VegaStream
Information Note
Radius accounting

Introduction.

This information note identifies the capabilities of the Vega product range with respect to providing Billing CDRs (Call Detail Records) using Radius Accounting records.

For details about Billing CDRs available via Telnet or serial interfaces, see information note IN_01-Billing.

Frequently billing is carried out by the SIP proxy or the H.323 gatekeeper rather than by the Vega end-point itself. The benefit of this is that the billing records are collected at a single point rather than from multiple distributed end points. When using the proxy / gatekeeper for billing, the Answer and Disconnect messages sent to the proxy / gatekeeper define the duration of the call. (See Table 1 for details of when the Vega sends Answer and Disconnect).

Where CDR records are required from the Vega, Radius Accounting records can be used as documented below.

Radius accounting.

Vega gateways can use Radius Accounting records to deliver billing CDR information.

A Radius accounting record with an "overloaded accounting session ID" field can be used to carry the CDR data,

or , from R7 ⚠7 an alternative format, "Vendor specific attributes" may be chosen.

If overloaded account session ID radius records are chosen, one of two formats may be selected, one which matches Cisco's record format for easy integration into systems that already incorporate Cisco equipment, and the second a VegaStream format which matches the data provided in the Vega telnet and serial CDR format.

If Vendor Specific Attributes is chosen, the Vega produces records which are compatible with Cisco's VSA format.

CDR records are sent at call start and call stop. If Cisco format is chosen, separate records are sent for each leg of the call (i.e. for a call through a Vega there will be a start and a stop record for the call as it enters the Vega and also for the call as it exits the Vega – two start records and 2 stop records).

The Vega can be configured with up to 2 Radius servers, which it uses in Master / Backup order. On power up or reboot, if any radius billing server is enabled in the Vega parameters it will send an Accounting On record

(registration message) to the first enabled server. If a server fails (replies timeout) the Vega will try registering with the other server (if it is enabled). If it receives a response to the registration it will send the CDR records to that server (Accounting start and Accounting stop messages). If no reply is received it will keep hunting for a server.

Radius Accounting Records are sent as UDP datagrams.

Radius operation can be configured through the web browser.

> On the web browser select Logging then RADIUS

`RADIUS Configuration`

Radius Servers Configuration

Server	Enabled	IP/Name	Port	Secret	Chg?
1	0	0.0.0.0	1813	testing123	Modify
2	0	0.0.0.0	1813	testing123	Modify

Delete Add

> Configure the server details by selecting Modify

RADIUS > RADIUS Server 1

Modify RADIUS Server

Enabled	☐
IP/Name	0.0.0.0
Port	1813
Secret	testing123

Submit

Configuration of the format of the Radius records that the Vega will send is carried out in the **Radius General Configuration**, **Radius Standard Attributes**, **Radius Accounting Attributes** and **Radius Cisco Vendor Specific Attributes** sections on the Logging > RADIUS page.

Radius General Configuration

Host Name	this_radius_hostname
Retry Timer Increment (ms)	500
Retry Timer Limit (ms)	4000
Retries	4
Window Size	10
Overload Session ID	○ vega ● cisco compatible ○ cisco vsa ○ none

Submit

⚠6 From release 6, the NAS (Network Access Server – gateway) identifier in the Accounting records is set from Host Name, specified above; 🚫 prior to release 6 the NAS identifier was specified by `lan.name`

Radius Standard Attributes

called_station_id	☑
calling_station_id	☑
nas_identifier	☑
nas_ip_address	☑
nas_port	☑
nas_port_type	☑
user_name	☑

Submit

Standard Radius fields (field types 1 to 39 and 60+) – defined in RFC 2138 may be configured in the **Radius Standard Attributes** section.

Entry	Meaning when tick box is ticked
called_station_id	include E164 number of the called party
calling_station_id	include E164 number of the calling party
nas_identifier	include name specified in logger.radius.name
nas_ip_address	include IP address of this gateway

nas_port	include interface number (IF:) that this call leg is traversing
nas_port_type	include interface type, Ethernet for LAN interface, Async for analogue POTS interfaces and ISDN-sync for ISDN interfaces
user_name	include name of the user … in priority order this is populated with: pre-routed NAME value, pre-routed NAMEC value , post-routed NAMEC value, pre-routed TELC , post-routed TELC value, TEL

Radius Accounting Attributes

acct_delay_time	☑
acct_input_octets	☑
acct_output_octets	☑
acct_session_id	☑
acct_session_time	☑
acct_status_type	☑

Submit

Radius accounting fields (field types 40 to 51) may be configured in the **Radius Accounting Attributes** section.

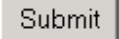| Entry	Meaning when tick box is ticked
acct_delay_time	include indication of delay incurred before this record was sent
acct_input_octets	include count of RTP media bytes received for this call – only available in STOP records, and if the QOS statistics module is enabled
acct_output_octets	include count of RTP media bytes sent for this call – only available in STOP records, and if the QOS statistics module is enabled
acct_session_id	include session ID … this is the field that contains the CDR information when overload_session_id = vega_format or cisco_format
acct_session_time	include session time field = duration of call in seconds
acct_status_type	include record type, i.e. indicate Accounting on/off for registration/de-registration records and Start/Stop for call records

Radius Cisco Vendor Specific Attributes

call_origin	☑	
call_type	☑	
connect_time	☑	
connection_id	☑	
disconnect_cause	☑	
disconnect_time	☑	
gateway_id	☑	
remote_gateway_id	☑	
setup_time	☑	
voice_quality	☑	

[Submit]

Fields that are present in the Vendor Specific Attributes Radius records may be configured in the **Radius Cisco Vendor Specific Attributes** section.

Entry	Meaning when tick box is ticked
call_origin	include indication of call origin, either Originate or Answer
call_type	include indication of call type, either Telephony or VoIP
connect_time	include connection time for this call leg – in NTP format
connection_id	include unique call ID (4 word hex value consisting of call context, connection time in seconds, disconnection time in seconds and IP address)
disconnect_cause	include Q.850 disconnect cause code
disconnect_time	include disconnection time for this call leg – in NTP format
gateway_id	include name specified in logger.radius.name
remote_gateway_id	include IP address of the remote endpoint
setup_time	include setup time for this call leg – in NTP format
voice_quality	include voice quality field (Voice Quality field is reserved for future use)

NOTE

1. All Radius parameters may be activated by selecting **Apply** after **Submit** .

2. ⚠6 Whenever a radius parameter is modified and an APPLY is performed the Vega will de-register with the current server and will then register again, firstly attempting to register with the master server, and if that fails, then trying to register with the backup radius server.

Network Time Protocol.

To ensure that the time values logged in Radius accounting records are accurate, ensure that NTP operation has been enabled (see the LAN configuration page) and that the Vega is configured to check the time regularly (e.g. once per day).

Vega billing CDRs.

The billing CDRs available on the telnet and serial interfaces are completely independent of the radius accounting CDRs – collecting or not collecting them will not affect the Radius Accounting CDRs.

Other related documents.

On the www.VegaAssist.com web site:
- Vega primer
- IN_01-Billing.

Radius Remote Authentication is specified in RFC 2138.
Radius accounting is specified in RFC 2139.

Tables

Table 1:

The call duration is taken from Answer to Disconnect – as specified below:

Product / call type	Answer	Disconnect
Vega 100 and Vega 50 BRI		
Vega 100 and Vega 50 BRI – VoIP to telephony	Answer received from ISDN	Earliest of: 1. disconnect received from ISDN 2. disconnect received from VoIP
Vega 100 and Vega 50 BRI – telephony to VoIP	Answer received from VoIP	Earliest of: 1. disconnect received from ISDN 2. disconnect received from VoIP
Vega 100 and Vega 50 BRI – telephony to telephony	Answer received from destination ISDN	Earliest of: 1. disconnect received from called ISDN 2. disconnect received from calling ISDN
Vega 50 FXO		
Vega 50 FXO – VoIP to telephony	Either: 1. If line current reversal is enabled and supported by the PBX, Answer is indicated by the PBX reversing line current from the Idle to Active state. 2. Otherwise no answer signal is available on analogue signaling, so CDR call time is started on outgoing call seize (call time will include dial tone, dialing and ring tone / busy / other progress tone)	Earliest of: 1. disconnect received from VoIP 2. [1]If enabled and supported by the PBX – loop current disconnect indication of call clear from the PBX 3. [1]If enabled and supported by the PBX – line current reversal return to the idle state indication of call clear from the PBX
Vega 50 FXO – telephony to VoIP	Answer received from VoIP	Earliest of: 1. disconnect received from VoIP 2. [1]If enabled and supported by the PBX – loop current disconnect indication of call clear from the PBX 3. [1]If enabled and supported by the PBX – line current reversal return to the idle state indication of call clear from the PBX

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[1] Only loop current disconnect or line current reversal can be enabled – these functions are mutually exclusive.

Product / call type	Answer	Disconnect
Vega 50 FXO – telephony to telephony	Either: 1. If line current reversal is enabled and supported by the PBX, Answer is indicated by the PBX reversing line current from the Idle to Active state. 2. Otherwise no answer signal is available on analogue signaling, so CDR call time is started on outgoing call seize (call time will include dial tone, dialing and ring tone / busy / other progress tone)	[2]Either: 1. [1]If enabled and supported by the PBX – loop current disconnect indication of call clear from the PBX 2. [1]If enabled and supported by the PBX – line current reversal return to the idle state indication of call clear from the PBX
Vega 50 FXS		
Vega 50 FXS – VoIP to telephony	Answer received from attached handset (off-hook / seize)	Earliest of: 1. disconnect received from attached handset (on-hook) 2. disconnect received from VoIP
Vega 50 FXS – telephony to VoIP	Answer received from VoIP	Earliest of: 1. disconnect received from attached handset (on-hook) 2. disconnect received from VoIP
Vega 50 FXS – telephony to telephony	Answer received from attached handset (off-hook / seize)	Earliest of: 1. disconnect received from calling handset (on-hook) 2. disconnect received from called handset (on-hook)

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[2] If neither loop current disconnect or line current reversal are enabled and supported – telephony to telephony calls can never clear!

Table 2:

Format of Vega Radius accounting records

Accounting On:
RADIUS: Code = Accounting-Request (4) RADIUS: Identifier = 0x00 RADIUS: Packet Length = 38 RADIUS: Authenticator = D9:29:5A:CC:BA:30:C3:03:9E:87:0B:80:B6:C0:01:29 RADIUS: Attribute = NAS-IP-Address (4) RADIUS: Atribute Length = 6 RADIUS: NAS IP Address = 192.168.1.106 RADIUS: Attribute = NAS-Identifier (32) RADIUS: Atribute Length = 6 RADIUS: NAS Identifier = test RADIUS: Attribute = Acct-Status-Type (40) RADIUS: Atribute Length = 6 RADIUS: Status Type = Accounting-On (7)
Ack from server
RADIUS: Code = Accounting-Response (5) RADIUS: Identifier = 0x00 RADIUS: Packet Length = 20 RADIUS: Authenticator = 8C:3A:0E:4F:C7:AB:62:98:F6:04:B9:26:61:4C:AF:3C

Accounting Start (VegaStream format):	**Accounting Start (Cisco compatible format) – leg 2:**

RADIUS: Code = Accounting-Request (4)
RADIUS: Identifier = 0x01
RADIUS: Packet Length = 207
RADIUS: Authenticator =
      0A:2D:BB:0C:D0:C7:EA:CA:A2:67:01:C6:9D:BD:7C:09
RADIUS: Attribute = NAS-IP-Address (4)
RADIUS: Atribute Length = 6
RADIUS: NAS IP Address = 192.168.1.106
RADIUS: Attribute = NAS-Identifier (32)
RADIUS: Atribute Length = 6
RADIUS: NAS Identifier = test
RADIUS: Attribute = Acct-Status-Type (40)
RADIUS: Atribute Length = 6
RADIUS: Status Type = Start (1)
RADIUS: Attribute = Acct-Session-Id (44)
RADIUS: Atribute Length = 169
RADIUS: Session ID =
      0000000002,01/01/1999,00:03:26,01/01/1999,00:00:00,
	RADIUS: Code = Accounting-Request (4)
	RADIUS: Identifier = 0x83
	RADIUS: Packet Length = 182
	RADIUS: Authenticator =
	      3B:3C:74:63:42:5D:73:D2:6B:4D:D6:96:4B:B4:23:18
	RADIUS: Attribute = NAS-IP-Address (4)
	RADIUS: Atribute Length = 6
	RADIUS: NAS IP Address = 192.168.1.106
	RADIUS: Attribute = NAS-Identifier (32)
	RADIUS: Atribute Length = 6
	RADIUS: NAS Identifier = TEST
	RADIUS: Attribute = Acct-Status-Type (40)
	RADIUS: Atribute Length = 6
	RADIUS: Status Type = Start (1)
	RADIUS: Attribute = Called-Station-Id (30)
	RADIUS: Atribute Length = 5
	RADIUS: Called Station ID = 201
	RADIUS: Attribute = Calling-Station-Id (31)

| ```
0,00:00:00,00,99 ,02
,"from:TEL:555501,TELC:555501,DISP:Unit1port1vega50
,TA:192.168.1.104 to:TEL:201 dest:TEL:201"
``` | ```
RADIUS: Atribute Length = 8
RADIUS: Calling Station ID = 555501
RADIUS: Attribute = Acct-Session-Id (44)
RADIUS: Atribute Length = 125
RADIUS: Session ID = 5/03:31:37.000 UTC Fri Jan 01 1999/TEST/5 4
        BA36C019 C0A8016A/answer/VoIP/03:31:37.000 UTC Fri
        Jan 01 1999//0/192.168.1.104RADIUS: Attribute =
        Acct-Session-Time (46)
RADIUS: Atribute Length = 6
RADIUS: Session Time (in seconds) = 0
``` |
| | **Accounting Start (Cisco compatible format) – leg 1:** |
| | ```
RADIUS: Code = Accounting-Request (4)
RADIUS: Identifier = 0x84
RADIUS: Packet Length = 177
RADIUS: Authenticator =
        16:59:E6:06:4F:20:7F:31:EC:9E:1C:94:9B:80:EB:39
RADIUS: Attribute = NAS-IP-Address (4)
RADIUS: Atribute Length = 6
RADIUS: NAS IP Address = 192.168.1.106
RADIUS: Attribute = NAS-Identifier (32)
RADIUS: Atribute Length = 6
RADIUS: NAS Identifier = TEST
RADIUS: Attribute = Acct-Status-Type (40)
RADIUS: Atribute Length = 6
RADIUS: Status Type = Start (1)
RADIUS: Attribute = Called-Station-Id (30)
RADIUS: Atribute Length = 5
RADIUS: Called Station ID = 201
RADIUS: Attribute = Calling-Station-Id (31)
RADIUS: Atribute Length = 8
RADIUS: Calling Station ID = 555501
RADIUS: Attribute = Acct-Session-Id (44)
RADIUS: Atribute Length = 120
RADIUS: Session ID = 4/03:31:37.000 UTC Fri Jan 01 1999/TEST/5 4
        BA36C019 C0A8016A/originate/Telephony/03:31:37.000
        UTC Fri Jan 01 1999//0/
RADIUS: Attribute = Acct-Session-Time (46)
RADIUS: Atribute Length = 6
RADIUS: Session Time (in seconds) = 0
``` |

Ack from server:

```
RADIUS: Code = Accounting-Response (5)
RADIUS: Identifier = 0x01
RADIUS: Packet Length = 20
RADIUS: Authenticator = 3A:56:3E:2C:5E:AA:98:3A:AC:F5:A1:23:E5:08:64:BB
```

Accounting Stop (VegaStream format):	Accounting Stop (Cisco compatible format) – leg 2:

`RADIUS: Code = Accounting-Request (4)`
`RADIUS: Identifier = 0x02`
`RADIUS: Packet Length = 207`
`RADIUS: Authenticator =`
`        E8:09:EA:CE:8A:24:45:C2:48:67:C4:BF:4A:16:60:7E`
`RADIUS: Attribute = NAS-IP-Address (4)`
`RADIUS: Atribute Length = 6`
`RADIUS: NAS IP Address = 192.168.1.106`
`RADIUS: Attribute = NAS-Identifier (32)`
`RADIUS: Atribute Length = 6`
`RADIUS: NAS Identifier = test`
`RADIUS: Attribute = Acct-Status-Type (40)`
`RADIUS: Atribute Length = 6`
`RADIUS: Status Type = Stop (2)`
`RADIUS: Attribute = Acct-Session-Id (44)`
`RADIUS: Atribute Length = 169`
`RADIUS: Session ID =`
`        0000000002,01/01/1999,00:03:26,01/01/1999,00:05:25,`
`        0,00:01:50,16,99 ,02`
`        ,"from:TEL:555501,TELC:555501,DISP:Unit1port1vega50`
`        ,TA:192.168.1.104 to:TEL:201 dest:TEL:201"`
	`RADIUS: Code = Accounting-Request (4)`
	`RADIUS: Identifier = 0xD4`
	`RADIUS: Packet Length = 215`
	`RADIUS: Authenticator =`
	`        EB:1C:95:EF:DB:30:00:89:08:99:6D:FF:5C:D3:5B:13`
	`RADIUS: Attribute = NAS-IP-Address (4)`
	`RADIUS: Atribute Length = 6`
	`RADIUS: NAS IP Address = 192.168.1.106`
	`RADIUS: Attribute = NAS-Identifier (32)`
	`RADIUS: Atribute Length = 6`
	`RADIUS: NAS Identifier = test`
	`RADIUS: Attribute = Acct-Status-Type (40)`
	`RADIUS: Atribute Length = 6`
	`RADIUS: Status Type = Stop (2)`
	`RADIUS: Attribute = Called-Station-Id (30)`
	`RADIUS: Atribute Length = 5`
	`RADIUS: Called Station ID = 201`
	`RADIUS: Attribute = Calling-Station-Id (31)`
	`RADIUS: Atribute Length = 8`
	`RADIUS: Calling Station ID = 555501`
	`RADIUS: Attribute = Acct-Session-Id (44)`
	`RADIUS: Atribute Length = 158`
	`RADIUS: Session ID = 3/00:21:50.000 UTC Fri Jan 01 1999/test/3 2`
	`        BA36939E C0A8016A/answer/VoIP/00:21:50.000 UTC Fri`
	`        Jan 01 1999/00:34:35.000 UTC Fri Jan 01`
	`        1999/16/192.168.1.104`
	`RADIUS: Attribute = Acct-Session-Time (46)`
	`RADIUS: Atribute Length = 6`
	`RADIUS: Session Time (in seconds) = 756`

	Accounting Stop (Cisco compatible format) – leg 1:

	`RADIUS: Code = Accounting-Request (4)`
	`RADIUS: Identifier = 0xD5`
	`RADIUS: Packet Length = 210`
	`RADIUS: Authenticator =`
	`        88:5C:20:EA:BD:D3:0E:B5:25:DE:75:CC:CB:C1:CD:84`
	`RADIUS: Attribute = NAS-IP-Address (4)`

```
                                              RADIUS: Atribute Length = 6
                                              RADIUS: NAS IP Address = 192.168.1.106
                                              RADIUS: Attribute = NAS-Identifier (32)
                                              RADIUS: Atribute Length = 6
                                              RADIUS: NAS Identifier = test
                                              RADIUS: Attribute = Acct-Status-Type (40)
                                              RADIUS: Atribute Length = 6
                                              RADIUS: Status Type = Stop (2)
                                              RADIUS: Attribute = Called-Station-Id (30)
                                              RADIUS: Atribute Length = 5
                                              RADIUS: Called Station ID = 201
                                              RADIUS: Attribute = Calling-Station-Id (31)
                                              RADIUS: Atribute Length = 8
                                              RADIUS: Calling Station ID = 555501
                                              RADIUS: Attribute = Acct-Session-Id (44)
                                              RADIUS: Atribute Length = 153
                                              RADIUS: Session ID = 2/00:21:50.000 UTC Fri Jan 01 1999/test/3 2
                                                      BA36939E C0A8016A/originate/Telephony/00:21:50.000
                                                      UTC Fri Jan 01 1999/00:34:35.000 UTC Fri Jan 01
                                                      1999/16/
                                              RADIUS: Attribute = Acct-Session-Time (46)
                                              RADIUS: Atribute Length = 6
                                              RADIUS: Session Time (in seconds) = 756
```

Ack from server:

```
RADIUS: Code = Accounting-Response (5)
RADIUS: Identifier = 0x02
RADIUS: Packet Length = 20
RADIUS: Authenticator = 2A:2F:2D:6D:07:5E:CC:5D:33:21:8E:04:19:59:A4:0D
```

Table 3:

Example report from a Radius server

Accounting On

```
0 2003y4m18d 16h42m17s ----------------------------------------------
1 2003y4m18d 16h42m17s Message Type=Accounting_Request
2 2003y4m18d 16h42m17s ID=0, Length=38
3 2003y4m18d 16h42m17s NAS IP address=3232235882
4 2003y4m18d 16h42m17s NAS ID=TEST
5 2003y4m18d 16h42m17s Session status=7
```

Accounting Start (VegaStream format)	**Accounting Start (Cisco compatible format) – leg 2**

<pre>6 2003y4m18d 16h59m45s -------------------------------------
                      ------ 	
7 2003y4m18d 16h59m45s Message Type=Accounting_Request
8 2003y4m18d 16h59m45s ID=5, Length=207
9 2003y4m18d 16h59m45s NAS IP address=3232235882
10 2003y4m18d 16h59m45s NAS ID=TEST
11 2003y4m18d 16h59m45s Session status=1
12 2003y4m18d 16h59m45s Session
          ID=0000000006,01/01/1999,00:17:56,01/01/1999,00:00:
          00,0,00:00:00,00,99 ,02
          ,"from:TEL:555501,TELC:555501,DISP:Unit1port1vega50
          ,TA:192.168.1.104 to:TEL:201 dest:TEL:201"</pre>
	<pre>26 2003y4m18d 17h10m9s ---
	                      ----- 	
	27 2003y4m18d 17h10m9s Message Type=Accounting_Request
	28 2003y4m18d 17h10m9s ID=1, Length=182
	29 2003y4m18d 17h10m9s NAS IP address=3232235882
	30 2003y4m18d 17h10m9s NAS ID=TEST
	31 2003y4m18d 17h10m9s Session status=1
	32 2003y4m18d 17h10m9s Called number=201
	33 2003y4m18d 17h10m9s Calling number=555501
	34 2003y4m18d 17h10m9s Session ID=3/00:07:53.000 UTC Fri Jan 01
	          1999/TEST/3 2 BA369059
	          C0A8016A/answer/VoIP/00:07:53.000 UTC Fri Jan 01
	          1999//0/192.168.1.104
	35 2003y4m18d 17h10m9s Session duration time=0</pre>

	Accounting Start (Cisco compatible format) – leg 1

	<pre>36 2003y4m18d 17h10m9s ---
	                      ----- 	
	37 2003y4m18d 17h10m9s Message Type=Accounting_Request
	38 2003y4m18d 17h10m9s ID=2, Length=177
	39 2003y4m18d 17h10m9s NAS IP address=3232235882
	40 2003y4m18d 17h10m9s NAS ID=TEST
	41 2003y4m18d 17h10m9s Session status=1
	42 2003y4m18d 17h10m9s Called number=201
	43 2003y4m18d 17h10m9s Calling number=555501
	44 2003y4m18d 17h10m9s Session ID=2/00:07:53.000 UTC Fri Jan 01
	          1999/TEST/3 2 BA369059
	          C0A8016A/originate/Telephony/00:07:53.000 UTC Fri
	          Jan 01 1999//0/</pre>

	45 2003y4m18d 17h10m9s Session duration time=0
Accounting Stop (VegaStream format)	**Accounting Stop (Cisco compatible format) – leg 2**
| ```
13 2003y4m18d 16h59m46s ---------------------------------------
      -------
14 2003y4m18d 16h59m46s Message Type=Accounting_Request
15 2003y4m18d 16h59m46s ID=6, Length=207
16 2003y4m18d 16h59m46s NAS IP address=3232235882
17 2003y4m18d 16h59m46s NAS ID=TEST
18 2003y4m18d 16h59m46s Session status=2
19 2003y4m18d 16h59m46s Session
         ID=0000000006,01/01/1999,00:17:56,01/01/1999,00:18:
         00,0,00:00:01,16,99 ,02
         ,"from:TEL:555501,TELC:555501,DISP:Unit1port1vega50
         ,TA:192.168.1.104 to:TEL:201 dest:TEL:201"
``` | ```
46 2003y4m18d 17h10m13s ---------------------------------------
      ------
47 2003y4m18d 17h10m13s Message Type=Accounting_Request
48 2003y4m18d 17h10m13s ID=3, Length=215
49 2003y4m18d 17h10m13s NAS IP address=3232235882
50 2003y4m18d 17h10m13s NAS ID=TEST
51 2003y4m18d 17h10m13s Session status=2
52 2003y4m18d 17h10m13s Called number=201
53 2003y4m18d 17h10m13s Calling number=555501
54 2003y4m18d 17h10m13s Session ID=3/00:07:53.000 UTC Fri Jan 01
         1999/TEST/3 2 BA369059
         C0A8016A/answer/VoIP/00:07:53.000 UTC Fri Jan 01
         1999/00:08:00.000 UTC Fri Jan 01
         1999/16/192.168.1.104
55 2003y4m18d 17h10m13s Session duration time=4
``` |
| | **Accounting Stop (Cisco compatible format) – leg 1** |
| | ```
56 2003y4m18d 17h10m13s ---------------------------------------
      ------
57 2003y4m18d 17h10m13s Message Type=Accounting_Request
58 2003y4m18d 17h10m13s ID=4, Length=210
59 2003y4m18d 17h10m13s NAS IP address=3232235882
60 2003y4m18d 17h10m13s NAS ID=TEST
61 2003y4m18d 17h10m13s Session status=2
62 2003y4m18d 17h10m13s Called number=201
63 2003y4m18d 17h10m13s Calling number=555501
64 2003y4m18d 17h10m13s Session ID=2/00:07:53.000 UTC Fri Jan 01
         1999/TEST/3 2 BA369059
         C0A8016A/originate/Telephony/00:07:53.000 UTC Fri
         Jan 01 1999/00:08:00.000 UTC Fri Jan 01 1999/16/
65 2003y4m18d 17h10m13s Session duration time=4
``` |

Table 4:

VegaStream format of overloaded accounting session ID:

```
Start Session ID=
    0000000006,01/01/1999,00:17:56,01/01/1999,00:00:00,0,00:00:00,00,99 ,02
    ,"from:TEL:555501,TELC:555501,DISP:Unit1port1vega50,TA:192.168.1.104 to:TEL:201
    dest:TEL:201"

Stop Session ID=
    0000000006,01/01/1999,00:17:56,01/01/1999,00:18:00,0,00:00:01,16,99 ,02
    ,"from:TEL:555501,TELC:555501,DISP:Unit1port1vega50,TA:192.168.1.104 to:TEL:201
    dest:TEL:201"
```

Field	Example from above	Comments
Sequence_number	0000000006	Sequence number increases by 1 for every call started – note, the sequence number is the same for start and stop records for the same call
Call_start_date	01/01/1999	
Call_start_time	00:17:56	
Call_end_date	01/01/1999	
Call_end_time	00:18:00	00:00:00 for a start record
Call_duration_days	0	Use Call duration (rather than end date/time – start date/time) as someone might have changed the Vega time during the call
Call_duration_HH:MM:SS[1]	00:00:01	00:00:00 for a start record
Call_clear_reason	16	
Inbound_interface	99	
Outbound_interface	02	
Calling party, called party and other available tokens	"from:TEL:555501,TELC:555501, DISP: Unit1port1vega50, TA:192.168.1.104 to:TEL:201 dest:TEL:201"	

---

[1] The accuracy of this time is +/- 1 second. At the start of a call the internal timer is rounded to the nearest second, at the end of the call the internal timer is rounded to the nearest second and the call duration is given as the difference of these values.

Table 5:

Cisco compatible format of overloaded accounting session ID:

```
Leg-2 Start Session ID=
   3/00:07:53.000 UTC Fri Jan 01 1999/TEST/3 2 BA369059 C0A8016A/answer/VoIP/00:07:53.000
   UTC Fri Jan 01 1999//0/192.168.1.104


Leg-1 Start Session ID=
   2/00:07:53.000 UTC Fri Jan 01 1999/TEST/3 2 BA369059
   C0A8016A/originate/Telephony/00:07:53.000 UTC Fri Jan 01 1999//0/


Leg-2 Stop Session ID=
   3/00:07:53.000 UTC Fri Jan 01 1999/TEST/3 2 BA369059 C0A8016A/answer/VoIP/00:07:53.000
   UTC Fri Jan 01 1999/00:08:00.000 UTC Fri Jan 01 1999/16/192.168.1.104

Leg-1 Stop Session ID=
   2/00:07:53.000 UTC Fri Jan 01 1999/TEST/3 2 BA369059
   C0A8016A/originate/Telephony/00:07:53.000 UTC Fri Jan 01 1999/00:08:00.000 UTC Fri Jan
   01 1999/16/
```

Field	Example from above	Comments
Session ID	3/	🚫 Same for start and stop records of a particular leg, but different for different call legs ⚠6 Session ID increases by 1 for every call started – note, the sequence number is the same for start and stop records for both legs of the same call (same number as use for Vega Sequence ID in Vega billing records and the Call Detail Record number in QOS call statistics.
Call leg setup time	00:07:53.000 UTC Fri Jan 01 1999/	
Gateway ID	TEST/	From 🚫 lan.name or ⚠6 logger.radius.name
Connection ID	3 2 BA369059 C0A8016A/	Same for start and stop records of both legs of call
Call origin	answer/	Answer or originate

Call type	VoIP/	VoIP or Telephony
Connection time[2]	00:07:53.000 UTC Fri Jan 01 1999/	Same as setup time for start records
Disconnection time	00:08:00.000 UTC Fri Jan 01 1999/	Empty in start record
Disconnect cause	16/	0/ in start record
Remote IP address	192.168.1.104	Empty in Telephony records

---

[2] The accuracy of this time is +/- 1 second. The sub-seconds field is always 000 – At the start of a call the internal time is rounded to the nearest second, at the end of the call the internal timer is rounded to the nearest second and the connection time is given as the difference of these values.