

使用TACACS+配置PPP回撥

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簡介

本文顯示路由器和AAA伺服器使用TACACS+進行點對點通訊協定(PPP)回撥的組態範例。其中包括兩個使用AAA伺服器或Windows 2000客戶端指定的回叫號碼的示例。

- 使用本地身份驗證和回撥執行初始測試(刪除`aaa new-model`命令)。如果回叫與本地身份驗證不起作用，則與TACACS+不起作用。有關如何使用本地身份驗證的示例，請參閱[在路由器和Windows PC之間配置MS回撥](#)。
- 使用TACACS+執行進一步的PPP身份驗證測試，無需回撥。如果使用者身份驗證和/或授權失敗，沒有回撥，則身份驗證和授權不適用於回撥。
- 回叫的本地身份驗證和使用TACACS+的PPP身份驗證工作完成後，將來自路由器上本地使用者的資訊(如回叫撥號字串)新增到伺服器上的使用者配置檔案中。

注意：這些測試中的客戶端是Windows 2000 Professional Client(DUN)，它像平常一樣為PPP連線設定，Microsoft回叫設定是「伺服器提供撥號時詢問我」。Cisco IOS®軟體版本11.3.2.T及更高版本支援Microsoft回撥。

必要條件

需求

本文件沒有特定需求。

採用元件

本文中的資訊係根據以下軟體和硬體版本：

- Cisco IOS軟體版本12.1(7)AA
- Cisco安全ACS UNIX 2.3(2)
- 適用於Windows 3.3的Cisco安全ACS
- TACACS免費軟體守護程式4.0(3)

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路正在作用，請確保您已瞭解任何指令可能造成的影響。

慣例

如需文件慣例的詳細資訊，請參閱[思科技術提示慣例](#)。

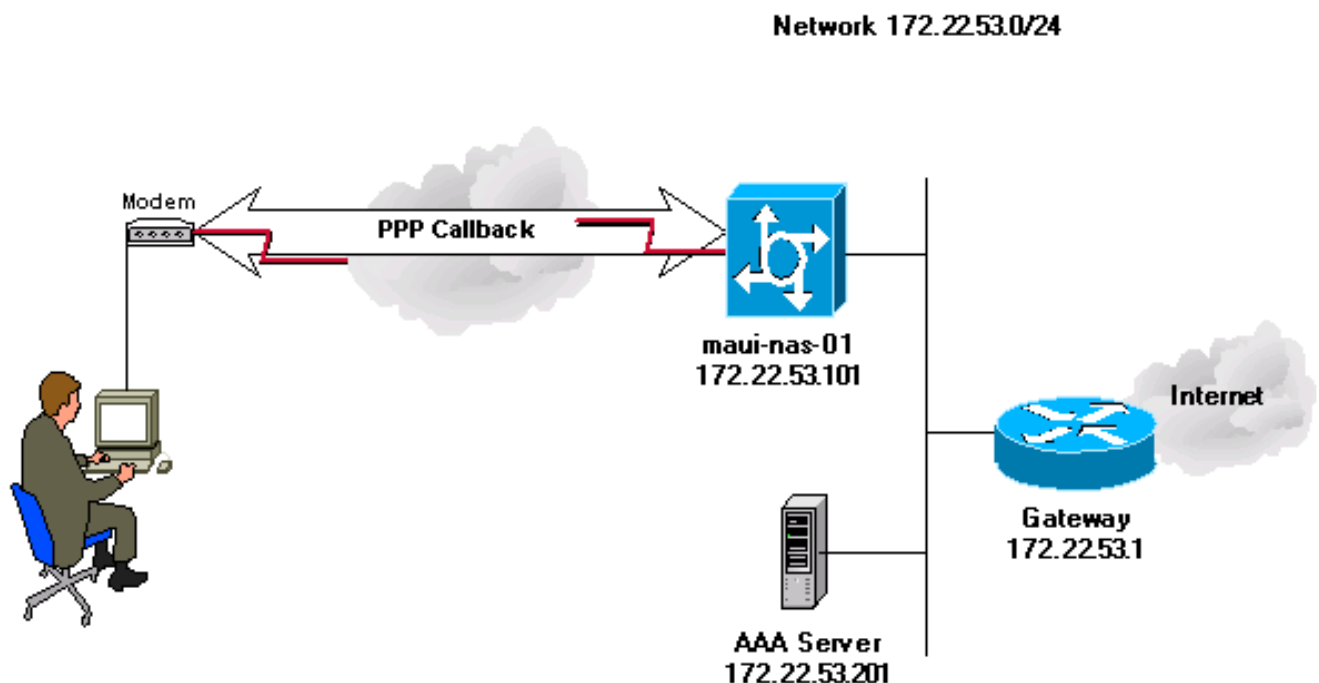
設定

本節提供用於設定本文件中所述功能的資訊。

注意：要查詢有關本文檔中使用的命令的其他資訊，請使用[命令查詢工具](#)（[僅限註冊客戶](#)）。

網路圖表

本檔案會使用下圖中所示的網路設定。



使用伺服器指定號碼的PPP回撥

伺服器配置

以下是使用AAA伺服器指定的電話號碼的PPP回撥的AAA伺服器配置。

伺服器設定 — Cisco Secure ACS for Windows

- 要為使用者和組啟用LCP選項，請轉到Interface Configuration屏幕，選擇TACACS+(Cisco IOS)，並確保為User和Group選中PPP IP和PPP LCP選項。
- 可以在組或使用者設定中配置回撥。**配置回叫組:**在「組設定」螢幕的「回撥」下，選擇「使用Windows資料庫回撥設定」選項（在舊版本的ACS中，此選項稱為「使用Microsoft NT回撥設定」）。然後檢查PPP IP和PPP LCP的選項。選擇Callback line，並在空白欄位中鍵入8407。對於組成員使用者，請轉到User Setup螢幕，然後在Callback下選擇Use group setting。按一下「Submit + Restart」。**為回叫配置單個使用者:**在「使用者設定」螢幕的「回撥」下，選擇「使用此號碼回撥」，並在空白欄位中鍵入84007。然後檢查PPP IP和PPP LCP的選項。按一下「Submit + Restart」。

伺服器設定 — Cisco Secure UNIX

```
<coachella>/export/home/brownr> ViewProfile -p 9900 -u callback_user
User Profile Information
user = callback_user{
profile_id = 113
profile_cycle = 15
member = ccie_study
password = chap "*****"
service=ppp {
protocol=ip {
}
protocol=lcp {
set callback-dialstring=84007
}
}
}
```

伺服器設定 — TACACS+免費軟體

```
user = callback_user {
chap= cleartext "chapuser"
service = ppp protocol = lcp {
callback-dialstring=84007
}
service = ppp protocol = ip {
}
}
```

[使用使用者指定號碼的PPP回撥](#)

本文檔前面的示例是按預定義的號碼（在AAA伺服器中指定）回撥。回叫也可以使用回叫號在使用者指定的號碼完成，並在AAA伺服器中指定為null。這會導致路由器向使用者要求回撥號碼。初始測試應在指定本地回撥的情況下完成。請參閱訪問伺服器和PC之間的[非同步PPP回撥示例](#)，並注意「[callback-dialstring](#)」被指定為引號(“”)。

在這些測試中，客戶端是Windows 2000 Professional客戶端，按常規方式設定PPP連線，而Microsoft回叫設定為「按以下號碼回叫」。

注意：顯示的[網路圖](#)和路[由器配](#)置適用於此處討論的回撥配置。

伺服器配置

此處顯示了使用使用者指定的電話號碼的PPP回撥的AAA伺服器配置。

伺服器設定 — Cisco Secure for Windows

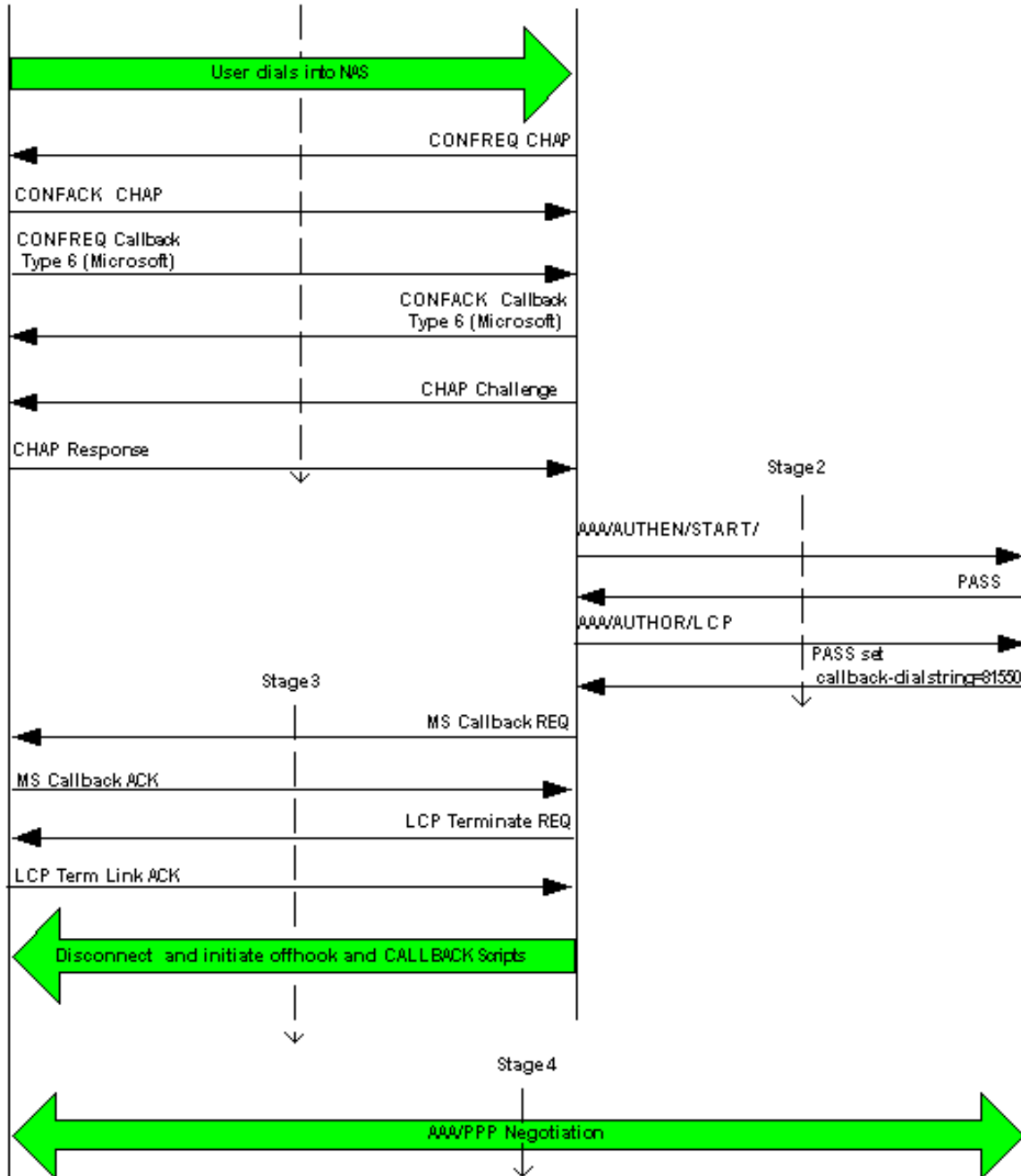
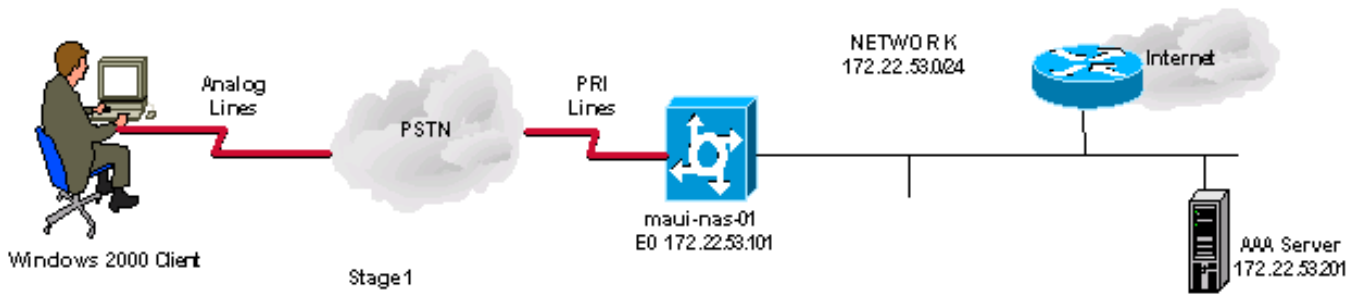
- 要為使用者和組啟用LCP選項，請轉到Interface Configuration屏幕，選擇TACACS+(Cisco IOS)，並確保為User和Group選中PPP IP和PPP LCP選項。
- 可以在組或使用者設定中配置回撥。**配置回叫組:**在Group Setup螢幕的Callback下，選擇Dialup client specify callback number的選項。然後檢查PPP IP和PPP LCP的選項。對於組成員使用者，請轉到User Setup螢幕，然後在Callback下選擇Use group setting。按一下「Submit + Restart」。**為回叫配置單個使用者:**在「使用者設定」螢幕的「回撥」下，選擇「撥號客戶端」指定回撥號碼的選項。然後檢查PPP IP和PPP LCP的選項。按一下「Submit + Restart」。

伺服器設定 — Cisco Secure UNIX

```
<coachella>ViewProfile -p 9900 -u callback_user
User Profile Information
user = callback_user{
profile_id = 113
profile_cycle = 15
member = ccie_study
password = chap "*****"
service=ppp {
protocol=ip {
}
protocol=lcp {
set callback-dialstring=""
}
}
}
```

伺服器設定 — TACACS+免費軟體

```
user = callback_user {
chap= cleartext "chapuser"
service = ppp protocol = lcp {
callback-dialstring=""
}
service = ppp protocol = ip {
}
}
```



路由器配置

NAS配置

```
AS5200
```

```
maui-nas-01#show run
Building configuration...
```

```
Current configuration : 2882 bytes
```

```

!
version 12.1
no service pad
service tcp-keepalives-in
service timestamps debug datetime msec localtime show-
timezone
service timestamps log datetime msec localtime show-
timezone
service password-encryption
!
hostname maui-nas-01
!
logging buffered 4096 debugging
no logging console guaranteed
no logging console
!--- Basic AAA configuration using TACACS+ as the
primary method, !--- local if the ERROR is received
during negotiation. !--- Disable AAA authentication and
authorization on console port. aaa new-model aaa
authentication login default group tacacs+ local aaa
authentication login NO_AUTHEN none aaa authentication
ppp default if-needed group tacacs+ local aaa
authorization exec default group tacacs+ local aaa
authorization exec NO_AUTHOR none aaa authorization
network default group tacacs+ local enable secret
<snipped> ! username admin password <snipped> spe 1/0
1/23 firmware location feature_card_flash spe 2/0 2/4 !
resource-pool disable ! clock timezone CST -6 clock
summer-time CST recurring modem recovery action none ip
subnet-zero no ip source-route no ip finger no ip
domain-lookup ip name-server 172.22.53.210 ! no ip bootp
server isdn switch-type primary-ni ! !--- Chat scripts
"offhook" and "CALLBACK" !--- used intuitively to go
offhook and callback clients. chat-script CALLBACK ABORT
ERROR ABORT BUSY "" "AT" OK "ATDT \T" TIMEOUT 30 CONNECT
\c chat-script offhook "" "ATH1" OK \c ! controller T1 0
framing esf clock source line primary linecode b8zs pri-
group timeslots 1-24 ! interface Ethernet0 ip address
172.22.53.101 255.255.255.0 no ip route-cache no ip
mroute-cache no cdp enable ! interface Serial0:23 no ip
address encapsulation ppp no ip route-cache isdn switch-
type primary-ni isdn incoming-voice modem isdn bchan-
number-order ascending no cdp enable ! interface Group-
Async1 ip unnumbered Ethernet0 encapsulation ppp no ip
route-cache ip tcp header-compression passive no ip
mroute-cache async mode interactive peer default ip
address pool IP_POOL no cdp enable !--- Allows "group-
async 1" to accept PPP callback requests from clients.
!--- Use Challenge Authentication Protocol (CHAP) for
authentication !--- on incoming calls. ppp callback
accept ppp authentication chap callin group-range 1 48 !
ip local pool IP_POOL 172.22.53.141 172.22.53.148 ip
default-gateway 172.22.53.1 no ip http server ip
classless ip route 0.0.0.0 0.0.0.0 172.22.53.1 ! no cdp
run tacacs-server host 172.22.53.201 key <snipped> !
line con 0 authorization exec NO_AUTHOR login
authentication NO_AUTHEN transport input none line 1 48
!--- Specifies chat scripts used during callback to
clients. script modem-off-hook offhook script callback
CALLBACK modem InOut transport preferred none transport
input all transport output none autoselect during-login
autoselect ppp callback forced-wait 5 line aux 0 line
vty 0 4 ! ntp server 172.22.53.1 end

```

[驗證](#)

目前沒有適用於此組態的驗證程序。

[疑難排解](#)

本節提供的資訊可用於對組態進行疑難排解。

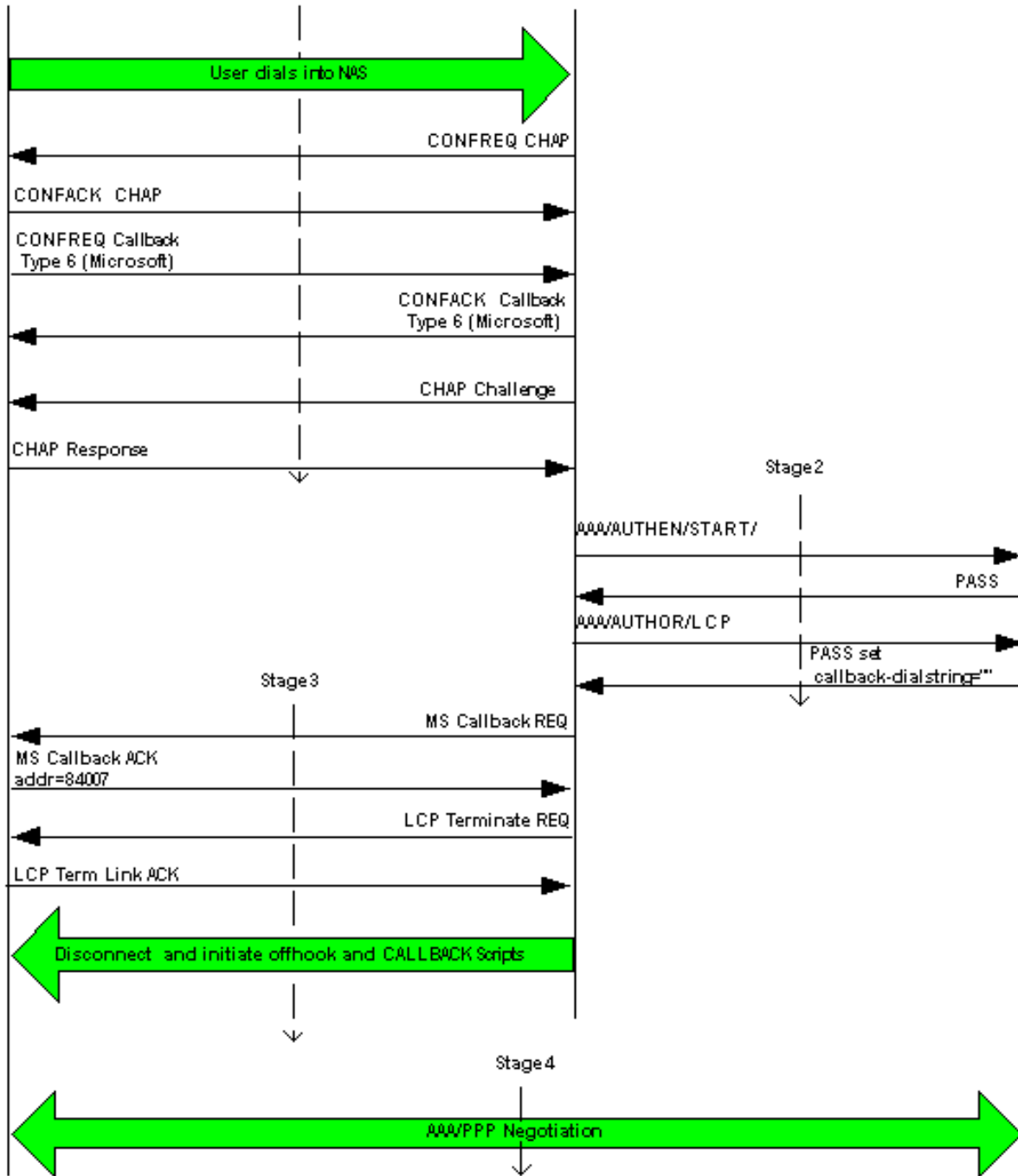
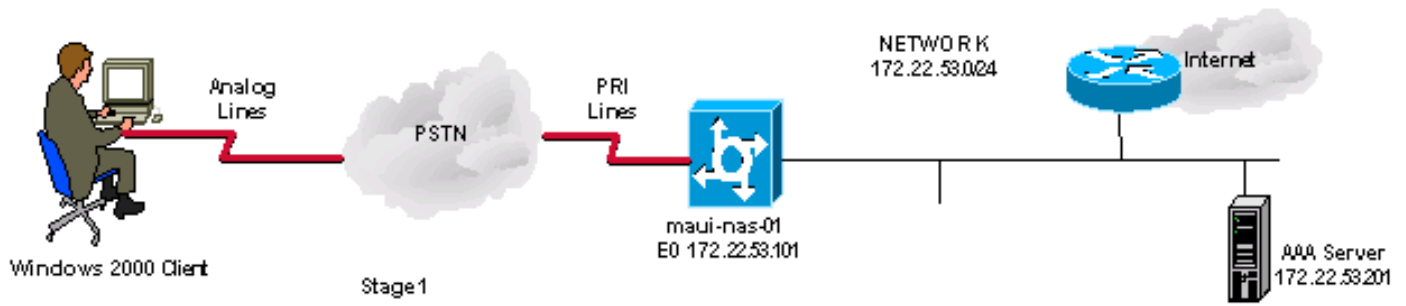
[疑難排解指令](#)

注意：發出debug命令之前，請參閱[有關Debug命令的重要資訊](#)。

- `debug aaa authentication` — 顯示有關AAA身份驗證的資訊。
- `debug aaa authorization` — 顯示有關AAA授權的資訊。
- `debug callback` — 當路由器使用數據機和聊天指令碼在終端線路上回叫時顯示回叫事件。
- `debug chat` — 顯示網路訪問伺服器(NAS)和PC之間傳送的字元。聊天指令碼是一組期望傳送字串對，用於定義資料終端裝置(DTE)-DTE或DTE — 資料通訊裝置(DCE)裝置之間的握手。
- `debug modem` — 顯示接入伺服器上的數據機線路活動。
- `debug ppp negotiation` — 顯示在PPP啟動期間傳輸的PPP資料包，其中協商了PPP選項。
- `debug ppp authentication` — 顯示身份驗證協定消息，包括質詢身份驗證協定(CHAP)資料包交換和口令身份驗證協定(PAP)交換。
- `debug tacacs+` — 顯示與TACACS+關聯的詳細調試資訊。

[調試輸出示例](#)

此圖中的各個階段對應於此圖之後顯示的實際debug輸出。請注意，由於間距考量，某些輸出已換行到兩行上。



階段1

```
maui-nas-01#debug aaa authentication
maui-nas-01#debug aaa authorization
```

```
maui-nas-01#show debug
```

General OS:

AAA Authentication debugging is on

AAA Authorization debugging is on

```
!--- AAA negotiation begins, aborted because PPP is autoselected. Aug 1 09:23:53.320 CST: AAA:
parse name=tty6 idb type=10 tty=6 Aug 1 09:23:53.320 CST: AAA: name=tty6 flags=0x11 type=4
shelf=0 slot=0 adapter=0 port=6 channel=0 Aug 1 09:23:53.324 CST: AAA: parse name=Serial0:4 idb
type=12 tty=-1 Aug 1 09:23:53.328 CST: AAA: name=Serial0:4 flags=0x51 type=1 shelf=0 slot=0
adapter=0 port=0 channel=4 Aug 1 09:23:53.332 CST: AAA/MEMORY: create_user (0x2A0AA0) user=''
ruser='' port='tty6' rem_addr='async/81560' authen_type=ASCII service=LOGIN priv=1 Aug 1
09:23:53.336 CST: AAA/AUTHEN/START (2776623843): port='tty6' list='' action=LOGIN service=LOGIN
Aug 1 09:23:53.340 CST: AAA/AUTHEN/START (2776623843): using "default" list Aug 1 09:23:53.344
CST: AAA/AUTHEN/START (2776623843): Method=tacacs+ (tacacs+) Aug 1 09:23:53.348 CST: TAC+: send
AUTHEN/START packet ver=192 id=2776623843 Aug 1 09:23:53.572 CST: TAC+: ver=192 id=2776623843
received AUTHEN status = GETUSER Aug 1 09:23:53.576 CST: AAA/AUTHEN (2776623843): status =
GETUSER Aug 1 09:23:55.548 CST: AAA/AUTHEN/ABORT: (2776623843) because Autoselected. Aug 1
09:23:55.552 CST: TAC+: send abort reason=Autoselected Aug 1 09:23:55.668 CST: AAA/MEMORY:
free_user (0x2A0AA0) user='' ruser='' port='tty6' rem_addr='async/81560' authen_type=ASCII
service=LOGIN priv=1 Aug 1 09:23:58.124 CST: %LINK-3-UPDOWN: Interface Async6, changed state to
up Aug 1 09:23:58.148 CST: As6 AAA/AUTHOR/FSM: (0): LCP succeeds trivially Aug 1 09:23:58.912
CST: AAA: parse name=Async6 idb type=10 tty=6 Aug 1 09:23:58.916 CST: AAA: name=Async6
flags=0x11 type=4 shelf=0 slot=0 adapter=0 port=6 channel=0 Aug 1 09:23:58.916 CST: AAA: parse
name=Serial0:4 idb type=12 tty=-1 Aug 1 09:23:58.920 CST: AAA: name=Serial0:4 flags=0x51 type=1
shelf=0 slot=0 adapter=0 port=0 channel=4 !--- AAA Authentication start packet is sent to AAA
server. Aug 1 09:23:58.924 CST: AAA/MEMORY: create_user (0x2984EC) user='callback_user'ruser=''
port='Async6' rem_addr='async/81560' authen_type=CHAP service=PPP priv=1 Aug 1 09:23:58.932 CST:
AAA/AUTHEN/START (3527356355): port='Async6' list='' action=LOGIN service=PPP Aug 1 09:23:58.936
CST: AAA/AUTHEN/START (3527356355): using "default" list Aug 1 09:23:58.936 CST: AAA/AUTHEN
(3527356355): status = UNKNOWN Aug 1 09:23:58.940 CST: AAA/AUTHEN/START (3527356355):
Method=tacacs+ (tacacs+) !--- Receive PASS from AAA server. Aug 1 09:23:58.944 CST: TAC+: send
AUTHEN/START packet ver=193 id=3527356355 Aug 1 09:23:59.172 CST: TAC+: ver=193 id=3527356355
received AUTHEN status = PASS Aug 1 09:23:59.172 CST: AAA/AUTHEN (3527356355): status = PASS !---
- AAA Authorization request sent to AAA server for LCP. Aug 1 09:23:59.180 CST: As6
AAA/AUTHOR/LCP: Authorize LCP Aug 1 09:23:59.184 CST: As6 AAA/AUTHOR/LCP (1701401119):
Port='Async6' list='' service=NET Aug 1 09:23:59.188 CST: AAA/AUTHOR/LCP: As6 (1701401119)
user='callback_user' Aug 1 09:23:59.192 CST: As6 AAA/AUTHOR/LCP (1701401119): send AV
service=ppp Aug 1 09:23:59.196 CST: As6 AAA/AUTHOR/LCP (1701401119): send AV protocol=lcp Aug 1
09:23:59.196 CST: As6 AAA/AUTHOR/LCP (1701401119): found list "default" Aug 1 09:23:59.200 CST:
As6 AAA/AUTHOR/LCP (1701401119): Method=tacacs+ (tacacs+) !--- Receive PASS from AAA server, set
the callback dialstring !--- via the "callback-dialstring" Attribute Value Pair. Aug 1
09:23:59.204 CST: AAA/AUTHOR/TAC+: (1701401119): user=callback_user Aug 1 09:23:59.208 CST:
AAA/AUTHOR/TAC+: (1701401119): send AV service=ppp Aug 1 09:23:59.212 CST: AAA/AUTHOR/TAC+:
(1701401119): send AV protocol=lcp Aug 1 09:23:59.440 CST: TAC+: (1701401119): received author
response status = PASS_ADD Aug 1 09:23:59.448 CST: As6 AAA/AUTHOR (1701401119): Post
authorization status = PASS_ADD Aug 1 09:23:59.452 CST: As6 AAA/AUTHOR/LCP: Processing AV
service=ppp Aug 1 09:23:59.456 CST: As6 AAA/AUTHOR/LCP: Processing AV protocol=lcp Aug 1
09:23:59.456 CST: As6 AAA/AUTHOR/LCP: Processing AV callback-dialstring=81550
```

階段2

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

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

```
maui-nas-01#show debug
```

General OS:

AAA Authentication debugging is on

AAA Authorization debugging is on

```
!--- AAA negotiation begins, aborted because PPP is autoselected. Aug 1 09:23:53.320 CST: AAA:
parse name=tty6 idb type=10 tty=6 Aug 1 09:23:53.320 CST: AAA: name=tty6 flags=0x11 type=4
shelf=0 slot=0 adapter=0 port=6 channel=0 Aug 1 09:23:53.324 CST: AAA: parse name=Serial0:4 idb
type=12 tty=-1 Aug 1 09:23:53.328 CST: AAA: name=Serial0:4 flags=0x51 type=1 shelf=0 slot=0
adapter=0 port=0 channel=4 Aug 1 09:23:53.332 CST: AAA/MEMORY: create_user (0x2A0AA0) user=''
ruser='' port='tty6' rem_addr='async/81560' authen_type=ASCII service=LOGIN priv=1 Aug 1
09:23:53.336 CST: AAA/AUTHEN/START (2776623843): port='tty6' list='' action=LOGIN service=LOGIN
Aug 1 09:23:53.340 CST: AAA/AUTHEN/START (2776623843): using "default" list Aug 1 09:23:53.344
CST: AAA/AUTHEN/START (2776623843): Method=tacacs+ (tacacs+) Aug 1 09:23:53.348 CST: TAC+: send
```

AUTHEN/START packet ver=192 id=2776623843 Aug 1 09:23:53.572 CST: TAC+: ver=192 id=2776623843 received AUTHEN status = GETUSER Aug 1 09:23:53.576 CST: AAA/AUTHEN (2776623843): status = GETUSER Aug 1 09:23:55.548 CST: AAA/AUTHEN/ABORT: (2776623843) because Autoselected. Aug 1 09:23:55.552 CST: TAC+: send abort reason=Autoselected Aug 1 09:23:55.668 CST: AAA/MEMORY: free_user (0x2A0AA0) user='' ruser='' port='tty6' rem_addr='async/81560' authen_type=ASCII service=LOGIN priv=1 Aug 1 09:23:58.124 CST: %LINK-3-UPDOWN: Interface Async6, changed state to up Aug 1 09:23:58.148 CST: As6 AAA/AUTHOR/FSM: (0): LCP succeeds trivially Aug 1 09:23:58.912 CST: AAA: parse name=Async6 idb type=10 tty=6 Aug 1 09:23:58.916 CST: AAA: name=Async6 flags=0x11 type=4 shelf=0 slot=0 adapter=0 port=6 channel=0 Aug 1 09:23:58.916 CST: AAA: parse name=Serial0:4 idb type=12 tty=-1 Aug 1 09:23:58.920 CST: AAA: name=Serial0:4 flags=0x51 type=1 shelf=0 slot=0 adapter=0 port=0 channel=4 *!--- AAA Authentication start packet is sent to AAA server.* Aug 1 09:23:58.924 CST: AAA/MEMORY: create_user (0x2984EC) user='callback_user'ruser='' port='Async6' rem_addr='async/81560' authen_type=CHAP service=PPP priv=1 Aug 1 09:23:58.932 CST: AAA/AUTHEN/START (3527356355): port='Async6' list='' action=LOGIN service=PPP Aug 1 09:23:58.936 CST: AAA/AUTHEN (3527356355): status = UNKNOWN Aug 1 09:23:58.940 CST: AAA/AUTHEN/START (3527356355): Method=tacacs+ (tacacs+) *!--- Receive PASS from AAA Server.* Aug 1 09:23:58.944 CST: TAC+: send AUTHEN/START packet ver=193 id=3527356355 Aug 1 09:23:59.172 CST: TAC+: ver=193 id=3527356355 received AUTHEN status = PASS Aug 1 09:23:59.172 CST: AAA/AUTHEN (3527356355): status = PASS *!--- AAA Authorization request sent to AAA server for LCP.* Aug 1 09:23:59.180 CST: As6 AAA/AUTHOR/LCP: Authorize LCP Aug 1 09:23:59.184 CST: As6 AAA/AUTHOR/LCP (1701401119): Port='Async6' list='' service=NET Aug 1 09:23:59.188 CST: AAA/AUTHOR/LCP: As6 (1701401119) user='callback_user' Aug 1 09:23:59.192 CST: As6 AAA/AUTHOR/LCP (1701401119): send AV service=ppp Aug 1 09:23:59.196 CST: As6 AAA/AUTHOR/LCP (1701401119): send AV protocol=lcp Aug 1 09:23:59.196 CST: As6 AAA/AUTHOR/LCP (1701401119): found list "default" Aug 1 09:23:59.200 CST: As6 AAA/AUTHOR/LCP (1701401119): Method=tacacs+ (tacacs+) *!--- Receive PASS from AAA Server, set the callback dialstring !--- via the "callback-dialstring" Attribute Value Pair.* Aug 1 09:23:59.204 CST: AAA/AUTHOR/TAC+: (1701401119): user=callback_user Aug 1 09:23:59.208 CST: AAA/AUTHOR/TAC+: (1701401119): send AV service=ppp Aug 1 09:23:59.212 CST: AAA/AUTHOR/TAC+: (1701401119): send AV protocol=lcp Aug 1 09:23:59.440 CST: TAC+: (1701401119): received author response status = PASS_ADD Aug 1 09:23:59.448 CST: As6 AAA/AUTHOR (1701401119): Post authorization status = PASS_ADD Aug 1 09:23:59.452 CST: As6 AAA/AUTHOR/LCP: Processing AV service=ppp Aug 1 09:23:59.456 CST: As6 AAA/AUTHOR/LCP: Processing AV protocol=lcp Aug 1 09:23:59.456 CST: As6 AAA/AUTHOR/LCP: Processing AV callback-dialstring=81550

階段3

maui-nas-01#show debug

General OS:

Modem control/process activation debugging is on

PPP:

PPP protocol negotiation debugging is on

Chat Scripts:

Chat scripts activity debugging is on

Callback:

Callback activity debugging is on

Aug 1 09:33:38.862 CST: As7 MCB: User callback_user Callback Number
- Server 81550

Aug 1 09:33:38.870 CST: Async7 PPP: O MCB Request(1) id 1 len 7

Aug 1 09:33:38.874 CST: Async7 MCB: O 1 1 0 7 3 3 0

Aug 1 09:33:38.874 CST: As7 MCB: O Request Id 1 Callback Type
Server-Num delay 0

Aug 1 09:33:38.878 CST: As7 PPP: Phase is CBCP

Aug 1 09:33:39.018 CST: Async7 PPP: I MCB Response(2) id 1 len 7

Aug 1 09:33:39.022 CST: Async7 MCB: I 2 1 0 7 3 3 C

Aug 1 09:33:39.026 CST: As7 MCB: Received response

Aug 1 09:33:39.026 CST: As7 MCB: Response CBK-Server-Num 3 3 12

Aug 1 09:33:39.034 CST: Async7 PPP: O MCB Ack(3) id 2 len 7

Aug 1 09:33:39.034 CST: Async7 MCB: O 3 2 0 7 3 3 C

Aug 1 09:33:39.038 CST: As7 MCB: O Ack Id 2 Callback Type Server-Num delay 12

Aug 1 09:33:39.042 CST: As7 MCB: Negotiated MCB with peer

!--- NAS sends LCP Terminate Request from client. Aug 1 09:33:39.182 CST: As7 LCP: I TERMREQ

[Open] id 6 len 16 (0x566260A7003CCD7400000000) *!--- NAS receives Terminate Acknowledge from client.* Aug 1 09:33:39.186 CST: As7 LCP: O TERMACK [Open] id 6 len 4 Aug 1 09:33:39.190 CST: As7 MCB: Peer terminating the link Aug 1 09:33:39.194 CST: As7 MCB: Link terminated by peer, Callback Needed Aug 1 09:33:39.198 CST: As7 MCB: Initiate Callback for callback_user at 81550 using Async Aug 1 09:33:39.202 CST: As7 MCB: Async-callback in progress Aug 1 09:33:39.206 CST: As7 PPP: Phase is TERMINATING *!--- NAS disconnects and initiates offhook and CALLBACK chat scripts.* Aug 1 09:33:39.210 CST: TTY7 Callback PPP process creation Aug 1 09:33:39.218 CST: TTY7 Callback process initiated, user: dialstring 81550 Aug 1 09:33:40.110 CST: %ISDN-6-DISCONNECT: Interface Serial0:5 disconnected from unknown , call lasted 19 seconds Aug 1 09:33:40.294 CST: TTY7: Async Int reset: Dropping DTR Aug 1 09:33:41.210 CST: As7 LCP: TIMEOUT: State TERMSent Aug 1 09:33:41.210 CST: As7 LCP: State is Closed Aug 1 09:33:41.214 CST: As7 PPP: Phase is DOWN Aug 1 09:33:41.218 CST: As7 PPP: Phase is ESTABLISHING, Passive Open Aug 1 09:33:41.226 CST: As7 LCP: State is Listen Aug 1 09:33:42.298 CST: %LINK-5-CHANGED: Interface Async7, changed state to reset Aug 1 09:33:42.318 CST: As7 LCP: State is Closed Aug 1 09:33:42.318 CST: As7 PPP: Phase is DOWN Aug 1 09:33:45.302 CST: As7 IPCP: Remove route to 172.22.53.147 Aug 1 09:33:45.306 CST: TTY7 Callback forced wait = 5 seconds Aug 1 09:33:47.302 CST: %LINK-3-UPDOWN: Interface Async7, changed state to down Aug 1 09:33:47.322 CST: As7 LCP: State is Closed Aug 1 09:33:50.310 CST: CHAT7: Matched chat script offhook to string offhook Aug 1 09:33:50.314 CST: CHAT7: Asserting DTR Aug 1 09:33:50.318 CST: CHAT7: Chat script offhook started Aug 1 09:33:50.322 CST: CHAT7: Sending string: ATH1 Aug 1 09:33:50.322 CST: CHAT7: Expecting string: OK Aug 1 09:33:50.634 CST: CHAT7: Completed match for expect: OK Aug 1 09:33:50.638 CST: CHAT7: Sending string: \c Aug 1 09:33:50.638 CST: CHAT7: Chat script offhook finished, status = Success Aug 1 09:33:50.642 CST: CHAT7: Matched chat script CALLBACK to string CALLBACK Aug 1 09:33:50.650 CST: CHAT7: Asserting DTR Aug 1 09:33:50.650 CST: CHAT7: Chat script CALLBACK started Aug 1 09:33:50.654 CST: CHAT7: Sending string: AT Aug 1 09:33:50.658 CST: CHAT7: Expecting string: OK Aug 1 09:33:50.686 CST: CHAT7: Completed match for expect: OK Aug 1 09:33:50.686 CST: CHAT7: Sending string: ATDT \T<81550> Aug 1 09:33:50.694 CST: CHAT7: Expecting string: CONNECT Aug 1 09:34:04.051 CST: %ISDN-6-CONNECT: Interface Serial0:0 is now connected to 81550 Aug 1 09:34:17.543 CST: CHAT7: Completed match for expect: CONNECT Aug 1 09:34:17.547 CST: CHAT7: Sending string: \c Aug 1 09:34:17.547 CST: CHAT7: Chat script CALLBACK finished, status = Success

第4階段

```
maui-nas-01#debug aaa authentication
maui-nas-01#debug aaa authorization
maui-nas-01#debug ppp authentication
```

```
maui-nas-01#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
```

```
!--- AAA/ PPP negotiation begins. Aug 1 09:42:15.096 CST: TTY8: Callback starting PPP directly with valid auth info Aug 1 09:42:15.104 CST: TTY8: destroy timer type 1 Aug 1 09:42:15.104 CST: TTY8: destroy timer type 0 Aug 1 09:42:15.160 CST: As8 LCP: I CONFREQ [Closed] id 0 len 47 Aug 1 09:42:15.164 CST: As8 LCP: ACCM 0x00000000 (0x020600000000) Aug 1 09:42:15.168 CST: As8 LCP: MagicNumber 0x5FA259DE (0x05065FA259DE) Aug 1 09:42:15.172 CST: As8 LCP: PFC (0x0702) Aug 1 09:42:15.172 CST: As8 LCP: ACFC (0x0802) Aug 1 09:42:15.176 CST: As8 LCP: MRRU 1614 (0x1104064E) Aug 1 09:42:15.180 CST: As8 LCP: EndpointDisc 1 Local Aug 1 09:42:15.184 CST: As8 LCP: (0x131701DC57FC8B1CEA4CCEA064C0D958) Aug 1 09:42:15.188 CST: As8 LCP: (0x82667300000000) Aug 1 09:42:15.192 CST: As8 LCP: Lower layer not up, Fast Starting Aug 1 09:42:15.196 CST: As8 PPP: Treating connection as a callout Aug 1 09:42:15.200 CST: As8 PPP: Phase is ESTABLISHING, Active Open Aug 1 09:42:15.204 CST: AAA/MEMORY: dup_user (0x4DDDF8) user='callback_user' ruser='' port='Async8' rem_addr='async/81560' authen_type=CHAP service=PPP priv=1 source='AAA dup lcp_reset' Aug 1 09:42:15.212 CST: AAA/MEMORY: free_user (0x2F5418) user='callback_user' ruser='' port='Async8' rem_addr='async/81560' authen_type=CHAP service=PPP priv=1 Aug 1 09:42:15.216 CST: As8 AAA/AUTHEN: Method=IF-NEEDED: no authentication needed. user='callback_user' port='Async8' rem_addr='async/81560' Aug 1 09:42:15.224 CST: As8 AAA/AUTHOR/FSM: (0): LCP succeeds trivially Aug 1 09:42:15.228 CST: As8 LCP: O CONFREQ [Closed] id 2 len 20 Aug 1 09:42:15.232 CST: As8 LCP: ACCM 0x000A0000 (0x0206000A0000) Aug 1 09:42:15.236 CST: As8 LCP: MagicNumber 0x6530AEA5 (0x05066530AEA5) Aug 1 09:42:15.240 CST: As8 LCP: PFC
```

(0x0702) Aug 1 09:42:15.240 CST: As8 LCP: ACFC (0x0802) Aug 1 09:42:15.248 CST: As8 LCP: O CONFREJ [REQsent] id 0 len 8 Aug 1 09:42:15.252 CST: As8 LCP: MRRU 1614 (0x1104064E) Aug 1 09:42:15.260 CST: %LINK-3-UPDOWN: Interface Async8, changed state to up Aug 1 09:42:15.368 CST: As8 LCP: I CONFACK [REQsent] id 2 len 20 Aug 1 09:42:15.372 CST: As8 LCP: ACCM 0x000A0000 (0x0206000A0000) Aug 1 09:42:15.376 CST: As8 LCP: MagicNumber 0x6530AEA5 (0x05066530AEA5) Aug 1 09:42:15.380 CST: As8 LCP: PFC (0x0702) Aug 1 09:42:15.384 CST: As8 LCP: ACFC (0x0802) Aug 1 09:42:15.404 CST: As8 LCP: I CONFREQ [ACKrcvd] id 1 len 43 Aug 1 09:42:15.408 CST: As8 LCP: ACCM 0x00000000 (0x020600000000) Aug 1 09:42:15.412 CST: As8 LCP: MagicNumber 0x5FA259DE (0x05065FA259DE) Aug 1 09:42:15.412 CST: As8 LCP: PFC (0x0702) Aug 1 09:42:15.416 CST: As8 LCP: ACFC (0x0802) Aug 1 09:42:15.420 CST: As8 LCP: EndpointDisc 1 Local Aug 1 09:42:15.424 CST: As8 LCP: (0x131701DC57FC8B1CEA4CCEA064C0D958) Aug 1 09:42:15.428 CST: As8 LCP: (0x82667300000000) Aug 1 09:42:15.432 CST: As8 LCP: O CONFACK [ACKrcvd] id 1 len 43 Aug 1 09:42:15.436 CST: As8 LCP: ACCM 0x00000000 (0x020600000000) Aug 1 09:42:15.440 CST: As8 LCP: MagicNumber 0x5FA259DE (0x05065FA259DE) Aug 1 09:42:15.444 CST: As8 LCP: PFC (0x0702) Aug 1 09:42:15.448 CST: As8 LCP: ACFC (0x0802) Aug 1 09:42:15.452 CST: As8 LCP: EndpointDisc 1 Local Aug 1 09:42:15.456 CST: As8 LCP: (0x131701DC57FC8B1CEA4CCEA064C0D958) Aug 1 09:42:15.460 CST: As8 LCP: (0x82667300000000) Aug 1 09:42:15.460 CST: As8 LCP: State is Open Aug 1 09:42:15.468 CST: As8 AAA/AUTHOR/LCP: Authorize LCP Aug 1 09:42:15.468 CST: As8 AAA/AUTHOR/LCP (2679858087): Port='Async8' list='' service=NET Aug 1 09:42:15.472 CST: AAA/AUTHOR/LCP: As8 (2679858087) user='callback_user' Aug 1 09:42:15.476 CST: As8 AAA/AUTHOR/LCP (2679858087): send AV service=ppp Aug 1 09:42:15.480 CST: As8 AAA/AUTHOR/LCP (2679858087): send AV protocol=lcp Aug 1 09:42:15.484 CST: As8 AAA/AUTHOR/LCP (2679858087): found list "default" Aug 1 09:42:15.488 CST: As8 AAA/AUTHOR/LCP (2679858087): Method=tacacs+ (tacacs+) Aug 1 09:42:15.492 CST: AAA/AUTHOR/TAC+: (2679858087): user=callback_user Aug 1 09:42:15.492 CST: AAA/AUTHOR/TAC+: (2679858087): send AV service=ppp Aug 1 09:42:15.496 CST: AAA/AUTHOR/TAC+: (2679858087): send AV protocol=lcp Aug 1 09:42:15.724 CST: TAC+: (2679858087): received author response status = PASS_ADD Aug 1 09:42:15.732 CST: As8 AAA/AUTHOR (2679858087): Post authorization status = PASS_ADD Aug 1 09:42:15.736 CST: As8 AAA/AUTHOR/LCP: Processing AV service=ppp Aug 1 09:42:15.740 CST: As8 AAA/AUTHOR/LCP: Processing AV protocol=lcp Aug 1 09:42:15.740 CST: As8 AAA/AUTHOR/LCP: Processing AV callback-dialstring=81550 Aug 1 09:42:15.748 CST: As8 PPP: Phase is UP Aug 1 09:42:15.752 CST: As8 AAA/AUTHOR/FSM: (0): Can we start IPCP? Aug 1 09:42:15.756 CST: As8 AAA/AUTHOR/FSM (3644410406): Port='Async8' list='' service=NET Aug 1 09:42:15.760 CST: AAA/AUTHOR/FSM: As8 (3644410406) user='callback_user' Aug 1 09:42:15.764 CST: As8 AAA/AUTHOR/FSM (3644410406): send AV service=ppp Aug 1 09:42:15.768 CST: As8 AAA/AUTHOR/FSM (3644410406): send AV protocol=ip Aug 1 09:42:15.768 CST: As8 AAA/AUTHOR/FSM (3644410406): found list "default" Aug 1 09:42:15.772 CST: As8 AAA/AUTHOR/FSM (3644410406): Method=tacacs+ (tacacs+) Aug 1 09:42:15.776 CST: AAA/AUTHOR/TAC+: (3644410406): user=callback_user Aug 1 09:42:15.780 CST: AAA/AUTHOR/TAC+: (3644410406): send AV service=ppp Aug 1 09:42:15.784 CST: AAA/AUTHOR/TAC+: (3644410406): send AV protocol=ip Aug 1 09:42:16.016 CST: TAC+: (3644410406): received author response status = PASS_ADD Aug 1 09:42:16.020 CST: As8 AAA/AUTHOR (3644410406): Post authorization status = PASS_ADD Aug 1 09:42:16.028 CST: As8 AAA/AUTHOR/FSM: We can start IPCP Aug 1 09:42:16.032 CST: As8 IPCP: O CONFREQ [Closed] id 1 len 16 Aug 1 09:42:16.036 CST: As8 IPCP: CompressType VJ 15 slots (0x0206002D0F00) Aug 1 09:42:16.040 CST: As8 IPCP: Address 172.22.53.101 (0x0306AC163565) Aug 1 09:42:16.048 CST: As8 LCP: I IDENTIFY [Open] id 2 len 18 magic 0x5FA259DEMSRASV5.00 Aug 1 09:42:16.052 CST: As8 LCP: I IDENTIFY [Open] id 3 len 29 magic 0x5FA259DEMSRAS-1-RBROWN-LAPTOP Aug 1 09:42:16.056 CST: As8 CCP: I CONFREQ [Not negotiated] id 4 len 10 Aug 1 09:42:16.060 CST: As8 CCP: MS-PPC supported bits 0x00000001 (0x120600000001) Aug 1 09:42:16.068 CST: As8 LCP: O PROTREQ [Open] id 3 len 16 protocol CCP (0x80FD0104000A120600000001) Aug 1 09:42:16.080 CST: As8 IPCP: I CONFREQ [REQsent] id 5 len 40 Aug 1 09:42:16.084 CST: As8 IPCP: CompressType VJ 15 slots CompressSlotID (0x0206002D0F01) Aug 1 09:42:16.088 CST: As8 IPCP: Address 0.0.0.0 (0x030600000000) Aug 1 09:42:16.092 CST: As8 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000) Aug 1 09:42:16.096 CST: As8 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000) Aug 1 09:42:16.100 CST: As8 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000) Aug 1 09:42:16.104 CST: As8 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000) Aug 1 09:42:16.108 CST: As8 AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0, we want 172.22.53.148 Aug 1 09:42:16.112 CST: As8 AAA/AUTHOR/IPCP: Processing AV service=ppp Aug 1 09:42:16.116 CST: As8 AAA/AUTHOR/IPCP: Processing AV protocol=ip Aug 1 09:42:16.120 CST: As8 AAA/AUTHOR/IPCP: Authorization succeeded Aug 1 09:42:16.120 CST: As8 AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we want 172.22.53.148 Aug 1 09:42:16.128 CST: As8 IPCP: O CONFREQ [REQsent] id 5 len 22 Aug 1 09:42:16.132 CST: As8 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000) Aug 1 09:42:16.136 CST: As8 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000) Aug 1 09:42:16.144 CST: As8 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000) Aug 1 09:42:16.184 CST: As8 IPCP: I CONFACK [REQsent] id 1 len 16 Aug 1 09:42:16.188 CST: As8 IPCP: CompressType VJ 15 slots (0x0206002D0F00) Aug 1 09:42:16.192 CST: As8 IPCP: Address 172.22.53.101 (0x0306AC163565) Aug 1 09:42:16.680 CST: As8 IPCP: I CONFREQ [ACKrcvd] id 6 len 22 Aug 1 09:42:16.684 CST: As8 IPCP:

CompressType VJ 15 slots CompressSlotID (0x0206002D0F01) Aug 1 09:42:16.688 CST: As8 IPCP: Address 0.0.0.0 (0x030600000000) Aug 1 09:42:16.692 CST: As8 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000) Aug 1 09:42:16.696 CST: As8 AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0, we want 172.22.53.148 Aug 1 09:42:16.700 CST: As8 AAA/AUTHOR/IPCP: Processing AV service=ppp Aug 1 09:42:16.704 CST: As8 AAA/AUTHOR/IPCP: Processing AV protocol=ip Aug 1 09:42:16.708 CST: As8 AAA/AUTHOR/IPCP: Authorization succeeded Aug 1 09:42:16.708 CST: As8 AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we want 172.22.53.148 Aug 1 09:42:16.716 CST: As8 IPCP: O CONFNAK [ACKrcvd] id 6 len 16 Aug 1 09:42:16.720 CST: As8 IPCP: Address 172.22.53.148 (0x0306AC163594) Aug 1 09:42:16.724 CST: As8 IPCP: PrimaryDNS 172.22.53.210 (0x8106AC1635D2) Aug 1 09:42:16.748 CST: %LINEPROTO-5-UPDOWN: Line protocol on Interface Async8, changed state to up Aug 1 09:42:16.852 CST: As8 IPCP: I CONFREQ [ACKrcvd] id 7 len 22 Aug 1 09:42:16.856 CST: As8 IPCP: CompressType VJ 15 slots CompressSlotID (0x0206002D0F01) Aug 1 09:42:16.860 CST: As8 IPCP: Address 172.22.53.148 (0x0306AC163594) Aug 1 09:42:16.864 CST: As8 IPCP: PrimaryDNS 172.22.53.210 (0x8106AC1635D2) Aug 1 09:42:16.868 CST: As8 AAA/AUTHOR/IPCP: Start. Her address 172.22.53.148, we want 172.22.53.148 Aug 1 09:42:16.876 CST: As8 AAA/AUTHOR/IPCP (4022385425): Port='Async8' list=''service=NET Aug 1 09:42:16.880 CST: AAA/AUTHOR/IPCP: As8 (4022385425) user='callback_user' Aug 1 09:42:16.884 CST: As8 AAA/AUTHOR/IPCP (4022385425): send AV service=ppp Aug 1 09:42:16.888 CST: As8 AAA/AUTHOR/IPCP (4022385425): send AV protocol=ip Aug 1 09:42:16.892 CST: As8 AAA/AUTHOR/IPCP (4022385425): send AV addr*172.22.53.148 Aug 1 09:42:16.892 CST: As8 AAA/AUTHOR/IPCP (4022385425): found list "default" Aug 1 09:42:16.896 CST: As8 AAA/AUTHOR/IPCP (4022385425): Method=tacacs+ (tacacs+) Aug 1 09:42:16.900 CST: AAA/AUTHOR/TAC+: (4022385425): user=callback_user Aug 1 09:42:16.904 CST: AAA/AUTHOR/TAC+: (4022385425): send AV service=ppp Aug 1 09:42:16.908 CST: AAA/AUTHOR/TAC+: (4022385425): send AV protocol=ip Aug 1 09:42:16.912 CST: AAA/AUTHOR/TAC+: (4022385425): send AV addr*172.22.53.148 Aug 1 09:42:17.140 CST: TAC+: (4022385425): received author response status = PASS_REPL Aug 1 09:42:17.148 CST: As8 AAA/AUTHOR (4022385425): Post authorization status = PASS_REPL Aug 1 09:42:17.156 CST: As8 AAA/AUTHOR/IPCP: Reject 172.22.53.148, using 172.22.53.148 Aug 1 09:42:17.164 CST: As8 AAA/AUTHOR/IPCP: Processing AV service=ppp Aug 1 09:42:17.164 CST: As8 AAA/AUTHOR/IPCP: Processing AV protocol=ip Aug 1 09:42:17.168 CST: As8 AAA/AUTHOR/IPCP: Processing AV addr*172.22.53.148 Aug 1 09:42:17.172 CST: As8 AAA/AUTHOR/IPCP: Authorization succeeded Aug 1 09:42:17.176 CST: As8 AAA/AUTHOR/IPCP: Done. Her address 172.22.53.148, we want 172.22.53.148 Aug 1 09:42:17.180 CST: As8 IPCP: O CONFACK [ACKrcvd] id 7 len 22 Aug 1 09:42:17.184 CST: As8 IPCP: CompressType VJ 15 slots CompressSlotID (0x0206002D0F01) Aug 1 09:42:17.192 CST: As8 IPCP: Address 172.22.53.148 (0x0306AC163594) Aug 1 09:42:17.196 CST: As8 IPCP: PrimaryDNS 172.22.53.210 (0x8106AC1635D2) Aug 1 09:42:17.200 CST: As8 IPCP: State is Open Aug 1 09:42:17.220 CST: As8 IPCP: Install route to 172.22.53.148

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