



Avaya Solution & Interoperability Test Lab

Application Notes for Amcom IntelliDesk with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services - Issue 1.0

Abstract

These Application Notes describe a compliance-tested configuration comprised of Avaya Aura® Communication Manager, Avaya Aura® Application Enablement Services, Avaya IP and Digital Telephones, and Amcom IntelliDesk desktop applications.

Amcom IntelliDesk allows a user to operate a physical telephone and view call and telephone display information through a graphical user interface (GUI). Amcom IntelliDesk integrates with Amcom CTI Layer, which is a middleware between Amcom IntelliDesk and Avaya Aura® Application Enablement Services, to control and monitor phone states.

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 a compliance-tested configuration comprised of Avaya Aura® Communication Manager, Avaya Aura® Application Enablement Services, Avaya IP and Digital Telephones, and Amcom IntelliDesk applications.

Amcom IntelliDesk allows a user to operate a physical telephone and view call and telephone display information through a graphical user interface (GUI). Amcom IntelliDesk integrates with Amcom CTI Layer, which is a middleware between Amcom IntelliDesk and Application Enablement Services, to control and monitor phone states.

It is the Amcom CTI Layer service that actually uses the Avaya Aura® Application Enablement Services Device and Media Control Application Programming Interface (API) to share control of and monitor a physical telephone and receive the same terminal and first party call information received by the physical telephone. Amcom IntelliDesk in turn uses the Amcom CTI Layer service to control and monitor a physical telephone. The IntelliDesk applications regularly provide the Database server with call and lamp state information concerning the controlled telephones.

2. General Test Approach and Test Results

The general approach was to exercise basic telephone and call operations on Avaya IP and Digital telephones using the aforementioned Amcom desktop application. The main objectives were to verify that:

- The user may successfully use IntelliDesk to perform off-hook, on-hook, dial, answer, hold, retrieve, transfer, conference, and release operations on the physical telephone.
- Manual operations performed on the physical telephone are correctly reflected in the IntelliDesk GUI.
- IntelliDesk and manual telephone operations may be used interchangeably; for example, go off-hook using IntelliDesk and manually dial digits.
- Display and call information on the physical telephone is accurately reflected in the IntelliDesk GUI.
- Call states are consistent between IntelliDesk and the physical telephone.

For serviceability testing, failures such as cable pulls and resets were applied. All test cases passed.

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 features and serviceability. The focus of the compliance test was primarily on verifying the interoperability between Amcom IntelliDesk, Application Enablement Services, and Communication Manager.

2.2. Support

Technical support for the Amcom IntelliDesk solution can be obtained by contacting Amcom:

- URL – <http://amcomsoftware.com>
- Phone – (888) 797-7487

Figure 1 illustrates the configuration used in these Application Notes. The sample configuration shows an enterprise with an Application Enablement Services server and an Avaya S8300D Server running Communication Manager software with an Avaya G450 Media Gateway. The IntelliDesk was located in a different VLAN. Endpoints include Avaya 9600 Series H.323 IP Telephones and an Avaya 6408D Digital Telephone. Avaya S8720 Servers with an Avaya G650 Media Gateway was included in the test to provide an inter-switch scenario.

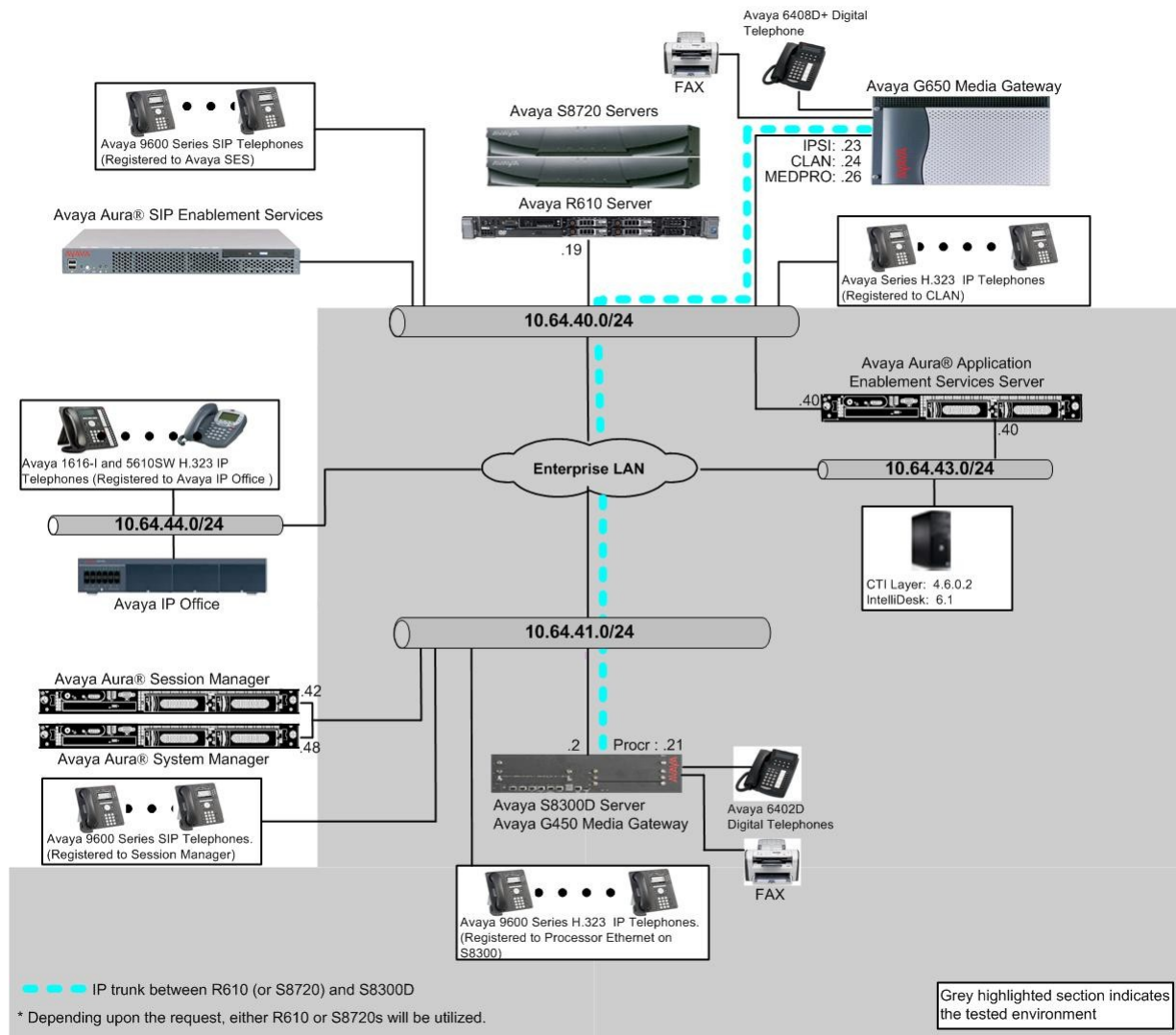


Figure 1: Amcom IntelliDesk Test Configuration.

4. Equipment and Software Validated

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

Equipment/Software		Release/Version
Avaya Aura® Communication Manager running on Avaya S8300D Server with Avaya G450 Media Gateway		6.0.1(R016x.00.1.510.1) w/ patch 00.1.510.1-19303
Avaya Aura® Application Enablement Services running on Avaya S8800 Server		6.1.1 (r6-1-1-30-0)
Avaya Aura® Communication Manager running on Avaya S8720 Servers with Avaya G650 Media Gateway (<i>used for inter-switch test scenarios</i>)		5.2.1 (R015x.02.1.016.4)
Avaya 9600 Series IP Telephones		
	9620 (H.323)	3.1
	9630 (H.323)	3.1
	9650 (H.323)	3.1
Avaya 6408D+ Digital Telephone		-
Amcom IntelliDesk		6.1

5. Configure Avaya Aura® Communication Manager

This section describes the procedure for setting up IP Services, Feature Access Codes, Abbreviated dialing, and controlled telephones.

5.1. Configure IP Services

Enter the **change node-names ip** command. In the compliance-tested configuration, the procr IP address was used for registering H.323 endpoints, and for connectivity to Application Enablement Services.

change node-names ip		Page 1 of 1
IP NODE NAMES		
Name	IP Address	
aes	10.64.43.40	
procr	10.64.41.21	
procr6	::	

Enter the **change ip-services** command. On **Page 1**, configure the Service Type field to **AESVCS** and the Enabled field to **y**. The Local Node field should be pointed to the **procr** that was configured previously in the IP NODE NAMES form in this section. During the compliance test, the default port was used for the Local Port field.

change ip-services

Page1 of 4

IP SERVICES

Service Type	Enabled	Local Node	Local Port	Remote Node	Remote Port
AESVCS	y	procr	8765		
CDR1		procr	0	rdtt	9002

On **Page 4**, enter the hostname of the Application Enablement Services server for the AE Services Server field. The server name may be obtained by logging in to the Application Enablement Services server using ssh, and running the command **uname -a**. Enter an alphanumeric password for the Password field. Set the Enabled field to **y**. The same password will be configured on the Application Enablement Services server in **Section 6.2**.

change ip-services

Page 4 of 4

AE Services Administration

Server ID	AE Services Server	Password	Enabled	Status
1:	aes	*	y	idle
2:				
3:				
4:				

5.2. Configure Feature Access Codes (FAC)

Enter the **display feature-access-codes** command. On **Page 5** of the **feature-access-codes** form, configure and enable the following access codes:

- After Call Work Access Code
- Auto-In Access Code
- Aux Work Access Code
- Login Access Code
- Logout Access Code

display feature-access-codes		Page 5 of 11
FEATURE ACCESS CODE (FAC)		
Call Center Features		
AGENT WORK MODES	After Call Work Access Code: 120	
	Assist Access Code: 121	
	Auto-In Access Code: 122	
	Aux Work Access Code: 123	
	Login Access Code: 124	
	Logout Access Code: 125	
	Manual-in Access Code: 126	
SERVICE OBSERVING	Service Observing Listen Only Access Code: 127	
	Service Observing Listen/Talk Access Code: 128	
	Service Observing No Talk Access Code: 129	
	Service Observing Next Call Listen Only Access Code:	

5.3. Configure Abbreviated Dialing

Enter the **add abbreviated-dialing group g** command, where **g** is the number of an available abbreviated dialing group. In the **DIAL CODE** list, enter the Feature Access Codes for ACD Login and Logout from **Section 5.2**.

add abbreviated-dialing group 1		Page 1 of 1
ABBREVIATED DIALING LIST		
Group List: 1	Group Name: Call Center	
Size (multiple of 5): 5	Program Ext:	Privileged? n
DIAL CODE		
11: 124		
12: 125		
13:		

5.4. Configure Controlled Telephones

Enter the **change station r** command, where **r** is the extension of a registered, physical Avaya IP or Digital telephone. On **Page 1** of the **station** form, enter a phone Type, descriptive name, Security Code and set IP SoftPhone field to **y** to allow the physical station to be controlled by a softphone such as the Amcom IntelliDesk application.

```
change station 72001                                     Page 1 of 5

                                STATION

Extension: 72001                                           Lock Messages? n      BCC: 0
Type: 9620                                                 Security Code: *      TN: 1
Port: S00002                                              Coverage Path 1:      COR: 1
Name: Console-72001                                       Coverage Path 2:      COS: 1
                                                           Hunt-to Station:

STATION OPTIONS
    Location:
    Loss Group: 19
    Speakerphone: 2-way
    Display Language: english
    Survivable GK Node Name:
    Survivable COR: internal
    Survivable Trunk Dest? y
    Time of Day Lock Table:
    Personalized Ringing Pattern: 1
    Message Lamp Ext: 72001
    Mute Button Enabled? y
    Media Complex Ext:
    IP SoftPhone? y
    IP Video Softphone? n
    Short/Prefixed Registration Allowed: default
    Customizable Labels? y
```

On **Page 4** of the station form, for **ABBREVIATED DIALING List 2**, enter the abbreviated dialing group configured in **Section 5.3**. On **Pages 4** and **5** of the station forms, configure the following **BUTTON ASSIGNMENTS** in addition to the call-appr (call appearance) buttons:

- auto-in (on Page 4)
- aux-work (on Page 4)
- abrv-dial – configure two of these buttons, one for Login and one for Logout, along with the Dial Codes from Abbreviated Dialing List 2 for ACD Login and Logout, respectively (on Page 5)
- release (On Page 5)

```
change station 72001                                     Page 4 of 5

                                STATION

SITE DATA
    Room: 1001
    Jack:
    Cable:
    Floor:
    Building: Store1
    Headset? n
    Speaker? n
    Mounting: d
    Cord Length: 0
    Set Color:

ABBREVIATED DIALING
    List1: personal 1      List2: group 1      List3:

BUTTON ASSIGNMENTS
1: call-appr
2: call-appr
3: brdg-appr B:1 E:72002
4: brdg-appr B:2 E:72002
5: auto-in Grp:
6: aux-work RC: Grp:
```


change station 72001

Page 5 of 5

STATION

BUTTON ASSIGNMENTS

7: abrv-dial List: 2 DC: 01

HL? n 10: ec500 Timer? n

8: abrv-dial List: 2 DC: 02

HL? n 11: extnd-call

9: release

12:

Repeat the instructions provided in this section for each physical station that is to be controlled / monitored by an Amcom IntelliDesk.

6. Configure Application Enablement Services

The Application Enablement Services server enables Computer Telephony Interface (CTI) applications to control and monitor telephony resources on Communication Manager.

This section assumes that installation and basic administration of the Application Enablement Services server has been performed. The steps in this section describe the configuration of a Switch Connection, a CTI user, a DMCC port.

6.1. Device and Media Call Control API Station Licenses

The Amcom IntelliDesk Service instances appear as “virtual” stations/softphones to Communication Manager. Each of these virtual stations, hereafter called Device and Media Call Control API station, requires a license. Note that this is separate and independent of Avaya IP Softphone licenses, which are required for Avaya IP Softphones but not required for Device and Media Call Control API stations. To check and verify that there are sufficient DMCC licenses, log in to <https://<IP address of the Application Enablement Services server>/index.jsp>, and enter appropriate login credentials to access the Application Enablement Services Management Console page.

Select the **Licensing** → **WebLM Server Access** link from the left pane of the window.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Thu Dec 1 14:28:33 2011 from 10.64.43.10
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-1-30-0

Licensing Home | Help | Logout

- ▶ AE Services
- ▶ Communication Manager Interface
- ▼ **Licensing**
 - WebLM Server Address
 - WebLM Server Access**
 - Reserved Licenses
- ▶ Maintenance
- ▶ Networking
- ▶ Security
- ▶ Status
- ▶ User Management
- ▶ Utilities
- ▶ Help

Licensing

If you are setting up and maintaining the WebLM, you need to use the following:

- WebLM Server Address

If you are importing, setting up and maintaining the license, you need to use the following:

- WebLM Server Access

If you want to administer TSAPI Reserved Licenses or DMCC Reserved Licenses, you need to use the following:

- Reserved Licenses

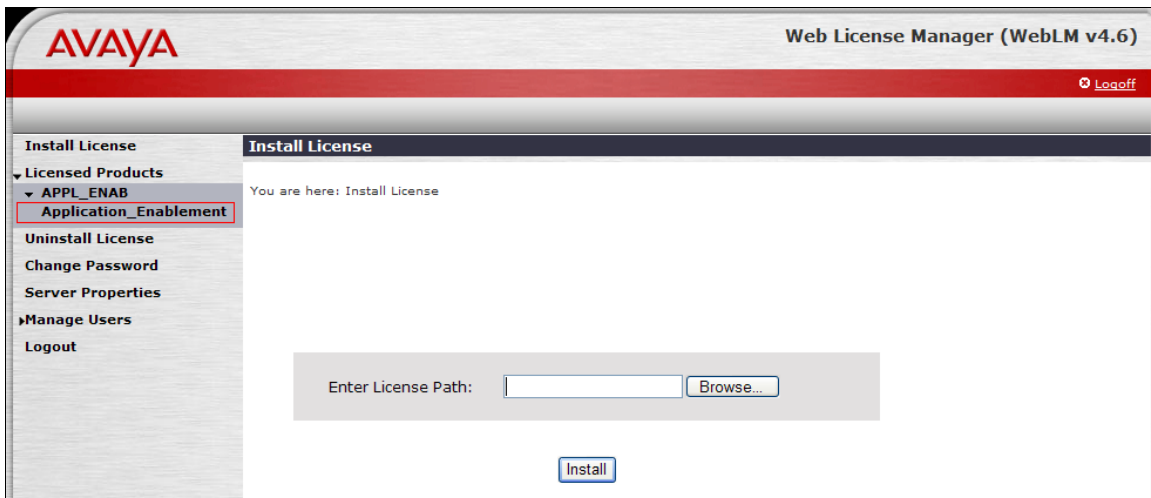
NOTE: Please disable your pop-up blocker if you are having difficulty with opening this page

Provide appropriate login credentials to access the Web License Manager page.



The image shows the login page of the Avaya Web License Manager (WebLM v4.6). The page has a red header with the Avaya logo and the text "Web License Manager (WebLM v4.6)". Below the header, the word "Login" is centered. There are two input fields: "User Name:" and "Password:". To the right of the "Password:" field is a button with a right-pointing arrow.

On the Install License page, select **License Products** → **APPL_ENAB** → **Application_Enablement** link from the left pane of the window.



The image shows the "Install License" page of the Avaya Web License Manager (WebLM v4.6). The page has a red header with the Avaya logo and the text "Web License Manager (WebLM v4.6)". In the top right corner, there is a "Logout" link. On the left side, there is a navigation pane with the following items: "Install License", "Licensed Products", "APPL_ENAB", "Application_Enablement" (highlighted with a red box), "Uninstall License", "Change Password", "Server Properties", "Manage Users", and "Logout". The main content area has a sub-header "Install License" and a breadcrumb "You are here: Install License". Below this, there is a form with the label "Enter License Path:" followed by a text input field and a "Browse..." button. At the bottom of the form is an "Install" button.

On the Licensed Features page, verify that there are sufficient DMCC licenses.

Web License Manager (WebLM v4.6)

[Logoff](#)

Install License

Licensed Products

APPL_ENAB

Application Enablement

Uninstall License

Change Password

Server Properties

Manage Users

Logout

Application Enablement (CTI) - Release: 6 - SID: 10503000 (Standard License File)

You are here: Licensed products > Application Enablement (CTI)

License installed on: Jun 2, 2011 9:55:08 AM MDT

[View Peak Usage](#)

Licensed Features

Feature (Keyword)	Expiration Date	Licensed	Acquired
CVLAN ASAI (VALUE_AES_CVLAN_ASAI)	permanent	16	0
Unified CC API Desktop Edition (VALUE_AES_AEC_UNIFIED_CC_DESKTOP)	permanent	1000	0
AES ADVANCED SMALL SWITCH (VALUE_AES_AEC_SMALL_ADVANCED)	permanent	3	0
CVLAN Proprietary Links (VALUE_AES_PROPRIETARY_LINKS)	permanent	16	0
Product Notes (VALUE_NOTES)	permanent	SmallServerTypes: s8300c;s8300d;icc;premio;tn8400;laptop;CtiSmallServer MediumServerTypes: ibmx306;ibmx306m;dell1950;xen;hs20;hs20_8832_vm;CtiMediumServer LargeServerTypes: isp2100;ibmx305;d1380g3;d1385g1;d1385g2;unknown;CtiLargeServer TrustedApplications: IPS_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; 1XP_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; 1XM_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; PC_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; CIE_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; OSCP_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; VP_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; SAMETIME_001, VALUE_AES_UNIFIED_CC_DESKTOP,; CCE_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; CSI_T1_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; CSI_T2_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted; AVAYAVERINT_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted;	Not counted
AES ADVANCED LARGE SWITCH (VALUE_AES_AEC_LARGE_ADVANCED)	permanent	3	0
TSAPI Simultaneous Users (VALUE_AES_TSAPI_USERS)	permanent	1000	0
DLG (VALUE_AES_DLG)	permanent	16	1
Device Media and Call Control (VALUE_AES_DMCC_DMC)	permanent	1000	8
AES ADVANCED MEDIUM SWITCH (VALUE_AES_AEC_MEDIUM_ADVANCED)	permanent	3	0

6.2. Configure Switch Connection

Launch a web browser, enter <https://<IP address of the Application Enablement Services server>> in the address field, and log in with the appropriate credentials for accessing the Application Enablement Services Management Console pages.

The screenshot shows the login page of the Application Enablement Services Management Console. At the top, the title "Application Enablement Services Management Console" is displayed in bold black text. Below the title is a red horizontal bar. In the center, there is a light gray box with a blue border containing the login form. The form has the text "Please login here:" followed by two input fields labeled "Username" and "Password". Below these fields is a "Login" button.

Click on **Communication Manager Interface** → **Switch Connection** in the left pane to invoke the Switch Connections page.

The screenshot shows the home page of the Application Enablement Services Management Console. At the top left is the AVAYA logo. To its right is the title "Application Enablement Services Management Console". On the far right, there is a welcome message: "Welcome: User craft", "Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10", "HostName/IP: aes.avaya.com/10.64.43.40", "Server Offer Type: VIRTUAL_APPLIANCE", and "SW Version: r6-1-1-30-0". Below the title bar is a red navigation bar with "Home" on the left and "Home | Help | Logout" on the right. On the left side, there is a dark gray sidebar with a list of menu items: "AE Services", "Communication Manager Interface" (highlighted with a red border), "Licensing", "Maintenance", "Networking", "Security", "Status", "User Management", "Utilities", and "Help". The main content area has a "Welcome to OAM" heading and a paragraph: "The AE Services Operations, Administration, and Management (OAM) Web provides you with tools for managing the AE Server. OAM spans the following administrative domains:". This is followed by a bulleted list of domains and their functions: "AE Services - Use AE Services to manage all AE Services that you are licensed to use on the AE Server.", "Communication Manager Interface - Use Communication Manager Interface to manage switch connection and dialplan.", "Licensing - Use Licensing to manage the license server.", "Maintenance - Use Maintenance to manage the routine maintenance tasks.", "Networking - Use Networking to manage the network interfaces and ports.", "Security - Use Security to manage Linux user accounts, certificate, host authentication and authorization, configure Linux-PAM (Pluggable Authentication Modules for Linux) and so on.", "Status - Use Status to obtain server status infomations.", "User Management - Use User Management to manage AE Services users and AE Services user-related resources.", "Utilities - Use Utilities to carry out basic connectivity tests.", and "Help - Use Help to obtain a few tips for using the OAM Help system". At the bottom, a paragraph states: "Depending on your business requirements, these administrative domains can be served by one administrator for both domains, or a separate administrator for each domain."

A Switch Connection defines a connection between the Application Enablement Services server and Communication Manager. Enter a descriptive name for the switch connection and click on **Add Connection**.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-1-30-0

Communication Manager Interface | Switch Connections [Home](#) | [Help](#) | [Logout](#)

- AE Services
- Communication Manager Interface
 - Switch Connections**
 - Dial Plan
- Licensing
- Maintenance
- Networking
- Security
- Status
- User Management
- Utilities
- Help

Switch Connections

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
G650	No	30	0

The next window that appears prompts for the Switch Password. Enter the same password that was administered in Communication Manager in **Section 5.1**. Click on **Apply**.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-1-30-0

Communication Manager Interface | Switch Connections [Home](#) | [Help](#) | [Logout](#)

- AE Services
- Communication Manager Interface
 - Switch Connections**
 - Dial Plan
- Licensing
- Maintenance
- Networking
- Security
- Status
- User Management
- Utilities
- Help

Connection Details - S8300D

Switch Password

Confirm Switch Password

Msg Period Minutes (1 - 72)

SSL ☒

Processor Ethernet ☒

After returning to the Switch Connections page, select the radio button corresponding to the switch connection added previously, and click on the **Edit PE/CLAN IPs** button.

AVAYA Application Enablement Services Management Console

Welcome: User craft
 Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10
 HostName/IP: aes.avaya.com/10.64.43.40
 Server Offer Type: VIRTUAL_APPLIANCE
 SW Version: r6-1-1-30-0

Communication Manager Interface | Switch Connections [Home](#) | [Help](#) | [Logout](#)

- AE Services
- Communication Manager Interface
 - Switch Connections
 - Dial Plan
- Licensing
- Maintenance
- Networking
- Security
- Status
- User Management
- Utilities
- Help

Switch Connections

[Add Connection](#)

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
<input type="radio"/> G650	No	30	0
<input checked="" type="radio"/> S8300D	Yes	30	1

[Edit Connection](#) [Edit PE/CLAN IPs](#) [Edit H.323 Gatekeeper](#) [Delete Connection](#) [Survivability Hierarchy](#)

On the **Edit Processor Ethernet IP – S8300D** page, enter the procr IP address which will be used for the DMCC service. Click on **Add/Edit Name or IP**.

AVAYA Application Enablement Services Management Console

Welcome: User craft
 Last login: Mon Dec 12 10:51:57 2011 from 10.64.43.10
 HostName/IP: aes.avaya.com/10.64.43.40
 Server Offer Type: VIRTUAL_APPLIANCE
 SW Version: r6-1-1-30-0

Communication Manager Interface | Switch Connections [Home](#) | [Help](#) | [Logout](#)

- AE Services
- Communication Manager Interface
 - Switch Connections
 - Dial Plan
- Licensing
- Maintenance
- Networking
- Security
- Status
- User Management
- Utilities
- Help

Edit Processor Ethernet IP - S8300D

[Add/Edit Name or IP](#)

Name or IP Address	Status
--------------------	--------

[Back](#)

After returning to the Switch Connections page, select the radio button corresponding to the switch connection added previously, and click on the **Edit H.323 Gatekeeper** button for DMCC call control and monitor.

Application Enablement Services
Management Console

Welcome: User craft
Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-1-30-0

Communication Manager Interface | Switch Connections
Home | Help | Logout

AE Services
Communication Manager Interface
Switch Connections
Dial Plan
Licensing
Maintenance
Networking
Security
Status
User Management
Utilities
Help

Switch Connections

Add Connection

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
<input type="radio"/> G650	No	30	0
<input checked="" type="radio"/> S8300D	Yes	30	1

Edit Connection
Edit PE/CLAN IPs
Edit H.323 Gatekeeper
Delete Connection
Survivability Hierarchy

On the **Edit H.323 Gatekeeper – S8300D** page, enter the procr IP address which will be used for the DMCC service. Click on **Add Name or IP**.

Application Enablement Services
Management Console

Welcome: User craft
Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-1-30-0

Communication Manager Interface | Switch Connections
Home | Help | Logout

AE Services
Communication Manager Interface
Switch Connections
Dial Plan
Licensing
Maintenance
Networking
Security
Status
User Management
Utilities
Help

Edit H.323 Gatekeeper - S8300D

Add Name or IP

Name or IP Address

Delete IP
Back

6.3. Configure the CTI Users

Navigate to **User Management** → **User Admin** → **Add User** link from the left pane of the window. On the Add User page, provide the following information:

- User Id
- Common Name
- Surname
- User Password
- Confirm Password

The above information (User ID and User Password) must match with the information configured in the Amcom IntelliDesk Configuration page in **Section 7**.

Select **Yes** using the drop down menu on the CT User field. This enables the user as a CTI user. Default values may be used in the remaining fields. Click the **Apply** button (not shown) at the bottom of the screen to complete the process.

The screenshot displays the Avaya Application Enablement Services Management Console. The top header includes the Avaya logo, the title 'Application Enablement Services Management Console', and a welcome message for 'User craft' with login details. A red navigation bar contains links for 'User Management', 'User Admin', 'Add User', 'Home', 'Help', and 'Logout'. The left sidebar shows a tree view with 'User Management' expanded, and 'User Admin' and 'Add User' highlighted. The main content area is titled 'Add User' and contains a form with the following fields: 'User Id' (Amcom), 'Common Name' (Amcom), 'Surname' (Amcom123&), 'User Password' (masked), 'Confirm Password' (masked), 'Admin Note' (empty), 'Avaya Role' (None), 'Business Category' (empty), 'Car License' (empty), 'CM Home' (empty), 'Css Home' (empty), 'CT User' (Yes), 'Department Number' (empty), 'Display Name' (empty), and 'Employee Number' (empty). A red box highlights the first five fields, and another red box highlights the 'CT User' field.

Welcome: User craft
Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-1-30-0

User Management | User Admin | Add User Home | Help | Logout


Add User

Fields marked with * can not be empty.

* User Id: Amcom
* Common Name: Amcom
* Surname: Amcom123&
* User Password:
* Confirm Password:

Admin Note:
Avaya Role: None
Business Category:
Car License:
CM Home:
Css Home:
CT User: Yes
Department Number:
Display Name:
Employee Number:

Once the user is created, navigate to the **Security** → **Security Database** → **CTI Users** → **List All Users** link from the left pane of the window. Select the User ID created previously, and click the **Edit** button to set the permission of the user.


Application Enablement Services
Management Console

Welcome: User craft
 Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10
 HostName/IP: aes.avaya.com/10.64.43.40
 Server Offer Type: VIRTUAL_APPLIANCE
 SW Version: r6-1-1-30-0

Security | Security Database | CTI Users | List All Users
 Home | Help | Logout

▶ AE Services
 ▶ Communication Manager Interface
 ▶ Licensing
 ▶ Maintenance
 ▶ Networking
 ▼ Security

▶ Account Management
 ▶ Audit
 ▶ Certificate Management
 Enterprise Directory
 ▶ Host AA
 ▶ PAM
 ▼ Security Database

▪ Control
 ▣ CTI Users

▪ List All Users

CTI Users

User ID	Common Name	Worktop Name	Device ID
<input checked="" type="radio"/> amcom	Amcom123&	NONE	NONE

Provide the user with unrestricted access privileges by checking the **Unrestricted Access** button. Click on the **Apply Changes** button.

AVAYA

Application Enablement Services
Management Console

Welcome: User craft
Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-1-30-0

Security | Security Database | CTI Users | List All Users

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▶ AE Services

▶ Communication Manager Interface

▶ Licensing

▶ Maintenance

▶ Networking

▼ Security

▶ Account Management

▶ Audit

▶ Certificate Management

Enterprise Directory

▶ Host AA

▶ PAM

▼ Security Database

▪ Control

▣ CTI Users

▪ List All Users

Edit CTI User

User Profile:

User IDamcom

Common NameAmcom123&

Worktop NameNONE

Unrestricted Access☒

Call and Device Control:

Call Origination/Termination and Device StatusNone

Call and Device Monitoring:

Device MonitoringNone

Calls On A Device MonitoringNone

Call Monitoring☐

Routing Control:

Allow Routing on Listed DevicesNone

Apply ChangesCancel Changes

6.4. Configure the DMCC Port

Navigate to the **Networking → Ports** link, from the left pane of the window, to set the DMCC server port. During the compliance test, the default port values were utilized. The following screen displays the default port values. Since the unencrypted port was utilized during the compliance test, set the Unencrypted Port field to **Enabled**. Default values may be used in the remaining fields. Click the **Apply Changes** button (not shown) at the bottom of the screen to complete the process.

AVAYA **Application Enablement Services**
Management Console

Welcome: User craft
Last login: Sat Dec 3 16:26:56 2011 from 10.64.43.10
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-1-30-0

Networking | Ports

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AE Service IP (Local IP)

Network Configure

Ports

TCP Settings

▶ Security

▶ Status

▶ User Management

▶ Utilities

▶ Help

Ports

CVLAN Ports

Unencrypted TCP Port9999Enabled Disabled

Encrypted TCP Port9998Enabled Disabled

DLG PortTCP Port5678

TSAPI Ports

TSAPI Service Port450Enabled Disabled

Local TLINK Ports

TCP Port Min1024

TCP Port Max1039

Unencrypted TLINK Ports

TCP Port Min1050

TCP Port Max1065

Encrypted TLINK Ports

TCP Port Min1066

TCP Port Max1081

DMCC Server Ports

Unencrypted Port4721Enabled Disabled

Encrypted Port4722Enabled Disabled

TR/87 Port4723Enabled Disabled

7. Configure Amcom IntelliDesk

Amcom installs, configures, and customizes the IntelliDesk applications for their end customers. Amcom IntelliDesk integrates with Amcom CTI Layer, which is a middleware between Amcom IntelliDesk and Application Enablement Services, to control and monitor the phone states. Thus, only the Amcom IntelliDesk will be discussed in these Application Notes.

The following shows the **Amcom AES CTI Services Setup** page. Provide the following information:

Under DMCC Settings

- **AES Server** – Enter the IP address of the Application Enablement Services server.
- **Switch IP Address** – Enter the procr IP address of Avaya S8300D server.
- **Port** – Enter the DMCC port (4721).
- **User** – Enter the user name created for Amcom IntelliDesk in **Section 6.3**.
- **Password** – Enter the password created for Amcom IntelliDesk in **Section 6.3**.

Under Phone Device Settings

- **Extension** – Enter the extension that will be controlled by Amcom IntelliDesk.
- **Security Code** – Enter the security code for the controlled station.
- **Release Button** – Enter the Release button assigned for the controlled station.
- **Line Appearances** – Enter the line appearances used for the controlled station.

Amcom AES CTI Service Setup

DMCC Settings:

- AES Server: 10.64.43.40
- Switch Name:
- Switch IP Address: 10.64.41.21
- Port (default = 4721): 4721
- Application Id: 1123
- User (default = cmapi): amcom
- Password:
- Media Mode: No Media
- Shared Control: False
- Dependency Mode: Dependent
- AES Version: 6.1
- Telecommuter Extension:
- ☐ Monitor Call Information
- ☐ Monitor Media Device
- ☐ Monitor Device Service

Phone Device Settings:

- Extension: 72001
- Security Code:
- RLT Transfer Button Id:
- Release Button Id: 9
- Toggle-Swap Button Id:

Line Appearances:

Line 1	Button id = 1
Line 2	Button id = 2
Line 3	Button id = 3

Service Settings:

- Listener Port: 973
- Home Directory: c:\Program Files\Amcom
- Configuration File Name: cmapi.cfg
- DLL File Name: C:\Program Files\Amcom\bin\amcom_cmapi.dll
- LUA Agent Function File:
- LUA Agent State File:
- LUA App Specific File:

Debug Settings:

- File Name: Amcom_CTI_services
- Number of Files: 10
- File Size: 10000
- Directory: c:\program files\amcom\trace
- ☒ Level 1 ☒ Level 16 ☒ Level 256
- ☒ Level 2 ☒ Level 32 ☒ Level 512
- ☒ Level 4 ☒ Level 64 ☒ Level 1024
- ☒ Level 8 ☒ Level 128 ☒ Level 2048

OK Cancel Restart Service Phone Server Smart Console

8. Verification Steps

The following steps may be used to verify the configuration:

- From the Amcom client computers, ping IP interfaces, in particular the Application Enablement Services server, and verify connectivity.
- For the physical IP telephones, verify that the physical telephones are registered by using the **list registered-ip-stations** command on the Communication Manager System Access Terminal (SAT). For the physical Digital telephones, verify that the telephones are attached to the correct ports.
- Go off-hook and on-hook on the controlled telephones manually and use IntelliDesk to verify consistency.
- Place and answer calls from the controlled telephones manually and use IntelliDesk to verify consistency.

9. Conclusion

These Application Notes described a compliance-tested configuration comprised of Communication Manager, Application Enablement Services, Avaya IP and Digital Telephones, and the Amcom IntelliDesk application. Amcom IntelliDesk allows a user to operate a physical telephone and view call and telephone display information through a graphical user interface (GUI). During compliance testing, calls were successfully placed to and from Avaya IP and Digital Telephones that were controlled and monitored by the Amcom IntelliDesk application.

10. Additional References

Product documentation for Avaya products may be found at <http://support.avaya.com>.

[1] *Administering Avaya Aura™ Communication Manager*, Issue 6.0, June 2010, Document Number 03-300509

[2] *Avaya Aura® Application Enablement Services Administration and Maintenance Guide*, Release 6.1, Issue 2, February 2011.

Product information for Amcom products may be found at <http://www.amcomsoft.com/products.cfm>.

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