
3d22h: AAA/AUTHOR/PCP As1: Processing AV service=ppp
3d22h: AAA/AUTHOR/PCP As1: Processing AV protocol=ip
3d22h: AAA/AUTHOR/PCP As1: Processing AV addr*15.15.15.15
3d22h: AAA/AUTHOR/PCP As1: Authorization succeeded
3d22h: AAA/AUTHOR/PCP As1: Done. Her address 15.15.15.15,
we want 15.15.15.15
3d22h: As1 PCP: O CONFACK [ACKrcvd] id 3 len 16
3d22h: As1 PCP: Address 15.15.15.15 (0x03060F0F0F0F)
3d22h: As1 PCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
3d22h: As1 PCP: State is Open
3d22h: As1 PCP: Install route to 15.15.15.15
rtpkrb#
```

debug 명령

이 디버그 명령은 이 문서에서 샘플 디버그 출력을 생성하는 데 사용되었습니다.

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

- **debug aaa authentication** - AAA 인증에 대한 정보를 표시합니다.
- **debug aaa authorization** - AAA 권한 부여에 대한 정보를 표시합니다.
- **debug tacacs+**—TACACS+와 관련된 자세한 디버깅 정보를 표시합니다.
- **debug ppp negotiation** - PPP 시작 중에 전송된 PPP 패킷을 표시합니다. 여기서 PPP 옵션은 협상됩니다.

관련 정보

- [IOS 설명서의 TACACS+](#)
- [TACACS+ 지원 페이지](#)
- [기술 지원 및 문서 - Cisco Systems](#)