



Avaya Solution & Interoperability Test Lab

Application Notes for configuring Avaya Aura® Communication Manager R6.2, Avaya Aura® Application Enablement Services R6.2 and Avaya Interaction Center R7.3 with CCT ContactPro v2 – Issue 1.0

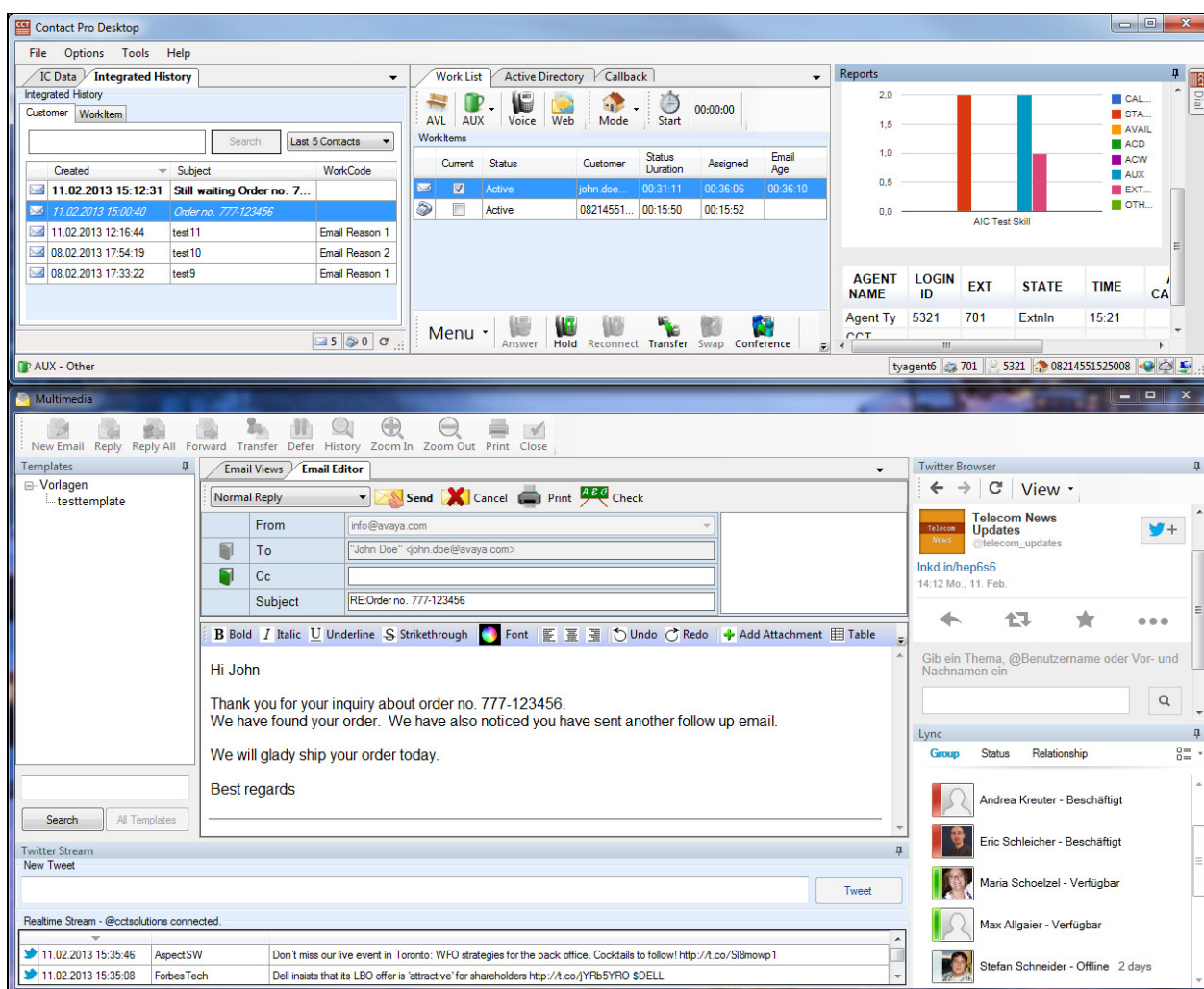
Abstract

These Application Notes describe the configuration steps required for CCT ContactPro to interoperate with Avaya Aura® Communication Manager, Avaya Aura® Application Enablement Services and Avaya Interaction Center. The CCT ContactPro Agent Client is an interaction management application for the Avaya Interaction Center platform developed using the Avaya Interaction Center Client Software Development Kit (SDK)

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 used to enable CCT ContactPro to interoperate with Avaya Aura® Communication Manager, Avaya Aura® Application Enablement Services and Avaya Interaction Center. The CCT ContactPro Agent Client is an interaction management application for Avaya Interaction Center. It is used as an alternative to and expands on the features provided by Avaya Agent Rich Client and provides a flexible and modular client solution for a multi-channel contact center. CCT ContactPro can be customized for each customer according to requirements. Shown below is an example of a fully customized, multi-module CCT ContactPro Desktop client.



Note: For the purposes of Interoperability Tests, not all Modules were present.

2. General Test Approach and Test Results

The general test approach was to validate successful handling of contacts in a variety of contact handling scenarios using the ContactPro Agent Client. This was performed by manually emailing or calling inbound or outbound to/from the contact center and handling inbound chat sessions. Where applicable agent actions were performed using both the physical phone and the ContactPro Agent 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.

2.1. Interoperability Compliance Testing

Interoperability compliance testing consisted of the validating the successful execution and verification of the following

- Login with correct/incorrect credentials and appropriate response
- Change ACD Agent state AVL/AUX
- Enable/Disable voice/web channels
- Outgoing/incoming PSTN call to ACD agent
- Answer call using deskphone/CCT pro with/without auto-answer with/without forced ACW
- ANI presentation
- Call Tracking
- Customer and History Lookup
- Hold/Retrieve
- Consultative/Blind transfer
- 3-way conference
- Customer/agent hangup
- RONA (Return On No Answer)
- Receive/respond/send email
- Defer/close/forward/transfer/cancel Email
- Email template
- Integrated history detail
- Search results
- Receive/chat/close WebChat

2.2. Test Results

All test cases passed successfully.

2.3. Support

Support for CCT products can be obtained as follows:

WEBSITE

www.cct-solutions.com

CONTACT

Phone: +49 69 7191 4969 0

Email: kontakt@cct-solutions.com

SUPPORT

Hotline: +49 821 455152 456

Email: helpdesk@cct-solutions.com

CCT Deutschland GmbH

Office Rhein Main:
Street Heinrich-Hertz-Strasse 5
ZIP 60486
City Frankfurt am Main
State Germany
Phone +49 69 7191 4969 0
Fax +49 69 7191 4969 666

Office South:
Street Am Eser 2
ZIP 86150 Augsburg
State Germany
Phone +49 821 455 152 700
Fax +49 821 455 152 777

Logistics and Data Center:
Street Werner-von-Siemens-Strasse 6
ZIP 86159
City Augsburg
State Germany

CCT Europe GmbH

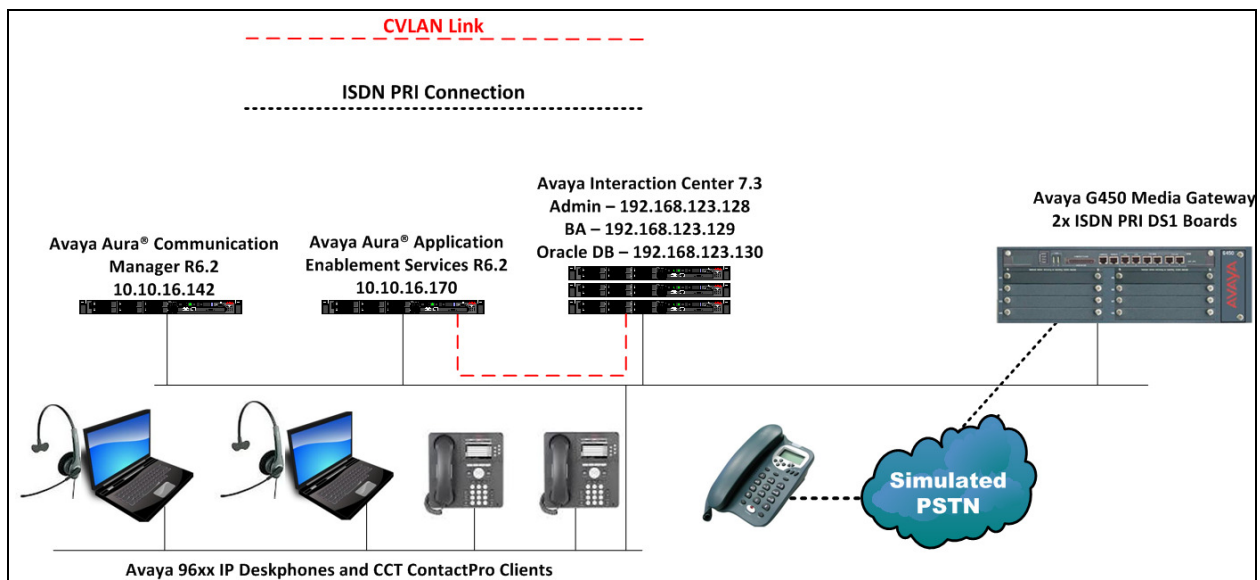
Street Sumpfstrasse 26
ZIP 6312
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CCT Software LLC

2020 North Bayshore Drv. Appt. 2408
33137 Miami FL
United States of America

3. Reference Configuration

An Avaya S8800 Server running Avaya Aura® Communication Manager R6.2 serving H.323 endpoints with an Avaya G450 Media Gateway was configured along with Avaya Aura® Session Manager R6.2 hosted on an Avaya S8800 Server servicing SIP endpoints. Avaya Interaction Center hosted on a VMware virtualized infrastructure comprising three Windows 2008 R2 servers providing Interaction Center Administration, Business Advocate and Oracle Database applications. The Avaya Aura® Application Enablement Services vAppliance was used to provide a CVLAN link to interaction center and a switch connection to Avaya Aura® Communication Manager. The CCT ContactPro Client was installed on Windows agent PCs.



Avaya Aura® Communication Manager, Avaya Aura® Session Manager, Avaya Aura® Application Enablement Services and Avaya Interaction Center with CCT ContactPro Solution

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 running on Avaya S8800 Server	R6.2 SP5 build R016x.02.0.823.0-20396
Avaya Aura® Application Enablement Services running on VMware	R6.2 patch 1
Avaya G450 Media Gateway <ul style="list-style-type: none">• MM710• MM712	32.24.0 <ul style="list-style-type: none">• HW5 FW22• HW7 FW14
Avaya 9630 IP Deskphone	<ul style="list-style-type: none">• H.323 3.2• SIP 2.6 SP8
Avaya Interaction Center running on VMware comprising: <ul style="list-style-type: none">• Admin Server• Business Advocate Server• Oracle Database Server	7.3 Admin – Windows 2008 R2 Enterprise Business Advocate - Windows 2008 R2 Enterprise Oracle Server 11g - Windows 2008 R2 Enterprise
CCT ContactPro Desktop	2.0
CCT Database Connector Service	1.6

5. Configure Avaya Aura® Communication Manager

The configuration and verification operations illustrated in this section were all performed using the Communication Manager System Access Terminal (SAT). It is assumed that the relevant dialplan, hunt groups, stations, trunks and call routing have been configured. The connection from Communication Manager to Session Manager is not specific to the test environment and is therefore not detailed below.

The information provided in this section describes the configuration of Communication Manager for this solution. For all other provisioning information such as installation and configuration, please refer to the product documentation in **Section 10**.

5.1. Configure AE Services

An AE Services link must be established between Communication Manager and Application Enablement Services. Enter the command **change node-names ip** and enter the node **Name** and **IP Address** for Application Enablement Services in this case **10.10.16.170**. Take a note of the **procr** node **Name** and **IP Address**, in this case **10.10.16.142**.

change node-names ip		Page 1 of 2
IP NODE NAMES		
Name	IP Address	
procr	10.10.16.142	
default	0.0.0.0	
aes62vm	10.10.16.170	

In order for Communication Manager to establish a connection to Application Enablement Services, administer the CTI Link as shown below. Using the **add cti-link next** command specify an available **Extension** number, set the **Type** as **ADJ-IP**, which denotes that this is a link to an IP connected adjunct, and name the link for easy identification. In this instance, the node-name is used.

add cti-link next		Page 1 of 3
CTI LINK		
CTI Link: 2		
Extension: 5897		
Type: ADJ-IP		
Name: aes62vm		COR: 1

On **Page 2** set **IC Adjunct Routing** to **y**.

change cti-link 2		Page 2 of 3
CTI LINK		
FEATURE OPTIONS		
Event Minimization? n	Special Character for Restricted Number? n	
IC Adjunct Routing? y	Send Disconnect Event for Bridged Appearance? n	
	Two-Digit Aux Work Reason Codes? y	
	Block CMS Move Agent Events? y	

Using the command **change ip-services**, configure IP-Services using **AESVCS** as the **Service Type** enter the **procr** node name as noted above as the **Local Node**

change ip-services					Page	1 of	4
IP SERVICES							
Service Type	Enabled	Local Node	Local Port	Remote Node	Remote Port		
AESVCS	y	procr	8765				

On **Page 4**, set the **AE Services Server** node-name and the **Password** that Application Enablement Services will use to authenticate with Communication Manager.

change ip-services				Page 4 of 4
AE Services Administration				
Server ID	AE Services Server	Password	Enabled	Status
1:	aes62vm	Avayapassword1	y	in use

5.2. Configure Inbound Vector

A vector must be configured, this defines the steps required to route an inbound call to the required destination. Enter the command **change vector x** where **x** is an appropriate vector number and configure as shown below:

- **Name** – assign an identifying name
- **adjunct routing link 2** – enter the cti-link number created in **Section 5.1.**

add vector 5015					Page 1 of 6	
CALL VECTOR						
Number: 5015		Name: IC Vector				
Multimedia? n	Attendant Vectoring? n		Meet-me Conf? n		Lock? n	
Basic? y	EAS? y	G3V4 Enhanced? y	ANI/II-Digits? y		ASAI Routing? y	
Prompting? y	LAI? y	G3V4 Adv Route? y	CINFO? y	BSR? y	Holidays? y	
Variables? y	3.0 Enhanced? y					
01 adjunct		routing link 2				
02 wait-time		999 secs hearing ringback				

5.3. Configure Inbound VDN

A VDN must be added, this is the number dialed to reach the vector configured in **Section 5.2**. Enter the command **add VDN x** where **x** is an appropriate extension number and configure an identifying **Name** and the **Destination: Vector Number** configured in **Section 5.2**.

add vdn 5015	Page 1 of 3
VECTOR DIRECTORY NUMBER	
Extension: 5015	
Name*: IC VDN	
Destination: Vector Number	5015
Attendant Vectoring? n	
Meet-me Conferencing? n	
Allow VDN Override? n	
COR: 1	
TN*: 1	
Measured: none	
VDN of Origin Annc. Extension*:	
1st Skill*:	
2nd Skill*:	
3rd Skill*:	
* Follows VDN Override Rules	

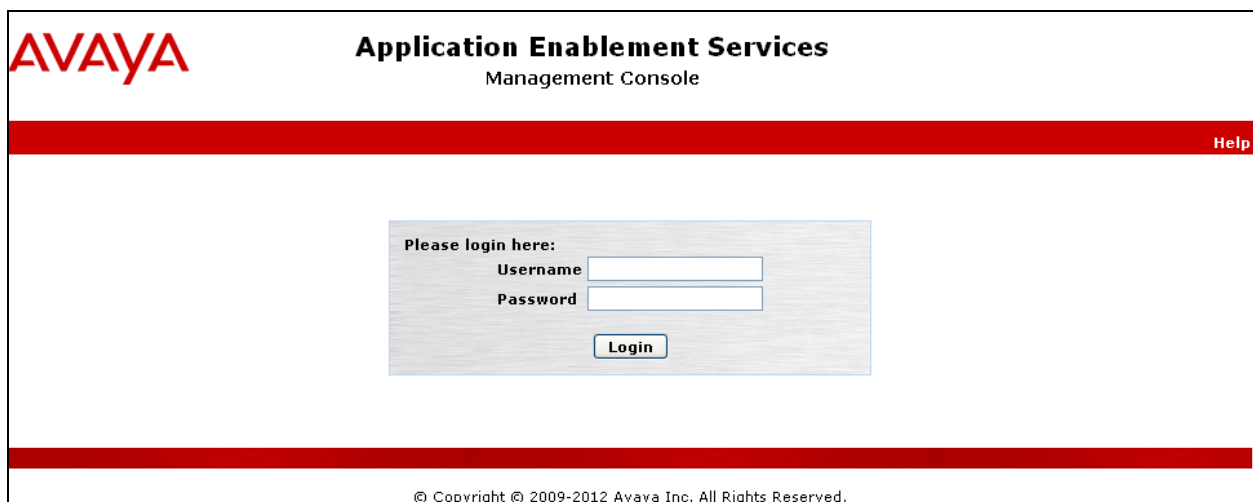
6. Configure Avaya Aura® Application Enablement Services Server

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

- Launch OAM interface
- Administer the Switch Connection
- Administer CVLAN Link
- Restart TSAPI Service
- Obtain Tlink name
- Administer Avaya CTI User

6.1. Launch OAM Interface

Access the OAM web-based interface of Application Enablement Services, in this instance using the URL <https://10.10.16.170> . The Management console is displayed. Log in using the appropriate credentials.



The screenshot shows the Avaya Application Enablement Services Management Console login page. At the top left is the Avaya logo. To its right, the text "Application Enablement Services" is displayed in bold, with "Management Console" underneath it. A red horizontal bar spans the width of the page, with the word "Help" in white text on the right side. In the center of the page is a login box with a light gray background. Inside the box, the text "Please login here:" is followed by two input fields: "Username" and "Password". Below these fields is a "Login" button. At the bottom of the page, a red horizontal bar is present, and below it, the copyright notice "© Copyright © 2009-2012 Avaya Inc. All Rights Reserved." is displayed.

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

The screenshot shows 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 "Home", "Help", and "Logout" links. A left sidebar lists menu items: AE Services, Communication Manager Interface, Licensing, Maintenance, Networking, Security, Status, User Management, Utilities, and Help. The main content area, titled "Welcome to OAM", provides an overview of the OAM web's purpose and lists administrative domains: AE Services, Communication Manager Interface, Licensing, Maintenance, Networking, Security, Status, User Management, Utilities, and Help. A footer note states: "Copyright © 2009-2012 Avaya Inc. All Rights Reserved."

6.2. Administer the Switch Connection

To establish the connection between Communication Manager and Application Enablement Services, click **Communication Manager Interface** → **Switch Connections**. In the field next to Add Connection enter **CM62** and click on **Add Connection**.

The screenshot displays the "Communication Manager Interface | Switch Connections" page. The left sidebar shows the navigation menu with "Switch Connections" highlighted. The main content area, titled "Switch Connections", features a text input field containing "CM62" and an "Add Connection" button. Below this is a table with columns: Connection Name, Processor Ethernet, Msg Period, and Number of Active Connections. At the bottom of the page, there are several action buttons: Edit Connection, Edit PE/CLAN IPs, Edit H.323 Gatekeeper, Delete Connection, and Survivability Hierarchy.

The following screen is displayed. Complete the configuration as shown and enter the password specified in **Section 5.1** when configuring AESVCS in ip-services. Click on **Apply** when done.

The screenshot shows the 'Communication Manager Interface | Switch Connections' page. On the left is a navigation menu with options: AE Services, Communication Manager Interface (selected), Switch Connections (selected), Dial Plan, Licensing, Maintenance, Networking, Security, Status, User Management, Utilities, and Help. The main content area is titled 'Connection Details - CM62'. It contains the following fields: 'Switch Password' (masked with dots), 'Confirm Switch Password' (masked with dots), 'Msg Period' (set to 30, with a unit of 'Minutes (1 - 72)'), 'SSL' (checked), and 'Processor Ethernet' (checked). At the bottom of the form are 'Apply' and 'Cancel' buttons. A copyright notice at the bottom reads: 'Copyright © 2009-2012 Avaya Inc. All Rights Reserved.'

The following screen will be shown displaying the newly added switch connection, click on **Edit PE/CLAN IPs** in order to specify the IP address of the procr, as noted in **Section 5.1**.

The screenshot shows the 'Communication Manager Interface | Switch Connections' page. The left navigation menu is the same as in the previous screenshot. The main content area is titled 'Switch Connections'. It features an 'Add Connection' button and a table with the following data:

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
CM62	Yes	30	0

Below the table are several action buttons: 'Edit Connection', 'Edit PE/CLAN IPs' (highlighted with a red box), 'Edit H.323 Gatekeeper', 'Delete Connection', and 'Survivability Hierarchy'. A copyright notice at the bottom reads: 'Copyright © 2009-2012 Avaya Inc. All Rights Reserved.'

Next to **Add name or IP**, enter the IP address of the procr as shown below.

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 - CM62

10.10.16.142 Add/Edit Name or IP

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

Back

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The following screen will now appear displaying the newly added IP address.

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 - CM62

10.10.16.142 Add/Edit Name or IP

Name or IP Address	Status
10.10.16.142	Idle

Back

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6.3. Administer CVLAN Link

Interaction Center interfaces with AES via a CVLAN link. Select **AE Services** → **CVLAN** → **CVLAN Links** from the left pane. The **TSAPI Links** screen is displayed, click **Add Link**.

The screenshot shows the 'CVLAN Links' screen. On the left, a navigation pane has 'AE Services' expanded, with 'CVLAN' and 'CVLAN Links' selected. The main area is titled 'CVLAN Links' and contains a table with headers: Signal, Proprietary, Switch Connection, Switch CTI Link #, ASAI Link Version, Heartbeat State, and Active Clients. Below the table are four buttons: 'Add Link' (highlighted with a red box), 'Edit Link', 'Delete Link', and 'Edit Client'.

Configure the CVLAN Link as follows and click **Apply Changes** when done:

- **Signal** – if this is the first CVLAN link this value will be 1
- **Proprietary** – place a check in this box
- **Switch Connection** – select the switch connection configured in **Section 6.2**
- **Switch CTI Link Number** – enter the CTI Link number as configured in **Section 6.1**
- **Heartbeat State** – place a check in this box

The screenshot shows the 'Add CVLAN Link' form. The left navigation pane is the same as the previous screenshot. The main area is titled 'Add CVLAN Link' and contains a form with the following fields: 'Signal' (value 1), 'Proprietary' (checked), 'Switch Connection' (dropdown menu showing 'CM62'), 'Switch CTI Link Number' (dropdown menu showing '2'), 'ASAI Link Version' (dropdown menu showing '4'), and 'Heartbeat State' (checked). At the bottom are two buttons: 'Apply Changes' (highlighted with a red box) and 'Cancel Changes'.

The following screen will be displayed showing the newly administered CVLAN Link.

The screenshot shows the 'CVLAN Links' screen after the link has been added. The table now contains one row with the following values: Signal (1), Proprietary (YES), Switch Connection (CM62), Switch CTI Link # (2), ASAI Link Version (4), Heartbeat State (ON), and Active Clients (0). The 'Add Link' button is still present and highlighted with a red box.

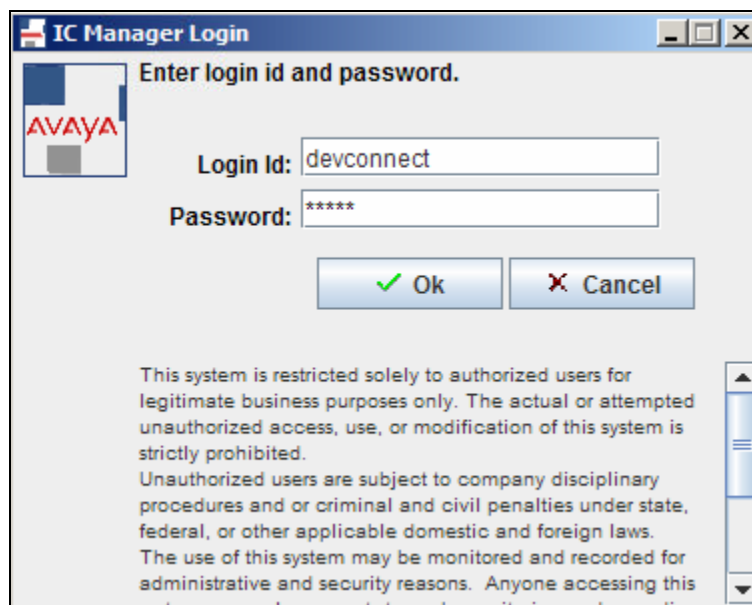
7. Configure Avaya Interaction Center

The detailed administration of Interaction Center, is not the focus of these Application Notes and will not be described. This information provided in this Section can be summarized as follows:

- Launch IC Manager
- Configure Telephony
- Administer Account for Java Bridge
- Administer Java Application Bridge
- Administer Avaya IC Client SDK Service
- Start SDK Service

7.1. Launch IC Manager

From the PC where the Avaya IC Design and Administration Tools have been installed, select **Start → All Programs → Avaya Interaction Center 7.3 → IC Manager** to launch IC Manager. The IC Manager Login dialog box is displayed. Enter the appropriate credentials and click **Ok**.



7.2. Configure Telephony

A connection to the telephony server must be administered. This relates to the configuration performed on AES in **Section 6.3**. Click **Server** → **All Domains** → **Voice1** → **TS** to select the Telephony Service for the Voice1 domain. Click the **TS** tab and ensure that the following are configured:

- **ACD Type** – select **Avaya**
- **ACD Model** – select **Definity**
- **ACD Protocol** – select **asai**
- **ACD Link** – enter the IP address of AES
- **Signal Number** – select the signal number configured for the CVLAN Link in **Section 6.3**
- **Call Control** – place a check in this box

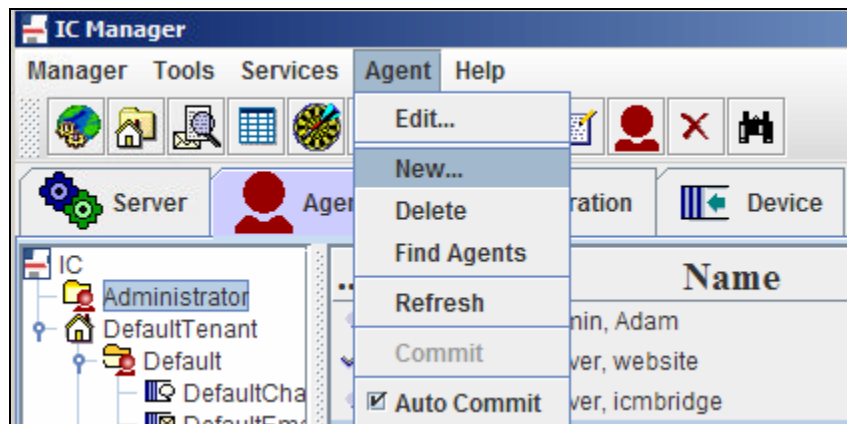
The remaining values are configured relevant to the implementation.

The screenshot shows the 'TS_Voice1@Voice1' configuration window with the 'TS' tab selected. The window contains several configuration fields and buttons. Two red rectangles highlight specific areas: the first rectangle encloses the 'ACD Type' (Avaya), 'ACD Model' (Definity), and 'ACD Protocol' (asai) dropdown menus; the second rectangle encloses the 'ACD Link' (10.10.16.170), 'Signal Number' (1), and 'Call Control' (checked) fields. The 'Site' dropdown is set to 'DefaultSite'. At the bottom, there are four buttons: 'Ok' (with a green checkmark), 'Cancel' (with a red X), 'Apply' (with a downward arrow), and 'Help' (with a question mark).

Field	Value
* ACD Name	CCT
* ACD Type	Avaya
* ACD Model	Definity
* ACD Protocol	asai
* Site	DefaultSite
* ACD Link	10.10.16.170
Signal Number	1
Call Control	<input checked="" type="checkbox"/>

7.3. Administer Account for Java Bridge

On the **IC Manager** screen, click the **Agent** tab. The **IC Manager** screen is updated with agent account information. In the left pane, navigate to the place where a non-human agent account will be created. For the compliance testing, the agent account was created under **IC → Administrator**, as shown below. Select **Agent → New** from the menu bar to create an agent account.



The Agent Editor screen is displayed. Select the General tab. Enter the following values for the specified fields, and retain the default values for the remaining fields

- **First Name** - A descriptive first name, in this case **dcobridge1**
- **Last Name** - A descriptive last name, in this case **server**
- **Preferred Name** - A descriptive preferred name, in this case **dcobridge1**
- **Login Id** - A descriptive login id, in this case **dcobridge1**
- **Domain** - Select the **User1** domain
- **Task Load** - Use the down arrow to decrease the load to **0**
- **Task Ceiling** - Use the down arrow to decrease the ceiling to **0**

The screenshot shows the 'Agent Editor' window for 'dcobridge1@User1'. The 'General' tab is active. The following fields are highlighted with red boxes:

- First Name ***: dcobridge1
- Last Name ***: server
- Preferred Name ***: dcobridge1
- Login Id ***: dcobridge1
- Task Load ***: 0
- Task Ceiling ***: 0

Other visible fields include:

- Middle Name**: (empty)
- Manager**: (empty)
- Employee Id**: (empty)
- Is Manager**: ☐
- Domain ***: User1 (dropdown)
- Workgroup ***: (empty)
- Site ***: DefaultSite (dropdown)

Buttons at the bottom: Ok, Cancel, Apply, Help.

Select the **Security** tab and enter the desired password into the **Password** and **Confirm** fields and check the **Agent** field. Click **Ok**.

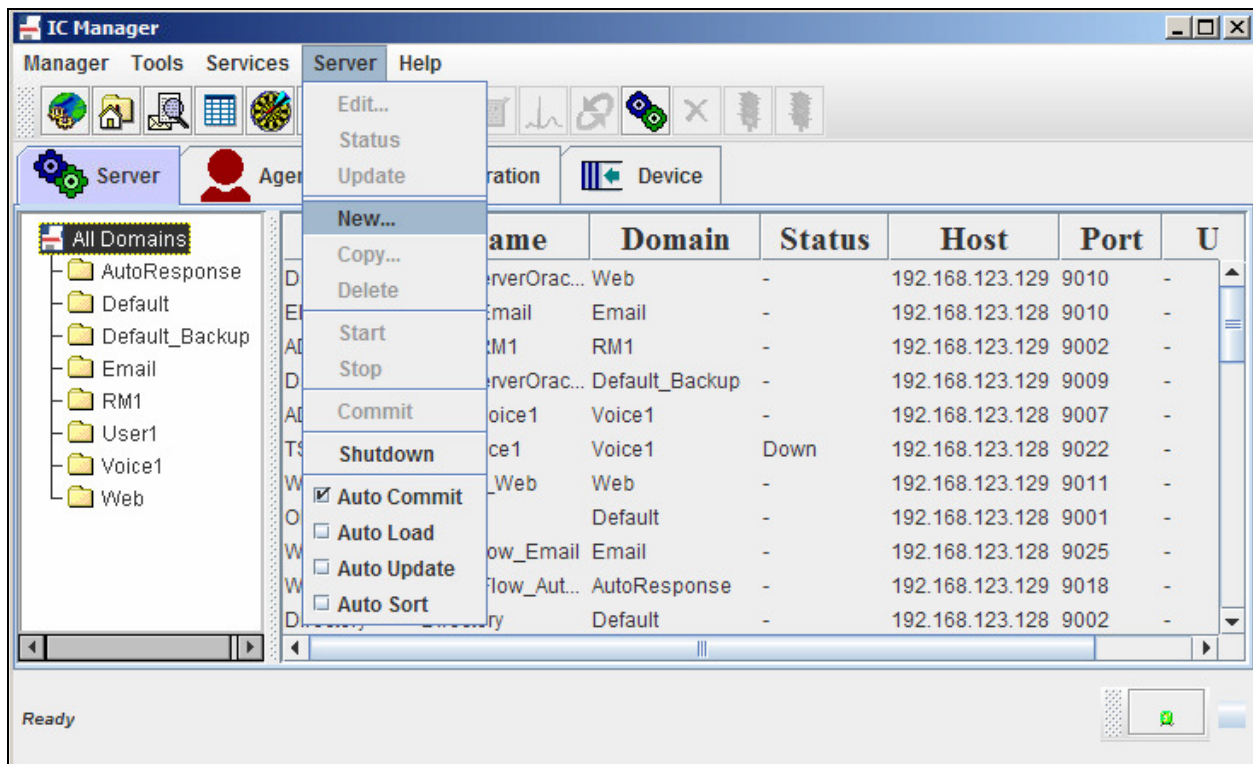
The screenshot shows a window titled "dcobridge1@User1" with several tabs: General, Channels, Security (selected), Properties, Skills, Advocate, and Miscellaneous. The Security tab contains the following elements:

- Password:** A text field containing "*****", highlighted with a red box.
- Confirm:** A text field containing "*****", highlighted with a red box.
- ☒ **Force password change on login**
- ☐ **Disable login**
- Roles** section with a grid of checkboxes:
 - ☐ Administrator
 - ☐ Supervisor
 - ☐ Postmaster
 - ☐ Operator
 - ☒ **Agent** (highlighted with a red box)
 - ☐ Clerk
 - ☐ Support
 - ☐ Editor

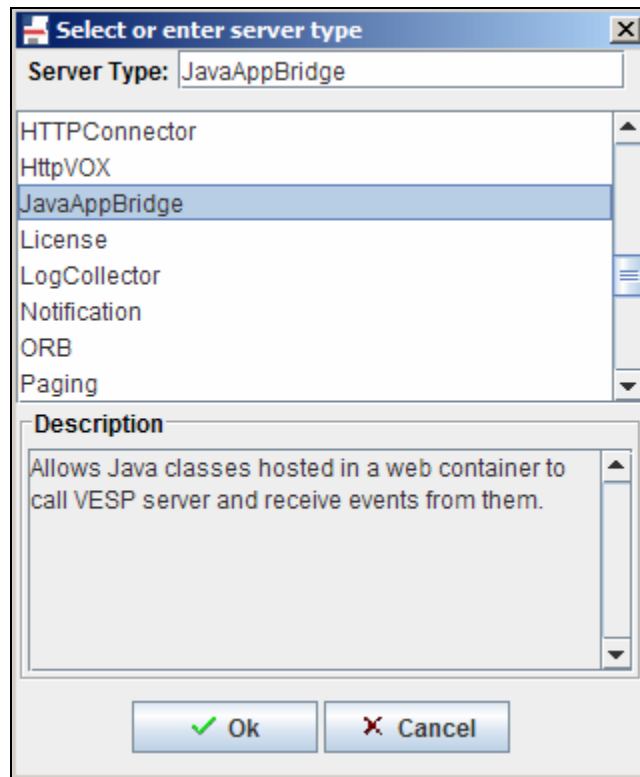
At the bottom of the window, there are four buttons: **Ok** (with a green checkmark icon, highlighted with a red box), **Cancel** (with a red X icon), **Apply** (with a downward arrow icon), and **Help** (with a question mark icon).

7.4. Administer Java Application Bridge

Click the **Server** tab. The **IC Manager** screen is updated with server information. Select **Server** → **New** from the main menu, as shown below.



The **Select or enter server type** dialog box is displayed. Scroll down the top pane and select **JavaAppBridge** and click **Ok**.



The **Server Editor** screen is displayed next, under the **General** tab configure as follows:

- **Name** - enter a descriptive name
- **Domain** – select **User1** from the drop-down list
- **Host** – select the IP address of the server that will run the IC Client SDK from the drop-down list.

Maintain the automatically populated default values in the remaining fields.

The screenshot shows the 'Server Editor' dialog box with the 'General' tab selected. The dialog has five tabs: 'General', 'JavaAppBridge', 'Configuration', 'Debug', and 'Advanced'. The 'General' tab contains the following fields and controls:

- Name:** Text box containing 'JavaAppBridge_1'.
- Domain:** Drop-down menu showing 'User1'.
- Host:** Drop-down menu showing '192.168.123.128'.
- Directory:** Text box containing 'rogram Files (x86)\Avaya\IC73\etc\'. (Note: The first letter 'r' is likely a typo for 'Program').
- Port:** Text box containing '9026'.
- Executable:** Drop-down menu showing 'iles (x86)\Avaya\IC73\bin\jabsrv'. (Note: The first letter 'i' is likely a typo for 'Files').
- Auto Start:** Unchecked checkbox.
- Security:** Unchecked checkbox.
- Status:** Text box.
- Start Time:** Text box.
- Uptime:** Text box.
- Version:** Text box.

At the bottom of the dialog are four buttons: 'Ok' (with a green checkmark icon), 'Cancel' (with a red X icon), 'Apply' (with a blue downward arrow icon), and 'Help' (with a yellow question mark icon). A mouse cursor is visible over the 'Ok' button.

Select the **JavaAppBridge** tab and configure as follows:

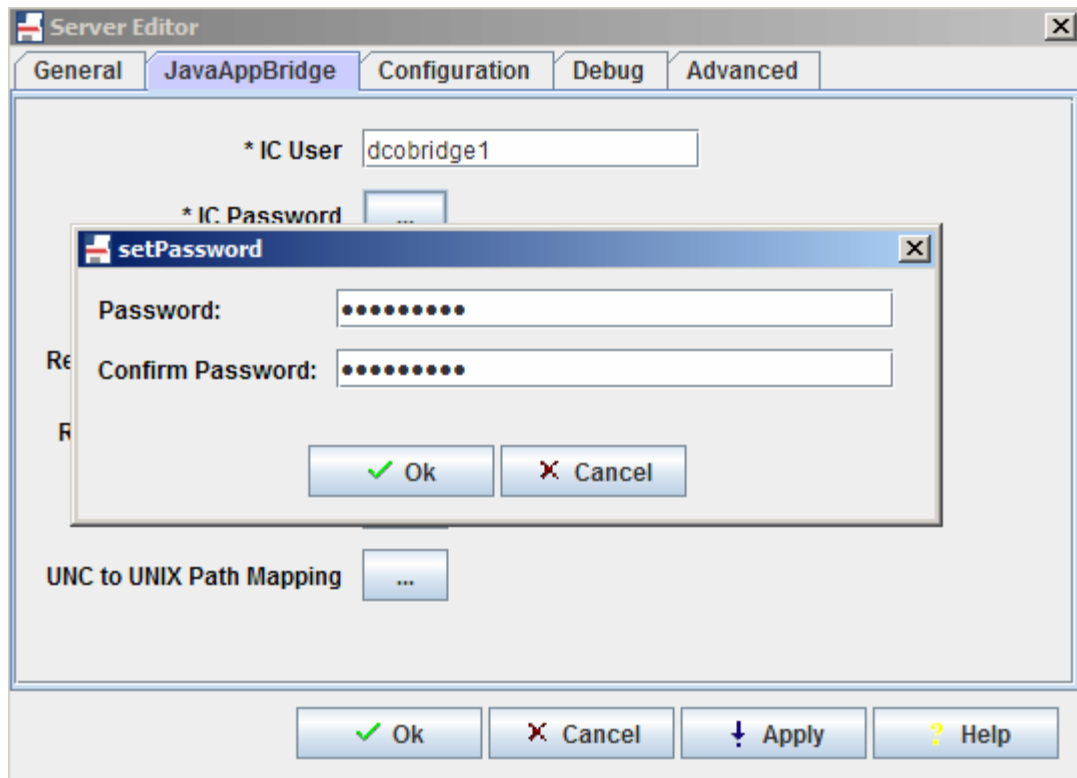
- **IC User** - enter the agent account configured in **Section 7.3**.

The screenshot shows the 'Server Editor' window with the 'JavaAppBridge' tab selected. The configuration fields are as follows:

Field	Value
* IC User	dcobridge1
* IC Password	...
Agent List	...
Refresh Global Resources	...
Refresh Email Templates	...
Refresh Address Book	...
UNC to UNIX Path Mapping	...

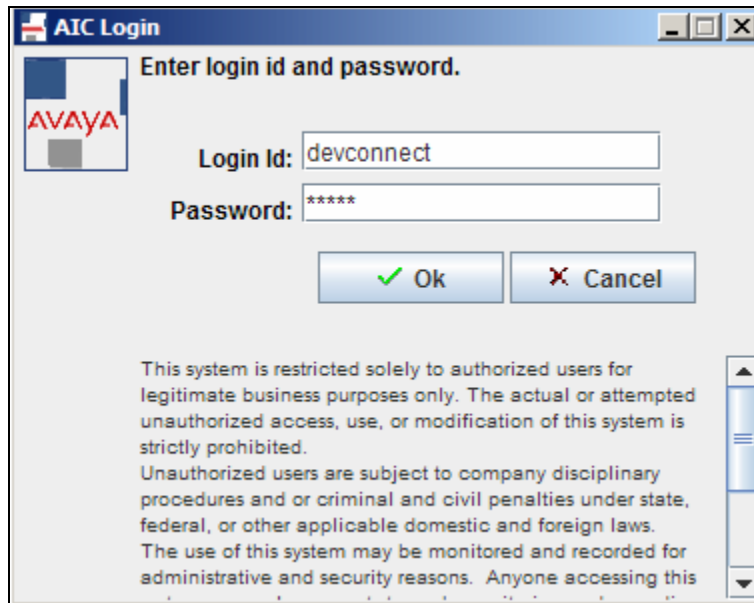
At the bottom of the window, there are four buttons: 'Ok' (with a green checkmark), 'Cancel' (with a red X), 'Apply' (with a blue downward arrow), and 'Help' (with a yellow question mark).

Click the **IC Password** field to display the **setPassword** dialog box. Enter the agent account password from **Section 7.3** into the **Password** and **Confirm Password** fields in the dialog box, and click **Ok**. Maintain the default values in the remaining fields on the **Server Editor** screen, and click **Ok**.



7.5. Administer Avaya IC Client SDK Service

The SDK Service is required to allow the CCT ContactPro Client to connect to Interaction Center. From the IC Client SDK server, select **Start → Programs → Avaya Interaction Center 7.3 → Config Tool**. The **AIC Login** dialog box is displayed. Enter the appropriate administrator credentials and click **Ok**.

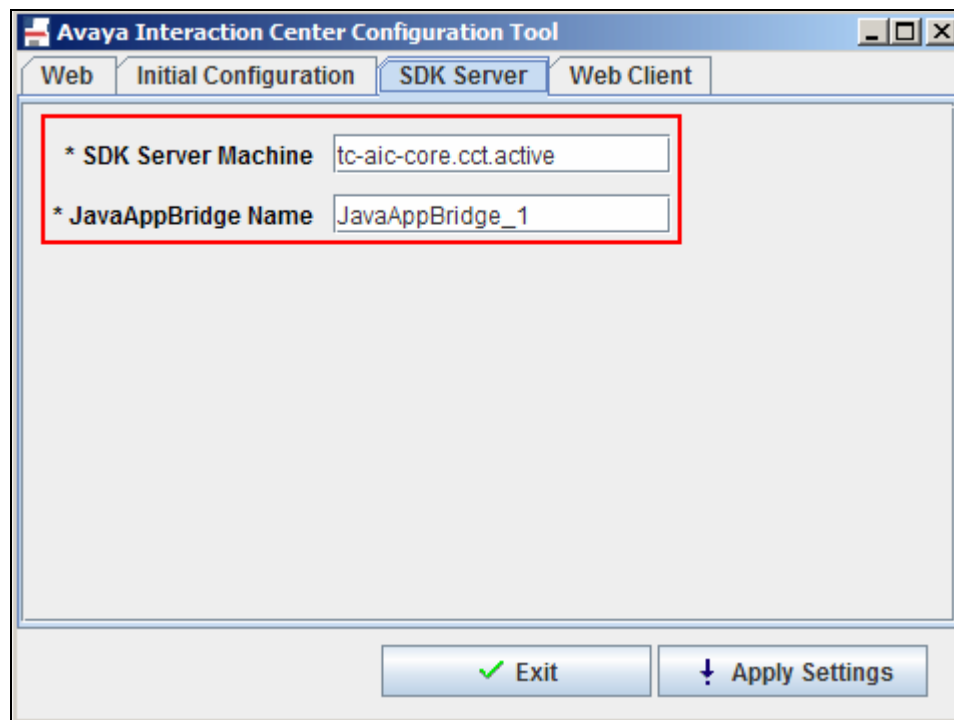


The image shows a Windows-style dialog box titled "AIC Login". It contains the Avaya logo on the left. The main text says "Enter login id and password." Below this are two input fields: "Login Id:" with the text "devconnect" and "Password:" with masked characters "*****". There are "Ok" and "Cancel" buttons. At the bottom, there is a scrollable area containing a disclaimer: "This system is restricted solely to authorized users for legitimate business purposes only. The actual or attempted unauthorized access, use, or modification of this system is strictly prohibited. Unauthorized users are subject to company disciplinary procedures and or criminal and civil penalties under state, federal, or other applicable domestic and foreign laws. The use of this system may be monitored and recorded for administrative and security reasons. Anyone accessing this".

The **Avaya Interaction Center Configuration Tool** screen is displayed next. Select the **SDK Server** tab and configure as follows:

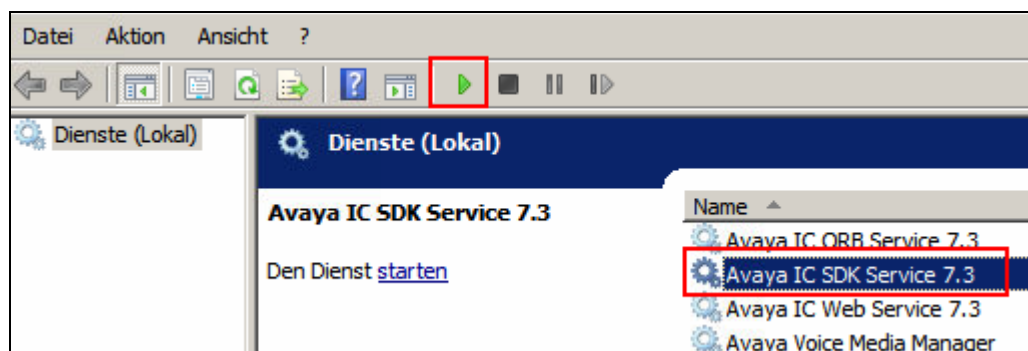
- **SDK Server Machine** - enter the fully-qualified domain name of the IC Client SDK server
- **JavaAppBridge Name** - enter the name of the Java Application Bridge from **Section 7.4**.

Click **Apply Settings** followed by **Exit**.



7.6. Start SDK Service

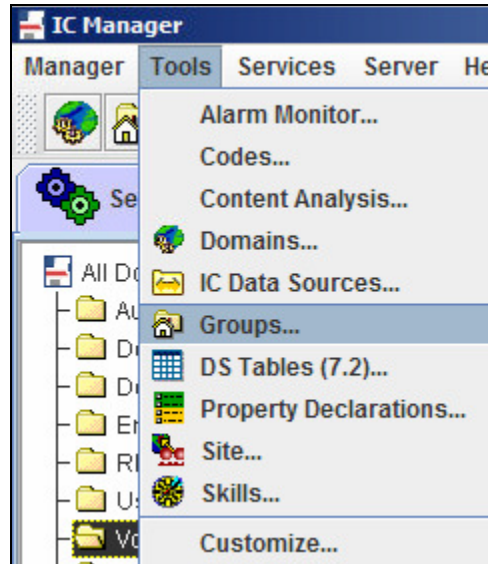
From the IC Client SDK server, select **Start → Administrative Tools → Services** (not shown) to load the Services screen below. Right click on **Avaya IC SDK Service 7.3**, and select **Start** to start the service.



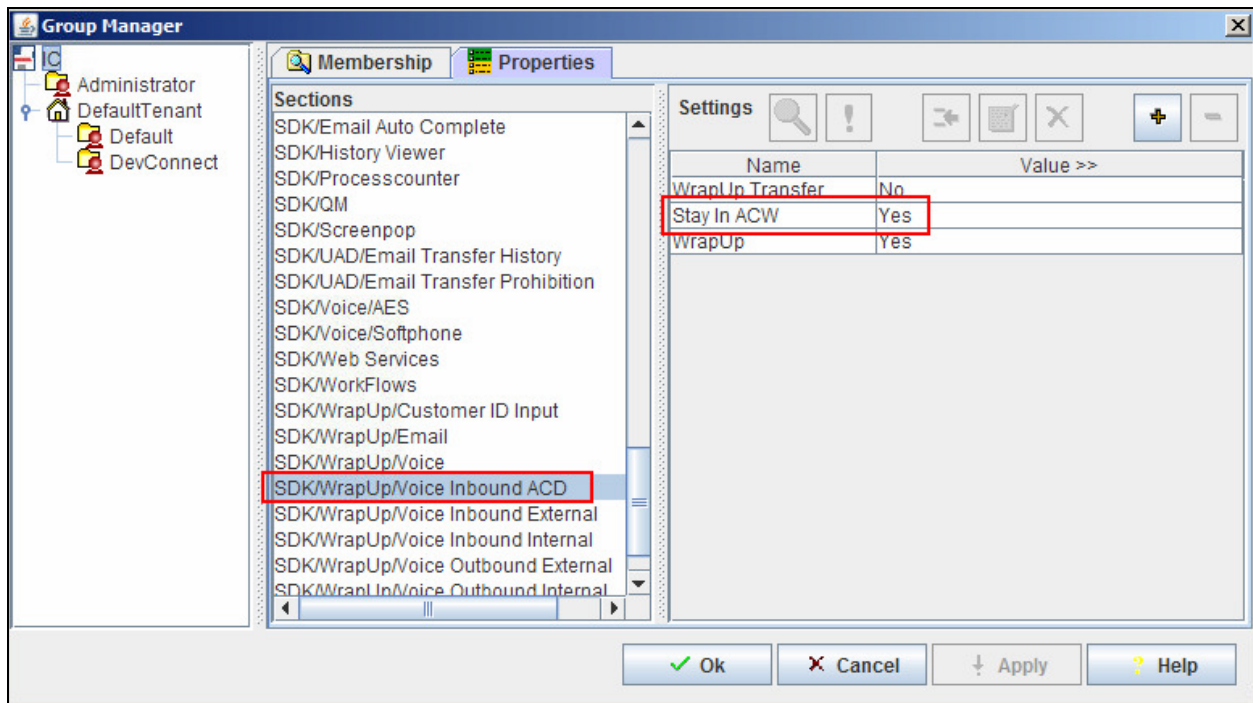
7.7. Server Side Customisations

Server Side Customisations are required on Interaction Center in order for integration with ContactPro. The details of these are not covered by these application notes and customisation is performed during engagement with CCT

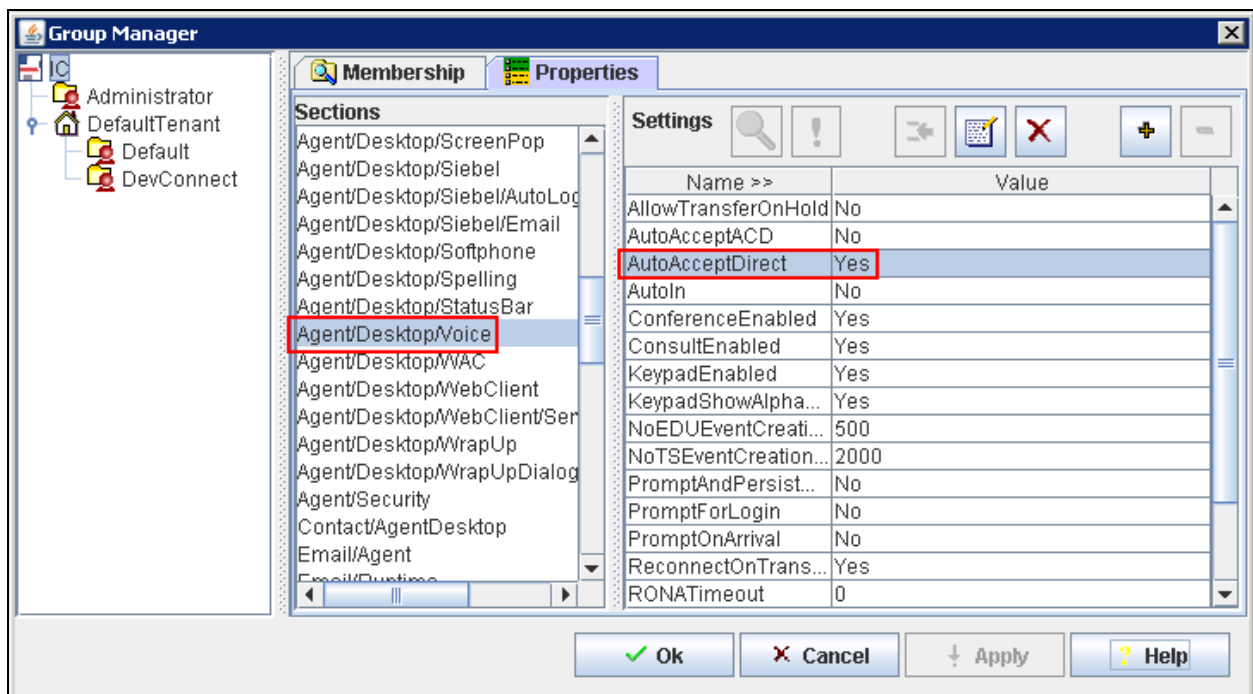
To configure Interaction Center Properties from **IC Manager** click **Tools → Groups** from the menu bar.



Select **IC** at the top of the hierarchy and click **Properties**. The customisations relevant to the SDK are prefixed with **SDK**. Below is an example of such a customisation where **Stay In ACW** is enabled for Inbound Voice ACD calls.

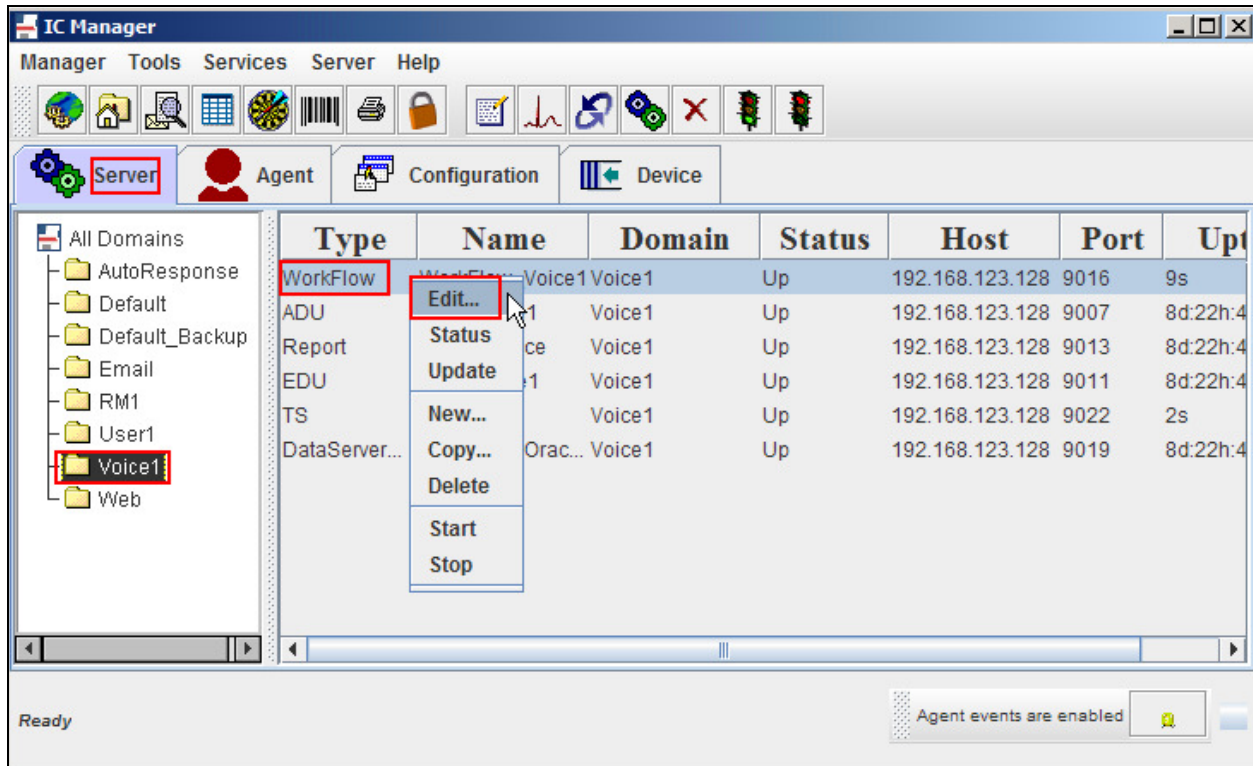


Customisations not specific to the SDK can also be configured in these property pages. In the screenshot below Auto Answer is enabled.

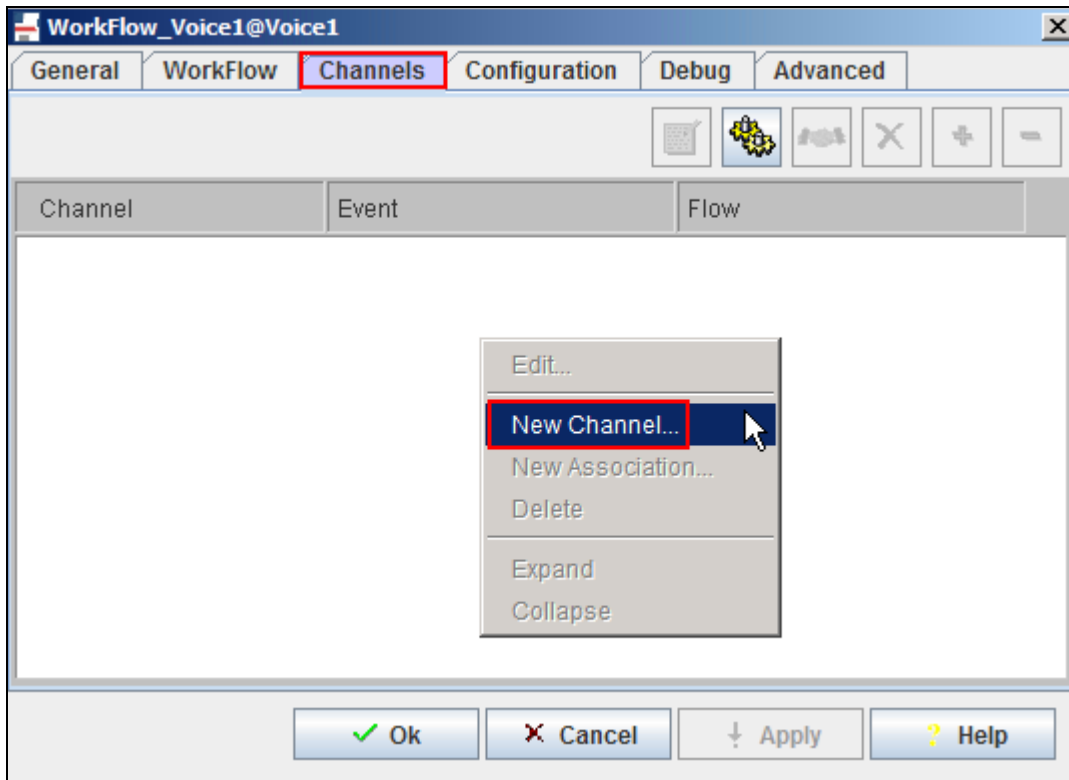


7.8. Administer Voice Domain Workflow Channel

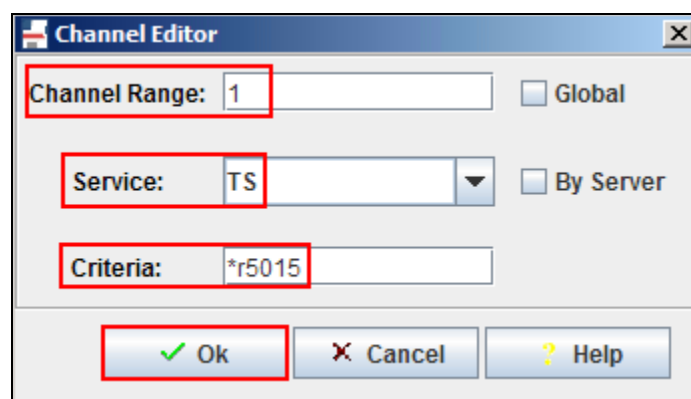
The adjunct-route Vector and VDN configuration in **Section 5.2** and **5.3** is used to create a Voice Domain Workflow Channel. Calls to this VDN will be routed to Interaction Center. From **IC Manager** click the Voice domain and right click on the **Workflow** component and click **Edit**.



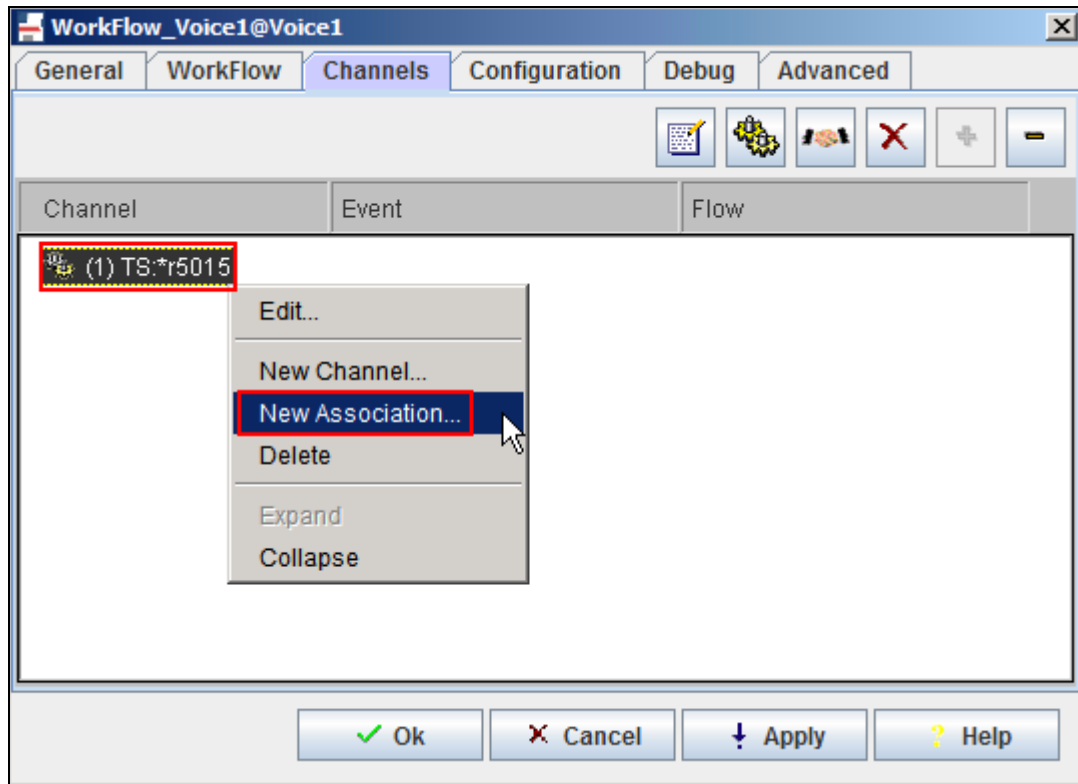
Click on the **Channels** tab and right click in the empty pane and select **New Channel**.



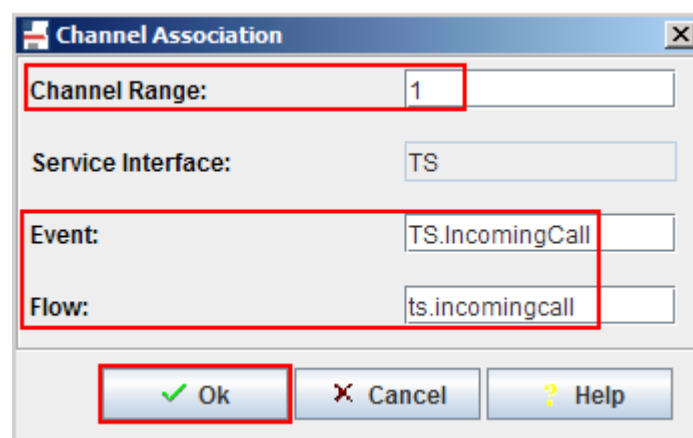
In the screen that follows, configure the **Channel Range** as **1**, from the **Service** drop down box select **TS** and in the **Criteria** field enter ***r5015**. This is the format required by Interaction Center and relates to VDN 5015 configured in **Section 5.3**. Click **Ok** when done.



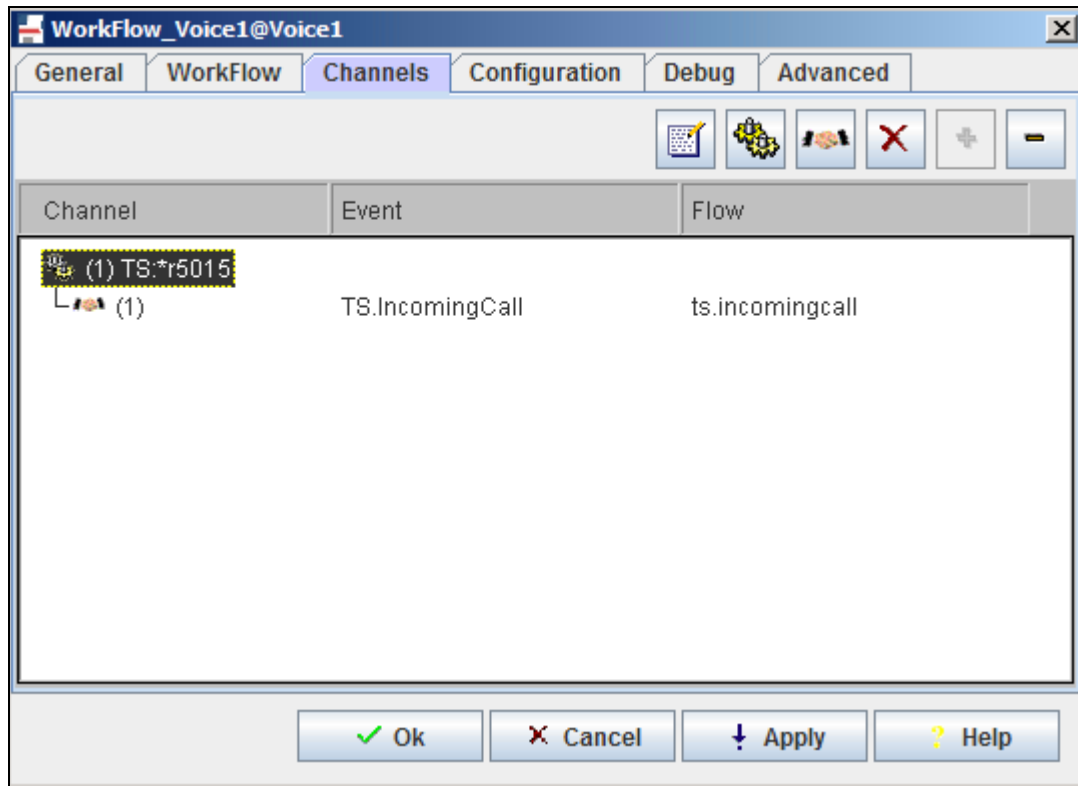
Right click on the newly added channel and click **New Association**.



In the screen that follows enter the **Channel Range** of **1**, the **Event** with a value of **TS.IncomingCall** and the **Flow** with a value of **ts.incomingcall** click **Ok** when done.



The following screen will be displayed showing the newly added channel and association.



8. Configure CCT ContactPro

The full documentation of configuration is not covered by these application notes and customisation is performed during engagement with CCT. The following lists the main sources of configuration.

- Configuration.xml
 - Exists in the same folder of ContactPro.exe. This is the main configuration file that the application loads on start up.

Below are excerpts of the configuration.xml file used demonstrating the configuration required for connection to the Database Server:

```
<Section name="Database" description="">
<Item name="Enabled" value="true" type="bool" required="true"
advanced="false" description="If this is disabled, the Host does not perform
any Database transactions on Startup. Such as retrieving the
ApplicationNumber, UserNumber and Automatic Configuration update. " />
<Item name="Database Connector" value="192.168.123.128:1101" type="string"
required="true" advanced="false" description="" />
<Item name="Database Connector" value="192.168.123.129:1101" type="string"
required="true" advanced="false" description="" />
<Item name="Maximum Rows Returned Per Select Query" value="100" type="int"
required="false" advanced="false" description="" />
<Item name="Use LOWER Function In Select Queries" value="false" type="bool"
required="false" advanced="false" description="" />
</Section>
```

And the SDK Server

```
<Section name="SDK Server" description="If the IP Address of the connecting
client is not in the range of any of the 'SDK Server n' sections, this
configuration is used.">
<Item name="Primary URL" value="http://192.168.123.128:9700/icsdk"
type="string" description="URL of the IC SDK Server." />
<Item name="Secondary URL" value="http://192.168.123.129:9700/icsdk"
type="string" description="URL of the IC SDK Server." />
<Item name="Tertiary URL" value="http://192.168.123.128:9700/icsdk"
type="string" description="URL of the IC SDK Server." />
<Item name="Quaternary URL" value="http://192.168.123.129:9700/icsdk"
type="string" description="URL of the IC SDK Server." />
</Section>
```

- IC Properties
 - IC Properties are used for configuration where it is necessary to apply different settings for a group or individual users.
- ContactPro Database Schema
 - Further configuration such as translation languages, and customer specific SQL Queries are stored in the ContactPro Database Schema.

8.1. Database Customisations

IC allows full database customisations through its Database Designer. The design and structure of the three IC databases (CCQ, REPOSITORY and ADVOCATE) can be different for each installation. To support complicated variations of the each customer, ContactPro utilises its own CONTACTPRO database schema and provides the following features.

- Dynamic SQL
Dynamic SQL statements allow easy migration to ContactPro without database design changes for existing IC installations. Please contact CCT for analysis of any required modifications to the dynamic SQL statements.

- Multilingual Support

ContactPro supports multilingual user interfaces, by retrieving all text from the CONTACTPRO database schema. You can easily add new languages. English, German and Turkish translations are available as of date of writing.

8.2. CCT ContactPro Database Connector Service

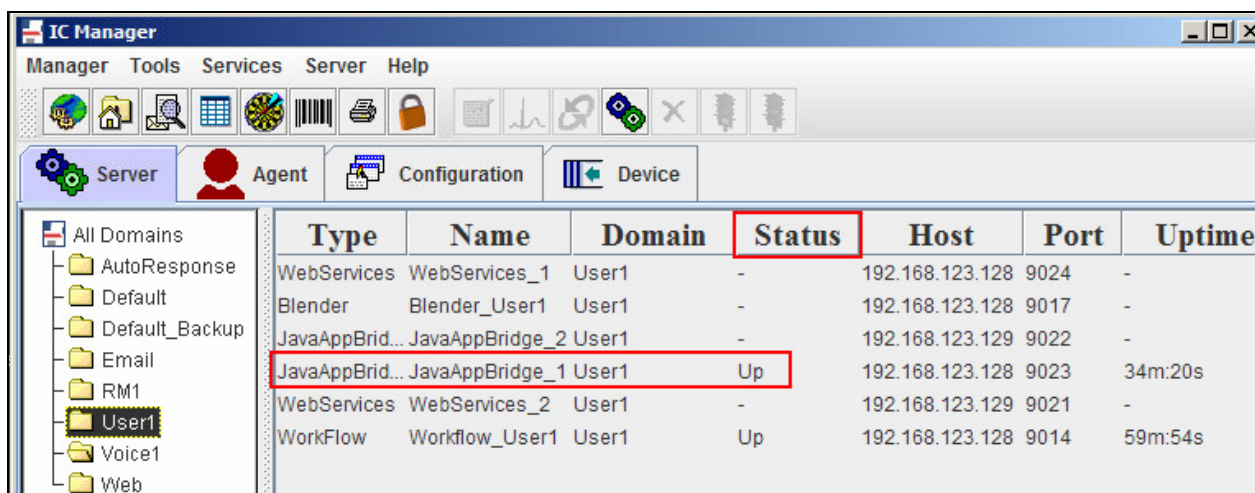
By default IC SDK does not support custom database access. To provide rich customisable features such as History, Templates and Reporting, CCT provides its own Database Connector Service. This allows ContactPro Desktops to access the database without directly opening a connection. Database Connector Services are available for Oracle and Microsoft SQL.

9. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Interaction Center and CCT ContactPro.

9.1. Verify Java Application Bridge

From the **IC Manager** application select the **Server** tab and click on the **User1** domain. In the **Status** column verify the status is of the Java App Bridge configured in **Section 7.4** is **Up**.



Type	Name	Domain	Status	Host	Port	Uptime
WebServices	WebServices_1	User1	-	192.168.123.128	9024	-
Blender	Blender_User1	User1	-	192.168.123.128	9017	-
JavaAppBrid...	JavaAppBridge_2	User1	-	192.168.123.129	9022	-
JavaAppBrid...	JavaAppBridge_1	User1	Up	192.168.123.128	9023	34m:20s
WebServices	WebServices_2	User1	-	192.168.123.129	9021	-
WorkFlow	Workflow_User1	User1	Up	192.168.123.128	9014	59m:54s

9.2. Verify CVLAN Link Status

From the AES OAM pages, click **AE Services** → **CVLAN** → **CVLAN Links** and verify that the configured CVLAN Link has an **Active Client**. This relates to the connection configured on Interaction Center in **Section 7.2**.

AE Services CVLAN CVLAN Link							Home Help Logout
CVLAN Links							
Signal	Proprietary	Switch Connection	Switch CTI Link #	ASAI Link Version	Heartbeat State	Active Clients	
1	YES	CM62	2	4	ON	1	
<input type="button" value="Add Link"/> <input type="button" value="Edit Link"/> <input type="button" value="Delete Link"/> <input type="button" value="Edit Client"/>							

9.3. Verify Successful Operation of CCT ContactPro Client

Double click on the ContactPro.exe icon on the client PC and enter the appropriate credentials as follows and click **OK**:

- **IC Login Username** – enter an agent administered on Interaction Center
- **IC Login Password** – enter the corresponding password for the above username
- **Station ID** – enter the extension number used for the voice path
- **Agent ID** – enter the agent configured on Communication Manager
- **Agent Password** – enter the corresponding agent password configured on Communication Manager

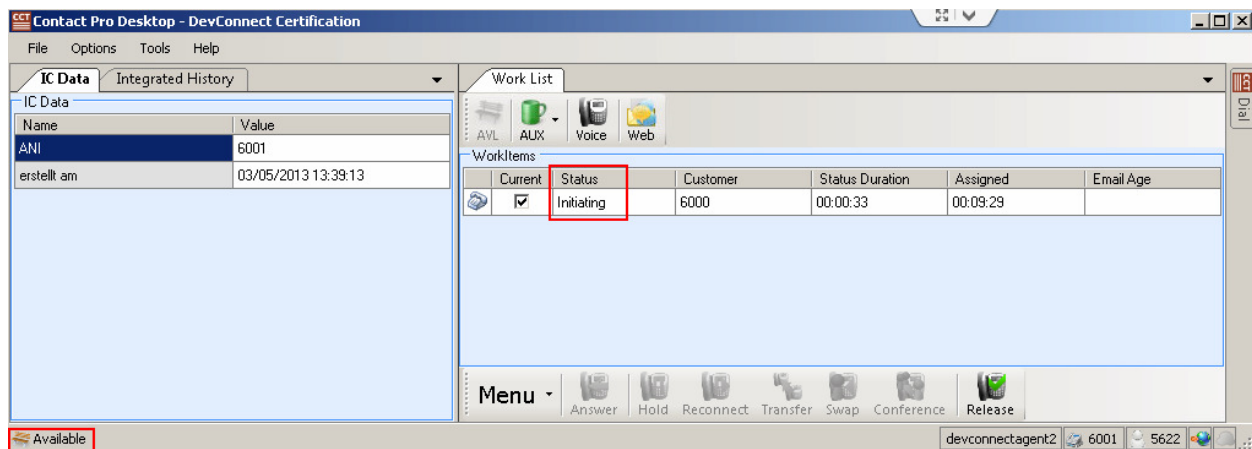


IC Login Username		devconnectagent2
IC Login Password		xxxxxx
Station ID		6001
Agent ID	Agent Password	5622 xxxxx
<input type="button" value="Clear"/>		<input type="button" value="OK"/>
		<input type="button" value="Cancel"/>

Please enter your login details.

Place an incoming/outgoing contact to/from the agent using email, webchat or voice and verify the agent desktop is populated with the contact information. Ensure that the relevant options are available to answer and/or respond to the contact. In the case of a voice call ensure the appropriate call handling options are available. Throughout the handling of the contact, ensure that the state of the contact is reflected accurately.

The screenshot below shows an outgoing call being placed, note the **Status** of the Workitem and the agent is in the **Available** state.



9.4. Verify Status of Communication Manager Agent

Enter the command **list agent-loginID** verify that agent **5622** shown in **Section 9.3** is logged-in to extension **6001**.

list agent-loginID										
AGENT LOGINID										
Login ID	Name	Extension	Dir	Agt	AAS/AUD	COR	Ag	Pr	SO	
	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	
5621	Agent 1	6000					1	lv1		
	3/01	9/02	/	/	/	/	/	/	/	
5622	Agent2	6001					1	lv1		
	3/02	9/01	/	/	/	/	/	/	/	
5623	Agent3	unstaffed					1	lv1		
	2/01	3/03	5/01	6/01	/	/	/	/	/	

Enter the command **status station 6001** and on **Page 7** verify that the agent is logged-in to the appropriate skills and in the **MI** mode.

status station 6001							Page 7 of 7
ACD STATUS							
Grp/Mod	Grp/Mod	Grp/Mod	Grp/Mod	Grp/Mod	Grp/Mod	Grp/Mod	
3/MI	/	/	/	/	/	/	On ACD Call? no
9/MI	/	/	/	/	/	/	

10. Conclusion

These Application Notes describe the configuration steps required for CCT ContactPro to interoperate with Avaya Interaction Center 7.3 using the Avaya IC Client SDK interface. All feature and serviceability test cases were completed successfully any with observations noted in **Section 2.2**.

11. Additional References

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

Avaya product documentation can be obtained from <http://support.avaya.com>

The following CCT documentation can be obtained using the contact information detailed in **Section 2.3**.

- CCT ContactPro Installation Guide.
- CCT ContactPro User Guide.
- CCT ContactPro Technical Specification.
- CCT ContactPro Test Specification.
- CCT Channel States with DMCC.
- CCT ContactPro Port Ranges.

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