

# RADIUS、PAP およびCHAP のデバッグのよくある問題

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## 概要

このドキュメントでは、Password Authentication Protocol ( PAP ) または Challenge Handshake Authentication Protocol ( CHAP ) を使用しているときに、RADIUS に共通する問題をデバッグする方法について詳しく説明します。Microsoft Windows 95、Windows NT、Windows 98、Windows 2000 に共通する PC の設定に加えて、設定例および適切なデバッグ例と不適切なデバッグ例も示します。

## [はじめに](#)

## [表記法](#)

ドキュメント表記の詳細は、『[シスコテクニカルティップスの表記法](#)』を参照してください。

## [前提条件](#)

このドキュメントに関しては個別の前提条件はありません。

## 使用するコンポーネント

このドキュメントの情報は Cisco IOS® ソフトウェア リリース 11.2 以降に基づいています。

このマニュアルの情報は、特定のラボ環境に置かれたデバイスに基づいて作成されました。このドキュメントで使用するすべてのデバイスは、初期（デフォルト）設定の状態から起動しています。実稼動中のネットワークで作業をしている場合、実際にコマンドを使用する前に、その潜在的な影響について理解しておく必要があります。

## PC の一般的な設定

### Windows 95

次に示す手順に従ってください。

1. [ダイヤルアップネットワーク]ウィンドウで接続名を選択し、[ファイル]>[プロパティ]を選択します。
2. [Server Type] タブで、[Type of Dial-up Server] の下にある [Require Encrypted Password] ボックスがチェックされているかどうかを確認します。このボックスがチェックされている場合、PC では、CHAP 認証だけが受け入れられていることを意味します。このボックスがチェックされていない場合、PC では PAP 認証または CHAP 認証が受け入れられていることを意味します。

### Windows NT

次に示す手順に従ってください。

1. [ダイヤルアップネットワーク]ウィンドウで接続名を選択し、[ファイル]>[プロパティ]を選択します。
2. Security タブで、設定を確認します。Accept any authentication including clear text ボックスがチェックされている場合、PC では PAP および CHAP が受け入れられていることを意味します。[Accept only encrypted authentication] ボックスがチェックされている場合、PC では CHAP 認証だけが受け入れられます。

### Windows 98

次に示す手順に従ってください。

1. Dial-Up Networking ウィンドウで、接続名を選択してから、Properties を選択します。
2. Server Types タブで、Advanced Options エリアの設定を確認します。Require encrypted password ボックスがチェックされていない場合、PC では PAP 認証または CHAP 認証が受け入れられていることを意味します。Require encrypted password ボックスがチェックされている場合、PC では CHAP 認証だけが受け入れられていることを意味します。

### Windows 2000

次に示す手順に従ってください。

1. Network and Dial-Up Connections で、接続名を選択してから、Properties を選択します。
2. [Security]タブで、[Advanced] > [Settings] > [Allow these protocols]領域の設定を確認します。  
。 [Unencrypted password (PAP)] ボックスがチェックされている場合、PC では PAP が受け入れられます。 [Challenge Handshake Authentication Protocol (CHAP)] ボックスがチェックされている場合、PC では、RFC 1994 の規定による CHAP が受け入れられます。 [Microsoft CHAP (MS-CHAP)] ボックスがチェックされている場合、PC では MS-CHAP バージョン 1 が受け入れられますが、RFC 1994 の規定による CHAP は受け入れられません。

## 設定およびデバッグ例

### RADIUS およびPAP

#### 設定 - RADIUS と PAP

```
Current configuration:
!
version 11.2
service timestamps debug uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname rtpkrb
!
aaa new-model
!
!--- The following four command lines are specific to !-
-- Cisco IOS 11.2 and later, up until 11.3.3.T. !--- See
below this configuration for commands !--- for other
Cisco IOS releases. ! aaa authentication login default
radius local
aaa authentication ppp default if-needed radius local
aaa authorization exec radius if-authenticated
aaa authorization network radius 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
!
snmp-server community public RW
snmp-server host 171.68.118.100 traps public
radius-server host 171.68.118.101 auth-port 1645 acct-
port 1646
radius-server key cisco
!
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
exec-timeout 0 0
password ww
!
end

```

## 他の Cisco IOS リリース用のコマンド

注：これらのコマンドを使用するには、上記の設定から強調表示されたコマンドを削除し、Cisco IOSリリースで規定されているとおりに貼り付けます。

### Cisco IOS 11.3.3.T から 12.0.5.T よりも前まで

```

aaa authen login default radius local
aaa authen ppp default if-needed radius local
aaa authorization exec default radius if-authenticated
aaa authorization network default radius if-authenticated

```

## Cisco IOS 12.0.5.T 以降

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

### デバッグの例- RADIUS およびPAP

注：デバッグ出力では、太字のテキストがデバッグの問題を強調表示しています。プレーンテキストは、正常なデバッグを示しています。

```
rtpkrb#
rtpkrb#sho deb
General OS:
AAA Authentication debugging is on
AAA Authorization debugging is on
PPP:
PPP authentication debugging is on
PPP protocol negotiation debugging is on
Radius protocol debugging is on
rtpkrb#
4d02h: As1 LCP: I CONFREQ [Closed] id 0 len 20
4d02h: As1 LCP: ACCM 0x00000000 (0x020600000000)
4d02h: As1 LCP: MagicNumber 0x00001F67 (0x050600001F67)
4d02h: As1 LCP: PFC (0x0702)
4d02h: As1 LCP: ACFC (0x0802)
4d02h: As1 LCP: Lower layer not up, discarding packet
%LINK-3-UPDOWN: Interface Async1, changed state to up
4d02h: As1 PPP: Treating connection as a dedicated line
4d02h: As1 PPP: Phase is ESTABLISHING, Active Open
4d02h: As1 LCP: O CONFREQ [Closed] id 85 len 24
4d02h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
4d02h: As1 LCP: AuthProto PAP (0x0304C023)
4d02h: As1 LCP: MagicNumber 0xF54252D5 (0x0506F54252D5)
4d02h: As1 LCP: PFC (0x0702)
4d02h: 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 98 len 12
As1 LCP: AuthProto 0xC123 (0x0308C12301000001)
As1 LCP: O CONFREQ [REQsent] id 99 len 24
As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
As1 LCP: AuthProto PAP (0x0304C023)
As1 LCP: MagicNumber 0xF54D1AF8 (0x0506F54D1AF8)
As1 LCP: PFC (0x0702)
As1 LCP: ACFC (0x0802)
As1 LCP: I CONFREJ [REQsent] id 99 len 8
As1 LCP: AuthProto PAP (0x0304C023)
As1 PPP: Closing connection because remote won't authenticate

4d02h: As1 LCP: I CONFACK [REQsent] id 85 len 24
4d02h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
4d02h: As1 LCP: AuthProto PAP (0x0304C023)
4d02h: As1 LCP: MagicNumber 0xF54252D5 (0x0506F54252D5)
4d02h: As1 LCP: PFC (0x0702)
4d02h: As1 LCP: ACFC (0x0802)
```

```
4d02h: As1 LCP: I CONFREQ [ACKrcvd] id 0 len 20
4d02h: As1 LCP: ACCM 0x00000000 (0x020600000000)
4d02h: As1 LCP: MagicNumber 0x00001F67 (0x050600001F67)
4d02h: As1 LCP: PFC (0x0702)
4d02h: As1 LCP: ACFC (0x0802)
4d02h: As1 LCP: O CONFACK [ACKrcvd] id 0 len 20
4d02h: As1 LCP: ACCM 0x00000000 (0x020600000000)
4d02h: As1 LCP: MagicNumber 0x00001F67 (0x050600001F67)
4d02h: As1 LCP: PFC (0x0702)
4d02h: As1 LCP: ACFC (0x0802)
4d02h: As1 LCP: State is Open
4d02h: As1 PPP: Phase is AUTHENTICATING, by this end
4d02h: As1 PAP: I AUTH-REQ id 14 len 19 from "ddunlap"
4d02h: As1 PAP: Authenticating peer ddunlap
4d02h: AAA/AUTHEN: create_user (0x15AD58) user='ddunlap' ruser=''
      port='Async1' rem_addr='async' authen_type=PAP service=PPP priv=1
4d02h: AAA/AUTHEN/START (1953436918): port='Async1' list=''
      action=LOGIN service=PPP
4d02h: AAA/AUTHEN/START (1953436918): using "default" list
4d02h: AAA/AUTHEN (1953436918): status = UNKNOWN
4d02h: AAA/AUTHEN/START (1953436918): Method=RADIUS
4d02h: RADIUS: Initial Transmit id 7 171.68.118.101:1645,
      Access-Request, len 77
4d02h: Attribute 4 6 0A1F0105
4d02h: Attribute 5 6 00000001
4d02h: Attribute 61 6 00000000
4d02h: Attribute 1 9 6464756E
4d02h: Attribute 2 18 7882E0A5
4d02h: Attribute 6 6 00000002
4d02h: Attribute 7 6 00000001
```

**Radius server is down - produces ERROR - since user is not  
in local database, failover to local FAILs**

```
As1 PAP: I AUTH-REQ id 16 len 19 from "ddunlap"
As1 AUTH: Duplicate authentication request id=16 already in progress
As1 PAP: I AUTH-REQ id 17 len 19 from "ddunlap"
As1 AUTH: Duplicate authentication request id=17 already in progress
RADIUS: Retransmit id 9
As1 PAP: I AUTH-REQ id 18 len 19 from "ddunlap"
As1 AUTH: Duplicate authentication request id=18 already in progress
As1 PAP: I AUTH-REQ id 19 len 19 from "ddunlap"
As1 AUTH: Duplicate authentication request id=19 already in progress
As1 PAP: I AUTH-REQ id 20 len 19 from "ddunlap"
As1 AUTH: Duplicate authentication request id=20 already in progress
RADIUS: Retransmit id 9
As1 PAP: I AUTH-REQ id 21 len 19 from "ddunlap"
As1 AUTH: Duplicate authentication request id=21 already in progress
As1 PAP: I AUTH-REQ id 22 len 19 from "ddunlap"
As1 AUTH: Duplicate authentication request id=22 already in progress
RADIUS: Retransmit id 9
As1 PAP: I AUTH-REQ id 23 len 19 from "ddunlap"
As1 AUTH: Duplicate authentication request id=23 already in progress
As1 LCP: I TERMREQ [Open] id 1 len 8 (0x000002CE)
As1 LCP: O TERMACK [Open] id 1 len 4
As1 PPP: Phase is TERMINATING
RADIUS: No response for id 9
%RADIUS-3-ALLDEADSERVER: No active radius servers found. Id 9.
RADIUS: No response from server
AAA/AUTHEN (3025998849): status = ERROR
AAA/AUTHEN/START (3025998849): Method=LOCAL
AAA/AUTHEN (3025998849): status = FAIL
```

Key in router does not match that of server:

RADIUS: Received from id 21 171.68.118.101:1645, Access-Reject, len 20

RADIUS: Reply for 21 fails decrypt

NT client sends 'DOMAIN\user' and Radius server expects 'user':

RADIUS: Received from id 11 171.68.118.101:1645, Access-Reject, len 20

AAA/AUTHEN (1406749115): status = FAIL

As1 PAP: O AUTH-NAK id 25 len 32 msg is "Password validation failure"

As1 PPP: Phase is TERMINATING

As1 LCP: O TERMREQ [Open] id 108 len 4

AAA/AUTHEN: free\_user (0xDA520) user='CISCO\ddunlap' ruser=''

port='Async1' rem\_addr='async' authen\_type=PAP service=PPP priv=1

Radius server refuses user because user user enters bad password,

or both userid & password are bad:

RADIUS: Received from id 12 171.68.118.101:1645, Access-Reject, len 20

AAA/AUTHEN (733718529): status = FAIL

As1 PAP: O AUTH-NAK id 26 len 32 msg is "Password validation failure"

As1 PPP: Phase is TERMINATING

As1 LCP: O TERMREQ [Open] id 111 len 4

AAA/AUTHEN: free\_user (0x15B030) user='ddunlap' ruser=''

='Async1' rem\_addr='async' authen\_type=PAP service=PPP priv=1

User passes authentication (i.e. username/password is good)

but fails authorization (profile not set up for Service-Type=Framed &  
Framed-Protocol=PPP):

RADIUS: Received from id 13 171.68.118.101:1645, Access-Accept, len 20

RADIUS: saved authorization data for user 15AD58 at 15ADF0

AAA/AUTHEN (56862281): status = PASS

AAA/AUTHOR/LCP As1: Authorize LCP

AAA/AUTHOR/LCP: Async1: (959162008): user='cse'

AAA/AUTHOR/LCP: Async1: (959162008): send AV service=ppp

AAA/AUTHOR/LCP: Async1: (959162008): send AV protocol=lcp

AAA/AUTHOR/LCP: Async1: (959162008): Method=RADIUS

RADIUS: no appropriate authorization type for user.

AAA/AUTHOR (959162008): Post authorization status = FAIL

AAA/AUTHOR/LCP As1: Denied

AAA/AUTHEN: free\_user (0x15AD58) user='cse' ruser=''

port='Async1' rem\_addr='async' authen\_type=PAP service=PPP priv=1

As1 PAP: O AUTH-NAK id 27 len 25 msg is "Authorization failed"

4d02h: RADIUS: Received from id 7 171.68.118.101:1645, Access-Accept, len 32

4d02h: Attribute 6 6 00000002

4d02h: Attribute 7 6 00000001

4d02h: RADIUS: saved authorization data for user 15AD58 at 16C7F4

4d02h: AAA/AUTHEN (1953436918): status = PASS

4d02h: AAA/AUTHOR/LCP As1: Authorize LCP

4d02h: AAA/AUTHOR/LCP: Async1: (2587233868): user='ddunlap'

4d02h: AAA/AUTHOR/LCP: Async1: (2587233868): send AV service=ppp

4d02h: AAA/AUTHOR/LCP: Async1: (2587233868): send AV protocol=lcp

4d02h: AAA/AUTHOR/LCP: Async1: (2587233868): Method=RADIUS

4d02h: AAA/AUTHOR (2587233868): Post authorization status = PASS\_REPL

4d02h: AAA/AUTHOR/LCP As1: Processing AV service=ppp

4d02h: As1 PAP: O AUTH-ACK id 14 len 5

4d02h: As1 PPP: Phase is UP

4d02h: AAA/AUTHOR/FSM As1: (0): Can we start IPCP?

4d02h: AAA/AUTHOR/FSM: Async1: (423372862): user='ddunlap'

4d02h: AAA/AUTHOR/FSM: Async1: (423372862): send AV service=ppp

4d02h: AAA/AUTHOR/FSM: Async1: (423372862): send AV protocol=ip

4d02h: AAA/AUTHOR/FSM: Async1: (423372862): Method=RADIUS

4d02h: AAA/AUTHOR (423372862): Post authorization status = PASS\_REPL

```
4d02h: AAA/AUTHOR/FSM As1: We can start IPCP
4d02h: As1 IPCP: O CONFREQ [Closed] id 17 len 10
4d02h: As1 IPCP: Address 10.31.1.5 (0x03060A1F0105)
4d02h: As1 IPCP: I CONFREQ [REQsent] id 1 len 34
4d02h: As1 IPCP: Address 0.0.0.0 (0x030600000000)
4d02h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
4d02h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
4d02h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
4d02h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
4d02h: AAA/AUTHOR/IPCP As1: Start. Her address 0.0.0.0, we want 0.0.0.0
4d02h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp
4d02h: AAA/AUTHOR/IPCP As1: Authorization succeeded
4d02h: AAA/AUTHOR/IPCP As1: Done. Her address 0.0.0.0, we want 0.0.0.0
4d02h: As1 IPCP: Using pool 'async'
4d02h: As1 IPCP: Pool returned 15.15.15.15
4d02h: As1 IPCP: O CONFREQ [REQsent] id 1 len 22
4d02h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
4d02h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
4d02h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
4d02h: As1 IPCP: I CONFACK [REQsent] id 17 len 10
4d02h: As1 IPCP: Address 10.31.1.5 (0x03060A1F0105)
%LINEPROTO-5-UPDOWN: Line protocol on Interface Async1, changed state to up
4d02h: As1 IPCP: I CONFREQ [ACKrcvd] id 2 len 16
4d02h: As1 IPCP: Address 0.0.0.0 (0x030600000000)
4d02h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
4d02h: AAA/AUTHOR/IPCP As1: Start. Her address 0.0.0.0, we want 15.15.15.15
4d02h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp
4d02h: AAA/AUTHOR/IPCP As1: Authorization succeeded
4d02h: AAA/AUTHOR/IPCP As1: Done. Her address 0.0.0.0, we want 15.15.15.15
4d02h: As1 IPCP: O CONFNAK [ACKrcvd] id 2 len 16
4d02h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)
4d02h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
4d02h: As1 IPCP: I CONFREQ [ACKrcvd] id 3 len 16
4d02h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)
4d02h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
4d02h: AAA/AUTHOR/IPCP As1: Start. Her address 15.15.15.15, we want 15.15.15.15
4d02h: AAA/AUTHOR/IPCP: Async1: (4204275250): user='ddunlap'
4d02h: AAA/AUTHOR/IPCP: Async1: (4204275250): send AV service=ppp
4d02h: AAA/AUTHOR/IPCP: Async1: (4204275250): send AV protocol=ip
4d02h: AAA/AUTHOR/IPCP: Async1: (4204275250): send AV addr*15.15.15.15
4d02h: AAA/AUTHOR/IPCP: Async1: (4204275250): Method=RADIUS
4d02h: AAA/AUTHOR (4204275250): Post authorization status = PASS_REPL
4d02h: AAA/AUTHOR/IPCP As1: Reject 15.15.15.15, using 15.15.15.15
4d02h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp
4d02h: AAA/AUTHOR/IPCP As1: Processing AV addr*15.15.15.15
4d02h: AAA/AUTHOR/IPCP As1: Authorization succeeded
4d02h: AAA/AUTHOR/IPCP As1: Done. Her address 15.15.15.15, we want 15.15.15.15
4d02h: As1 IPCP: O CONFACK [ACKrcvd] id 3 len 16
4d02h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)
4d02h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
4d02h: As1 IPCP: State is Open
4d02h: As1 IPCP: Install route to 15.15.15.15
rtpkrb#
```

## RADIUS およびCHAP

### 設定 - RADIUS と CHAP

```
Current configuration:
!
version 11.2
```



```
service timestamps debug uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname rtpkrb
!
aaa new-model
!
!--- The following four command lines are specific to !-
-- Cisco IOS 11.2 and later, up until 11.3.3.T. !--- See
below this configuration for commands !--- for other
Cisco IOS releases. ! aaa authentication login default
radius local
aaa authentication ppp default if-needed radius local
aaa authorization exec radius if-authenticated
aaa authorization network radius 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
!
snmp-server community public RW
snmp-server host 171.68.118.100 traps public
radius-server host 171.68.118.101 auth-port 1645 acct-
port 1646
radius-server key cisco
!
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
exec-timeout 0 0
password ww
!
end
```

## 他の Cisco IOS リリース用のコマンド

注：これらのコマンドを使用するには、上記の設定から強調表示されたコマンドを削除し、Cisco IOSリリースで規定されているとおりに貼り付けます。

## Cisco IOS 11.3.3.T から 12.0.5.T よりも前まで

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

## Cisco IOS 12.0.5.T 以降

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

## デバッグの例- RADIUS およびCHAP

注：デバッグ出力では、太字の斜体のテキストがデバッグの問題を強調表示しています。プレーンテキストは、正常なデバッグを示しています。

```
rtplib#show debug
General OS:
AAA Authentication debugging is on
AAA Authorization debugging is on
PPP:
PPP authentication debugging is on
PPP protocol negotiation debugging is on
Radius protocol debugging is on
rtplib#
4d02h: As1 LCP: I CONFREQ [Closed] id 0 len 20
4d02h: As1 LCP: ACCM 0x00000000 (0x020600000000)
4d02h: As1 LCP: MagicNumber 0x0000405F (0x05060000405F)
4d02h: As1 LCP: PFC (0x0702)
```

4d02h: As1 LCP: ACFC (0x0802)  
4d02h: As1 LCP: Lower layer not up, discarding packet  
%LINK-3-UPDOWN: Interface Async1, changed state to up  
4d02h: As1 PPP: Treating connection as a dedicated line  
4d02h: As1 PPP: Phase is ESTABLISHING, Active Open  
4d02h: As1 LCP: O CONFREQ [Closed] id 87 len 25  
4d02h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)  
4d02h: As1 LCP: AuthProto CHAP (0x0305C22305)  
4d02h: As1 LCP: MagicNumber 0xF5445B55 (0x0506F5445B55)  
4d02h: As1 LCP: PFC (0x0702)  
4d02h: As1 LCP: ACFC (0x0802)  
4d02h: As1 LCP: I CONFACK [REQsent] id 87 len 25  
4d02h: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)  
4d02h: As1 LCP: AuthProto CHAP (0x0305C22305)  
4d02h: As1 LCP: MagicNumber 0xF5445B55 (0x0506F5445B55)  
4d02h: As1 LCP: PFC (0x0702)  
4d02h: As1 LCP: ACFC (0x0802)  
4d02h: As1 LCP: I CONFREQ [ACKRcvd] id 0 len 20  
4d02h: As1 LCP: ACCM 0x00000000 (0x020600000000)  
4d02h: As1 LCP: MagicNumber 0x0000405F (0x05060000405F)  
4d02h: As1 LCP: PFC (0x0702)  
4d02h: As1 LCP: ACFC (0x0802)  
4d02h: As1 LCP: O CONFACK [ACKRcvd] id 0 len 20  
4d02h: As1 LCP: ACCM 0x00000000 (0x020600000000)  
4d02h: As1 LCP: MagicNumber 0x0000405F (0x05060000405F)  
4d02h: As1 LCP: PFC (0x0702)  
4d02h: As1 LCP: ACFC (0x0802)  
4d02h: As1 LCP: State is Open  
4d02h: As1 PPP: Phase is AUTHENTICATING, by this end  
4d02h: As1 CHAP: O CHALLENGE id 11 len 27 from "rtpkrb"  
4d02h: As1 CHAP: I RESPONSE id 11 len 28 from "chapadd"  
4d02h: AAA/AUTHEN: create\_user (0x15AD58) user='chapadd' ruser=''  
port='Async1' rem\_addr='async' authen\_type=CHAP service=PPP priv=1  
4d02h: AAA/AUTHEN/START (575703226): port='Async1' list=''  
action=LOGIN service=PPP  
4d02h: AAA/AUTHEN/START (575703226): using "default" list  
4d02h: AAA/AUTHEN (575703226): status = UNKNOWN  
4d02h: AAA/AUTHEN/START (575703226): Method=RADIUS  
4d02h: RADIUS: Initial Transmit id 8 171.68.118.101:1645,  
Access-Request, len 78  
4d02h: Attribute 4 6 0A1F0105  
4d02h: Attribute 5 6 00000001  
4d02h: Attribute 61 6 00000000  
4d02h: Attribute 1 9 63686170  
4d02h: Attribute 3 19 0B895D57  
4d02h: Attribute 6 6 00000002  
4d02h: Attribute 7 6 00000001

**Radius server is down - produces ERROR - since user is not  
in local database, failover to local FAILs:**

**As1 CHAP: I RESPONSE id 12 len 28 from "chapadd"**  
**As1 AUTH: Duplicate authentication request id=12 already in progress**  
**As1 CHAP: I RESPONSE id 12 len 28 from "chapadd"**  
**As1 AUTH: Duplicate authentication request id=12 already in progress**  
**RADIUS: Retransmit id 15**  
**As1 CHAP: I RESPONSE id 12 len 28 from "chapadd"**  
**As1 AUTH: Duplicate authentication request id=12 already in progress**  
**As1 CHAP: I RESPONSE id 12 len 28 from "chapadd"**  
**As1 AUTH: Duplicate authentication request id=12 already in progress**  
**As1 CHAP: I RESPONSE id 12 len 28 from "chapadd"**  
**As1 AUTH: Duplicate authentication request id=12 already in progress**  
**RADIUS: Retransmit id 15**  
**As1 CHAP: I RESPONSE id 12 len 28 from "chapadd"**

```
As1 AUTH: Duplicate authentication request id=12 already in progress
As1 CHAP: I RESPONSE id 12 len 28 from "chapadd"
As1 AUTH: Duplicate authentication request id=12 already in progress
RADIUS: Retransmit id 15
As1 CHAP: I RESPONSE id 12 len 28 from "chapadd"
As1 AUTH: Duplicate authentication request id=12 already in progress
As1 LCP: I TERMREQ [Open] id 1 len 8 (0x000002CE)
As1 LCP: O TERMACK [Open] id 1 len 4
As1 PPP: Phase is TERMINATING
RADIUS: id 15, requester hung up.
RADIUS: No response for id 15
RADIUS: No response from server
AAA/AUTHEN (1866705040): status = ERROR
AAA/AUTHEN/START (1866705040): Method=LOCAL
AAA/AUTHEN (1866705040): status = FAIL
As1 CHAP: Unable to validate Response. Username chapadd: Authentication failure
As1 CHAP: O FAILURE id 12 len 26 msg is "Authentication failure"
AAA/AUTHEN: free_user (0x1716B8) user='chapadd' ruser=''
    port='Async1' rem_addr='async' authen_type=CHAP service=PPP priv=1
```

Key in router does not match that of server:

```
RADIUS: Received from id 21 171.68.118.101:1645, Access-Reject, len 20
RADIUS: Reply for 21 fails decrypt
```

NT client sends 'DOMAIN\user' and Radius server expects 'user':

```
RADIUS: Received from id 16 171.68.118.101:1645, Access-Reject, len 20
AAA/AUTHEN (2974782384): status = FAIL
As1 CHAP: Unable to validate Response. Username CISCO\chapadd:
    Authentication failure
As1 CHAP: O FAILURE id 13 len 26 msg is "Authentication failure"
As1 PPP: Phase is TERMINATING
As1 LCP: O TERMREQ [Open] id 131 len 4
AAA/AUTHEN: free_user (0x171700) user='CISCO\chapadd' ruser=''
    port='Async1' rem_addr='async' authen_type=CHAP service=PPP priv=1
```

Radius server refuses user because user is set up for pap,

user enters bad password, or both userid & password are bad:

```
RADIUS: Received from id 17 171.68.118.101:1645, Access-Reject, len 20
AAA/AUTHEN (3898168391): status = FAIL
As1 CHAP: Unable to validate Response. Username ddunlap: Authentication failure
As1 CHAP: O FAILURE id 14 len 26 msg is "Authentication failure"
As1 PPP: Phase is TERMINATING
As1 LCP: O TERMREQ [Open] id 134 len 4
AAA/AUTHEN: free_user (0x1716B8) user='ddunlap' ruser=''
    port='Async1' rem_addr='async' authen_type=CHAP service=PPP priv=1
```

User PASSES authentication (i.e. username/password is good)

but FAILS authorization (profile not set up for Service-Type=Framed & Framed-Protocol=PPP):

```
RADIUS: Received from id 19 171.68.118.101:1645, Access-Accept, len 20
AAA/AUTHEN (2006894701): status = PASS
AAA/AUTHOR/LCP As1: Authorize LCP
AAA/AUTHOR/LCP: Async1: (2370106832): user='noauth'
AAA/AUTHOR/LCP: Async1: (2370106832): send AV service=ppp
AAA/AUTHOR/LCP: Async1: (2370106832): send AV protocol=lcp
AAA/AUTHOR/LCP: Async1: (2370106832): Method=RADIUS
RADIUS: no appropriate authorization type for user.
AAA/AUTHOR (2370106832): Post authorization status = FAIL
AAA/AUTHOR/LCP As1: Denied
```

4d02h: RADIUS: Received from id 8 171.68.118.101:1645, Access-Accept, len 32

4d02h: Attribute 6 6 00000002

4d02h: Attribute 7 6 00000001  
4d02h: AAA/AUTHEN (575703226): status = PASS  
4d02h: AAA/AUTHOR/LCP As1: Authorize LCP  
4d02h: AAA/AUTHOR/LCP: Async1: (4143416222): user='chapadd'  
4d02h: AAA/AUTHOR/LCP: Async1: (4143416222): send AV service=ppp  
4d02h: AAA/AUTHOR/LCP: Async1: (4143416222): send AV protocol=lcp  
4d02h: AAA/AUTHOR/LCP: Async1: (4143416222): Method=RADIUS  
4d02h: AAA/AUTHOR (4143416222): Post authorization status = PASS\_REPL  
4d02h: AAA/AUTHOR/LCP As1: Processing AV service=ppp  
4d02h: As1 CHAP: 0 SUCCESS id 11 len 4  
4d02h: As1 PPP: Phase is UP  
4d02h: AAA/AUTHOR/FSM As1: (0): Can we start IPCP?  
4d02h: AAA/AUTHOR/FSM: Async1: (1916451991): user='chapadd'  
4d02h: AAA/AUTHOR/FSM: Async1: (1916451991): send AV service=ppp  
4d02h: AAA/AUTHOR/FSM: Async1: (1916451991): send AV protocol=ip  
4d02h: AAA/AUTHOR/FSM: Async1: (1916451991): Method=RADIUS  
4d02h: AAA/AUTHOR (1916451991): Post authorization status = PASS\_REPL  
4d02h: AAA/AUTHOR/FSM As1: We can start IPCP  
4d02h: As1 IPCP: O CONFREQ [Closed] id 19 len 10  
4d02h: As1 IPCP: Address 10.31.1.5 (0x03060A1F0105)  
4d02h: As1 IPCP: I CONFREQ [REQsent] id 1 len 34  
4d02h: As1 IPCP: Address 0.0.0.0 (0x030600000000)  
4d02h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)  
4d02h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)  
4d02h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)  
4d02h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)  
4d02h: AAA/AUTHOR/IPCP As1: Start. Her address 0.0.0.0, we want 0.0.0.0  
4d02h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp  
4d02h: AAA/AUTHOR/IPCP As1: Authorization succeeded  
4d02h: AAA/AUTHOR/IPCP As1: Done. Her address 0.0.0.0, we want 0.0.0.0  
4d02h: As1 IPCP: Using pool 'async'  
4d02h: As1 IPCP: Pool returned 15.15.15.15  
4d02h: As1 IPCP: O CONFREQ [REQsent] id 1 len 22  
4d02h: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)  
4d02h: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)  
4d02h: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)  
4d02h: As1 IPCP: I CONFACK [REQsent] id 19 len 10  
4d02h: As1 IPCP: Address 10.31.1.5 (0x03060A1F0105)  
4d02h: As1 IPCP: I CONFREQ [ACKrcvd] id 2 len 16  
4d02h: As1 IPCP: Address 0.0.0.0 (0x030600000000)  
4d02h: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)  
4d02h: AAA/AUTHOR/IPCP As1: Start. Her address 0.0.0.0, we want 15.15.15.15  
4d02h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp  
4d02h: AAA/AUTHOR/IPCP As1: Authorization succeeded  
4d02h: AAA/AUTHOR/IPCP As1: Done. Her address 0.0.0.0, we want 15.15.15.15  
4d02h: As1 IPCP: O CONFNAK [ACKrcvd] id 2 len 16  
4d02h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)  
4d02h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)  
4d02h: As1 IPCP: I CONFREQ [ACKrcvd] id 3 len 16  
4d02h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)  
4d02h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)  
4d02h: AAA/AUTHOR/IPCP As1: Start. Her address 15.15.15.15, we want 15.15.15.15  
4d02h: AAA/AUTHOR/IPCP: Async1: (1096193147): user='chapadd'  
4d02h: AAA/AUTHOR/IPCP: Async1: (1096193147): send AV service=ppp  
4d02h: AAA/AUTHOR/IPCP: Async1: (1096193147): send AV protocol=ip  
4d02h: AAA/AUTHOR/IPCP: Async1: (1096193147): send AV addr\*15.15.15.15  
4d02h: AAA/AUTHOR/IPCP: Async1: (1096193147): Method=RADIUS  
4d02h: AAA/AUTHOR (1096193147): Post authorization status = PASS\_REPL  
4d02h: AAA/AUTHOR/IPCP As1: Reject 15.15.15.15, using 15.15.15.15  
4d02h: AAA/AUTHOR/IPCP As1: Processing AV service=ppp  
4d02h: AAA/AUTHOR/IPCP As1: Processing AV addr\*15.15.15.15  
4d02h: AAA/AUTHOR/IPCP As1: Authorization succeeded  
4d02h: AAA/AUTHOR/IPCP As1: Done. Her address 15.15.15.15, we want 15.15.15.15  
4d02h: As1 IPCP: O CONFACK [ACKrcvd] id 3 len 16

```
4d02h: As1 IPCP: Address 15.15.15.15 (0x03060F0F0F0F)
4d02h: As1 IPCP: PrimaryDNS 171.68.118.103 (0x8106AB447667)
4d02h: As1 IPCP: State is Open
%LINEPROTO-5-UPDOWN: Line protocol on Interface Async1, changed state to up
4d02h: As1 IPCP: Install route to 15.15.15.15
rtpkrb#
```

## デバッグ コマンド

このドキュメントで使用したデバッグ出力例の作成には、次の debug コマンドを使用しました。

注 : debug コマンドを使用する前に、「[debug コマンドに関する重要な情報](#)」を参照してください。

- debug aaa authentication - AAA 認証に関する情報を表示します。
- debug aaa authorization - AAA 許可に関する情報を表示します。
- debug radius - Remote Authentication Dial-In User Server ( RADIUS ) に関連付けられた詳細なデバッグ情報を表示します。
- debug ppp negotiation - PPP の開始時に送信される PPP パケットを表示します。PPP の開始時には PPP オプションがネゴシエートされます。

## 関連情報

- [RADIUS に関するサポート ページ](#)
- [テクニカルサポート - Cisco Systems](#)