AVAYA

Avaya Solution & Interoperability Test Lab

Application Notes for Telesoft PSwitchView with Avaya Communication Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Telesoft PSwitchView to interoperate with Avaya Communication Manager.

PSwitchView is Windows-based call analysis software. It interoperates with Avaya Communication Manager using Avaya Reliable Session Protocol (RSP) over TCP/IP for the collection of call detail records (CDR).

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.

JC; Reviewed:
SPOC 1/17/2008

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1 of 11
PSV-CM

1. Introduction

The objective of this interoperability compliance testing is to verify that Telesoft PSwitchView 7.0 can interoperate with Avaya Communication Manager 4.0.1. PSwitchView interoperates with Avaya Communication Manager using Avaya Reliable Session Protocol (RSP) over TCP/IP for the collection of call detail records (CDR). The CDR collection was verified for two Avaya Communication Managers running on Avaya S8500 server and Avaya S8300 Server respectively during the compliance testing.

CDRs collected from multiple Avaya Communication Managers can be kept separately or they can be merged for further processing. PSwitchView processes the collected CDRs and accurately bills them. It provides querying and reporting functionality on the billed data. The data can also be exported to various formats for processing.

Figure 1 illustrates the network configuration used to verify the Telesoft PSwitchView solution. Site A is comprised of an Avaya S8500 Server and Avaya G650 Media Gateway, and has connections to the following: Avaya 4600 and 9600 Series IP Telephones, Avaya 2400 Series Digital Telephones, and an ISDN-BRI trunk to the PSTN. Telesoft PSwitchView is installed on a server running Microsoft Windows Server 2003 with Service Pack 2. Site B is comprised of an Avaya S8300 Server with Avaya G350 Media Gateway, and has connections to an Avaya 4600 Series IP Telephone and an Avaya 2400 Series Digital Telephone. The Avaya C364T-PWR Converged Stackable Switch provides Ethernet connectivity to the servers and IP telephones and Layer 3 IP routing between the two sites. An H.323 IP trunk is configured between Site A and B for the users to call between the two sites.
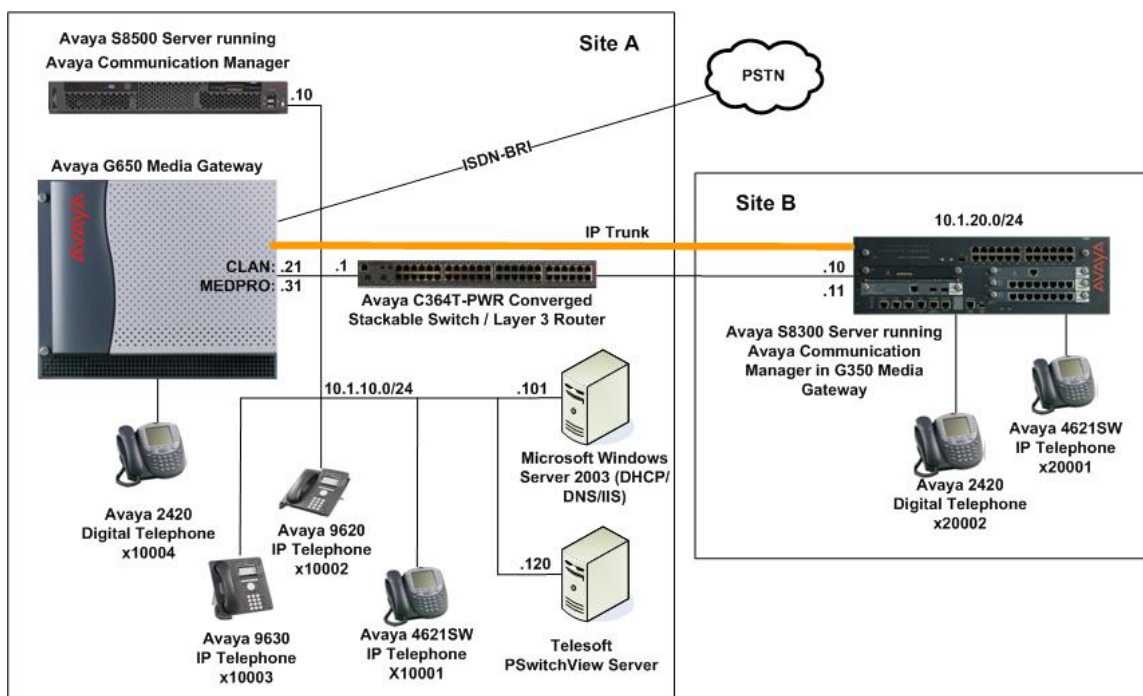

Figure 1: Test configuration

2. Equipment and Software Validated

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

Equipment	Software
Avaya S8500 Server	Avaya Communication Manager 4.0.1 (R014x.00.1.731.2)
Avaya G650 Media Gateway	-
- TN2312BP IP Server Interface	HW07, FW40
- TN799DP C-LAN Interface	HW01, FW24
- TN2302AP IP Media Processor	HW20, FW117
- TN2602AP IP Media Processor	HW02, FW31
Avaya S8300 Server	Avaya Communication Manager 4.0.1 (R014x.00.1.731.2)
Avaya G350 Media Gateway	26.33.0
Avaya 4600 Series IP Telephones	
- 4621SW	2.8.3 (H.323)
Avaya 9600 Series IP Telephones	
- 9620	1.5 (H.323)
- 9630	1.5 (H.323)
Avaya 2400 Series Digital Telephone	-
Avaya C364T-PWR Converged Stackable Switch	4.5.18
Telesoft PSwitchView	7.0

3. Avaya Communication Manager

This section provides the procedures for configuring Call Detail Recording (CDR) in Avaya Communication Manager. All configuration changes in Avaya Communication Manager are performed through the System Access Terminal (SAT). These steps describe the procedure used for the Avaya S8500 Server. All steps are the same for Avaya S8300 Server. An Avaya Communication Manager is configured to generate and send the CDR records to the IP address of the Telesoft PSwitchView server using RSP over TCP/IP. For this configuration, the CDR links are configured to originate from the IP addresses of the Avaya S8500 and S8300 Servers (i.e. with node-name – "procr") and terminates at the IP address of the Telesoft PSwitchView server. The highlights in the following screens indicate the parameter values used during the compliance test.
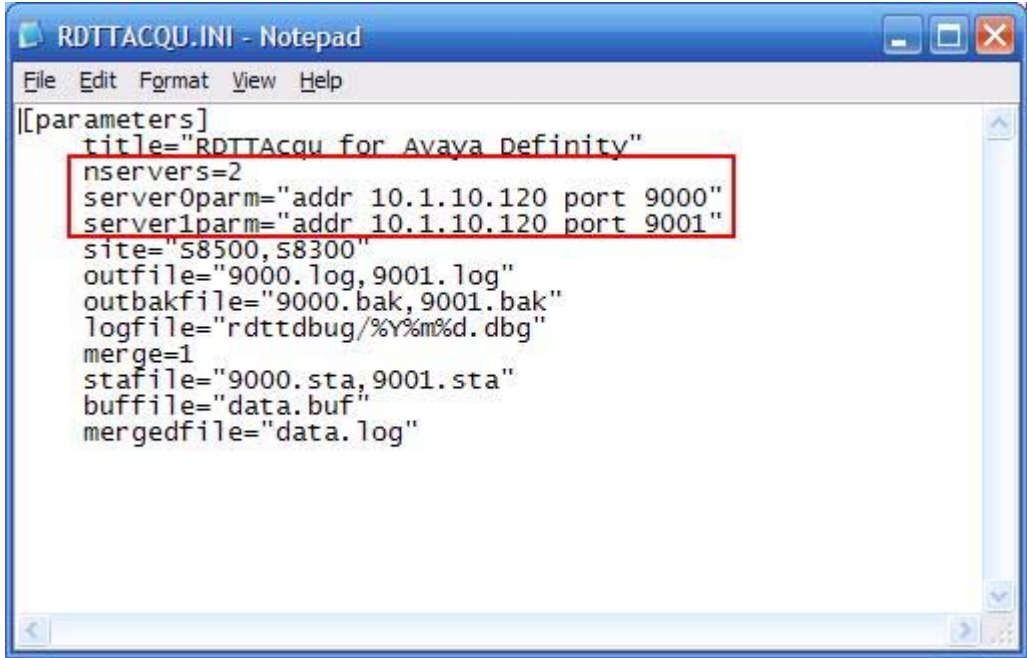
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3 of 11
PSV-CM

Step	Description
1.	Use the **change node-names ip** command to add a new node name for the Telesoft PSwitchView server.

```
change node-names ip                                    Page   1 of   1
                              IP NODE NAMES
     Name              IP Address
default              0.0.0.0
procr                10.1.10.10
PSwitchView          10.1.10.120
```

Step	Description
2.	Use the **change ip-services** command to define the CDR link. To define a primary CDR link, the following information should be provided:

- **Service Type: CDR1** [If needed, a secondary link can be defined by setting Service Type to CDR2.]
- **Local Node: procr**
- **Local Port: 0** [The Local Port is fixed to 0 because Avaya Communication Manager initiates the CDR link.]
- **Remote Node: PSwitchView** [The Remote Node is set to the node name previously defined in Step 1.]
- **Remote Port: 9000** [The Remote Port may be set to a value between 5000 and 64500 inclusive, and must match the port configured in Telesoft PSwitchView server in Section 4 Step 5. Note that PSwitchView requires a different port number for each S8XXX Server.]

```
change ip-services                                      Page   1 of   4

                              IP SERVICES
  Service      Enabled      Local        Local       Remote        Remote
   Type                     Node         Port        Node          Port
 CDR1                       procr          0        PSwitchView     9000
```

On Page 3 of the IP SERVICES form, enable the Reliable Session Protocol (RSP) for the CDR link by setting the **Reliable Protocol** field to **y**.

```
change ip-services                                      Page   3 of   4

                          SESSION LAYER TIMERS
  Service      Reliable  Packet Resp   Session Connect   SPDU   Connectivity
   Type        Protocol     Timer       Message Cntr     Cntr      Timer

  CDR1            y          30              3            3          60
```

Step	Description
3.	Enter the **change system-parameters cdr** command to set the parameters for the type of calls to track and the format of the CDR data. The following settings were used during the compliance test. • **CDR Date Format**: **month/day** • **Primary Output Format**: **customized** • **Primary Output Endpoint**: **CDR1** The remaining parameters define the type of calls that will be recorded and what data will be included in the record. See reference [2] for a full explanation of each field. The test configuration used some of the more common fields described below. • **Use Legacy CDR Formats? n** [Specify the use of the new Avaya Communication Manager 4.0.1 and later formats in the CDR records produced by the system.] • **Intra-switch CDR: y** [Allows call records for internal calls involving specific stations. Those stations must be specified in the INTRA-SWITCH-CDR form.] • **Record Outgoing Calls Only? n** [Allows incoming trunk calls to appear in the CDR records along with the outgoing trunk calls.] • **Outg Trk Call Splitting? y** [Allows a separate call record for any portion of an outgoing call that is transferred or conferenced.] • **Inc Trk Call Splitting? y** [Allows a separate call record for any portion of an incoming call that is transferred or conferenced.]

```
change system-parameters cdr                                   Page   1 of   2
                              CDR SYSTEM PARAMETERS

 Node Number (Local PBX ID): 1                       CDR Date Format: month/day
      Primary Output Format: customized     Primary Output Endpoint: CDR1
    Secondary Output Format:
           Use ISDN Layouts? n                     Enable CDR Storage on Disk? n
        Use Enhanced Formats? n      Condition Code 'T' For Redirected Calls? n
    Use Legacy CDR Formats? n                       Remove # From Called Number? n
Modified Circuit ID Display? y                               Intra-switch CDR? y
               Record Outgoing Calls Only? n       Outg Trk Call Splitting? y
  Suppress CDR for Ineffective Call Attempts? y        Outg Attd Call Record? y
       Disconnect Information in Place of FRL? n      Interworking Feat-flag? n
 Force Entry of Acct Code for Calls Marked on Toll Analysis Form? n
                                      Calls to Hunt Group - Record: group-ext
Record Called Vector Directory Number Instead of Group or Member? n
Record Agent ID on Incoming? n        Record Agent ID on Outgoing? y
      Inc Trk Call Splitting? y                   Inc Attd Call Record? n
  Record Non-Call-Assoc TSC? n           Call Record Handling Option: warning
      Record Call-Assoc TSC? n   Digits to Record for Outgoing Calls: dialed
     Privacy - Digits to Hide: 0              CDR Account Code Length: 5
```

	On page 2 of the CDR SYSTEM PARAMETERS form, define the customized CDR format as shown.

Step	Description
| | ```
change system-parameters cdr                              Page   2 of   2
                         CDR SYSTEM PARAMETERS

     Data Item - Length        Data Item - Length        Data Item - Length
 1: date           - 6   17: auth-code      - 13   33:                 -
 2: space          - 1   18: space          - 1    34:                 -
 3: time           - 4   19: acct-code      - 15   35:                 -
 4: space          - 1   20: space          - 1    36:                 -
 5: sec-dur        - 5   21: cond-code      - 1    37:                 -
 6: space          - 1   22: space          - 1    38:                 -
 7: clg-num/in-tac - 15  23: in-trk-code    - 4    39:                 -
 8: space          - 1   24: space          - 1    40:                 -
 9: code-dial      - 4   25: in-crt-id      - 3    41:                 -
10: space          - 1   26: space          - 1    42:                 -
11: code-used      - 4   27: frl            - 1    43:                 -
12: space          - 1   28: space          - 1    44:                 -
13: out-crt-id     - 3   29: return         - 1    45:                 -
14: space          - 1   30: line-feed      - 1    46:                 -
15: dialed-num     - 23  31:                -      47:                 -
16: space          - 1   32:                -      48:                 -

                         Record length = 117
``` |
| 4. | If the **Intra-switch CDR** field is set to **y** on Page 1 of the CDR SYSTEM PARAMETERS form, then use the **change intra-switch-cdr** command to define the extensions that will be subjected to call detail records. In the **Assigned Members** field, enter the specific extensions whose usage will be tracked with the CDR records.

```
change intra-switch-cdr                                   Page   1 of   3
                        INTRA-SWITCH CDR

                             Assigned Members:   4    of 5000   administered
  Extension          Extension          Extension          Extension
  10001
  10002
  10003
  10004
``` |
| 5. | For each trunk group for which CDR records are desired, verify that CDR reporting is enabled. Use the **change trunk-group *n*** command, where *n* is the trunk group number, to verify that the CDR Reports field is set to **y**. This applies to all types of trunk groups.

```
change trunk-group 2                                      Page   1 of  21
                           TRUNK GROUP

Group Number: 2                    Group Type: isdn        CDR Reports: y
 Group Name: Singtel BRI Line 2          COR: 95     TN: 1        TAC: 702
   Direction: two-way      Outgoing Display? n        Carrier Medium: PRI/BRI
 Dial Access? y            Busy Threshold: 255  Night Service: 10004
Queue Length: 0
Service Type: public-ntwrk       Auth Code? n         TestCall ITC: rest
                    Far End Test Line No:
TestCall BCC: 4
``` |

4. Configure Telesoft PSwitchView

This section describes the configuration of Telesoft PSwitchView.

Step	Description
1.	Edit the file **RDTTACQU.INI** located in the directory **C:\avayacm\rdttacqu**. In the **[parameters]** section, set the field **nservers** to the number of Avaya Communication Managers. The fields **server*X*parm** specifies the IP address and port number that Telesoft PSwitchView listens for connection, where *X* is a number starting from zero. In this compliance testing, the **server*X*parm** fields are defined as shown below.

5. Interoperability Compliance Testing

The interoperability compliance testing included feature and serviceability testing. The feature testing evaluated the ability of Telesoft PSwitchView to collect and process CDR records for various types of calls. The serviceability test introduced failure scenarios to see if Telesoft PSwitchView can resume CDR collection after failure recovery.

5.1. General Test Approach

The general test approach was to manually place intra-switch calls, inter-switch calls, inbound and outbound PSTN trunk calls to and from telephones on the Avaya Communication Managers, and verify that Telesoft PSwitchView collects the CDR records and reports the correct attributes of the call. For serviceability testing, the CDR links on Avaya Communication Managers were disabled and re-enabled and the Avaya S8500 and S8300 servers were also rebooted.

5.2. Test Results

All feature and serviceability tests passed. Telesoft PSwitchView successfully captured and processed call records from Avaya Communication Manager. Telesoft PSwitchView also successfully processed the CDR data, and produced call accounting reports. The types of calls generated during the compliance test include intra-switch calls, inbound/outbound PSTN trunk calls, inbound/outbound inter-switch IP trunk calls, transferred calls and conferenced calls.

6. Verification Steps

The following steps may be used to verify the configuration:

- Use the **ping** utility on the Telesoft PSwitchView server to verify the IP connectivity to the Avaya S8500 and S8300 Servers.
- On the SAT of each Avaya S8500 and S8300 Server, enter the **status cdr-link** command and verify that the **Link State** shows **up**.

```
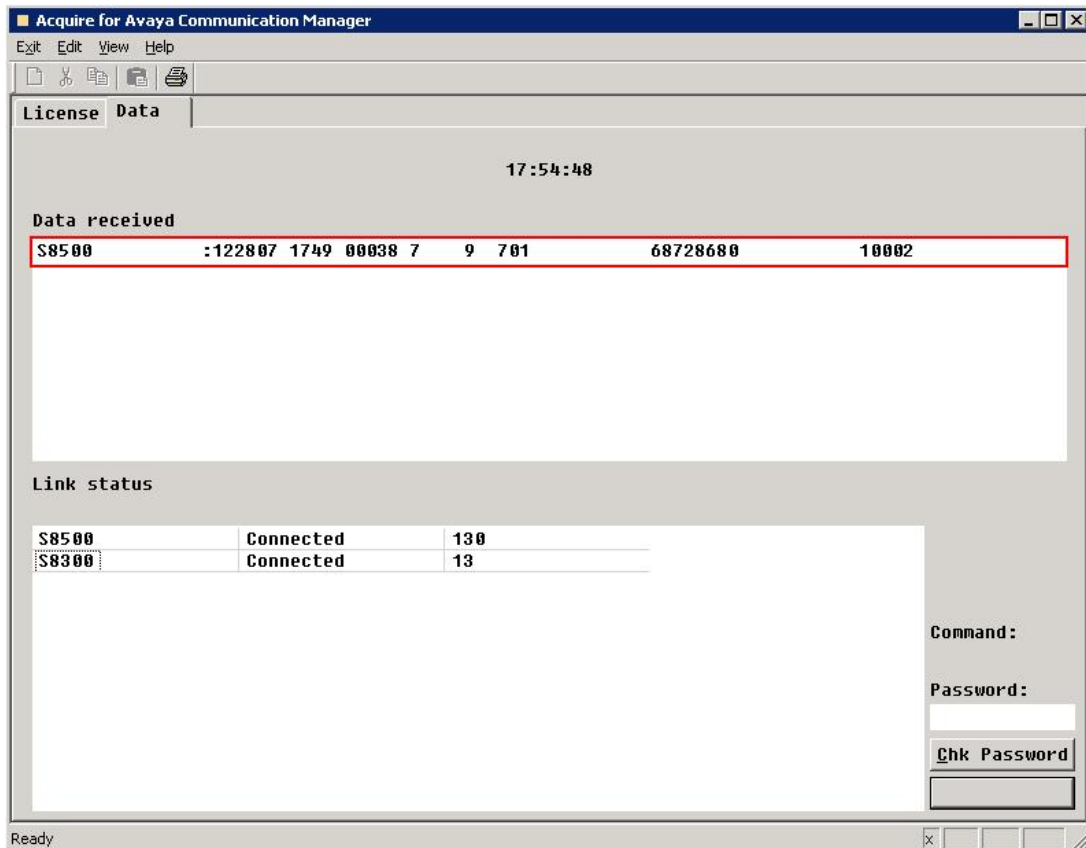status cdr-link
                               CDR LINK STATUS
                 Primary                        Secondary

        Link State: up                      CDR not administered

     Date & Time: 2007/8 /20 9 :40:34        0   /0 /0  0 :0 :0
  Forward Seq. No: 134                        0
 Backward Seq. No: 325                        0
CDR Buffer % Full:   0.00                        0.00
      Reason Code: OK
```

- Place a call and verify that Telesoft PSwitchView receives the CDR record for the call. Compare the values of data fields in the CDR record with the expected values and verify that they match.

- Place internal, inbound trunk, and outbound trunk calls to and from various telephones, generate an appropriate report in Telesoft PSwitchView and verify the report's accuracy.

7. Support

Technical support for PSwitchView can be obtained by contacting Telesoft's Support Desk at +91 22 26155139, or sending an e-mail to support@telesoft.in.

8. Conclusion

These Application Notes describe the procedures for configuring the Telesoft PSwitchView to collect call detail records from Avaya Communication Manager. Telesoft PSwitchView successfully passed the compliance testing.

9. Additional References

This section references the Avaya and Telesoft documentation that are relevant to these Application Notes.

The following Avaya product documentation can be found at http://support.avaya.com.

[1] *Feature Description and Implementation For Avaya Communication Manager*, Release 4.0, Issue 5, February 2007, Document Number 555-245-205.
[2] *Administrator Guide for Avaya Communication Manager*, Release 4.0, Issue 3, February 2007, Document Number 03-300509.

The following PSwitchView documentations are provided by Telesoft on request.

[3] PSwitchView : Using RdttAcquire module, 5 Dec 2007.
[4] PSwitchView Call Analysis Software, Version 7.0.

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