Avaya Solution & Interoperability Test Lab

Application Notes for Afiniti with Avaya Aura® Application Enablement Services, Avaya Aura® Communication Manager and Avaya Call Management System – Issue 1.1

Abstract

These Application Notes contain interoperability instructions for Afiniti with Avaya Aura® Application Enablement Services, Avaya Aura® Communication Manager and Avaya Call Management System to successfully interoperate with release 7.0 through 7.1.3 versions of the products, prior to the implementation of Special Application (SA) 9137, in line with standard DevConnect policies for forward-looking interoperability vs. the specific release tested herein.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

This document contains a sample configuration that was used for interoperability compliance testing between Afiniti and Avaya products. The tested configuration only reflects interoperability with releases 7.0 through 7.1.3, and excludes interoperability as implemented through Special Application (SA) 9137 Externally Controlled Distribution (ECD). For details on SA9137 please refer to Avaya Application Note "*Application Notes for Afiniti ECD Integration*", Issue 1.1, July 2018 available on www.avaya.com/support.

2. General Test Approach and Test Results

Interoperability testing contained functional tests that tested the following interfaces/products:

- Avaya Aura® Application Enablement Services – TSAPI Interface
- Avaya Aura® Application Enablement Services – SMS Interface
- Avaya Call Management System – ODBC, ECH Interface
- Avaya Call Management System – RT Socket Interface
- Avaya Call Management System – CMS Web/CMS Supervisor for custom reports

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

During Interoperability Compliance testing, call center call routing scenarios were tested along with CMS reports that were impacted by Afiniti taking control of calls. Alternative CMS reports were tested on Afiniti Reporting Portal with no impact. Scenarios that were tested are, Afiniti's ability to:

- Monitor agent status and Skill Levels
- Queue calls in single and multiple skills
- Deliver calls to single skill and multi-skill agents
- Deliver calls to agents based on algorithms similar to Avaya's UCD-MIA, EAD-MIA, UCD-LOA, EAD-LOA and Service Objective
- Route calls based on specific caller number (ANI)
- Route calls based on Afiniti estimated wait-time, number of calls in queue and time of the day check
- Route calls in compatible with Avaya's converse-on command
- Route calls based on agent skill levels and call priorities in a queue
- Synchronize agent skill level in Afiniti by using Avaya's SMS service
- Connect with multiple CTI links (single or multiple AESs)
- Load balance calls using Single site and Multi-Site BSR equivalent functionality
- Handle routing race conditions using RONA via Coverage path on a VDN.

- Support adjunct (vector) fail-safe mechanism with and without UUI based Afiniti integration
- Support wait-time threshold mechanisms for both agents and caller surplus scenario for Afiniti intelligent call routing.
- Not to impact VDN label information using Avaya configuration
- Support for Fail-Safe scenarios
- Insert custom tables into CMS database
    - Afiniti inserts impacted data into custom tables
- Generate custom reports to be viewed in CMS Web or Afiniti portal

Please note that performance testing or load testing were not part of this test effort.

2.2. Test Results

All planned test cases were passed with following observations:

- Since call routing capabilities are taken over by Afiniti, all calls are routed to agents based on algorithms configured in Afiniti. During compliance, testing algorithms that are similar to Avaya's methods UCD-MIA, EAD-MIA, UCD-LOA, EAD-LOA and Service Objective were tested. Also, BSR equivalent functionality was also tested for Single Site and Multi Site configurations.
- Since call routing capabilities are taken over by Afiniti, all calls are queued in Afiniti. Queue statistics like number of calls in queue and EWT based announcements/routing are also tested.
- Afiniti's ability of routing calls to single skill or multiple skills are also tested and with Agent skill level and call priorities.
- Afiniti routing is also tested with Avaya's converse-on command.
- Afiniti's ability to automatically synchronize agent skill level periodically
- Afiniti has the ability to connect with different CTI links. This allows Afiniti to integrate with different AES and can route calls to multiple sites.
- Since calls are queued in Afiniti and not in Avaya, Fail-Safe scenarios are also tested in which if Afiniti goes down or CTI link disconnects, then calls are queued and route by Avaya.
- Due to the call routing capabilities taken over by Afiniti, CMS Reports that are related to Split/Skill and Agent are impacted. Real time reports are provided by Afiniti and viewed on Afiniti portal. For Historical Reports, custom tables are inserted into CMS database and custom reports are defined by Afiniti, which can be viewed on CMS Web or CMS Supervisor.
- Though the data on custom CMS Reports, which is impacted by Afiniti, was verified, Avaya is not responsible for the accuracy of the data that is provisioned in CMS reports by Afiniti.
- Avaya is not responsible for the state of data in custom tables nor the maintenance of custom tables inserted by Afiniti
- In a scenario where all the data is lost (system or hard drive crash) on CMS and a restore is performed on the Database, Afiniti will need to insert the custom tables, in order for the data to be restored.

- Post CMS upgrade (to a future release), custom tables may have to be re-examined by Afiniti as these tables are not part of CMS upgrade process.
- Afiniti acts as a proxy for RT Socket feed. Afiniti modifies the RT Socket feed to insert Skill/Split and Agent data. Though verified, Avaya is not responsible for any data that is inserted by Afiniti.

2.3. Support

Support for Afiniti can be obtained via following means:
Email address: afinitihelpdesk@afiniti.com
Toll free numbers:
855.625.4193 (US)
800.998.7006 (UK)

3. Reference Configuration

Figure 1 illustrates a sample configuration that consists of Avaya Products and Afiniti.

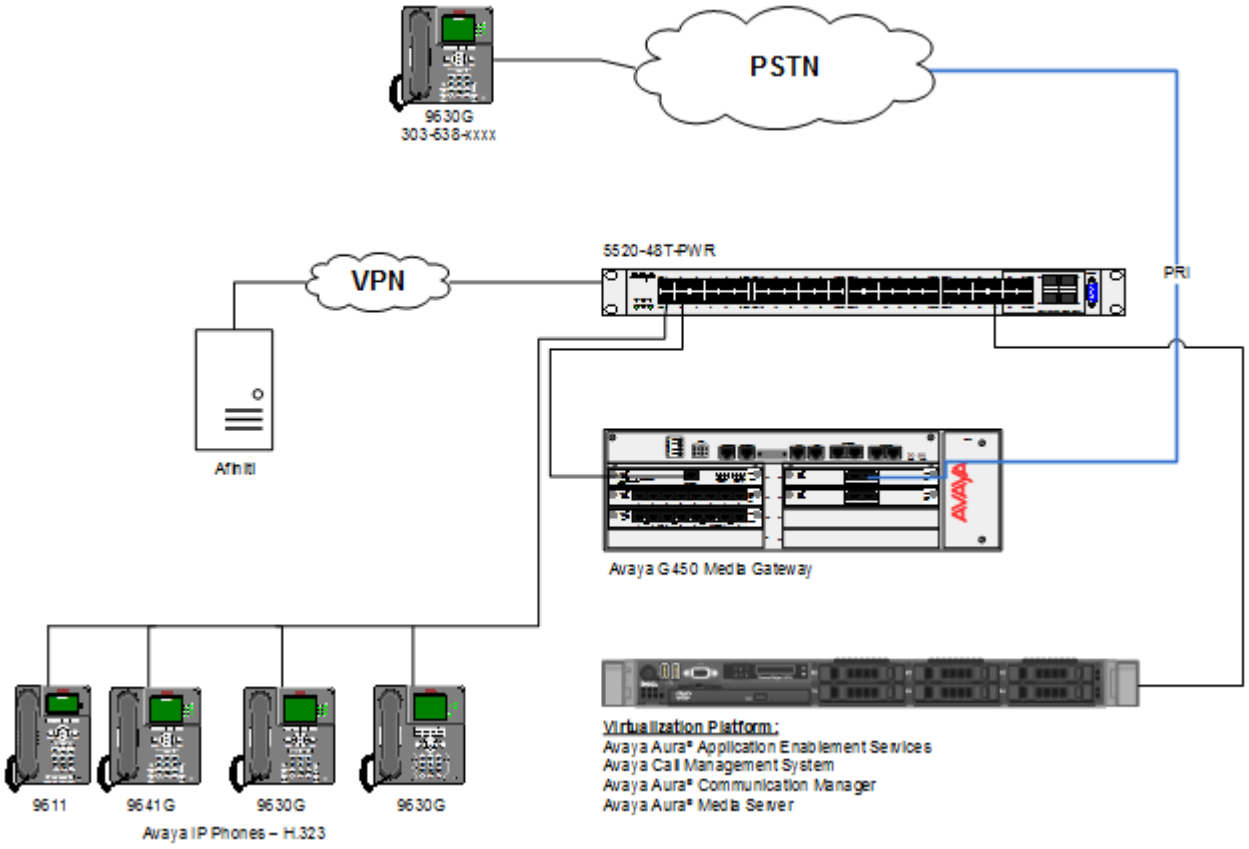


Figure 1: Test Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® Communication Manager	7.0.1.2.0 R017x.00.0.441.0 Build 23384
Avaya G450 Media Gateway	37.19.0
Avaya Aura® Application Enablement Services	7.0.1.0.0.15-0
Avaya Call Management System	cms-R18.0.0.0-fa.b
Avaya Aura® Media Server	v.7.7.0.359
Afiniti	3.9.17.3503

5. Configure Avaya Aura® Communication Manager

This section contains steps necessary to configure Afiniti successfully with Avaya Aura® Communication Manager.

All configurations in Communication Manager were performed via SAT terminal.

The table below shows a sample call center data that was used during compliance testing.

Station	Agent	Hunt Group/Extension	VDN	Vector
11001	1101	1/12001	12101	1
11002	1102	2/12002	12102	2
11003	1103	3/12003	12103	3
11004	1104			
11005	1105			

Table 1: Sample Data

5.1. Configure Stations

Use **add station *n*** command to add a station, where ***n*** is an available station extension. Configure the station as follows, on Page 1:

- In **Name** field, enter a descriptive name
- Set **Type** to the type of the telephones
- Enter a **Security Code**
- Set **IP SoftPhone** to **y**

```
add station 11001                                          Page   1 of   5
                                    STATION

Extension: 11001                        Lock Messages? n               BCC: M
     Type: 9630                         Security Code: *                TN: 1
     Port: S00104                     Coverage Path 1: 1               COR: 1
     Name: h3232station1              Coverage Path 2:                 COS: 1
                                      Hunt-to Station:               Tests? y
STATION OPTIONS
                 Location:                   Time of Day Lock Table:
              Loss Group: 19         Personalized Ringing Pattern: 1
                                                Message Lamp Ext: 11001
           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
```

One Page 4, under **BUTTON ASSIGNMENTS**, add **call-disp, auto-in, after-call, manual-in** and **logout,** as shown below:

```
add station 11001                                          Page   4 of   5
                                    STATION
 SITE DATA
       Room: D4-H30                                        Headset? n
       Jack:                                               Speaker? y
      Cable:                                              Mounting: d
      Floor: 4                                          Cord Length: 0
   Building: D                                            Set Color:

ABBREVIATED DIALING
     List1:                     List2:                      List3:

BUTTON ASSIGNMENTS
 1: call-appr                            5: auto-in              Grp:
 2: call-appr                            6: aux-work     RC:     Grp:
 3: call-appr                            7: after-call           Grp:
 4: call-disp                            8: manual-in            Grp:

                                                 Customizable Labels? y
```

5.2. Configure Hunt Group

Use **add hunt-group *n*** command to add a hunt group, where ***n*** is an available hunt group. On Page 1:

- In the **Group Name** filed, enter a descriptive name.
- Set **ACD, Queue, Vector** to **y.**
- Enter an available **Group Extension**

```
add hunt-group 1                                               Page   1 of   4
                                  HUNT GROUP

           Group Number: 1                                 ACD? y
             Group Name: Skill 1                         Queue? y
        Group Extension: 11001                          Vector? y
             Group Type: ucd-mia
                     TN: 1
                    COR: 1                       MM Early Answer? n
          Security Code:                   Local Agent Preference? n
 ISDN/SIP Caller Display:

            Queue Limit: unlimited
 Calls Warning Threshold:      Port:
  Time Warning Threshold:      Port:
```

On Page 2, set **Skill** to **y** and **Measured** to **both.**

```
add hunt-group 1                                               Page   2 of   4
                                  HUNT GROUP

                   Skill? y      Expected Call Handling Time (sec): 20
                     AAS? n        Service Level Target (% in sec): 80 in 20
                Measured: both
     Supervisor Extension:


      Controlling Adjunct: none


        VuStats Objective:

   Multiple Call Handling: none


 Timed ACW Interval (sec): 1        After Xfer or Held Call Drops? n
```

5.3. Configure Agents

User **add agent-loginID *n*** to add an agent, where ***n*** is an available agent id. On Page 1:

- In the **Name** field, type in a descriptive name
- Enter password in **Password** and **Password (enter again)**

```
add agent-loginID 1101                                    Page   1 of   2
                                AGENT LOGINID

               Login ID: 1101                                 AAS? n
                   Name: IP Agent 1                         AUDIX? n
                     TN: 1        Check skill TNs to match agent TN? n
                    COR: 1
          Coverage Path: 1                          LWC Reception: spe
          Security Code:                      LWC Log External Calls? n
          Attribute:                         AUDIX Name for Messaging:

                                       LoginID for ISDN/SIP Display? n
                                                           Password: 12345
                                           Password (enter again): 12345
                                                     Auto Answer: none
                                                  MIA Across Skills: system
 AUX Agent Considered Idle (MIA)? n          ACW Agent Considered Idle: system
                                             Aux Work Reason Code Type: system
                                               Logout Reason Code Type: system
                        Maximum time agent in ACW before logout (sec): system
```

On Page 2, set skill number and skill level in **SN** and **SL** fields. Skill number is the hung group that was added in previous section.

```
add  agent-loginID 1101                                    Page   2 of   2
                                AGENT LOGINID
      Direct Agent Skill:                            Service Objective? n
Call Handling Preference: skill-level              Local Call Preference? n

    SN   RL SL          SN   RL SL
 1: 1       1       16:
 2: 2       1       17:
 3:                 18:
 4:                 19:
 5:                 20:
 6:
 7:
 8:
 9:
10:
11:
12:
13:
14:
```

5.4. Configure Vectors

Use **change vector *n*** to configure a Vector, where ***n*** is an available Vector number. For test scenarios, two Vectors were used during compliance test. Vector 1 had a step that pointed to Vector 3, for sanity tests. Both Vectors were configured as follows:

```
change vector 1                                              Page   1 of   6
                                CALL VECTOR

    Number: 1                Name: Afiniti Queu1
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 wait-time    2   secs hearing ringback
02 goto vector  3    @step 1  if unconditionally
03 goto step    5             if available-agents in skill 1            >  ZZ
04 goto step    6             if SF               =      1
05 queue-to     skill 1    pri h
06 adjunct      routing link 2
07 wait-time    0   secs hearing music
08 wait-time    30  secs hearing music
09 goto step    2             if SF               =      1
10 goto step    8             if unconditionally
11 stop
12

                       Press 'Esc f 6' for Vector Editing
```

Please note that in **step 5** in the Vector was added as a failover step. In a scenario where Afiniti is unavailable, calls will route or queue based on Avaya's algorithm.

```
change vector 3                                              Page   1 of   6
                                CALL VECTOR

    Number: 3                Name: Afiniti Sanity
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 goto step    6             if SE               =      0
02 set          SS     = none   CATR  0
03 adjunct      routing link 2
04 wait-time    3   secs hearing music
05 goto step    9             if SS               =      1
06 set          SF     = none   CATR  0
07 return
08
09 set          SF     = none   CATR  1
10 return
```

Vector variable definitions are as follows:

```
change variables
                              VARIABLES FOR VECTORS

Var Description                 Type    Scope Length Start Assignment       VAC
SE  Afinti Global Check         collect G     16     1     1
SF  Afiniti Sanity Flag         collect L     16     1
SS  Sanity_Check                asaiuui L     1      50
SW  Afiniti EWT                 collect L     16     1
SZ  Afiniti second fail safe    collect G     16     1     10
YF  Afiniti                     collect L     16     1
ZZ  2ND FAILSAFE                collect G     16     1     10
```

5.5. Configure VDN

Use **add vdn *n*** to add a vdn, where ***n*** is an available vdn extension**.** On Page 1:

- In the **Name** field, enter a descriptive name
- In the **Destination** field, set **Vector Number** to the vector configured earlier in this document. i.e., Vector Number 1.
- Set **Measured** to **both**

```
change vdn 12101                                              Page   1 of   3
                            VECTOR DIRECTORY NUMBER

                              Extension: 12101
                                  Name*: VDN 1
                            Destination: Vector Number        1
                     Attendant Vectoring? n
                    Meet-me Conferencing? n
                      Allow VDN Override? n
                                    COR: 1
                                    TN*: 1
                               Measured: both     Report Adjunct Calls as ACD*? n
        Acceptable Service Level (sec): 20

        VDN of Origin Annc. Extension*:
                            1st Skill*:
                            2nd Skill*:
                            3rd Skill*:
```

5.6. Configure CMS connection

Use **change node-names ip** command to add an entry to CMS. Type in a **Name** for CMS and CMS IP address in **IP Address.**

```
change node-names ip                                          Page   2 of   2
                                  IP NODE NAMES
    Name              IP Address
acms                10.64.110.18

( 16 of 26   administered node-names were displayed )
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name
```

Use **change communication-interface processor-channels** command to add a TCP connection for CMS. On an available processor channel line:

- Set **Enable** to **y**
- Set **App.** To **mis**
- Set **Mode** to **s**
- Set **Interface Link/Chan** to **pv4** and **CMS** respectively
- Set **Session Local/Remote** to available session ids

```
change communication-interface processor-channels                Page   1 of  24
                        PROCESSOR CHANNEL ASSIGNMENT
Proc                  Gtwy      Interface          Destination      Session   Mach
Chan Enable   Appl.    To  Mode Link/Chan        Node        Port  Local/Remote ID
  1:   y    mis             s    pv4 5001  acms             0      1     1
```

5.7. Configure AES connection

Use **change ip-services** command to add an entry for AES. On Page 1,

- In the **Service Type** field, type **AESVCS**.
- In the **Enabled** field, type **y**.
- In the **Local Node** field, type the Node name **procr** for the Processor Ethernet Interface.
- In the **Local Port** field, use the default of **8765**.

```
change ip-services                                               Page   1 of   4

                                    IP SERVICES
 Service      Enabled      Local        Local       Remote      Remote
  Type                     Node         Port        Node        Port
AESVCS         y       procr            8765
```

On Page 4 of the IP Services form, enter the following values:

- In the **AE Services Server** field, type the name obtained from the Application Enablement Services server.
- In the **Password** field, type a password to be administered on the Application Enablement Services server.
- In the **Enabled** field, type **y**.

```
                        AE Services Administration

 Server ID    AE Services       Password          Enabled    Status
                 Server
    1:      aes               *                    y        in use
    2:      aes10210          *                    y        in use
```

5.8. Configure CTI Link

Use **add cti-link *n*** command, where ***n*** is an available CTI link number.

- In the **Extension** field, type in an available extension number
- In the **Type** field, type **ADJ-IP**.
- In the **Name** field, type a descriptive name.

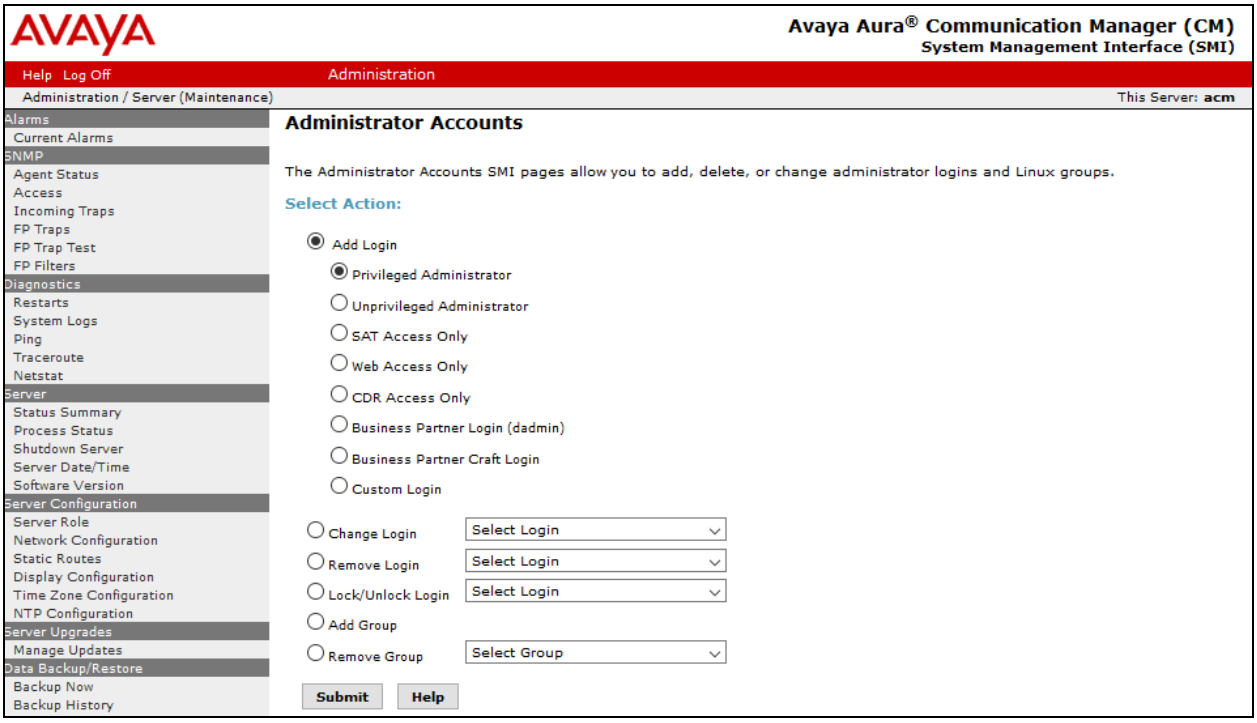
```
add cti-link 2                                              Page   1 of   3
                                   CTI LINK
 CTI Link: 2
Extension: 19998
     Type: ADJ-IP
                                                                      COR: 1
     Name: aes10210
```

5.9. Configure SMS User

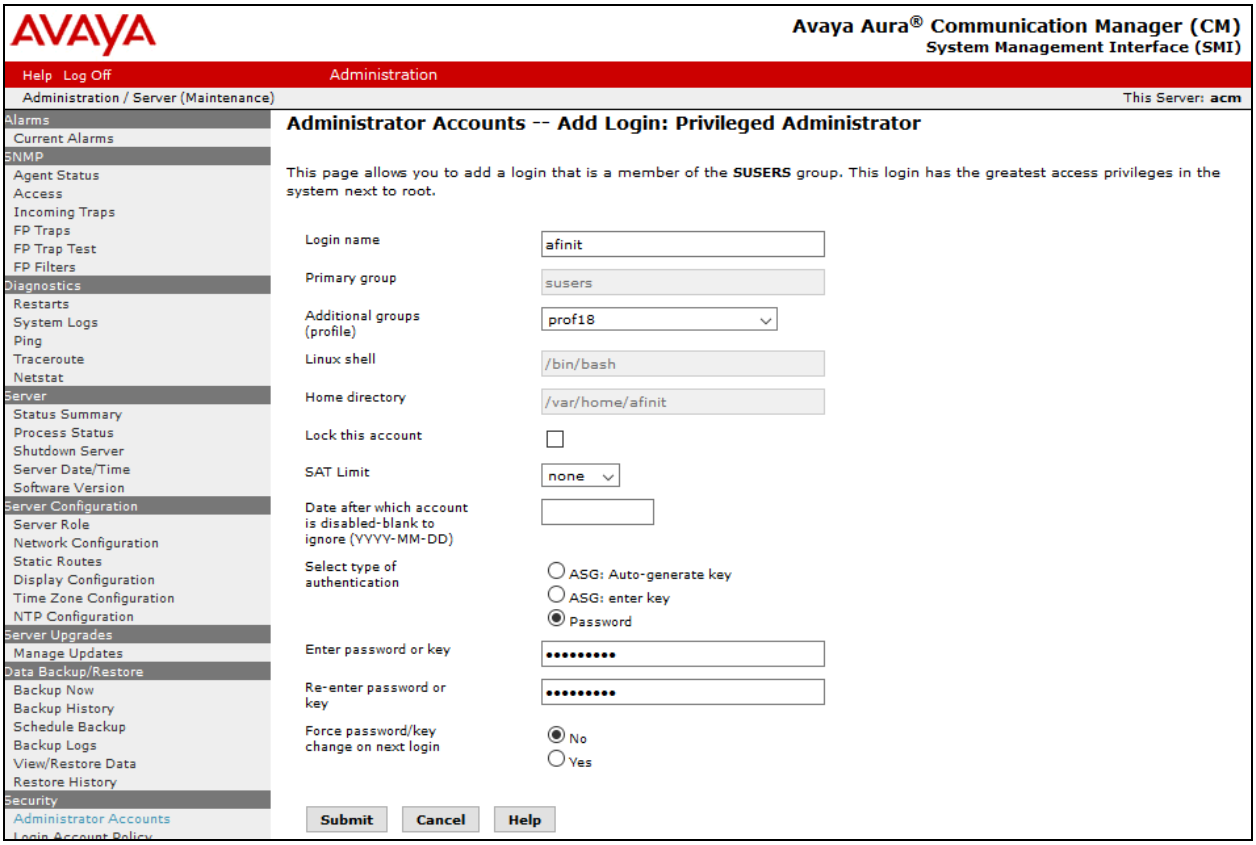
User profile 18 was used for SMS User. This profile is one of the default profiles.

```
list user-profiles

                                USER PROFILES

                  Extended
    Profile        Profile     User Profile Name
      0              n         services super-user
      1              n         services manager
      2              n         business partner
      3              n         services
      16             n         call center manager
      17             n         snmp
      18             n         customer super-user
      19             n         customer non-super-user
```

Log onto Communication Manager System Management Interface via a browser, http://<IP-Address>, where IP-Address is the IP Address of Communication Manager. Navigate to **Administration → Server (Maintenance) → Administrator Accounts,** and select **Add Logon → Privileged User**.



Type in a desired **Login Name**, Select **prof18** for **Additional Groups** and type in password in **Enter password or key** and **Re-enter password or key.**



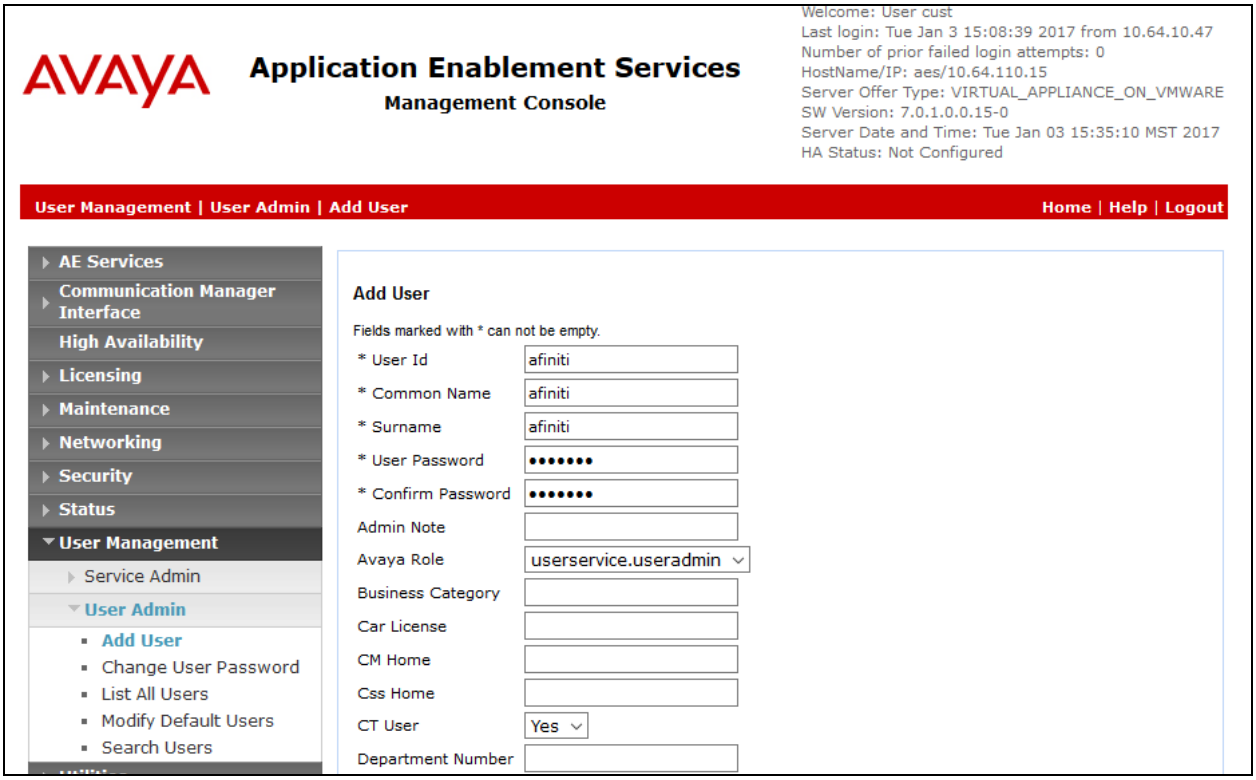
6. Configure Avaya Aura® Application Enablement Services

Configuration of Avaya Aura® Application Enablement Services requires a user account be configured for Afiniti.

6.1. Configure User

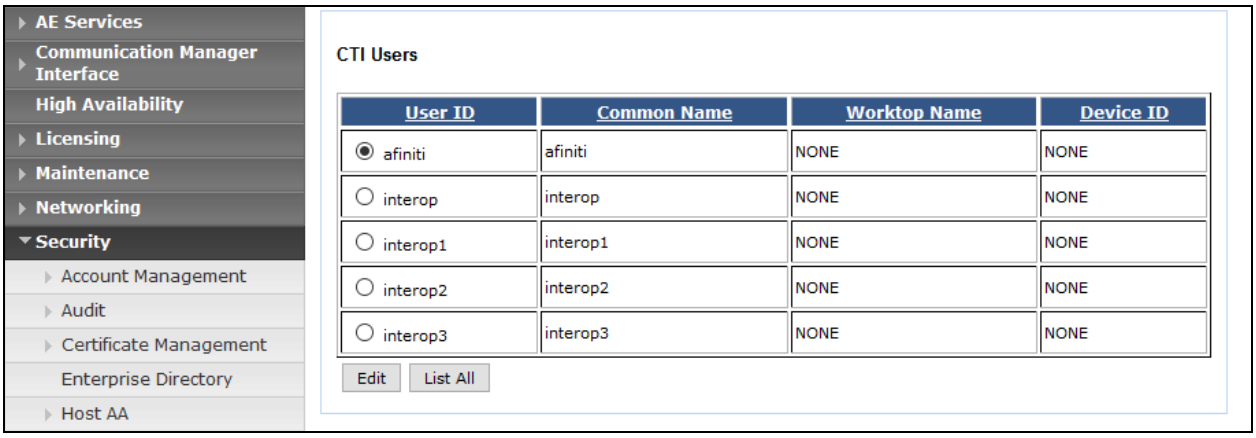
All administration is performed by web browser, https://<aes-ip-address>/

A user needs to be created for Afiniti to communicate with AES. Navigate to **User Management → User Admin → Add User**.

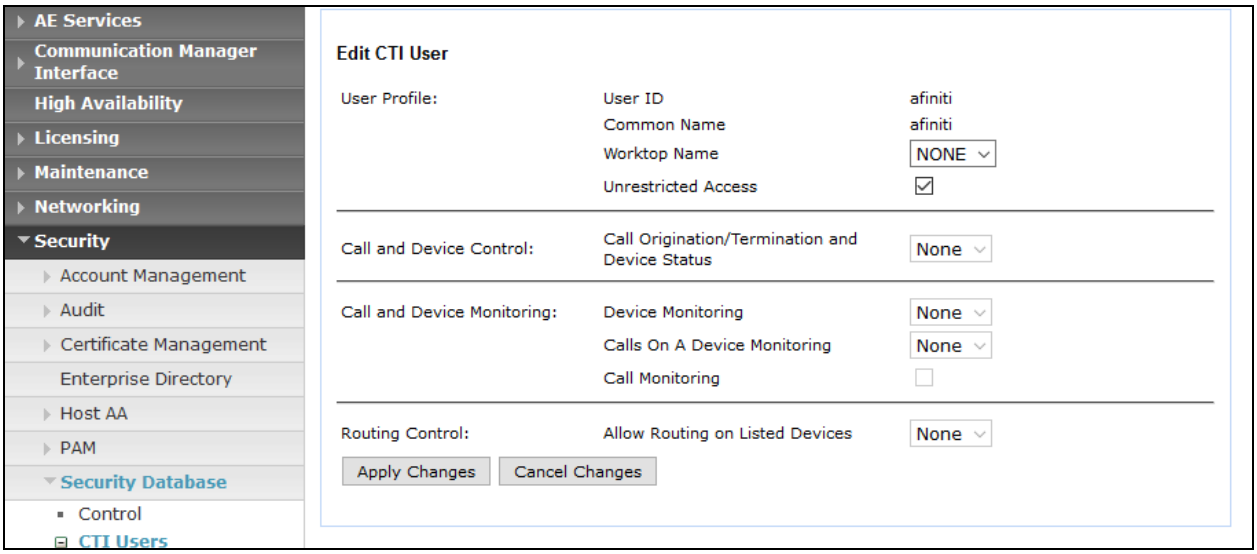


Fill in **User Id, Common Name, Surname, User Password** and **Confirm Password**. Set **Avaya Role** to **userservice.useradmin** and set the **CT User** to **Yes,** and **Apply**.

Navigate to **Security → Security Database → CTI Users → List All Users**.

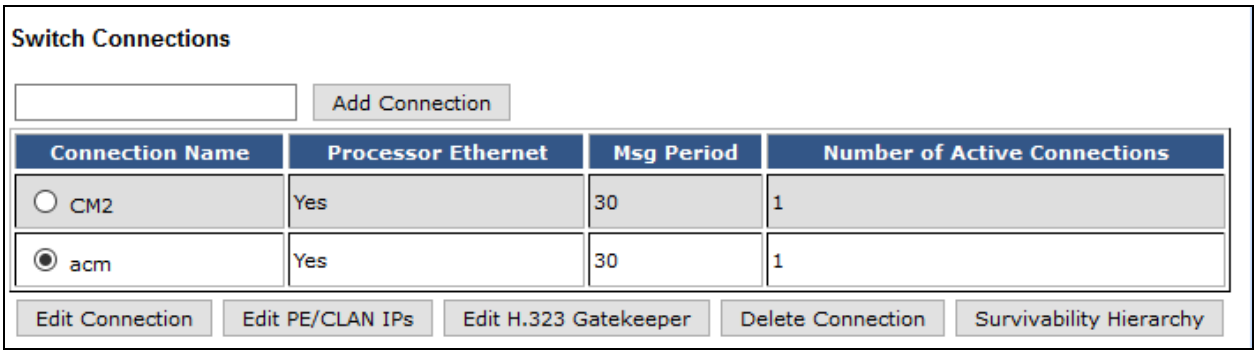


Select the recently added user and click **Edit**. Check the box for **Unrestricted Access** and click **Apply Changes**.

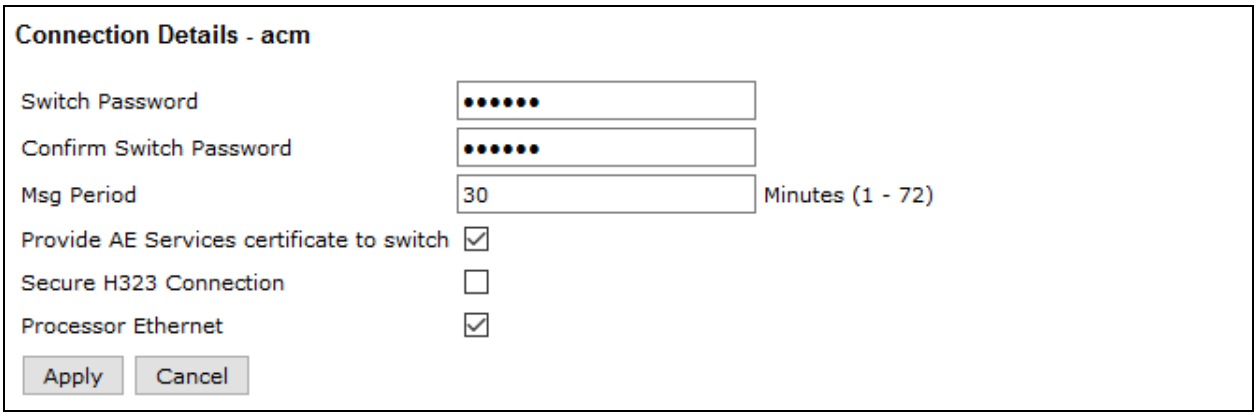


6.2. Configure Communication Manager Switch Connections

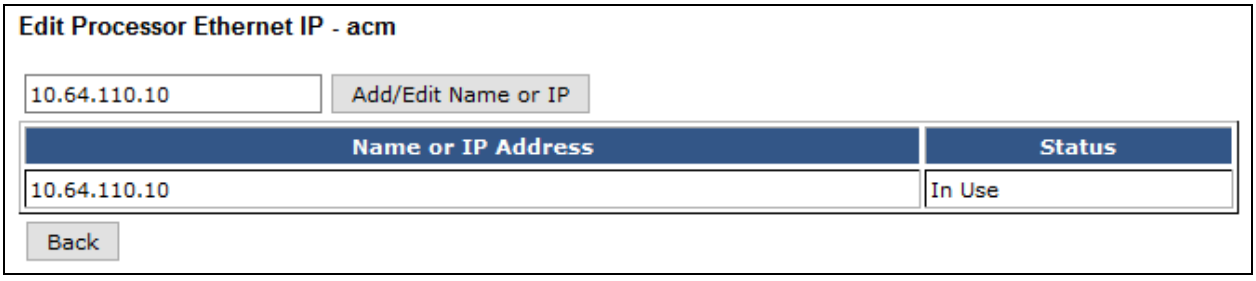
To add links to the Communication Manager, navigate to the **Communication Manager Interface → Switch Connections** page and enter a name for the new switch connection and click the **Add Connection** button. This was previously configured as **TR18300** for this test environment:



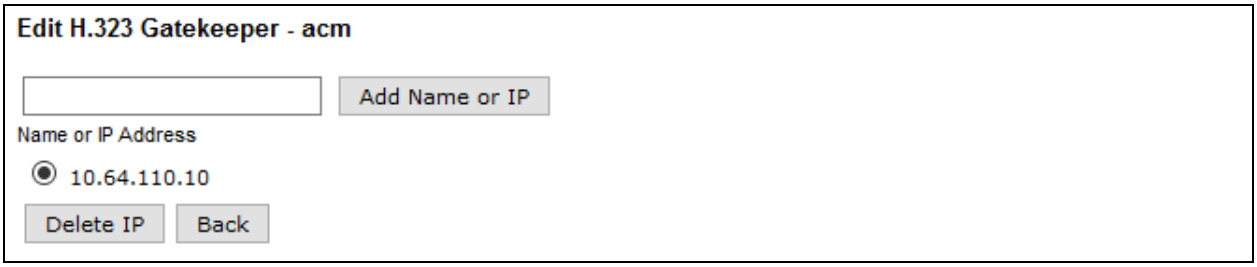
Use the **Edit Connection** button shown above to configure the connection. Enter the **Switch Password** and check the **Processor Ethernet** box if using the **procr** interface, as shown below. This must match the password configured when adding AESVCS connection in Communication Manager.



Use the **Edit PE/CLAN IPs** button (shown in this section's first screen shot above) to configure the **procr** or **CLAN** IP Address (es) for TSAPI message traffic.



Use the **Edit H.323 Gatekeeper** button (shown in this section's first screen capture above) to configure the **procr** or **CLAN** IP Address (es).



6.3. Configure TSAPI Link

Navigate to the **AE Services → TSAPI → TSAPI Links** page to add the TSAPI CTI Link. Click **Add Link** (not shown).

Select a **Switch Connection** using the drop down menu. Select the **Switch CTI Link Number** using the drop down menu. The **Switch CTI Link Number** must match the number configured in the **cti-link** form for Communication Manager.

If the application will use Encrypted Links, select **Encrypted** in the **Security** selection box.

Click **Apply Changes**.

Configuration shown below was previously configured.

7. Configure Avaya Call Management System

This section covers the configuration of Call Management System to communicate to Communication Manager. Configuration for RT_Socket and ECH interface is performed by Avaya Professional Services and is not shown in this document.

7.1. Configure ACD for Communication Manager

Telnet or SSH into Call Management System, using proper credentials and log in as root.

- Type in **cmssvc** command to view the Avaya Call Management System Service Menu.
- Select **4, Turn Avaya CMS on or off,** to go to the CMS service menu.

```
(acms)-(root)=# cmssvc

 Avaya(TM) Call Management System Services Menu

Select a command from the list below.
   1) auth_display Display feature authorizations
   2) auth_set     Authorize capabilities/capacities
   3) run_ids      Turn Informix Database on or off
   4) run_cms      Turn Avaya CMS on or off
   5) setup        Set up the initial configuration
   6) swinfo       Display switch information
   7) swsetup      Change switch information
   8) patch_inst   Install a single CMS patch from CD
   9) patch_rmv    Backout an installed CMS patch
  10) load_all     Install all CMS patches found on CD
  11) back_all     Backout all installed CMS patches from machine
Enter choice (1-11) or q to quit: 4
```

- Select **2, Turn off CMS but Leave IDS running.**

```
Select one of the following
  1) Turn on CMS
  2) Turn off CMS but Leave IDS running
  3) Turn off both CMS and IDS
Enter choice (1-3): 2
```

- Wait until CMS is shut down; **CMS is now off** message will be displayed when CMS is shutdown.

```
Notifying users of impending shutdown...
. . . . . .
Proceeding with cms shutdown.

*** Turning off CMS, Please wait  ***
. . . . . .

*** Cleaning up, Please wait ***

*** CMS is now off ***
```

- Type in **cmsadm** command and select **1, acd_create,** from the service menu. At each prompt type in information as follows:
    - **Enter switch name:** Type in a descriptive name
    - **Select the model of switch for this ACD:** Select **6**
    - For next three prompts, type **y**
    - **Enter the local port assigned to switch:** Type **1**
    - **Enter the remote port assigned to switch:** Type **1**
    - **Select the transport to the switch:** Select **1**
    - **Enter switch host name or IP Address**: Type in Communication Manager's IP Address
    - **Enter switch TCP port number:** Set it to default
    - For rest of the prompts leave the values at default or enter desired values

```
(acms)-(root)=# cmsadm

 Avaya(TM) Call Management System Administration Menu

Select a command from the list below.
   1) acd_create   Define a new ACD
   2) acd_remove   Remove all administration and data for an ACD
   3) backup       Filesystem backup
   4) pkg_install  Install a feature package
   5) pkg_remove   Remove a feature package
   6) run_pkg      Turn a feature package on or off
   7) run_ids      Turn Informix Database on or off
   8) run_cms      Turn Avaya CMS on or off
   9) passwd_age   Set password aging options
  10) dbaccess     Change Informix DB access permissions
Enter choice (1-10) or q to quit: 1

Information for ACD 1

Enter switch name (up to 20 characters): acm

Select the model of switch for this ACD
   1) Communication Mgr 5.2
   2) Communication Mgr 6.x
   3) Communication Mgr 7.x
Enter choice (1-3): 3

Is Vectoring enabled on the switch? (y/n): y

Is Expert Agent Selection enabled on the switch? (y/n): y

Does the Central Office have disconnect supervision? (y/n): (default: y) y

Enter the local port assigned to switch (1-64): 1

Enter the remote port assigned to switch (1-64): 1
```

```
Select the transport to the switch
   1) TCP/IP
Enter choice (1-1): 1

Enter switch host name or IP Address: 10.64.110.10

Enter switch TCP port number (5001-5999): (default: 5001)

Number of splits/skills (0-8000): (default: 500)

Total split/skill members, summed over all splits/skills (0-1250): (default: 1250)

Number of shifts (1-4): (default: 1)

Enter the start time for shift 1 (hh:mmXM): (default: 8:00 AM)

Enter the stop time for shift 1 (hh:mmXM): (default: 5:00 PM)

Number of agents logged into all splits/skills during shift 1 (0-1250): (default:
1250)

Number of trunk groups (0-2000): (default: 500)

Number of trunks (0-12000): (default: 1000)

Number of unmeasured facilities (0-6000): (default: 500)

Number of call work codes (1-500): (default: 500)

Enter number of vectors (0-8000): (default: 500)

Enter number of VDNs (0-18000): (default: 4000)

Updating database.

Computing space requirements and dbspace availability.

ACD S8300_TR1 (3) created successfully.
```

- Type in **cmssvc** command and select **4** from the service menu.
    - Select **1** to **Turn on CMS**

```
(acms)-(root)=# cmssvc

 Avaya(TM) Call Management System Services Menu

Select a command from the list below.
   1) auth_display Display feature authorizations
   2) auth_set     Authorize capabilities/capacities
   3) run_ids      Turn Informix Database on or off
   4) run_cms      Turn Avaya CMS on or off
   5) setup        Set up the initial configuration
   6) swinfo       Display switch information
   7) swsetup      Change switch information
   8) patch_inst   Install a single CMS patch from CD
   9) patch_rmv    Backout an installed CMS patch
  10) load_all     Install all CMS patches found on CD
  11) back_all     Backout all installed CMS patches from machine
Enter choice (1-11) or q to quit: 4

Select one of the following
  1) Turn on CMS
  2) Turn off CMS but Leave IDS running
  3) Turn off both CMS and IDS
Enter choice (1-3): 1

Please wait for initialization
. .

*** CMS is now up  ***
```

8. Configure Afiniti

8.1. Setup Connectivity with the Avaya components

Configuration for Afiniti is performed by Afiniti Engineers. Information in this section is for informational purposes only. Hardware and network infrastructure needs to be setup to host and aid connectivity to the various Avaya components. Afiniti needs connectivity information based on connection type.

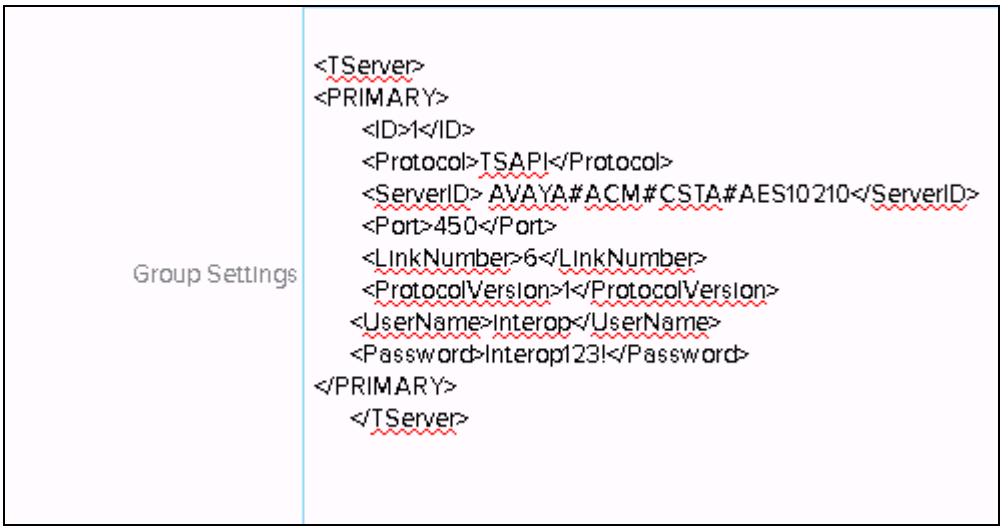
All configurations in this section are performed via the Afiniti Portal. The Afiniti Portal can be accessed via a web browser using http://<ip-address>/AfinitiPortalSuite, where the ip-address is the IP address of the Afiniti Portal.

8.1.1. TSAPI

To configure the TSAPI connection, navigate to **Afiniti Portal → Switch Configurator** (not shown) and configure as follows:

- Type in a number for Tserver **ID** node
- Type in **TSAPI** in **Protocol** node
- Type in the **T-Link** in **Server ID** node
- Type in the login information for AES in **Username** and **Password** nodes

Rest of the fields can be kept as default.



8.2. Setup VDNs / Skills / RONA Information

8.2.1. VDNs

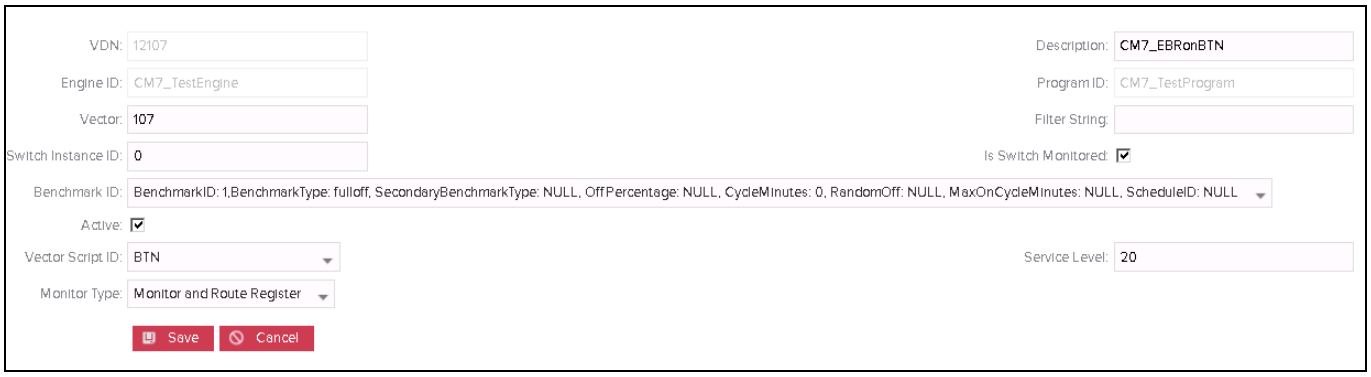
Afiniti needs to monitor/register all the queuing VDNs for routing and receiving call events. VDN and Vectors mentioned in this section are the same as those configured in Communication Manager.

Navigate to **Afiniti Portal → Add VDN** (not shown) page:

- Type in VDN number in **VDN** field
- Type in a name for VDN in **Description** field
- Type in the Vector number in **Vector** field
- Type in the **Benchmark** applied on the VDN.

Rest of the fields can be kept as default.

Click the **Save** button to save the VDN information entered.



The following configurations were added through the Afiniti Portal for the functional testing;

VDN	VDN Name / Label	Avaya Vector No:
12101	CM7_Test_VDN1	101
12102	CM7_Test_VDN1	102
12107	CM7_EBRonBTN	107
12112	CM7_VDN Jump	112
12111	CM7_CovPath_VDN	103

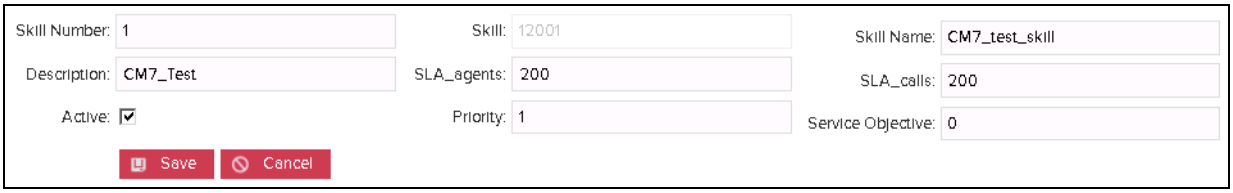
8.2.2. Skills

Skills are also configured to monitor agent login/logout activity for dynamic station monitoring associations. Afiniti does not need to configure stations as they are picked up automatically via agent login/logout events.
To add a Skill, navigate to the **Afiniti Portal → Add Skill** (not shown) page.

- Enter Skill Number in **Skill Number** field
- Type in the extension for the Skill in **Skill** field
- Provide a name in **Skill Name**
- Provide the **Priority** of the skill
- Provide **Agent and Call SLA**
- **Mark the Active** check box

Rest of the fields can be kept as default.

Click **Save** to save changes.



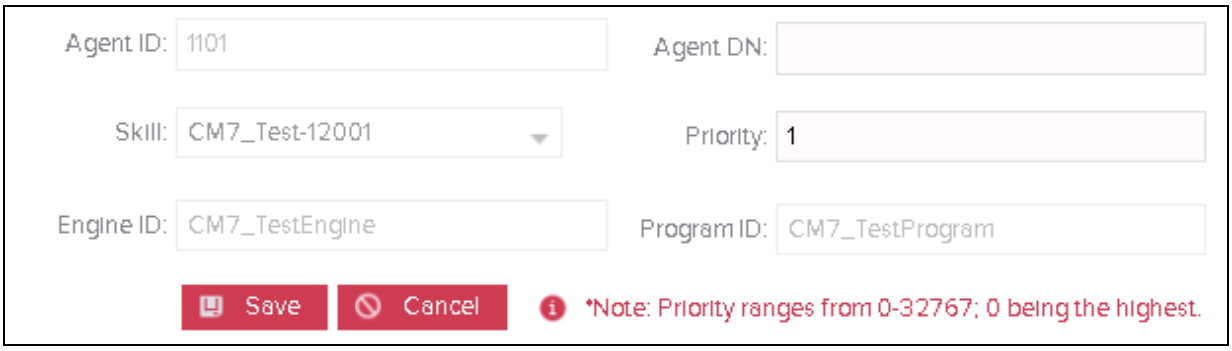
The following skills were configured during testing;

Skill#	Skill Extension	Skill Name	Routing Method (MIA/LOA)
1	12001	CM7_Test_Skill	MIA/LOA
2	12002	CM7_Test_Skill_1	MIA/LOA
3	54001	CM7_Test_Skill_CM2	MIA/LOA
4	54002	CM7_Test_Skill_CM2	MIA/LOA

8.2.3. Agent Skill Levels (Optional)

Agent skill levels can also be configured in Afiniti. To configure agent skill, go to the **Afiniti Portal → Add mapping** (not shown) screen:

- Type in the Agent ID in **Agent ID** field.
- Select the the Skill from the **Skill** drop down.
- Type in Priority in **Priority** field.

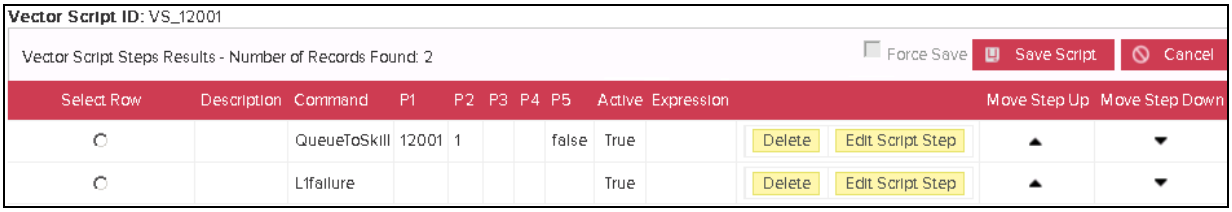


8.2.4. Roll Over No Answer

Roll Over No Answer (RONA) VDN is configured in Afiniti in order to take call control in case of no answer / busy / unknown / route failure if a call has left the queuing vector. Adding a RONA VDN is similar to adding a new VDN in Afiniti. Please refer to section 8.2.1

8.3. Afiniti Routing Script

Afiniti needs to replicate the routing logic defined in the Avaya vector into its own routing scripts. Supported logics are unconditional/conditional call queuing to multiple skills, variables assigned, time based conditions, route to VDN/external numbers except announcement/music/digits collection. Following scripts were configure during compliance testing



The following Afiniti routing scripts were used during the functional testing;

Afiniti Vector Script	Function
VS_12101	Single QueueToSkill
BSR_VectorSingleSite	Single Site BSR
BSR_VectorMultiSite	Multi-site BSR
VS_CovPath	Coverage Path

8.4. Reporting

The following configurations need to be made for the Afiniti Reporting module.

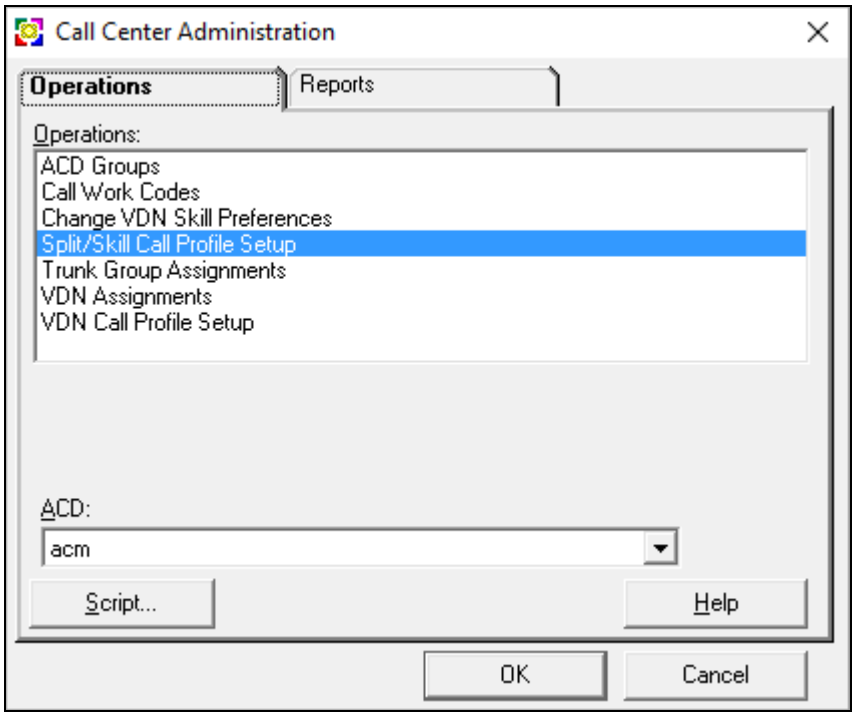
8.4.1. Historical Reporting

The following permissions need to be assigned to the user that will be used by Afiniti to generate reports:

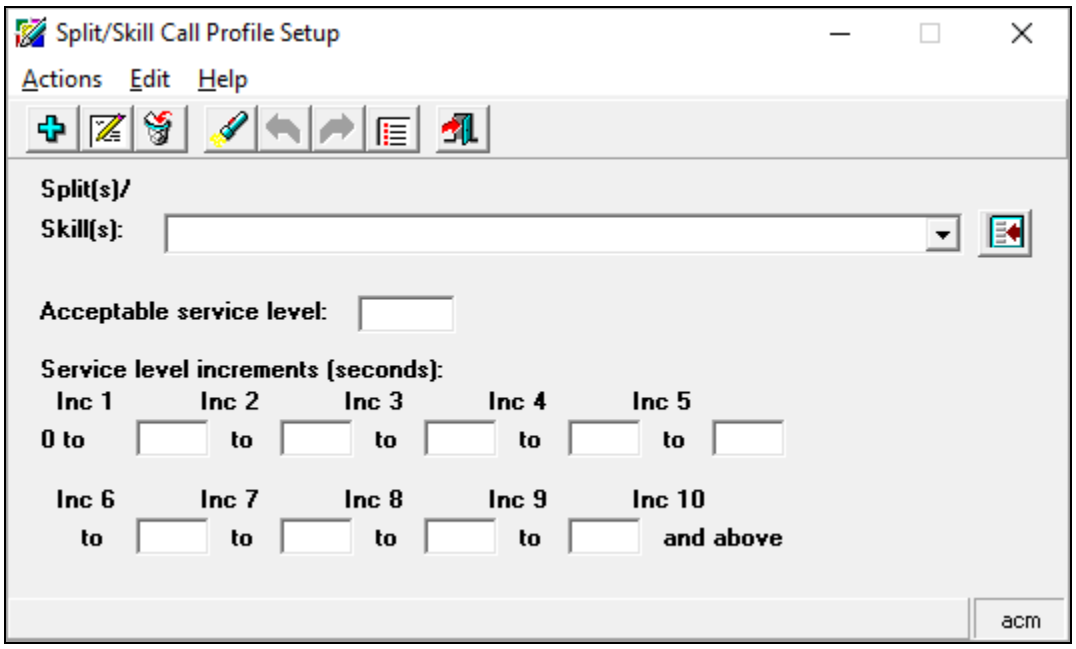
- Informix ODBC Access on CMS
- Permissions to create custom tables in CMS
- Permissions to insert/update/delete information from custom tables in CMS
- Permissions to read data from CMS standard tables
- Permissions to view and export CMS Supervisor reports
- Permissions to upload Afiniti modified reports on CMS Supervisor
- Permissions on all the Afiniti skills and VDNs.

Once access and permissions on CMS Supervisor are granted, an instance of CMS supervisor is started.

Navigate to **Command → Call Center Administration.**



Double click **Split/Skill Call Profile Setup** and configure **Service level** and **Period1 – Period9**; values are required for all the Afiniti skills.

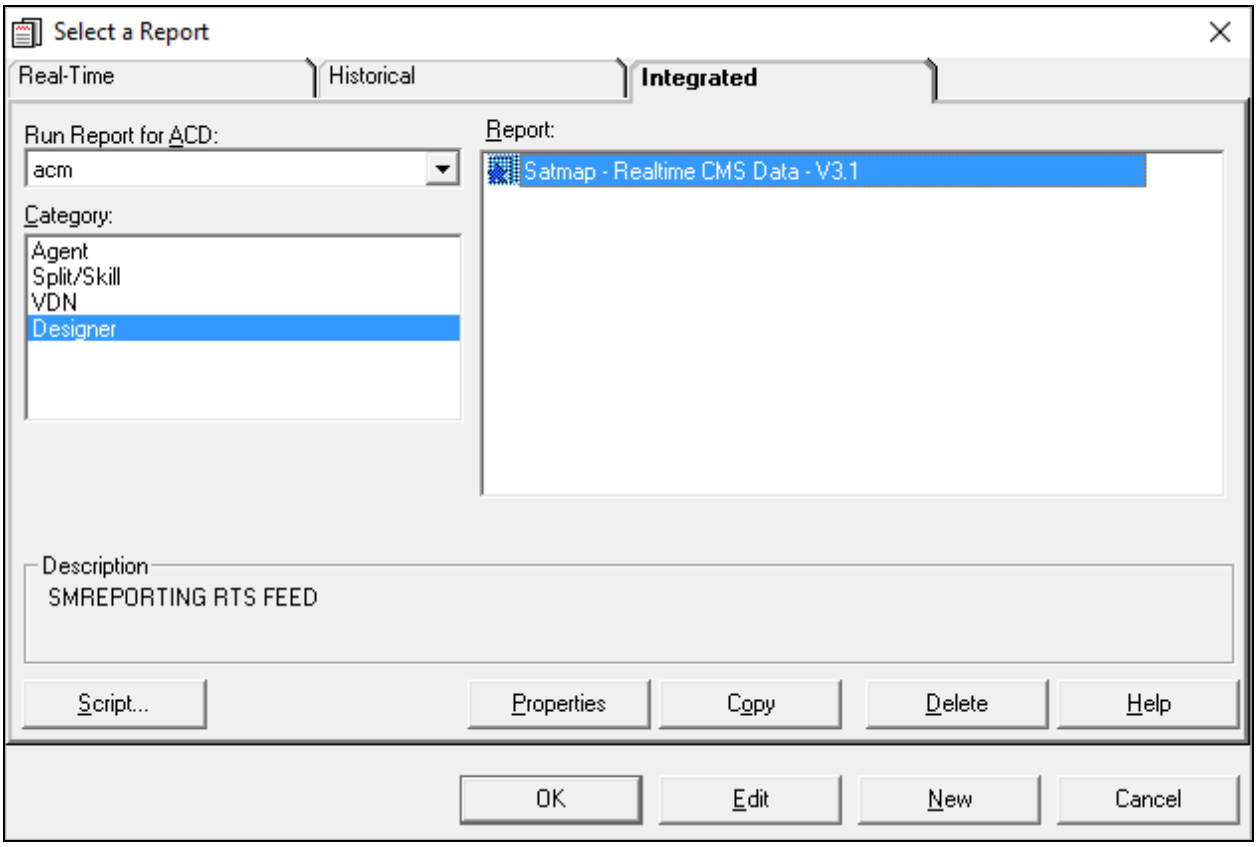


8.4.2. Real-Time Reporting – Portal

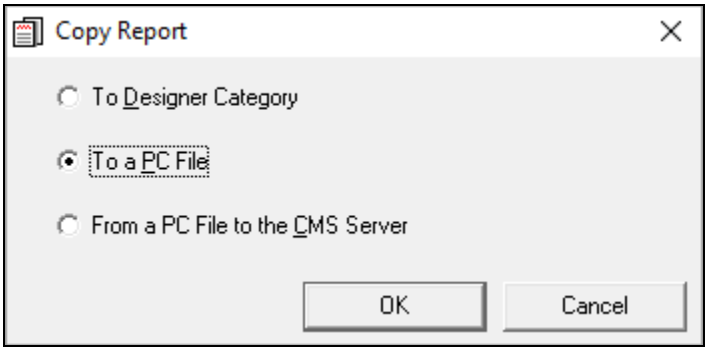
8.4.2.1 Real-Time Reporting – Portal (CMS Supervisor Based)

- Permissions to upload Afiniti modified reports on CMS Supervisor
- Permissions to view and export CMS Supervisor reports
- Permissions on all the Afiniti skills and VDNs.

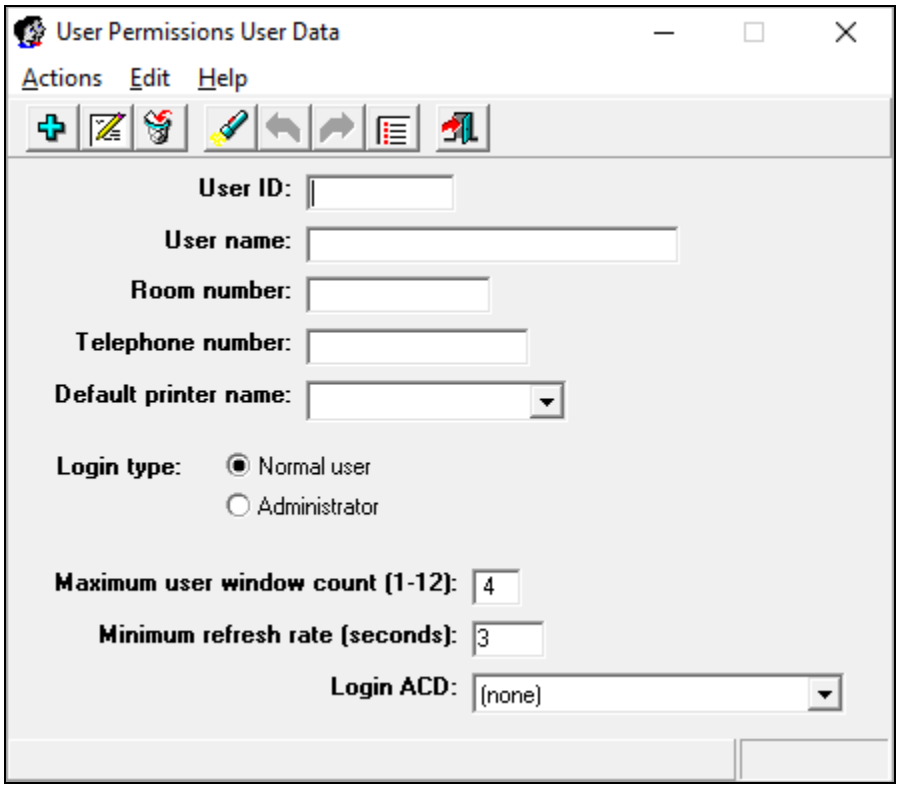
Select the report that needs to be exported.



The CMS reports are exported in .REP format.



Refresh rate of 3 seconds is configured for the Afiniti user on CMS Supervisor.



8.4.2.2 Real-Time Reporting – Portal (RT Socket Based)

- Load Afiniti provided custom report in CMS.
- Enabled RT Socket feed for this report to Afiniti.
- Set data relay frequency to 5 seconds.
- Set skills to relay data for Afiniti enabled skills only.

8.4.3. RT Gateway

- Redirect RT Sockets feed to the Afiniti provided port number.
- Afiniti will then provide the data feed to the port where the RT sockets feed was being sent.

9. Verification Steps

- Via a SAT terminal, verify that Application Enablement Services is enabled and listening using the **status aesvcs interface** command.

```
status aesvcs interface

                          AE SERVICES INTERFACE STATUS

Local Node         Enabled?  Number of     Status
                             Connections

procr              yes       2             listening
```

- Verify communication between Communication Manager and the Application Enablement Services server using the **status aesvcs link** command.

```
status aesvcs link

                            AE SERVICES LINK STATUS

Srvr/  AE Services     Remote IP         Remote  Local Node      Msgs    Msgs
Link   Server                           Port                    Sent    Rcvd

02/01  aes10210                         57769   procr           752     984
                       10.64.102.10
01/02  aes                              57175   procr           596     597
                       10.64.110.15
```

- Verify that the CMS connection is established using the **status processor-channels 2** command on the SAT).

```
                       PROCESSOR-CHANNEL STATUS

         Channel Number: 1
   Session Layer Status: In Service
          Socket Status: TCP connected
            Link Number: pv4
              Link Type: processor ethernet
  Message Buffer Number: 0

           Last Failure: none
                     At:
```

10. Conclusion

Afiniti was able to successfully interoperate with Avaya Aura® Communication Manager, Avaya Aura® Application Enablement Services and Avaya Call Management System. All executed test cases were passed.

11. Additional References

This section references the product documentation relevant for these Application Notes.

[1] Administering Avaya Aura® Communication Manager, Release 7.0.1, Issue 2.1, August 2016

[2] Avaya Call Management System Switch Connections, Administration, and Troubleshooting, Release 18, March 2016

[3] Administering and Maintaining Avaya Aura® Application Enablement Services, Release 7.0.1, Issue 2, August 2016

Documentation related to Afiniti can be directly obtained from Afiniti.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.