



**Avaya Solution & Interoperability Test Lab**

---

## **Application Notes for Aceyus with Avaya Aura® Communication Manager and Avaya Call Management System with Aceyus Historical Interface – Issue 1.1**

### **Abstract**

These Application Notes describe the configuration steps required to integrate Aceyus with Avaya Call Management System using the Aceyus Historical Interface to capture ACD call center data from Avaya Aura® Communication Manager. The Aceyus Historical interface is used to obtain splits/skills, Vector Directory Numbers (VDNs), and agent data periodically. This interface is provided by Avaya Professional Services.

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 to integrate Aceyus with Avaya Call Management System using the Aceyus Historical interface to capture ACD call center data from Avaya Aura® Communication Manager. The Aceyus Historical interface is used to obtain splits/skills, Vector Directory Numbers (VDNs), and agent data periodically.

The Aceyus - Avaya CMS Historical Adapter is a windows service that will be installed in the customer's environment to enable data collection via ODBC from one or many Avaya CMS servers. This service is installed and supported by the Aceyus Professional Services and support teams. This service requires Microsoft .NET 4.0 and Microsoft Windows Server 2008 or higher to operate and will place data in the Aceyus Data Warehouse installed in the customer's environment.

## 2. General Test Approach and Test Results

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.

The feature test cases were performed manually. Incoming calls were made to the monitored ACD/Skill and VDN groups to enable data streams to be sent to Aceyus. Manual call controls and work mode changes from the Agent telephones were exercised as necessary to populate specific fields in the data streams.

The serviceability test cases were performed manually by stopping and restarting the Aceyus Historical interface, and by disconnecting and reconnecting the LAN cable to the Aceyus server.

The verification of all tests included checking of proper display of real-time data at the Aceyus server, and comparing the displayed data with reports from the Avaya CMS server.

### 2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. The feature testing focused on verifying Aceyus parsing and displaying of ACD/Skill, VDN, and Agent data from Avaya CMS.

The serviceability testing focused on verifying the ability of Aceyus to recover from adverse conditions, such as restarting Aceyus services and interfaces.

## 2.2. Test Results

The test objectives listed in **Section 2.1** were verified and all test cases were executed and passed.

## 2.3. Support

Contact Aceyus for technical support.

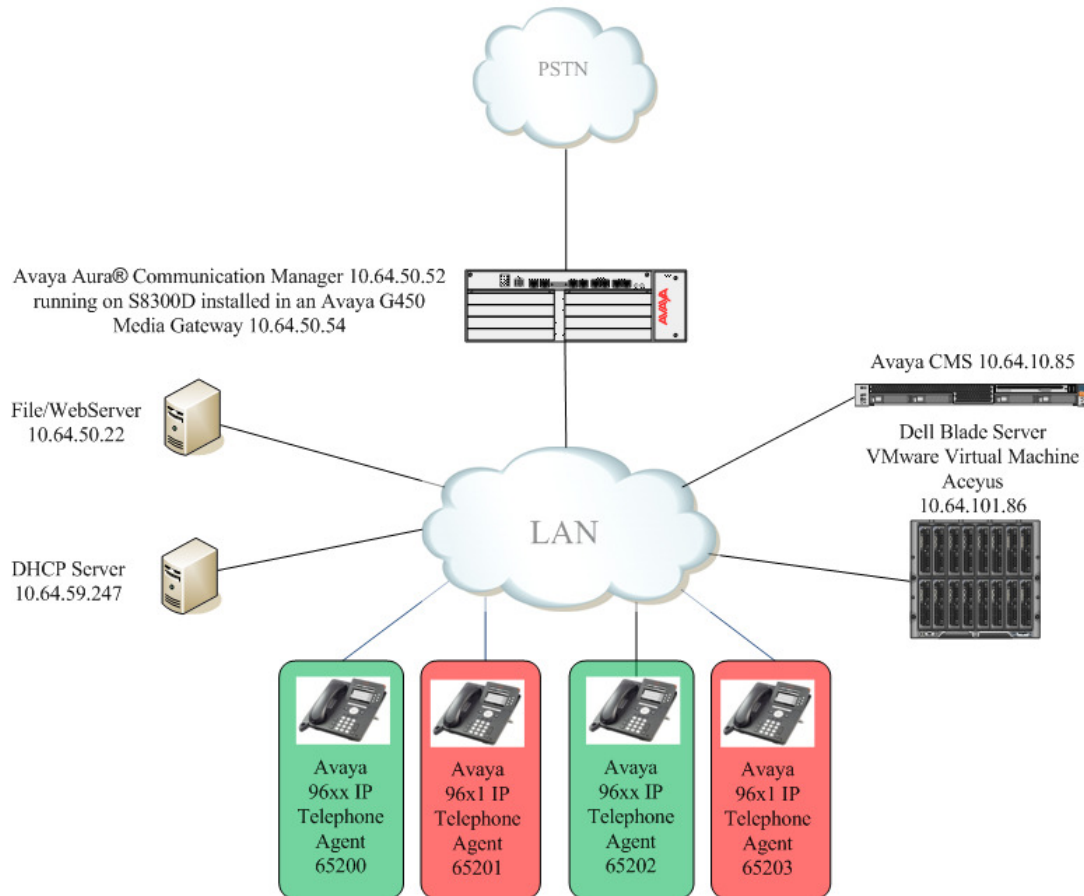
- **Web:** [www.aceyus.com](http://www.aceyus.com)
- **Phone:** 888-222-3987 – Option 2 (Monday – Friday 7am – 7pm CT for P2, P3, P4 and 24 x 7 for P1)
- **Email:** [support@aceyus.com](mailto:support@aceyus.com)

### Priority Definitions:

<p><b>Critical Priority (P1)</b></p> <p>Produces an emergency situation in which the Production Aceyus Software is inoperable, produces incorrect results, or fails catastrophically, or a mainline function of such Aceyus Software is inoperative, causing significant impact on Licensee’s business operation (for example, Licensee’s production network is down, causing critical impact to business operation if service is not restored quickly.) Problem will be worked on a substantially continuous basis until acceptable workaround is provided.</p>	<p><b>High Priority (P2)</b></p> <p>Produces a serious situation in which the Production Aceyus Software is inoperable, produces incorrect results, or fails catastrophically, or a mainline function of such Aceyus Software is inoperative, causing a major impact on Licensee’s business operations (for example, the Licensee’s network is severely degraded impacting significant aspects of business operations).</p>
<p><b>Medium Priority (P3)</b></p> <p>Produces a non-critical situation in which the Production Aceyus Software produces incorrect results, or a feature of such Aceyus Software is inoperative, causing a minor impact on Licensee’s business operations ( for example, Licensee’s network performance is degraded; network functionality is noticeably impaired, but most business operations continue). Aceyus will use commercially reasonable efforts to provide a mutually acceptable workaround if the problem has not been resolved in the next release of the relevant Aceyus Software.</p>	<p><b>Low Priority (P4)</b></p> <p>General questions and/or inquiries causing little or no impact on Licensee’s business operations. Aceyus will use commercially reasonable efforts to provide a mutually acceptable workaround if the problem has not been resolved in the next release of the relevant Aceyus Software.</p>

### 3. Reference Configuration

**Figure 1** illustrates the configuration used for compliance testing. The network consisted of Communication Manager running on an S8300D blade that was installed in the G450 Media gateway, Avaya Call Management System and Aceyus.



**Figure 1: Network Configuration**

## 4. Equipment and Software Validated

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

Equipment	Software/Firmware
<i>Avaya PBX Products</i>	
Avaya S8300D Server running Avaya Aura® Communication Manager	Avaya Aura® Communication Manager 6.2
Avaya G450 Media Gateway MGP	HW 2 FW 31.20.0
<i>Avaya Aura® Session Manager</i>	
Avaya Aura® Session Manager HP Proliant DL360 G7	6.3
Avaya Aura® System Manager HP Proliant DL360 G7	6.3
<i>Avaya Call Management System</i>	
CMS server on SUN SPARC Enterprise T5120	R16.3
<i>Avaya Endpoints</i>	
Avaya 96xx Series IP Telephones	H.323 3.1SP2
Avaya 96x1 Series IP Telephones	SIP 6.2
<i>Aceyus Products</i>	
Aceyus Avaya CMS Historical Interface	4.5

## 5. Configure Avaya Aura® Communication Manager

This section describes the steps required for Communication Manager to support the configuration in **Figure 1**. The following pages provide step-by-step instructions on how to administer parameters specific to the Aceyus solution only. The assumption is that the appropriate license and authentication files have been installed on the servers and that login and password credentials are available and that the reader has a basic understanding of the administration of Communication Manager. It is assumed that all other connections, (e.g., to PSTN, to LAN) are configured and will not be covered in this document. The reader will need access to the System Access Terminal (SAT). For detailed information on the installation, maintenance, and configuration of Communication Manager, please refer to [1].

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

- Verify Communication Manager Options
- Administer adjunct CMS release
- Administer processor interface channel

- Administer measured VDN
- Administer measured Skill

The detailed administration of contact center devices such as ACD/Skill, VDN, Vector, and Agents are assumed to be in place. These Application Notes will only cover how to enable ACD/Skill, VDN, and Agent data to be sent to Avaya CMS.

## 5.1. Verify Avaya Aura® Communication Manager Software Options

Log into the System Access Terminal (SAT) to verify that the Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the “display system-parameters customer-options” command to verify that the **G3 Version** field is set to “V16” on **Page 1**, as shown below.

```

display system-parameters customer-options                               Page 1 of 11
                                OPTIONAL FEATURES

G3 Version: V16                                                    Software Package: Enterprise
Location: 2                                                            System ID (SID): 1
Platform: 28                                                           Module ID (MID): 1

                                                                USED
Platform Maximum Ports: 6400 142
Maximum Stations: 2400 34
Maximum XMOBILE Stations: 2400 0
Maximum Off-PBX Telephones - EC500: 9600 3
Maximum Off-PBX Telephones - OPS: 9600 19
Maximum Off-PBX Telephones - PBFMC: 9600 0
Maximum Off-PBX Telephones - PVFMC: 9600 0
Maximum Off-PBX Telephones - SCCAN: 0 0
Maximum Survivable Processors: 313 0

(NOTE: You must logoff & login to effect the permission changes.)

```

Navigate to **Page 6**, and verify that the **Call Center Release** field is set to “6.0”, as shown below.

```

display system-parameters customer-options                               Page 6 of 11
                                CALL CENTER OPTIONAL FEATURES

                                Call Center Release: 6.0

                                ACD? y                                Reason Codes? y
                                BCMS (Basic)? y                      Service Level Maximizer? n
                                BCMS/VuStats Service Level? y       Service Observing (Basic)? y
                                BSR Local Treatment for IP & ISDN? y  Service Observing (Remote/By FAC)? y
                                Business Advocate? y                Service Observing (VDNs)? y
                                Call Work Codes? y                    Timed ACW? y
                                DTMF Feedback Signals For VRU? y      Vectoring (Basic)? y
                                Dynamic Advocate? y                  Vectoring (Prompting)? y
                                Expert Agent Selection (EAS)? y       Vectoring (G3V4 Enhanced)? y
                                EAS-PHD? y                          Vectoring (3.0 Enhanced)? y
                                Forced ACD Calls? n                  Vectoring (ANI/II-Digits Routing)? y
                                                                Vectoring (G3V4 Advanced Routing)? y
                                Lookahead Interflow (LAI)? y          Vectoring (CINFO)? y
                                Multiple Call Handling (On Request)? y  Vectoring (Best Service Routing)? y
                                Multiple Call Handling (Forced)? y     Vectoring (Holidays)? y
                                PASTE (Display PBX Data on Phone)? y   Vectoring (Variables)? y
                                (NOTE: You must logoff & login to effect the permission changes.)

```

**Note: Values used were specific to this Compliance Test. When integrating with other releases please use the Version information provided for that release.**

## 5.2. Administer Adjunct CMS Release

Use the “change system-parameters features” command and navigate to **Page 12**. Set the **Reporting Adjunct Release** field for **CMS** to the software release of the Avaya CMS. In this case, “R16.1/R16.x” is used to correspond to Avaya CMS software release R16.3.

```
change system-parameters features                               Page 12 of 19
                    FEATURE-RELATED SYSTEM PARAMETERS

AGENT AND CALL SELECTION
    MIA Across Splits or Skills? n
    ACW Agents Considered Idle? y
    Call Selection Measurement: predicted-wait-time
Service Level Supervisor Call Selection Override? n
    Auto Reserve Agents: all
    Block Hang-up by Logged-in Auto-Answer Agents? n

CALL MANAGEMENT SYSTEM
    REPORTING ADJUNCT RELEASE (determines protocol used by appl link)
        CMS (appl mis): R16.1/R16.x
        AAPC/IQ (appl ccr): 5.1/5.2/7.0

    BCMS/VuStats LoginIDs? y
    BCMS/VuStats Measurement Interval: hour
    BCMS/VuStats Abandon Call Timer (seconds): 10
    Validate BCMS/VuStats Login IDs? n
    Clear VuStats Shift Data: on-login
    Remove Inactive BCMS/VuStats Agents? n
```

## 5.3. Administer Processor Interface Channel

Assign a new processor interface channel with the “change communication-interface processor-channels” command. Add an entry with the following values, and submit these changes.

- **Enable:** “y”
- **Appl.:** “mis”
- **Mode:** “s” for server mode.
- **Interface Link:** “pv4”
- **Interface Chan:** TCP channel number for Avaya CMS. In this case “5001”.
- **Destination Node:** Blank
- **Destination Port:** “0”
- **Session Local:** **Local Session ID** for the connection to CMS. In this case “4”.
- **Session Remote:** **Remote Session ID** for the connection to CMS. In this case “4”.

Note: For each connection, the Local Session number on Communication Manager must equal the Remote Session number on CMS and vice versa.



The **Interface Chan** field contains the Avaya CMS TCP channel number, which is defined as part of the Avaya CMS installation. For the compliance testing, the TCP channel number of “5001” was used.

```
change communication-interface processor-channels Page 1 of 24
PROCESSOR CHANNEL ASSIGNMENT
```

Proc	Enable	Appl.	Gtwy To	Mode	Interface Link/Chan	Destination Node	Port	Session Local/Remote	Mach ID
1:	y	ccr		s	pv4 5002 iq1		0	1 1	
2:	y	mis		s	pv4 5001 cms		0	4 4	

## 5.4. Administer Measured VDN

Use the “change vdn n” command, where “n” is the extension of the VDN to be measured by Avaya CMS. Set the **Measured** field to “external” or “both” to enable measurement data on the VDN to be sent to Avaya CMS. Repeat this step for all VDNs that will be monitored by Avaya CMS.

```
change vdn 66101 Page 1 of 3
VECTOR DIRECTORY NUMBER

Extension: 66101
Name*: VDN 66101
Destination: Vector Number 21
Attendant Vectoring? n
Meet-me Conferencing? n
Allow VDN Override? n
COR: 1
TN*: 1
Measured: both
Acceptable Service Level (sec): 10
Service Objective (sec): 20
VDN of Origin Annc. Extension*:
1st Skill*:
2nd Skill*:
3rd Skill*:

* Follows VDN Override Rules
```

## 5.5. Administer Measured Skill

Use the “change hunt-group n” command, where “n” is the extension of the ACD/Skill group number to be measured by Avaya CMS. On **Page 2** set the **Measured** field to “external” or “both” to enable real-time measurement data on the ACD/Skill group and the associated agents to be sent to Avaya CMS. Repeat this step for all ACD/Skill groups that will be measured by Avaya CMS.

```
change hunt-group 20                                     Page 2 of 4
HUNT GROUP
Skill? y          Expected Call Handling Time (sec): 2
AAS? n           Service Level Target (% in sec): 10 in 60
Measured: both Service Objective (sec): 60
Supervisor Extension: Service Level Supervisor? y
                  Activate on Oldest Call Waiting? y
                  Call Selection Override? n
Controlling Adjunct: none Level 1 Threshold (sec): 2
                  Level 2 Threshold (sec): 5
                  Dynamic Threshold Adjustment? n
VuStats Objective:
Multiple Call Handling: none Dynamic Queue Position? y
Timed ACW Interval (sec): After Xfer or Held Call Drops? n
```

## 6. Configure Avaya Call Management System

Configuration of the Aceyus Historical interface was performed by Aceyus Professional Services and is outside the scope of these Application Notes. The configuration uses an ODBC connection to CMS.

## 7. Configure Aceyus

Aceyus Professional Services will login to the data collection server (a windows server) installed in the customer's environment to configure the "Aceyus – Avaya CMS Historical Adapter" service. This will include installing the necessary MSSQL database for data to be stored in, setting data retention sizing, configuring ODBC and testing data migration.

## 8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Communication Manager, Avaya Call Management System, and Aceyus.

### 8.1. Verify Avaya Aura® Communication Manager

Verify the status of the processor interface channel by using the "status processor-channels n" command, where "n" is the processor channel number from 5.3. Verify that the **Session Layer Status** is "In Service", and that the **Socket Status** is "TCP connected", as shown below.

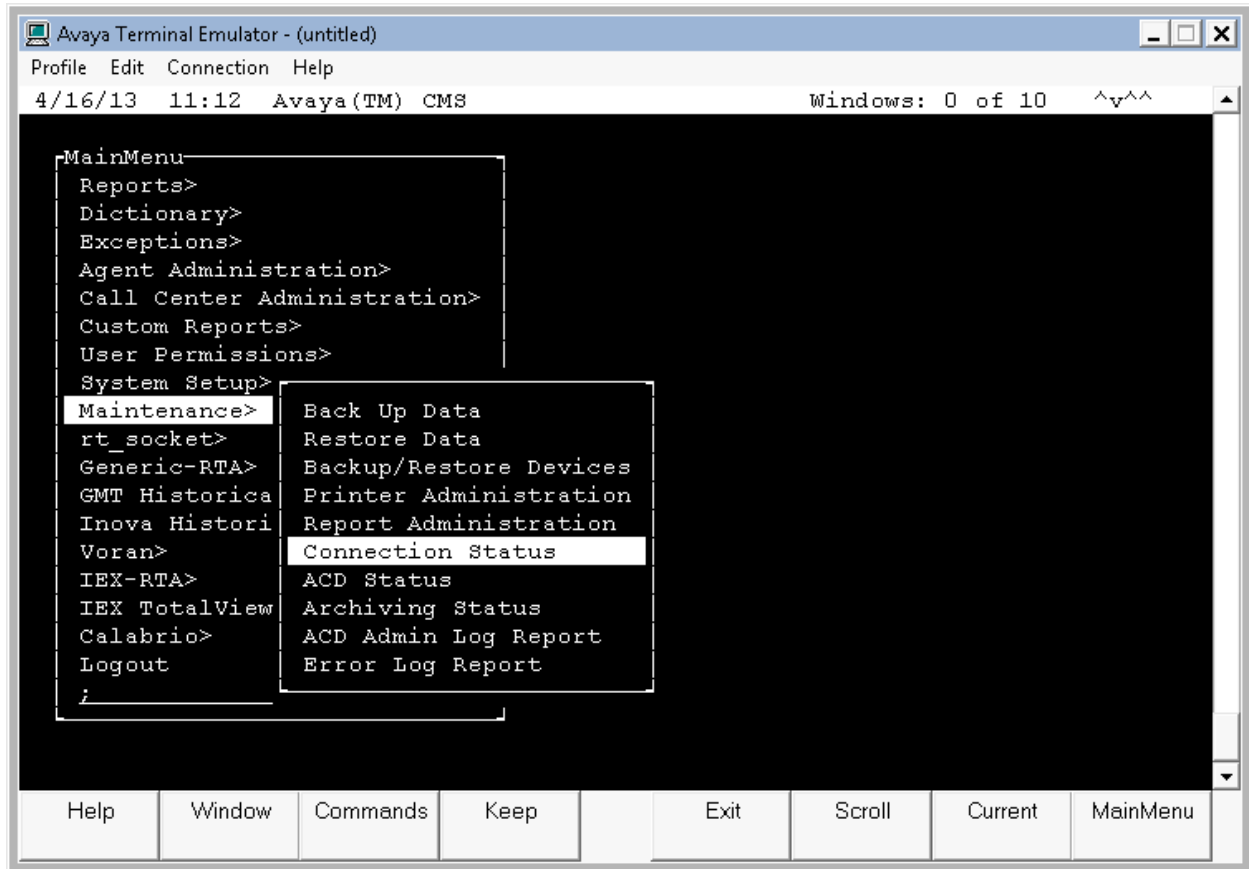
```
status processor-channels 2
                        PROCESSOR-CHANNEL STATUS

      Channel Number: 2
Session Layer Status: In Service
Socket Status: TCP connected
      Link Number: pv4
      Link Type: processor ethernet
Message Buffer Number: 0

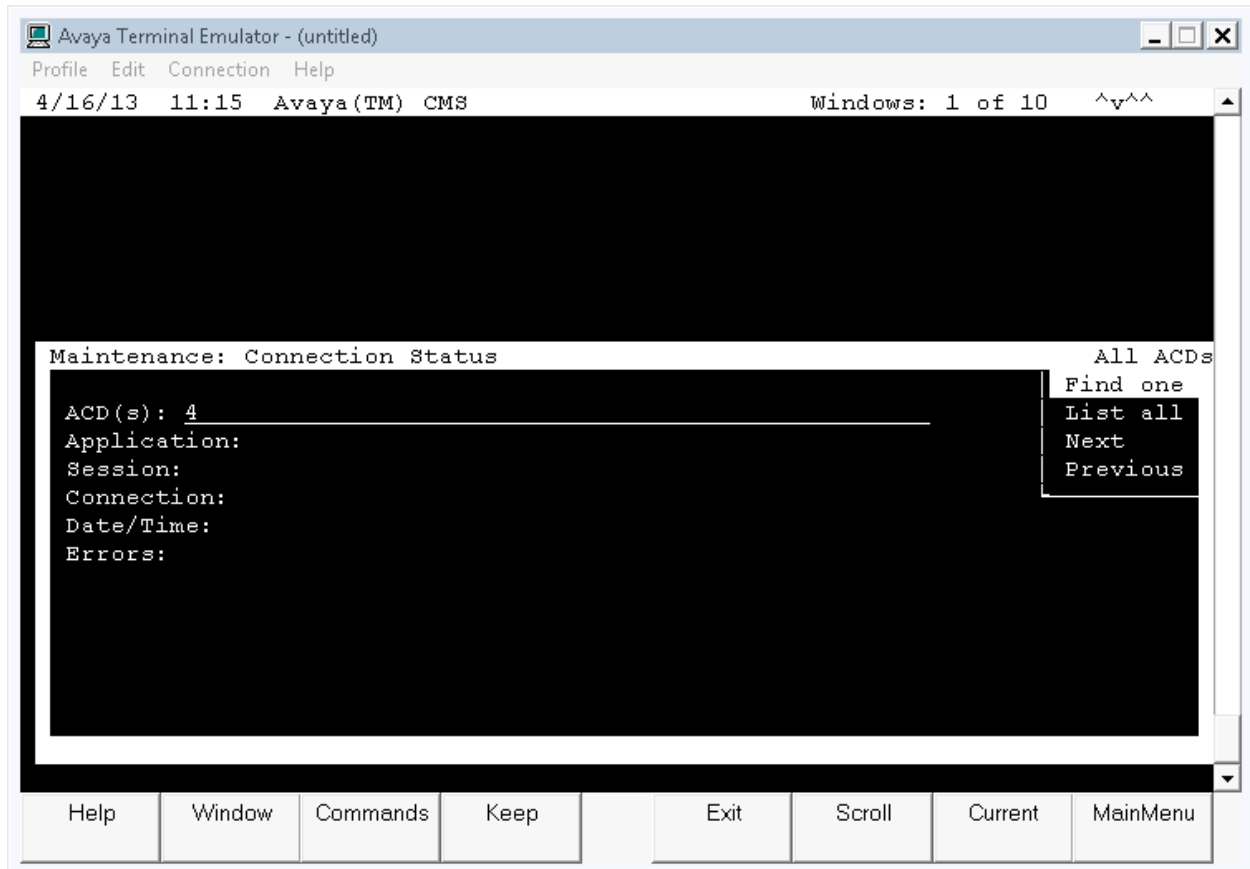
      Last Failure: None
      At:
```

## 8.2. Verify Avaya Call Management System

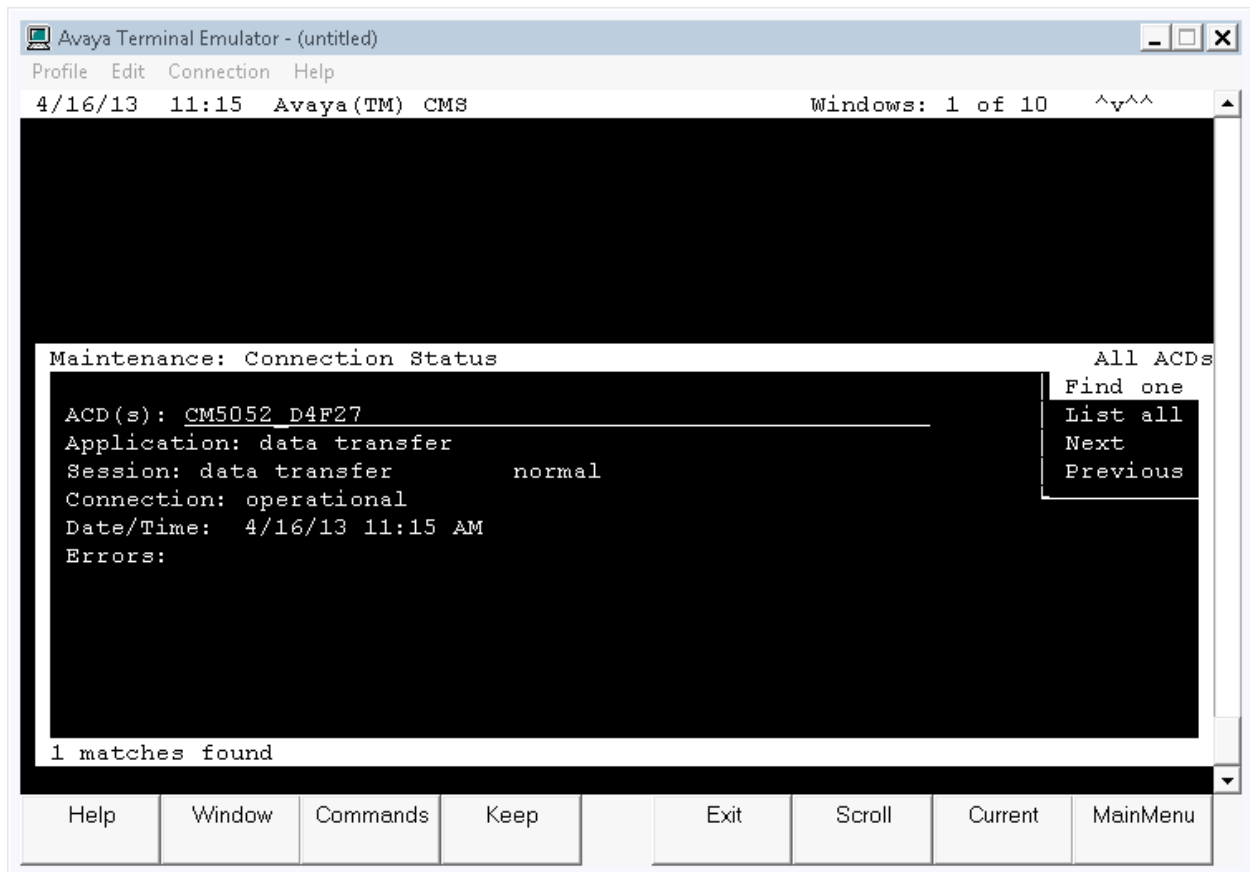
From the **MainMenu**, verify the status of the connection to Communication Manager by selecting **Maintenance** → **Connection Status**, as shown below.



Enter the corresponding **ACD(s)** number, which is provided by Avaya Professional Services. For the compliance testing, the corresponding switch connection is ACD system "4". Tab over to **Find one** and press **Enter**.



The switch connection status is displayed. Check the status in the **Session** and **Connection** fields, as shown below.



### **8.3. Verify Aceyus**

Aceyus will verify that data is migrating normally from the CMS historical database by running SQL queries on the Aceyus data warehouse and validating that the data matches queries run against the CMS system. Once this initial step has been completed Aceyus will let the data collection process run for 24 hours. After 24 hours, the error log (CMSLog.txt) should be checked for errors.

If the Aceyus reporting package is also installed Aceyus will run reports similar to Avaya CMS reports, in the Aceyus environment. These reports can be used to compare and validate reporting data.

## **9. Conclusion**

These Application Notes describe the configuration steps required for Aceyus to successfully interoperate with Avaya Aura® Communication Manager using the Aceyus Historical Interface of Avaya Call Management System. All feature and serviceability test cases were completed successfully.

## **10. References**

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

- [1] *Administering Avaya Aura® Communication Manager*, Document Number 03-300509
- [2] *Avaya Call Management System Administration*, December 2011, Release 16.3.
- [3] *Aceyus – CMS Adapter Install Guide*, Version 4.5.5 April 2013

---

**©2013 Avaya Inc. All Rights Reserved.**

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at [devconnect@avaya.com](mailto:devconnect@avaya.com).