AVAYA

Avaya Solution & Interoperability Test Lab

Application Notes for InfinityCTI Click and Dial with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for InfinityCTI Click and Dial to interoperate with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services.

In the compliance testing, InfinityCTI Click and Dial used the Telephony Services Application Programming Interface from Avaya Aura® Application Enablement Services to launch outbound calls on behalf of users.

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.

TLT; Reviewed:
SPOC 6/7/2016

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1. Introduction

These Application Notes describe the configuration steps required for InfinityCTI Click and Dial to interoperate with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services.

In the compliance testing, InfinityCTI Click and Dial used the Telephony Services Application Programming Interface (TSAPI) from Avaya Aura® Application Enablement Services to launch outbound calls on behalf of users.

The TSAPI interface is used by InfinityCTI Click and Dial to monitor the user station extension, and to launch outbound calls and send DTMF on behalf of the user. All call progress tones are played back on the user telephone connected to Avaya Aura® Communication Manager.

InfinityCTI Click and Dial supports automatic dialing of highlighted telephone number string from any application running on the user desktop such as web browser, email, spreadsheet, text document, etc. The telephone number string can consist of digits and/or letters. InfinityCTI Click and Dial strips all special characters from the telephone number string, and prepends any required network prefixes to the resultant number prior to sending to Avaya Aura® Application Enablement Services. Once the outbound call is established, InfinityCTI Click and Dial also supports sending of highlighted digits string as DTMF digits.

2. General Test Approach and Test Results

The feature test cases were performed manually. The outbound calls were initiated by users and launched by Click and Dial. Necessary user actions such as answer and drop were performed manually from the user telephones to test the various call scenarios.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet connection to the user PC running Click and Dial.

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.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on Click and Dial:

- Use of TSAPI event report service to monitor agent station.

- Use of TSAPI call control service to launch outbound calls and send DTMF digits.

- Proper handling of call scenarios involving incomplete number, invalid number, ring no answer, voicemail coverage, no route available, busy, spreadsheet, email, web browser, text document, DTMF, internal call, local call, long distance, international, special characters, multiple calls, and multiple users.

The serviceability testing focused on verifying the ability of Click and Dial to recover from adverse conditions, such as disconnecting and reconnecting the Ethernet connection to the user PC running Click and Dial.

2.2. Test Results

All test cases were executed, and the following were observations on Click and Dial:

- By design, outbound call is not launched when the number of digits in the resultant telephone number is less than the length of internal extensions.

- By design, all special characters are stripped from the highlighted telephone number string, including * and #, prior to sending to Application Enablement Services as destination digits.

- By design, all special characters are stripped from the highlighted DTMF string, excluding * and #, prior to sending to Application Enablement Services as DTMF digits. Therefore * and # characters are retained in the resultant DTMF string.

- For a call that stayed up during an Ethernet disruption to the user PC, the first attempt by the user to send DTMF post recovery for the active call will fail, but can succeed in the second attempt.

2.3. Support

Technical support on Click and Dial can be obtained through the following:

- **Phone:** (800) 795-1546
- **Email:** support@infinitycti.com

3. Reference Configuration

The Click and Dial solution consists of a Windows server for application licensing, and the Click and Dial application running on the user PCs. As shown in **Figure 1**, each user PC has a TSAPI connection to Application Enablement Services via the Click and Dial application.

The Windows server has an InfinityCTI LicenseServiceApp component, which is a custom component built for each customer for the purpose of Click and Dial licensing. The custom component takes into account the customer network server and port information.
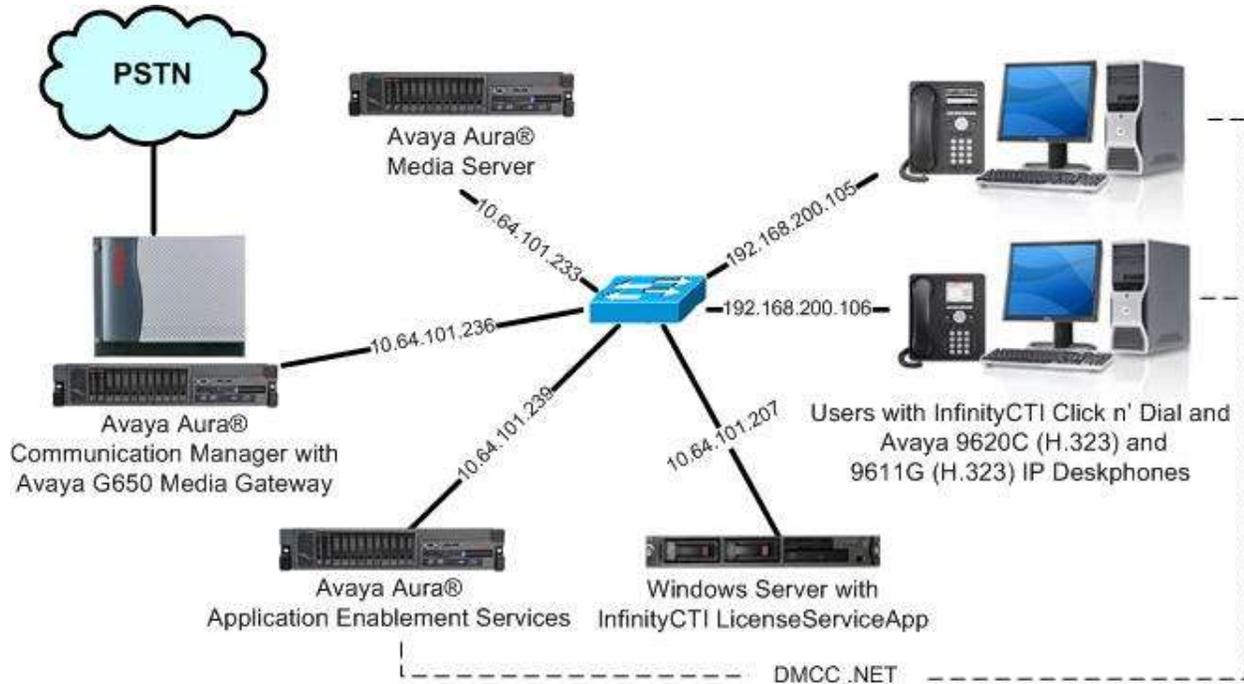
Figure 1: Compliance Testing Configuration

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 SP 3.1 (7.0.0.3.1.441.22903)
Avaya G650 Media Gateway	NA
Avaya Aura® Media Server in Virtual Environment	7.7.0.236
Avaya Aura® Application Enablement Services in Virtual Environment	7.0 Patch 2 (7.0.0.0.2.13)
Avaya 9620C & 9650 IP Deskphones (H.323)	3.250A
Avaya 9611G IP Deskphone (H.323)	6.6029
Windows Server 2008 • InfinityCTI LicenseServiceApp	R2 Standard 6.0.0.0
InfinityCTI Click and Dial on Windows 7 Professional • Avaya TSAPI Windows Client (csta32.dll)	4.1.3.3 SP 1 7.0.0.131

5. Configure Avaya Aura® Communication Manager

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

- Verify license
- Administer CTI link

5.1. Verify License

Log in to the System Access Terminal 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 **Computer Telephony Adjunct Links** customer option is set to "y" on **Page 4**. If this option is not set to "y", then contact the Avaya sales team or business partner for a proper license file.

```
display system-parameters customer-options                        Page   4 of  12
                             OPTIONAL FEATURES

    Abbreviated Dialing Enhanced List? y            Audible Message Waiting? y
         Access Security Gateway (ASG)? n              Authorization Codes? y
         Analog Trunk Incoming Call ID? y                        CAS Branch? n
 A/D Grp/Sys List Dialing Start at 01? y                          CAS Main? n
Answer Supervision by Call Classifier? y               Change COR by FAC? n
                                   ARS? y  Computer Telephony Adjunct Links? y
                  ARS/AAR Partitioning? y  Cvg Of Calls Redirected Off-net? y
           ARS/AAR Dialing without FAC? n                       DCS (Basic)? y
             ASAI Link Core Capabilities? n                 DCS Call Coverage? y
             ASAI Link Plus Capabilities? n                DCS with Rerouting? y
         Async. Transfer Mode (ATM) PNC? n
   Async. Transfer Mode (ATM) Trunking? n     Digital Loss Plan Modification? y
              ATM WAN Spare Processor? n                            DS1 MSP? y
                                  ATMS? y           DS1 Echo Cancellation? y
                  Attendant Vectoring? y
```

5.2. Administer CTI Link

Add a CTI link using the "add cti-link n" command, where "n" is an available CTI link number. Enter an available extension number in the **Extension** field. Note that the CTI link number and extension number may vary. Enter "ADJ-IP" in the **Type** field, and a descriptive name in the **Name** field. Default values may be used in the remaining fields.

```
add cti-link 1                                              Page   1 of   3
                                CTI LINK
 CTI Link: 1
Extension: 60111
     Type: ADJ-IP
                                                                  COR: 1

     Name: AES CTI Link
```

6. Configure Avaya Aura® Application Enablement Services

This section provides the procedures for configuring Application Enablement Services. The procedures include the following areas:

- Launch OAM interface
- Verify license
- Administer TSAPI link
- Administer InfinityCTI user
- Disable security database
- Restart TSAPI service
- Obtain Tlink name

6.1. Launch OAM Interface

Access the OAM web-based interface by using the URL "https://ip-address" in an Internet browser window, where "ip-address" is the IP address of the Application Enablement Services server.

The **Please login here** screen is displayed. Log in using the appropriate credentials.

The **Welcome to OAM** screen is displayed next.

6.2. Verify License

Select **Licensing → WebLM Server Access** in the left pane, to display the applicable WebLM server log in screen (not shown). Log in using the appropriate credentials, and navigate to display installed licenses (not shown).

Select **Licensed products → APPL_ENAB → Application_Enablement** in the left pane, to display the **Application Enablement (CTI)** screen in the right pane.

Verify that there are sufficient licenses for **TSAPI Simultaneous Users**, as shown below.

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6.3. Administer TSAPI Link

Select **AE Services** → **TSAPI** → **TSAPI Links** from the left pane of the **Management Console**, to administer a TSAPI link. The **TSAPI Links** screen is displayed, as shown below. Click **Add Link**.
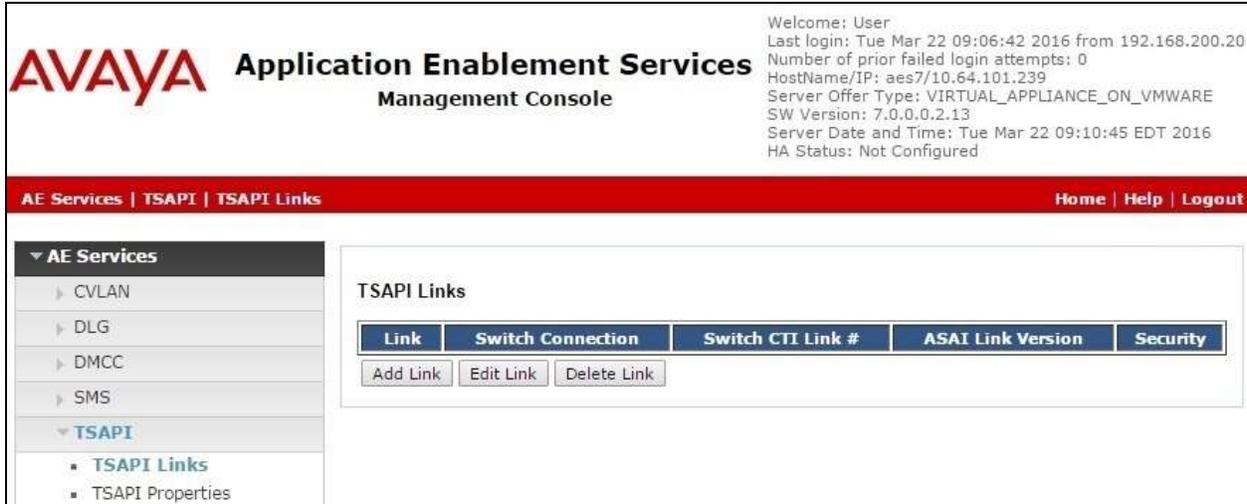
The **Add TSAPI Links** screen is displayed next.

The **Link** field is only local to the Application Enablement Services server, and may be set to any available number. For **Switch Connection**, select the relevant switch connection from the drop-down list. In this case, the existing switch connection "cm7" is selected. For **Switch CTI Link Number**, select the CTI link number from **Section 5.2**. Retain the default values in the remaining fields.
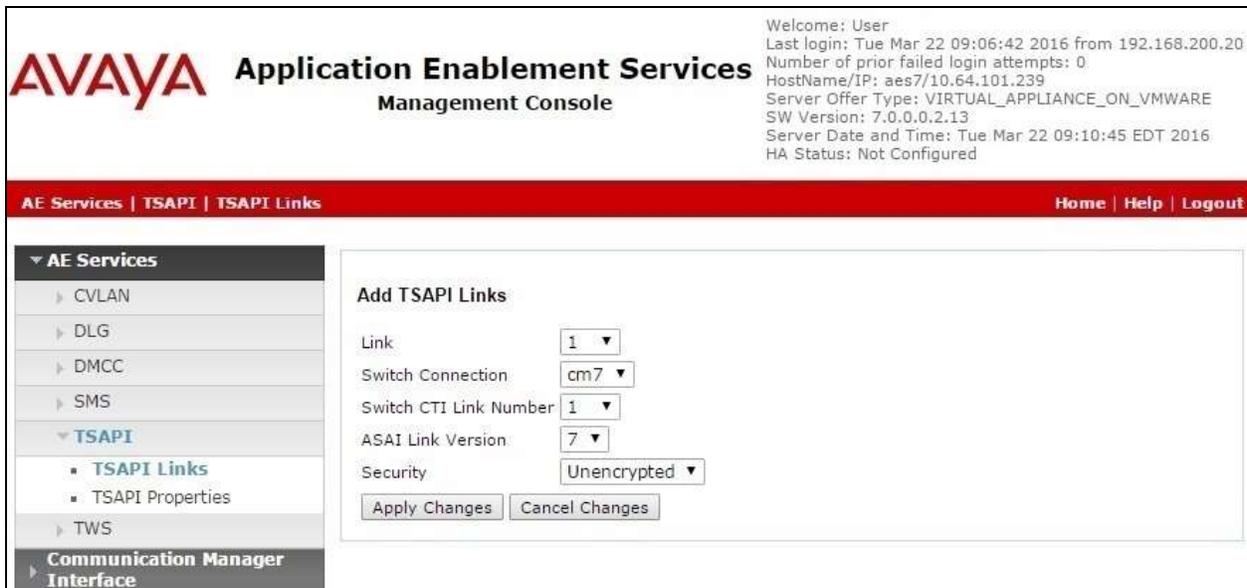
6.4. Administer InfinityCTI User

Select **User Management** → **User Admin** → **Add User** from the left pane, to display the **Add User** screen in the right pane.

Enter desired values for **User Id**, **Common Name**, **Surname**, **User Password**, and **Confirm Password**. For **CT User**, select "Yes" from the drop-down list. Retain the default value in the remaining fields.

6.5. Disable Security Database

Select **Security → Security Database → Control** from the left pane, to display the **SDB Control for DMCC, TSAPI, JTAPI and Telephony Web Services** screen in the right pane. Uncheck **Enable SDB for TSAPI Service, JTAPI and Telephony Web Services** as shown below.

In the event that the security database is used by the customer with parameter already enabled, then follow reference [2] to configure access privileges for the InfinityCTI user from **Section 6.4**.

6.6. Restart TSAPI Service

Select **Maintenance → Service Controller** from the left pane, to display the **Service Controller** screen in the right pane. Check **TSAPI Service**, and click **Restart Service**.

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6.7. Obtain Tlink Name

Select **Security** → **Security Database** → **Tlinks** from the left pane. The **Tlinks** screen shows a listing of the Tlink names. A new Tlink name is automatically generated for the TSAPI service. Locate the Tlink name associated with the relevant switch connection, which would use the name of the switch connection as part of the Tlink name. Make a note of the associated Tlink name, to be used later for configuring Click and Dial.

In this case, the associated Tlink name is "AVAYA#**CM7**#CSTA#**AES7**". Note the use of the switch connection "CM7" from **Section 6.3** as part of the Tlink name.

7. Configure InfinityCTI Click and Dial

This section provides the procedures for configuring Click and Dial.

From the user PC, select **Start → All Programs → InfinityCTI → CND4 → Configuration** to display the **Click and Dial Configuration** screen. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Key Selection:**   Select the desired hot keys combination for Click and Dial.
- **Area Code:**   Any applicable area code to be stripped for intra-lata calls.
- **Outside Line:**   The applicable prefix for external calls, in this case "9".
- **Extension Length:**   The applicable length of internal extensions, in this case "5".
- **Device:**   The applicable user station extension, in this case "65001".
- **License Server URL:** The URL provided by InfinityCTI for the license server.
- **License Key:**   The license key provided by InfinityCTI.
- **Telephony Server:**   The Tlink name from **Section 6.7**.
- **User name:**   The InfinityCTI user credentials from **Section 6.4**.
- **Password:**   The InfinityCTI user credentials from **Section 6.4**.

8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Communication Manager, Application Enablement Services, and Click and Dial.

8.1. Verify Avaya Aura® Communication Manager

On Communication Manager, verify the status of the administered CTI link by using the "status aesvcs cti-link" command. Verify that the **Service State** is "established" for the CTI link number administered in **Section 5.2**, as shown below.

```
status aesvcs cti-link

                        AE SERVICES CTI LINK STATUS

CTI    Version   Mnt   AE Services      Service      Msgs      Msgs
Link             Busy  Server           State        Sent      Rcvd

1      7         no    aes7             established  38        30
```

8.2. Verify Avaya Aura® Application Enablement Services

On Application Enablement Services, verify the status of the TSAPI link by selecting **Status → Status and Control → TSAPI Service Summary** from the left pane (not shown below). The **TSAPI Link Details** screen is displayed.

Verify the **Status** is "Talking" for the TSAPI link administered in **Section 6.3** and that the **Associations** column reflects the correct number of Click and Dial users, in this case "2".

8.3. Verify InfinityCTI Click and Dial

For initial start of the Click and Dial application, select **Start → All Programs → InfinityCTI → CND4 → CND4**. Note that this is only needed for the initial start.

From the user PC, highlight any telephone number string, such as the string in the browser window shown below. Press the defined hot keys combination from **Section 7** for selection, and verify that a call is launched from the user telephone to the destination.
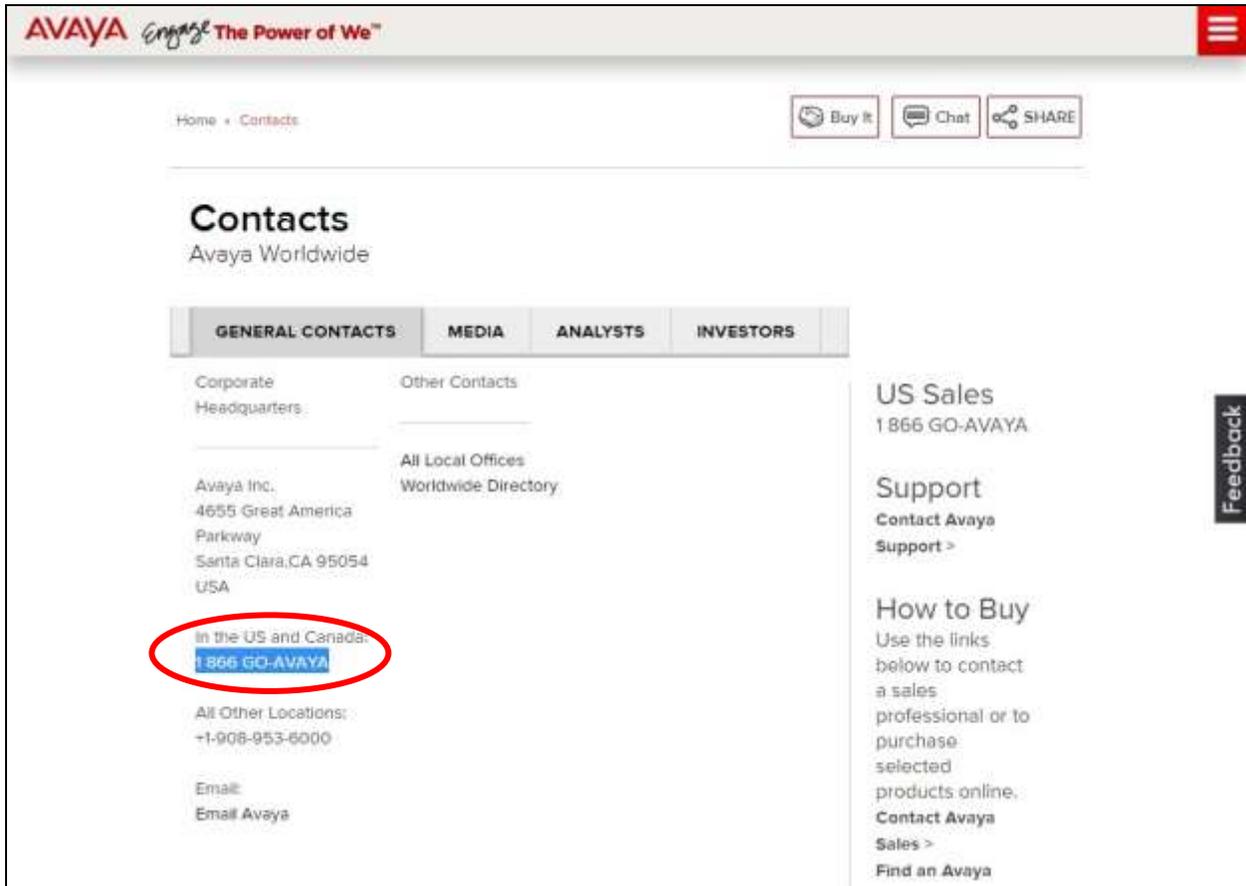
9. Conclusion

These Application Notes describe the configuration steps required for InfinityCTI Click and Dial to successfully interoperate with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services. All feature and serviceability test cases were completed with an observation 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, Issue 1, August 2015, available at http://support.avaya.com.

2. *Administering and Maintaining Aura® Application Enablement Services*, Release 7.0, Issue 1, August 2015, available at http://support.avaya.com.

3. *InfinityCTI Click n' Dial Users Guide*, available to customers as part of installation.

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