Contents

Introduction

This document describes how to track heartbeat messages between Customer Voice Portal (CVP) Callserver and Voice Response Unit Peripheral Interface Manager (VRU PIM) using VRU PIM logs and Wireshark capture.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- CVP Server
- Cisco Unified Intelligent Contact Management (ICM), Cisco Unified Contact Center Enterprise (UCCE) Deployments

Components Used

The information in this document is based on these software versions:

- CVP Server 9.0 and above
- UCCE 9.0 and above
- Wireshark

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.

Background Information

Heartbeat messages are exchanged between CVP Call Server and VRU PIM using the port configured on the ICM subsystem of the CVP Call Server. The default port number is 5000.

Procedure

In order to track heartbeat messages between CVP and VRU PIM, there are several steps that need to be executed.

Step1. On the VRU PIM side, increase the level of traces. The default trace level does not show any heartbeat messages.

If you enable only hearbeat traces (***heartbeat*** /on), the logs won't show the hearbeat intearcation between CVP and VRU PIM, you see only this :

18:58:00:552 pg2A-pim1 Trace: PIMActiveHeartbeat

18:58:05:536 pg2A-pim1 Trace: PIMActiveHeartbeat

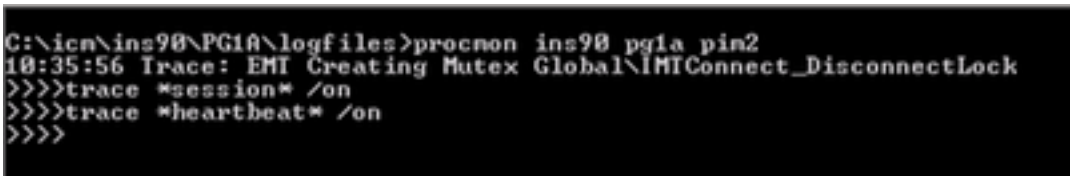
18:58:10:536 pg2A-pim1 Trace: PIMActiveHeartbeat

18:58:15:537 pg2A-pim1 Trace: PIMActiveHeartbeat

18:58:20:537 pg2A-pim1 Trace: PIMActiveHeartbeat

But if you have trace ***heartbeat*** /on and trace ***session*** /on it actually shows you the messages in the VRU PIM logs with the sequence numbers:

Here is the example on how to enable the VRU PIM traces:



> **Warning**: Increase the level of traces in a production envorment can degradade the performance of the system.

There are 3 messages that complete one heartbeat exchange.

```
18:59:05:538 pg2A-pim1 Trace: PG->VRU: Heartbeat Req (= Message Type 5); Message Length 4 bytes
Invoke ID: (2857109196) aa4c06cc
```

```
18:59:05:538 pg2A-pim1 Trace: VRU->PG: Heartbeat Conf (= Message Type 6); Message Length 4 bytes
Invoke ID: (2857109196) aa4c06cc
```

```
18:59:05:538 pg2A-pim1 Trace: PIMActiveHeartbeat
```

And 5 seconds later:

```
18:59:10:538 pg2A-pim1 Trace: PG->VRU: Heartbeat Req (= Message Type 5); Message Length 4 bytes
Invoke ID: (2857109197) aa4c06cd
```

```
18:59:10:538 pg2A-pim1 Trace: VRU->PG: Heartbeat Conf (= Message Type 6); Message Length 4 bytes
Invoke ID: (2857109197) aa4c06cd


18:59:10:538 pg2A-pim1 Trace: PIMActiveHeartbeat
```

And every 5 seconds after that

```
18:59:15:538 pg2A-pim1 Trace: PG->VRU: Heartbeat Req (= Message Type 5); Message Length 4 bytes
Invoke ID: (2857109198) aa4c06ce


18:59:15:538 pg2A-pim1 Trace: VRU->PG: Heartbeat Conf (= Message Type 6); Message Length 4 bytes
Invoke ID: (2857109198) aa4c06ce


18:59:15:538 pg2A-pim1 Trace: PIMActiveHeartbeat

18:59:20:538 pg2A-pim1 Trace: PG->VRU: Heartbeat Req (= Message Type 5); Message Length 4 bytes
Invoke ID: (2857109199) aa4c06cf


18:59:20:538 pg2A-pim1 Trace: VRU->PG: Heartbeat Conf (= Message Type 6); Message Length 4 bytes
Invoke ID: (2857109199) aa4c06cf


18:59:20:538 pg2A-pim1 Trace: PIMActiveHeartbeat
```

Step2. Capture Wireshark traces.

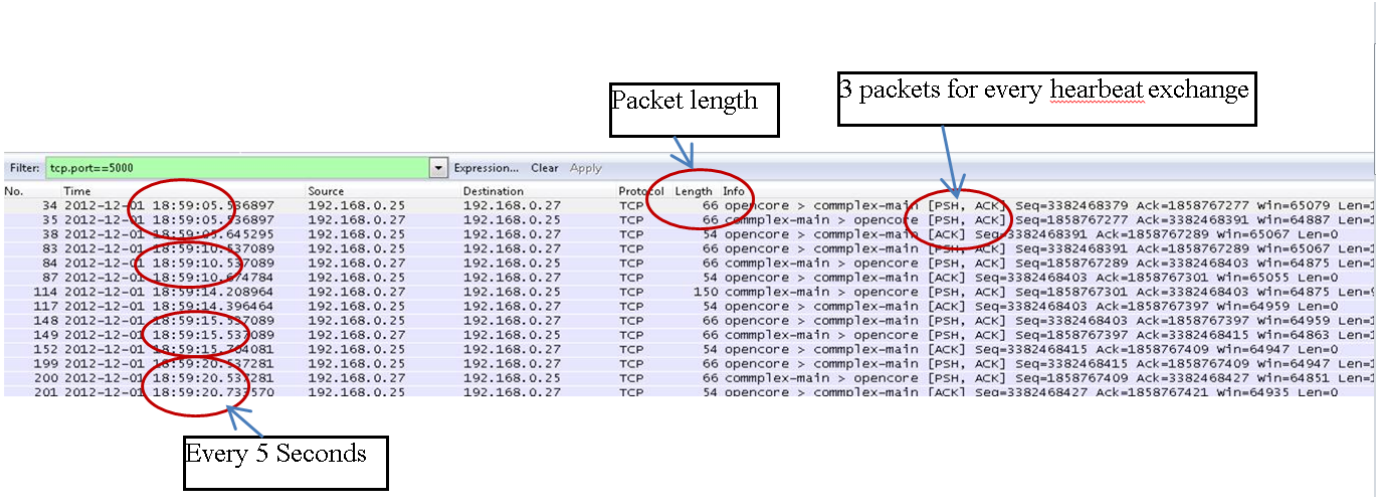
The VRU PIM log messages are typically enough to see the hearbeat interaction between the two components. However, in some scenarios wireshark captures are needed.

Here is a snippet of a wireshark traces taken from the CVP Callserver.

Since the two devices are talking on port 5000, the traces are filtered by **tcp.port==5000**

The heartbeat packets in the wireshark are 66 bytes for (push, ack) and then 54 to 60 bytes for the ack.

The actual keepalive data in the push messages that are sent from CVP Callserver to VRU PIM and viceversa is only 12 bytes



Take one packet. as an example, choose packet 34. This packet mactches with the timestamp(18:59:05) of first heartbeat messages seen in the VRU PIM logs earlier.

Expand just the data portion of the frame:

```
⊞ Frame 34: 66 bytes on wire (528 bits), 66 bytes captured (528 bits)
⊞ Ethernet II, Src: Vmware_96:10:ea (00:50:56:96:10:ea), Dst: Vmware_96:6c:e1 (00:50:56:96:6c:e1)
⊞ Internet Protocol Version 4, Src: 192.168.0.25 (192.168.0.25), Dst: 192.168.0.27 (192.168.0.27)
⊞ Transmission Control Protocol, Src Port: opencore (4089), Dst Port: commplex-main (5000), Seq: 3382468379, Ack: 1858767277, Len: 12
⊟ Data (12 bytes)
    Data: 000000400000005aa4c06cc
    [Length: 12]
```

You can see the data **aa4c06cc** matches with the Invoke number in the VRU PIM traces.

The heartbeat packets that follow would then have the number **aa4c06cd**, **aa4c06cce** and so on.