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Avaya Solution & Interoperability Test Lab

Application Notes for KANA Enterprise with Avaya Aura® Contact Center R6.4 and Avaya Aura® Communication Manager R6.3 using CCT .NET API - Issue 1.0

Abstract

These Application Notes describe the configuration steps for provisioning KANA Enterprise with Avaya Aura® Contact Center R6.4 connecting to the Communication Control Toolkit (CCT) module of Contact Center utilising the CCT .NET Application Programming Interface (API).

Readers should pay attention to Section 2, in particular the scope of testing as outlined in Section 2.1 as well as the 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.

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1. Introduction

These Application Notes describe the configuration steps for provisioning KANA Enterprise from KANA (A Verint Company) with a SIP-enabled Avaya Aura® Contact Center R6.4 connecting to the Communication Control Toolkit (CCT) module of Contact Center utilising the .NET CCT SDK.

Avaya Aura® Contact Center Release 6.4 is a suite of software applications that provide context-sensitive assisted voice and multimedia customer contact solutions. The server type for this compliance test was a SIP-enabled Contact Center with an Avaya Media Server, Avaya Aura® Application Enablement Services server and an Avaya Aura® Communication Manager included in the contact center solution.

The Communication Control Toolkit (CCT) SDK allows third-party applications to access the underlying contact control functionality provided by Avaya Aura® Contact Center, using any run-time server software that supports .NET 4.x. The Full CCT API provides contact control functionality.

KANA Enterprise is a customer service suite which is comprised of several products: the Agent Desktop, Web Self-Service, Case Management, and customer interaction channels such as Email, Chat, Whitemail and Telephony. The KANA Enterprise Agent (KE Agent) Desktop provides the user, depending on the scenario, with mandatory or desired options based on context. Agents have the facility at any time to invoke processes through menu models, the most likely options are presented by default. These options include meta-driven desktop features, such as displaying the available actions for any in-context items.

KANA Enterprise includes a channel integration model which can handle multiple interactions across channels at point of delivery. The model includes work management, support for blending and swinging, and interruptible work. KANA Enterprise manages multiple interactions across the following channels: Telephony, Email, Whitemail, Social, Campaign, Live Chat, and Co-Browse.

Core Process Platform is a multi-platform, scalable development framework for creating and deploying complex business processes. It is comprised of four main components:
1. KANA Enterprise Customer Experience Designer (CED) - an integrated development environment for creating business processes;

2. A Repository that stores the processes and software components which comprise these.

3. The KANA Enterprise Runtime Engine (RE) - executes processes within the context of a J2EE application server;

4. Thin Client - provides the user interface to your application. You can use various different clients to provide multichannel functionality: including, web browser, mobile device, or web-enabled phone.

When an agent logs into the KE Agent Desktop, the Runtime Engine provides the agent with a dedicated session that is responsible for executing the business processes, and handling events from the client or other back-end systems.

For a CTI-enabled agent the Runtime Engine uses the OI CCT Avaya Aura Contact Center Channel Provider to manage the telephony. This channel provider uses the Full API variant of the CCT .NET SDK. However, it doesn't call this directly, rather the Runtime Engine is configured to use this specific class of channel provider for the telephony channel via the generic Interaction Manager. This abstract interface is what is actually invoked by the business process, but is fulfilled by the Channel Provider. This means that different channel providers can be used if the telephony platform is not Avaya Aura.

An agent login to KE Agent Desktop involves the Runtime Engine issuing instructions via Interaction Manager and Channel Provider to log the agent into telephony, and make them available for calls. The agent profile contains the telephony system credentials that enable an agent to login using the agent id and password as configured on the Contact Center. Furthermore, if required, the relationship between a physical phone and a desktop is maintained so that when an agent logs into a desktop computer they are logged into the correct phone.

Once logged in, the agents can make themselves available, unavailable, and when a call arrives and is answered (usually automatically), a CTI toolbar is presented within the desktop application which allows them to perform the usual CTI functions such as drop a call, transfer or conference a call and request a break with a not ready reason code. Whenever the agent interacts with the CTI toolbar the Channel Provider, the CCT Server and some aspect of the Avaya Contact Center may be engaged to fulfill the agent's intention.

2. General Test Approach and Test Results

The interoperability compliance testing evaluates the ability of the KE Agent to make and receive calls. Three agents were logged into the KE Agent from three separate client PC's logging into Avaya one-X® Communicator.

- Agent avaya9 → Logged into KE Agent and using Avaya one-X® Communicator 53017 as audio client.
- Agent avaya10 → Logged into KE Agent and using Avaya one-X® Communicator 53019 as audio client.
- Agent avaya11 → Logged into KE Agent using Avaya one-X® Communicator 53020 as audio 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

The interoperability compliance testing included feature and serviceability testing. There was no load testing performed as a part of this compliance test. The feature testing focused on verifying the KANA Enterprise Agent's handling of CTI messages in the areas of call control, event notification and routing. Various types of calls including internal switch calls, PSTN calls, outgoing and incoming calls were tested. The following call types and features were tested:

- Private DN Inbound/Outbound Calls.
- Hold/Transfer Functionality.
- Agent Skillset calls.
- Failover Testing.
- Login and logout Operators.
- Change agent status to: Available, Not Ready, and Not Available.
- Alternate call.

Single step transfer and conference call is not supported; hence, not tested during compliance test.

2.2. Test Results

All Test Cases passed. The following observations were noted.

- When there is an active call and the Ethernet cable is pulled out or the KANA Server is disconnected, the CTI function is frozen and the user needs to use one-X® Communicator to control the call, for example, to hang up.

- When an agent is on a call and the Ethernet cable is pulled out or the KANA Server is disconnected, the agent has to log out of CTI (e.g. using the ref client) before they can log in again.

- When the Ethernet cable is pulled out or the KANA Server is disconnected, to simulate a network outage, and one-X® Communicator and KANA clients both lose network connectivity; after an incoming call rings five times without answer, the status of agent is changed on AACC to Not Ready.

- After the Ethernet cable is pulled out to the KANA Enterprise client, and plugged back in, KANA cannot update the status of the agent accordingly and pops up an error message instead: Can't accept interaction. The user needs to logout and back in to have CTI features back. Also, there is screen pop that asks the user to wrap up the call happened during lost connection.

2.3. Support

Technical support for the KANA Enterprise product can be obtained as follows.
- Tel USA: + +1-800-737-8738
- Tel EMEA: +44 141 533 4000
- Email: info@kana.com

3. Reference Configuration

3.1. Network topology

Figure 1 shows the network topology during compliance testing. The KANA Enterprise server is placed on the Avaya Telephony LAN. CTI capability is provided via the CCT Server component of the AACC. Three agents logged into four PC using Chrome web browser are logged into the KE Agent in order to make and receive calls on three different Avaya one-X Communicator.
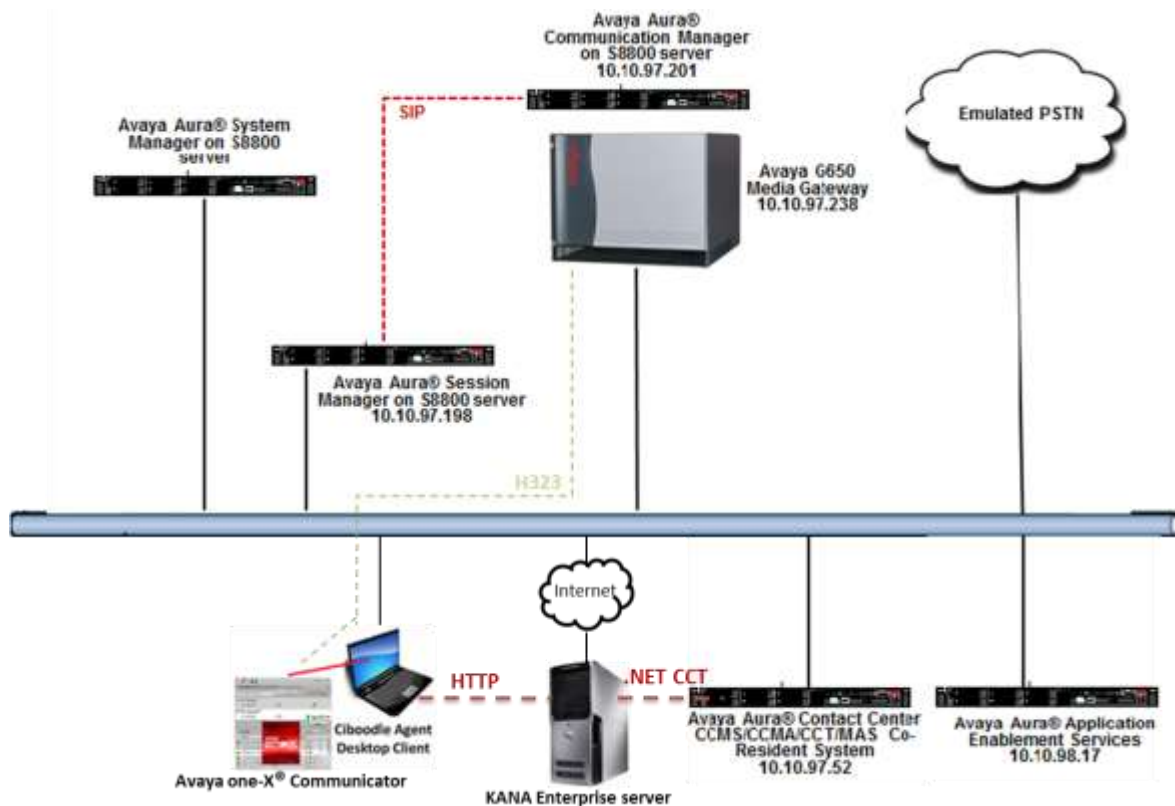
Figure 1: Network solution of Kana Enterprise with SIP –Enabled Avaya Aura® Contact Center R6.4 and Avaya Aura® Solution.

3.2. KANA Components

On the KANA Enterprise Server, the following components are running:

- **CCTSO** – Written in C++ and built against the .NET 4.0 platform , and the CCT 6.4 SP13 SDK (latest at time of writing).

- **GT_BROKER** – brokers messages between the CCTSO and the KANA Agent Desktop.

- **KE Agent** – the Contact Centre application that agents use, and which is CTI-enabled via the GT_BROKER and CCTSO.

On a client PC, users run a Chrome web browser to access the KE Agent Desktop application. To be able to take calls agents will already have logged into an Avaya one-X Communicator before logging into KE Agent.

4. Equipment and Software Validated

The following equipment and software was used for the compliance test.

Equipment/Software	Release/Version
Avaya Aura® System Manager	6.3 SP10
Avaya Aura® Session Manager	6.3 SP10
Avaya Aura® Communication Manager running on S8800 Server with an Avaya G650 Media Gateway	6.3 FP4
Avaya Aura® Application Enablement Services running on S8800 Server	6.3.0.0.212
Avaya Aura® Contact Centre running on a Windows 2008 R2 Server	R6.4 SP13
Avaya one-X® Communicator H.323 endpoint only Voice endpoints, no hard-phones used.	6.2.4.07-FP4
KANA Enterprise Server	KE13R2 SP1
KANA Enterprise Agent Desktop Client	Chrome browser v38

5. Configure Avaya Aura® Communication Manager

It is assumed that a fully functioning Communication Manager is in place with the necessary licensing and a SIP connection is already made to Session Manager. For further information on the configuration of Communication Manager, please see **Section 12** of these Application Notes. System Access Terminal (SAT) was used to access Communication Manager to make changes.

To add an Avaya endpoint to Communication Manager, such as a 9608 H.323 Deskphone, open the SAT and connect to Communication Manager (not shown). Type **add station x**, where x is the extension number to be added. On **Page 1,** ensure that **IP Softphone** is set to **y**.

```
add station 53017                                              Page   1 of   5
                                  STATION

Extension: 53017                       Lock Messages? n                BCC: M
     Type: 9608                        Security Code: 1234              TN: 1
     Port: S00025                    Coverage Path 1:                  COR: 1
     Name: Agent 53017               Coverage Path 2:                  COS: 1
                                    Hunt-to Station:            Tests? y
STATION OPTIONS
                                       Time of Day Lock Table:
           Loss Group: 19        Personalized Ringing Pattern: 1
                                           Message Lamp Ext: 53017
         Speakerphone: 2-way            Mute Button Enabled? y
     Display Language: english             Button Modules: 0
 Survivable GK Node Name:
        Survivable COR: internal         Media Complex Ext:
   Survivable Trunk Dest? y                    IP SoftPhone? y
                                        IP Video Softphone? y
                      Short/Prefixed Registration Allowed: default
```

Below is an example of **Page 2** used during compliance testing.

```
Add station 53017                                              Page   2 of   5
                                  STATION
FEATURE OPTIONS
          LWC Reception: spe         Auto Select Any Idle Appearance? n
          LWC Activation? y                   Coverage Msg Retrieval? y
  LWC Log External Calls? n                            Auto Answer: none
           CDR Privacy? n                           Data Restriction? n
    Redirect Notification? y         Idle Appearance Preference? n
  Per Button Ring Control? n         Bridged Idle Line Preference? n
   Bridged Call Alerting? n              Restrict Last Appearance? y
 Active Station Ringing: single
                                                 EMU Login Allowed? n
        H.320 Conversion? n      Per Station CPN - Send Calling Number?
       Service Link Mode: as-needed              EC500 State: enabled
        Multimedia Mode: enhanced           Audible Message Waiting? n
  MWI Served User Type:                   Display Client Redirection? n
           AUDIX Name:                    Select Last Used Appearance? n
                                          Coverage After Forwarding? s
                                            Multimedia Early Answer? n
 Remote Softphone Emergency Calls: as-on-local Direct IP-IP Audio Connections? y
  Emergency Location Ext: 53017      Always Use? n IP Audio Hairpinning? n
```

Below is an example of **Page 3** used during compliance testing.

```
display station 53017                                            Page   3 of   5
                               STATION

            Conf/Trans on Primary Appearance? n
  Bridged Appearance Origination Restriction? n

              Call Appearance Display Format: disp-param-default
                         IP Phone Group ID:
Enhanced Callr-Info Display for 1-Line Phones? n


                        ENHANCED CALL FORWARDING
                               Forwarded Destination        Active
 Unconditional For Internal Calls To:                          n
              External Calls To:                               n
       Busy For Internal Calls To:                             n
              External Calls To:                               n
   No Reply For Internal Calls To:                             n
              External Calls To:                               n

          SAC/CF Override: n
```

On **Page 4** ensure that only two **call-appr** buttons are selected as shown below.

```
display station 53017                                            Page   4 of   5
                               STATION
 SITE DATA
      Room:                                    Headset? n
      Jack:                                    Speaker? n
     Cable:                                    Mounting: d
     Floor:                                 Cord Length: 0
  Building:                                   Set Color:

ABBREVIATED DIALING
    List1:                  List2:                  List3:




BUTTON ASSIGNMENTS
 1: call-appr
 2: call-appr
 3:


    voice-mail
```

For the addition of the Avaya SIP Endpoints and one-X® Communicator, please refer to the documents listed in **Section 12**.

6. Adding a Windows User

If there is no domain controller present containing Active Directory Windows users, then these users will need to be created/added on the Contact Center server. A unique Windows user is required for every CCT user added.

To create a Windows user on the Contact Center server go to **Start→Administrative Tools→Computer Management** on the Contact Center server as shown below.
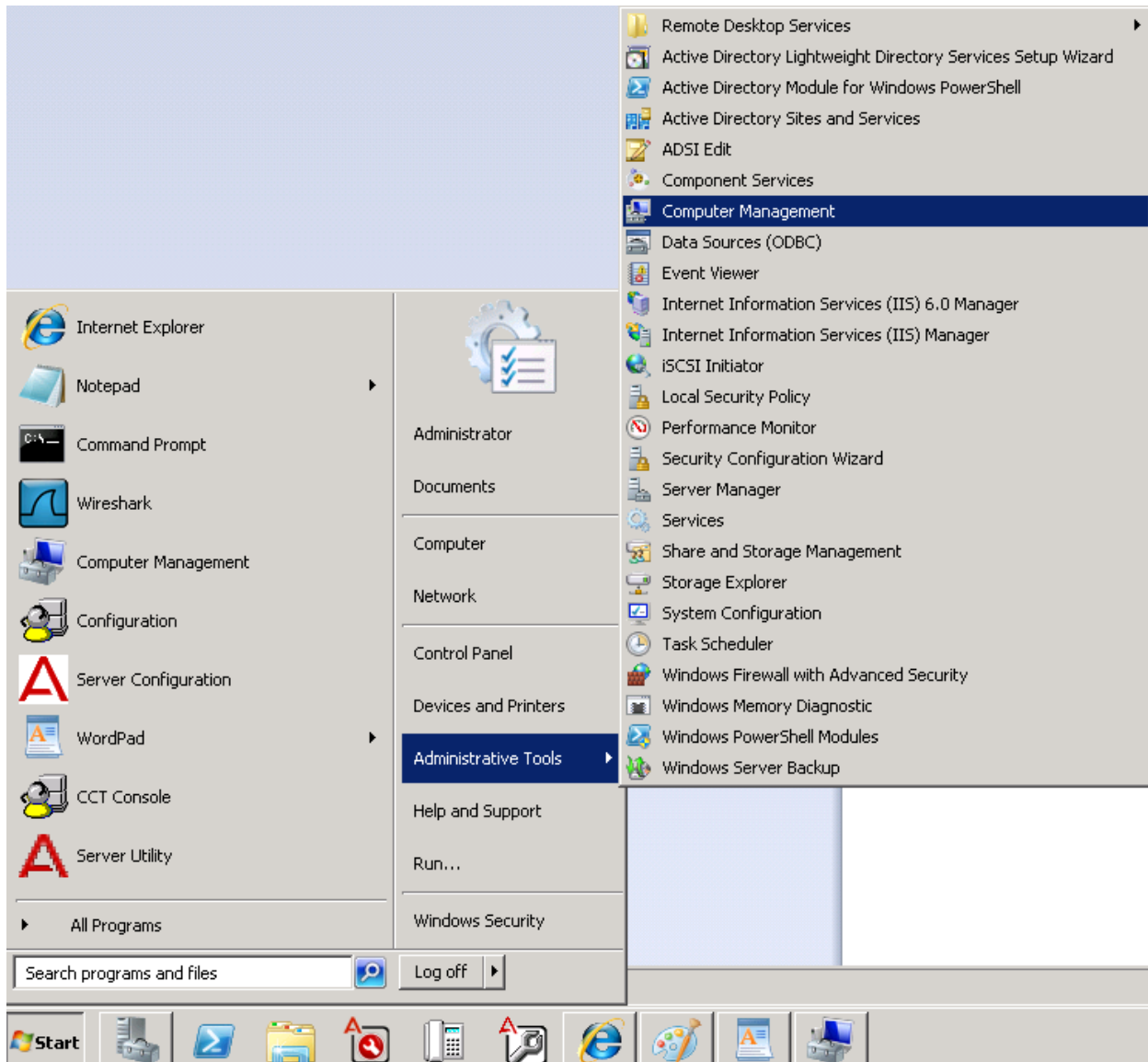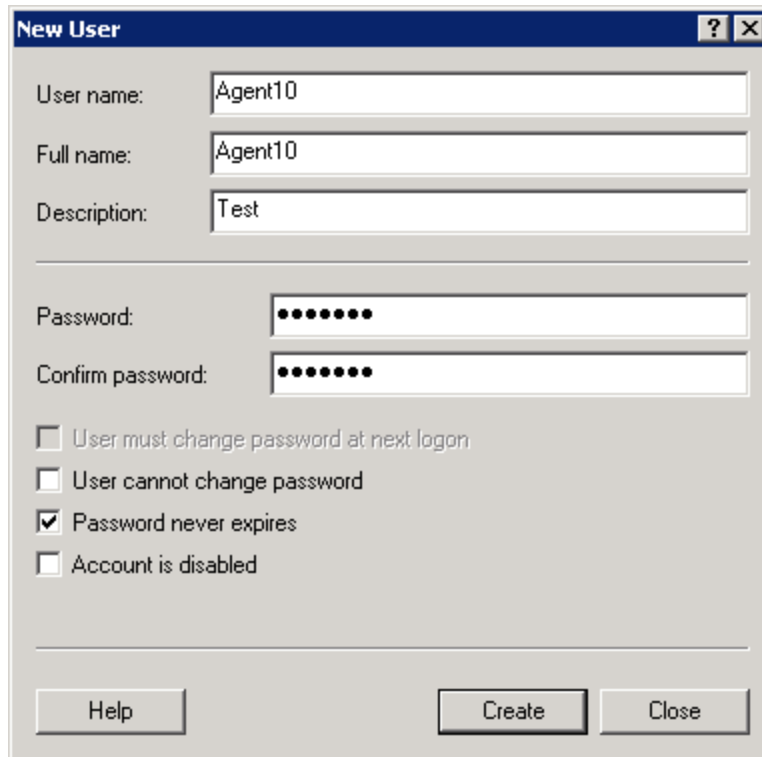
In the left pane, navigate to **Local Users and Groups** and right click on **Users** and select **New User…** as shown below.
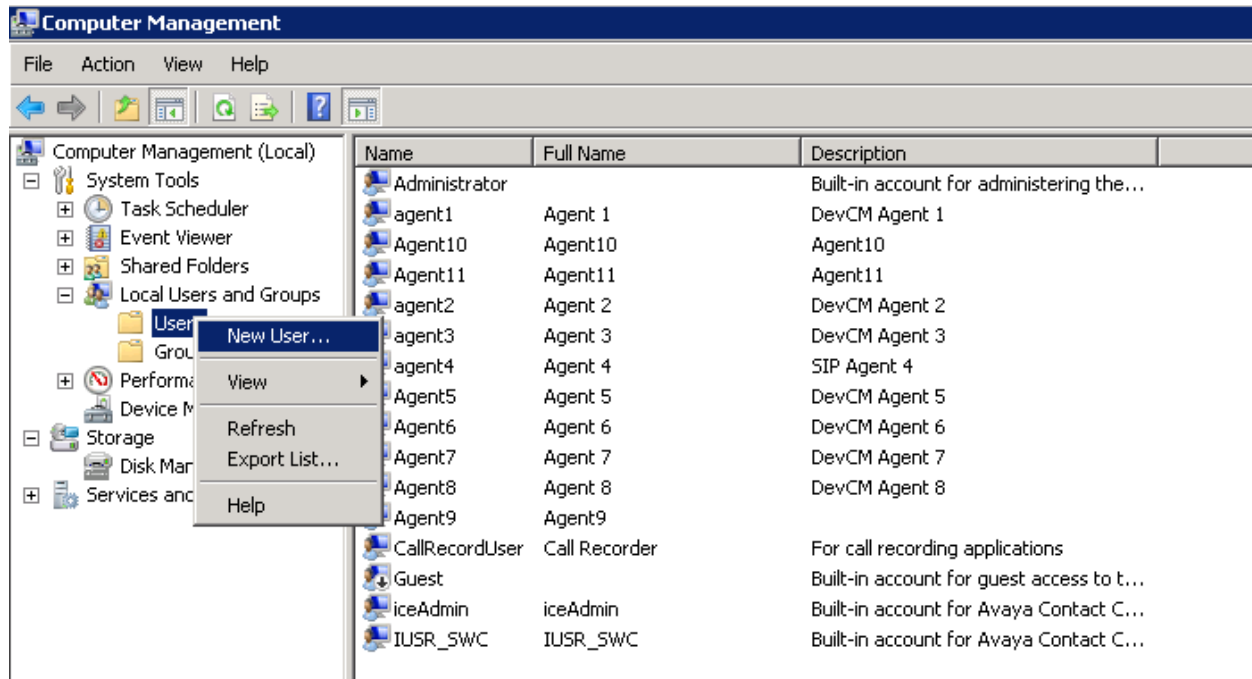
Enter a suitable **User name** and **Password**. It is best practice to tick that the password never expires to avoid issues with passwords in the future.

Note: KANA Enterprise does not accept a username beginning with a number or a password with a special character.

The following three users were created for the compliance testing with KE Agent. During the testing the users were associated with the following Avaya one-X® Communicator H323.
- **Agent9**   Avaya one-X® Communicator (with H.323 endpoint)
- **Agent10**   Avaya one-X® Communicator (with H.323 endpoint)
- **Agent11**   Avaya one-X® Communicator (with H.323 endpoint)

7. Configure Avaya Aura® Contact Center

This section goes through the setup required on the Avaya Aura® Contact Center to ensure that the KE Agent can login to the Contact Center correctly. Log in to Contact Center by opening a web browser and navigating to the Contact Center FQDN or IP address as shown below. Enter the webadmin **User ID** and **Password** and click on **Log In**.

7.1. Configure the Avaya Aura® Contact Center Agent

When logged in correctly, select **Contact Center Management** from the **Launchpad**.
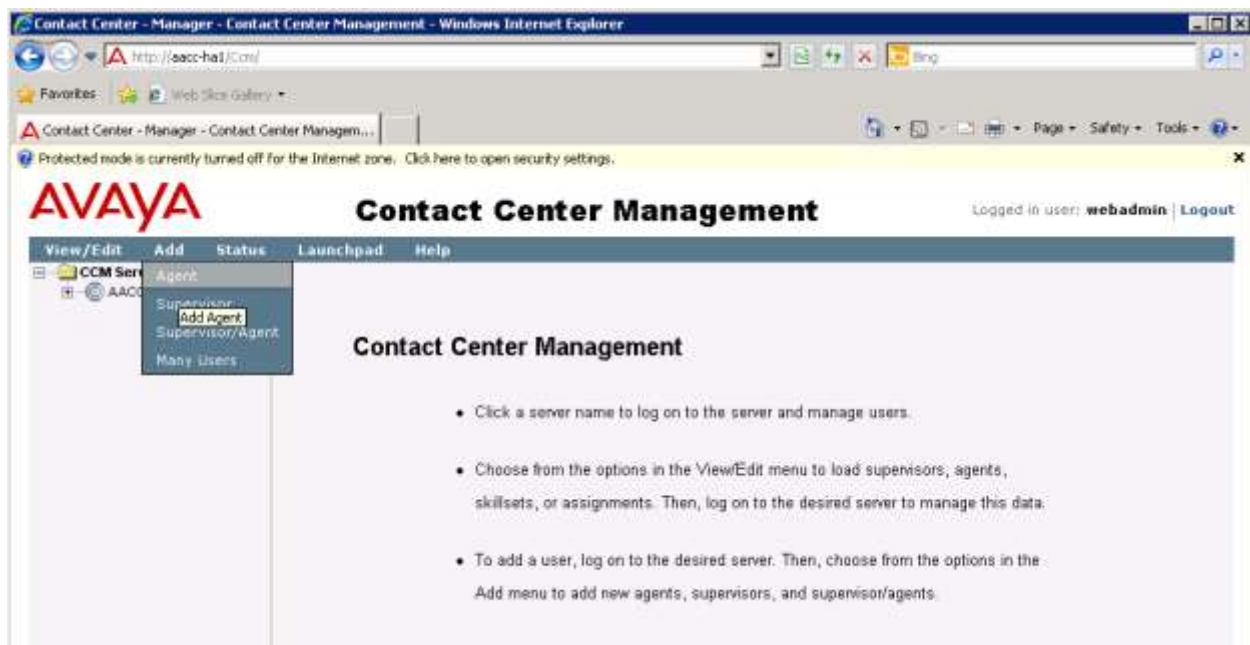
Select **Add** from the menu and click on **Agent**.
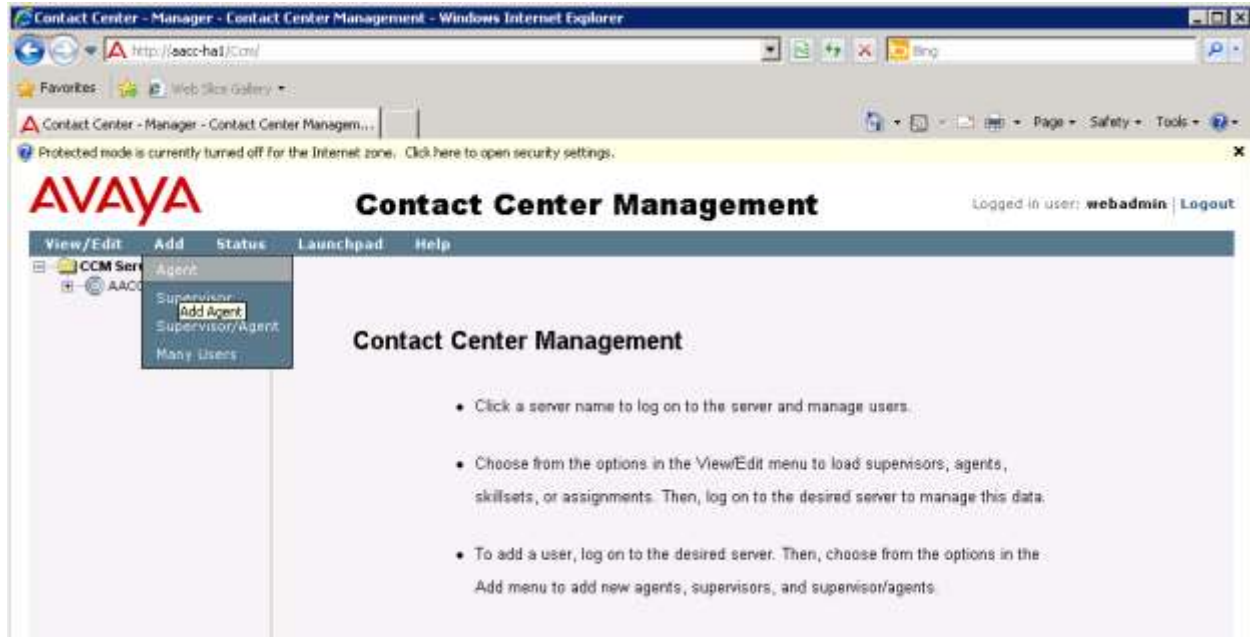
Enter the agent's details noting the **Login ID** and **Voice URI**. During compliance test, CCT Web Services was enabled. It is not required to be turned on for client applications that are using the .NET API. The following information was captured for reference of system used during compliance test.

- **Login ID** will be used by KE Agent to log in the agent.
- **Voice URI** is the "*extension number"@domain name.*

Click on the **Create CCT Agent** tick-box and under **Associate User Account** select the
Windows user that will be associated with this Contact Center agent. Note for this test
environment **Search local operating system** was selected as this is the manner in which the
users are setup as per **Section 6**.

.

In section **Agent Information**, select the **Primary Supervisor**, the **Call Presentation** and
Threshold. In section **Contact Types,** ensure that **Voice** is selected in order to route voice calls
to the agent.

Once the appropriate skillset is chosen, click on **Submit** at the bottom of the screen to save the new agent.

7.2. Checking the CCT user

From the **Launchpad,** click on **Configuration** as shown below.

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In the left pane, expand the CCT server and click on **CCT Administration** as shown. In the main window, click on **Launch CCT Console**.
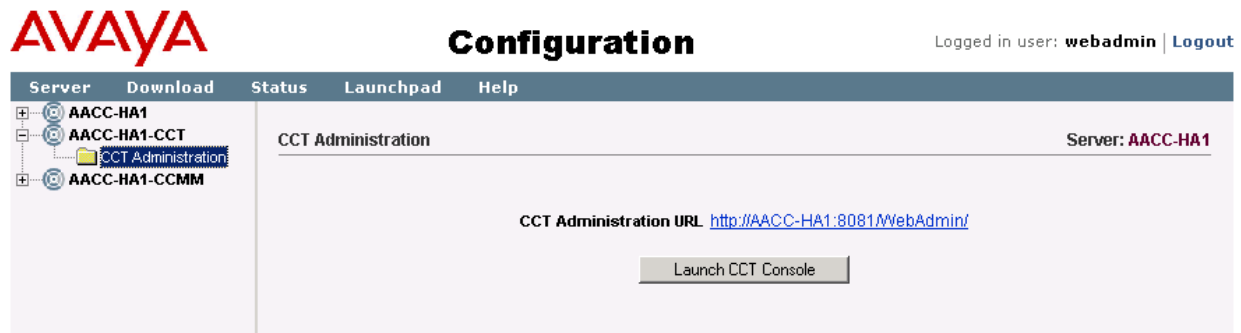
The following window will be opened and the CCT users will already be created from the procedure outlined in **Section 8.1**. Select **Users** in the left pane and double-click on the user in question in the main window.
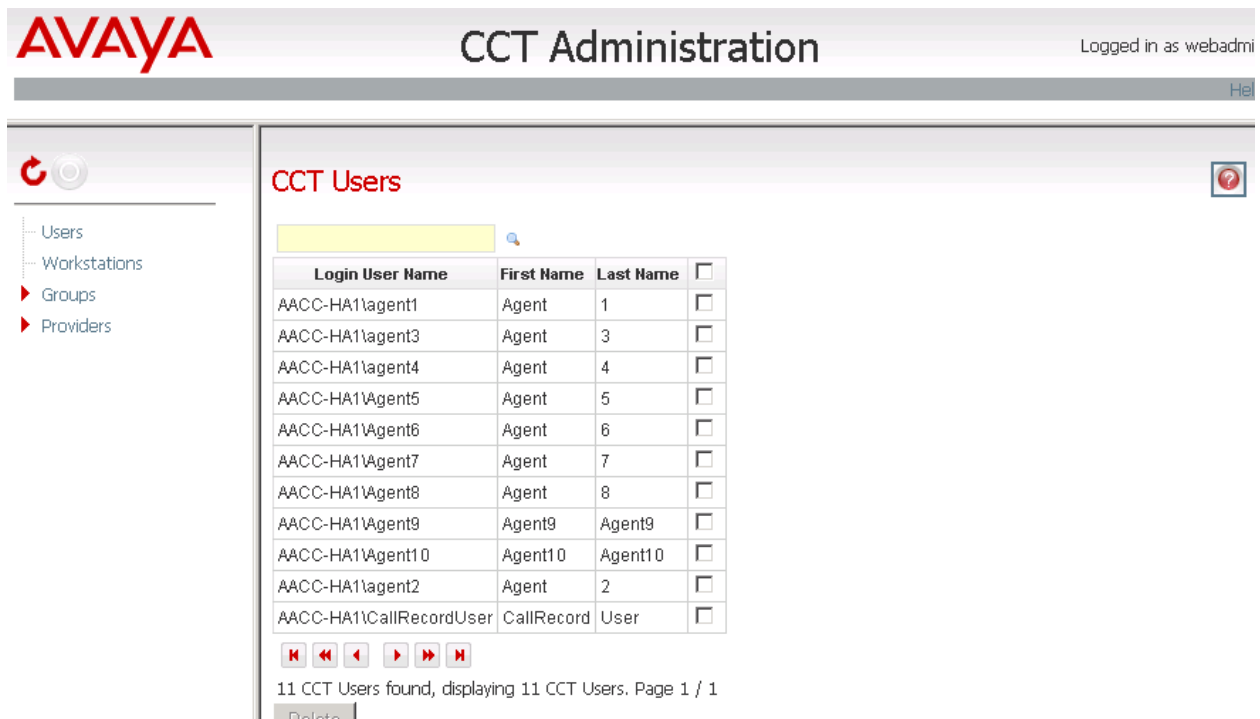
The CCT **User Details** are displayed; note the **Login User Name** is in the format domain\windowsuser, note the domain name in this case is the Contact Center server name. Open **Agent Assignments** and note the Contact Center agent is already mapped to the CCT user.
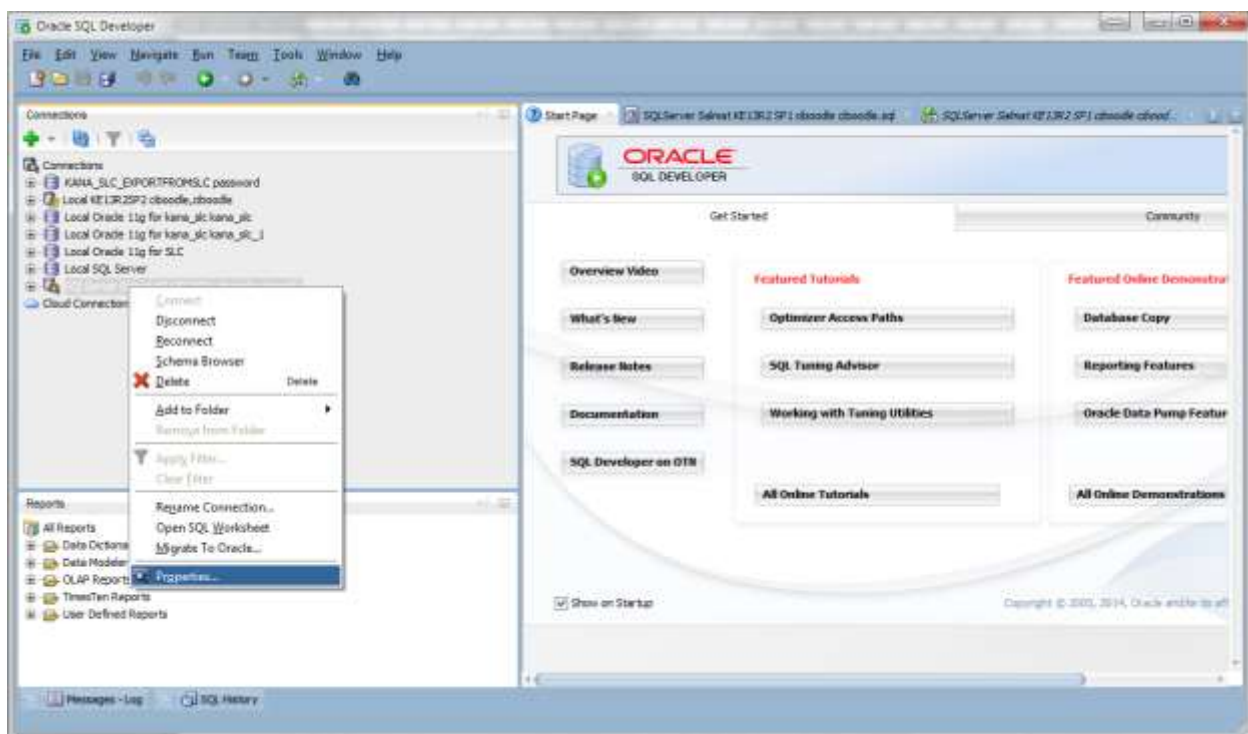
8. Configure KANA Enterprise

The following section describes the steps required to configure the KANA Enterprise in order to connect with Avaya Aura® Contact Center R6.4 connecting Communication Control Toolkit (CCT) module of Contact Center utilising the CCT .NET Application Programming Interface (API).The installation of KANA Enterprise is outside the scope of these Application Notes and is therefore not documented. For information regarding the installation and further configuration of KANA Enterprise please refer to **Section 12**.

Note: It is assumed that the KANA Enterprise Server has been fully installed and a database already in place and configured. It is also assumed that any additional software that is required for the connection with Contact Center is installed.

8.1. Configure Avaya Aura® Contact Center Connection in the KANA Enterprise Database

It is assumed that a database client is available to query the Oracle database on the KANA Enterprise Server. Using a suitable SQL editor open a connection to the KANA Enterprise database as shown below. Right-click on the database and select **Properties**.

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Fill in the information required such as the **Username**, **Password**, **Hostname** and the **Port** number as shown in the example below.
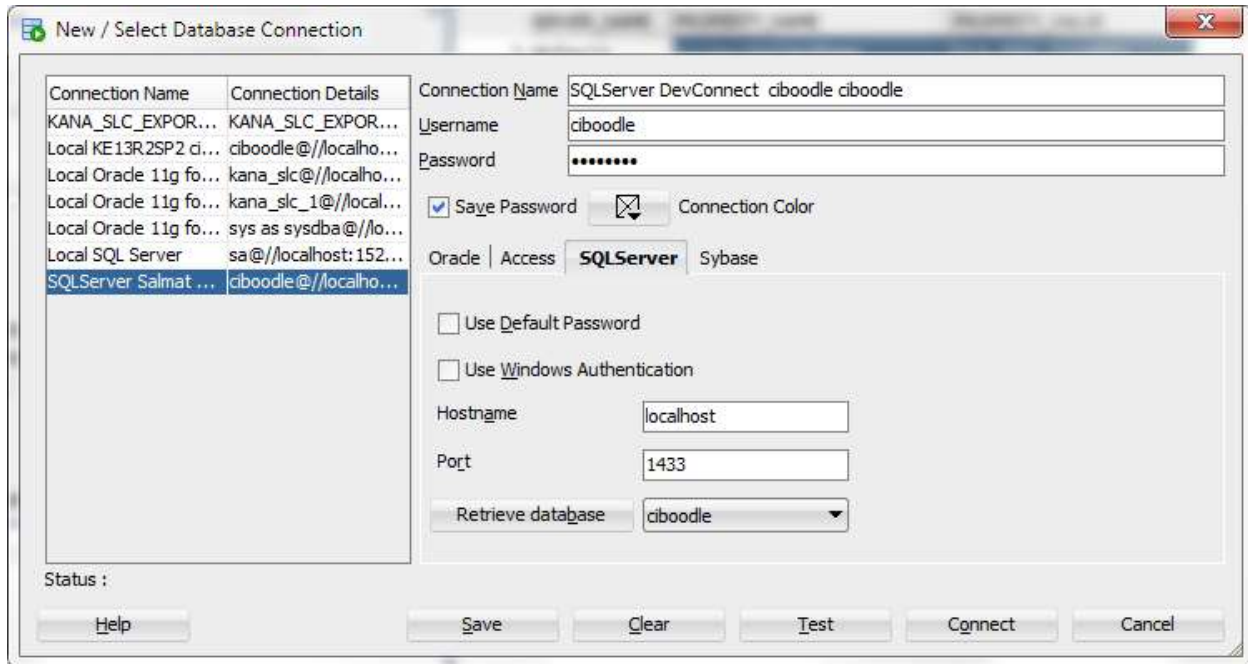
The following information must be set in order to connect to the Contact Center CCT module. In the example below, the Contact Center IP Address is **10.10.97.52**.

Parameter	Value
brokerServerName	GLA-ENG-7846NX1
brokerPortNumber	5001
brokerClassName	GT_KERNEL
serverName	10.10.97.52
portNumber	29373
domain	aacc-ha1
requestTimeoutPeriod	30000
pollingPeriod	5
serviceObjectName	CCTSO
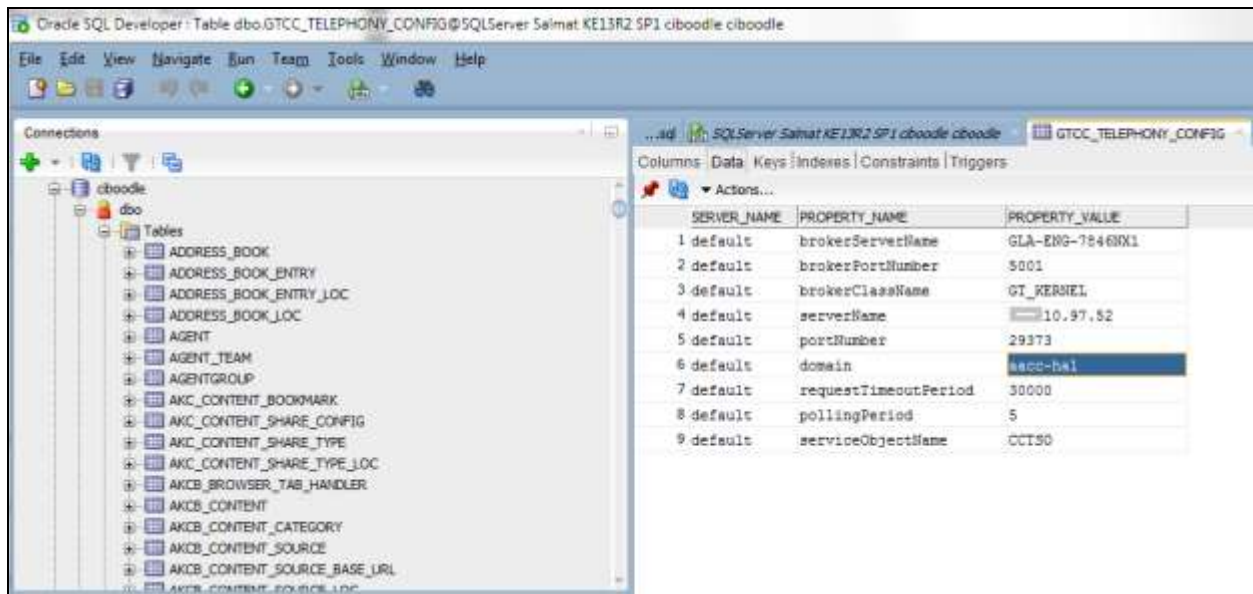
8.2. Configure Users on KANA Enterprise

User is configured by KANA Administrator. For more information about create user on KANA, review application note for more details.
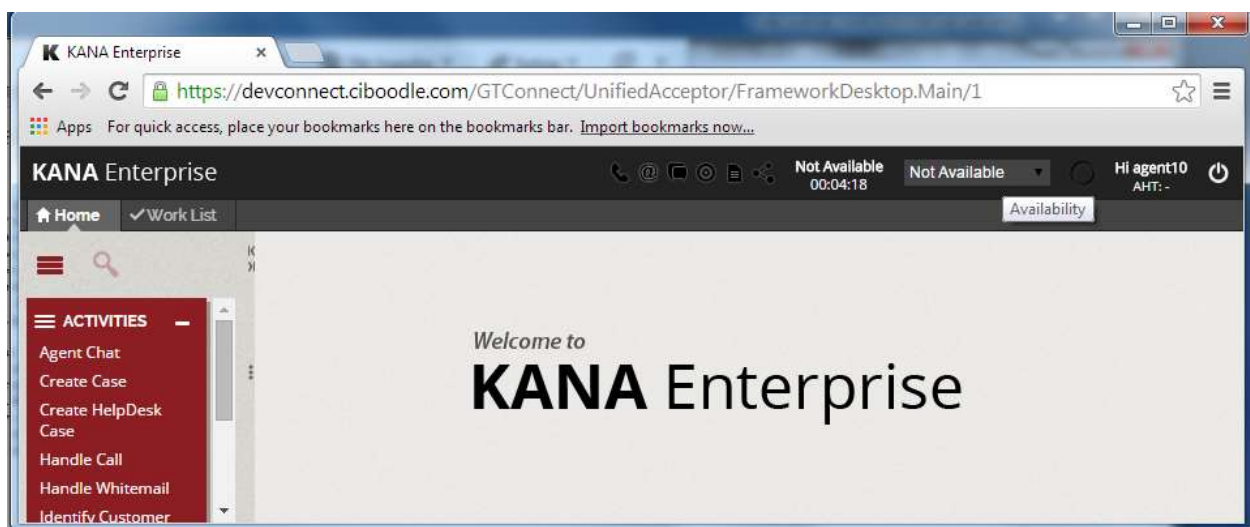
8.3. Assign User to Telephony Channel

Select **Manage Channels** in the left window and click on **Assign Blends** in the main window.

9. Verification Steps

The following steps can be taken to ensure that all connections between KANA Enterprise and the Avaya Solution are configured correctly.

9.1. Verify an Agent can be logged into the Avaya Solution using KANA Enterprise Agent Desktop Client

Open the web browser and navigate to **http://<KanaServerIP>/GTConnect/ UnifiedAcceptor/FrameworkDesktop.Main/qtxusername/agent10/gtxUserPassword/DevCo nnect123**. Note this is the username and password of the agent created in **Section 6**.

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9.2. Verify a Skillset Call can be Received Using KANA Enterprise Agent

Place a call to a skillset associated with the agent logged in. Once the call appears at the agent's phone the following screen pop should appear at the KE Agents desktop.
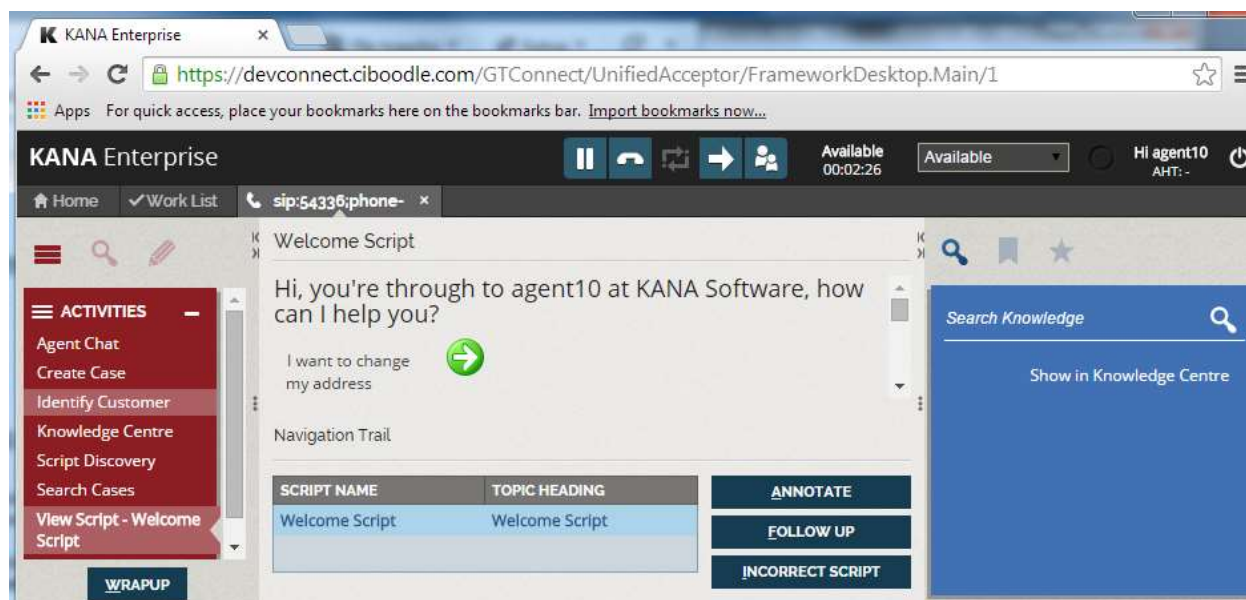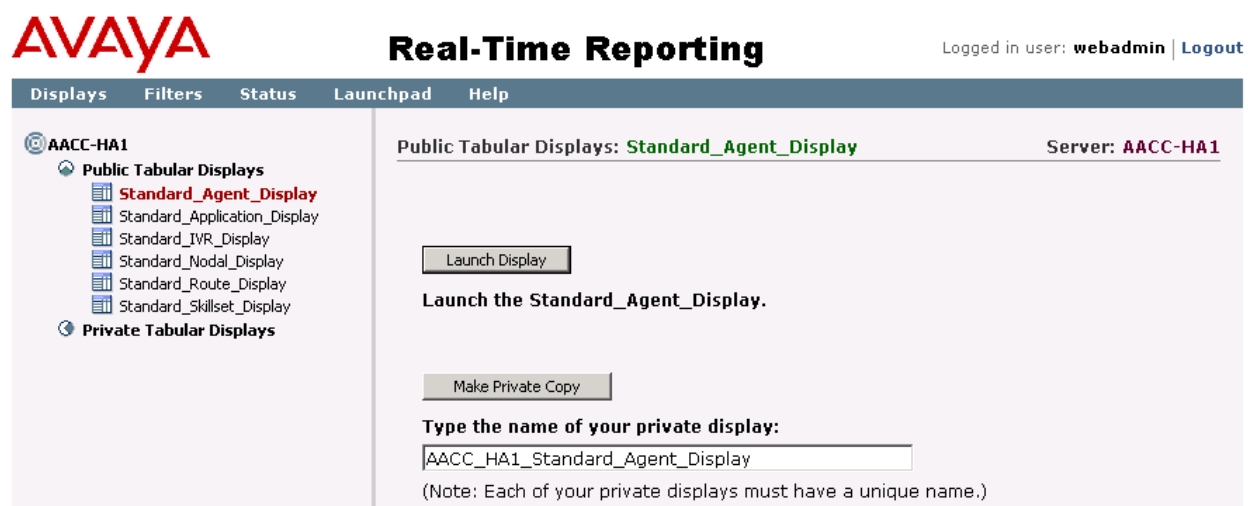
9.3. Verify Agent Status on Avaya Aura® Contact Center

Log into the Contact Center as described in **Section 8**. Click on **Real-Time Reporting** as shown below.

In the left window, click on **Public Tabular Displays** and select **Standard_Agent_Display**. Click on **Launch Display** in the main window.

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The **Standard Agent Display** should show the agent logged in and the **In Contacts Status Idle** indicating the agent is ready to take a call, as shown in the example below.

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10. Conclusion

These Application Notes describe the configuration steps required for KANA Enterprise to successfully interoperate with a SIP-enabled Avaya Aura® Contact Center R6.4 using CCT .NET API. Please refer to **Section 2.2** for test results and observations.

11. Additional References

This section references documentation relevant to these Application Notes. The Avaya product documentation is available at http://support.avaya.com where the following documents can be obtained.

[1] *Administering Avaya Aura® Communication Manager,* Release 6.3, Issue 10, June 2014, Document ID 03-300509

[2] *Avaya Aura® Communication Manager Feature Description and Implementation,* Release 6.3, Issue 14, December 2014, Document ID 555-245-205

[3] *Avaya Aura® Application Enablement Services Administration and Maintenance Guide* Release 6.3, June 2014, Document ID 02-300357

[4] *Avaya Aura ® Contact Center SIP Commissioning*, Document ID NN44400-511, Issue 3.02 Release 6.3, March 2012

[5] *Avaya Aura ® Contact Center Planning and Engineering*, Document ID NN44400-211, Issue 05.04, Release 6.4, December 2014

[6] *Avaya Aura ® Contact Center Installation*, Document ID NN44400-311, Issue 04.02, Release 6.3, May 2013

Product documentation for KANA Enterprise can be requested from KANA or may be downloaded from http://www.kana.com.

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