

This article describes AAA troubleshooting. For more information about AAA troubleshooting, see the "[Diagnosing and Troubleshooting AAA Operations](#)" page of the [Cisco AAA Implementation Case Study](#) document.

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Using Debug Commands for AAA Voice Troubleshooting

debug radius

The output below is from troubleshooting AAA redirect using called number for an incoming POTS dial peer.

In this example, an incoming call is set up using **dial-peer voice 1000 pots**. Applying **voice-class aaa 1** to **dial-peer voice 1000** redirects AAA requests to the server specified for method list sanj_aaa1:10.6.20.70 auth-port 1698 acct-port 1699.

```
aaa group server radius sg1
  server 10.6.20.70 auth-port 1698 acct-port 1699
!
aaa group server radius sg6
  server 10.6.20.70 auth-port 1704 acct-port 1705
!
aaa group server radius sg7
  server 10.6.20.70 auth-port 1720 acct-port 1721
!
aaa authentication login sanj_aaa1 group sg1
aaa authorization exec sanj_aaa1 group sg1
aaa accounting connection sanj_aaa1 start-stop group sg1
!
aaa authentication login sanj_aaa6 group sg6
aaa authorization exec sanj_aaa6 group sg6
aaa accounting connection sanj_aaa6 start-stop group sg6
!
aaa authentication login sanj_aaa7 group sg7
aaa authorization exec sanj_aaa7 group sg7
aaa accounting connection sanj_aaa7 start-stop group sg7
```

Cisco_IOS_Voice_Troubleshooting_and_Monitoring_--_AAA_for_Voice_Troubleshooting

```
!  
voice class aaa 1  
  authentication method sanj_aaa1  
  authorization method sanj_aaa1  
  accounting method sanj_aaa1  
  accounting template cdr1  
!  
voice class aaa 2  
  authentication method sanj_aaa6  
  authorization method sanj_aaa6  
  accounting method sanj_aaa6  
  accounting template cdr2  
!  
voice class aaa 3  
  authentication method sanj_aaa7  
  authorization method sanj_aaa7  
  accounting method sanj_aaa7  
!  
dial-peer voice 1000 pots  
  application plain_debit  
  incoming called-number 12345  
  voice-class aaa 1  
  port 0:D  
!  
dial-peer voice 1001 pots  
  application plain_debit  
  incoming called-number 12346  
  voice-class aaa 2  
  port 1:D  
debug radius  
Radius protocol debugging is on  
Radius packet hex dump debugging is off  
Radius packet protocol debugging is on  
debug isdn q931  
  
ISDN Q931 packets debugging is on  
00:17:55: ISDN Se0:23: RX <- SETUP pd = 8  callref = 0x009D  
00:17:55:      Bearer Capability i = 0x8090A2  
00:17:55:      Channel ID i = 0xE1808397  
00:17:55:      Calling Party Number i = 0x0080, '4081234567', Plan:Unknown, Type:Unknown  
00:17:55:      Called Party Number i = 0xE9, '12345', Plan:Private, Type:Abbreviated  
00:17:55: RADIUS/ENCODE(0000000C): Unsupported AAA attribute timezone  
00:17:55: RADIUS(0000000C): Encoding nas-port...Only port-type avlbl  
00:17:55: RADIUS(0000000C): sending  
00:17:55: RADIUS: Send to unknown id 4 10.6.20.70:1699, Accounting-Request, len 262  
00:17:55: RADIUS:  authenticator 10 41 58 99 4C F2 B1 CD - 44 3E E3 60 5D 10 C3 A9  
00:17:55: RADIUS:  Acct-Session-Id      [44] 10  "0000000C"  
00:17:55: RADIUS:  Vendor, Cisco          [26] 56  
00:17:55: RADIUS:  Conf-Id                [24] 50  "h323-conf-id=B8FE8B7F BF1711D3 800CE483  
89ADC43B"  
00:17:55: RADIUS:  Vendor, Cisco          [26] 31  
00:17:55: RADIUS:  h323-call-origin      [26] 25  "h323-call-origin=answer"  
00:17:55: RADIUS:  Vendor, Cisco          [26] 65  
00:17:55: RADIUS:  Cisco AVpair         [1] 59  "h323-incoming-conf-id=B8FE8B7F BF1711D3  
800CE483 89ADC43B"  
00:17:55: RADIUS:  User-Name             [1] 12  "4081234567"  
00:17:55: RADIUS:  Acct-Status-Type      [40] 6   Start                               [1]  
00:17:55: RADIUS:  NAS-Port-Type           [61] 6   Async                               [0]  
00:17:55: RADIUS:  Vendor, Cisco          [26] 19  
00:17:55: RADIUS:  cisco-nas-port       [2] 13  "ISDN 0:D:23"  
00:17:55: RADIUS:  Calling-Station-Id   [31] 12  "4081234567"  
00:17:55: RADIUS:  Called-Station-Id    [30] 7   "12345"  
00:17:55: RADIUS:  Service-Type         [6] 6   Login                               [1]  
00:17:55: RADIUS:  NAS-IP-Address       [4] 6   10.5.20.100
```

debug radius

Cisco_IOS_Voice_Troubleshooting_and_Monitoring_-_AAA_for_Voice_Troubleshooting

```

00:17:55: RADIUS: Delay-Time [41] 6 0
00:17:55: ISDN Se0:23: TX -> CALL_PROC pd = 8 callref = 0x809D
00:17:55: Channel ID i = 0xA98397
00:17:55: ISDN Se0:23: TX -> CONNECT pd = 8 callref = 0x809D
00:17:55: RADIUS: Received from id 4 10.6.20.70:1699, Accounting-response, len 20
00:17:55: RADIUS: authenticator DC CD BA E8 7E 02 EA D1 - 12 67 DC 57 3C 73 56 75
00:17:55: ISDN Se0:23: RX <- CONNECT_ACK pd = 8 callref = 0x009D
00:17:55: ISDN Se0:23: CALL_PROGRESS: CALL_CONNECTED call id 0x63, bchan 22, dsl 0
00:17:55: %ISDN-6-CONNECT: Interface Serial0:22 is now connected to 4081234567
00:18:01: %ISDN-6-CONNECT: Interface Serial0:22 is now connected to 4081234567
00:18:06: RADIUS(0000000C): Encoding nas-port...Only port-type avlbl
00:18:06: RADIUS/ENCODE(0000000C): acct_session_id: 12
00:18:06: RADIUS(0000000C): sending
00:18:06: RADIUS: Send to unknown id 3 10.6.20.70:1698, Access-Request, len 199
00:18:06: RADIUS: authenticator 4B 2C 8C D7 12 54 45 3D - 51 44 30 05 C3 9B 44 B1
00:18:06: RADIUS: User-Name [1] 8 "777777"
00:18:06: RADIUS: User-Password [2] 18 *
00:18:06: RADIUS: Vendor, Cisco [26] 56
00:18:06: RADIUS: Conf-Id [24] 50 "h323-conf-id=61A46F2C 00000003 62E66E40
62E3A5C8"
00:18:06: RADIUS: Vendor, Cisco [26] 36
00:18:06: RADIUS: Cisco AVpair [1] 30 "h323-ivr-out=transactionID:3"
00:18:06: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:18:06: RADIUS: NAS-Port-Type [61] 6 Async [0]
00:18:06: RADIUS: Vendor, Cisco [26] 19
00:18:06: RADIUS: cisco-nas-port [2] 13 "ISDN 0:D:23"
00:18:06: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:18:06: RADIUS: Service-Type [6] 6 Login [1]
00:18:06: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
00:18:06: RADIUS: Received from id 3 10.6.20.70:1698, Access-Accept, len 200
00:18:06: RADIUS: authenticator 9C AA 9E 4C 64 02 13 3A - 72 8C 3F D9 72 D0 3B 06
00:18:06: RADIUS: Vendor, Cisco [26] 27
00:18:06: RADIUS: Cisco AVpair [1] 21 "h323-ivr-in=sanjose"
00:18:06: RADIUS: Vendor, Cisco [26] 34
00:18:06: RADIUS: Cisco AVpair [1] 28 "h323-credit-amount=7777.77"
00:18:06: RADIUS: Vendor, Cisco [26] 26
00:18:06: RADIUS: Cisco AVpair [1] 20 "h323-return-code=0"
00:18:06: RADIUS: Vendor, Cisco [26] 30
00:18:06: RADIUS: h323-credit-time [102] 24 "h323-credit-time=54329"
00:18:06: RADIUS: Vendor, Cisco [26] 33
00:18:06: RADIUS: h323-billing-model [109] 27 "h323-billing-model=prepay"
00:18:06: RADIUS: Vendor, Cisco [26] 24
00:18:06: RADIUS: h323-currency [110] 18 "h323-currency=US"
00:18:06: RADIUS: Idle-Timeout [28] 6 30
00:18:06: RADIUS: Received from id C
00:18:27: ISDN Se0:23: RX <- DISCONNECT pd = 8 callref = 0x009D
00:18:27: Cause i = 0x8290 - Normal call clearing
00:18:27: %ISDN-6-DISCONNECT: Interface Serial0:22 disconnected from 4081234567 ,
call lasted 32 seconds
00:18:27: ISDN Se0:23: TX -> RELEASE pd = 8 callref = 0x809D
00:18:27: ISDN Se0:23: RX <- RELEASE_COMP pd = 8 callref = 0x009D
00:18:27: RADIUS/ENCODE(0000000C): Unsupported AAA attribute timezone
00:18:27: RADIUS(0000000C): Encoding nas-port...Only port-type avlbl
00:18:27: RADIUS(0000000C): sending
00:18:27: RADIUS: Send to unknown id 5 10.6.20.70:1699, Accounting-Request, len 327
00:18:27: RADIUS: authenticator 2D 65 1C 38 6D 5B B3 DD - C8 57 D6 02 B4 4F E4 4E
00:18:27: RADIUS: Acct-Session-Id [44] 10 "0000000C"
00:18:27: RADIUS: Vendor, Cisco [26] 56
00:18:27: RADIUS: Conf-Id [24] 50 "h323-conf-id=B8FE8B7F BF1711D3 800CE483
89ADC43B"
00:18:27: RADIUS: Vendor, Cisco [26] 31
00:18:27: RADIUS: h323-call-origin [26] 25 "h323-call-origin=answer"
00:18:27: RADIUS: Vendor, Cisco [26] 65
00:18:27: RADIUS: Cisco AVpair [1] 59 "h323-incoming-conf-id=B8FE8B7F BF1711D3

```

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```
800CE483 89ADC43B"
00:18:27: RADIUS: Acct-Input-Octets [42] 6 0
00:18:27: RADIUS: Acct-Output-Octets [43] 6 148000
00:18:27: RADIUS: Acct-Input-Packets [47] 6 0
00:18:27: RADIUS: Acct-Output-Packets [48] 6 925
00:18:27: RADIUS: Acct-Session-Time [46] 6 32
00:18:27: RADIUS: Vendor, Cisco [26] 35
00:18:27: RADIUS: Cisco AVpair [1] 29 "h323-ivr-out=Tariff:Unknown"
00:18:27: RADIUS: User-Name [1] 12 "4081234567"
00:18:27: RADIUS: Acct-Status-Type [40] 6 Stop [2]
00:18:27: RADIUS: NAS-Port-Type [61] 6 Async [0]
00:18:27: RADIUS: Vendor, Cisco [26] 19
00:18:27: RADIUS: cisco-nas-port [2] 13 "ISDN 0:D:23"
00:18:27: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:18:27: RADIUS: Called-Station-Id [30] 7 "12345"
00:18:27: RADIUS: Service-Type [6] 6 Login [1]
00:18:27: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
00:18:27: RADIUS: Delay-Time [41] 6 0
00:18:27: RADIUS: Received from id 5 10.6.20.70:1699, Accounting-response, len 20
00:18:27: RADIUS: authenticator E5 B1 ED 3B AD A8 5B 5C - 49 83 63 BA DF 02 B2 00
```

An incoming call is set up using dial-peer voice 1001 pots. dial-peer voice 1001 has voice-class aaa 2 applied which should redirect AAA requests to the server specified for method list sanj_aaa6: 10.6.20.70 auth-port 1708 acct-port 1709.

```
00:30:05: ISDN Se1:23: RX <- SETUP pd = 8 callref = 0x0004
00:30:05: Bearer Capability i = 0x8090A2
00:30:05: Channel ID i = 0xE1808397
00:30:05: Calling Party Number i = 0x0080, '4081234567', Plan:Unknown, Type:Unknown
00:30:05: Called Party Number i = 0xE9, '12346', Plan:Private, Type:Abbreviated
00:30:05: RADIUS/ENCODE(0000000E): Unsupported AAA attribute timezone
00:30:05: RADIUS(0000000E): Encoding nas-port...Only port-type avlbl
00:30:05: RADIUS(0000000E): sending
00:30:05: RADIUS: Send to unknown id 6 10.6.20.70:1709, Accounting-Request, len 262
00:30:05: RADIUS: authenticator 2F 3A 09 3D 6B C4 10 D2 - F6 68 D6 F4 36 35 C3 DE
00:30:05: RADIUS: Acct-Session-Id [44] 10 "0000000E"
00:30:05: RADIUS: Vendor, Cisco [26] 56
00:30:05: RADIUS: Conf-Id [24] 50 "h323-conf-id=6C29BC16 BF1911D3 8010E483
89ADC43B"
00:30:05: RADIUS: Vendor, Cisco [26] 31
00:30:05: RADIUS: h323-call-origin [26] 25 "h323-call-origin=answer"
00:30:05: RADIUS: Vendor, Cisco [26] 65
00:30:05: RADIUS: Cisco AVpair [1] 59 "h323-incoming-conf-id=6C29BC16 BF1911D3
8010E483 89ADC43B"
00:30:05: RADIUS: User-Name [1] 12 "4081234567"
00:30:05: RADIUS: Acct-Status-Type [40] 6 Start [1]
00:30:05: RADIUS: NAS-Port-Type [61] 6 Async [0]
00:30:05: RADIUS: Vendor, Cisco [26] 19
00:30:05: RADIUS: cisco-nas-port [2] 13 "ISDN 1:D:23"
00:30:05: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:30:05: RADIUS: Called-Station-Id [30] 7 "12346"
00:30:05: RADIUS: Service-Type [6] 6 Login [1]
00:30:05: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
00:30:05: RADIUS: Delay-Time [41] 6 0
00:30:05: ISDN Se1:23: TX -> CALL_PROC pd = 8 callref = 0x8004
00:30:05: Channel ID i = 0xA98397
00:30:05: ISDN Se1:23: TX -> CONNECT pd = 8 callref = 0x8004
00:30:05: ISDN Se1:23: RX <- CONNECT_ACK pd = 8 callref = 0x0004
00:30:05: ISDN Se1:23: CALL_PROGRESS: CALL_CONNECTED call id 0x64, bchan 22, dsl 1
00:30:05: %ISDN-6-CONNECT: Interface Serial1:22 is now connected to 4081234567
00:30:06: RADIUS: Received from id 6 10.6.20.70:1709, Accounting-response, len 20
00:30:06: RADIUS: authenticator E1 AD 70 9F DC 09 29 32 - 74 47 96 9F 3F 77 27 82
00:30:11: %ISDN-6-CONNECT: Interface Serial1:22 is now connected to 4081234567
```

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```
00:30:19: RADIUS(0000000E): Encoding nas-port...Only port-type avlbl
00:30:19: RADIUS/ENCODE(0000000E): acct_session_id: 14
00:30:19: RADIUS(0000000E): sending
00:30:19: RADIUS: Send to unknown id 4 10.6.20.70:1708, Access-Request, len 199
00:30:19: RADIUS: authenticator CE 16 21 8D A5 59 56 9F - B7 E9 CA 5C EC C5 89 A0
00:30:19: RADIUS: User-Name [1] 8 "777777"
00:30:19: RADIUS: User-Password [2] 18 *
00:30:19: RADIUS: Vendor, Cisco [26] 56
00:30:19: RADIUS: Conf-Id [24] 50 "h323-conf-id=61A46F2C 00000003 62E66E40
634A0A64"
00:30:19: RADIUS: Vendor, Cisco [26] 36
00:30:19: RADIUS: Cisco AVpair [1] 30 "h323-ivr-out=transactionID:4"
00:30:19: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:30:19: RADIUS: NAS-Port-Type [61] 6 Async [0]
00:30:19: RADIUS: Vendor, Cisco [26] 19
00:30:19: RADIUS: cisco-nas-port [2] 13 "ISDN 1:D:23"
00:30:19: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:30:19: RADIUS: Service-Type [6] 6 Login [1]
00:30:19: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
00:30:20: RADIUS: Received from id 4 10.6.20.70:1708, Access-Accept, len 173
00:30:20: RADIUS: authenticator FF 0D 40 72 0D 80 12 26 - 44 13 D5 0E C4 BB 71 BE
00:30:20: RADIUS: Vendor, Cisco [26] 34
00:30:20: RADIUS: Cisco AVpair [1] 28 "h323-credit-amount=7777.77"
00:30:20: RADIUS: Vendor, Cisco [26] 26
00:30:20: RADIUS: Cisco AVpair [1] 20 "h323-return-code=0"
00:30:20: RADIUS: Vendor, Cisco [26] 30
00:30:20: RADIUS: h323-credit-time [102] 24 "h323-credit-time=54329"
00:30:20: RADIUS: Vendor, Cisco [26] 33
00:30:20: RADIUS: h323-billing-model [109] 27 "h323-billing-model=prepay"
00:30:20: RADIUS: Vendor, Cisco [26] 24
00:30:20: RADIUS: h323-currency [110] 18 "h323-currency=US"
00:30:20: RADIUS: Idle-Timeout [28] 6 30
00:30:20: RADIUS: Received from id E
00:30:43: ISDN Se1:23: RX <- DISCONNECT pd = 8 callref = 0x0004
00:30:43: Cause i = 0x8290 - Normal call clearing
00:30:43: %ISDN-6-DISCONNECT: Interface Serial1:22 disconnected from 4081234567 ,
call lasted 37 seconds
00:30:43: ISDN Se1:23: TX -> RELEASE pd = 8 callref = 0x8004
00:30:43: ISDN Se1:23: RX <- RELEASE_COMP pd = 8 callref = 0x0004
00:30:43: RADIUS/ENCODE(0000000E): Unsupported AAA attribute timezone
00:30:43: RADIUS(0000000E): Encoding nas-port...Only port-type avlbl
00:30:43: RADIUS(0000000E): sending
00:30:43: RADIUS: Send to unknown id 7 10.6.20.70:1709, Accounting-Request, len 327
00:30:43: RADIUS: authenticator 99 5A B4 45 67 C0 F4 91 - 9B 4B C3 1D 7E DE 7D D1
00:30:43: RADIUS: Acct-Session-Id [44] 10 "0000000E"
00:30:43: RADIUS: Vendor, Cisco [26] 56
00:30:43: RADIUS: Conf-Id [24] 50 "h323-conf-id=6C29BC16 BF1911D3 8010E483
89ADC43B"
00:30:43: RADIUS: Vendor, Cisco [26] 31
00:30:43: RADIUS: h323-call-origin [26] 25 "h323-call-origin=answer"
00:30:43: RADIUS: Vendor, Cisco [26] 65
00:30:43: RADIUS: Cisco AVpair [1] 59 "h323-incoming-conf-id=6C29BC16 BF1911D3
8010E483 89ADC43B"
00:30:43: RADIUS: Acct-Input-Octets [42] 6 0
00:30:43: RADIUS: Acct-Output-Octets [43] 6 161920
00:30:43: RADIUS: Acct-Input-Packets [47] 6 0
00:30:43: RADIUS: Acct-Output-Packets [48] 6 1012
00:30:43: RADIUS: Acct-Session-Time [46] 6 37
00:30:43: RADIUS: Vendor, Cisco [26] 35
00:30:43: RADIUS: Cisco AVpair [1] 29 "h323-ivr-out=Tariff:Unknown"
00:30:43: RADIUS: User-Name [1] 12 "4081234567"
00:30:43: RADIUS: Acct-Status-Type [40] 6 Stop [2]
00:30:43: RADIUS: NAS-Port-Type [61] 6 Async [0]
00:30:43: RADIUS: Vendor, Cisco [26] 19
```

Cisco_IOS_Voice_Troubleshooting_and_Monitoring_-_AAA_for_Voice_Troubleshooting

```
00:30:43: RADIUS: cisco-nas-port [2] 13 "ISDN 1:D:23"
00:30:43: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:30:43: RADIUS: Called-Station-Id [30] 7 "12346"
00:30:43: RADIUS: Service-Type [6] 6 Login [1]
00:30:43: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
00:30:43: RADIUS: Delay-Time [41] 6 0
00:30:43: RADIUS: Received from id 7 10.6.20.70:1709, Accounting-response, len 20
00:30:43: RADIUS: authenticator 78 80 AB D1 82 75 ED ED - E4 1F 12 25 D8 83 F9 6
```

voice class aaa 3 is applied to **dial-peer voice 1000 pots** and a call is made. **voice class aaa 3** uses server 10.6.20.70 with auth port 1720 and acct port 1721. The radius daemon has not started. AAA accounting and AAA authorization requests are sent to the appropriate server but no acknowledgement is received. Retries are attempted.

```
00:37:03: %SYS-5-CONFIG_I: Configured from console by console
00:37:11: ISDN Se0:23: RX <- SETUP pd = 8 callref = 0x009E
00:37:11: Bearer Capability i = 0x8090A2
00:37:11: Channel ID i = 0xE1808397
00:37:11: Calling Party Number i = 0x0080, '4081234567', Plan:Unknown, Type:Unknown
00:37:11: Called Party Number i = 0xE9, '12345', Plan:Private, Type:Abbreviated
00:37:11: RADIUS/ENCODE(00000010): Unsupported AAA attribute timezone
00:37:11: RADIUS(00000010): Encoding nas-port...Only port-type avlbl
00:37:11: RADIUS(00000010): sending
00:37:11: RADIUS: Send to unknown id 8 10.6.20.70:1721, Accounting-Request, len 414
00:37:11: RADIUS: authenticator EC F7 FD AB ED 0D 26 BF - F0 A4 D2 88 91 1E D9 22
00:37:11: RADIUS: Acct-Session-Id [44] 10 "00000010"
00:37:11: RADIUS: Vendor, Cisco [26] 56
00:37:11: RADIUS: h323-setup-time [25] 50 "h323-setup-time=*00:37:09.095 UTC Sat
Jan 1 2000"
00:37:11: RADIUS: Vendor, Cisco [26] 34
00:37:11: RADIUS: h323-gw-id [33] 28 "h323-gw-id=router."
00:37:11: RADIUS: Vendor, Cisco [26] 56
00:37:11: RADIUS: Conf-Id [24] 50 "h323-conf-id=69EAABEB BF1A11D3 8014E483
89ADC43B"
00:37:11: RADIUS: Vendor, Cisco [26] 31
00:37:11: RADIUS: h323-call-origin [26] 25 "h323-call-origin=answer"
00:37:11: RADIUS: Vendor, Cisco [26] 32
00:37:11: RADIUS: h323-call-type [27] 26 "h323-call-type=Telephony"
00:37:11: RADIUS: Vendor, Cisco [26] 65
00:37:11: RADIUS: Cisco AVpair [1] 59 "h323-incoming-conf-id=69EAABEB BF1A11D3
8014E483 89ADC43B"
00:37:11: RADIUS: Vendor, Cisco [26] 30
00:37:11: RADIUS: Cisco AVpair [1] 24 "subscriber=RegularLine"
00:37:11: RADIUS: User-Name [1] 12 "4081234567"
00:37:11: RADIUS: Acct-Status-Type [40] 6 Start [1]
00:37:11: RADIUS: NAS-Port-Type [61] 6 Async [0]
00:37:11: RADIUS: Vendor, Cisco [26] 19
00:37:11: RADIUS: cisco-nas-port [2] 13 "ISDN 0:D:23"
00:37:11: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:37:11: RADIUS: Called-Station-Id [30] 7 "12345"
00:37:11: RADIUS: Service-Type [6] 6 Login [1]
00:37:11: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
00:37:11: RADIUS: Delay-Time [41] 6 0
00:37:11: ISDN Se0:23: TX -> CALL_PROC pd = 8 callref = 0x809E
00:37:11: Channel ID i = 0xA98397
00:37:11: ISDN Se0:23: TX -> CONNECT pd = 8 callref = 0x809E
00:37:11: ISDN Se0:23: RX <- CONNECT_ACK pd = 8 callref = 0x009E
00:37:11: ISDN Se0:23: CALL_PROGRESS: CALL_CONNECTED call id 0x65, bchan 22, dsl 0
00:37:11: %ISDN-6-CONNECT: Interface Serial0:22 is now connected to 4081234567
00:37:16: RADIUS: Retransmit id 8
00:37:16: RADIUS: acct-delay-time for 4021D9EC (at 4021DB84) now 5
00:37:17: %ISDN-6-CONNECT: Interface Serial0:22 is now connected to 4081234567
00:37:21: RADIUS: Retransmit id 1
```

debug radius

Cisco_IOS_Voice_Troubleshooting_and_Monitoring_--_AAA_for_Voice_Troubleshooting

```
00:37:21: RADIUS: acct-delay-time for 4021D9EC (at 4021DB84) now 10
00:37:26: RADIUS: Retransmit id 2
00:37:26: RADIUS: acct-delay-time for 4021D9EC (at 4021DB84) now 15
00:37:31: RADIUS: Tried all servers.
00:37:31: RADIUS: No valid server found. Trying any viable server
00:37:31: RADIUS: Tried all servers.
00:37:31: RADIUS: No response for id 3
00:37:31: RADIUS/DECODE: parse response no app start; FAIL
00:37:31: RADIUS/DECODE: parse response; FAIL
00:37:35: RADIUS(00000010): Encoding nas-port...Only port-type avlbl
00:37:35: RADIUS/ENCODE(00000010): acct_session_id: 16
00:37:35: RADIUS(00000010): sending
00:37:35: RADIUS: Send to unknown id 5 10.6.20.70:1720, Access-Request, len 199
00:37:35: RADIUS: authenticator 4B 6E 67 9F D4 1E 73 37 - 45 D3 CD 7C 70 FD C7 12
00:37:35: RADIUS: User-Name [1] 8 "777777"
00:37:35: RADIUS: User-Password [2] 18 *
00:37:35: RADIUS: Vendor, Cisco [26] 56
00:37:35: RADIUS: Conf-Id [24] 50 "h323-conf-id=61A46F2C 00000003 62E66E40
634A0A64"
00:37:35: RADIUS: Vendor, Cisco [26] 36
00:37:35: RADIUS: Cisco AVpair [1] 30 "h323-ivr-out=transactionID:5"
00:37:35: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:37:35: RADIUS: NAS-Port-Type [61] 6 Async [0]
00:37:35: RADIUS: Vendor, Cisco [26] 19
00:37:35: RADIUS: cisco-nas-port [2] 13 "ISDN 0:D:23"
00:37:35: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:37:35: RADIUS: Service-Type [6] 6 Login [1]
00:37:35: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
00:37:40: RADIUS: Retransmit id 5
00:37:45: RADIUS: Retransmit id 5
00:37:50: RADIUS: Retransmit id 5
00:37:55: RADIUS: Tried all servers.
00:37:55: RADIUS: No valid server found. Trying any viable server
00:37:55: RADIUS: Tried all servers.
00:37:55: RADIUS: No response for id 5
00:37:55: RADIUS/DECODE: parse response no app start; FAIL
00:37:55: RADIUS/DECODE: parse response; FAIL
00:38:00: %ISDN-6-DISCONNECT: Interface Serial0:22 disconnected from 4081234567 ,
call lasted 48 seconds
00:38:00: ISDN Se0:23: TX -> DISCONNECT pd = 8 callref = 0x809E
00:38:00: Cause i = 0x8090 - Normal call clearing
00:38:00: RADIUS/ENCODE(00000010): Unsupported AAA attribute timezone
00:38:00: RADIUS(00000010): Encoding nas-port...Only port-type avlbl
00:38:00: RADIUS(00000010): sending
00:38:00: RADIUS: Send to unknown id 9 10.6.20.70:1721, Accounting-Request, len 660
00:38:00: RADIUS: authenticator C5 79 B7 D3 92 75 37 D0 - E7 5C 5B 84 99 6E 97 17
00:38:00: RADIUS: Acct-Session-Id [44] 10 "00000010"
00:38:00: RADIUS: Vendor, Cisco [26] 56
00:38:00: RADIUS: h323-setup-time [25] 50 "h323-setup-time=*00:37:09.095 UTC Sat
Jan 1 2000"
00:38:00: RADIUS: Vendor, Cisco [26] 34
00:38:00: RADIUS: h323-gw-id [33] 28 "h323-gw-id=router."
00:38:00: RADIUS: Vendor, Cisco [26] 56
00:38:00: RADIUS: Conf-Id [24] 50 "h323-conf-id=69EAABEB BF1A11D3 8014E483
89ADC43B"
00:38:00: RADIUS: Vendor, Cisco [26] 31
00:38:00: RADIUS: h323-call-origin [26] 25 "h323-call-origin=answer"
00:38:00: RADIUS: Vendor, Cisco [26] 32
00:38:00: RADIUS: h323-call-type [27] 26 "h323-call-type=Telephony"
00:38:00: RADIUS: Vendor, Cisco [26] 65
00:38:00: RADIUS: Cisco AVpair [1] 59 "h323-incoming-conf-id=69EAABEB BF1A11D3
8014E483 89ADC43B"
00:38:00: RADIUS: Vendor, Cisco [26] 30
00:38:00: RADIUS: Cisco AVpair [1] 24 "subscriber=RegularLine"
```

Cisco_IOS_Voice_Troubleshooting_and_Monitoring_--_AAA_for_Voice_Troubleshooting

```
00:38:00: RADIUS: Acct-Input-Octets [42] 6 0
00:38:00: RADIUS: Acct-Output-Octets [43] 6 112160
00:38:00: RADIUS: Acct-Input-Packets [47] 6 0
00:38:00: RADIUS: Acct-Output-Packets [48] 6 701
00:38:00: RADIUS: Acct-Session-Time [46] 6 49
00:38:00: RADIUS: Vendor, Cisco [26] 58
00:38:00: RADIUS: h323-connect-time [28] 52 "h323-connect-time=*00:37:09.109 UTC Sat
Jan 1 2000"
00:38:00: RADIUS: Vendor, Cisco [26] 61
00:38:00: RADIUS: h323-disconnect-tim[29] 55 "h323-disconnect-time=*00:37:57.739 UTC
Sat Jan 1 2000"
00:38:00: RADIUS: Vendor, Cisco [26] 34
00:38:00: RADIUS: h323-disconnect-cau[30] 28 "h323-disconnect-cause=10 "
00:38:00: RADIUS: Vendor, Cisco [26] 35
00:38:00: RADIUS: Cisco AVpair [1] 29 "h323-ivr-out=Tariff:Unknown"
00:38:00: RADIUS: Vendor, Cisco [26] 28
00:38:00: RADIUS: h323-voice-quality [31] 22 "h323-voice-quality=0"
00:38:00: RADIUS: User-Name [1] 12 "4081234567"
00:38:00: RADIUS: Acct-Status-Type [40] 6 Stop [2]
00:38:00: RADIUS: NAS-Port-Type [61] 6 Async [0]
00:38:00: RADIUS: Vendor, Cisco [26] 19
00:38:00: RADIUS: cisco-nas-port [2] 13 "ISDN 0:D:23"
00:38:00: RADIUS: Calling-Station-Id [31] 12 "4081234567"
00:38:00: RADIUS: Called-Station-Id [30] 7 "12345"
00:38:00: RADIUS: Service-Type [6] 6 Login [1]
00:38:00: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
00:38:00: RADIUS: Delay-Time [41] 6 0
00:38:00: ISDN Se0:23: RX <- RELEASE pd = 8 callref = 0x009E
00:38:00: ISDN Se0:23: TX -> RELEASE_COMP pd = 8 callref = 0x809E
00:38:05: RADIUS: Retransmit id 9
00:38:05: RADIUS: acct-delay-time for 4021D9EC (at 4021DC7A) now 5
00:38:10: RADIUS: Retransmit id 4
00:38:10: RADIUS: acct-delay-time for 4021D9EC (at 4021DC7A) now 10
00:38:15: RADIUS: Retransmit id 5
00:38:15: RADIUS: acct-delay-time for 4021D9EC (at 4021DC7A) now 15
00:38:20: RADIUS: Tried all servers.
00:38:20: RADIUS: No valid server found. Trying any viable server
00:38:20: RADIUS: Tried all servers.
00:38:20: RADIUS: No response for id 6
00:38:20: RADIUS/DECODE: parse response no app start; FAIL
00:38:20: RADIUS/DECODE: parse response; FAIL
```

debug radius accounting

In the output below, cdr1 includes h323-call-origin but does not include VSA h323-gw-id. cdr2 includes h323-gw-id but does not include h323-call-origin.

```
show call accounting-template voice cdr1

CDR template cdr1 is running
url: tftp://10.255.255.255/johndoe/sanjose/cdr/cdr1.cdr
The last load was successful.
attr: h323-call-origin (56)
Totally 1 attrrs defined.

show call accounting-template voice cdr2
CDR template cdr2 is running
url: tftp://10.255.255.255/johndoe/sanjose/cdr/cdr2.cdr
The last load was successful.

attr: h323-gw-id (65)
```


Cisco_IOS_Voice_Troubleshooting_and_Monitoring_-_AAA_for_Voice_Troubleshooting

Totally 1 attrrs defined.

The output below is from a call that uses cdr1.cdr which allows only h323-call-origin.

```
debug radius accounting
Radius protocol debugging is on
Radius packet hex dump debugging is off
Radius packet protocol (authentication) debugging is off
Radius packet protocol (accounting) debugging is on
02:41:32: RADIUS/ENCODE(00000023): Unsupported AAA attribute timezone
02:41:32: RADIUS(00000023): Encoding nas-port...Only port-type avlbl
02:41:32: RADIUS(00000023): sending
02:41:32: RADIUS: Send to unknown id 26 10.6.20.70:1699, Accounting-Request, len
262
02:41:32: RADIUS:  authenticator 84 6E A0 C0 0F 27 79 03 - 59 96 FC 6C F4 17 05
4D
02:41:32: RADIUS:  Acct-Session-Id      [44] 10  "00000023"
02:41:32: RADIUS:  Vendor, Cisco        [26] 56
02:41:32: RADIUS:  Conf-Id              [24] 50  "h323-conf-id=C925CD59 BF2B11D3
8038E483 89ADC43B"
02:41:32: RADIUS:  Vendor, Cisco        [26] 31
02:41:32: RADIUS:  h323-call-origin     [26] 25  "h323-call-origin=answer"
02:41:32: RADIUS:  Vendor, Cisco        [26] 65
02:41:32: RADIUS:  Cisco AVpair        [1]  59  "h323-incoming-conf-id=C925CD59
BF2B11D3 8038E483 89ADC43B"
02:41:32: RADIUS:  User-Name            [1]  12  "4081234567"
02:41:32: RADIUS:  Acct-Status-Type     [40]  6  Start                               [1]
02:41:32: RADIUS:  NAS-Port-Type        [61]  6  Async                               [0]
02:41:32: RADIUS:  Vendor, Cisco        [26] 19
02:41:32: RADIUS:  cisco-nas-port       [2]  13  "ISDN 0:D:23"
02:41:32: RADIUS:  Calling-Station-Id   [31] 12  "4081234567"
02:41:32: RADIUS:  Called-Station-Id    [30]  7  "12345"
02:41:32: RADIUS:  Service-Type         [6]  6  Login                               [1]
02:41:32: RADIUS:  NAS-IP-Address       [4]  6  10.5.20.100
02:41:32: RADIUS:  Delay-Time           [41]  6  0
02:41:32: RADIUS: Received from id 26 10.6.20.70:1699, Accounting-response, len
20
02:41:32: RADIUS:  authenticator 90 AD C8 09 60 D7 26 01 - DE E0 BC DC C1 F8 CA
2F
02:41:32: %ISDN-6-CONNECT: Interface Serial0:22 is now connected to 4081234567
02:41:38: %ISDN-6-CONNECT: Interface Serial0:22 is now connected to 4081234567
02:41:52: RADIUS(00000023): Encoding nas-port...Only port-type avlbl
02:41:59: %ISDN-6-DISCONNECT: Interface Serial0:22 disconnected from 4081234567
, call lasted 26 seconds
02:41:59: RADIUS/ENCODE(00000023): Unsupported AAA attribute timezone
02:41:59: RADIUS(00000023): Encoding nas-port...Only port-type avlbl
02:41:59: RADIUS(00000023): sending
02:41:59: RADIUS: Send to unknown id 27 10.6.20.70:1699, Accounting-Request, len
327
02:41:59: RADIUS:  authenticator 13 B7 10 EE 1C 55 7A D2 - 0F 4A A5 2F 1F 85 0E
3A
02:41:59: RADIUS:  Acct-Session-Id      [44] 10  "00000023"
02:41:59: RADIUS:  Vendor, Cisco        [26] 56
02:41:59: RADIUS:  Conf-Id              [24] 50  "h323-conf-id=C925CD59 BF2B11D3
8038E483 89ADC43B"
02:41:59: RADIUS:  Vendor, Cisco        [26] 31
02:41:59: RADIUS:  h323-call-origin     [26] 25  "h323-call-origin=answer"
02:41:59: RADIUS:  Vendor, Cisco        [26] 65
02:41:59: RADIUS:  Cisco AVpair        [1]  59  "h323-incoming-conf-id=C925CD59
BF2B11D3 8038E483 89ADC43B"
02:41:59: RADIUS:  Acct-Input-Octets    [42]  6  0
02:41:59: RADIUS:  Acct-Output-Octets   [43]  6  121600
02:41:59: RADIUS:  Acct-Input-Packets  [47]  6  0
```

debug radius accounting

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```
02:41:59: RADIUS: Acct-Output-Packets [48] 6 760
02:41:59: RADIUS: Acct-Session-Time [46] 6 27
02:41:59: RADIUS: Vendor, Cisco [26] 35
02:41:59: RADIUS: Cisco AVpair [1] 29 "h323-ivr-out=Tariff:Unknown"
02:41:59: RADIUS: User-Name [1] 12 "4081234567"
02:41:59: RADIUS: Acct-Status-Type [40] 6 Stop [2]
02:41:59: RADIUS: NAS-Port-Type [61] 6 Async [0]
02:41:59: RADIUS: Vendor, Cisco [26] 19
02:41:59: RADIUS: cisco-nas-port [2] 13 "ISDN 0:D:23"
02:41:59: RADIUS: Calling-Station-Id [31] 12 "4081234567"
02:41:59: RADIUS: Called-Station-Id [30] 7 "12345"
02:41:59: RADIUS: Service-Type [6] 6 Login [1]
02:41:59: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
02:41:59: RADIUS: Delay-Time [41] 6 0
02:41:59: RADIUS: Received from id 27 10.6.20.70:1699, Accounting-response, len
20
02:41:59: RADIUS: authenticator 7F B2 88 3A 4A 96 05 C6 - D5 81 19 D8 25 3B 4D CB
```

The output below is from the **show debug** command.

```
show debug
Radius protocol debugging is on
Radius packet protocol (accounting) debugging is on
```

The output below is from a call that uses cdr2 which allows h323-gw-id, but does not allow h323-call-origin.

```
ADIUS/ENCODE(00000025): Unsupported AAA attribute timezone
02:51:35: RADIUS(00000025): Encoding nas-port...Only port-type avlbl
02:51:35: RADIUS(00000025): sending
02:51:35: RADIUS: Send to unknown id 28 10.6.20.70:1709, Accounting-Request, len
265
02:51:35: RADIUS: authenticator 15 F0 7E AB 75 07 10 70 - 5E 3C 54 78 09 18 83
E5
02:51:35: RADIUS: Acct-Session-Id [44] 10 "00000025"
02:51:35: RADIUS: Vendor, Cisco [26] 34
02:51:35: RADIUS: h323-gw-id [33] 28 "h323-gw-id=router."
02:51:35: RADIUS: Vendor, Cisco [26] 56
02:51:35: RADIUS: Conf-Id [24] 50 "h323-conf-id=306F55DD BF2D11D3
803CE483 89ADC43B"
02:51:35: RADIUS: Vendor, Cisco [26] 65
02:51:35: RADIUS: Cisco AVpair [1] 59 "h323-incoming-conf-id=306F55DD
BF2D11D3 803CE483 89ADC43B"
02:51:35: RADIUS: User-Name [1] 12 "4081234567"
02:51:35: RADIUS: Acct-Status-Type [40] 6 Start [1]
02:51:35: RADIUS: NAS-Port-Type [61] 6 Async [0]
02:51:35: RADIUS: Vendor, Cisco [26] 19
02:51:35: RADIUS: cisco-nas-port [2] 13 "ISDN 1:D:23"
02:51:35: RADIUS: Calling-Station-Id [31] 12 "4081234567"
02:51:35: RADIUS: Called-Station-Id [30] 7 "12346"
02:51:35: RADIUS: Service-Type [6] 6 Login [1]
02:51:35: RADIUS: NAS-IP-Address [4] 6 10.5.20.100
02:51:35: RADIUS: Delay-Time [41] 6 0
02:51:35: %ISDN-6-CONNECT: Interface Serial1:22 is now connected to 4081234567
02:51:35: RADIUS: Received from id 28 10.6.20.70:1709, Accounting-response, len
20
02:51:35: RADIUS: authenticator D3 D8 59 42 2B 48 96 8D - 5E 2E D8 61 9A 9D 0D
5F
02:51:41: %ISDN-6-CONNECT: Interface Serial1:22 is now connected to 4081234567
02:51:43: %ISDN-6-DISCONNECT: Interface Serial1:22 disconnected from 4081234567
, call lasted 8 seconds
02:51:43: RADIUS/ENCODE(00000025): Unsupported AAA attribute timezone
02:51:43: RADIUS(00000025): Encoding nas-port...Only port-type avlbl
02:51:43: RADIUS(00000025): sending
```

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```
02:51:43: RADIUS: Send to unknown id 29 10.6.20.70:1709, Accounting-Request, len
330
02:51:43: RADIUS:  authenticator 55 35 AB CC 20 64 69 4B - 3F EE 79 04 11 E8 AE
4F
02:51:43: RADIUS:  Acct-Session-Id      [44] 10  "00000025"
02:51:43: RADIUS:  Vendor, Cisco       [26] 34
02:51:43: RADIUS:  h323-gw-id         [33] 28  "h323-gw-id=router."
02:51:43: RADIUS:  Vendor, Cisco       [26] 56
02:51:43: RADIUS:  Conf-Id            [24] 50  "h323-conf-id=306F55DD BF2D11D3
803CE483 89ADC43B"
02:51:43: RADIUS:  Vendor, Cisco       [26] 65
02:51:43: RADIUS:  Cisco AVpair        [1] 59  "h323-incoming-conf-id=306F55DD
BF2D11D3 803CE483 89ADC43B"
02:51:43: RADIUS:  Acct-Input-Octets   [42] 6   0
02:51:43: RADIUS:  Acct-Output-Octets  [43] 6  50240
02:51:43: RADIUS:  Acct-Input-Packets  [47] 6   0
02:51:43: RADIUS:  Acct-Output-Packets [48] 6  314
02:51:43: RADIUS:  Acct-Session-Time  [46] 6   8
02:51:43: RADIUS:  Vendor, Cisco       [26] 35
02:51:43: RADIUS:  Cisco AVpair        [1] 29  "h323-ivr-out=Tariff:Unknown"
02:51:43: RADIUS:  User-Name           [1] 12  "4081234567"
02:51:43: RADIUS:  Acct-Status-Type    [40] 6   Stop [2]
02:51:43: RADIUS:  NAS-Port-Type       [61] 6   Async [0]
02:51:43: RADIUS:  Vendor, Cisco       [26] 19
02:51:43: RADIUS:  cisco-nas-port      [2] 13  "ISDN 1:D:23"
02:51:43: RADIUS:  Calling-Station-Id  [31] 12  "4081234567"
02:51:43: RADIUS:  Called-Station-Id   [30] 7   "12346"
02:51:43: RADIUS:  Service-Type        [6] 6   Login [1]
02:51:43: RADIUS:  NAS-IP-Address      [4] 6  10.5.20.100
02:51:43: RADIUS:  Delay-Time          [41] 6   0
02:51:43: RADIUS: Received from id 29 10.6.20.70:1709, Accounting-response, len
20
02:51:43: RADIUS:  authenticator 45 31 ED 45 F4 06 ED 54 - 5E 6F 83 64 4D 2D 34
90
```

Using show Commands for AAA Voice Troubleshooting

show call accounting voice summary

The **show call accounting voice summary** command shows the status of all accounting templates that are defined, loaded.

```
show call accounting voice summary

name          url                                          last_load  is_running
=====
cdr1          tftp://10.255.255.255/johndoe/sanjose/  success    is running
cdr2          tftp://10.255.255.255/johndoe/sanjose/  success    is running

=== show call accounting-template voice ===
```

The **show call accounting-template voice *template name*** command shows the VSAs that are contained in the accounting template.

```
show call accounting-template voice cdr1
```

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```
CDR template cdr1 is running
  url: tftp://10.255.255.255/johndoe/sanjose/cdr/cdr1.cdr
The last load was successful.
  attr: h323-call-origin (56)
  Totally 1 attrs defined.
```

```
show call accounting-template voice cdr2
```

```
CDR template cdr2 is running
  url: tftp://10.255.255.255/johndoe/sanjose/cdr/cdr2.cdr
  The last load was successful.
  attr: h323-call-origin (56)
  Totally 1 attrs defined.
```

The output below results from defining a template that does not exist or that cannot be reached.

```
router(config)#$://10.255.255.255/johndoe/sanjose/cdr/cdr4000.cdr
Reading cdr template cdr10 fail, put it on retry queue.
01:15:46: hifs ifs could not open file
```

The output below is for a template with an invalid VSA.

```
show call accounting-template voice cdr1
CDR template cdr1 is running
  url: tftp://10.255.255.255/johndoe/sanjose/cdr/cdr1.cdr
  The last load was successful.
  attr: h323-call-origin (56)
  Totally 1 attrs defined.
```

Template cdr1.cdr is modified on the tftp server to enable an invalid VSA (for example h323-call-origin) to be put into the template.

```
call accounting-template voice reload cdr1

Loading johndoe/sanjose/cdr/cdr1.cdr from 10.255.255.255 (via Ethernet0): !
[OK - 88/4096 bytes]
cam: Fail to reload cdr template cdr1, unloading ...
02:27:29: hifs ifs file read succeeded. size=88,
url=tftp://10.255.255.255/johndoe/sanjose/cdr/cdr1.cdr
02:27:29: Error: attr name invalid-vsa-h323-call-origin (0) is not valid in line 3.

sh call accounting-template voice cdr1

CDR template cdr1 is running
  url: tftp://10.255.255.255/johndoe/sanjose/cdr/cdr1.cdr
  Last load returned errno=8, Exec format error
  attr: h323-call-origin (56)
  Totally 1 attrs defined.
```

The template has been rejected, and previous template still applied.

show call aaa attributes

The **show call aaa attributes** command displays the VSAs that are supported. Mandatory VSAs that are sent to the accounting server are not displayed.

```
show call aaa attributes

AAA ATTRIBUTE LIST:
  Name=disc-cause-ext          Format=Enum
```

show call accounting voice summary

Cisco_IOS_Voice_Troubleshooting_and_Monitoring_--_AAA_for_Voice_Troubleshooting

```
Name=Acct-Status-Type          Format=Enum
Name=acl                       Format=Ulong
Name=addr                      Format=IP v4 Address
.....
Name=gw-password              Format=Binary
Name=h323-billing-model       Format=String
Name=h323-call-origin         Format=String
.....
```

Use the **show call accounting-template voice summary** command to check if a template is loaded and running.

The output below shows two templates successfully loaded and running, and a template that failed to load.

```
show call accounting-template voice summary

name          url                                                    last_load  is_running
=====
cdr1          tftp://10.255.255.255/johndoe/sanjose/               success    is running
cdr2          tftp://10.255.255.255/johndoe/sanjose/               success    is running
cdr10         tftp://10.255.255.255/johndoe/sanjose/               fail       is not running
```

The output below shows reloading template cdr1 after modifying it.

Initially, the original template cdr1 is loaded as shown:

```
show call accounting-template voice cdr1

CDR template cdr1 is running
url: tftp://10.255.255.255/johndoe/sanjose/cdr/cdr1.cdr
The last load was successful.
attr: h323-call-origin (56)
Totally 1 attrs defined.
```

Additional VSAs are added to modify cdr1 on the tftp server as shown:

```
call accounting

call accounting-template voice reload cdr1
Loading johndoe/sanjose/cdr/cdr1.cdr from 10.255.255.255 (via Ethernet0): !
[OK - 1848/3072 bytes]
cam: Reload cdr template cdr1 success.
01:35:58: hifs ifs file read succeeded. size=1848,
url=tftp://10.255.255.255/johndoe/sanjose/cdr/cdr1.cdr

show call accounting-template voice cdr1
CDR template cdr1 is running
url: tftp://10.255.255.255/johndoe/sanjose/cdr/cdr1.cdr
The last load was successful.
attr: h323-call-origin (56)
attr: h323-call-type (57)
attr: h323-connect-time (59)
attr: h323-disconnect-cause (63)
attr: h323-disconnect-time (64)
attr: h323-gw-id (65)
attr: h323-remote-address (73)
attr: h323-remote-id (74)
attr: h323-setup-time (76)
attr: h323-voice-quality (78)
attr: subscriber (79)
attr: in-portgrp-id (80)
```

show call aaa attributes

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```
attr: out-portgrp-id (81)
attr: charged-units (82)
attr: disconnect-text (83)
attr: info-type (84)
attr: logical-if-index (85)
attr: peer-address (86)
attr: peer-id (87)
attr: peer-if-index (88)
attr: acom-level (89)
attr: tx-duration (90)
attr: voice-tx-duration (91)
attr: fax-tx-duration (92)
attr: noise-level (94)
attr: codec-bytes (95)
attr: coder-type-rate (96)
attr: early-packets (97)
attr: late-packets (98)
attr: lost-packets (99)
attr: gapfill-with-interpolation (100)
attr: gapfill-with-prediction (101)
attr: gapfill-with-redundancy (102)
attr: gapfill-with-silence (103)
attr: lowater-playout-delay (104)
attr: hiwater-playout-delay (105)
attr: ontime-rv-playout (106)
attr: receive-delay (107)
attr: round-trip-delay (108)
attr: remote-udp-port (109)
attr: session-protocol (110)
attr: vad-enable (111)
```

Totally 42 attrs defined.