

Figure 1 Section 7 PPP Callback with TACACS+

First, Configure Local Callback Before Involving TACACS+

```
hostname R6
!
!
username R8 password 0 cisco
aaa new-model
!
!
aaa authentication login default local
aaa authentication login no_login none
aaa authentication ppp default local
!
interface BRI0/0
no ip address
encapsulation ppp
dialer pool-member 10
isdn switch-type basic-ni
isdn tei-negotiation first-call
isdn spid1 6661 6666
isdn spid2 6662 6666
ppp authentication chap
ppp multilink
!
interface Dialer1
ip address 172.22.85.2 255.255.255.0
encapsulation ppp
ip ospf network point-to-point
ip ospf cost 65535
ip ospf demand-circuit

dialer pool 10
dialer remote-name R8
dialer idle-timeout 45
dialer string 8888
dialer hold-queue 100
dialer-group 5
ppp callback request
ppp authentication chap
```

```
ppp multilink
!  
dialer-list 5 protocol ip permit
```

```
R6#sho dialer
```

```
BRI0/0 - dialer type = ISDN
```

Dial String	Successes	Failures	Last DNIS	Last status
-------------	-----------	----------	-----------	-------------

0 incoming call(s) have been screened.

0 incoming call(s) rejected for callback.

```
BRI0/0:1 - dialer type = ISDN
```

```
Idle timer (120 secs), Fast idle timer (20 secs)
```

```
Wait for carrier (30 secs), Re-enable (15 secs)
```

```
Dialer state is idle
```

```
BRI0/0:2 - dialer type = ISDN
```

```
Idle timer (120 secs), Fast idle timer (20 secs)
```

```
Wait for carrier (30 secs), Re-enable (15 secs)
```

```
Dialer state is idle
```

```
Di1 - dialer type = DIALER PROFILE
```

```
Idle timer (45 secs), Fast idle timer (20 secs)
```

```
Wait for carrier (30 secs), Re-enable (15 secs)
```

```
Dialer state is idle
```

```
Number of active calls = 0
```

Dial String	Successes	Failures	Last DNIS	Last status
-------------	-----------	----------	-----------	-------------

8888	15	0	00:17:32	
------	----	---	----------	--

successful	Default			
------------	---------	--	--	--

```
hostname R8
```

```
!
```

```
aaa authentication login default local
```

```
aaa authorization network default local
```

```
!
```

```
interface BRI0/0
```

```
no ip address
```

```
encapsulation ppp
```

```
ip ospf cost 1
```

```
dialer rotary-group 10
```

```
dialer-group 1
```

```
isdn switch-type basic-ni
```

```
isdn spid1 8881 8888
```

```
isdn spid2 8882 8888
```

```
ppp authentication chap
```

```
ppp multilink
```

```
!
```

```
interface Dialer10
```

```
ip address 172.22.85.1 255.255.255.0
```

```
encapsulation ppp
```

```
no ip route-cache
```

```
ip ospf network point-to-point
```

```
ip ospf demand-circuit
```

```
no ip mroute-cache
dialer in-band
dialer map ip 172.22.85.2 name R6 class diall broadcast
6666
dialer callback-secure
dialer-group 1
no peer default ip address
ppp callback accept
ppp authentication chap
dialer-list 1 protocol ip permit
!
map-class dialer diall
dialer callback-server username
```

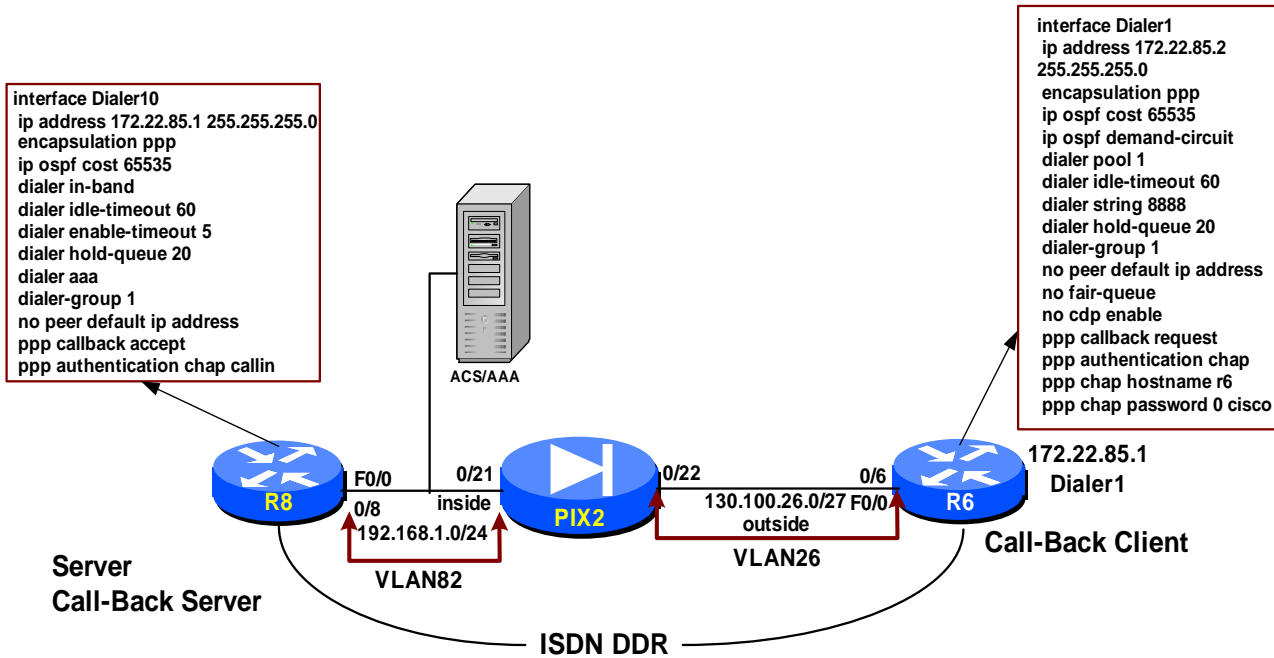
```
#debug callback
Callback activity debugging is on
R8#
01:04:34: BR0/0 DDR: rotor dialout [priority]
01:04:34: BR0/0 DDR: Dialing cause ip (s=172.22.85.1,
d=6.6.6.6)
01:04:34: BR0/0 DDR: Attempting to dial 6666
01:04:146090768040: %LINK-3-UPDOWN: Interface BRI0/0:1,
changed state to up
01:04:34: BR0/0:1 PPP: Using dialer call direction
01:04:34: BR0/0:1 PPP: Treating connection as a callout
01:04:34: BR0/0:1 PPP: Authorization required
01:04:34: BR0/0:1 AAA/AUTHOR/LCP: Authorization succeeds
trivially
01:04:36: BR0/0:1 CHAP: O CHALLENGE id 41 len 23 from "R8"
01:04:36: BR0/0:1 CHAP: I CHALLENGE id 43 len 23 from "R6"
01:04:36: AAA/AUTHEN/PPP (0000002B): Pick method list
'Permanent Local'
01:04:36: BR0/0:1 CHAP: Using hostname from unknown source
01:04:36: BR0/0:1 CHAP: Using password from AAA
01:04:36: BR0/0:1 CHAP: O RESPONSE id 43 len 23 from "R8"
01:04:36: BR0/0:1 CHAP: I SUCCESS id 43 len 4
01:04:36: BR0/0:1 CHAP: I RESPONSE id 41 len 23 from "R6"
01:04:36: AAA/AUTHEN/PPP (0000002B): Pick method list
'Permanent Local'
01:04:36: BR0/0:1 PPP: Sent CHAP LOGIN Request
01:04:36: BR0/0:1 PPP: Received LOGIN Response PASS
01:04:36: BR0/0:1 PPP/AAA: Check Attr: Framed-Protocol
01:04:36: BR0/0:1 PPP/AAA: Check Attr: username
01:04:36: BR0/0:1 PPP/AAA: Check Attr: challenge
01:04:36: BR0/0:1 PPP/AAA: Check Attr: id
01:04:36: BR0/0:1 PPP/AAA: Check Attr: response
01:04:36: BR0/0:1 DDR: Remote name for R6
01:04:36: BR0/0:1 AAA/AUTHOR/LCP: Process Author
01:04:36: BR0/0:1 CHAP: O SUCCESS id 41 len 4
01:04:36: BR0/0:1 AAA/AUTHOR/IPCP: FSM authorization not
needed
01:04:36: BR0/0:1 AAA/AUTHOR/FSM: We can start IPCP
01:04:36: BR0/0:1 AAA/AUTHOR/CDPCP: FSM authorization not
needed
01:04:36: BR0/0:1 AAA/AUTHOR/FSM: We can start CDPCP
01:04:36: BR0/0:1 AAA/AUTHOR/IPCP: Start. Her address
172.22.85.2, we want 172.22.85.2
```

```

01:04:36: BR0/0:1 AAA/AUTHOR/PCP: Reject 172.22.85.2, using
172.22.85.2
01:04:36: BR0/0:1 AAA/AUTHOR/PCP: Authorization succeeded
01:04:36: BR0/0:1 AAA/AUTHOR/PCP: Done. Her address
172.22.85.2, we want 172.22.85.2
01:04:36: BR0/0:1 DDR: dialer protocol up
01:04:37: %LINEPROTO-5-UPDOWN: Line protocol on Interface
BRI0/0:1, changed state to up

```

Now, Configure Callback Using TACACS+:



```

R6
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R6
!
!
username R8 password 0 cisco
ip subnet-zero
!
!
no ip domain lookup
!
!
isdn switch-type basic-ni
!
!
key chain ccie
  key 1
    key-string ccie
!
!
interface Loopback6

```

```
description OSPF Loopback
ip ospf network point-to-point
ip address 6.6.6.6 255.255.255.255
!
interface Loopback66
ip address 140.100.86.1 255.255.255.224
!
interface Loopback666
description BGP Loopback
ip address 6.6.6.66 255.255.255.255
!
interface Tunnel0
ip address 192.168.2.2 255.255.255.0
ip ospf authentication message-digest
ip ospf message-digest-key 5 md5 cisco
tunnel source 130.100.26.6
tunnel destination 130.100.26.3
!
interface FastEthernet0/0
ip address 130.100.26.6 255.255.255.224
no ip proxy-arp
ip rip authentication mode md5
ip rip authentication key-chain ccie
speed 10
half-duplex
no cdp enable
standby 1 ip 130.100.26.1
standby 1 preempt
standby 1 authentication ccie
standby 1 track Serial0/0
!
interface BRI0/0
no ip address
encapsulation ppp
ip ospf cost 65000
dialer pool-member 1
isdn switch-type basic-ni
isdn tei-negotiation first-call
isdn spid1 6661 6666
isdn spid2 6662 6666
no cdp enable
ppp authentication chap
ppp multilink
!
interface Serial0/0
ip address 140.100.56.6 255.255.255.192
no ip proxy-arp
ip ospf authentication message-digest
ip ospf message-digest-key 5 md5 cisco
ip ospf network point-to-point
no cdp enable
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
no cdp enable
!
```

```
interface Dialer1
 ip address 172.22.85.2 255.255.255.0
 encapsulation ppp
 ip ospf cost 65535
 ip ospf demand-circuit
 dialer pool 1
 dialer remote-name R8
 dialer idle-timeout 60
 dialer string 8888
 dialer hold-queue 20
 dialer-group 1
 no peer default ip address
 no fair-queue
 no cdp enable
 ppp callback request
 ppp authentication chap
 ppp chap hostname R6
 ppp chap password 0 cisco
 ppp multilink
!
router ospf 123
 router-id 6.6.6.6
 log-adjacency-changes detail
 area 56 authentication message-digest
 area 56 virtual-link 5.5.5.5 authentication message-
digest
 area 56 virtual-link 5.5.5.5 message-digest-key 5 md5
cisco
 area 86 authentication message-digest
 network 1.1.1.0 0.0.0.255 area 86
 network 6.6.6.6 0.0.0.0 area 56
 network 140.100.56.0 0.0.0.63 area 56
 network 172.22.85.0 0.0.0.255 area 86
 network 192.168.2.0 0.0.0.255 area 86
!
router rip
 version 2
 network 130.100.0.0
 no auto-summary
!
router bgp 456
 no synchronization
 bgp router-id 6.6.6.6
 bgp log-neighbor-changes
 network 6.6.6.66 mask 255.255.255.255
 network 130.100.86.0 mask 255.255.255.224
 neighbor 140.100.56.5 remote-as 456
 neighbor 140.100.56.5 next-hop-self
 neighbor 192.168.2.1 remote-as 65000
 no auto-summary
!
ip classless
ip route 0.0.0.0 0.0.0.0 BRI0/0
ip route 192.168.1.0 255.255.255.0 130.100.26.2
ip route 192.168.1.1 255.255.255.255 130.100.26.2
no ip http server
!
!
```

```
access-list 100 dynamic R3 timeout 6 permit ip any any
dialer-list 1 protocol ip permit
dialer-list 5 protocol ip permit
!
route-map redist deny 10
!
route-map red permit 10
  match ip address 1
!
call rsvp-sync
!
line con 0
  exec-timeout 0 0
  privilege level 15
line aux 0
line vty 0 4
  privilege level 15
  login
  autocommand telnet 5.5.5.5
!
end
```

```
hostname R8
!
enable password 7 05080F1C2243
!
aaa new-model
!
!
aaa authentication login none
aaa authentication ppp default group tacacs+
aaa authorization network default group tacacs+
aaa authorization configuration default group tacacs+
aaa accounting network default start-stop group tacacs+
aaa accounting system default start-stop group tacacs+
isdn switch-type basic-ni
!
!
key chain ccie
  key 1
    key-string 7 0307580203
!
interface Loopback0
  ip address 2.2.2.2 255.255.255.255
!
interface Loopback8
  description OSPF Loopback
  ip address 8.8.8.8 255.255.255.255
  ip broadcast-address 8.8.8.8
!
interface Loopback88
  description BGP Loopback
  ip address 8.8.8.88 255.255.255.255
!
interface Loopback100
  ip address 172.16.1.1 255.255.255.0
!
```

```
interface Tunnel1
 ip address 192.168.2.1 255.255.255.0
 ip broadcast-address 192.168.2.255
 ip ospf authentication message-digest
 ip ospf message-digest-key 5 md5 7 045802150C2E
 tunnel source 192.168.1.1
 tunnel destination 130.100.26.6
!
interface BRI0/0
 no ip address
 encapsulation ppp
 ip ospf cost 65535
 dialer rotary-group 10
 dialer-group 1
 isdn switch-type basic-ni
 isdn spid1 8881 8888
 isdn spid2 8882 8888
 no cdp enable
 ppp authentication chap
 ppp multilink
!
interface Serial0/0
 ip address 10.1.1.2 255.255.255.0
 ip broadcast-address 10.1.1.255
 clockrate 512000
 no cdp enable
!
interface FastEthernet0/1
 ip address 192.168.1.1 255.255.255.0
 ip nat inside
 ip rip send version 1
 ip rip receive version 1
 no ip route-cache
 no ip mroute-cache
 duplex auto
 speed auto
 no cdp enable
!
interface Dialer10
 ip address 172.22.85.1 255.255.255.0
 encapsulation ppp
 ip ospf cost 65535
 dialer in-band
 dialer idle-timeout 60
 dialer enable-timeout 5
 dialer hold-queue 20
 dialer aaa
 dialer-group 1
 no peer default ip address
 ppp callback accept
 ppp authentication chap callin
!
router ospf 123
 router-id 8.8.8.8
 log-adjacency-changes detail
 area 86 authentication message-digest
 network 1.1.1.0 0.0.0.255 area 86
 network 8.8.8.8 0.0.0.0 area 86
```



```
network 172.22.85.0 0.0.0.255 area 86
network 192.168.2.0 0.0.0.255 area 86
!
ip local pool Internet 192.168.1.10 192.168.1.20
ip local pool test 172.16.1.10 172.16.1.100
ip local pool default 10.10.10.1 10.10.10.10
ip drp access-group 3
ip drp authentication key-chain ccie
ip drp server
ip classless
ip route 6.6.6.0 255.255.255.0 192.168.1.222
ip route 10.1.1.0 255.255.255.0 10.1.1.1
ip route 130.100.26.0 255.255.255.0 192.168.1.222
ip tacacs source-interface Loopback8
no ip http server
ip http authentication local
ip pim bidir-enable
!
!
ip access-list extended idletime
ip access-list extended inacl
ip access-list extended key-exchange
ip access-list extended protocol
ip access-list extended service
ip access-list extended timeout
!
access-list 1 permit 192.168.1.0 0.0.0.255 log
access-list 1 deny 172.16.1.0 0.0.0.255 log
access-list 2 permit 8.8.8.88
access-list 3 permit 6.6.6.6
access-list 3 permit 192.168.2.1
access-list 5 permit 192.168.1.8 log
dialer-list 1 protocol ip permit
dialer-list 5 protocol ip permit
!
route-map loop permit 10
match ip address 2
!
route-map Loopback permit 10
match ip address 10
!
tacacs-server host 192.168.1.7
tacacs-server directed-request
tacacs-server key cisco6727

!
!
alias exec sr sho ip route
alias exec DB show ip route
privilege configure level 7 snmp-server
privilege exec level 1 telnet
privilege exec level 7 ping
privilege exec level 7 configure terminal
privilege exec level 7 configure
privilege exec level 1 show ip route
privilege exec level 1 show ip
privilege exec level 1 show startup-config
privilege exec level 1 show
```

```
!  
line con 0  
  exec-timeout 0 0  
  privilege level 15  
  speed 115200  
line aux 0  
  modem InOut  
  transport input all  
line vty 0 4  
  exec-timeout 0 0  
  privilege level 15  
  session-limit 100000  
  transport input telnet ssh  
line vty 5 15  
  privilege level 15
```

```
R8#debug callback  
Callback activity debugging is on  
R8#debug ppp authentication  
PPP authentication debugging is on  
R8#debug ppp negotiation  
PPP protocol negotiation debugging is on  
R8#deb dialer  
Dial on demand events debugging is on  
R8#debug aaa authorization  
AAA Authorization debugging is on  
R8#debug aaa authentication  
AAA Authentication debugging is on  
R8#debug ppp pac  
PPP packet display debugging is on
```

```
R8#sho debugging  
General OS:  
  AAA Authentication debugging is on  
  AAA Authorization debugging is on  
Dial on demand:  
  Dial on demand events debugging is on  
PPP:  
  PPP authentication debugging is on  
  PPP protocol negotiation debugging is on  
  PPP packet display debugging is on  
Callback:  
  Callback activity debugging is on
```

```
R8#sho ip route ospf  
  1.0.0.0/32 is subnetted, 2 subnets  
O IA    1.1.1.1 [110/11368] via 192.168.2.2, 00:00:07,  
Tunnell  
  3.0.0.0/32 is subnetted, 4 subnets  
O IA    3.3.3.3 [110/11304] via 192.168.2.2, 00:00:07,  
Tunnell  
O E2    3.3.3.13 [110/20] via 192.168.2.2, 00:00:17, Tunnell  
O E2    3.3.3.23 [110/20] via 192.168.2.2, 00:00:17, Tunnell  
  4.0.0.0/32 is subnetted, 2 subnets
```

```

O IA      4.4.4.4 [110/11240] via 192.168.2.2, 00:00:07,
Tunnell
    140.100.0.0/16 is variably subnetted, 4 subnets, 2
masks
O IA      140.100.45.0/26 [110/11239] via 192.168.2.2,
00:00:07, Tunnell
O IA      140.100.56.0/26 [110/11175] via 192.168.2.2,
00:00:17, Tunnell
O E2      140.100.9.0/27 [110/20] via 192.168.2.2, 00:00:17,
Tunnell
    5.0.0.0/32 is subnetted, 2 subnets
O IA      5.5.5.5 [110/11176] via 192.168.2.2, 00:00:07,
Tunnell
    6.0.0.0/8 is variably subnetted, 3 subnets, 2 masks
O IA      6.6.6.6/32 [110/11112] via 192.168.2.2, 00:00:17,
Tunnell
    67.0.0.0/24 is subnetted, 1 subnets
O E2      67.67.67.0 [110/20] via 192.168.2.2, 00:00:17,
Tunnell
    150.100.0.0/16 is variably subnetted, 3 subnets, 3
masks
O IA      150.100.32.0/27 [110/11367] via 192.168.2.2,
00:00:07, Tunnell
O IA      150.100.33.0/29 [110/11303] via 192.168.2.2,
00:00:07, Tunnell
O IA      150.100.31.0/28 [110/11367] via 192.168.2.2,
00:00:07, Tunnell
R8#

```

```

R8(config)#int tun 1
R8(config-if)#shut
R8(config-if)#

R8#ter
14:02:33: %LINK-3-UPDOWN: Interface BRI0/0:1, changed state
to up
R8#terminal m
14:02:33: BR0/0:1 PPP: Using dialer call direction
14:02:33: BR0/0:1 PPP: Treating connection as a callin
14:02:33: BR0/0:1 PPP: Phase is ESTABLISHING, Passive Open
14:02:33: BR0/0:1 LCP: State is Listen
R8#terminal mo
14:02:35: BR0/0:1 LCP: TIMEout: State Listen
14:02:35: BR0/0:1 PPP: Authorization required
14:02:35: BR0/0:1 AAA/AUTHOR/LCP: Authorization succeeds
trivially
14:02:35: BR0/0:1 LCP: O CONFREQ [Listen] id 196 len 15
14:02:35: BR0/0:1 LCP:   AuthProto CHAP (0x0305C22305)
14:02:35: BR0/0:1 LCP:   MagicNumber 0xB367E58C
(0x0506B367E58C)
14:02:35: BR0/0:1 PPP: I pkt type 0xC021, datagramsize 19
link[ppp]
14:02:35: BR0/0:1 LCP: I CONFACK [REQsent] id 196 len 15
14:02:35: BR0/0:1 LCP:   AuthProto CHAP (0x0305C22305)
14:02:35: BR0/0:1 LCP:   MagicNumber 0xB367E58C
(0x0506B367E58C)
14:02:35: BR0/0:1 PPP: I pkt type 0xC021, datagramsize 22
link[ppp]

```

```
14:02:35: BR0/0:1 LCP: I CONFREQ [ACKrcvd] id 254 len 18
14:02:35: BR0/0:1 LCP: AuthProto CHAP (0x0305C22305)
14:02:35: BR0/0:1 LCP: MagicNumber 0xB359C44F
(0x0506B359C44F)
14:02:35: BR0/0:1 LCP: Callback 0 (0x0D0300)
14:02:35: BR0/0:1 LCP: O CONFACK [ACKrcvd] id 254 len 18
14:02:35: BR0/0:1 LCP: AuthProto CHAP (0x0305C22305)
14:02:35: BR0/0:1 LCP: MagicNumber 0xB359C44F
(0x0506B359C44F)
14:02:35: BR0/0:1 LCP: Callback 0 (0x0D0300)
14:02:35: BR0/0:1 LCP: State is Open
14:02:35: BR0/0:1 PPP: Phase is AUTHENTICATING, by both
14:02:35: BR0/0:1 CHAP: O CHALLENGE id 225 len 23 from "R8"
14:02:35: BR0/0:1 PPP: I pkt type 0xC223, datagramsize 27
link[ppp]
14:02:35: BR0/0:1 CHAP: I CHALLENGE id 235 len 23 from "R6"
14:02:35: BR0/0:1 CHAP: Waiting for Peer to authenticate
first
14:02:35: BR0/0:1 PPP: I pkt type 0xC223, datagramsize 27
link[ppp]
14:02:35: BR0/0:1 CHAP: I RESPONSE id 225 len 23 from "R6"
14:02:35: BR0/0:1 PPP: Phase is FORWARDING, Attempting
Forward
14:02:35: BR0/0:1 PPP: Phase is AUTHENTICATING,
Unauthenticated User
14:02:35: AAA/AUTHEN/PPP (0000012C): Pick method list
'default'
14:02:35: BR0/0:1 PPP: Sent CHAP LOGIN Request
14:02:35: BR0/0:1 PPP: Received LOGIN Response PASS
14:02:35: BR0/0:1 PPP: Phase is FORWARDING, Attempting
Forward
14:02:35: BR0/0:1 PPP: Phase is AUTHENTICATING,
Authenticated User
14:02:35: BR0/0:1 DDR: Remote name for R6
14:02:35: BR0/0:1 DDR: Authenticated host R6 with no
matching dialer map
14:02:35: AAA/AUTHEN/PPP (0000012C): Pick method list
'default'
14:02:35: AAA/AUTHOR (0x12C): Pick method list 'default'
14:02:35: BR0/0:1 PPP: Sent LCP AUTHOR Request
14:02:35: AAA/AUTHOR (0x12C): Pick method list 'default'
14:02:35: BR0/0:1 PPP: Sent IPCP AUTHOR Request
14:02:35: BR0/0:1 CHAP: Using hostname from unknown source
14:02:35: BR0/0:1 CHAP: Using password from AAA
14:02:35: BR0/0:1 CHAP: O RESPONSE id 235 len 23 from "R8"
14:02:35: BR0/0:1 PPP: I pkt type 0xC223, datagramsize 8
link[ppp]
14:02:35: BR0/0:1 LCP: Received AAA AUTHOR Response PASS
14:02:35: BR0/0:1 PPP/AAA: Check Attr: Framed-Protocol
14:02:35: BR0/0:1 PPP/AAA: Check Attr: username
14:02:35: BR0/0:1 PPP/AAA: Check Attr: callback-dialstring
14:02:35: BR0/0:1 PPP/AAA: Check Attr: callback-rotary
14:02:35: BR0/0:1 AAA/AUTHOR/FSM: We can start LCP
14:02:35: BR0/0:1 CHAP: I SUCCESS id 235 len 4
14:02:35: BR0/0:1 IPCP: Received AAA AUTHOR Response PASS
14:02:35: BR0/0:1 PPP/AAA: Check Attr: Framed-Protocol
14:02:35: BR0/0:1 PPP/AAA: Check Attr: username
14:02:35: BR0/0:1 AAA/AUTHOR/FSM: We can start IPCP
```

```
14:02:35: BR0/0:1 AAA/AUTHOR/LCP: Process Author
14:02:35: BR0/0:1 AAA/AUTHOR/LCP: Process Attr: callback-
dialstri
14:02:35: BR0/0:1 AAA/AUTHOR/LCP: Process Attr: callback-
rotary
14:02:35: BR0/0:1 CHAP: O SUCCESS id 225 len 4
14:02:35: DSES CB20: Session create
14:02:35: BR0/0:1 PPP/AAA: Saving a copy of the
authorization data
14:02:35: BR0/0:1 PPP/AAA: Copying acct-sess-id to the
callback author data
14:02:35: BR0/0:1 DDR: PPP callback: Callback server
starting to R6 6666
14:02:36: %LINEPROTO-5-UPDOWN: Line protocol on Interface
BRI0/0:1, changed state to up
14:02:36: BR0/0:1 DDR: disconnecting call
14:02:36: %ISDN-6-CONNECT: Interface BRI0/0:1 is now
connected to 6666 R6
14:02:36: %ISDN-6-DISCONNECT: Interface BRI0/0:1
disconnected from 6666 R6, call lasted 3 seconds
14:02:156809430024: %LINK-3-UPDOWN: Interface BRI0/0:1,
changed state to down
14:02:36: BR0/0:1 PPP: Sending Acct Event[Down] id[12C]
14:02:36: BR0/0:1 PPP: Phase is TERMINATING
14:02:36: BR0/0:1 LCP: State is Closed
14:02:36: BR0/0:1 PPP: Phase is DOWN
14:02:36: BR0/0:1 DDR: disconnecting call
14:02:37: %LINEPROTO-5-UPDOWN: Line protocol on Interface
BRI0/0:1, changed state to down
14:02:40: DDR: Callback timer expired
14:02:40: Di10 DDR: beginning callback to R6 6666
14:02:40: BR0/0 DDR: rotor dialout [priority]
14:02:40: BR0/0 DDR: Dialing cause ???
14:02:40: BR0/0 DDR: Attempting to dial 6666
14:02:171860570985: %LINK-3-UPDOWN: Interface BRI0/0:1,
changed state to up
14:02:173567861870: BR0/0:1 PPP/AAA: Using authorization
data from a prior call
14:02:171798691840: DDR: Freeing callback to R6 6666
14:02:173984808652: DDR: removing callback, 0 packets
unqueued and discarded
14:02:40: BR0/0:1 PPP(0000012D): Replacing Acct Session Id
from PPP Callback Author Data
14:02:40: BR0/0:1 PPP: Using dialer call direction
14:02:40: BR0/0:1 PPP: Treating connection as a callout
14:02:40: BR0/0:1 PPP: Phase is ESTABLISHING, Active Open
14:02:40: BR0/0:1 PPP: Authorization required
14:02:40: BR0/0:1 PPP: No remote authentication for callback
14:02:40: BR0/0:1 AAA/AUTHOR/LCP: Authorization succeeds
trivially
14:02:40: BR0/0:1 LCP: O CONFREQ [Closed] id 197 len 10
14:02:40: BR0/0:1 LCP:      MagicNumber 0xB367FA47
(0x0506B367FA47)
14:02:40: BR0/0:1 PPP: I pkt type 0xC021, datagramsize 19
link[ppp]
14:02:40: BR0/0:1 LCP: I CONFREQ [REQsent] id 255 len 15
14:02:40: BR0/0:1 LCP:      AuthProto CHAP (0x0305C22305)
```

```
14:02:40: BR0/0:1 PPP: I pkt type 0xC021, datagramsize 14
link[ppp]
14:02:40: BR0/0:1 LCP: MagicNumber 0xB359E09A
(0x0506B359E09A)
14:02:40: BR0/0:1 LCP: O CONFACK [REQsent] id 255 len 15
14:02:40: BR0/0:1 LCP: AuthProto CHAP (0x0305C22305)
14:02:40: BR0/0:1 LCP: MagicNumber 0xB359E09A
(0x0506B359E09A)
14:02:40: BR0/0:1 LCP: I CONFACK [ACKsent] id 197 len 10
14:02:40: BR0/0:1 LCP: MagicNumber 0xB367FA47
(0x0506B367FA47)
14:02:40: BR0/0:1 LCP: State is Open
14:02:40: BR0/0:1 PPP: Phase is AUTHENTICATING, by the peer
14:02:40: BR0/0:1 PPP: I pkt type 0xC223, datagramsize 27
link[ppp]
14:02:40: BR0/0:1 CHAP: I CHALLENGE id 236 len 23 from "R6"
14:02:40: AAA/AUTHEN/PPP (0000012D): Pick method list
'default'
14:02:40: BR0/0:1 CHAP: Using hostname from unknown source
14:02:40: BR0/0:1 CHAP: Using password from AAA
14:02:40: BR0/0:1 CHAP: O RESPONSE id 236 len 23 from "R8"
14:02:40: BR0/0:1 PPP: I pkt type 0xC223, datagramsize 8
link[ppp]
14:02:40: BR0/0:1 CHAP: I SUCCESS id 236 len 4
14:02:40: BR0/0:1 PPP: Phase is FORWARDING, Attempting
Forward
14:02:40: BR0/0:1 PPP: I pkt type 0x8021, datagramsize 14
link[ip]
14:02:40: BR0/0:1 PPP: Phase is ESTABLISHING, Finish LCP
14:02:40: BR0/0:1 AAA/AUTHOR/LCP: Process Author
14:02:40: BR0/0:1 AAA/AUTHOR/LCP: Process Attr: callback-
dialstring
14:02:40: BR0/0:1 AAA/AUTHOR/LCP: Process Attr: callback-
rotary
14:02:40: BR0/0:1 PPP: Phase is UP
14:02:40: BR0/0:1 AAA/AUTHOR/PCP: FSM authorization not
needed
14:02:40: BR0/0:1 AAA/AUTHOR/FSM: We can start PCP
14:02:40: BR0/0:1 PCP: O CONFREQ [Closed] id 1 len 10
14:02:40: BR0/0:1 PCP: Address 172.22.85.1
(0x0306AC165501)
14:02:40: BR0/0:1 AAA/AUTHOR/CDPCP: FSM authorization not
needed
14:02:40: BR0/0:1 AAA/AUTHOR/FSM: We can start CDPCP
14:02:40: BR0/0:1 CDPCP: O CONFREQ [Closed] id 1 len 4
14:02:40: BR0/0:1 PPP: Process pending packets
14:02:40: BR0/0:1 PCP: I CONFREQ [REQsent] id 1 len 10
14:02:40: BR0/0:1 PCP: Address 172.22.85.2
(0x0306AC165502)
14:02:40: BR0/0:1 AAA/AUTHOR/PCP: Start. Her address
172.22.85.2, we want 0.0.0.0
14:02:40: BR0/0:1 AAA/AUTHOR/PCP: Reject 172.22.85.2, using
0.0.0.0
14:02:40: BR0/0:1 AAA/AUTHOR/PCP: Authorization succeeded
14:02:40: BR0/0:1 AAA/AUTHOR/PCP: Done. Her address
172.22.85.2, we want 0.0.0.0
14:02:40: BR0/0:1 PCP: O CONFACK [REQsent] id 1 len 10
```

```
14:02:40: BR0/0:1 IPCP:      Address 172.22.85.2
(0x0306AC165502)
14:02:40: BR0/0:1 PPP: I pkt type 0x8021, datagramsize 14
link[ip]
14:02:40: BR0/0:1 PPP: I pkt type 0xC021, datagramsize 14
link[ppp]
14:02:40: BR0/0:1 IPCP: I CONFACK [ACKsent] id 1 len 10
14:02:40: BR0/0:1 IPCP:      Address 172.22.85.1
(0x0306AC165501)
14:02:40: BR0/0:1 IPCP: State is Open
14:02:40: BR0/0:1 LCP: I PROTREJ [Open] id 0 len 10 protocol
CDPCP (0x820701010004)
14:02:40: BR0/0:1 CDPCP: State is Listen
14:02:40: Di10 IPCP: Install route to 172.22.85.2
14:02:40: BR0/0:1 IPCP: Add link info for cef entry
172.22.85.2
14:02:40: BR0/0:1 DDR: dialer protocol up
14:02:40: BR0/0:1: Call connected, 0 packets unqueued, 0
transmitted, 0 discarded
14:02:40: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 84
link[ip]
14:02:40: %OSPF-5-ADJCHG: Process 123, Nbr 6.6.6.6 on
Dialer10 from DOWN to INIT, Received Hello
14:02:41: %LINEPROTO-5-UPDOWN: Line protocol on Interface
BR10/0:1, changed state to up
14:02:41: BR0/0:1 PPP: Outbound cdp packet dropped, CDPCP
state is Listen
14:02:41: BR0/0:1 PPP: Outbound cdp packet dropped, CDPCP
state is Listen
14:02:41: BR0/0:1 PPP: Outbound cdp packet dropped, CDPCP
state is Listen
14:02:41: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 88
14:02:41: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 72
link[ip]
14:02:41: %OSPF-5-ADJCHG: Process 123, Nbr 6.6.6.6 on
Dialer10 from INIT to 2WAY, 2-Way Received
14:02:41: %OSPF-5-ADJCHG: Process 123, Nbr 6.6.6.6 on
Dialer10 from 2WAY to EXSTART, AdjOK?
14:02:41: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 72
14:02:41: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 472
link[ip]
14:02:41: %OSPF-5-ADJCHG: Process 123, Nbr 6.6.6.6 on
Dialer10 from EXSTART to EXCHANGE, Negotiation Done
14:02:41: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 92
14:02:41: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 304
14:02:41: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 72
link[ip]
14:02:41: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 72
14:02:41: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 76
link[ip]
14:02:41: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 116
14:02:42: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 668
link[ip]
14:02:42: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 72
link[ip]
14:02:42: %OSPF-5-ADJCHG: Process 123, Nbr 6.6.6.6 on
Dialer10 from EXCHANGE to LOADING, Exchange Done
```

```

14:02:42: %OSPF-5-ADJCHG: Process 123, Nbr 6.6.6.6 on
Dialer10 from LOADING to FULL, Loading Done
14:02:42: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 128
link[ip]
14:02:42: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 128
14:02:44: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 84
link[ip]
14:02:44: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 464
14:02:46: %ISDN-6-CONNECT: Interface BRI0/0:1 is now
connected to 6666 unknown
14:02:47: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 128
14:02:47: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 128
link[ip]
14:02:49: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 84
link[ip]
14:02:50: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 84
14:02:58: BR0/0:1 PPP: O pkt type 0x0021, datagramsize
44ping 17
14:03:02: BR0/0:1 PPP: Outbound cdp packet dropped, CDPCP
state is Listen2.22.85.2
      ^
14:03:08: BR0/0:1 LCP: O ECHOREQ [Open] id 1 len 12 magic
0xB367FA47
14:03:08: BR0/0:1 LCP-FS: I ECHOREP [Open] id 1 len 12 magic
0xB359E09A
14:03:08: BR0/0:1 LCP-FS: Received id 1, sent id 1, line up
R8#ping 172.22.85.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.22.85.2, timeout is 2
seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
32/33/36 ms
R8#
14:03:14: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 104
14:03:14: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 104
link[ip]
14:03:14: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 104
14:03:14: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 104
link[ip]
14:03:14: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 104
14:03:14: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 104
link[ip]
14:03:14: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 104
14:03:14: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 104
link[ip]
14:03:14: BR0/0:1 PPP: O pkt type 0x0021, datagramsize 104
14:03:14: BR0/0:1 PPP: I pkt type 0x0021, datagramsize 104
link[ip]

```

```

R8#show ip route ospf
      1.0.0.0/32 is subnetted, 1 subnets
O IA      1.1.1.1 [110/65792] via 172.22.85.2, 00:01:35,
Dialer10
      3.0.0.0/32 is subnetted, 3 subnets
O IA      3.3.3.3 [110/65728] via 172.22.85.2, 00:01:35,
Dialer10

```



```
O E2      3.3.3.13 [110/20] via 172.22.85.2, 00:01:35,
Dialer10
O E2      3.3.3.23 [110/20] via 172.22.85.2, 00:01:35,
Dialer10
      4.0.0.0/32 is subnetted, 1 subnets
O IA      4.4.4.4 [110/65664] via 172.22.85.2, 00:01:35,
Dialer10
      140.100.0.0/16 is variably subnetted, 3 subnets, 2
masks
O IA      140.100.45.0/26 [110/65663] via 172.22.85.2,
00:01:35, Dialer10
O IA      140.100.56.0/26 [110/65599] via 172.22.85.2,
00:01:35, Dialer10
O E2      140.100.9.0/27 [110/20] via 172.22.85.2, 00:01:35,
Dialer10
      5.0.0.0/32 is subnetted, 2 subnets
O IA      5.5.5.5 [110/65600] via 172.22.85.2, 00:01:35,
Dialer10
O IA      5.5.5.55 [110/65600] via 172.22.85.2, 00:01:35,
Dialer10
      6.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
O IA      6.6.6.6/32 [110/65536] via 172.22.85.2, 00:01:35,
Dialer10
      67.0.0.0/24 is subnetted, 1 subnets
O E2      67.67.67.0 [110/20] via 172.22.85.2, 00:01:35,
Dialer10
O        192.168.2.0/24 [110/76646] via 172.22.85.2, 00:01:35,
Dialer10
      150.100.0.0/16 is variably subnetted, 3 subnets, 3
masks
O IA      150.100.32.0/27 [110/65791] via 172.22.85.2,
00:01:35, Dialer10
O IA      150.100.33.0/29 [110/65727] via 172.22.85.2,
00:01:35, Dialer10
O IA      150.100.31.0/28 [110/65791] via 172.22.85.2,
00:01:35, Dialer10
```

CiscoSecure ACS - Microsoft Internet Explorer

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Callback

☐ Use group setting

☐ No callback allowed

☒ Callback using this number

☐ Dialup client specifies callback number

☐ Use Microsoft NT/2000 callback settings

Client IP Address Assignment

☐ Use group settings

☐ No IP address assignment

☒ Assigned by dialup client

☐ Assign static IP address

☐ Assigned by AAA client pool

☐ Assigned from AAA pool

Available Pools

Selected Pools

Callback

Submit

Delete

Cancel

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TACACS+ Settings

☒ **PPP IP**

☐ In access control list

☐ Out access control list

☐ Route

☐ Routing ☐ Enabled

☐ Custom attributes

☒ **PPP LCP**

☐ Callback line

☒ Callback rotary

☐ No callback verify ☐ Enabled

☐ Custom attributes

Submit Delete Cancel

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- [RADIUS Vendor-Specific Attributes](#)

Account Disabled Status

Dialer Rotary Must Match the TACACS+ Setting

```

hostname R8
!
interface BRI0/0
encapsulation ppp
 ip ospf cost 65535
 dialer rotary-group 10
 dialer-group 1
 isdn switch-type basic-ni
 isdn spid1 8881 8888
 isdn spid2 8882 8888
ppp authentication chap
!
interface Dialer10 ←
 ip address 172.22.85.1 255.255.255.0
 encapsulation ppp
 ip ospf cost 65535
 dialer in-band
 dialer idle-timeout 60
 dialer enable-timeout 5
 dialer hold-queue 20
 dialer aaa
 dialer-group 1
 no peer default ip address
 ppp callback accept
 ppp authentication chap callin

```

Accounting Log of User R6

CiscoSecure ACS - Microsoft Internet Explorer

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TACACS+ Accounting active.csv

Date	Time	User Name	Group Name	Caller ID	Acct. Flag	elapsed time	service	bytes in	bytes out	paks in	paks out	task id
05/01/2003	22:34:49	r6	Tacacs_Group		start		ppp					96
05/01/2003	22:34:43	r6	Tacacs_Group	6666	stop	1	ppp	0	0	0	0	96
05/01/2003	22:34:42	r6	Tacacs_Group	6666	start		ppp					96