

## Avaya Solution & Interoperability Test Lab

Application Notes for Geomant Desktop Connect for Microsoft Dynamics 3.1 with Avaya Aura® Communication Manager 7.1 and Avaya Aura® Application Enablement Services 7.1 – Issue 1.0

#### **Abstract**

These Application Notes describe the configuration steps required for Geomant Desktop Connect for Microsoft Dynamics 3.1 to interoperate with Avaya Aura® Communication Manager 7.1 and Avaya Aura® Application Enablement Services 7.1. Geomant Desktop Connect for Microsoft Dynamics provides a connector that links Avaya Aura® Communication Manager with cloud-based Customer Relationship Management provider Microsoft Dynamics.

The compliance testing focused on the telephony integration with Avaya Aura® Communication Manager via the Avaya Aura® Application Enablement Services Java Telephony Application Programming Interface.

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 Geomant Desktop Connect for Microsoft Dynamics 3.1 to interoperate with Avaya Aura® Communication Manager 7.1 using Avaya Aura® Application Enablement Services 7.1. Geomant Desktop Connect for Microsoft Dynamics provides a connector that links Avaya Aura® Communication Manager with cloud-based Customer Relationship Management provider Microsoft Dynamics.

The compliance testing focused on the telephony integration with Avaya Aura® Communication Manager via the Avaya Aura® Application Enablement Services Java Telephony Application Programming Interface (JTAPI).

The JTAPI interface is used by Geomant Desktop Connect for Microsoft Dynamics to monitor contact center devices on Avaya Aura® Communication Manager, and provide login/logout, agent work mode change, screen pop, and click-to-dial via the web-based agent application with Microsoft Dynamics.

JTAPI is a client-side interface to the Telephony Services Application Programmer Interface (TSAPI) on Avaya Aura® Application Enablement Services. As such, these Application Notes will describe the required configurations for creation and connectivity to the TSAPI service.

# 2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon agent log in, the application automatically uses JTAPI to query device information, log the agent in, and request device monitoring.

For the manual part of the testing, incoming ACD calls were placed with available agents that have web browser connections to Microsoft Dynamics. All necessary call actions were initiated from the agent desktop whenever possible, such as answer and drop. The click-to-dial calls were initiated by clicking on the contact phone number displayed on the agent desktop.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet connection to the Desktop Connect server and client.

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 Avaya systems and the Desktop Connect for Microsoft Dynamics did not include use of any specific encryption features as requested by Geomant.

## 2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on Desktop Connect:

- Use of JTAPI/TSAPI query service to query agent states and device information.
- Use of JTAPI/TSAPI event report service to monitor agent stations, skill groups, and VDNs.
- Use of JTAPI/TSAPI set value service to set agent states, including login, logout, and work mode changes.
- Use of JTAPI/TSAPI call control service to support call control and the click-to-dial feature.
- Proper handling of call scenarios involving inbound, outbound, ACD, non-ACD, drop, hold/reconnect, voicemail, transfer, conference, multiple agents, multiple calls, different ANI/DNIS, internal, click-to-dial from contact phone number, pending aux work, and aux work reason codes.

The serviceability testing focused on verifying the ability of Desktop Connect to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet connection to the Desktop Connect server and client.

#### 2.2. Test Results

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

- By design, the destination agent for transfer scenario will receive contact screen pop with the PSTN caller information, whereas the destination agent for conference scenarios will not.
- In general, mixed use of agent desktop and telephone to perform call control actions are supported. For the transfer and conference features, however, all actions need to start and complete from the same source.
- The application does not support TSAPI user credentials that contained the special character semicolon.
- The VDN parameter on the agent desktop screen will display the associated skill group name for the ACD calls.

# 2.3. Support

Technical support on Desktop Connect can be obtained through the following:

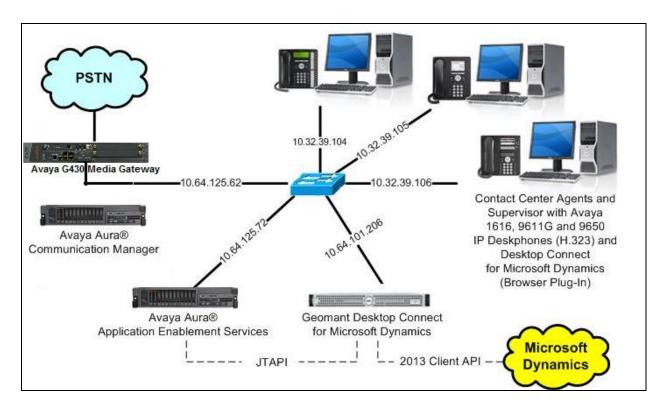
• **Phone:** +44 1789 766178

• Email: product\_dc@support.geomant.com

# 3. Reference Configuration

Desktop Connect can be deployed on a single server or with components distributed across multiple servers. The compliance testing used a single server configuration. The agent desktops were installed with the relevant browser plug-in for integration with Desktop Connect.

The detailed administration of basic connectivity between Communication Manager and Application Enablement Services 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 on a VMware Virtual Machine	CM 7.1.1.0.0.532.23985 Kernel-3.10.0-693.e17.AVI Plat-rhel17.2-0010		
Avaya G450 Media Gateway	38.20.1/1		
Avaya Media Server	7.8.0.309		
Avaya Aura® Application Enablement Services	7.1.0.0.0.17-0		
Avaya 9611G IP Deskphone (H.323)	6.6229		
Avaya 9641G IP Deskphone (H.323)	6.6229		
Geomant Desktop Connect for Microsoft Dynamics on Microsoft Windows Server 2012 R2 Standard  • Avaya JTAPI Windows Client  • Microsoft Dynamics SOAP XRM API  • Apache Tomcat 8.0  • Java SE Runtime Environment x64 1.8	3.1		
Microsoft Windows 10 Enterprise  Internet Explorer 10  Edge 25+ Chrome 33+ Firefox 29+	1709		
Microsoft Dynamics 2013	6.0		
Microsoft Dynamics 2015	7.0		
Microsoft Dynamics 2016	8.0, 8.1		
Microsoft Dynamics O365	9.0		

# 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
- Administer system parameters features
- Obtain reason codes

## 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 3**. 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
                                                                      3 of 11
                                                               Page
                               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
```

#### 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 2

CTI Link: 2

Extension: 60100

Type: ADJ-IP

COR: 1

Name: AES CTI Link
```

## 5.3. Administer System Parameters Features

Use the "change system-parameters features" command to enable **Create Universal Call ID** (**UCID**), which is located on **Page 5**. For **UCID Network Node ID**, enter an available node ID.

```
change system-parameters features
                                                              Page
                                                                     5 of 20
                       FEATURE-RELATED SYSTEM PARAMETERS
SYSTEM PRINTER PARAMETERS
                        Lines Per Page: 60
 Endpoint:
SYSTEM-WIDE PARAMETERS
                                    Switch Name:
           Emergency Extension Forwarding (min): 10
         Enable Inter-Gateway Alternate Routing? n
Enable Dial Plan Transparency in Survivable Mode? n
                             COR to Use for DPT: station
               EC500 Routing in Survivable Mode: dpt-then-ec500
MALICIOUS CALL TRACE PARAMETERS
              Apply MCT Warning Tone? n MCT Voice Recorder Trunk Group:
     Delay Sending RELease (seconds): 0
SEND ALL CALLS OPTIONS
    Send All Calls Applies to: station Auto Inspect on Send All Calls? n
             Preserve previous AUX Work button states after deactivation? n
UNIVERSAL CALL ID
    Create Universal Call ID (UCID)? y
                                          UCID Network Node ID: 27
```

Navigate to **Page 13**, and enable **Send UCID to ASAI**. This parameter allows for the universal call ID to be sent to Desktop Connect.

```
change system-parameters features
                                                               Page 13 of 20
                        FEATURE-RELATED SYSTEM PARAMETERS
CALL CENTER MISCELLANEOUS
          Callr-info Display Timer (sec): 10
                        Clear Callr-info: next-call
       Allow Ringer-off with Auto-Answer? n
   Reporting for PC Non-Predictive Calls? n
           Agent/Caller Disconnect Tones? n
         Interruptible Aux Notification Timer (sec): 3
            Zip Tone Burst for Callmaster Endpoints: double
 ASAI
           Copy ASAI UUI During Conference/Transfer? y
       Call Classification After Answer Supervision? y
                                  Send UCID to ASAI? y
         For ASAI Send DTMF Tone to Call Originator? y
 Send Connect Event to ASAI For Announcement Answer? n
```

## 5.4. Obtain Reason Codes

For contact centers that use reason codes, enter the "change reason-code-names" command to display the configured reason codes. Make a note of the **Aux Work** reason codes, which will be used later to configure Desktop Connect.

Note that Desktop Connect supports up to six reason codes for aux work, and none for log out.

change reason-code-nam	es		Page	1 of	1
	REASON	CODE NAMES			
	Aux Work/	Logout			
	Interruptible?				
Reason Code 1:	Lunch	/n			
Reason Code 2:	Coffee	/n			
Reason Code 3:	Injury	/n			
Reason Code 4:	Fire	/n			
Reason Code 5:	Flood	/n			
Reason Code 6:	Snakes	/n			
Reason Code 7:		/n			
Reason Code 8:		/n			
Reason Code 9:		/n			
Default Reason Code:					

# 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
- Disable security database
- Restart service
- Obtain Tlink name
- Administer Geomant user

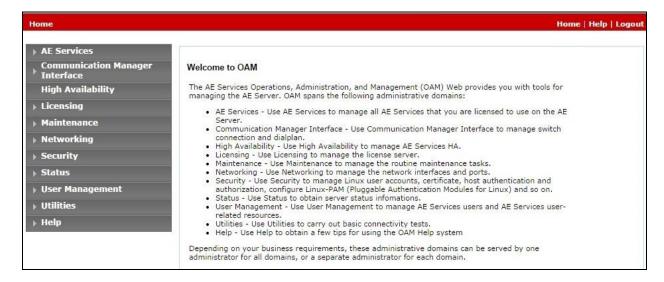
#### 6.1. Launch OAM Interface

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.

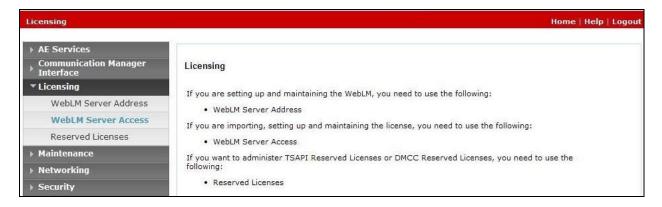


The Welcome to OAM screen is displayed next.



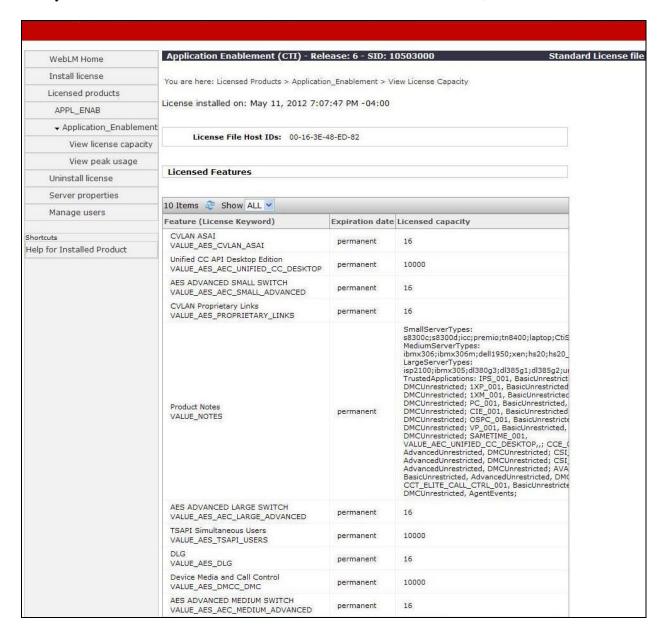
## 6.2. Verify License

Select Licensing  $\rightarrow$  WebLM Server Access in the left pane, to display the Web License Manager pop-up screen (not shown), and log in using the appropriate credentials.



The Web License Manager screen below is displayed. 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.



#### 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 "S8800" 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. Disable Security Database

Select Security  $\rightarrow$  Security Database  $\rightarrow$  Control from the left pane, to display the SDB Control for DMCC, TSAPI, JTAPI and Telephony Web Services screen in the right pane. Uncheck both fields below.



#### 6.5. Restart Service

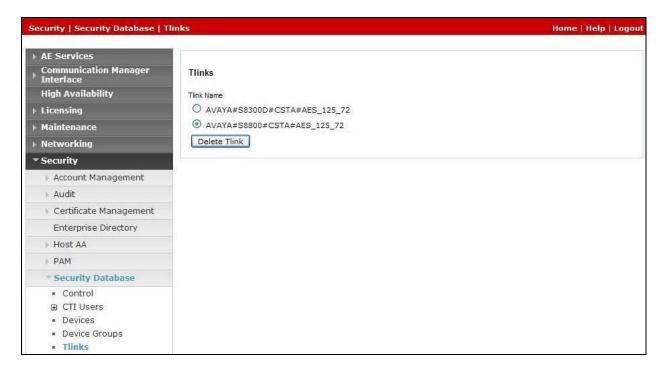
Select Maintenance  $\rightarrow$  Service Controller from the left pane, to display the Service Controller screen in the right pane. Check TSAPI Service, and click Restart Service.



#### 6.6. 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 Desktop Connect.

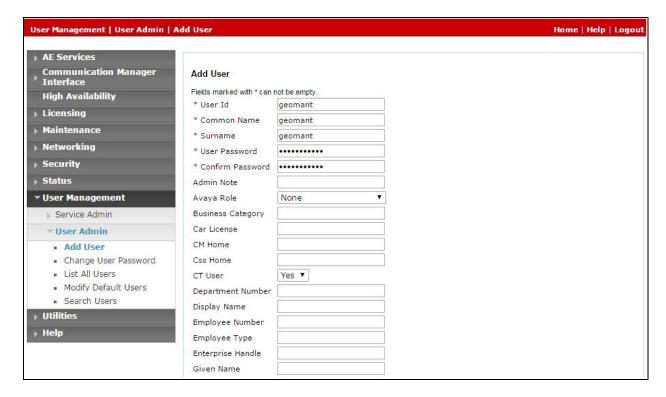
In this case, the associated Tlink name is "AVAYA#S8800#CSTA#AES\_125\_72". Note the use of the switch connection "S8800" from **Section 6.3** as part of the Tlink name.



#### 6.7. Administer Geomant User

Select User Management  $\rightarrow$  User Admin  $\rightarrow$  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.



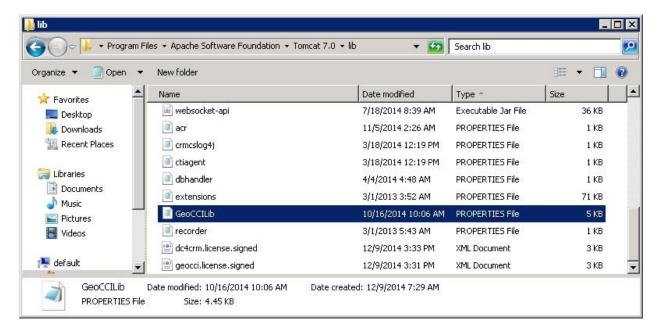
# 7. Configure Geomant Desktop Connect for Microsoft Dynamics

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

- Administer GeoCCILib
- Administer call center

#### 7.1. Administer GeoCCILib

From the Desktop Connect server, navigate to the C:\Program Files\Apache Software Foundation\Tomcat 7.0\lib directory to locate the GeoCCILib file shown below.

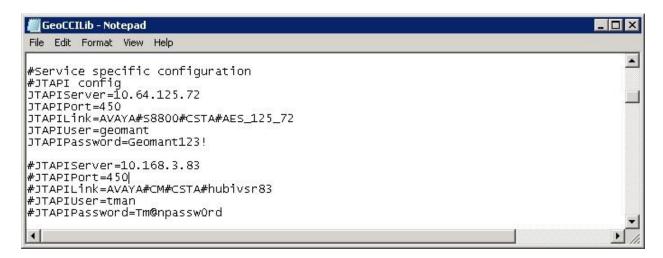


Open the **GeoCCILib** file with the Notepad application. Enter the following values for the specified fields, and retain the default values for the remaining fields.

• **JTAPIServer:** IP address of Application Enablement Services.

• **JTAPILink:** The Tlink name from **Section 6.6**.

JTAPIUser: The Geomant user credentials from Section 6.7.
 JTAPIPassword: The Geomant user credentials from Section 6.7.



Scroll down to the **HuntGroups** and **VDNs** sub-sections. For **HuntGroups** and **VDNs**, enter the number of skill groups and VDNs tested respectively, and create an entry for each skill group and VDN as shown below.

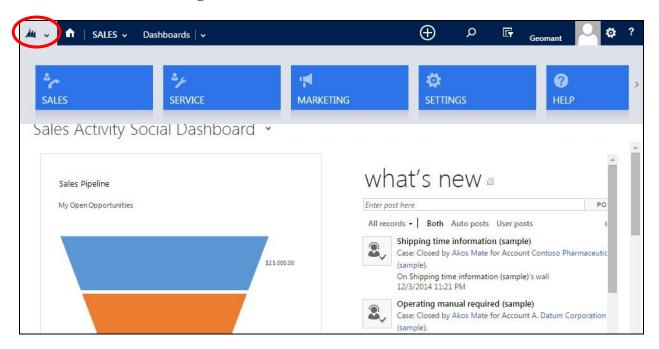


#### 7.2. Administer Call Center

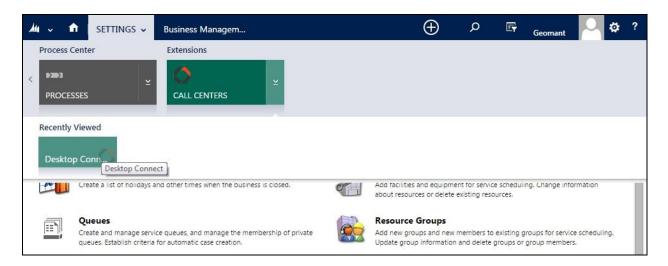
Access the web-based interface by using the URL provided by the end customer for Microsoft Dynamics CRM. Log in using the administrator credentials.



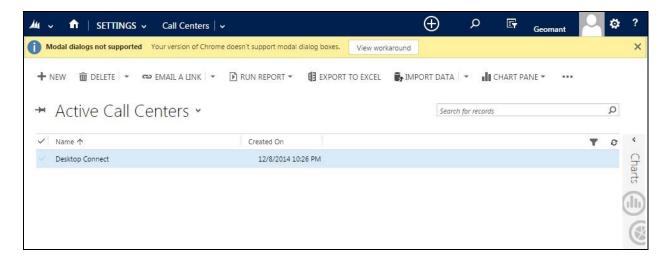
The screen below is displayed. Click the **Microsoft Dynamics CRM** drop-down in the upper left corner and select **Settings**.



The screen below is displayed next. Click the **SETTINGS** drop-down, scroll as necessary to locate and select **CALL CENTERS**.



The **Active Call Centers** screen is displayed, showing a list of pre-configured call centers. Double click on the relevant call center entry.



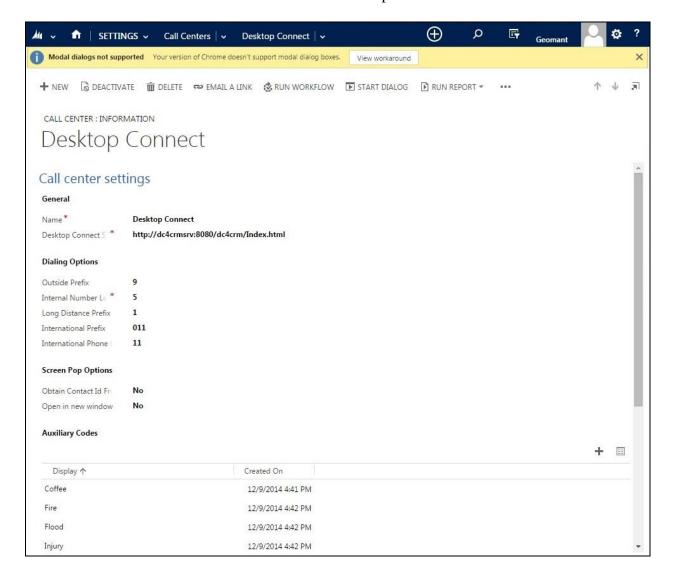
The screen below is displayed next. Enter the following values for the specified fields, and retain the default values for the remaining fields.

• **Outside Prefix:** The relevant prefix to apply for outbound calls.

• Internal Phone Length: The maximum length of internal extensions, in this case "5"

Long Distance Prefix: The relevant prefix to apply for long distance calls.
 International Prefix: The relevant prefix to apply for international calls.
 International Phone: The minimum number of digits for international calls.

In the **Auxiliary Codes** sub-section, create an entry for each reason code from **Section 5.4**. The screenshot below shows the first four reason codes in alphabetical order.

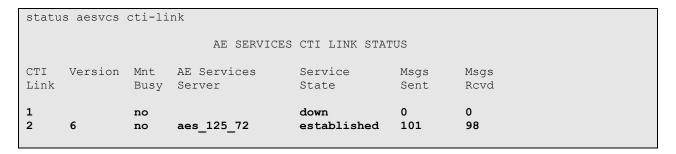


# 8. Verification Steps

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

## 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.



## 8.2. Verify Avaya Aura® Application Enablement Services

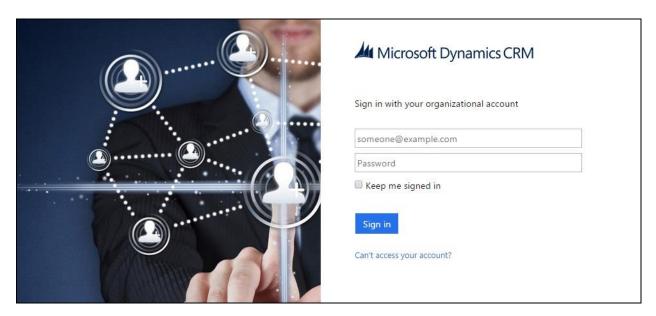
On Application Enablement Services, verify the status of the TSAPI link by selecting **Status Status and Control TSAPI Service Summary** from the left pane (not shown). The **TSAPI Link Details** screen is displayed.

Verify the **Status** is "Talking" for the TSAPI link administered in **Section 6.3**. Also verify that the **Associations** column reflects the total number of monitored VDNs, skill groups, and logged in agents, in this case "6".

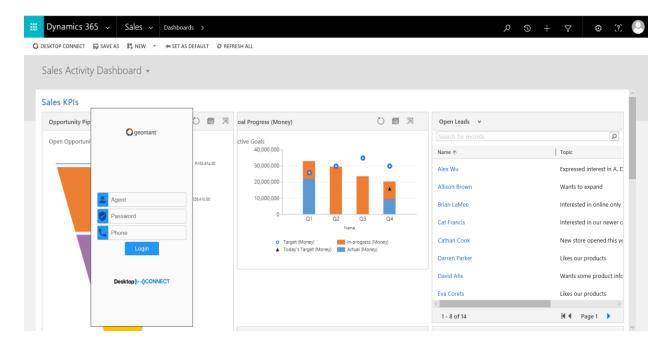


## 8.3. Verify Geomant Desktop Connect for Microsoft Dynamics

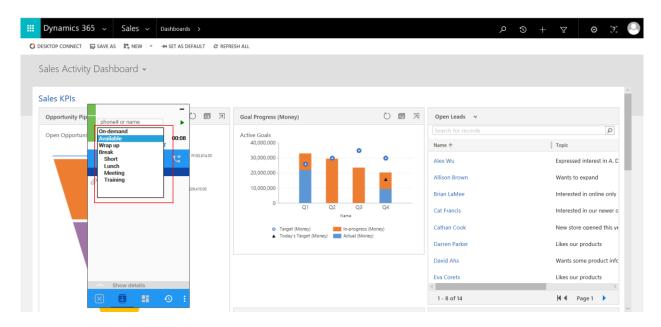
From the agent PC, launch an Internet browser window and enter the same URL from **Section 7.2**. Log in with the relevant user credentials provided by the end customer.



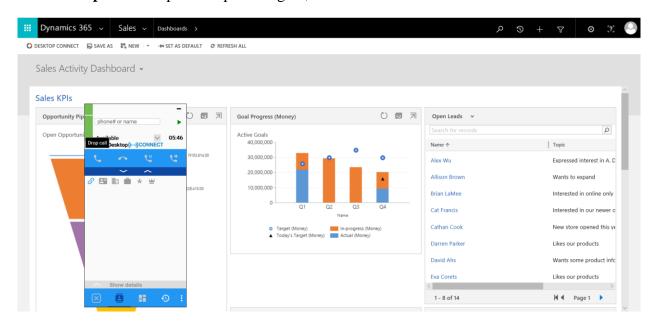
The screen below is displayed next. In the **Desktop Connect** pane, enter the relevant information from **Section 3** for **Agent ID**, **Password**, and **Extension**.



The **Desktop Connect** pane is updated. Click on the **State** drop-down, and select a desired available mode such as **Available**.

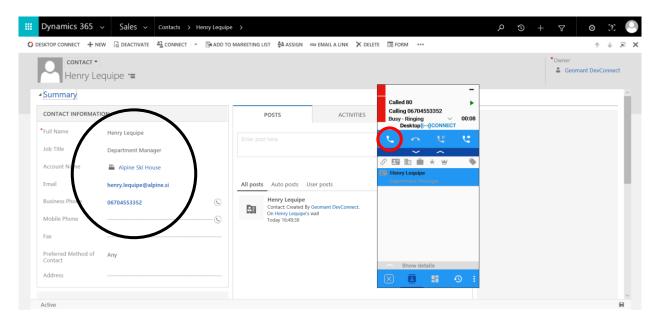


The **Desktop Connect** pane is updated again, as shown below.

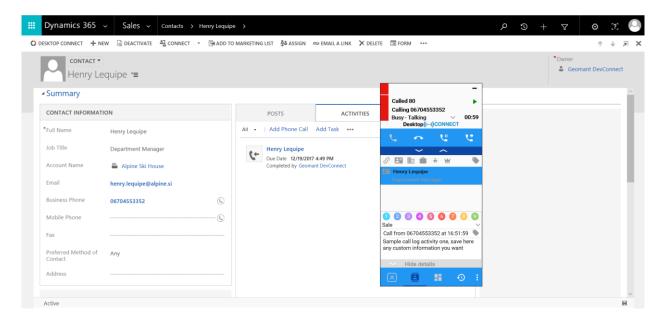


Make an incoming ACD call. Verify that the **Desktop Connect** pane of the available agent is updated to reflect **Busy** and **Line 1 – In a call (ringing)**, along with proper call information.

Click on the phone icon to answer the call, and on the matching contact record icon to populate caller information from the database, as shown below. Note that the **Desktop Connect** pane can be manually repositioned as desired.



Verify that the agent is connected to the PSTN caller with two-way talk paths, and that the **Desktop Connect** pane is updated to reflect **Line 1 – In a call (talking)**. Also verify that the screen is updated with a **CONTACT INFORMATION** section along with pertinent information from the matching contact record, as shown below.



## 9. Conclusion

These Application Notes describe the configuration steps required for Geomant Desktop Connect for Microsoft Dynamics 3.1 to successfully interoperate with Avaya Aura® Communication Manager 7.1 and Avaya Aura® Application Enablement Services 7.1. 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, Document 03-300509, Issue 10, Release 7.1, June 2017, available at http://support.avaya.com.
- **2.** Avaya Aura® Application Enablement Services Administration and Maintenance Guide, Release 7.1, 02-300357, June 2014, available at <a href="http://support.avaya.com">http://support.avaya.com</a>.
- **3.** Desktop Connect for Microsoft Dynamics 2013, 2015, 2016 & O365 Deployment and Configuration Guide, Version 3.1, September 14 2017, available as part of Desktop Connect Knowledge Base http://kb.geomant.com/display/DC31

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