



Avaya Solution & Interoperability Test Lab

Application Notes for Integrated Research Prognosis Unified Communication 10 with Avaya Aura® Contact Center 6.4 - Issue 1.0

Abstract

These Application Notes describe the procedures for configuring Integrated Research Prognosis Unified Communication 10 to interoperate with Avaya Aura® Contact Center 6.4. Prognosis monitored and displayed real-time data from Avaya Aura® Contact Center components such as Agents, Applications, centralized alarm and alerts, SNMP, License, Skillsets, Scripts and server statistic like CPU, Memory, Disk Usage using Open Database Connectivity (ODBC), Windows Management Instrumentation (WMI), Real Time Data (RTD) and Simple Network management Protocol (SNMP).

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.

1. Introduction

These Application Notes describe the compliance tested configuration used to validate Integrated Research Prognosis Unified Communications 10 (herein after referred to as Prognosis) with Avaya Aura® Contact Center (AACC) 6.4. During compliance test, the Prognosis web-based application was used to verify proper display of following data from AACC:

- Use of Avaya Real-Time Data (RTD) API to obtain real-time feed from AACC for Agent, Skillset, Scripts and Applications information.
- Use of Intersystems ODBC Driver to connect to the AACC Caché database in which all historical Contact Center activities and statistics was stored. Prognosis ran SQL queries against this database to obtain and display AACC statistics such as Agents, Applications, Skillset, Scripts and license.
- Prognosis was configured as SNMP trap destination to receive traps and events from AACC.
- Use of Microsoft Windows Management Instrumentation (WMI) to monitor server statistics such as CPU, Memory and Disk Usage.

2. General Test Approach and Test Results

The feature test cases were performed manually. Several incoming calls were placed to AACC CDN number with available agents and when all agents are busy to verify that Prognosis properly displayed real-time data of Agent, Skillset, Scripts and Application. Manually restarted Contact Center Manager Administrator License Service (CCMA LMService) to verify Prognosis received and displayed SNMP for this event. Also verified server static were correctly displayed such as CPU, Memory and Disk Usage.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet connection to Prognosis server and to the agent desktop.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on Prognosis:

- Use of MWI connection to display server statistics information such as CPU, Physical Memory and Virtual Memory usage, list of busiest processes.
- Manually restart CCMA LMService, verify that proper SNMP traps were captured and displayed for these events.
- Verify list and detail of all Agents configured on AACC. Verify accuracy of displayed real-time status of agents upon status changes such as logout, not ready, and ready.
- Proper real-time details display of AACC Skillsets, Agents, and Applications when calls were placed to AACC CDN with available/non available agent, call scenarios involving calls waiting, calls answer delay, call answered and call abandoned.
- Verify detailed configuration data for Agents, Applications, Skillsets, Scripts and License statics, which were obtained via ODBC connection, were properly displayed.

2.2. Test Results

All test cases were passed and met the requirements as shown in **Section 2.1** with the following observation: It takes about 10-20 seconds for Prognosis to start displaying AACC data in the web user interface.

2.3. Support

For technical support on Prognosis, contact the Integrated Research Support Team at:

- Hotline: +61 (2) 9921 1524
- Email: support@prognosis.com

3. Reference Configuration

Figure 1 illustrates the test configuration used to verify the Prognosis application with Avaya Aura® Contact Center. The configuration consists of an Avaya S8800 Server running Avaya Aura® Communication Manager with an Avaya G650 Media Gateway providing voice service for Avaya Aura® Contact Center agent phones.

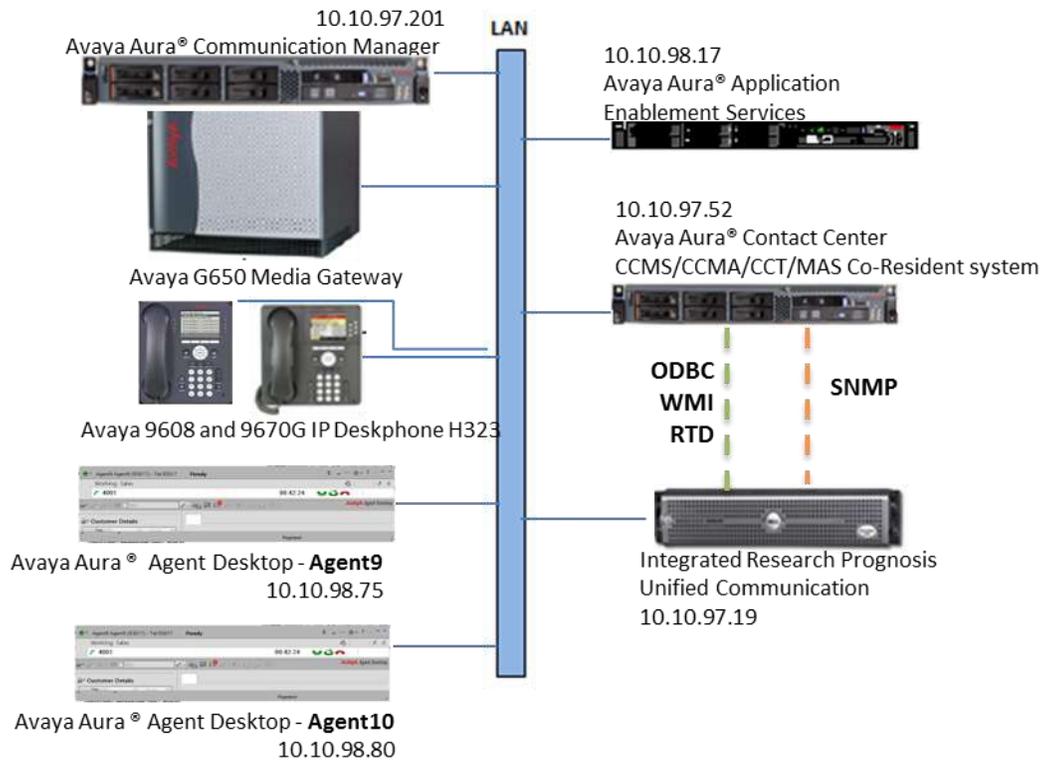


Figure 1: Test Configuration Diagram

4. Equipment and Software Validated

The following equipment and software were used for the compliance test provided:

Equipment/Software	Release/Version
Avaya Aura® Communication Manager running on Avaya S8800 Server	6.3 SP 8 (R016x.03.0.124.0 w/Patch 21588)
Avaya G650 Media Gateway (TN2312BP)	Vintage HW06 FW043
Avaya Aura® Contact Center CCMS/CCMA/CCT/MAS Co-Resident system running on S8800 Server	6.4 SP13 Window 64-bit 2008 R2 Service Pack 1
Avaya Aura® Application Enablement Service running on S8800 Server	6.3.3
Avaya 9670G IP Deskphone (H323)	3.2.4
Avaya 9608 IP Deskphone (H323)	6.5
Avaya Aura® Agent Desktop	6.4 Version 8.4.0.419
Integrated Research Prognosis Unified Communication 10 running on Window 2008 <ul style="list-style-type: none">• Avaya Real-Time Data (RTD) API• 32-bit InterSystems ODBC driver• Window 2008 WMI Service	Version 10 Window 64-bit 2008 R2 SP1 6.3 SP 10 SDK 2009.01.00.446 7601.17514

5. Configure Avaya Aura® Communication Manager

The configuration of the Communication Manager and AACC is assumed to be in place and will not be discussed in this document. For more information of how to configure Communication Manager and AACC, please go to support.avaya.com.

6. Configure Avaya Aura® Contact Center

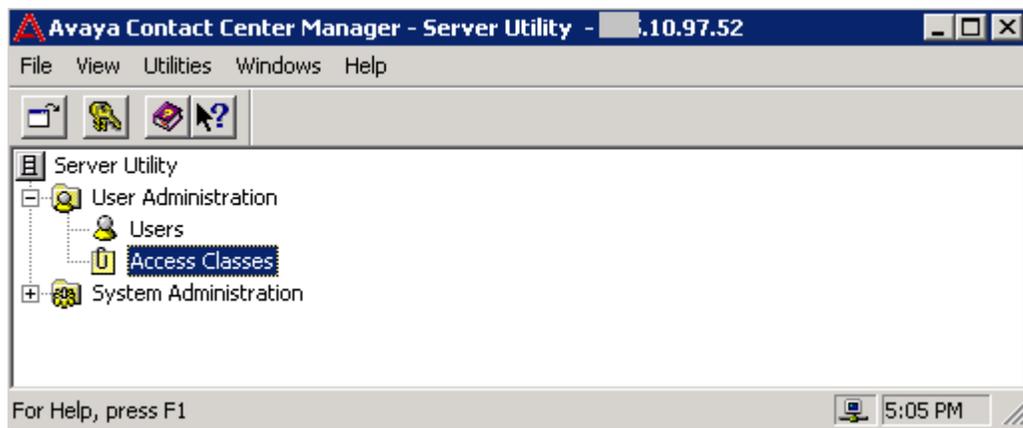
The initial administration of Contact Center and the connection to Communication Manager is assumed to be in place and will not be covered here. This section only covers the following configuration that is required for the purpose of administering Prognosis:

- Configure User
- Configure SNMP

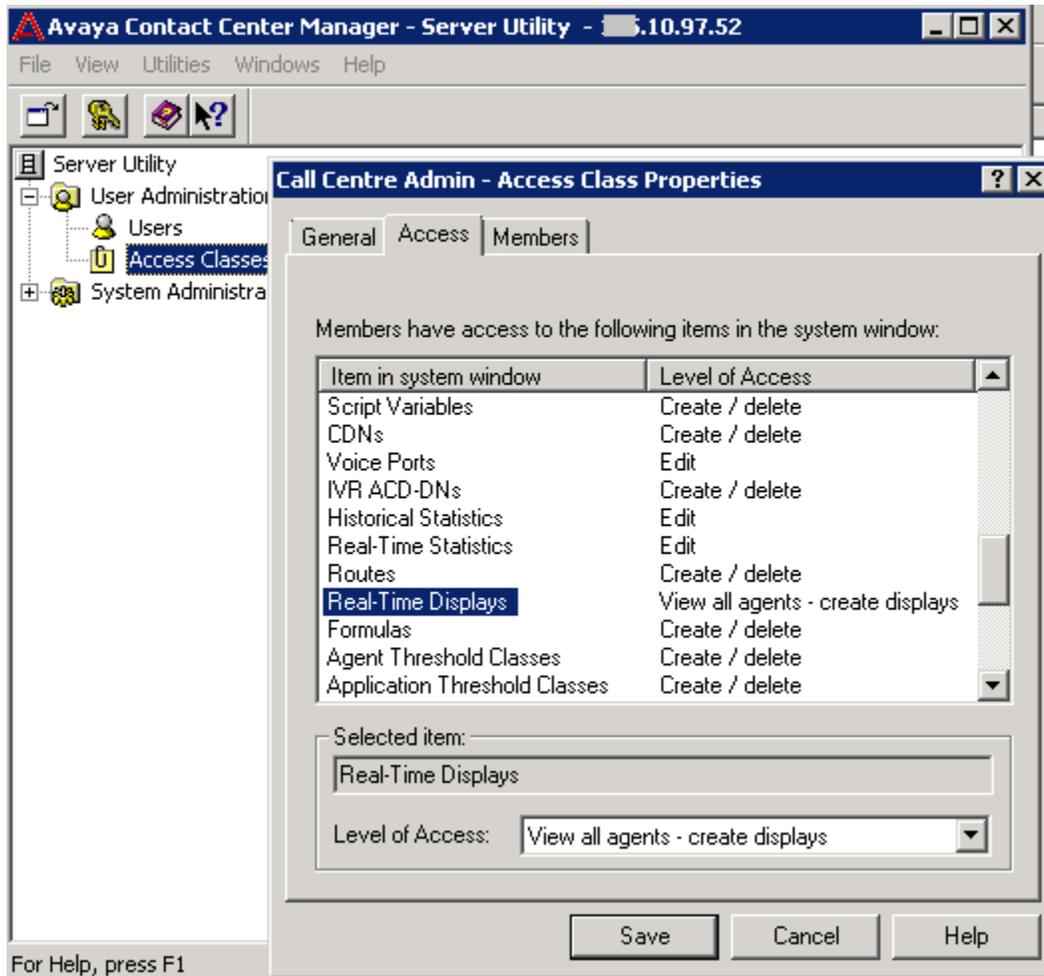
6.1. Configure User

This section describes step to create a user for Prognosis which can be used to access SQL and Real Time Data on AACC. Default user such as **sysadmin** can be used; during compliance test user **test1** was created for Prognosis and assigned to **Call Center Admin** access class.

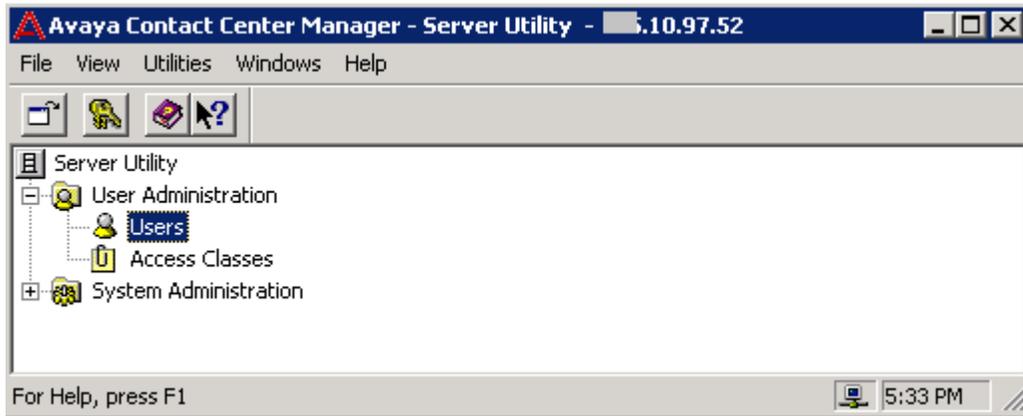
Verify that **Call Center Admin** has **Real-Time Display** access level allow to all agent, click on the **Start → Avaya → Contact Center → Server Utility → Server Utility** link. Use appropriate AACC login credentials (not shown). From the **Server Utility** window, double-click on **Access Classes**.



In the **Access Classes** window (not shown), double click on **Call Center Admin**, this access class is pre-defined in AACC. In the **Call Centre Admin - Access Class Properties** window, click **Access** tab and verify that **Real-Time Displays** has **Level of Access** set to **View all agents - create displays**. Click the **Save** button to save any changes. Below is the example of **Call Center Admin** class used for the Prognosis user.



From the **Server Utility** window, double-click on **Users**.



On the **Users** window (not shown), click **New User** button in the toolbar to create a new user account. In the **General** tab of user dialog box, set the new user details as shown below:

- **First name:** Enter descriptive name, example: **Prognosis**.
- **Last name:** Enter descriptive name, example: **Test1**.

Open the **Desktop** tab, add a unique **User ID** and set a **Password** (not shown). Uncheck the **Password Expires** checkbox if required. Select the **Access Class** name that was created in above step. Below is example of user **test1** created for Prognosis and belong to **Call Centre Admin** class. Click **Save** to save changes.

The screenshot shows a dialog box titled "Prognosis Test1 - User Properties" with a "Desktop" tab selected. The dialog contains the following fields and controls:

- User ID:** A text box containing "test1" and a "Reset Password" button.
- Password retry count:** A text box containing "0" and a checkbox labeled "Password Expires" which is unchecked.
- User desktop status:** A text box containing "OK." and a "Lock Out" button.
- Access Class:** A dropdown menu showing "Call Centre Admin".

At the bottom of the dialog are three buttons: "Save", "Cancel", and "Help".

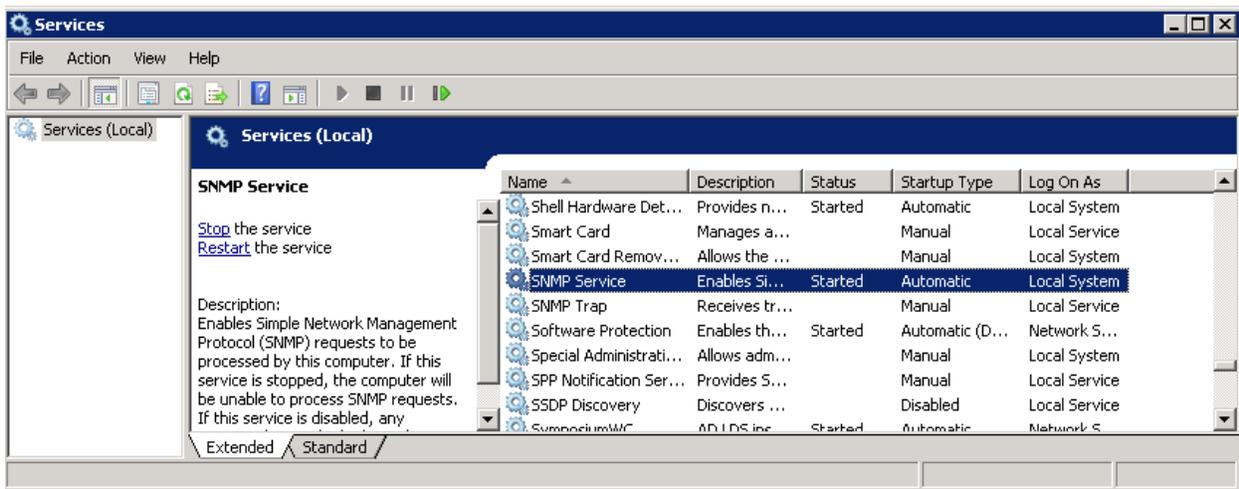
6.2. Configure SNMP

This section describes steps to configure Prognosis as SNMP trap destination on AACC. There are 3 steps involved:

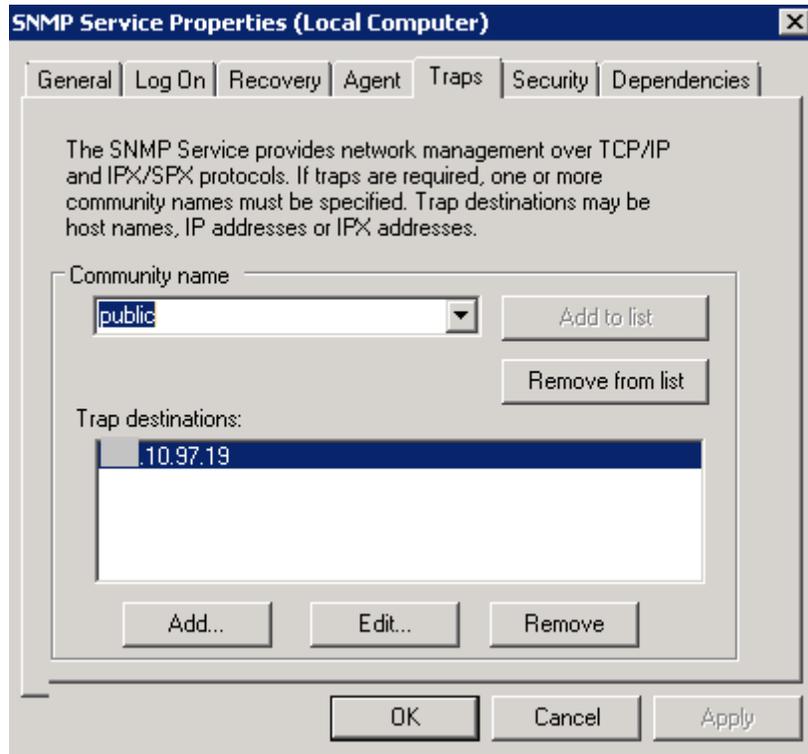
- Configuring the Windows SNMP Service.
- Selecting CCMS events to be forwarded.
- Selecting CCMA, CCT and CCMM event to be forwarded.

6.2.1. Configuring the Windows SNMP Service

On AACC, log on with an Administrator account to the AACC Window Server to update SNMP service configuration. Click on **Start** → **All Programs** → **Administrative Tools** → **Services**, browse to **SNMP Service**.



Double click on **SNMP Service** to open its properties window, enter any descriptive name such as **public** for **Community name**, and click **Add to list** button to add community string to system. Click **Add** on the button below the **Trap destinations** to add Prognosis IP address as a destination to receive traps from AACC. Example below with IP address of Prognosis **10.10.97.19** is added. Click **OK** to save changes.

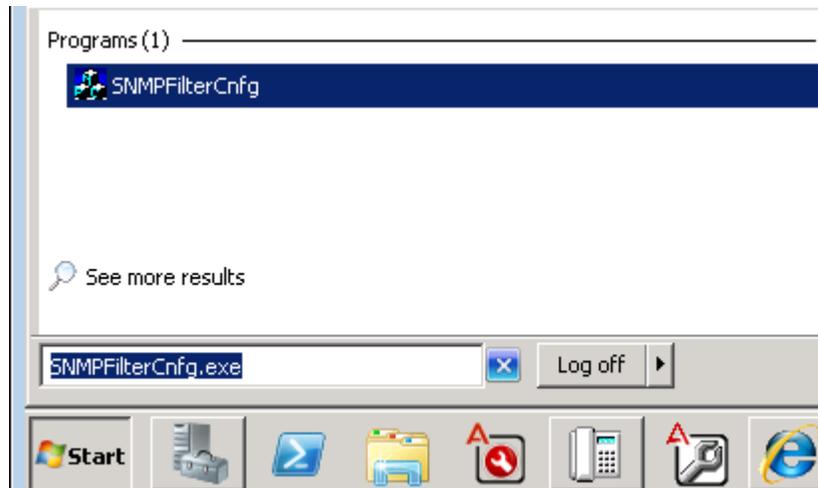


Restart the **SNMP Service** and close the **Services** window.

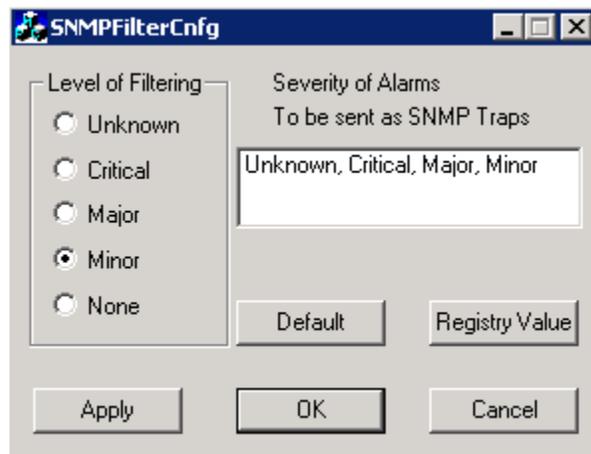
6.2.2. Selecting CCMS Events to be Forwarded

Contact Center Manager Server uses SNMPFilterCnfg.exe to forward all Contact Center manager Server related events (these events code fall between the ranges 44900 to 51400). For more information about event codes and a list of recommended events to forward, see Avaya Aura® Contact Center Contact Center Event Codes (NN44400-713).

Click on **Start**, and enter **SNMPFilterCnfg.exe** in the search textbox.



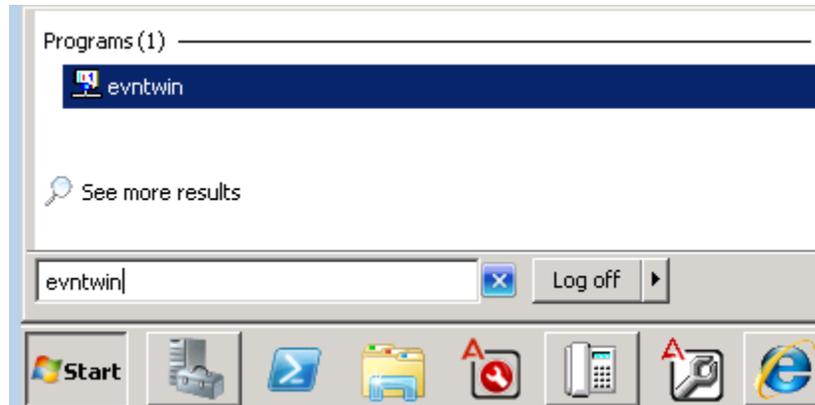
Click on **SNMPFilterCnfg** from the search results to open its detail window. In the **Level of Filtering** box, select **Minor**. Click **OK** to save changes.



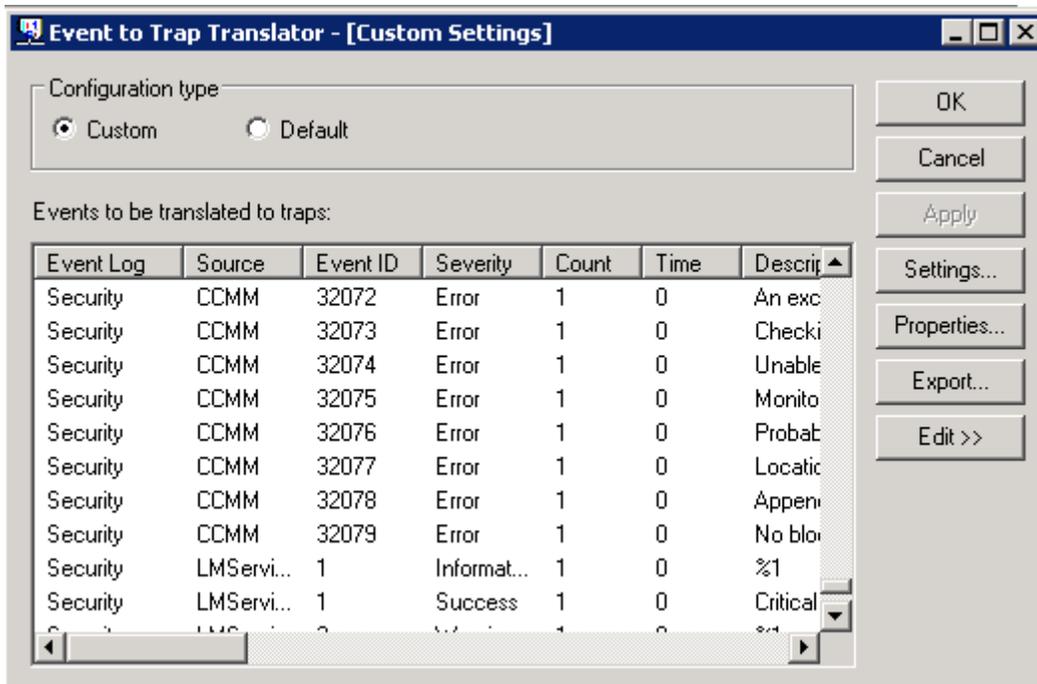
6.2.3. Selecting CCMA, CCT and CCMM Event to be Forwarded

AACC use the Windows Server 2008 Event to Trap Translator (evntwin.exe) to select the events to be translated to SNMP traps and forwarded to Prognosis. For more information about configuring SNMP on AACC refer to document listed in **Section 10 – [2]**. This section describes steps for how to select events to be translated into SNMP traps.

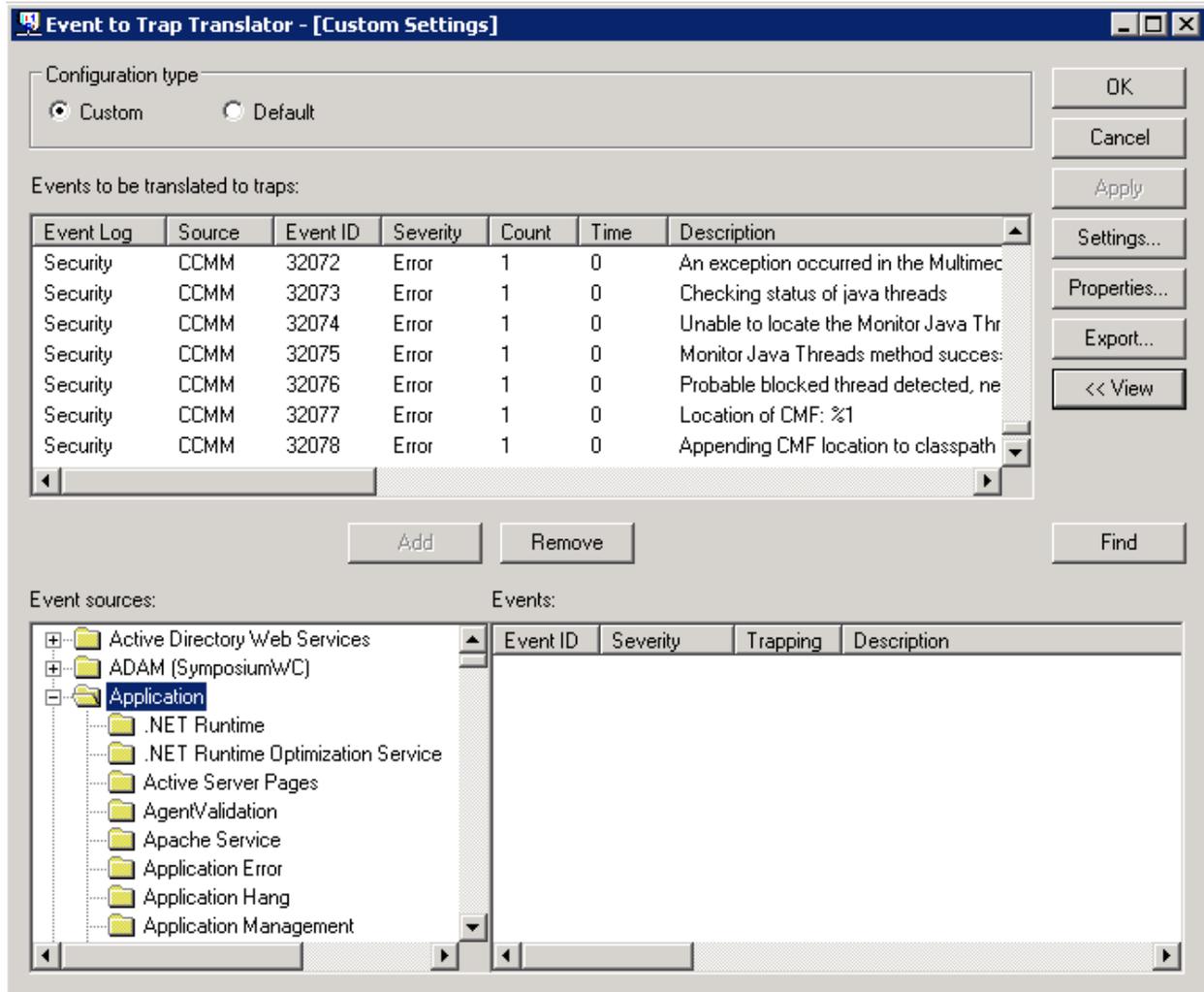
Click on **Start**, and enter **evntwin** in the search textbox. Click on the application icon from the search result to open its detail window.



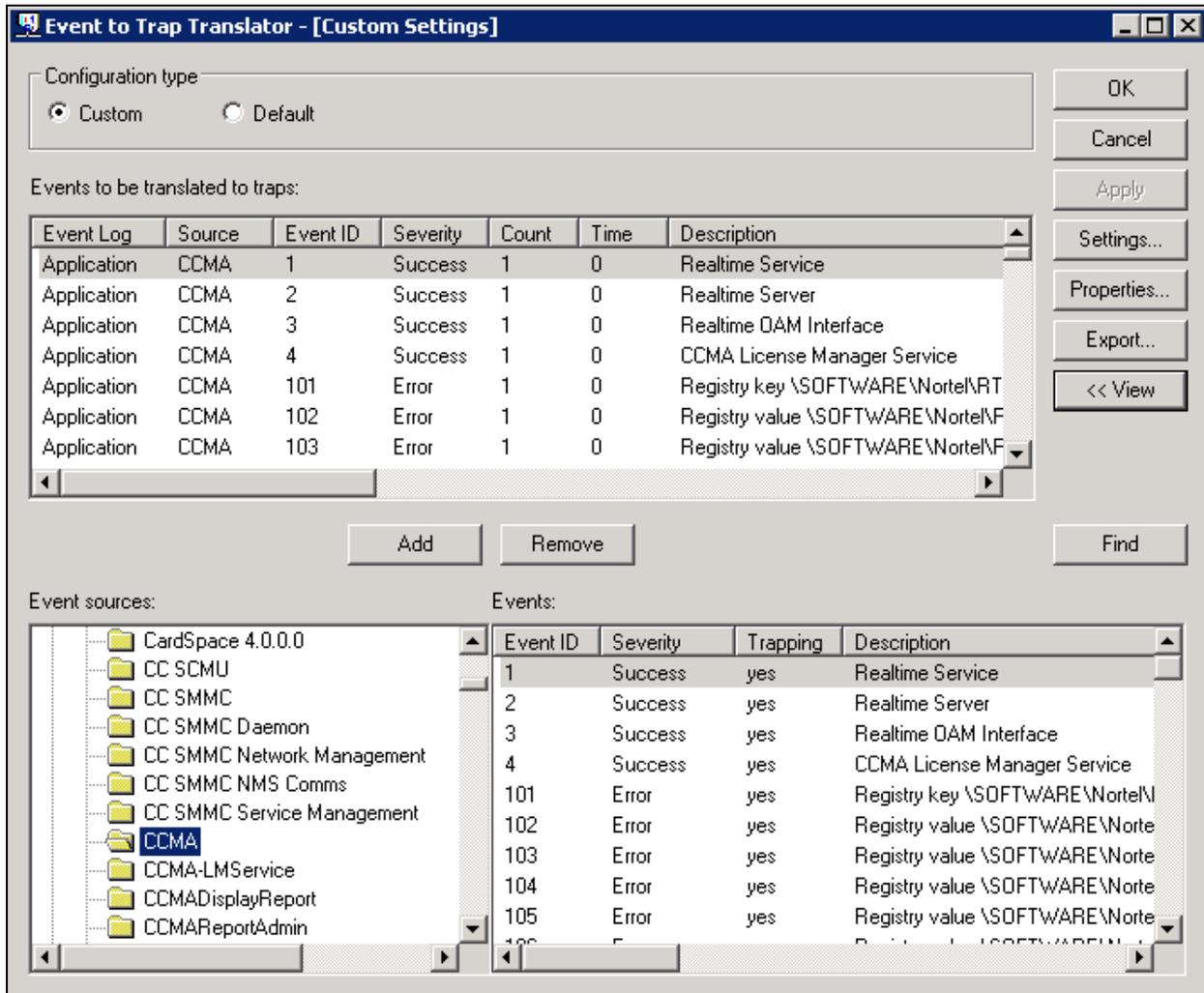
In the **Event to Trap Translator**, click on **Edit>>** button to edit list of events to be translated to:



In the **Event Sources** section, browse to **Application**.

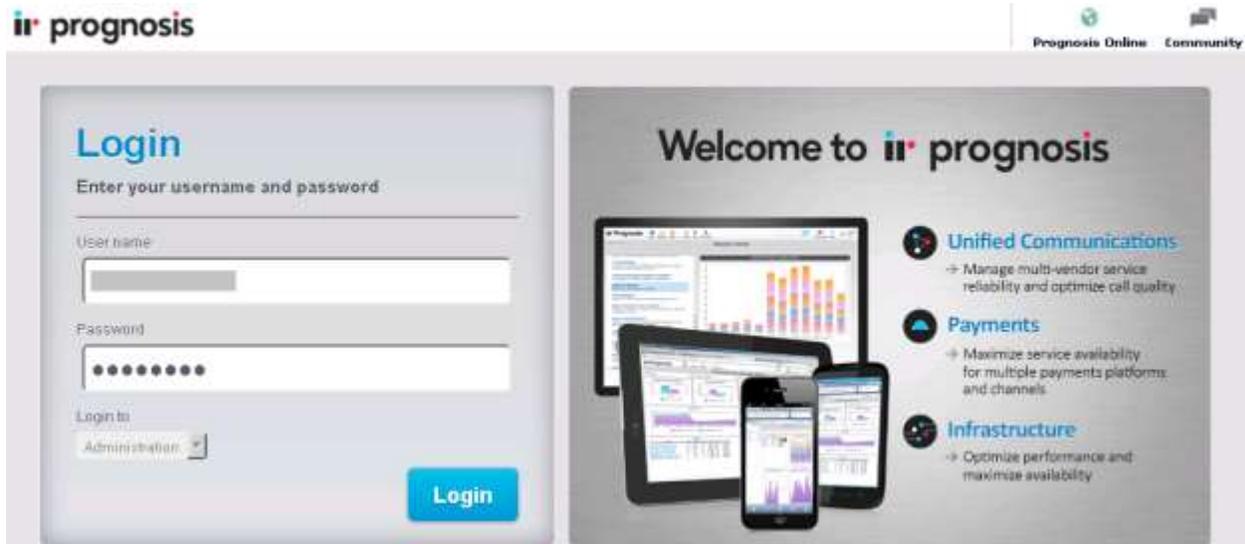


Expand the **Application** tree, and browse to the **CCMA** application. Highlight events that need to be translated in the **Events** window and click **Add** to add event into the list of **Events to be translated to traps** in the above section. During compliance test all events for CCMS, CCMA, LM, CCMM, CCT and Cache applications as listed in document **Avaya Aura® Contact Center Contact Center Event Codes (NN44400-713)** was selected. Click **OK** to save changes.

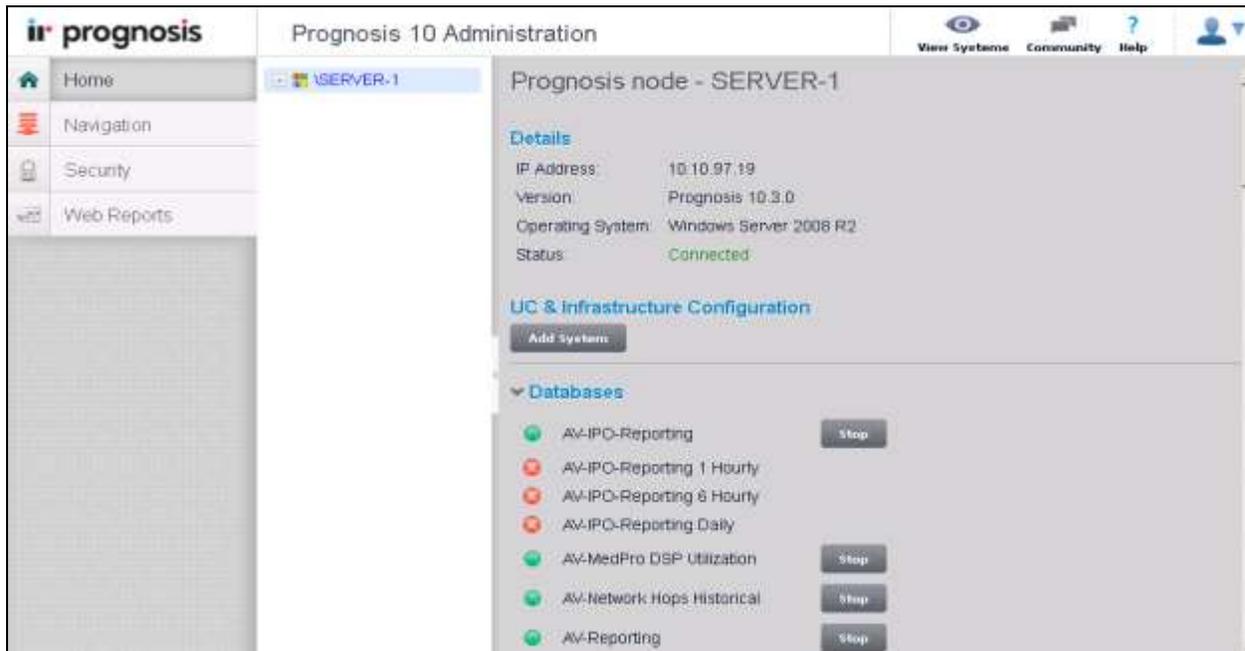


7. Configure Integrated Research Prognosis Unified Communication

This section describes the configuration of Prognosis required to interoperate with AACC. Log in to the Prognosis server with administrative privileges. Launch the Prognosis Administration by clicking **Start → All Programs → Prognosis → Administration** and log in with the appropriate password.

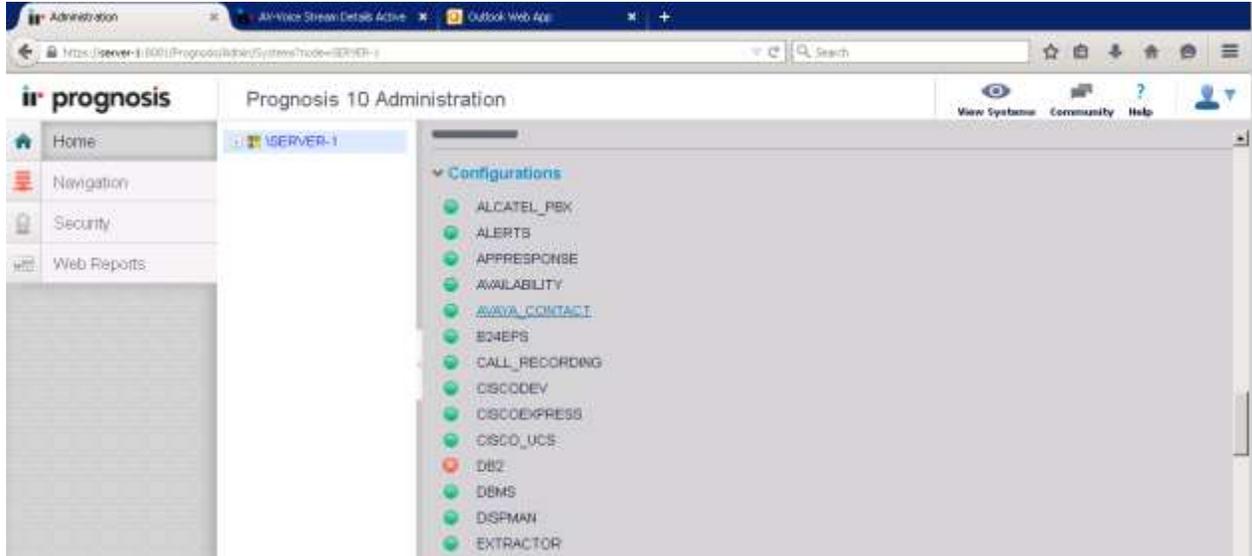


The **Prognosis 10 Administration** homepage is displayed as shown below.



7.1. Administer AVAYA_CONTACT Static Configuration

This section describes steps to add AACC into AVAYA_CONTACT static configuration. In the Prognosis home screen, scroll down to **Configurations** and click on **AVAYA_CONTACT** hyperlink (shown below) to open **Update Static Configuration AVAYA_CONTACT** page.



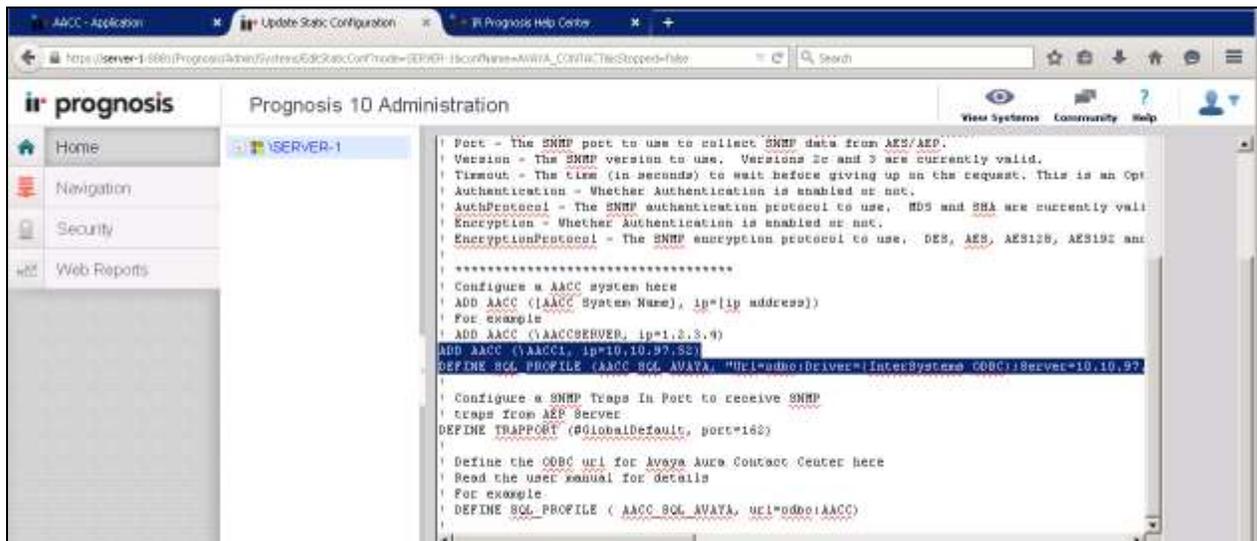
In the **Update Static Configuration AVAYA_CONTACT** page, add an entry for AACC using the following format:

- **ADD AACC** (\any_name, ip): enter any name for AACC and IP address of AACC.
- **DEFINE SQL_PROFILE** (AACC_SQL_AVAYA, "Url=odbc string to connect to AACC").

Example entries below were added during testing:

- **ADD AACC** (\AACC1, ip=10.10.97.52)
- **DEFINE SQL_PROFILE** (AACC_SQL_AVAYA, "Url=odbc:Driver={InterSystems ODBC};Server=10.10.97.52;DATABASE=CCMS_STAT;PORT=1972;UID=\$username\$;PWD=\$password\$")

Click on **Start** button (not shown) to save changes and return to the home page.



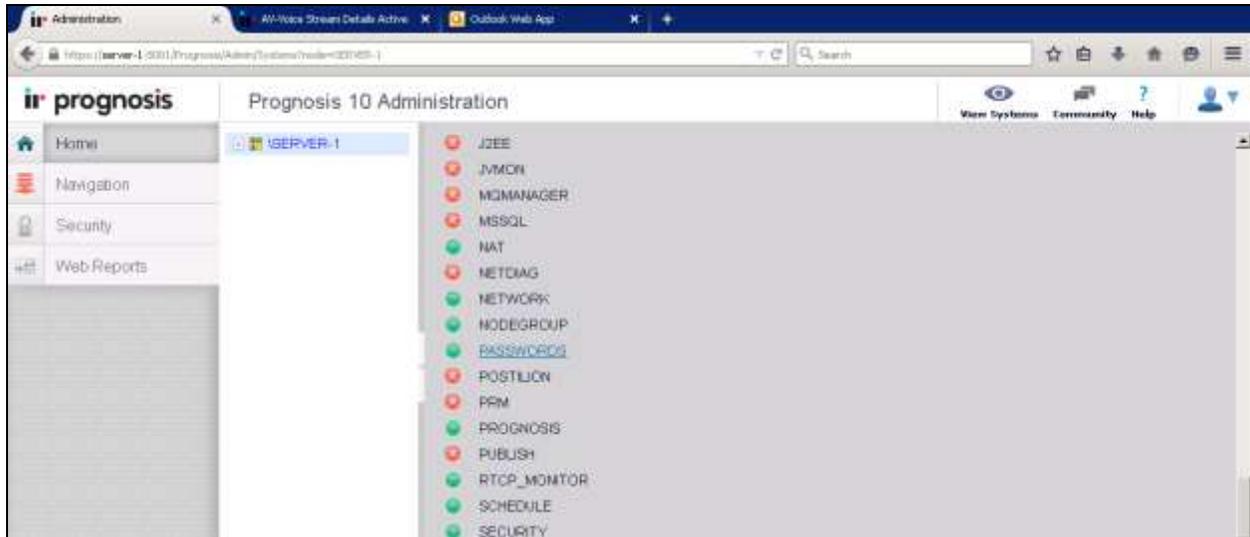
```
Port - The SNMP port to use to collect SNMP data from AES/AEP...
Version - The SNMP version to use. Versions 2c and 3 are currently valid.
Timeout - The time (in seconds) to wait before giving up on the request. This is an Opt
Authentication - Whether Authentication is enabled or not. MD5 and SHA are currently valid
Encryption - Whether Authentication is enabled or not.
EncryptionProtocol - The SNMP encryption protocol to use. DES, AES, AES128, AES192 and
*****
Configure a AACC system here
ADD AACC ([AACC System Name], ip=[ip address])
For example:
ADD AACC (\AACCSEVER, ip=1.2.3.4)
ADD AACC (\AACC1, ip=10.10.97.52)
DEFINE SQL_PROFILE (AACC_SQL_AVAYA, "Url=odbc:Driver={InterSystems ODBC};Server=10.10.97.52;DATABASE=CCMS_STAT;PORT=1972;UID=$username$;PWD=$password$")

Configure a SNMP Traps In Port to receive SNMP
traps from AES Server
DEFINE TRAPPORT (@GlobalDefault, port=162)

Define the ODBC url for Avaya Aura Contact Center here
Read the user manual for details
For example:
DEFINE SQL_PROFILE ( AACC_SQL_AVAYA, url="odbc:AACC")
```

7.2. Administer Password

On the home page, scroll down to **Configuration** section and click on **PASSWORDS**.



A list of password entries is displayed. In the compliance test the following entries were added:

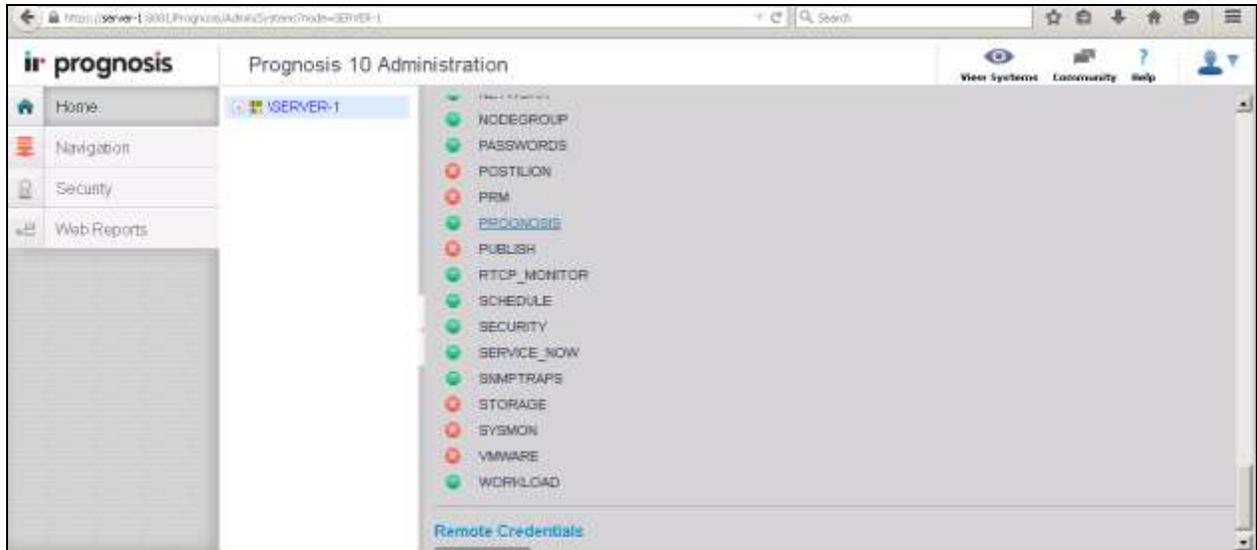
- **WMI: AVAYA_CONTACT:** AAC Name defined in above section, example **AACC1**.
- **Username:** enter Username used to login AACC Server in windows domain format – domain\username, example **aacc-ha1\administrator**.
- **Password:** enter the applicable window password.
- **AACC_SQL_AVAYA:** enter user name and password created in Section 6.1, in this case it is **test1**.
- **AACCRD:\AACC1:** enter user name and password created in Section 6.1, in this case it is **test1**.

Click **Update** to save changes and return to the home page.

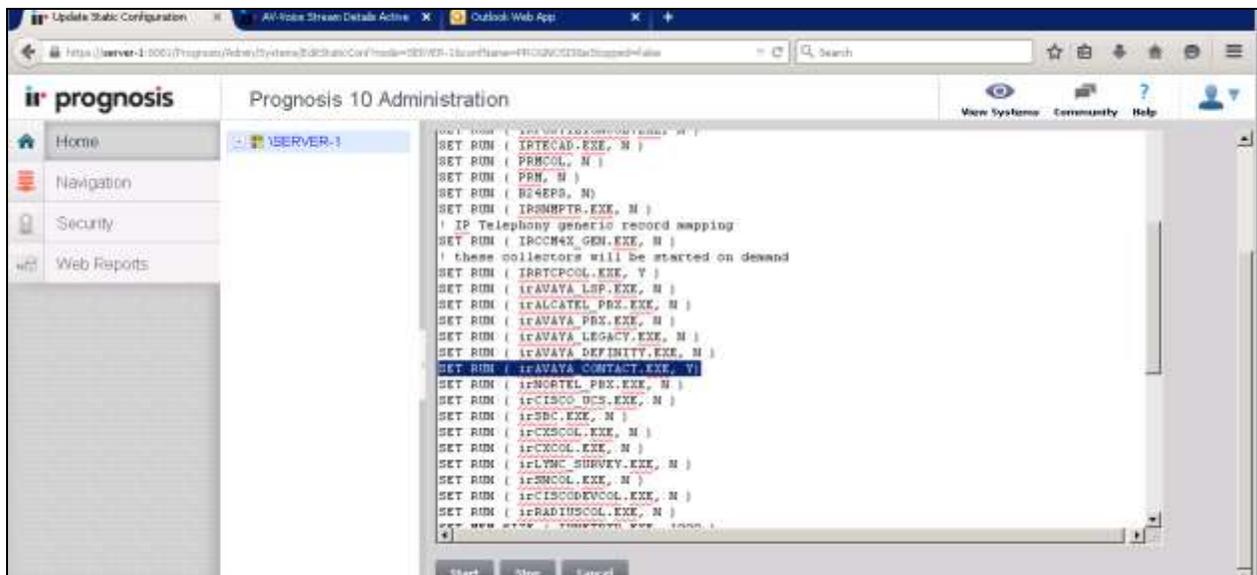


7.3. Start irAVAYA_CONTACT

On the home page, scroll down to **Configuration** section and click on **PROGNOSIS**.



In the updated page, make certain that **irAVAYA_CONTACT.EXE** is set to **Y** as shown below. Click **Start** to save change and start the module.



8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of AACC and Prognosis. Launch Prognosis View web user interface, by entering <https://ip-address:8081> in browser address bar where ip-address is Prognosis IP address, and enter appropriate login credential.

Browse to **Contact Center** → **Avaya Aura Contact Center** in the left navigation pane. The AACC server instance is displayed in the middle column. In the Avaya Aura Contact Center Servers pages show general status of monitored AACC as shown below.

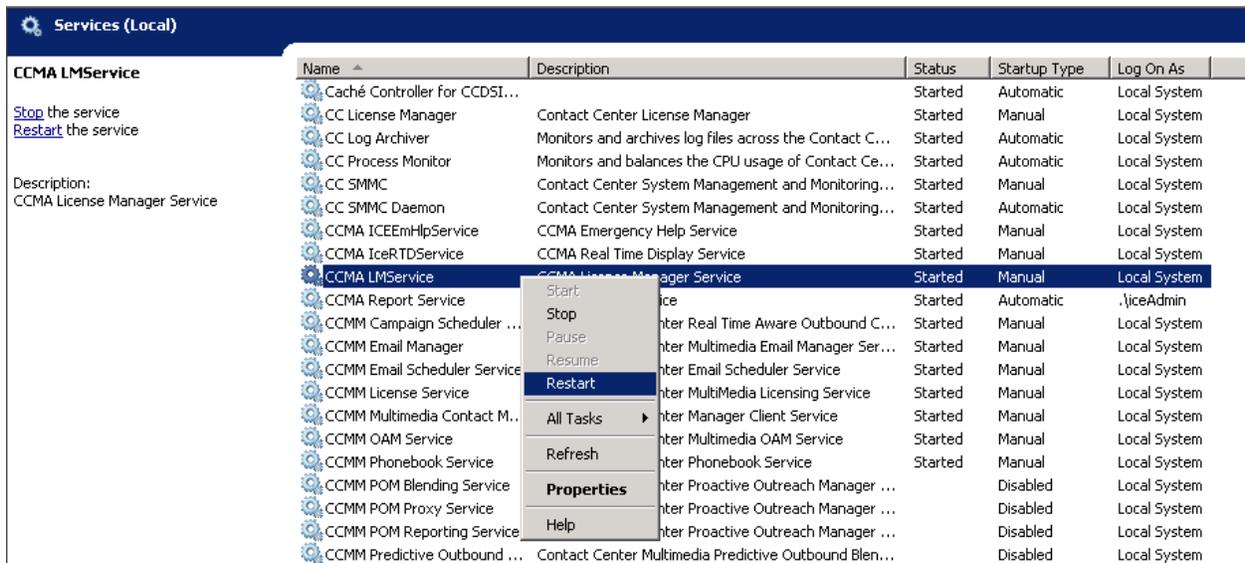
The screenshot displays the Prognosis web interface. The top navigation bar includes links for Home, Reports, Alerts, Excel Export, Add to Headup, Community, and Help. The main content area is titled "Avaya Aura Contact Center Servers" and shows a table of server status. The table has columns for AACC Server, IP Address, Status, CPU %, Mem %, and State Traps. The table contains one row with the following data:

AACC Server	IP Address	Status	CPU %	Mem %	State Traps
WAACC1	10.97.52	Up	3.00	12.00	12

Click on **Agents** to view status of agents, verify the status of all agents is displayed accurately.



On AACC Server, click **Start** → **All Programs** → **Administrator Tools** → **Services** to launch **Service** application, browse to **CCMA LMService** and restart service as shown below.



On Prognosis web-based application, click **AACC1 → SNMP** link to verify a list of SNMP traps were displayed on Prognosis SNMP traps page. Verify that there is an entry associated with the **CCMA LM Service** restart, as shown below.

Server	Event Code	Event Source	Severity	Host	User ID	Message
VAACC1	16323	NGen	Informational	AACC-HR1	Unknown	Event from RDC Out Internal Thread[] : Ressetting internal statistical data. Reseting data. System time = 3426400699. Remaining
VAACC1	61622	CCMA	Informational	AACC-HR1	Unknown	CCMA LM Service Stopped/Shutdown - All active CCMA LMService session licenses will be released.
VAACC1	16324	NGen	Informational	AACC-HR1	Unknown	Event from CC Process Monitor (iprotom.X) : Process LMService is not running or has exited.
VAACC1	61623	CCMA	Informational	AACC-HR1	Unknown	License manager interface has successfully retrieved the persistent license usage data from CCMA database (ADAM) at the startup.
VAACC1	61623	CCMA	Informational	AACC-HR1	Unknown	Request for License was granted: License Type: LM_RCV_USER UserID: CCMA Test:RCVLicenseTest.
VAACC1	16324	NGen	Informational	AACC-HR1	Unknown	Event from CC Process Monitor (iprotom.X) : Process LMService has started.
VAACC1	61625	CCMA	Informational	AACC-HR1	Unknown	Release of license successful: License Type: LM_RCV_USER UserID: CCMA Test:RCVLicenseTest.
VAACC1	61621	CCMA	Informational	AACC-HR1	Unknown	License Manager Interface initialization successful.
VAACC1	61621	CCMA	Informational	AACC-HR1	Unknown	CCMA LMService started.

9. Conclusion

These Application Notes describe the procedures for configuring Integrated Research Prognosis Unified Communications 10 to interoperate with Avaya Aura® Contact Center 6.4. During compliance testing, all test cases were completed successfully.

10. Additional References

The following Avaya documentations can be obtained on the <http://support.avaya.com>.

- [1] *Avaya Aura® Contact Center Contact Center Event Codes*, NN44400-713 Standard 4.2 May 2013.
- [2] *Avaya Aura® Contact Center Server Administration Release 6.4*, NN44400-610 December 2014.

The following Prognosis documentations are provided by Integrated Research. Documents are also provided in the online help that comes with the software Package.

- [3] *Prognosis 10 Deployment and Installation Guide*, 31st October 2013.

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