



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for Viable Resources Customer Experience Reporting with Avaya Aura™ Communication Manager and Avaya Aura™ Application Enablement Services – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for Customer Experience Reporting to interoperate with Avaya Aura™ Communication Manager and Avaya Aura™ Application Enablement Services. Customer Experience Reporting is a web-based contact center management solution. Customer Experience Reporting uses real-time data from Communication Manager to monitor and produce reports on phone activity for agents and ACD/skill groups.

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

Viable Resources' Customer Experience Reporting is a web-based contact center management solution. Customer Experience Reporting uses real-time data from Avaya Aura™ Communication Manager to monitor and produce reports on phone activity for agents and ACD/skill groups. It enables supervisors to monitor activities as they happen in a contact center and provide historical, statistical, and graphic reports on specific activities over time.

The interoperability of Customer Experience Reporting Version 1.1 with Avaya Aura™ Communication Manager is accomplished through Avaya Aura™ Application Enablement Services. These Application Notes describe the compliance test configuration used to test Customer Experience Reporting Version 1.1, with Communication Manager running on an Avaya S8300 Server and an Avaya G350 Media Gateway.

## 1.1. Interoperability Compliance Testing

The Compliance testing focused on the following areas:

- **Installation & Configuration**
- **Customer Experience Reporting/Avaya Feature Functionality Verification**
- **Failover and Serviceability Tests**

The installation and configuration testing focused on the setup of all components and the ability to interoperate. It also covered the ability to remove the application from the Customer Experience Reporting server.

The functionality testing focused on verifying Customer Experience Reporting ability to receive and parse real-time data from Communication Manager, and the use of the data in various reports as well as the production of historical reports.

The serviceability testing focused on verifying the ability of Customer Experience Reporting to recover from and report on adverse conditions.

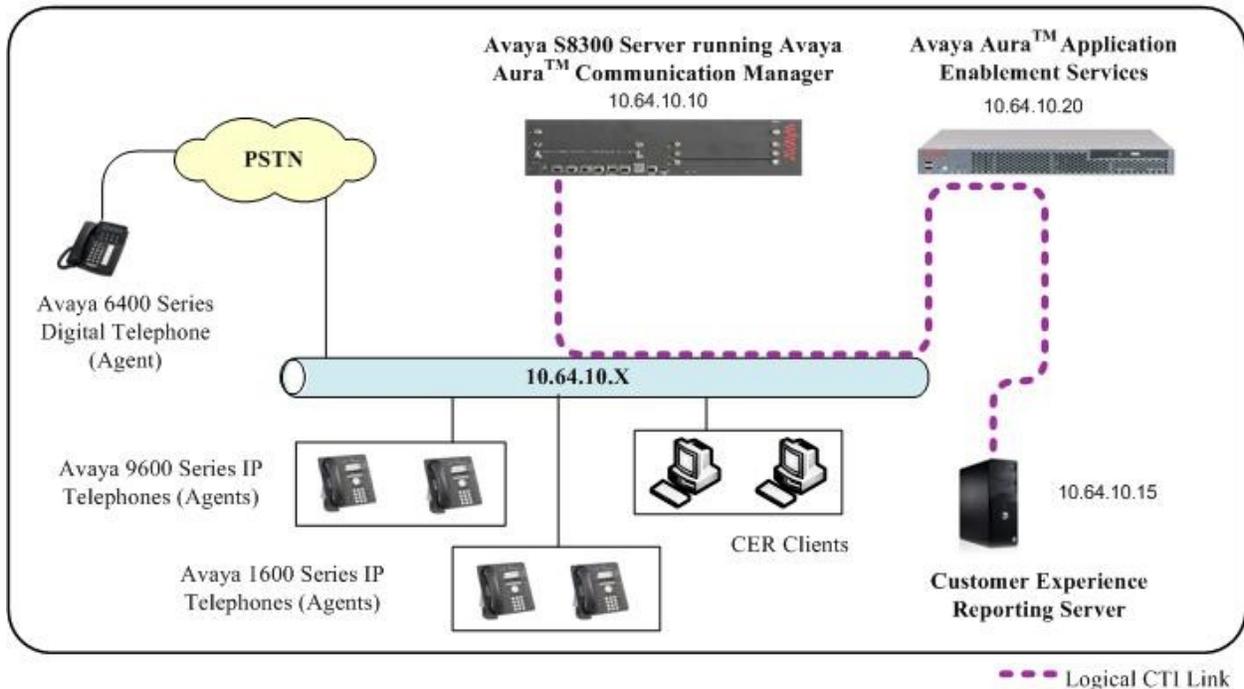
## 1.2. Support

Technical support on Customer Experience Reporting can be obtained through the following:

- **Phone:** (513) 518-2775
- **Email:** [inquiries@ccscenters.com](mailto:inquiries@ccscenters.com)

## 2. Reference Configuration

The interoperability of Customer Experience Reporting Version 1.1 with Communication Manager is accomplished through Application Enablement Services. The compliance test configuration used to test Customer Experience Reporting Version 1.1 includes the Avaya S8300 Server, the Avaya G350 Media Gateway, Application Enablement Services, Windows 2003 Server for Customer Experience Reporting, PCs for the clients, and telephones. **Figure 1** provides a high level topology.



**Figure 1:** Customer Experience Reporting Compliance Test Sample Configuration

### 3. Equipment and Software Validated

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

Hardware/Software Component	Version/Description
Avaya S8300 Server and G350 Media Gateway	Avaya Aura™ Communication Manager 5.2 (R015x.02.0.947.3) with Service Pack 17534
Avaya Aura™ Application Enablement Services	Release 4.2.3
Avaya 9600 Series IP Telephones	9620, 9630, 9640 H.323 Avaya One-X Terminals R2.0
Avaya IP Agent, Avaya One-X Agent	R6, R1
Viable Solutions' Customer Experience Reporting running on Windows 2003 (32-bit) Server	Version 1.1 with Windows IIS Services 5.1, .NET Framework 3.5, and Internet Explorer 6.0

### 4. Configure Avaya Aura™ Communication Manager

All the configuration changes in this section for Communication Manager are performed through the System Access Terminal (SAT) interface. For more information on configuring Communication Manager, refer to the Avaya product documentation, Reference [1].

This section provides the procedures for configuring Communication Manager. The procedures fall into the following areas:

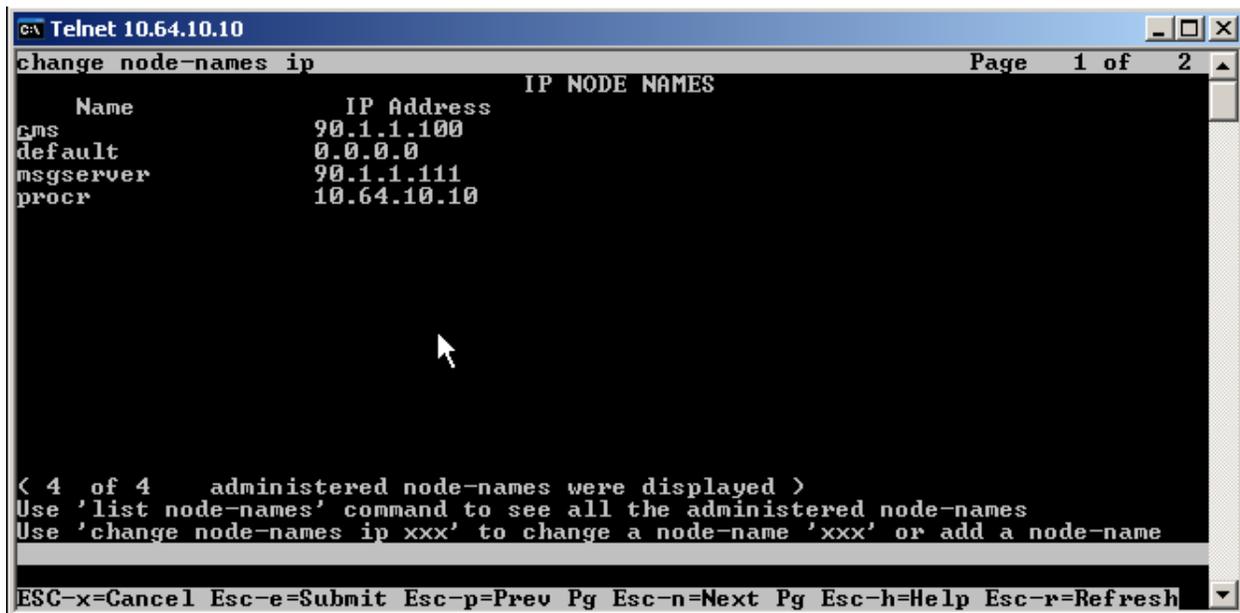
- Administer Processor Ethernet Interface for Application Enablement Services connectivity
- Administer CTI link with TSAPI service

The detailed administration of contact center entities, such as VDN, Vector, Skill, Logical Agents and Station Extensions are assumed to be in place and are not covered in these Application Notes.

## 4.1. Administer Processor Ethernet Interface for Application Enablement Services Connectivity

Verify the entry for the Processor Ethernet Interface in the node-names form.

- Enter the **change node-names ip** command. In this case, **procr** and **10.64.10.10** are already populated as **Name** and **IP Address** for the Processor Ethernet Interface that will be used for connectivity to the Application Enablement Services server. The actual IP address may vary. Submit these changes.



```
cx Telnet 10.64.10.10
change node-names ip
Page 1 of 2
IP NODE NAMES
Name          IP Address
gms           90.1.1.100
default       0.0.0.0
msgserver     90.1.1.111
procr         10.64.10.10

< 4 of 4 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

ESC-x=Cancel Esc-e=Submit Esc-p=Prev Pg Esc-n=Next Pg Esc-h=Help Esc-r=Refresh
```

On an S8300 server, the Processor Ethernet Interface should already be in the ip-interface list.

- Either the **display ip-interface procr** command or the **list ip-interface all** command will display the parameters of the Processor Ethernet Interface on the S8300.

```
ca Telnet 10.64.10.10
display ip-interface procr
IP INTERFACES
Type: PROCR
Target socket load: 1700
Enable Interface? y
Allow H.323 Endpoints? y
Network Region: 1
Allow H.248 Gateways? y
Gatekeeper Priority: 5
IPU4 PARAMETERS
Node Name: procr
Subnet Mask: /24
Command:
ESC-x=Cancel Esc-e=Submit Esc-p=Prev Pg Esc-n=Next Pg Esc-h=Help Esc-r=Refresh
```

```
ca Telnet 10.64.10.10
list ip-interface all
IP INTERFACES
ON Type Slot Code/Sfx Node Name/ IP-Address Mask Gateway Node Net Rgn ULAN
-----
y PROCR 10.64.10.10 /24 10.64.10.1 1
Command successfully completed
Command:
ESC-x=Cancel Esc-e=Submit Esc-p=Prev Pg Esc-n=Next Pg Esc-h=Help Esc-r=Refresh
```

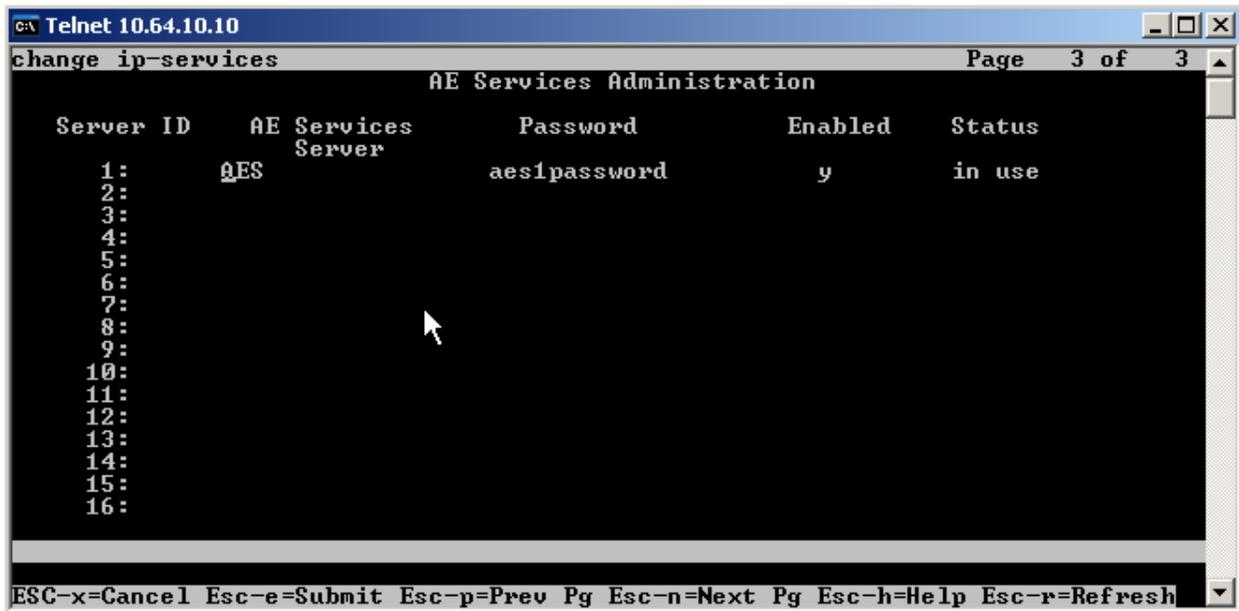
Add an entry for IP Services with the following values for fields on Page 1, as displayed below:

- Enter the **change ip-services** command.
- 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, retain the default of 8765.

```
CAV Telnet 10.64.10.10
change ip-services Page 1 of 3
Service Type Enabled Local Node IP SERVICES Local Port Remote Node Remote Port
AESVCS y procr 8765
ESC-x=Cancel Esc-e=Submit Esc-p=Prev Pg Esc-n=Next Pg Esc-h=Help Esc-r=Refresh
```

Go to Page 3 of the IP Services form, and enter the following values:

- In the **AE Services Server** field, type the name obtained from the Application Enablement Services server, in this case **AES**.
- In the **Password** field, type the same password to be administered on the Application Enablement Services server, in this case **aes1password**.
- In the **Enabled** field, type **y**.



```
GA Telnet 10.64.10.10
change ip-services Page 3 of 3
AE Services Administration
Server ID  AE Services Server  Password  Enabled  Status
1:         AES                aes1password  y        in use
2:
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:
16:
ESC-x=Cancel Esc-e=Submit Esc-p=Prev Pg Esc-n=Next Pg Esc-h=Help Esc-r=Refresh
```

Note that the name and password entered for the **AE Services Server** and **Password** fields must match the name and password on the Application Enablement Services server. The administered name for the Application Enablement Services server is created as part of the Application Enablement Services installation, and can be obtained from the Application Enablement Services server by typing **uname -n** at the Linux command prompt. The same password entered above will need to be set on the Application Enablement Services server using **Administration > Switch Connections > Edit Connection > Set Password**.

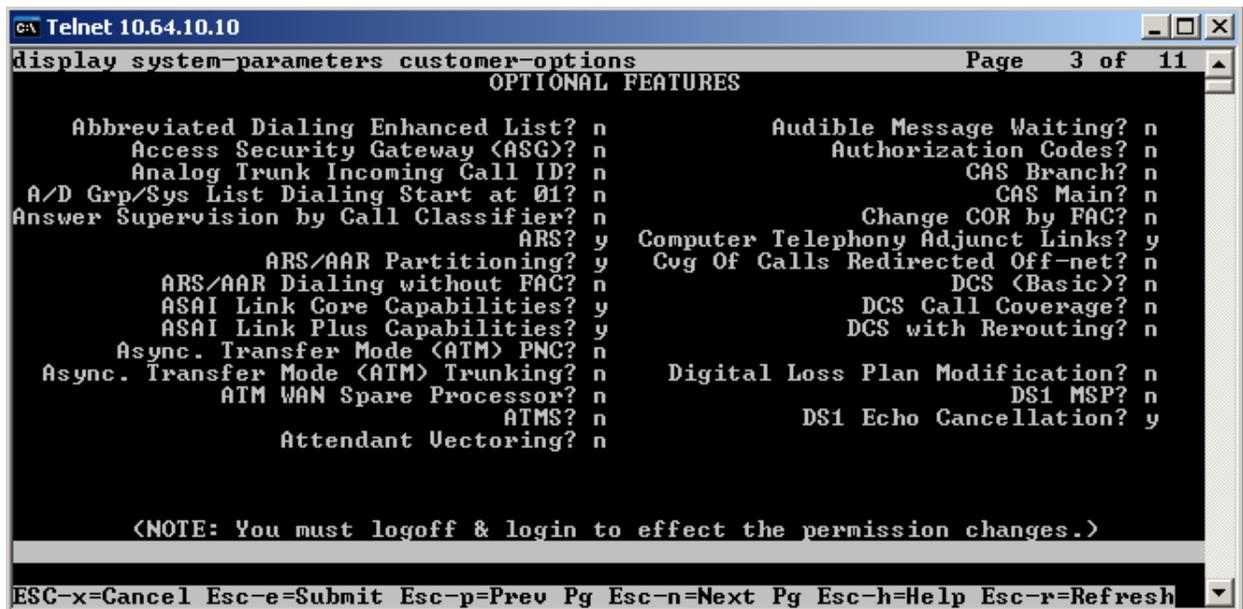
## 4.2. Administer Computer Telephony Integration (CTI) Link

It is assumed that Communication Manager is enabled with feature licenses for Vectoring, ASAI Link Core Capabilities, and Computer Telephony Adjunct Links.

This section provides the steps required for configuring a CTI Link.

Enter the **display system-parameters customer-options** command.

- On Page 3, verify that the **Computer Telephony Adjunct Links** field is set to **y** for yes. If not, contact an authorized Avaya account representative to obtain the license.



```
C:\> Telnet 10.64.10.10
display system-parameters customer-options Page 3 of 11
OPTIONAL FEATURES

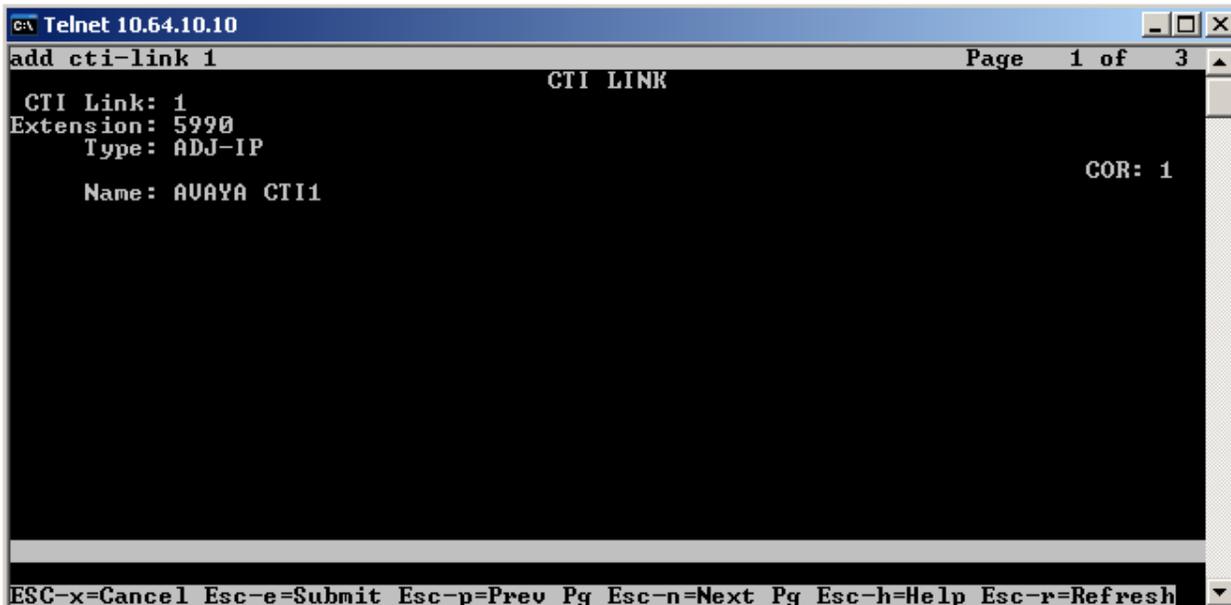
Abbreviated Dialing Enhanced List? n      Audible Message Waiting? n
Access Security Gateway (ASG)? n          Authorization Codes? n
Analog Trunk Incoming Call ID? n          CAS Branch? n
A/D Grp/Sys List Dialing Start at 01? n   CAS Main? n
Answer Supervision by Call Classifier? n   Change COR by FAC? n
ARS? y      Computer Telephony Adjunct Links? y
ARS/AAR Partitioning? y                   Cvg Of Calls Redirected Off-net? n
ARS/AAR Dialing without FAC? n           DCS (Basic)? n
ASAI Link Core Capabilities? y           DCS Call Coverage? n
ASAI Link Plus Capabilities? y           DCS with Rerouting? n
Async. Transfer Mode (ATM) PNC? n        Digital Loss Plan Modification? n
Async. Transfer Mode (ATM) Trunking? n    DS1 MSP? n
ATM WAN Spare Processor? n               DS1 Echo Cancellation? y
ATMS? n
Attendant Vectoring? n

<NOTE: You must logoff & login to effect the permission changes.>

ESC-x=Cancel Esc-e=Submit Esc-p=Prev Pg Esc-n=Next Pg Esc-h=Help Esc-r=Refresh
```

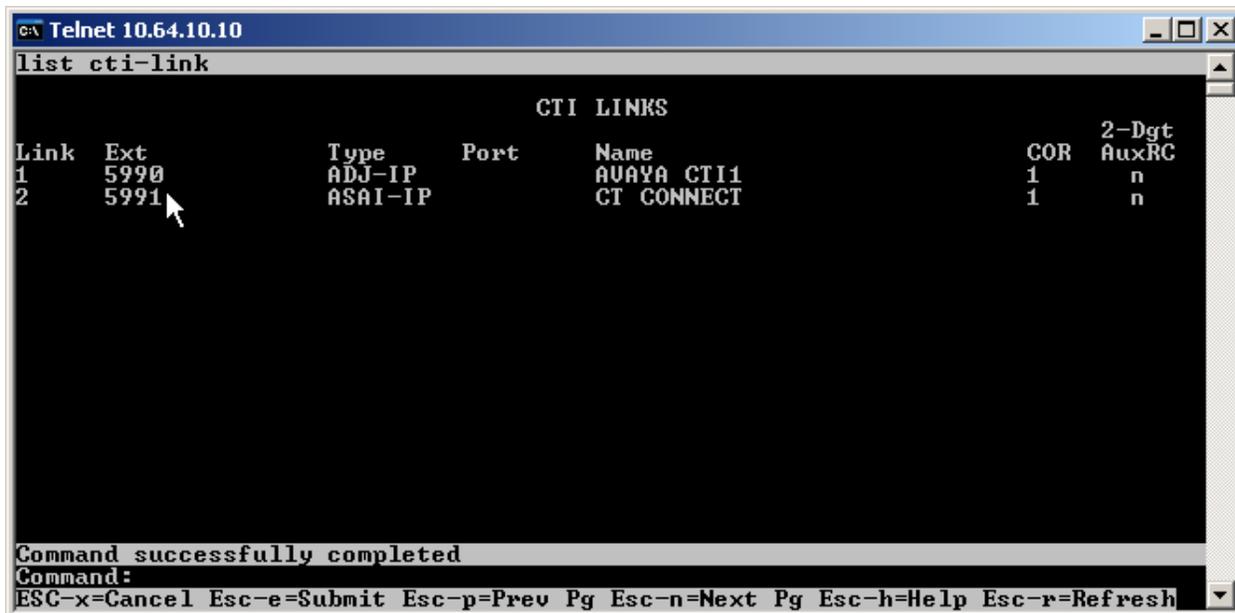
Enter the **add cti-link <link number>** command, where **<link number>** is an available CTI link number.

- In the **Extension** field, type **<station extension>**, where **<station extension>** is a valid station extension.
- In the **Type** field, type **ADJ-IP**.
- In the **Name** field, type a descriptive name.



```
c:\ Telnet 10.64.10.10
add cti-link 1
CTI LINK
CTI Link: 1
Extension: 5990
Type: ADJ-IP
Name: AVAYA CTI1
COR: 1
Page 1 of 3
ESC-x=Cancel Esc-e=Submit Esc-p=Prev Pg Esc-n=Next Pg Esc-h=Help Esc-r=Refresh
```

Enter the **list cti-link** command to verify that the CTI Link is correctly configured. All configured links will show in this screen. In the snapshot below, Link 1 is the link of interest added above.



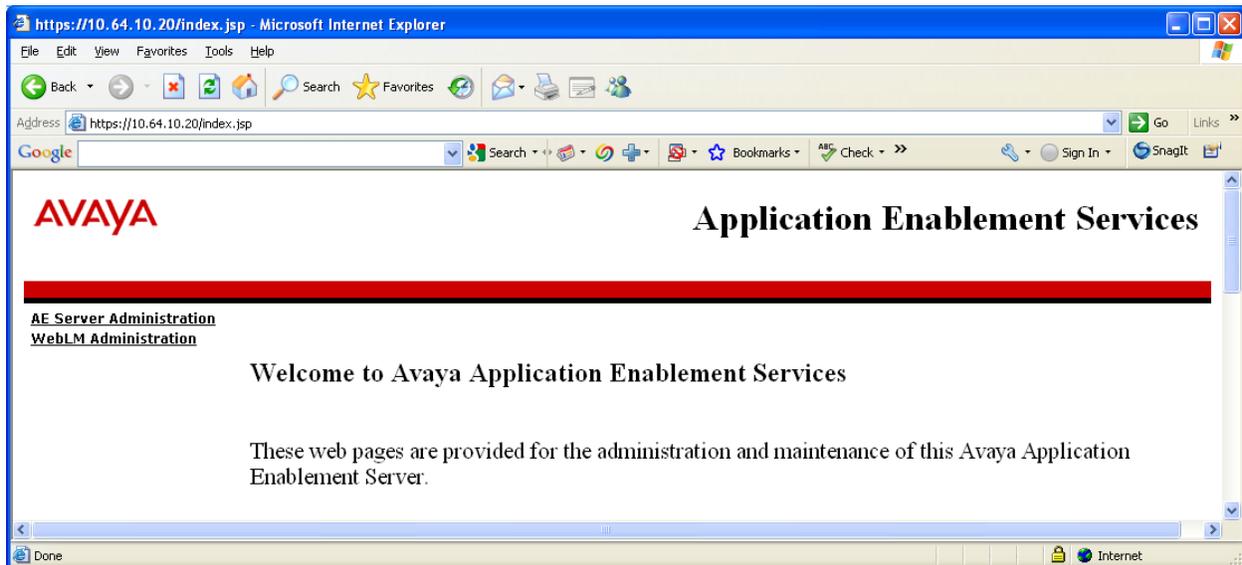
```
c:\ Telnet 10.64.10.10
list cti-link
CTI LINKS
Link  Ext      Type      Port      Name      COR  2-Dgt
1     5990     ADJ-IP    Port      AVAYA CTI1  1    n
2     5991     ASAI-IP    Port      CT CONNECT  1    n
Command successfully completed
Command:
ESC-x=Cancel Esc-e=Submit Esc-p=Prev Pg Esc-n=Next Pg Esc-h=Help Esc-r=Refresh
```

## 5. Configure Avaya Aura™ Application Enablement Services

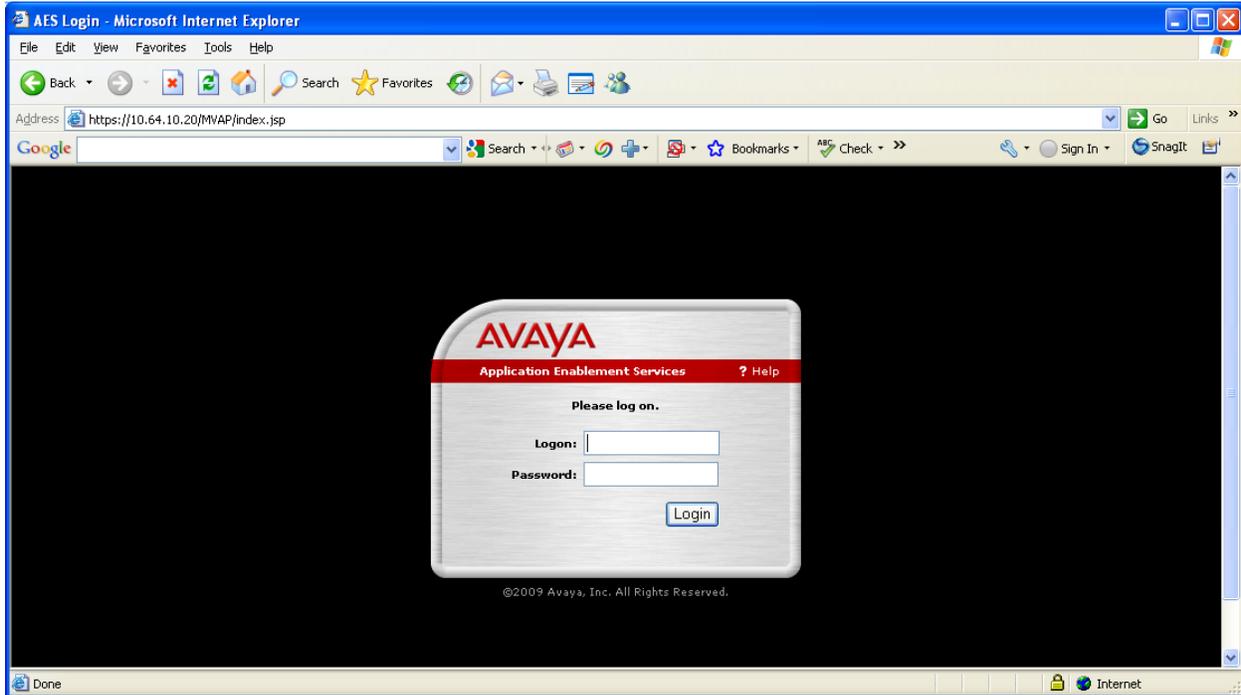
Application Enablement Services enables Computer Telephony Interface (CTI) applications to monitor and control telephony resources on Communication Manager. The Application Enablement Services server receives requests from CTI applications and forwards them to Communication Manager. Conversely, the Application Enablement Services server receives responses and events from Communication Manager and forwards them to the appropriate CTI applications.

This section assumes that the installation and basic administration of the Application Enablement Services server has already been performed. For more information on administering Application Enablement Services, refer to the Avaya product documentation, Reference [2].

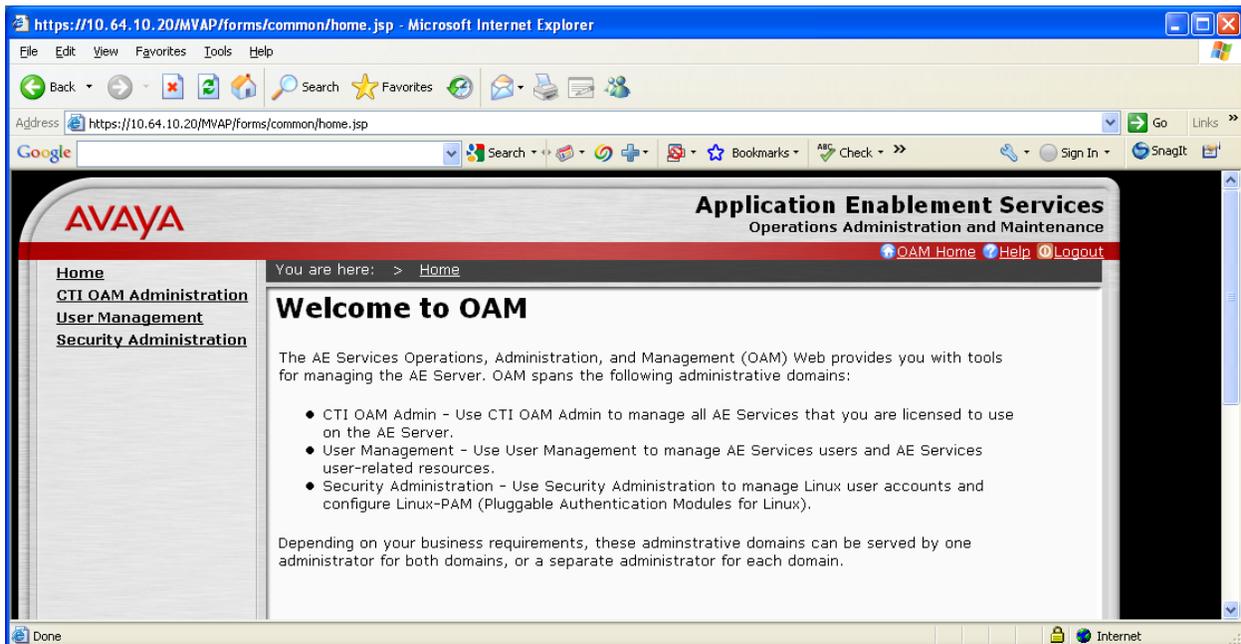
Access the Application Enablement Services OAM web-based interface by using the URL **https://ip-address** in an Internet browser window, where **ip-address** is the IP address of the Application Enablement Services server.



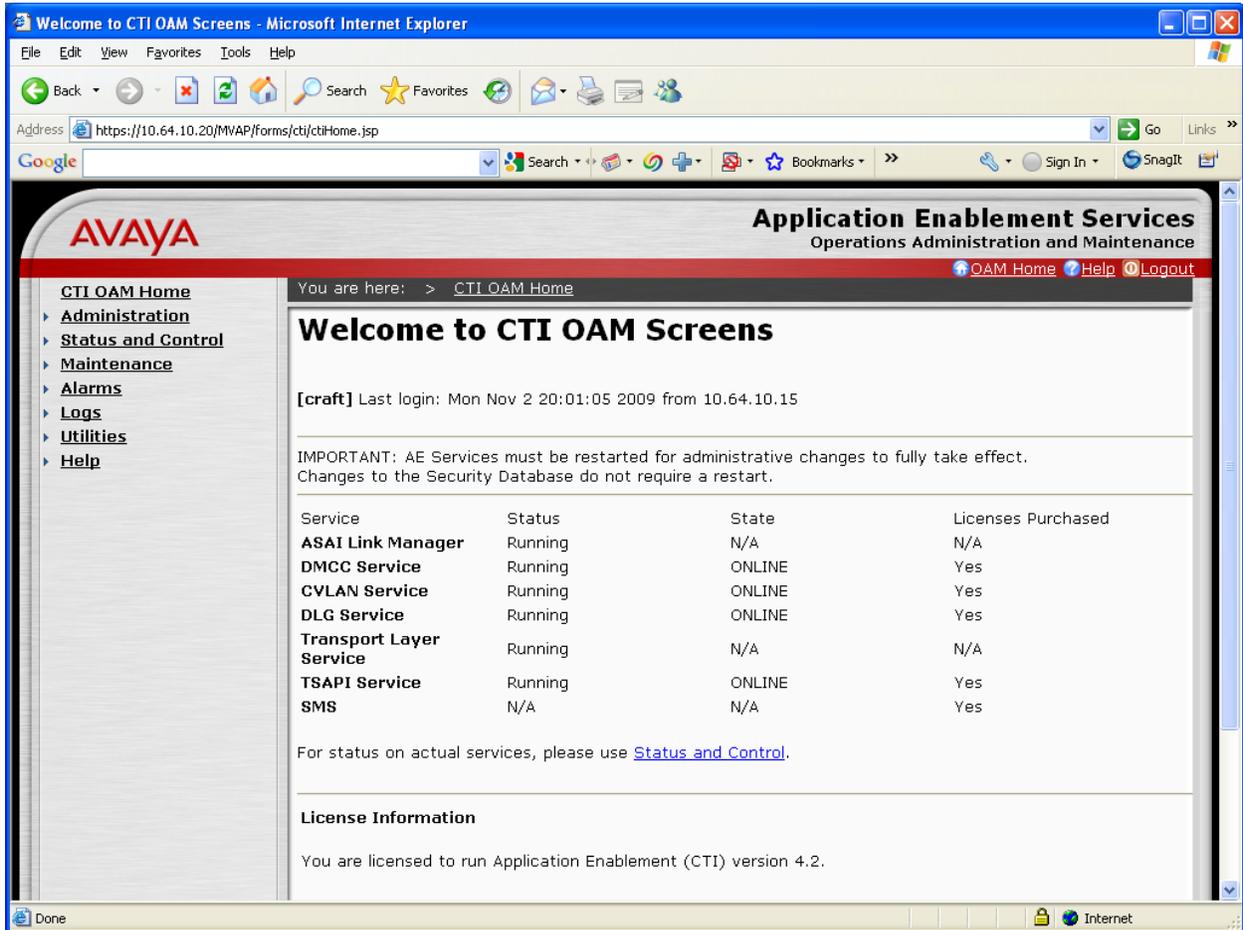
The **Login** screen is displayed as shown below. Log in with the appropriate credentials.



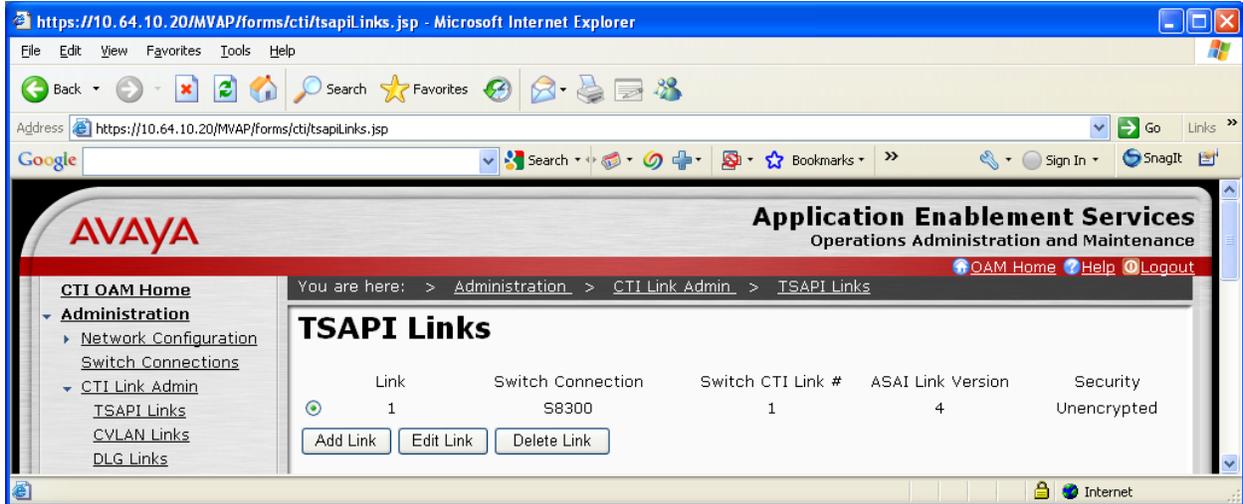
The **Welcome to OAM** screen is displayed next. Select **CTI OAM Administration** from the left pane.



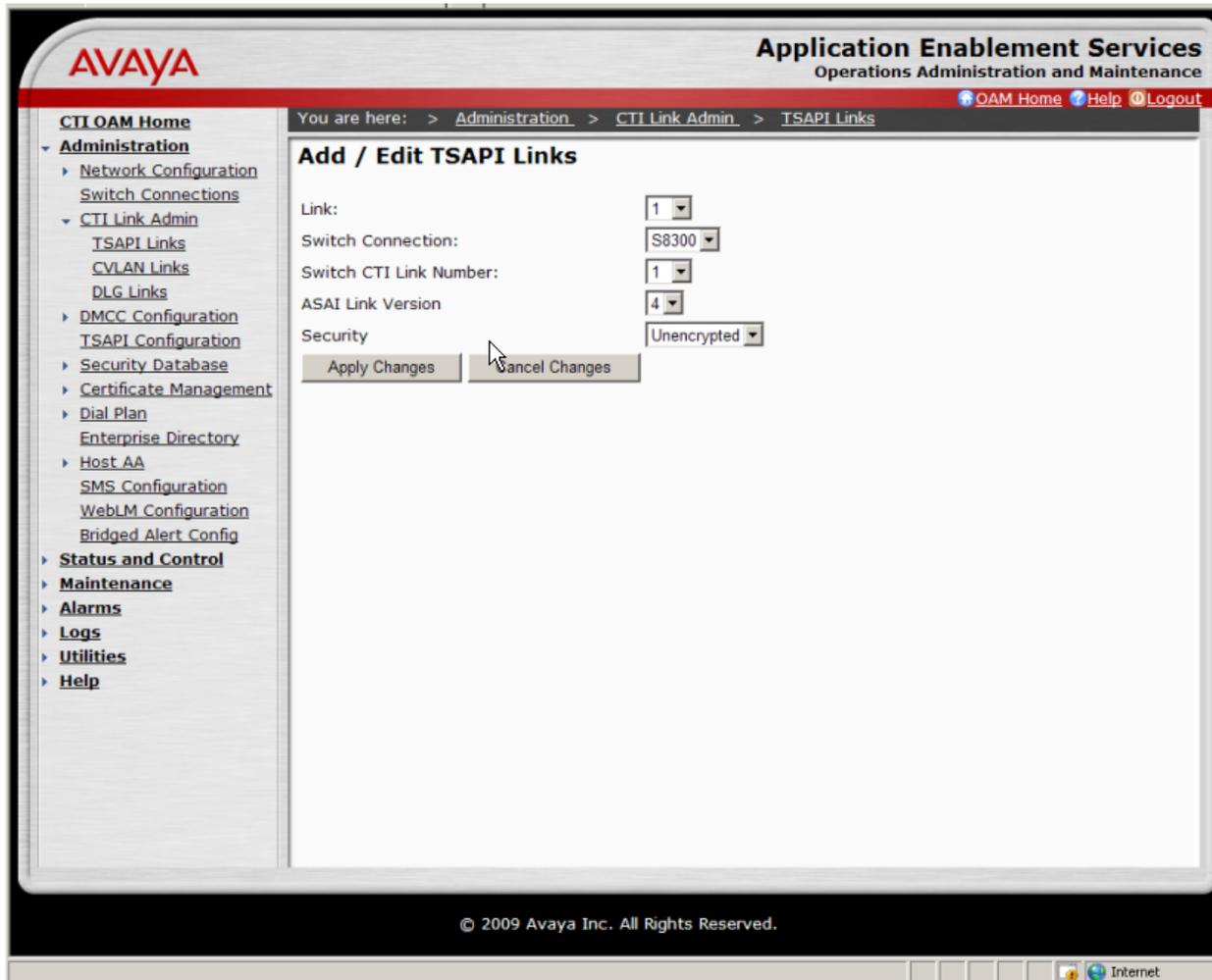
The **Welcome to CTI OAM Screens** screen is displayed. Verify that Application Enablement Services is licensed for the TSAPI service, as shown in the bottom of the screen below. If the TSAPI service is not licensed, contact the Avaya sales team or business partner for a proper license file.



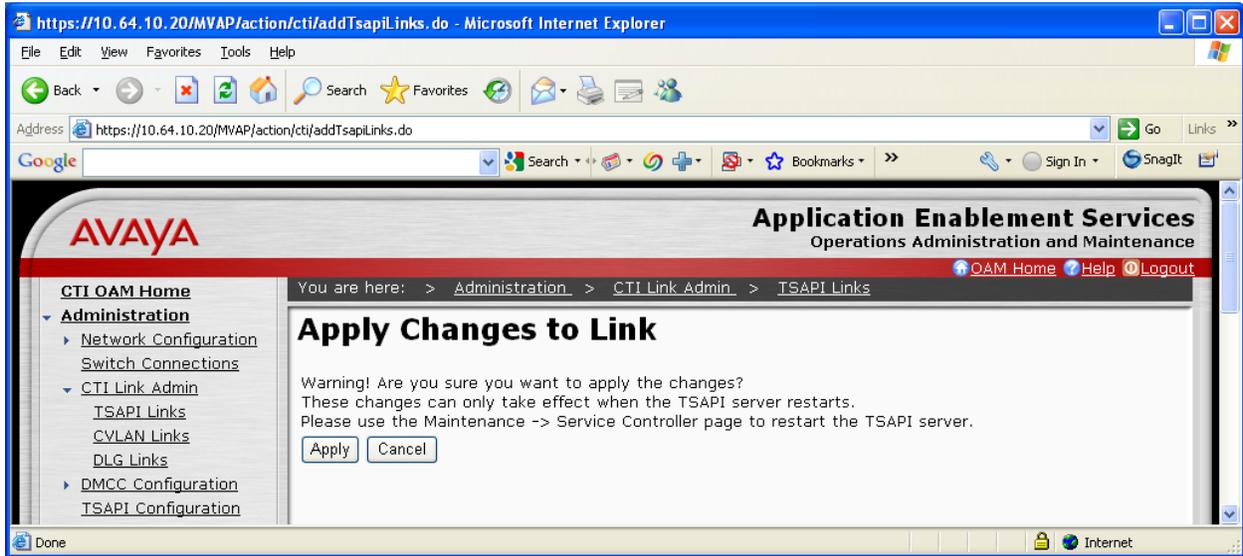
To administer a TSAPI link, select **Administration > CTI Link Admin > TSAPI Links** from the left pane. The **TSAPI Links** screen is displayed, as shown below. Click **Add Link**.



The **Add / Edit TSAPI Links** screen is displayed next. The **Link** field is only local to the Application Enablement Services server, and may be set to any available number. For **Switch Connection**, select the relevant switch connection from the drop-down list. In this case, the existing switch connection **S8300** is selected. For **Switch CTI Link Number**, select the CTI link number previously administered. Click **Apply Changes**.



The **Apply Changes to Link** screen is displayed. Click **Apply**.



Next, add a CTI User, as Customer Experience Reporting requires a CTI user to access Application Enablement Services. Select **OAM Home > User Management > Add User** from the left pane.

In the **Add User** screen, enter the following values:

- In the **User Id** field, type a meaningful user id.
- In the **Common Name** field, type a descriptive name.
- In the **Surname** field, type a descriptive surname.
- In the **User Password** field, type a password for the user.
- In the **Confirm Password** field, re-enter the same password for the user.
- In the **Avaya Role** field, retain the default of **None**.
- In the **CT User** field, select **Yes** from the dropdown menu.
- Click **Apply** at the bottom of the screen (not shown here).

**AVAYA** Application Enablement Services  
Operations Administration and Maintenance

You are here: > [User Management](#) > [Add User](#)

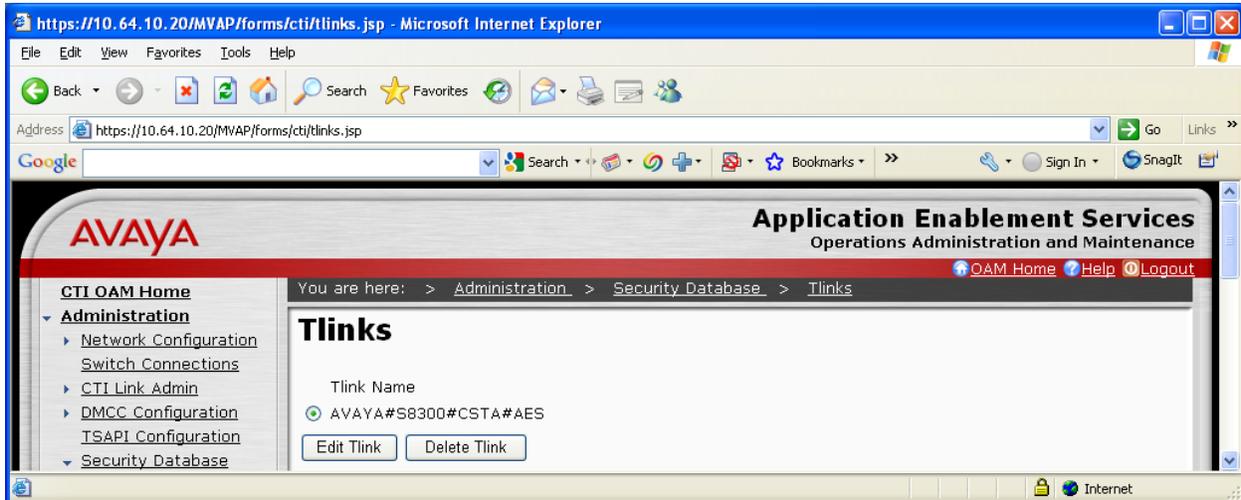
### Add User

Fields marked with \* can not be empty.

- \* User Id
- \* Common Name
- \* Surname
- \* User Password
- \* Confirm Password
- Admin Note
- Avaya Role
- Business Category
- Car License
- CM Home
- Css Home
- CT User
- Department Number
- Display Name
- Employee Number
- Employee Type
- Enterprise Handle
- Given Name
- Home Phone
- Home Postal Address
- Initials

Select **Administration > Security Database > Tlinks** from the left pane. The **Tlinks** screen shows a listing of the Tlink names. A new Tlink name is automatically generated by the Application Enablement Services server, upon creation of a new switch connection. Locate the Tlink name associated with the relevant switch connection, which would use the name of the switch connection as part of the Tlink name. Make a note of the associated Tlink name, to be used later for configuring the Customer Experience Reporting server.

In this case, the associated Tlink name is “AVAYA#S8300#CSTA#AES”. Note the use of the switch connection “S8300” as part of the Tlink name.



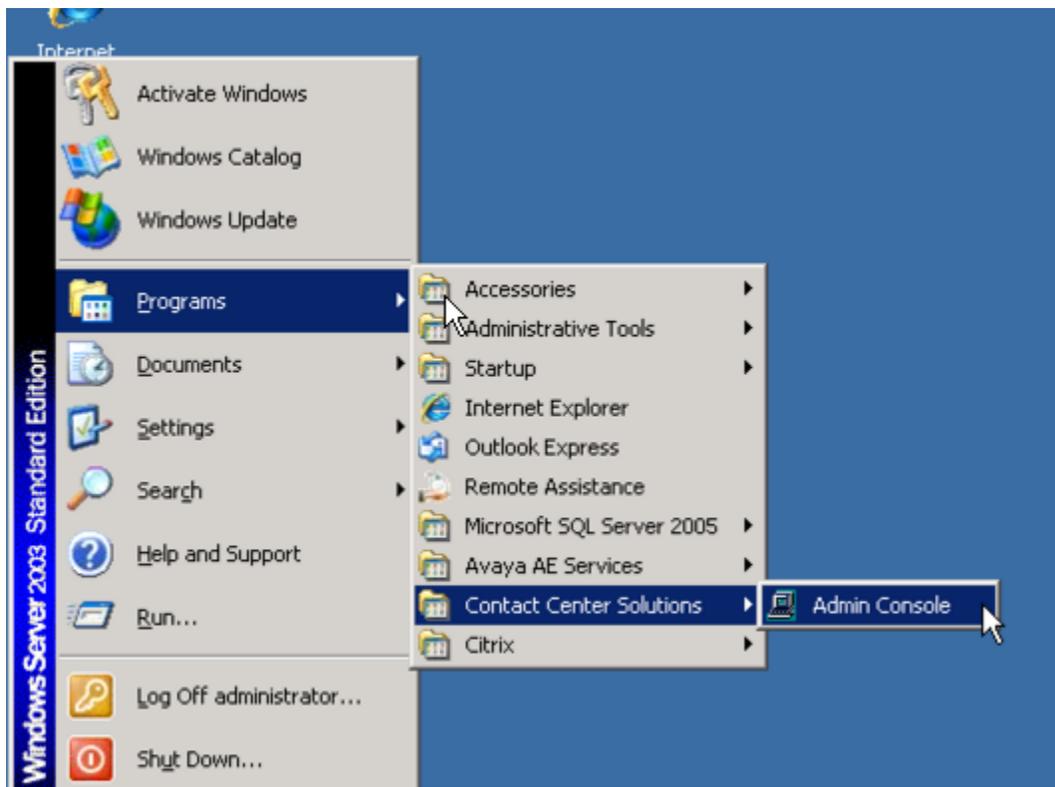
## 6. Configure Customer Experience Reporting

This section provides the procedures for configuring Customer Experience Reporting. The procedures include the following areas:

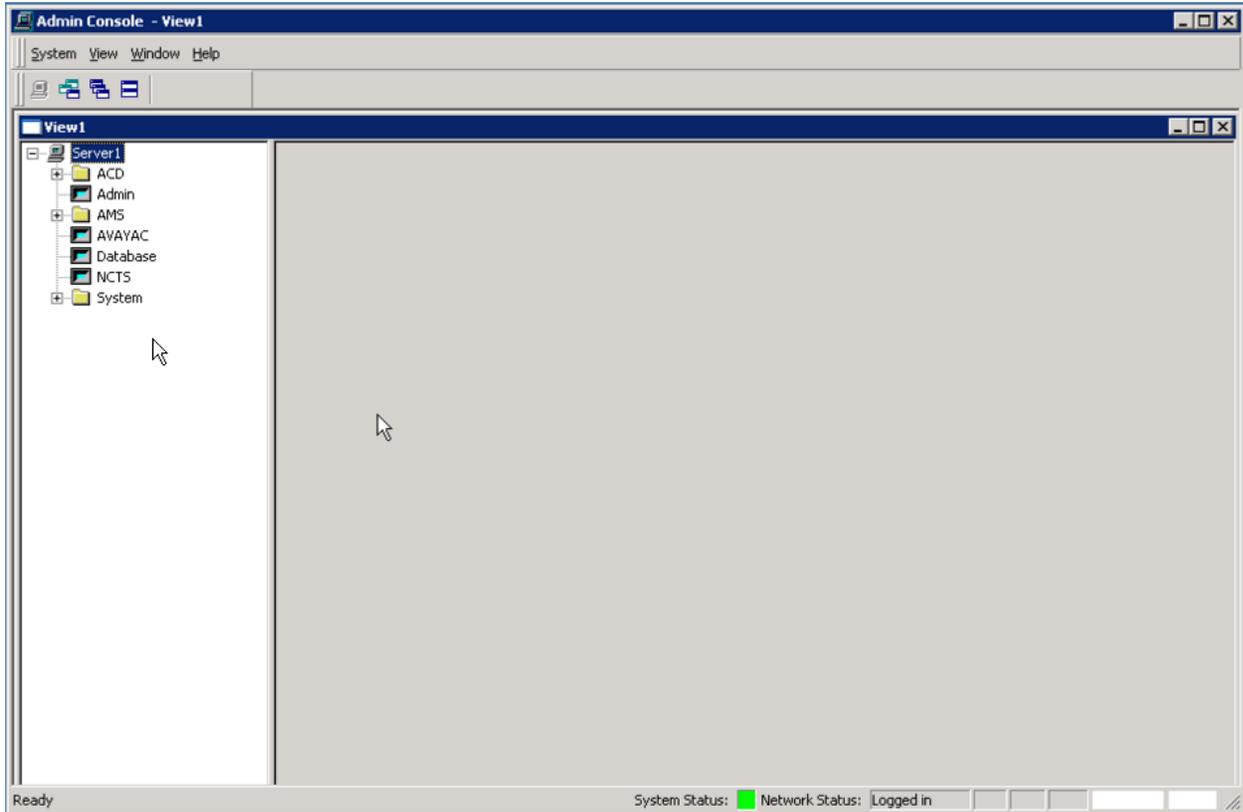
- Launch and Configure Administrator Console
- Launch Customer Experience Reporting Web Interface
- Administer Skills
- Administer Vectors
- Administer VDNs
- Administer Agents
- Administer Supervisor(s)
- Web Client Installation
- Accessing Instant Messaging

The configuration of Customer Experience Reporting is typically performed by Viable Resources support technicians. The procedural steps are presented in these Application Notes for informational purposes.

### 6.1. Launch and Configure Administrator Console



The first screen that appears is not a login screen. The console does not require a login, but it does require some configuration.



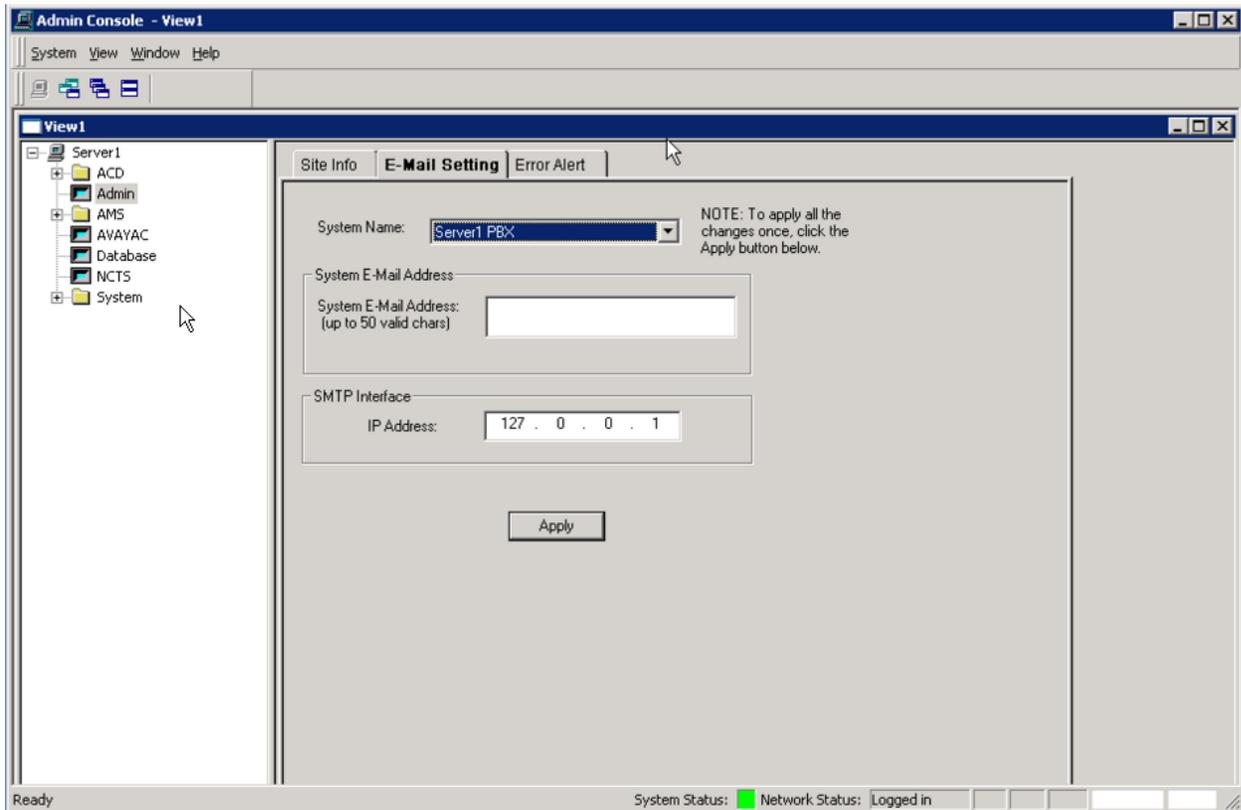
Configure the Site Info Tab under the Admin Tab.

- Fill in boxes for **Name**, **Address**, **City**, **State**, **Zip Code**, **First Name**, **Last Name**, **Phone Number**, and **E-Mail Address**.

The screenshot shows the 'Admin Console - View1' window. On the left is a tree view with 'Server1' expanded to show folders for 'ACD', 'Admin', 'AMS', 'AVAYAC', 'Database', 'NCTS', and 'System'. The main area has three tabs: 'Site Info' (selected), 'E-Mail Setting', and 'Error Alert'. At the top of the 'Site Info' tab, there are two input fields: 'Registration Number' with the value 'DEVCONNET' and 'Site ID' with the value '00000'. To the right of these fields is a note: 'NOTE: To apply all the changes once, click the Apply button below.' Below this is a 'Site Information' section with four input fields: 'Name' (Avaya DevConnect), 'Address' (1300 West 120th Ave, D4-D40), 'City' (Westminster), and 'State' (CO). To the right of the 'State' field is a 'ZIP Code' field with the value '80234'. Below that is a 'Contact Person' section with four input fields: 'First Name' (Bella), 'Last Name' (Hartz), 'Phone Number' (303.555.1212), and 'E-Mail Address' (someuser@avaya.com). At the bottom center of the form is an 'Apply' button. The status bar at the bottom of the window shows 'Ready' on the left, and 'System Status: [green square] Network Status: Logged in' on the right.

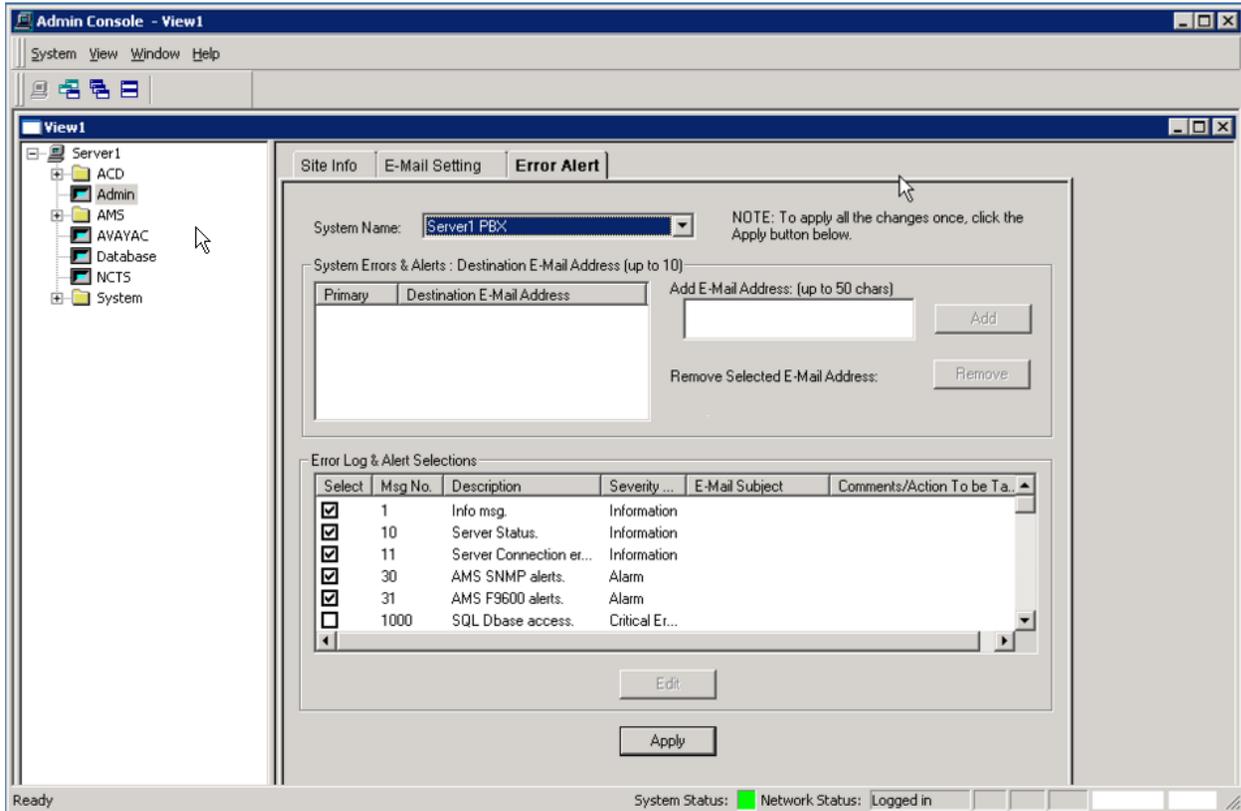
Configure the E-Mail Setting Tab under the Admin Tab.

- Choose the **System Name** from the pull-down menu. Populate the **System E-Mail Address** box and the **SMTP Interface IP Address** for the network management elements, if required for alerting. Hit **Apply**.
- E-mail was not populated in the screen shot below as it was not needed for the interoperability testing.



Configure the Error Alert Tab under the Admin Tab.

- Choose the **System Name** from the pull-down menu. Populate the **Add E-Mail Address** box and choose which error logs and alerts the customer requires, if needed. Hit **Apply**.
- E-mail was not populated in the screen shot below as it was not needed for the interoperability testing.



Configure the Avaya portion under the AVAYAC tab.

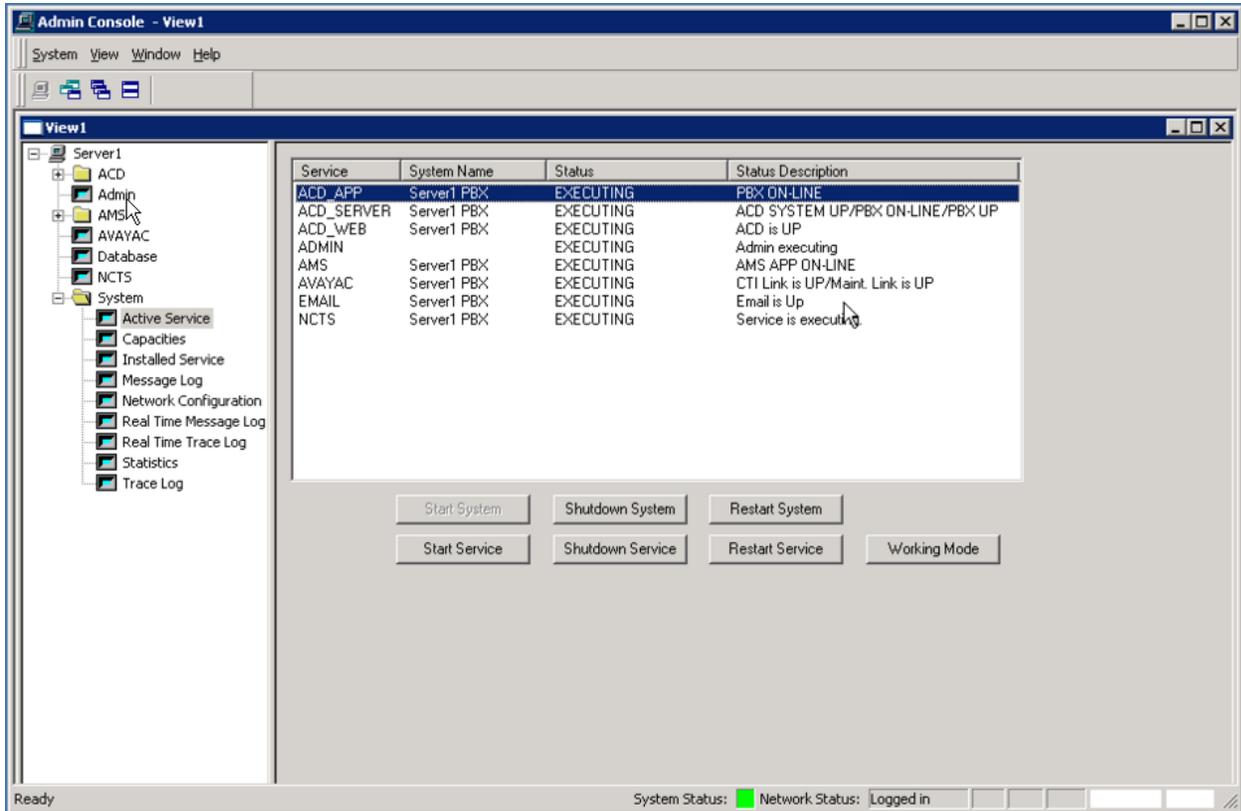
- Choose the **System Name** from the pull-down menu. Populate the **Maintenance Interface** information with the **IP Address**, **Login Name**, and **Password** from the Communication Manager.  
NOTE: A standard login is recommended with privileges similar to the dadmin login created below, but Viable does not recommend using dadmin in a production environment.
- Populate the **CTI Interface** information with the **IP Address/Port**, **Avaya CTI Link ID**, the TLINK name for the **AES Connection ID**, the **Login Name**, and **Password** from the Application Enablement Server. Hit **Apply**.

The screenshot shows the 'Admin Console - View1' window. On the left is a tree view with folders: Server1, ACD, Admin, AMS, AVAYAC (selected), Database, NCTS, and System. The main area contains configuration fields:

- System Name:** Server1 PBX (dropdown menu)
- Maintenance Interface:**
  - IP Address: 10 . 64 . 10 . 10
  - Login Name: dadmin
  - Password: [masked]
  - PIN: [masked]
- CTI Interface:**
  - IP Address / Port: 10 . 64 . 10 . 20 / 450
  - Avaya CTI Link ID: 01 (dropdown menu)
  - AES Connection ID: AVAYA#S8300#CSTA#AES
  - Login Name: avaya
  - Password: [masked]

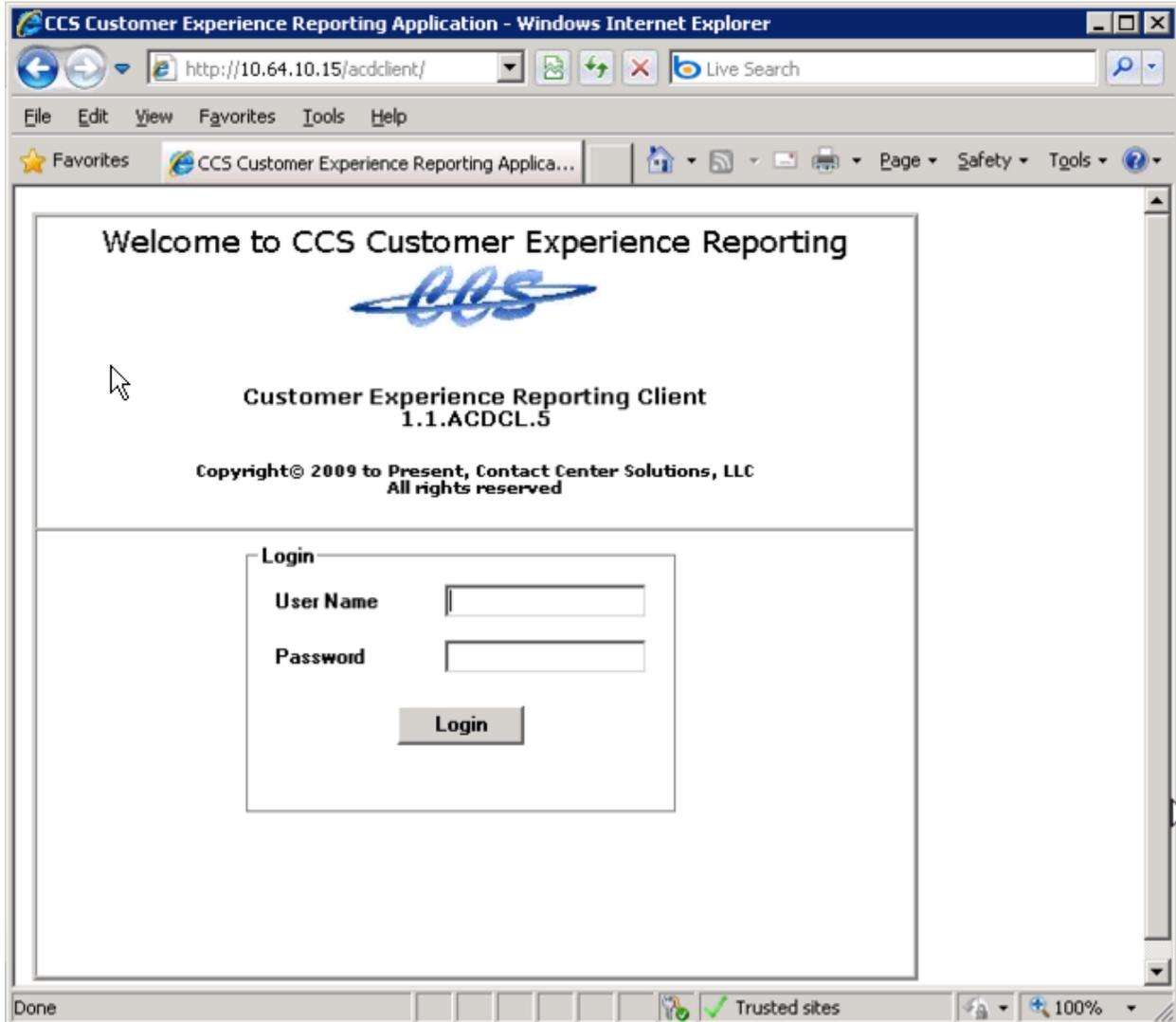
Buttons for 'Reset' and 'Apply' are located to the right of the Maintenance Interface fields. The status bar at the bottom shows 'Ready', 'System Status: [green]', 'Network Status: Logged in', and several empty status indicators.

To view system status in the Admin Console, click on **System -> Active Service**. This page gives the full system status including Network Status, PBX status, and CTI Link Status.



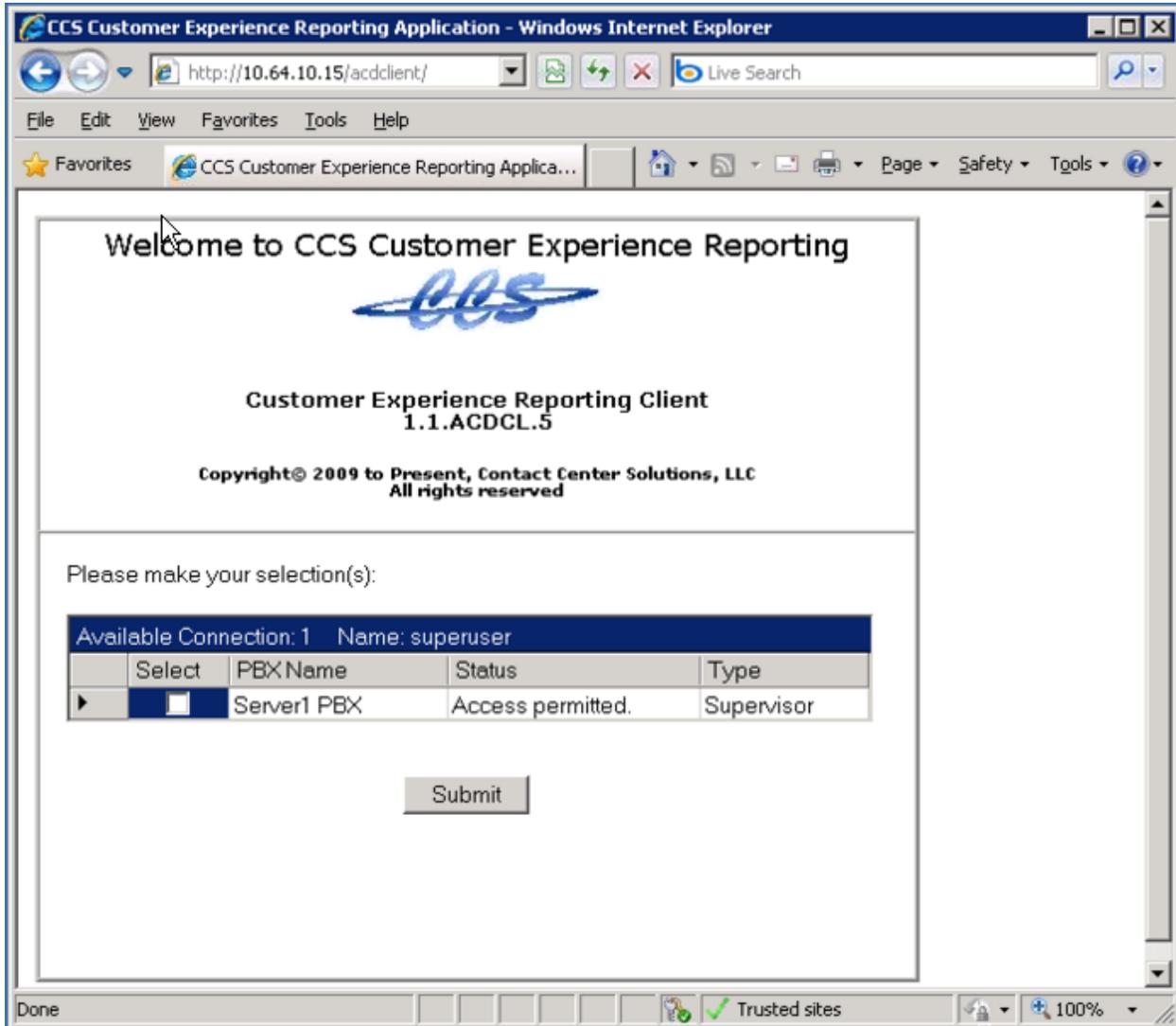
## 6.2. Launch Customer Experience Reporting

Access the Customer Experience Reporting web-based interface using the URL **http://ip-address/acdclient** in an Internet browser window, where **ip-address** is the IP address of the Customer Experience Reporting server. The **Log In** screen is displayed as shown below. Log in using the appropriate credentials.

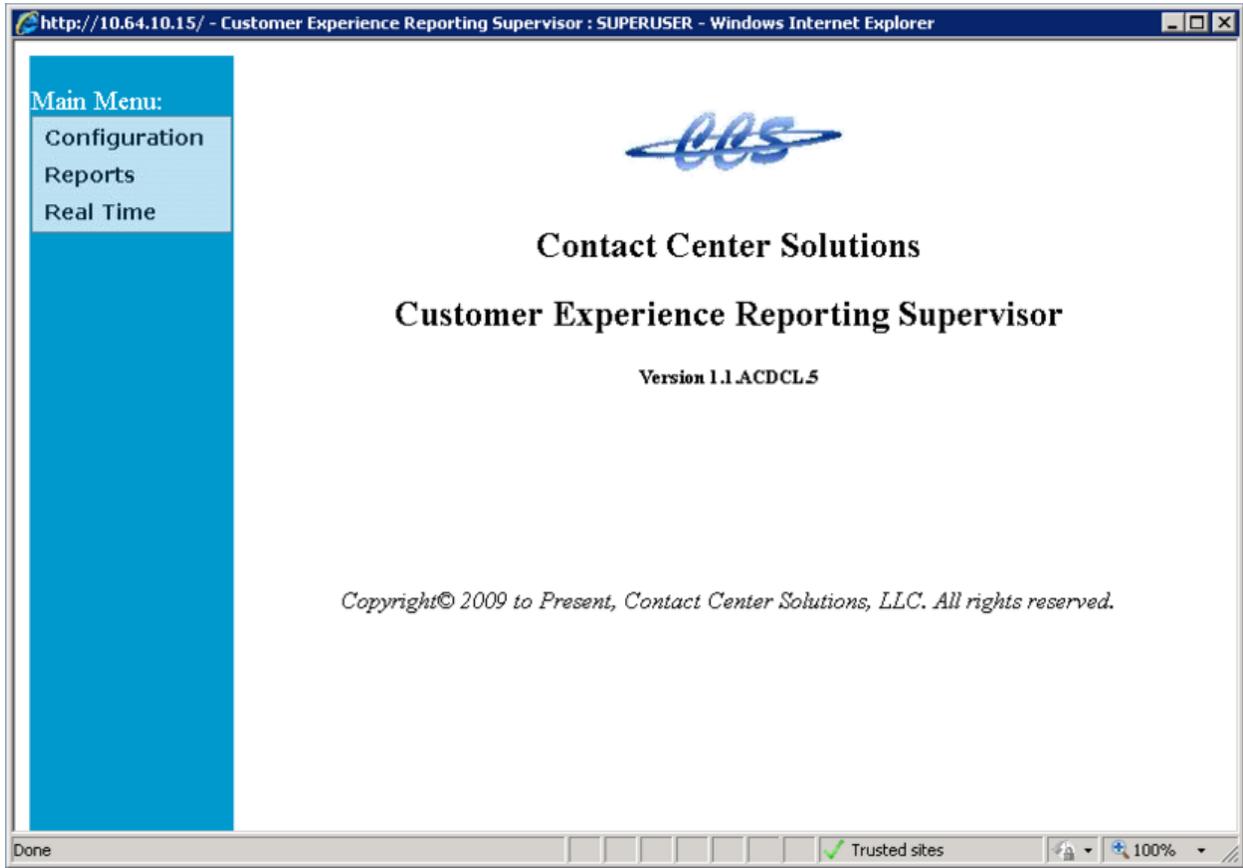


After entering a valid login and password, the user is prompted to choose a server. In this configuration, there is only one choice.

- Check the box labeled **Select**, and hit **Submit**.

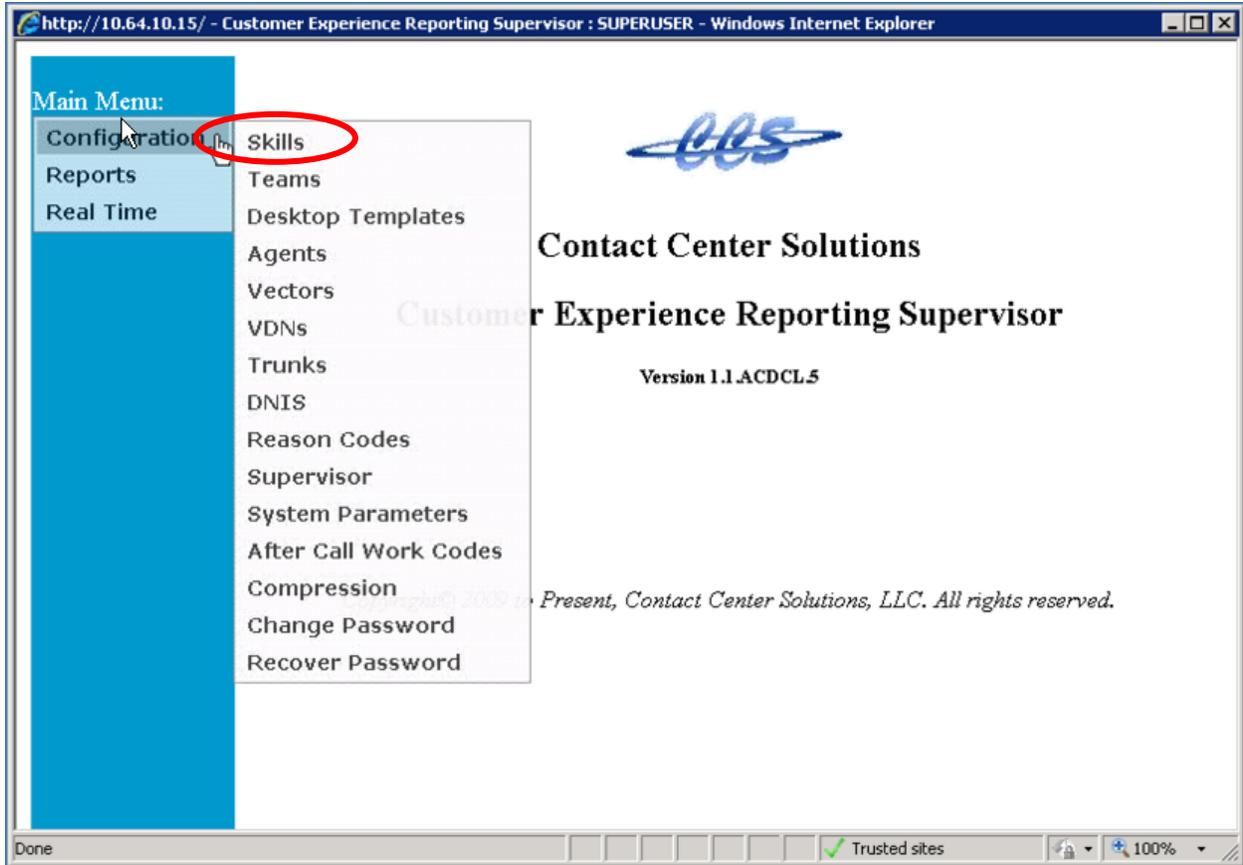


The next screen is the Main Menu. From here, the Supervisor can do the Configuration for the system.



### 6.3. Administer Skills

From the Main Menu, select **Configuration** -> **Skills** from the left pane.



Populate the **Skill Configuration** fields based on the information from the Communication Manager S8300 Server.

- Choose the **ACD System** from the pull-down menu. Populate the fields for **Skill Number**, **Skill Name**, **Extension**, and **COR**. Set other parameters as needed. Hit **Submit**.
- For test purposes, the fields **ACD System**, **Skill No.**, **Skill Name**, **Extension**, and **COR** were populated. Total Calls Waiting thresholds were set to **TH1 = 5**, **TH2 = 10**, and **TH3 = 15**. This was essential for testing the real-time reports. The rest of the fields were left at the default values.

**Skill Configuration**

ACD System: Server1 PBX

**Skill Information**

Skill No.: 10  
 Skill Name: TESTHUNT  
 Extension: 5510 COR: 1

**Calculation Intervals**

ASA, SVL: 10 Minutes  
 % Abandoned Calls(AB): 10 Minutes

**Call Waiting**

	TH1	TH2	TH3	Bell
Total Calls Waiting	5	10	15	N
Call Waiting Time	60	120		N
Longest Call Waiting	60	120		N
Average Speed Of Answer(ASA)	30			N
Service Level (SVL)	20			
% Grade of Service (GOS)	80			N
% Abandoned (AB)	5			N
% Waiting Calls	5	10		N
% AVAIL Agents	20	50		N

**Miscellaneous**

Redirect On No Ans Time (Rings):  
 Max Calls Queued: 20  
 Redirect to VDN:  
 After Call Work (ACW) Time:

**Shift Schedules(00:00-23:59)**

	Start	End
First Shift	00:00	23:59
Second Shift	00:00	00:00
Third Shift	00:00	00:00
Fourth Shift	00:00	00:00

**Time in State (mm:ss)**

	TH1	TH2
AVAIL	02:00	05:00
ACW	02:00	05:00
ACD IN	02:00	05:00
EXT OUT	02:00	05:00
INTERNAL	02:00	05:00
AUX	02:00	05:00
EXT IN	02:00	05:00
HOLD	02:00	05:00
RING	02:00	05:00
UNAVAIL	02:00	05:00
DIAL	00:00	00:00

Buttons: Submit, Cancel, Insert Mode

As you populate multiple skills, these can be accessed using the pull-down menu. The skill can be modified using either the **Skill No.** or **Skill Name**.

http://10.64.10.15/ - Skill Configuration - Windows Internet Explorer

### Skill Configuration

**ACD System** Server1 PBX

**Skill Information**

Skill No. 10 Skill Name TESTHUNT

Extension 55TU COR 1

**Calculation Intervals**

ASA, SVL 10 Minutes

% Abandoned Calls(AB) 10 Minutes

**Call Waiting**

	TH1	TH2	TH3	Bell
Total Calls Waiting	5	10	15	N
Call Waiting Time	60	120		N
Longest Call Waiting	60	120		N
Average Speed Of Answer(ASA)	30			N
Service Level (SVL)	20			
% Grade of Service (GOS)	80			N
% Abandoned (AB)	5			N
% Waiting Calls	5	10		N
% AVAIL Agents	20	50		N

Last Modified : 12/21/2009 4:17:26 PM

**Miscellaneous**

Redirect On No Ans Time (Rings):

Max Calls Queued: 20

Redirect to VDN:

After Call Work (ACW) Time:

**Shift Schedules(00:00-23:59)**

	Start	End
First Shift	00:00	23:59
Second Shift	00:00	00:00
Third Shift	00:00	00:00
Fourth Shift	00:00	00:00

**Time in State (mm:ss)**

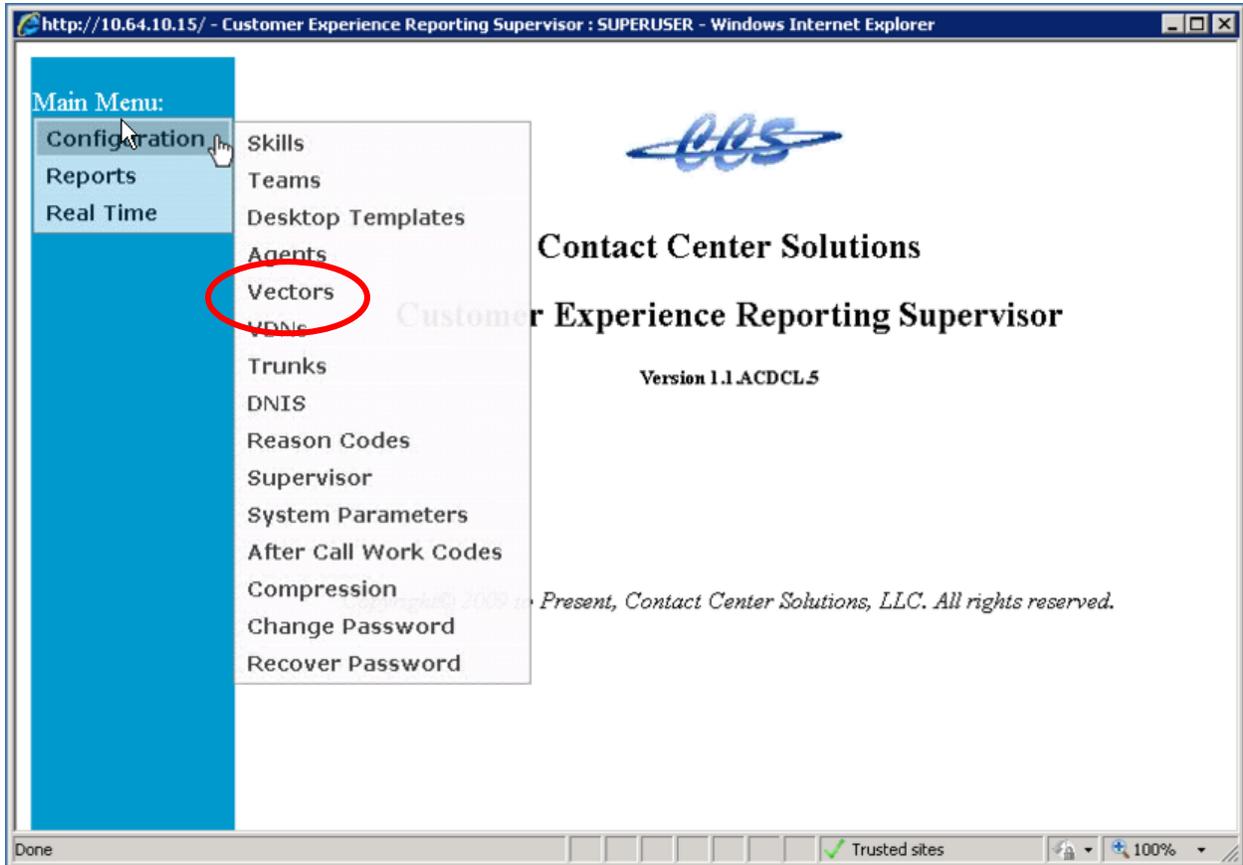
	TH1	TH2
AVAIL	02:00	05:00
ACW	02:00	05:00
ACD IN	02:00	05:00
EXT OUT	02:00	05:00
INTERNAL	02:00	05:00
AUX	02:00	05:00
EXT IN	02:00	05:00
HOLD	02:00	05:00
RING	02:00	05:00
UNAVAIL	02:00	05:00
DIAL	00:00	00:00

Submit Insert Delete < Previous Next >

Done Trusted sites 100%

## 6.4. Administer Vectors

From the Main Menu, select **Configuration** -> **Vectors** from the left pane.



Populate the Vector Configuration Fields based on the information from the Communication Manager S8300 Server.

- Choose the **ACD System** from the pull-down menu. Populate the fields for **Vector Number**, **Vector Name**, and Vector Steps. Hit **Submit**.

**Vector Configuration**

ACD System: Server1 PBX

Vector Information

Vector No: 1

Vector Name: TestVector1

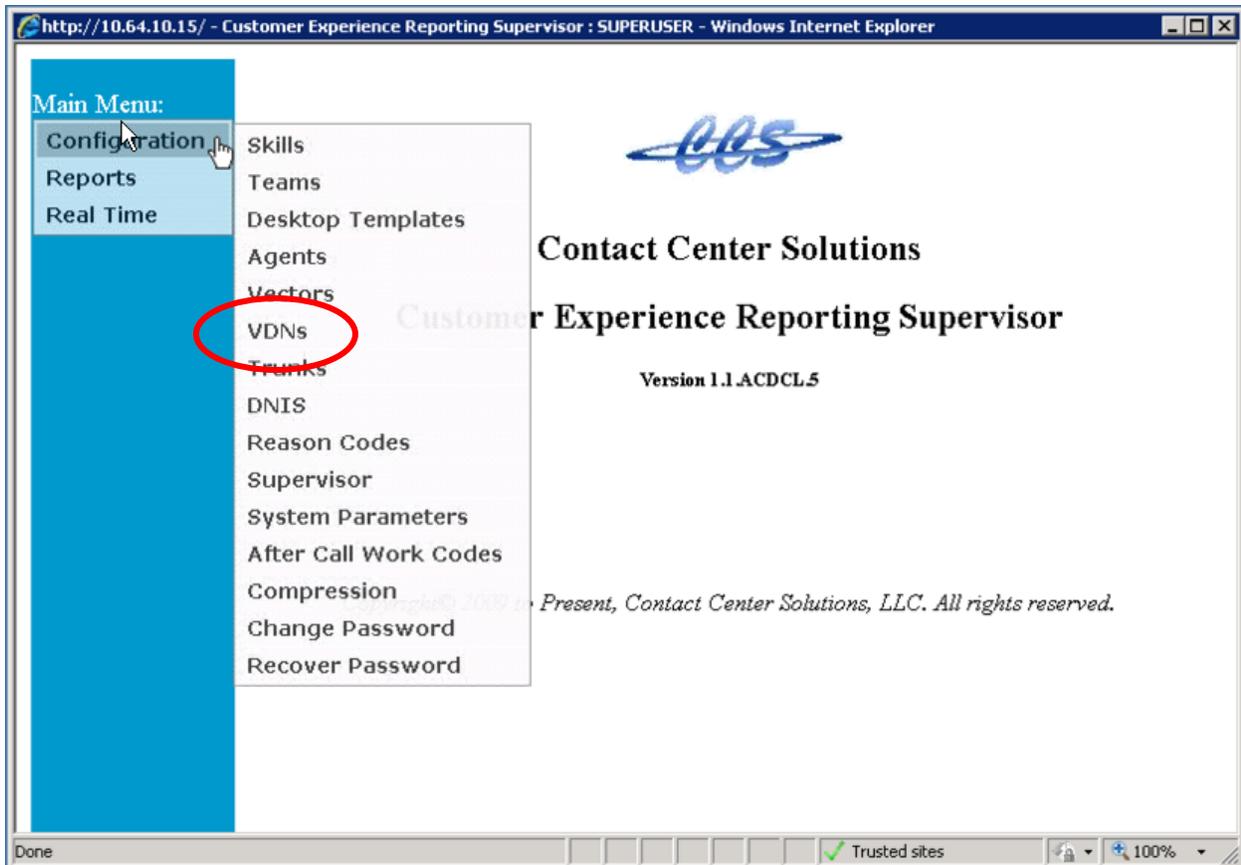
Buttons: Add Step, Delete Step, Schedule >, Activate/Override >, Sync To ACD Sys >, Submit, Cancel

Select	No	Command			
Select	1	wait-time	0	secs	hearing silence
Select	2	route-to	number	5510	with cov n if unconditionally
Select	3	stop			
Select	4				
Select	5				
Select	6				
Select	7				
Select	8				
Select	9				
Select	10				
Select	11				
Select	12				
Select	13				
Select	14				
Select	15				
Select	16				

1

## 6.5. Administer VDNs

From the Main Menu, select **Configuration** -> **VDNs** from the left pane.



Populate the VDN Configuration Fields based on the information from the Communication Manager S8300 Server.

- Choose the **ACD System** from the pull-down menu. Populate the fields for **VDN Number**, **VDN Name**, **Vector No**, and any other thresholds that need to be set. Hit **Submit**.
- For test purposes, the fields **ACD System**, **VDN No.**, **VDN Name**, **Vector No.**, and **COR** were populated. The rest of the fields were left at the default values.

**VDN Configuration** Vector >

ACD System: Server1 PBX    Sort VDN by: Number    VDN List: All

**VDN Information**

VDN Number: 5610    TestVDN    Vector No: 1

VDN Name: TestVDN    Automatic Scheduling     Record is InActive

Allow Override: N

Call Threshold	Collection Interval	TH1	TH2	Bell	COR
Total Number of Call Waiting(NCW)		0	0	N	1
Call Waiting Threshold(CWT)		0	0	N	1st Skill
Number of Calls Rerouted(CRR)	10 Minutes	0	0	N	
Number of Calls Abandoned(ABN)	10 Minutes	0	0	N	
Number of Calls Handled(NCH)	10 Minutes	0	0	N	2nd Skill
Number of Calls Offered(NCO)	10 Minutes	0	0	N	
Average Speed of Answer(ASA)	10 Minutes	0		N	
Percent Abandon(%ABN)	10 Minutes	0		N	3rd Skill
Average Delay to Abandon(ADA)	10 Minutes	0		N	
Acceptable Grade of Service %(GOS)	10 Minutes	0		N	
Call Answer Threshold for GOS		0			

Last Modified: 12/21/2009 4:36:14 PM

Request Processed

Submit    Insert    Delete    < Previous    Next >

Repeat population of the fields for each VDN that is added. Once added, they can be viewed in the pull-down window list.

http://10.64.10.15/ - VDN Configuration - Windows Internet Explorer

### VDN Configuration

[Vector >](#)

ACD System: Server1 PBX    Sort VDN by: Number    VDN List: All

**VDN Information**

VDN Number: 5612    TestVDN2    Vector No: 1

VDN Name: TestVDN2    TestVDN    Automatic Scheduling     Record is InActive

Allow Override: N    TestVDN2    Default

**Call Threshold**

Collection Interval	TH1	TH2	Bell	COR
Total Number of Call Waiting(NCW)	0	0	N	1
Call Waiting Threshold(CWT)	0	0	N	1st Skill
Number of Calls Rerouted(CRR)    10 Minutes	0	0	N	
Number of Calls Abandoned(ABN)    10 Minutes	0	0	N	
Number of Calls Handled(NCH)    10 Minutes	0	0	N	2nd Skill
Number of Calls Offered(NCO)    10 Minutes	0	0	N	
Average Speed of Answer(ASA)    10 Minutes	0		N	
Percent Abandon(%ABN)    10 Minutes	0		N	3rd Skill
Average Delay to Abandon(ADA)    10 Minutes	0		N	
Acceptable Grade of Service %(GOS)    10 Minutes	0		N	
Call Answer Threshold for GOS	0			

Last Modified: 12/21/2009 4:37:18 PM

Request Processed

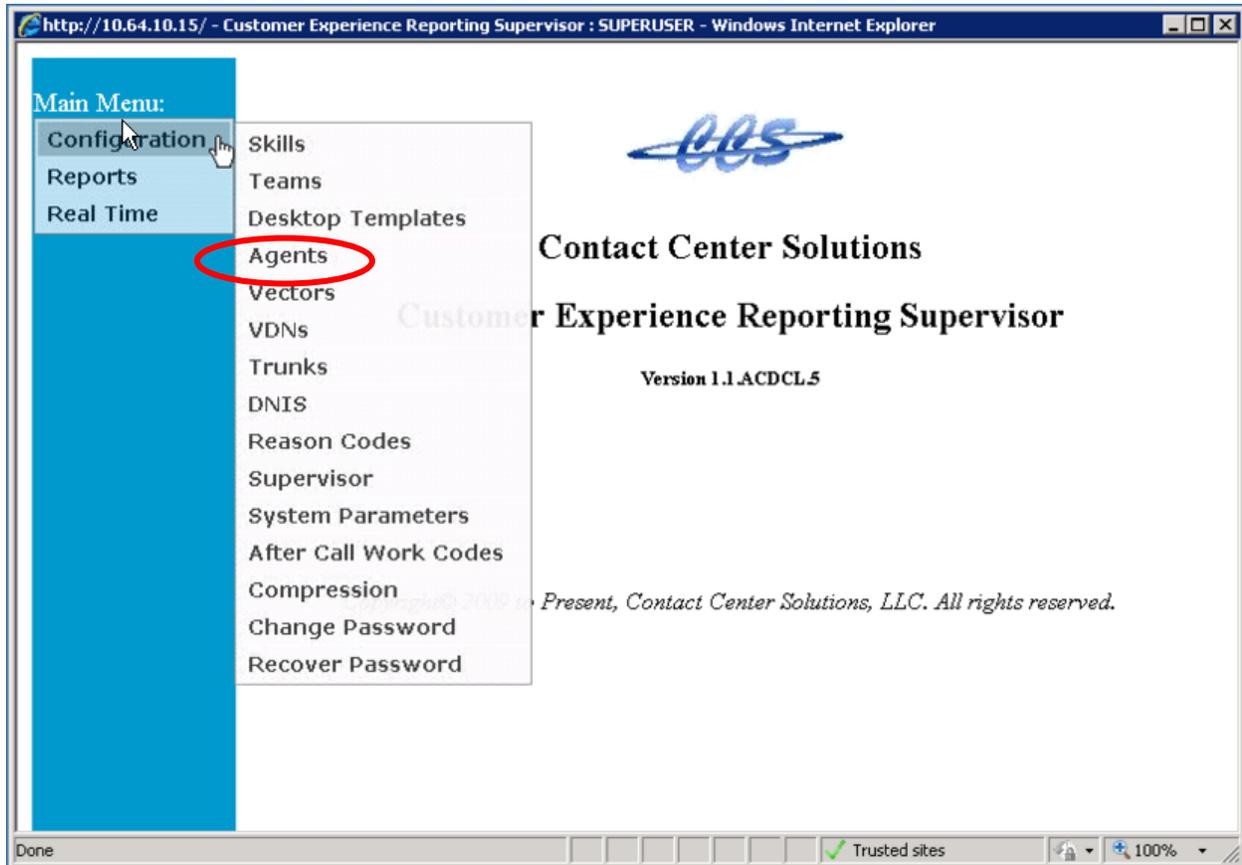
Submit    Insert    Delete    < Previous    Next >

Trusted sites    100%

## 6.6. Administer Agents

From the Main Menu, select **Configuration** -> **Agents** from the left pane.

Select the **Agents** tab, and click **Add new record** to add a new agent.



Populate the **Agent Configuration** fields based on the information from the Communication Manager S8300 Server.

- Choose the **ACD System** from the pull-down menu. Populate the fields for **Agent Information**, including **Agent ID** and **Agent Name**. Set other parameters as needed. Hit **Submit**.

**Agent Configuration**

ACD System: Server1 PBX

**Agent Information**

Agent ID: 5310

Agent Name: AGENT 1

Automatic Login  Automatic AVAIL

Desktop Template: [ ] [ ]

**Telephone**

COR: 1 Auto Answer: none

Agent Ext. No.: 5200

**Miscellaneous**

Team: 0 [ ]

After Call Work (ACW) Mode: Indefinite  
After ACD call, phone will remain in ACW mode Indefinitely.

Forced ACW Code

**Skill Selection**

Level	Skill No.	Skill Name	Priority
1	10	TESTHUNT	1
2	[ ]	[ ]	[ ]
3	[ ]	[ ]	[ ]
4	[ ]	[ ]	[ ]
5	[ ]	[ ]	[ ]
6	[ ]	[ ]	[ ]
7	[ ]	[ ]	[ ]
8	[ ]	[ ]	[ ]
9	[ ]	[ ]	[ ]
10	[ ]	[ ]	[ ]
12			

Submit Cancel [Insert Mode](#)

Repeat this section to add the remaining agents. Agents that were previously added can be modified using the pull-down menu under **Agent ID** or **Agent Name**.

http://10.64.10.15/ - Agent Configuration - Windows Internet Explorer

### Agent Configuration

ACD System: Server1 PBX    Sort Agent by: ID    Agent List: All

**Agent Information**

Agent ID: 5319    Agent Name: Agent 10

Agent Name dropdown: 5310, 5311, 5312, 5313, 5314, 5315, 5316, 5317, 5318, 5319

Automatic Login:     Automatic AVAIL:

Desktop Template:

Telephone: COR: 1    Auto Answer: none    Agent Ext. No.: 5209

**Miscellaneous**

Team: 0    After Call Work (ACW) Time: PBX Controlled

Check "ACW Time" for skills (0 means immediate to Avail).

Forced ACW Code:

Last Modified: 12/21/2009 4:31:42 PM

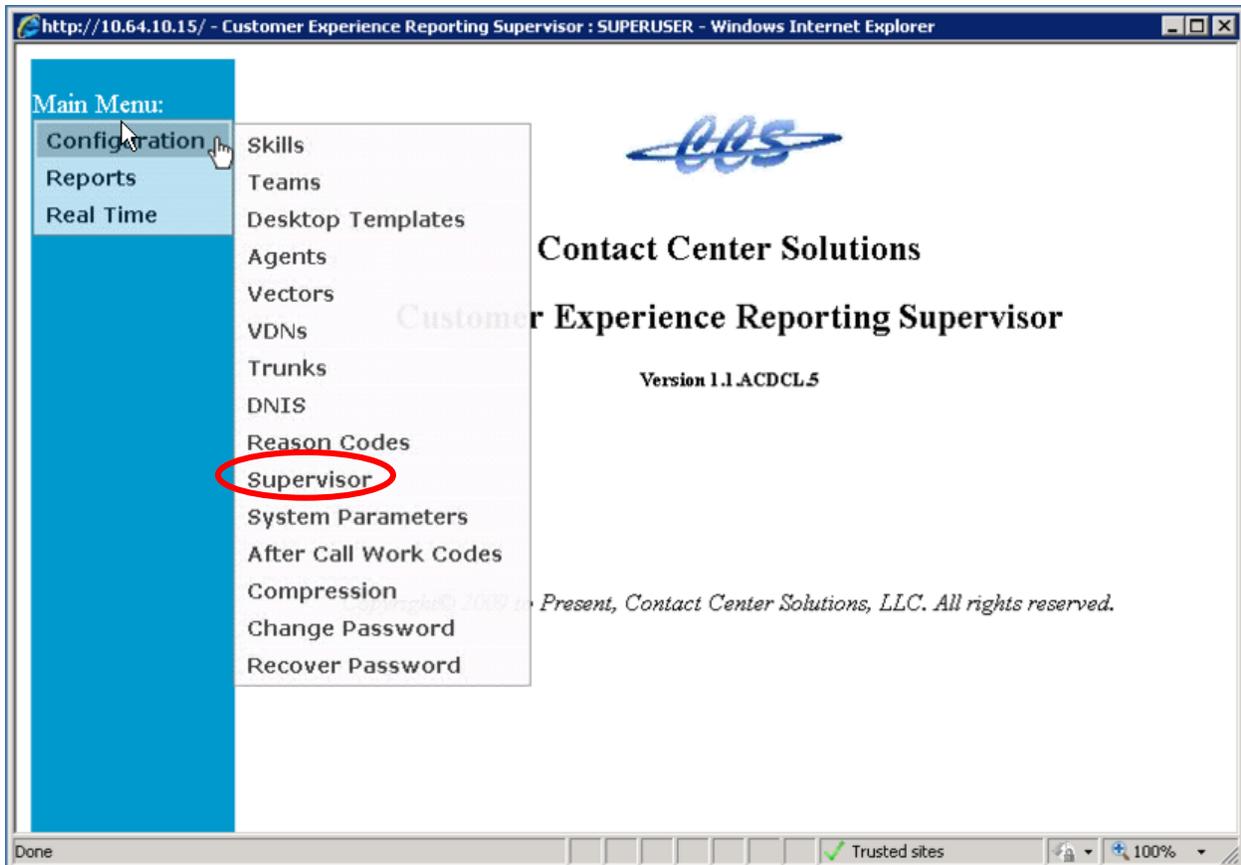
Request Processed:

Submit    Insert    Delete    < Previous    Next >

Level	Skill No.	Skill Name	Priority
1	12	TESTHUNT2	1
2			
3			
4			
5			
6			
7			
8			
9			
10			
12			

## 6.7. Administer Supervisor(s)

From the Main Menu, select **Configuration** -> **Supervisor** from the left pane.



Populate the **Supervisor Configuration** fields based on the information from the Communication Manager S8300 Server.

- Choose the **ACD System** from the pull-down menu. Populate the fields for **Supervisor Information**, including **Supervisor Login Name** and **Supervisor Login ID**. Set other parameters as needed, including **ACD Skills**, **ACD Teams**, and **ACD VDNs** that the Supervisor will monitor. Hit **Submit**.

http://10.64.10.15/ - Supervisor Configuration - Windows Internet Explorer

### Supervisor Configuration

ACD System: Server1 PBX      Sort Supervisor by

**Supervisor Information**

Supervisor Login Name: Skill1 Super

Supervisor Login ID: skill1      Login Limit: 1

Features: Features...      Telephone:      Ext. No.:

**Viewable Supervisor Entities :**

ACD Skills	ACD Teams	ACD VDNs
Insert    Delete	Insert    Delete	Insert    Delete
10 : TESTHUNT		5610 : TestVDN

Submit    Cancel    Insert Mode

Done      Trusted sites      100%

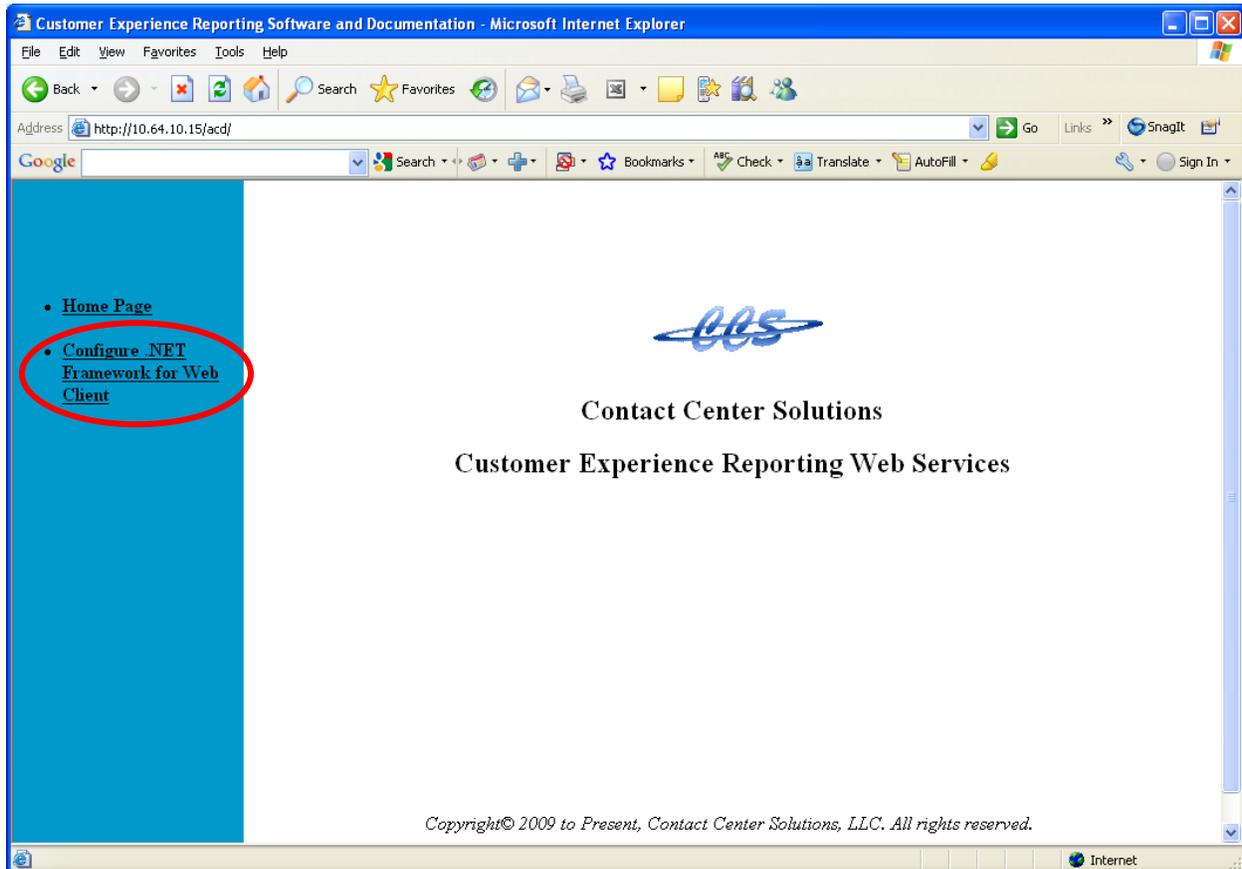
Populate the **Supervisor Feature Configuration** fields based on the information from the Communication Manager S8300 Server.

- Check the fields shown in the following screen shot for **Skill Displays**, **VDN Displays**, **Reports**, **Utility**, and **Vector**. Set the **Configuration and Administration Privileges** and shown in the screen below. This sets administrative privileges or restrictions of the Supervisor in CER. Hit **Apply**.

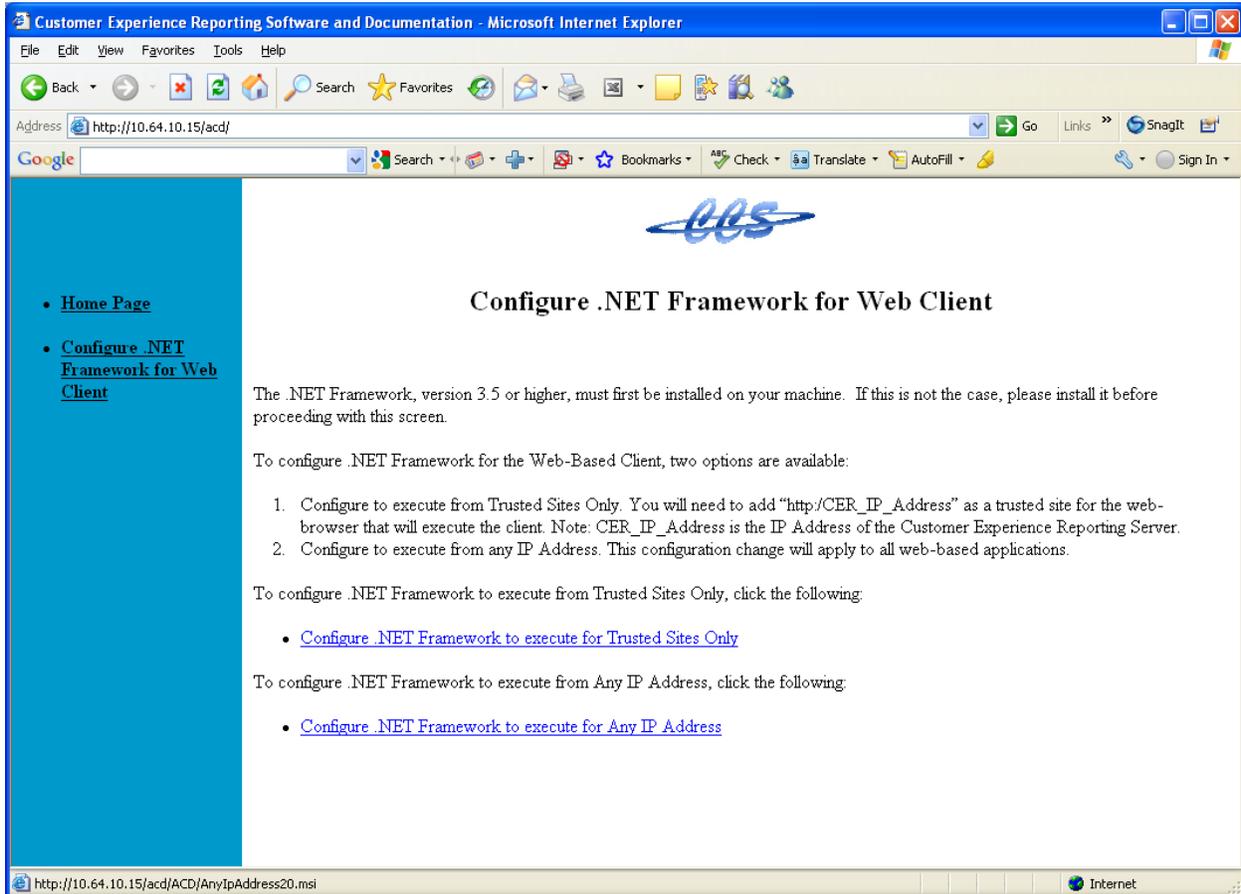
Feature Names	Feature Names	Feature Names	Privilege
<b>Skill Displays</b>	<b>Reports</b>	<b>Configuration and Administration</b>	
<input checked="" type="checkbox"/> Skill Agent Status	<input checked="" type="checkbox"/> On Demand Reports	Skills	Full
<b>Agent State Notify</b>	<input checked="" type="checkbox"/> Scheduled Reports	Teams	None
<input type="checkbox"/> External Outgoing Call	<input checked="" type="checkbox"/> Scheduled Reports All	Agent Desktop Templates	None
<input type="checkbox"/> External Incoming Call	<input checked="" type="checkbox"/> Call Track Reports	Agents	View
<input type="checkbox"/> Internal Call	<input checked="" type="checkbox"/> Configuration Reports	Announcements	None
<input type="checkbox"/> ACD IN	<input checked="" type="checkbox"/> Global Report View	Vectors	View
<input type="checkbox"/> RONA	<b>Utility</b>	Vector Scheduling	None
<input type="checkbox"/> ACW	<input type="checkbox"/> Recover Password	VDNs	None
<input type="checkbox"/> AUX	<input type="checkbox"/> Change Password	Trunk Groups	None
<input checked="" type="checkbox"/> Team Agent Status	<input checked="" type="checkbox"/> Agent Control	Trunks	None
<input checked="" type="checkbox"/> Skill Status	<input type="checkbox"/> Database Compression	DNIS	None
<input checked="" type="checkbox"/> Skill Status Graphs	<b>Vector</b>	Reason Codes	Modify
<b>VDN Displays</b>	<input checked="" type="checkbox"/> Activate	Supervisor	None
<input checked="" type="checkbox"/> VDN Call	<input checked="" type="checkbox"/> Override	Supervisor Features	None
<input checked="" type="checkbox"/> VDN Call Graphs	<input checked="" type="checkbox"/> Emergency Override	System Parameters	None
<input checked="" type="checkbox"/> Call Info		ACW Codes	View

## 6.8. Web Client Installation

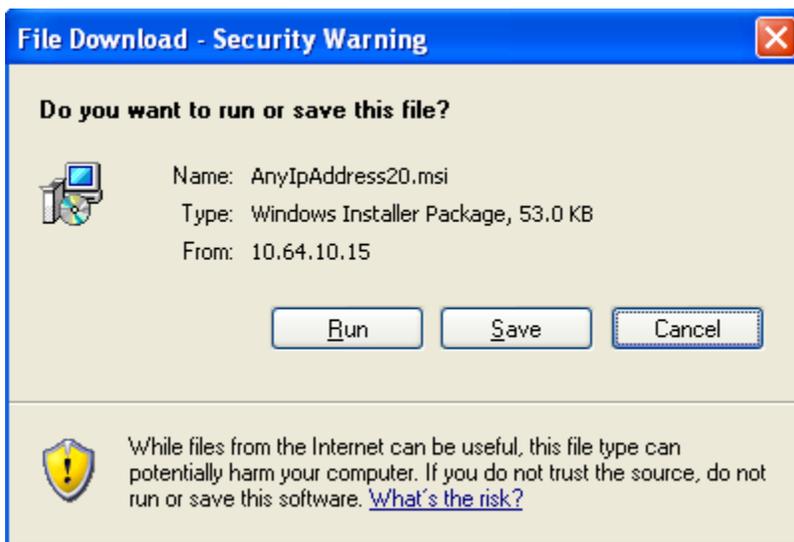
Bring up a browser and type in <ip-address/acd>. The screen that appears allows the end user to download the client. Click on **Configure .NET Framework for Web Client**.



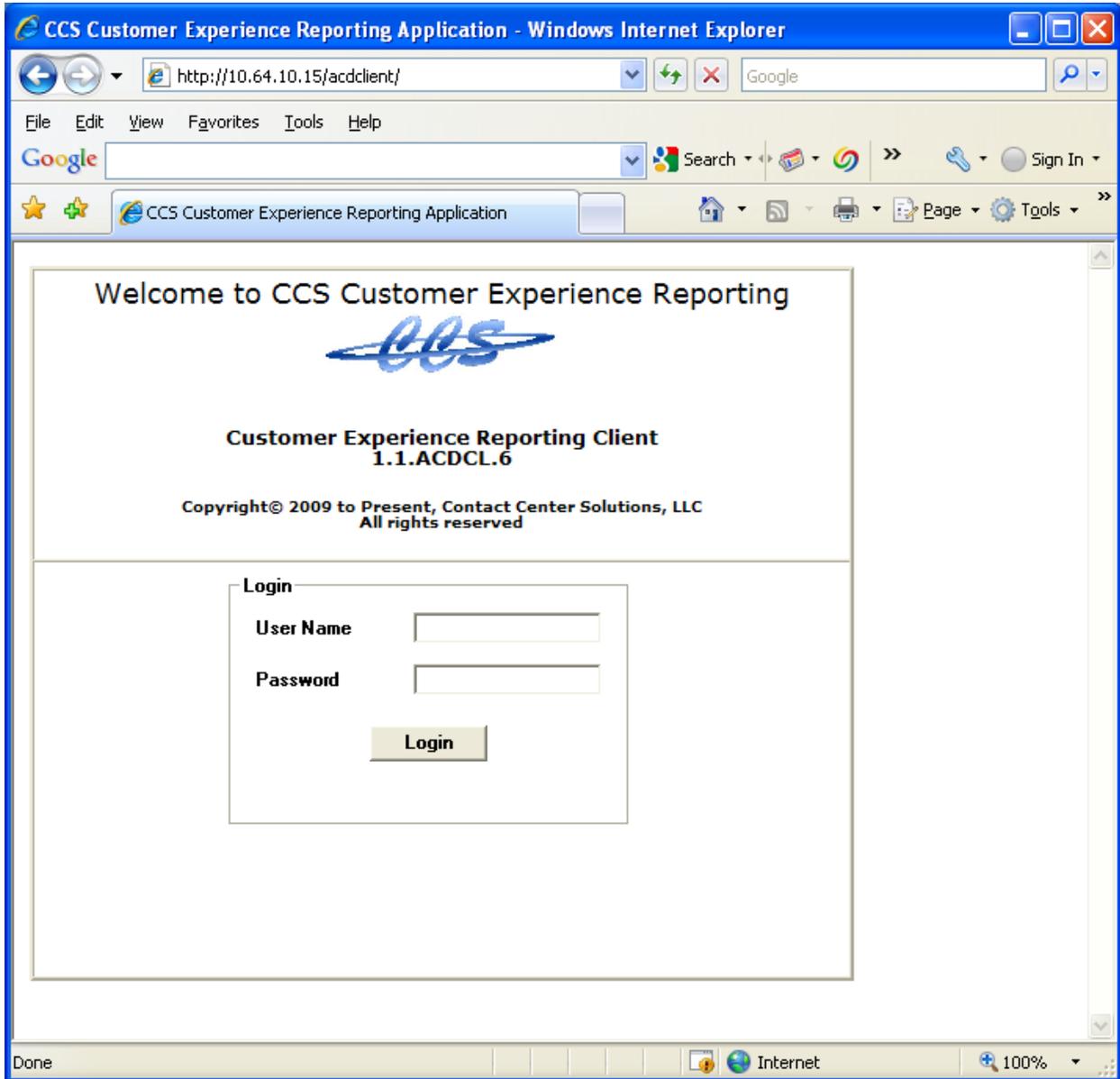
At the Configure screen, choose one of the two links to set up the client. In this case, the second link, **Configure .NET Framework to execute for Any IP Address** was used.



Choose either **Run** or **Save** to download the client.



Once the client is downloaded, type into the browser **http://ip-address/acdclient**, where **ip-address** is the IP address of the Customer Experience Reporting server. This brings up a login page. Log in with the appropriate credentials. Both Agents and Supervisors will log in using this method.



## 6.9. Accessing Instant Messaging

Log into the Web Client. Once logged in, select a server to log into. Hit **Submit**.

The screenshot shows a web browser window titled "CCS Customer Experience Reporting Application - Windows Internet Explorer". The address bar shows the URL "http://10.64.10.15/acdclient/". The page content includes a welcome message, the CCS logo, and a table of available connections. The table has one row selected, showing "Server1 PBX" with a status of "Access permitted." and a type of "Supervisor". A "Submit" button is located below the table.

Welcome to CCS Customer Experience Reporting



**Customer Experience Reporting Client**  
1.1.ACDCL.6

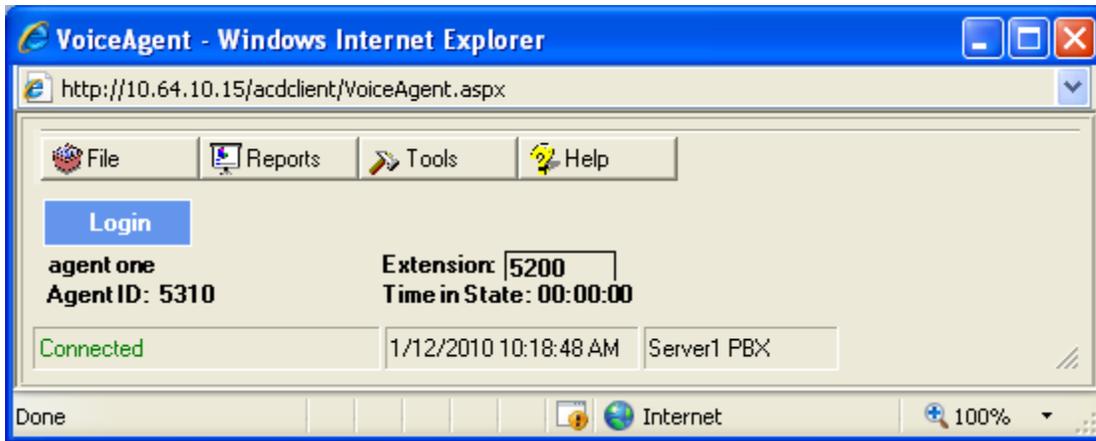
Copyright© 2009 to Present, Contact Center Solutions, LLC  
All rights reserved

Please make your selection(s):

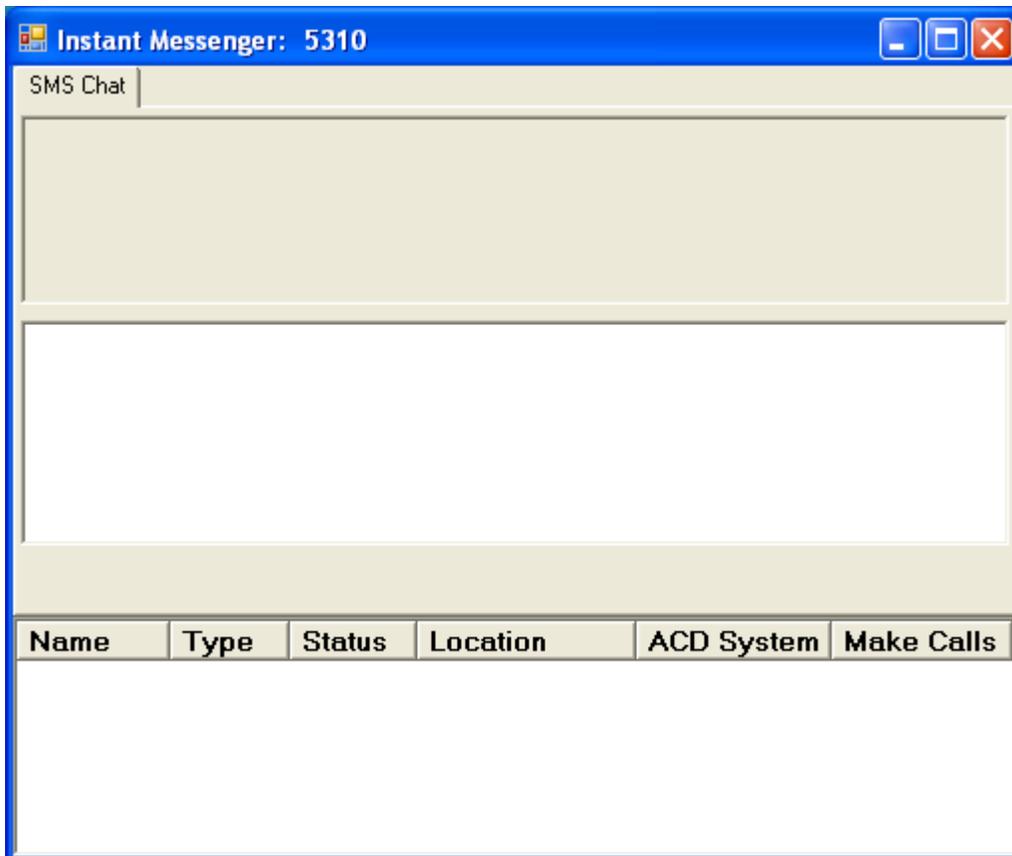
Available Connection: 1 Name: superuser				
Select	PBX Name	Status	Type	
<input checked="" type="checkbox"/>	Server1 PBX	Access permitted.	Supervisor	

Submit

Once access is granted, the end user will see the screen below. The Agent can hit the Login button to log in. In order to initiate a Messenger session, choose **Tools -> Messenger**.



This brings up an Instant Messenger Window.



When additional Agents and Supervisors are online, that information is shown at the bottom of the screen with **Name** listed in blue. A chat session is initiated using the **Make Call** button. Chat can be seen in the top window in blue. More than one chat session can take place and can be seen with the multiple tabs, as seen in the screen below.

Instant Messenger: superuser

Skill1 super 327808 Agent One 393344

Connecting... Please wait.  
 Agent One> I'm starving. I can feel my ribs!  
 superuser> Please take your break now, we will be busy later  
 Agent One> Cool, thanks!

Send Disconnect

Name	Type	Status	Location	ACD System	Make Calls
Skill1 su...	Supervisor	OnLine	10.64.10.50	1	Make Call
Agent O...	Voice	OnLine	10.64.10.52	1	Make Call

## 7. General Test Approach and Test Results

All feature functionality test cases were performed manually to verify proper operation. The following scenarios were tested using the test configuration diagram shown in **Figure 1**.

The installation test cases were covered with the setup of Communication Manager, Application Enablement Services, and Customer Experience Reporting. The clean removal of the application was also covered in this section.

The functionality test cases were performed manually. Various calls were placed including incoming PSTN calls to the hunt groups, and incoming and outgoing personal calls from the agents.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet cable to an IP telephone, the Customer Experience Reporting server, and Communication Manager, and also by busying out the CTI port connection to Application Enablement Services from Communication Manager.

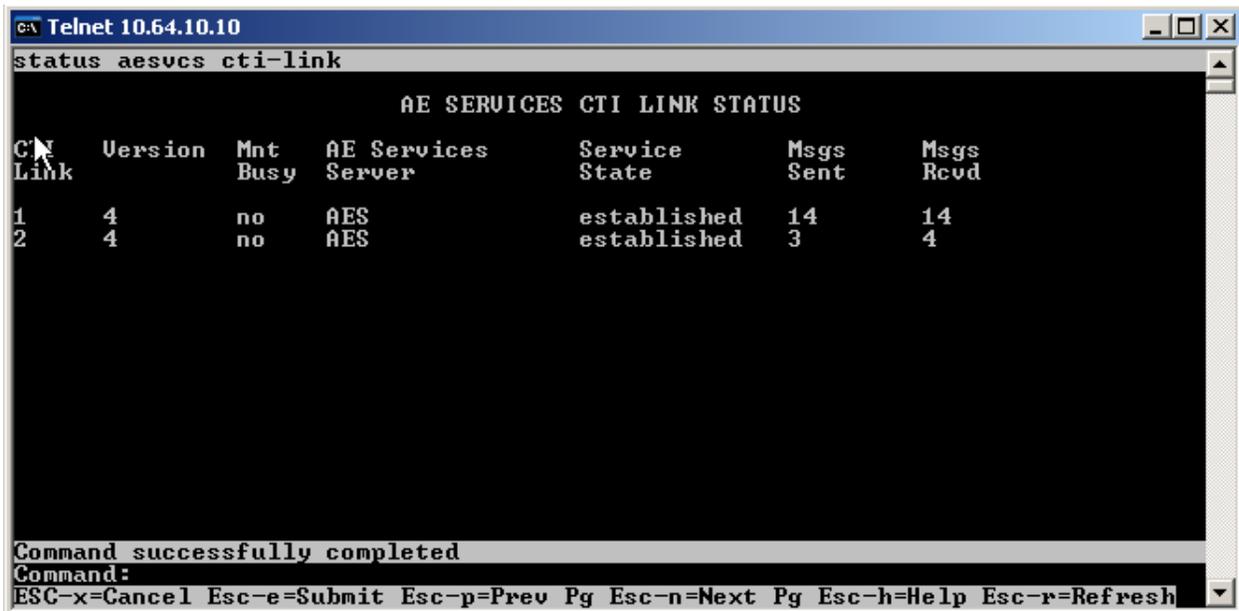
The verification of tests included manually checking of agent and VDN status from the various reports using the Customer Experience Reporting portal, checking system status via the Admin Console, and checking the accuracy of the historical reports over multiple test days from the portal.

All test cases passed. No errors were detected.

## 8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Communication Manager, Application Enablement Services, and Customer Experience Reporting.

For Communication Manager, check the CTI Link status with the **status aesvcs cti-link** command. The link status should show **no** for maintenance busy (**Mnt Busy**) and the **Service State** should indicate **established**.



```
ca\ Telnet 10.64.10.10
status aesvcs cti-link

                          AE SERVICES CTI LINK STATUS

Link  Version  Mnt  AE Services  Service  Msgs  Msgs
Link  Number    Busy Server      State    Sent  Rcvd
-----
1     4         no   AES          established  14    14
2     4         no   AES          established   3     4

Command successfully completed
Command:
ESC-x=Cancel Esc-e=Submit Esc-p=Prev Pg Esc-n=Next Pg Esc-h=Help Esc-r=Refresh
```

For Application Enablement Services, the **TSAPI Service** should show as **Running, ONLINE,** and **Yes** for **Licenses Purchased**.

**AVAYA** Application Enablement Services  
Operations Administration and Maintenance

You are here: > CTI OAM Home

## Welcome to CTI OAM Screens

[craft] Last login: Mon Nov 2 20:01:05 2009 from 10.64.10.15

IMPORTANT: AE Services must be restarted for administrative changes to fully take effect. Changes to the Security Database do not require a restart.

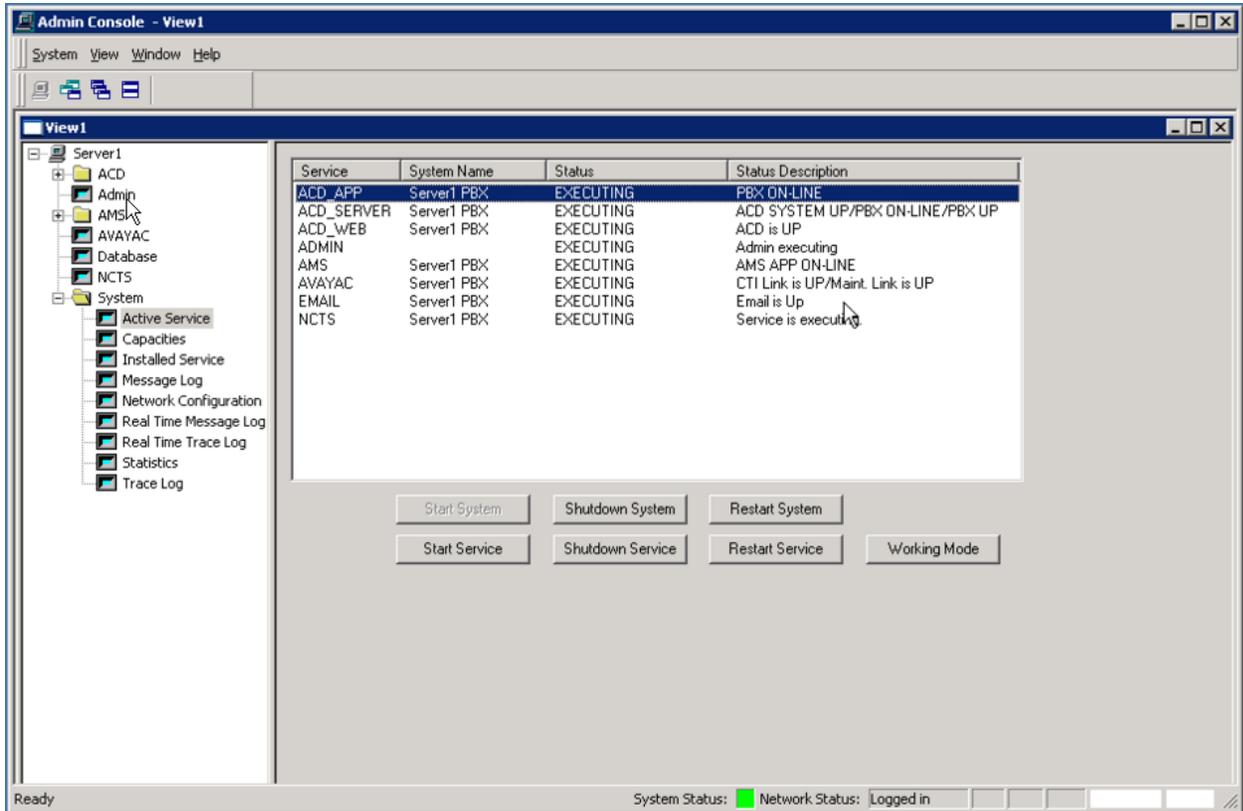
Service	Status	State	Licenses Purchased
<b>ASAI Link Manager</b>	Running	N/A	N/A
<b>DMCC Service</b>	Running	ONLINE	Yes
<b>CVLAN Service</b>	Running	ONLINE	Yes
<b>DLG Service</b>	Running	ONLINE	Yes
<b>Transport Layer Service</b>	Running	N/A	N/A
<b>TSAPI Service</b>	Running	ONLINE	Yes
<b>SMS</b>	N/A	N/A	Yes

For status on actual services, please use [Status and Control](#).

### License Information

You are licensed to run Application Enablement (CTI) version 4.2.

In the Customer Experience Reporting Admin Console, the **System Status** box should show as green, and all other Services on this screen (**ACD\_APP**, **ACD\_SERVER**, **ACD\_WEB**, **ADMIN**, **AMS**, **AVAYAC**, **EMAIL**, and **NCTS**) should be up and executing.



In the Skill Agent Status Report, Customer Experience Reporting shows all of the Agents that have been configured and their status real-time status.

Skill Agent Status Report: superuser - (10:TESTHUNT, 12:TESTHUNT2)

Agent Summary																		
Agents	ACD IN	AVAIL	ACW	EXT OUT	AUX	INT	EXT IN	UNAVAIL	HELD	RING	DIAL	GOS	NCW	LCW	>TH1	>TH2	ASA	%ABN
5	0	4	0	0	1	0	0	0	0	0	0	100	0	0	0	0	0	0

Detail Agent Status												
ID	Ext #	Name	Skill	Team	Alert	Pri	State	CI	St Time	Log In/Out Time	Reason	
5310	5200	AGENT 1	10	0	1		AVAIL		00:00:54	12/21/2009 05:07:30PM		
5311	5201	Agent 2	10	0	1		AVAIL		00:00:44	12/21/2009 05:07:41PM		
5312	5202	Agent 3	10				LOGOUT		00:00:00			
5313	5203	Agent 4	10	0	1		AVAIL		00:01:04	12/21/2009 05:07:20PM		
5314	5204	Agent 5	10	0	1		AUX		00:00:24	12/21/2009 05:07:59PM		
5315	5205	Agent 6	12	0	1		AVAIL		00:00:04	12/21/2009 05:08:10PM		
5316	5206	Agent 7	12				LOGOUT		00:00:00			
5317	5207	Agent 8	12				LOGOUT		00:00:00			
5318	5208	Agent 9	12				LOGOUT		00:00:00			
5319	5209	Agent 10	12				LOGOUT		00:00:00			

Grouping: All In Header |  Logged Off Agents |  All Agents |  Agent State Notify | Server1 PBX | 12/21/2009 5:08:35 PM

Once multiple calls are in progress and have been completed, the reporting can be verified with real time and historical reports, in this case by using the Skill Agent Status Report.

Skill Agent Status Report: superuser - (10:TESTHUNT, 12:TESTHUNT2)

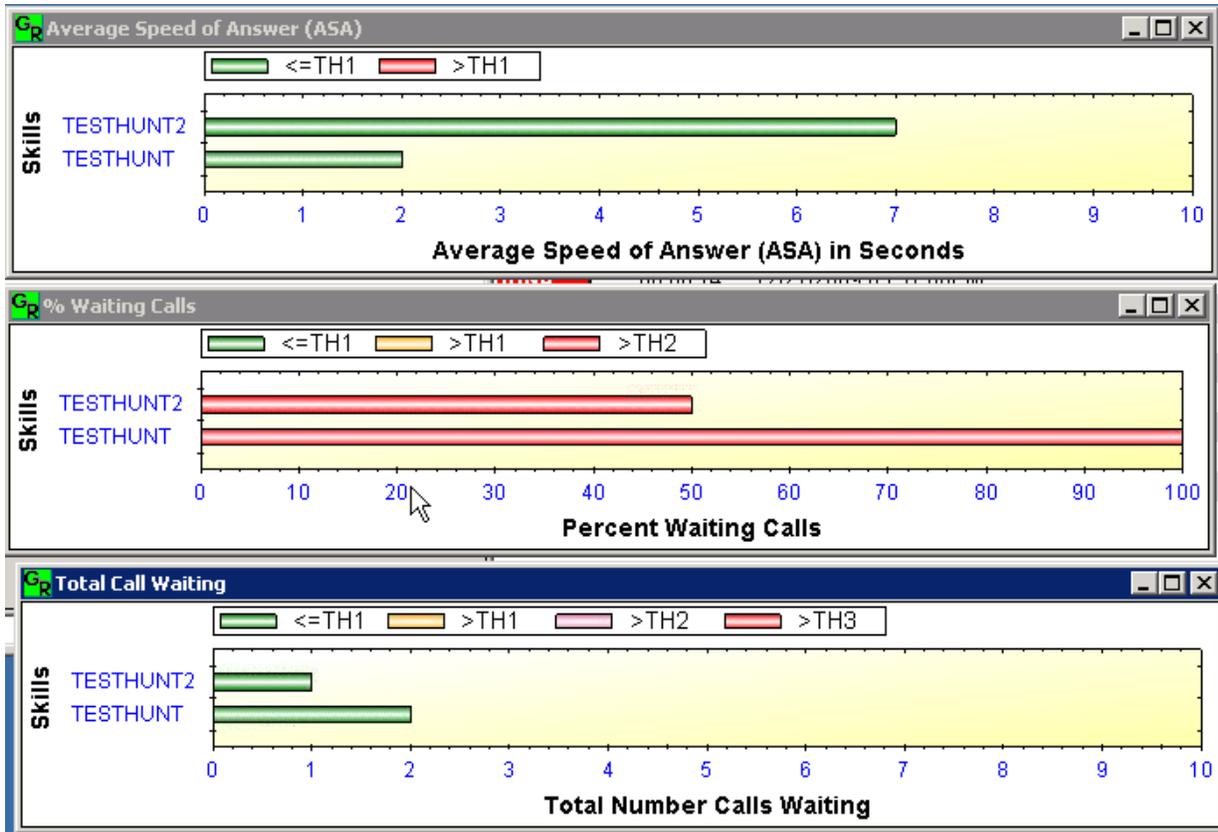
Agent Summary																		
Agents	ACD IN	AVAIL	ACW	EXT OUT	AUX	INT	EXT IN	UNAVAIL	HELD	RING	DIAL	GOS	NCW	LCW	>TH1	>TH2	ASA	%ABN
9	2	0	0	0	1	5	0	0	0	0	1	100	0	0	0	0	4	0

Detail Agent Status												
ID	Ext #	Name	Skill	Team	Alert	Pri	State	CI	St Time	Log In/Out Time	Reason	
5310	5200	AGENT 1	10	0	1		INTERNAL	CI	00:01:57	12/21/2009 05:31:47PM		
5311	5201	Agent 2	10	0	1		INTERNAL	CI	00:02:07	12/21/2009 05:31:06PM		
5312	5202	Agent 3	10	0	1		ACD IN	CI	00:02:13	12/21/2009 05:31:03PM		
5313	5203	Agent 4	10	0	1		INTERNAL	CI	00:02:13	12/21/2009 05:31:29PM		
5314	5204	Agent 5	10	0	1		INTERNAL	CI	00:01:57	12/21/2009 05:30:59PM		
5315	5205	Agent 6	12	0	1		ACD IN	CI	00:02:07	12/21/2009 05:31:25PM		
5316	5209	Agent 7	12	0	1		DIAL		00:00:57	12/22/2009 08:32:39AM		
5317	5207	Agent 8	12	0	1		INTERNAL	CI	00:01:17	12/21/2009 05:38:49PM		
5318	5208	Agent 9	12	0	1		AUX		00:52:00	12/22/2009 08:36:34AM		
5319	5209	Agent 10	12				LOGOUT		00:00:00			

Grouping: All In Header |  Logged Off Agents |  All Agents |  Agent State Notify | Server1 PBX | 12/22/2009 9:29:10 AM

Once calls have been made, graphical representations of the data can be confirmed for multiple report types. Shown below are the representations for the reports including **Average Speed of Answer**, **% Waiting Calls**, and **Total Call Waiting**.



Additions and changes to the system can be verified using the **System Configuration Changes Report**.

The screenshot shows a web browser window with the URL `http://localhost/acdclient/WebReportMain.aspx?reportID=ondemand`. The report is titled "SYSTEM CONFIGURATION CHANGES REPORT" and is dated 12-21-09 00:00 to 12-22-09 23:59. It was requested by "superuser". The report contains a table with the following columns: Sup ID, Sup Name, Table Name, Mode, Record, and Modified Time. The data is as follows:

Sup ID	Sup Name	Table Name	Mode	Record	Modified Time
<b>Server1 PBX</b>					
1	SUPERUSER	Skill Group	Inserted	Group: 10	12-21-09 16:17
1	SUPERUSER	Skill Group	Inserted	Group: 12	12-21-09 16:18
1	SUPERUSER	Agent	Inserted	Agent: 5310	12-21-09 16:24
1	SUPERUSER	Agent	Modified	Agent: 5310	12-21-09 16:25
1	SUPERUSER	Agent	Inserted	Agent: 5311	12-21-09 16:27
1	SUPERUSER	Agent	Inserted	Agent: 5312	12-21-09 16:27
1	SUPERUSER	Agent	Inserted	Agent: 5313	12-21-09 16:28
1	SUPERUSER	Agent	Inserted	Agent: 5314	12-21-09 16:28
1	SUPERUSER	Agent	Inserted	Agent: 5315	12-21-09 16:29
1	SUPERUSER	Agent	Inserted	Agent: 5316	12-21-09 16:30
1	SUPERUSER	Agent	Inserted	Agent: 5317	12-21-09 16:30
1	SUPERUSER	Agent	Inserted	Agent: 5318	12-21-09 16:31
1	SUPERUSER	Agent	Inserted	Agent: 5319	12-21-09 16:31
1	SUPERUSER	VDN	Inserted	VDN: 5610	12-21-09 16:36
1	SUPERUSER	VDN	Inserted	VDN: 5612	12-21-09 16:37
1	SUPERUSER	Vector	Inserted	Vector: 1	12-21-09 16:41
1	SUPERUSER	Vector	Inserted	Vector: 12	12-21-09 16:43

## 9. Conclusion

Customer Experience Reporting was compliance tested with Communication Manager and Application Enablement Services. Customer Experience Reporting successfully monitored and produced reports on phone activity for agents and ACD/skill groups. All test cases completed successfully.

## 10. Additional References

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

The following Avaya product documentation can be found at <http://support.avaya.com>:

[1] *Administering Avaya™ Communication Manager*, Doc ID: 03-300509, Issue 5.0, Release 5.2, May 2009

[2] *Avaya MultiVantage Application Enablement Services Administration and Maintenance Guide*, Doc ID: 02-300357, Release 4.2, Issue 10, May 2008

[3] Customer Experience Reporting User's Guide, V1.1, available via request to [inquiries@ccscallcenters.com](mailto:inquiries@ccscallcenters.com)

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