

PCM Data/Audio Analysis Without Cisco Internal Decode



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Contributed by Jacky Lee, Cisco TAC Engineer.
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Introduction

This document describes how to replay Pulse Code Modulation (PCM) data/audio as soon as the capture is complete, without the use of a PCM decoder.

Prerequisites

Requirements

This feature was developed for the Cisco Integrated Services Router Generation 2 (ISR G2) and the Cisco VG350 Analog Voice Gateway platforms, which include:

- 2900 Series
- 3900 Series
- 3900e Series
- VG350

Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Configure

In this section, you are presented with the information to configure the features described in this document.

Note: Use the Command Lookup Tool (registered customers only) to obtain more information on the commands used in this section.

A test configuration and Argot DS0 dump/PCM capture is shown:

```
monitor pcm-tracer
monitor pcm-tracer profile 1

!--- "10" is the active B-Channel

capture-tdm E1 0/1/1 ds0 10

!--- Must configure, unit in minutes

monitor pcm-tracer capture-duration 2

!--- File name that will store in flash:

monitor pcm-tracer capture-destination pcmdata

!--- Delay unit in seconds

monitor pcm-tracer delayed-start 2

!--- Command to enable debug to trigger and rest capture

Router#debug pcm-trace

!--- Command to start the capture

Router#monitor pcm-trace start profile 1

Router#show log
.
.
.
009636: Nov 19 03:56:10.487: %SYS-5-CONFIG_I: Configured from console by vty1
(64.104.205.247)
009637: Nov 19 03:56:13.479: pcmt_capture_process: PCM Tracer to start after
2 seconds
009638: Nov 19 03:56:15.480: pcmt_capture_process: PCM Tracer: start capture
009639: Nov 19 03:56:15.480: ds0_dump_config_init: path pcmdata
009640: Nov 19 03:56:15.480: ds0_dump_reset
009641: Nov 19 03:56:15.480: %PCM_TRACER-6-PCMT_START: Starting PCM Trace on
channel under profile 1
009642: Nov 19 03:56:15.480: pcmt_start_capture: Slot 0, subslot 1, port 1, chan 10
009643: Nov 19 03:56:15.480: ds0_tdm_get_connect_info(0/1/1:10)
009644: Nov 19 03:56:15.480: ds0_tdm_get_connect_info: rx_str 80, rx_chan 0,
tx_str 32, tx_chan 42
009645: Nov 19 03:56:15.480: pcmt_start_capture: PCM Tracer configure for
trace 0/1/1:10
009646: Nov 19 03:56:15.480: ds0_dump_configure_ctcr
009647: Nov 19 03:56:15.480: ds0_dump_configure_ctcr: ds0_dump_info index 0,
str 80, ts 0
009648: Nov 19 03:56:15.480: ds0_dump_configure_ctcr: ds0_dump_info index 1,
str 32, ts 42
009649: Nov 19 03:56:15.480: ds0_dump_configure_ctcr: tdm_map count 2
009650: Nov 19 03:56:15.480: ds0_dump_configure_ctcr: DS0 dump PCM Tracer:
trace channel: 0/1/1:10
009651: Nov 19 03:56:15.480: ds0_dump_mem_init
009652: Nov 19 03:56:15.480: ds0_dump_mem_init: Allocated capture buffer ptr
0x0EA30000, size 0x001D4C00
009653: Nov 19 03:56:15.480: ds0_dump_start_capture: Capture_type 2, slot 0
009654: Nov 19 03:56:15.480: %DS0_DUMP-6-PCM_TRACE_STARTED: PCM capture started.
009655: Nov 19 03:58:15.479: %DS0_DUMP-6-PCMT_COPY_STARTED: PCM capture file
copy started.
009656: Nov 19 03:58:15.479: ds0_copy_dump_data_to_ifs: begin addr 0x0EA30000,
end addr 0x0EC04C00
009657: Nov 19 03:58:15.479: ds0_copy_dump_data_to_ifs: Allocate copy buffer ptr
```

```

0x2AC67260, size 0x000EA600
009658: Nov 19 03:58:15.481: ds0_copy_dump_data_to_ifs: Copy trace contents to
pcmdata_rx_0_1_1_10 size 0x000EA600
009659: Nov 19 03:58:17.256: ds0_copy_dump_data_to_ifs: Copy trace contents to
pcmdata_tx_0_1_1_10 size 0x000EA600
009660: Nov 19 03:58:19.078: %DS0_DUMP-6-PCMT_COPY_COMPLETED: PCM capture copy
completed.
009661: Nov 19 03:58:19.078: ds0_dump_mem_init
009662: Nov 19 03:58:19.078: ds0_dump_mem_init: Free capture buffer ptr 0x0EA30000,
size 0x001D4C00
.
.
.

```

Once the capture is complete, the captured files can be found from flash:

```

Router#show flash:
-#- --length-- -----date/time----- path
.
.
.
19      960000 Nov 19 2012 04:13:26 +00:00 pcmdata_rx_0_1_1_10
20      960000 Nov 19 2012 04:13:28 +00:00 pcmdata_tx_0_1_1_10
.
.
.

```

The captured file can be replayed on Audacity or Adobe Audition without a PCM decoder.

In order to set up and configure audio replay on Audacity, complete these steps:

1. Open the Audacity application.
2. Choose **Project > Import Raw Data**.
3. Open the PCM capture file.
4. In the Import Raw Data window, choose or configure these parameters:
 - a. U–Law (for T1) or A–Law (for E1)
 - b. Big–endian
 - c. 1 Channel (Mono)
 - d. Start offset: 0 bytes
 - e. Amount to import: 100%
 - f. Sample rate: 8000 Hz

In order to set up and configure audio replay on Adobe Audition, complete these steps:

1. Name the PCM capture file with a .pcm extension.
2. Open the Adobe Audition application.
3. Choose **File > Open**.
4. Choose **PCM Raw Data** in order to open the PCM capture file.
5. In the Interpret Sample Format As window, choose or configure these parameters:
 - a. Sample Rate: 8000
 - b. Channels: Mono
 - c. Resolution: 16 bit
6. In the Data Formatted As window, choose 8 bit mu–Law Compressed (for T1) or 8 bit A–Law Compressed (for E1).

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.

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