

Application Note



Product: T1 VoIP Gateway (IGWP)
Purpose: v7 Call Detail Records format guide
Date: 08/24/2009

Introduction

This document provides an overview of the VoIP Gateway Call Detail Record (CDR) function. A CDR provides two main functions:

- Facilitate billing of customer calls performed through the gateway
- Gain insight into usage of telephony resources.

A CDR is defined as a sequence of events which describes a single call. All calls made through the VoIP Gateway will generate a CDR. The steps, screen shots, configuration, etc. depicted throughout this document are based upon VoIP Gateway software version 7.0.

How are CDRs exported by the VoIP Gateway (IGWP)?

The CDR log entries are exported using a dedicated channel. The transport mechanisms are as follows:

- syslog: deliver entries to (unix-ish) syslogd. Entries are sent to a configured syslog daemon using the syslog class specified.
- raw tcp: deliver entries to specified host and port in raw text-based tcp stream. The IGWP will open a TCP socket to the specified IP address and port and write each entry to this stream. If the stream is closed for any reason, it will be reopened again. Entries are separated by CR/NL.
- raw tcp incoming: retrieve entries in raw text-based tcp stream by connecting to a specified TCP port of the gateway. As before except the gateway waits for an incoming connect.
- http: deliver entries by HTTP 1.0 GET request to specified web server with query part in URL (e.g. <http://path?log=msg>)

Can CDRs get lost?

Yes. Currently, CDRs are NOT permanently buffered. That is, when a CDR is generated and there is no active and functional CDR delivery mechanism at this point in time, the CDR gets lost. Thus, you must make sure that the mechanism is always in place. More specifically, CDRs delivered by either raw tcp or syslog are

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always lost if the mechanism is not in place once the CDR is written. However, CDRs delivered via HTTP are buffered as far as memory suffices in the gateway. The IGWP buffers up to 300kB for CDR records. A CDR is of variable size, but as a rule of thumb, 200 bytes per CDR should be a valid average.

How many CDRs are generated per call and when?

If enabled the VoIP Gateway will generate a CDR for each call and each object, which means if a call is made from one user to another user, a CDR for the outgoing call is generated at the first user object and a CDR for an incoming call is generated at the other user object. The CDRs are generated at the end of the call and sent via the CDR0 and CDR1 interfaces. XML is used for the context of the CDRs.

Only one CDR is generated for off-hook or partial dialed calls. Multiple CDRs are generated for calls that involve transfer or call forwarding.

Top-Level Tag <cdr>

Each CDR uses the top-level tag <cdr>. The following attributes are used with this tag:

- guid** The GUID identifying the object this call belongs to
- cn** The cn (Long Name) of the object
- e164** The number of the object
- h323** The H.323 Id (Name) of the object
- dir** Indicates the direction of the call. For a call originating from this object this attribute is set to **from**. For calls sent to this object this attribute is set to **to**.
- utc** The time when this call was started as UTC time. This is an integer with the standard ctime semantic.
- local** The local time the call was started

The Tag <event>

For each state a call goes through a tag <event> is added to the CDR. The following attributes are used with this tag:

- msg** A string identifying the message which caused the state change of the call.
- time** The time in seconds from the beginning of the call.
- e164** The number of the other party of the call, if available.
- h323** The H.323 Id (Name) of the other party of the call if available.

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conf A GUID identifying the call (conferenceID). This GUID is used to associate CDRs from outgoing calls to CDRs of incoming calls, even across different PBXs. The first event within a CDR always contains this attribute. The conferenceID may change during a call (e.g. because of call transfer). In this case another **conf** attribute is present containing the new conferenceID.

Available messages (values of msg)

For each state a call goes through a tag <event> is added to the CDR. The following attributes are used with this tag:

setup-from	A call originating from the object was initiated.
setup-to	A call to the object was initiated.
alert-from	The endpoint for this object is alerting.
alert-to	The other party is alerting.
conn-from	The endpoint for this object has connected the call.
conn-to	The other party has connected the call.
rel-from	The endpoint for this object has released the call.
rel-to	The other party has released the call
transfer-from	The endpoint for this call has transferred the call. The call should be released shortly after this event.
transfer-to	The other party has transferred the call.
cf-from	The endpoint for this object has forwarded the call. The call should be released shortly after this event.
cf-to	The other party has forwarded the call.

Example CDR

Internal Call

An internal call was made from the user "John Smith(2210)" to the user "Jane Doe(2219)". After 10 seconds alerting it was accepted by the user "Jane Doe(2219)" and disconnected after 50 seconds of the talk time by the user "Jane Doe(2219)":

```
08.24.2009-07:57:56 [IP302-1e-02-03]
<cdr guid="60f13fbfe909d311925d0090331f002d"
cn="John Smith"
e164="2210"
h323="John Smith"
```

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```
dir="from"
utc="1239169389"
local="1239169389">
  <event msg="setup-from" time="0" e164="2219"
conf="8059c0a6e909d311848500013e100a78"/>
  <event msg="alert-to" time="0" e164="2219" h323="Jane Doe"/>
  <event msg="conn-to" time="10" e164="2219" h323="Jane Doe"/>
  <event msg="rel-from" time="60"/>
</cdr>

08.04.2009-07:57:56 [IP302-1e-02-03]
<cdr guid="6d6444b6e909d3118cc30090331e0203"
cn="Jane Doe"
e164="2219"
h323="Jane Doe"
dir="to"
utc="1239169389"
local="1239169389">
  <event msg="setup-to" time="0" e164="2210" h323="John Smith"
conf="8059c0a6e909d311848500013e100a78"/>
  <event msg="alert-from" time="0" e164="2210" h323="John Smith"/>
  <event msg="conn-from" time="10" e164="2210" h323="John Smith"/>
  <event msg="rel-to" time="60"/>
</cdr>
```

External Call

An external call was made from the user "John Smith(2210)" to external number 1-408-253-4555. via trunk object "Amt(0)". After 6 seconds it started to alert and the call was accepted by the external party, after 8 seconds of alerting. The call was disconnected after 9 seconds of the talk time by the user "Jane Doe(2219)":

```
08.24.2009-09:07:16 [IP302-1e-02-03]
<cdr guid="6d6444b6e909d3118cc30090331e0203"
cn="Jane Doe"
e164="2219"
h323="Jane Doe"
dir="from"
utc="1239174413"
local="1239174413">
```

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```
<event msg="setup-from" time="0" e164="14082534555"  
conf="7e8c4be3e909d311a84a0090331b004a"/>  
<event msg="alert-to" time="6" e164="14082534555"/>  
<event msg="conn-to" time="14" e164="14082534555"/>  
<event msg="rel-from" time="23"/>  
</cdr>  
  
08.04.2009-09:07:16 [IP302-1e-02-03]  
<cdr guid="be6e6b57e909d311875c0090331f002d"  
cn="Amt"  
e164="14082534555"  
dir="to"  
utc="1239174413"  
local="1239174413">  
  <event msg="setup-to" time="0" e164="2219" h323="Jane Doe"  
conf="7e8c4be3e909d311a84a0090331b004a"/>  
  <event msg="alert-from" time="6" e164="2219" h323=" Jane Doe"/>  
  <event msg="conn-from" time="14" e164="2219" h323=" Jane Doe"/>  
  <event msg="rel-to" time="23"/>  
</cdr>
```

Additional Information

If you have any questions or need additional information, please contact Ascom Technical Assistance Center at 1-877-71-ASCOM, option 3.