



Avaya Solution & Interoperability Test Lab

Application Notes for Mattersight Call Recording Solution with Avaya Proactive Contact with PG230 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Mattersight Call Recording Solution to interoperate with Avaya Proactive Contact with PG230.

In the compliance testing, Mattersight Call Recording Solution used the Event Service interface from Avaya Proactive Contact to obtain information on agent states and calls, and used the trunk tap method to capture the media associated with the agents for call recording.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the configuration steps required for Mattersight Call Recording Solution (CRS) to interoperate with Avaya Proactive Contact with PG230.

In the compliance testing, CRS used the Event Service interface from Proactive Contact to obtain information on agent states and calls, and used the trunk tap method to capture the media associated with the agents for call recording.

CRS is the call capturing component of the Mattersight Behavioral Analytics (BA) solution. In actual customer deployments, the recordings captured by CRS are automatically uploaded to the Analytics component of the BA solution located at Mattersight for subsequent analysis. The compliance testing only covered the call capturing capability of CRS. In the testing, the captured recordings and associated metadata were validated by manually copying the items from the CRS server to a supervisor PC, and were displayed and played back using a Mattersight provided Recording Viewer tool.

The compliance test covered the recording of calls that were delivered by Proactive Contact for the PG230 deployment option. The recording of inbound calls delivered by Communication Manager under the agent blending mode is outside the scope of this compliance test.

2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the CRS application, the application automatically established Event Service connection with Proactive Contact.

For the manual part of the testing, each call was handled manually on the agent with generation of unique audio content for recordings. Necessary agent actions such as hold and reconnect were performed from the Proactive Contact Agent application running on the agent PCs to test the different call scenarios.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet connection to CRS.

The verification of tests included use of the Mattersight provided Recording Viewer tool for proper display and playback of recordings. In actual customer deployments, customers would use the hosted Mattersight Portal for display and playback of recordings.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Proactive Contact and CRS utilized the enabled capabilities of SSLIOP.

2.1. Interoperability Compliance Testing

The interoperability compliance testing included feature and serviceability testing.

The feature testing focused on verifying the following on CRS:

- Handling of Event Service agent states and call events.
- Proper recording, logging, and playback of calls for scenarios involving agent drop, customer drop, hold, reconnect, simultaneous calls, conference, transfer, forward work, long duration, multiple agents, manual call, inbound call blending, outbound call blending, and outbound agent blending scenarios.

The serviceability testing focused on verifying the ability of CRS to recover from adverse conditions, such as disconnecting and reconnecting the Ethernet connection to CRS.

2.2. Test Results

All test cases were executed and verified. The following were observations on CRS from the compliance testing.

- For a manual call placed from the agent desktop, the call was recorded but the recording entry reflected the DNIS number from the previous call hung up by the agent. Mattersight shared that the relevant DNIS for the manual call has been logged, and can be made available on the Mattersight Portal.
- By design, the held interval is included in the recording and contained audio from the agent.
- Upon each Ethernet disruption to the CRS server, up to three new Event Service connections can be created from CRS. The multiple connections have no harmful effects other than tying up more ports than necessary.

2.3. Support

Technical support on CRS can be obtained through the following:

- **Phone:** (877) 235-6925
- **Web:** support@mattersight.com

3. Reference Configuration

As shown in **Figure 1**, there is a physical connection between Proactive Contact and Communication Manager in the PG230 deployment option and used by Proactive Contact for agent headset connections. In the compliance testing, the TDM streams for the Proactive Contact agents were captured using a T1 splitter that replicated all audio over the agent headset trunks to the AudioCodes SmartTAP DP6409 PCIe Dual T1 board on CRS.

The detailed administration of basic connectivity between Communication Manager and Proactive Contact is not the focus of these Application Notes and will not be described.

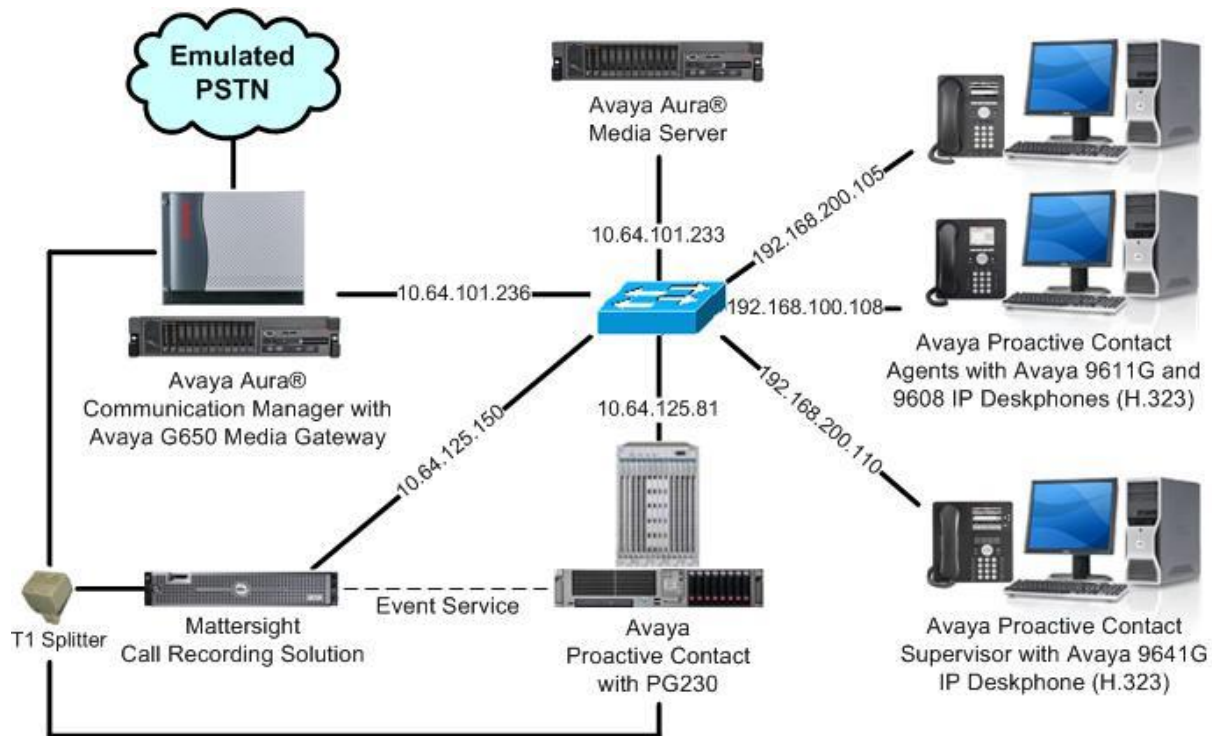


Figure 1: Compliance Testing Configuration

4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment/Software	Release/Version
Avaya Aura® Communication Manager in Virtual Environment	7.0.1.2 (7.0.1.2.0.441.23523)
Avaya G650 Media Gateway <ul style="list-style-type: none">• TN464HP DS1 Interface	HW02 FW025
Avaya Aura® Media Server in Virtual Environment	7.7.0.375
Avaya Proactive Contact	5.1.2
Avaya Proactive Contact Agent	5.1.2
Avaya 9608, 9611G, and 9641G IP Deskphones (H.323)	6.6401
Mattersight Call Recording Solution on Microsoft Windows Server 2012 <ul style="list-style-type: none">• Audio Capture Engine (ACE)• AudioCodes SmartTAP DP6409 PCIe Dual T1• Avaya Event Service SDK	3.6.0.42510 R2 Standard 3.6.0.42510 5.09.00 Build 01038 5.1.2
Mattersight Recording Viewer on Microsoft Windows 10 Pro	0.6

5. Configure Avaya Aura® Communication Manager

This section provides the procedures for obtaining the relevant DS1 board configuration from Communication Manager.

Log in to the System Access Terminal (SAT) and issue the “display ds1 n” command, where “n” is the slot number of the DS1 circuit pack used for agent headset connections with Proactive Contact, in this case “1a05”.

Make a note of the **Line Coding**, **Framing Mode**, and **Signaling Mode** parameter values, which will be used later to configure CRS.

```
display ds1 1a05
                                DS1 CIRCUIT PACK
                                Location: 01A05                Name: Hard 1-21
                                Bit Rate: 1.544                Line Coding: ami-basic
                                Line Compensation: 1            Framing Mode: d4
                                Signaling Mode: robbed-bit
                                Interface Companding: mulaw
                                Idle Code: 11111111
                                Slip Detection? n              Near-end CSU Type: other
                                Echo Cancellation? n
```

6. Configure Avaya Proactive Contact

This section provides the procedures for configuring Proactive Contact. The procedures include the following area:

- Obtain host name
- Obtain IOR file

6.1. Obtain Host Name

Log in to the Linux shell of the Proactive Contact server. Use the “uname -a” command to obtain the host name, which will be used later for configuring CRS.

In the compliance testing, the host name of the Proactive Contact server is “lzpds4b”, as shown below.

```
$ uname -a
Linux lzpds4b 2.6.18-408.el5PAE #1 SMP Mon Dec 11 14:08:08 EST 2015 i686 i686 i3
86 GNU/Linux
LZPDS4B(xxx)@/opt/avaya/pds [1002]
$
```

6.2. Obtain IOR File

Use a tool such as WinSCP, to copy the IOR file below from the Proactive Contact server, which will be used later to configure CRS.

- /opt/avaya/services/data/ns_ior

7. Configure Mattersight Call Recording Solution

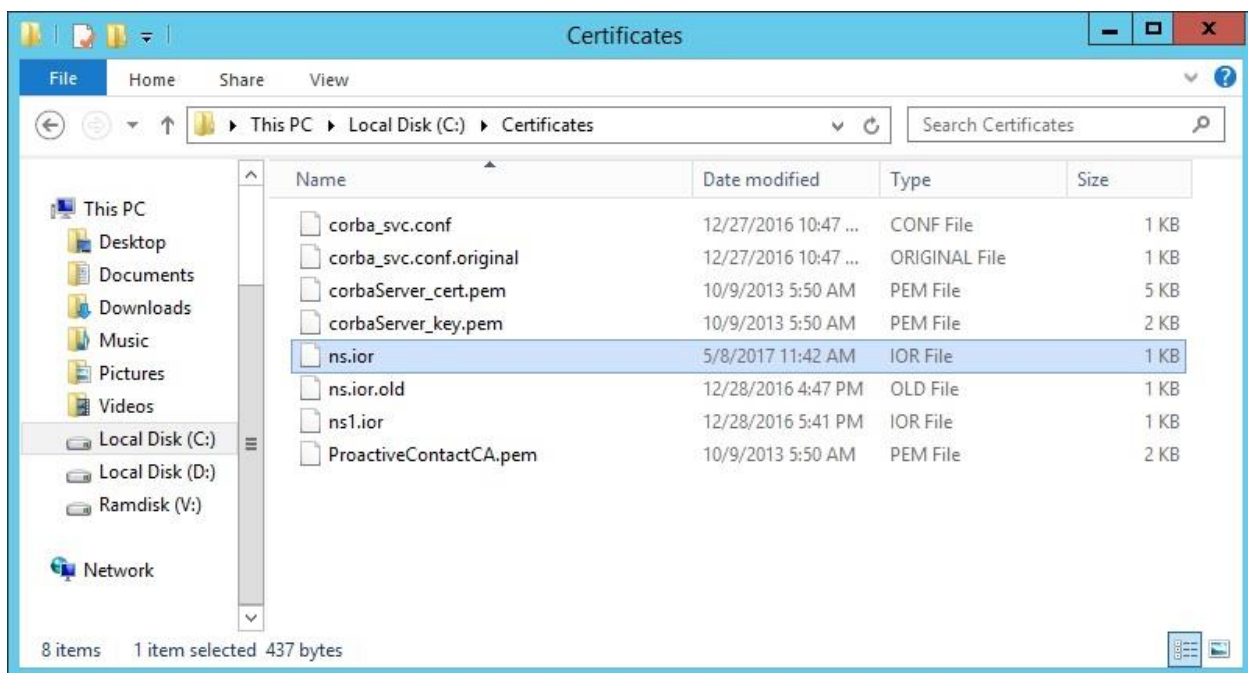
This section provides the procedures for configuring CRS. The procedures include the following areas:

- Copy IOR file
- Administer SmartTAP
- Administer runtime parameters

The configuration of CRS is performed by Mattersight operations engineers. The procedural steps are presented in these Application Notes for informational purposes.

7.1. Copy IOR File

Copy the IOR file from **Section 6.2** to the applicable certificates directory on the CRS server, in this case **C:\Certificates**, as shown below. This file will be used for Event Service connection with Proactive Contact.



7.2. Administer SmartTAP

From the CRS server, select **Start** → **Control Panel**, and click on the **SmartControl** icon (not shown below). The **AudioCodes USA Inc SmartWORKS** screen is displayed.

Select the **Digital Network** tab. Enter the following values for specified fields for the relevant trunk, and retain the default values for the remaining fields.

- **Framing:** Select “SF(D4)” to match the framing from **Section 5**.
- **Line Coding:** Select “AMI” to match the line encoding from **Section 5**.
- **Signaling Protocol:** Select “NONE” to match robbed-bit signaling mode from **Section 5**.

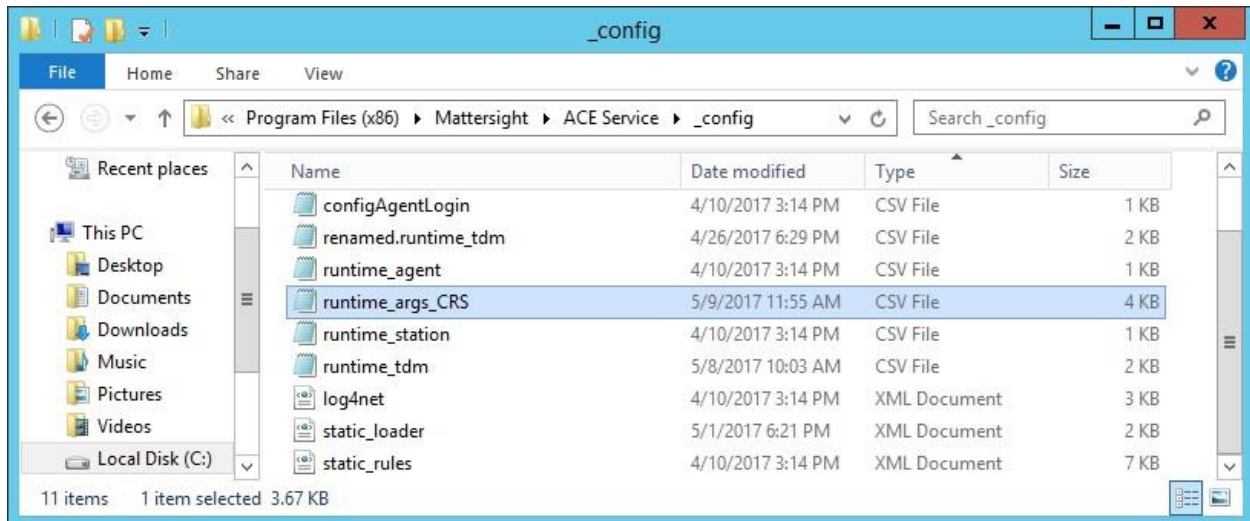
In the compliance testing, the same settings were configured for both trunks, to allow the T1 cable to be plugged into either trunk. Follow reference [4] to reset the SmartTAP card.

The screenshot shows the 'AudioCodes USA Inc SmartWORKS' application window with the 'Digital Network' tab selected. The interface includes a navigation bar with 'System', 'Board', 'CPM', 'Parameters', and 'Digital Network'. The main configuration area is divided into several sections:

- Board:** A text box containing 'Board 0, SmartTAP DP6409 PCIe Dual T1'.
- T1E1 Option:** Radio buttons for 'T1' (selected) and 'E1'.
- Trunk Settings:** A table with columns for Trunk, Framing, Line Coding, LBO, and ZCS. Trunk 0 and 1 are both configured with Framing: SF(D4) and Line Coding: AMI.
- Protocol Settings:** A table with columns for Trunk, Signaling Protocol, and Variant. Trunk 0 and 1 are both configured with Signaling Protocol: NONE. Each row has an 'Advanced' button.
- NFAS Settings:** A table with columns for Trunk, NFAS Index, Trunk Index, and Trunk Type. All fields are currently empty.

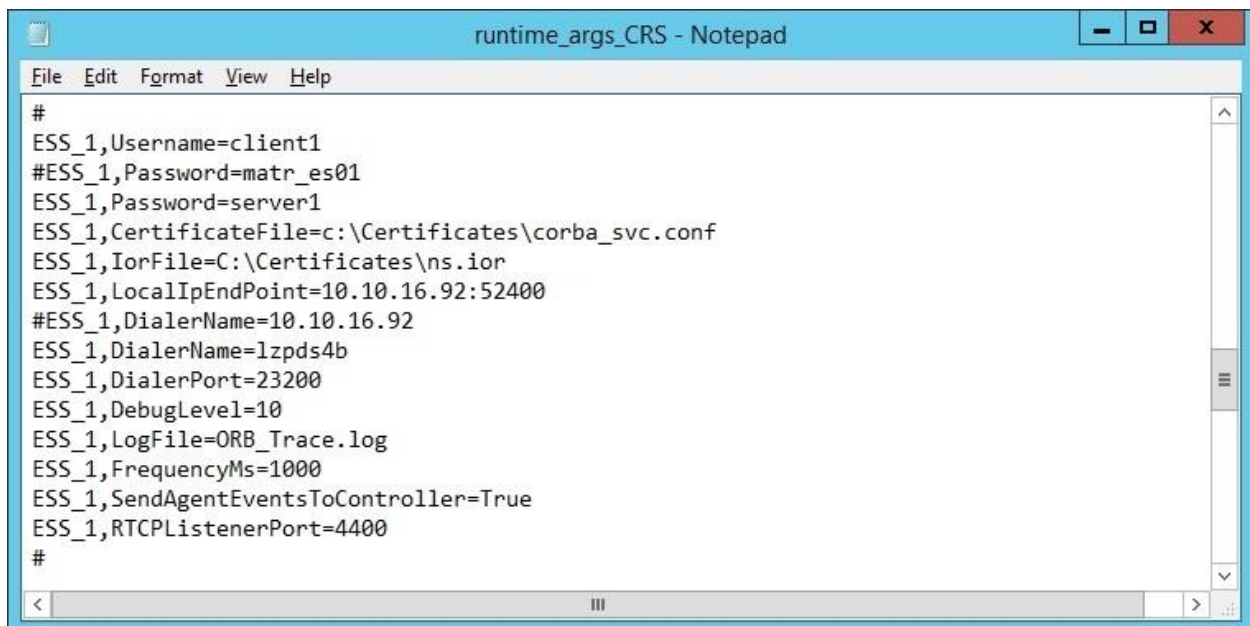
7.3. Administer Runtime Parameters

Navigate to the **C:\Program Files (x86)\Mattersight\ACE Service_config** directory to edit the **runtime_args_CRS** file.



Scroll down to the **ESS_1** sub-section. Enter the following values for specified fields, and retain the default values for the remaining fields.

- **Username:** Name of the Proactive Contact Event Service client.
- **Password:** Password of the Proactive Contact Event Service client.
- **IorFile:** Path to the IOR file from **Section 7.1**.
- **DialerName:** Host name of Proactive Contact server from **Section 6.1**.



8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Proactive Contact and CRS.

8.1. Verify Avaya Proactive Contact

Log in to the Linux shell of the Proactive Contact server, and issue the “netstat | grep ensERVER” command. Verify that there is an entry showing an **ESTABLISHED** connection with CRS, as shown below.

tcp	0	0	lzpds4b:enserver_ssl	lzpds4b:15162	ESTABLISHED
tcp	0	0	lzpds4b:15162	lzpds4b:enserver_ssl	ESTABLISHED
tcp	0	0	lzpds4b:enserver_ssl	10.64.125.150:58342	ESTABLISHED

8.2. Verify Mattersight Call Recording Solution

Start a job on Proactive Contact, and log an agent in to handle and complete an outbound call.

Click on the Recording Viewer executable on the supervisor PC to launch the tool. The **Recording Viewer** screen below is displayed. Note that the Recording Viewer executable is only available for use by Avaya DevConnect or Avaya Support resources upon request to Mattersight. This tool is not available for general customer use.

Manually locate and copy the recording and metadata entries from the CRS server under the **C:\CRS\Recordings** and **C:\CRS\Replications** directories respectively to the relevant directories on the supervisor PC. In the compliance testing, similar directories were used for the Recording Viewer application on the supervisor PC, as shown in the bottom of the screen below.

RecordingId	FileName	AgentKey	StationKey	RecordingStart	RecordingEnd	AudioRecordingDecision	CallType	ANI	DNIS
▶▶									

RECORDING: C:\CRS\Recordings REPLICATION: C:\CRS\Replications

Select **File** → **Refresh**. Verify that there is an entry reflecting the outbound call.

RecordingId	FileName	AgentKey	StationKey	RecordingStart
8ffe4bb-e0b6-4464b128-cfe601103ce7	MATR-BA2346-CRS.c00.48ffe4bb-e0b6-4464b128-cfe601103ce7.pcm	1107	65003	2017-05-17 14:56:37.540

Scroll to the right of the recording entry, and verify proper reporting of parameter values, as shown below.

Click on the associated **pcm** file, and verify that the recording can be played back.

AgentKey	StationKey	RecordingStart	RecordingEnd	AudioRecordingDecision	CallType	ANI	DNIS
107	65003	2017-05-17 14:56:37.540	2017-05-17 14:57:56.829	1	OUTBOUNDCALL		912038750020

9. Conclusion

These Application Notes describe the configuration steps required for Mattersight Call Recording Solution to successfully interoperate with Avaya Proactive Contact with PG230. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

10. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administering Avaya Aura® Communication Manager*, Release 7.0.1, Issue 2.1, August 2016, available at <http://support.avaya.com>.
2. *Administering Avaya Proactive Contact*, Release 5.1.2, Issue 1, May 2016, available at <http://support.avaya.com>.
3. *Mattersight CRS 3.0 for Avaya Proactive Contact Overview*, April 26, 2017, available upon request to Mattersight Support.
4. *SmartWORKS DP Quick Install*, Version 3.10.0, December 8, 2012, available to registered AudioCodes partners.

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