



## **Avaya Solution and Interoperability Test Lab**

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# **Application Notes for Cassidian Vesta Software Version 2.20 SP5 and Avaya Communication Server 1000 Release 7.5 and Avaya Aura® Contact Center Release 6.1 – Issue 1.0**

## **Abstract**

These Application Notes describe a solution comprised of Avaya Communication Server 1000 Release 7.5 and Avaya Aura® Contact Center Release 6.1 and Cassidian Vesta Version 2.20 SP5.

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

The objective of this compliance test was to validate interoperability of the Cassidian Vesta with the Avaya Communication Server 1000 Release 7.5 and the Avaya Aura® Contact Center Release 6.1 in receiving, displaying and handling the emergency 911 calls.

## 2. General Test Approach and Test Results

The General test approach was to verify that the 81 test cases in the test plan and make sure there is no issue found during the compliance testing.

The compliance testing uses the ANI Simulator proprietary device to generate the emergency 911 calls with 8-digit, 10-digit, and 20-digit, this device is also equipped with the audio and microphone jack that can check audio speech path of the emergency calls when they are established between the ANI Simulator device and agent phone.

### 2.1. Interoperability Compliance Testing

The focus of this testing was to verify that the Vesta system including the Vesta server and Vesta workstation can interoperate with the Avaya Communication Server 1000 PBX and Avaya Aura® Contact Center systems to handle the emergency 911 calls which are made from the ANI Simulator proprietary device to emergency 911 number and then the emergency calls are routed to the ACD agent phones.

The following test areas were practiced in the compliance testing:

- Verify Vesta workstation Logon and Logoff functionality.
- Verify Vesta ACD functionality with 8-digit, 10-digit, and 20-digit emergency calls.
- Verify Vesta DN functionality.
- Verify Vesta Shared DN (MADN SCR) functionality.
- Verify Vesta Supervisor functionality.
- Verify Vesta CDR.

### 2.2. Test Results

There was an ANI 20-digit wireless issue that only happened on the Avaya IP 1140E phone. This issue was already fixed by applying the SU patch **cs1000-tps-7.50.17.16-5.i386** in the Signaling server of Communication Server 1000 system before the compliance test started.

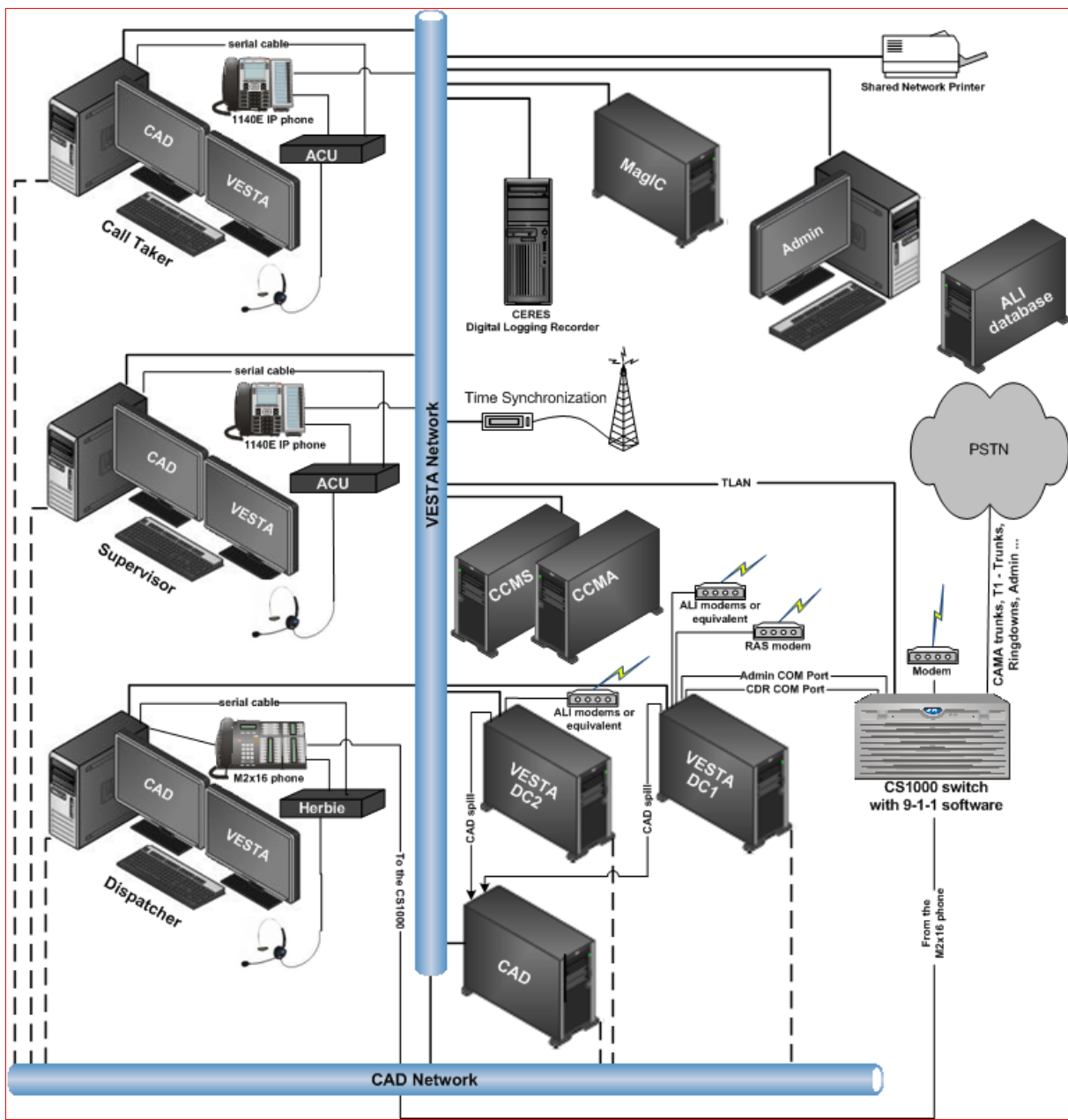
The compliance testing was successful and all objectives were verified and met. All test cases were executed and they all passed.

### 2.3. Support

Technical support for the Cassidian Vesta Software can be reached by contacting email at [help@reverse911.com](mailto:help@reverse911.com) or phone +1 (951) 719-2100.

## 3. Reference Configuration

**Figure 1** illustrates the network diagram configuration used during the compliance testing between the Avaya Communication Server 1000, Avaya Aura® Contact Center and the Cassidian Vesta system.



**Figure 1: Network Diagram Configuration**

## 4. Equipment and Software Validated

The following equipment and software were used during the lab testing:

System	Software Version
Avaya Communication Server 1000E	Call Server (CPPM): 7.50 Q Signaling Server (CPPM): 7.50 Q
Avaya IP Phone 1140E	0625C7F
Avaya Digital M2216	N/A
Avaya Digital M3905	Flash: 9.0 P0 L1.8
Avaya Aura® Contact Center	6.208 SP1
Cassidian Vesta Server	2.20 SP5
Cassidian Vesta Workstation	2.20 SP5

## 5. Configure Avaya Communication Server 1000

This document assumes that the Avaya Communication Sever 1000 system was properly installed and configured as per the product document. For more information about how to install and configure Communication Sever 1000, please refer to **Section 10 [1]**.

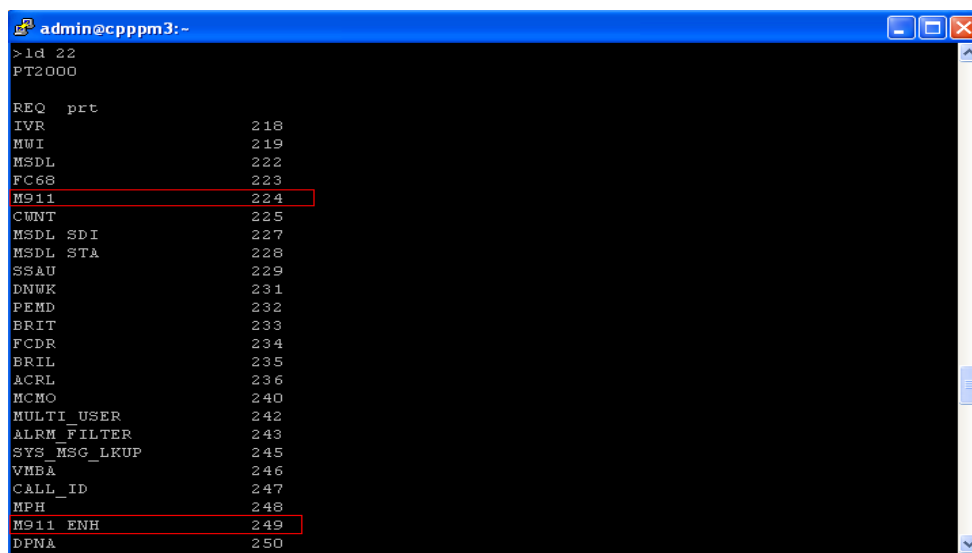
The following summarizes the tasks need to be done in the Call Server:

- Check whether the 911 and ACD packages in the Call Server are equipped or not.
- Provision the configurations for Contact Center in the Call Server.
- Provision the configurations for the emergency 911.

### 5.1. Check the Emergency 911 and ACD packages

Log in the Call Server as an administrator in the command line mode (overlay) and issue the command LD 22 as shown in **Figure 2** and **3** below:

- For the emergency 911 feature, make sure the packages 224 and 249 are equipped.

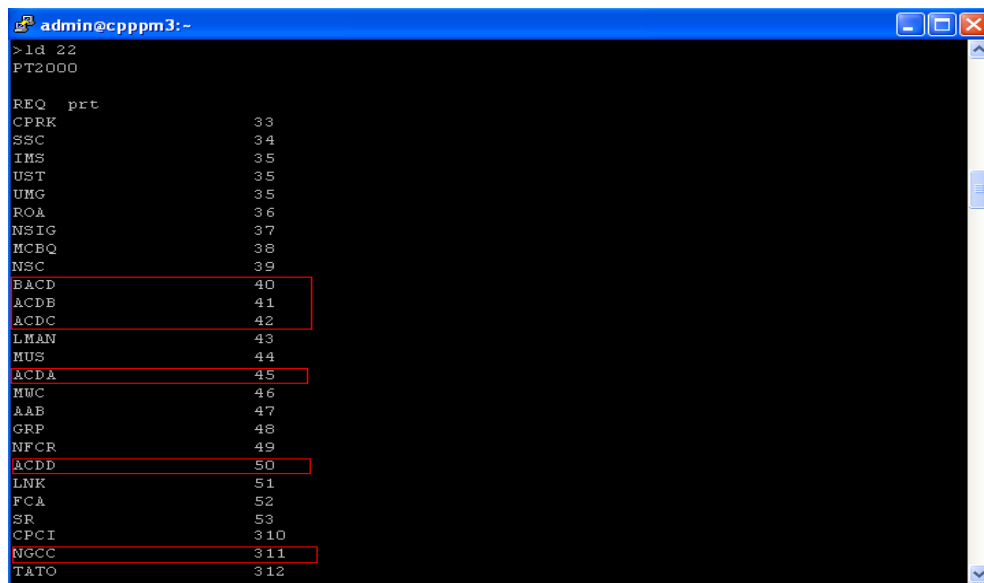


```
admin@cpppm3:-
>ld 22
PT2000

REQ   prt
IVR           218
MWI           219
MSDL         222
FC68         223
M911         224
CWNT         225
MSDL SDI     227
MSDL STA     228
SSAU         229
DNWK         231
PEND         232
BRIT         233
FCDR         234
BRIL         235
ACRL         236
MCMO         240
MULTI_USER   242
ALRM_FILTER   243
SYS_MSG_LKUP  245
VMBA         246
CALL_ID       247
MPH           248
M911 ENH     249
DPNA         250
```

**Figure 2: The packages needed for emergency 9-1-1 feature**

- For the ACD/AACC feature, make sure the packages 40, 41, 42, 45, 50, and 311 are equipped.



```
admin@c ppm3:~>ld 22
PT2000

REQ prt
CPRK          33
SSC           34
IMS           35
UST           35
UMG           35
ROA           36
NSIG          37
MCBQ          38
NSC           39
EACD          40
ACDB          41
ACDC          42
LMAN          43
MUS           44
ACDA          45
MWC           46
AAB           47
GRP           48
NFCR          49
ACDD          50
LNK           51
FCA           52
SR            53
CPCI          310
NGCC          311
TATO          312
```

**Figure 3: The packages needed for the ACD/CC feature**

## 5.2. Provision the configurations for Contact Center

This section describes the steps on how to provision the configurations for the ACD feature in the Call Server.

### 5.2.1. Create an AML over Ethernet (ELAN) for Contact Center

Log in the Call Server as an administrator in the command line mode (overlay) and issue the command LD 17 as shown in **Figure 4** below:

```

admin@cphpm3:-
OVL000
>ld 17
CFN000
MEM AVAIL: (U/P): 36462093   USED U P: 8291933 125843   TOT: 44879869
DISK SPACE NEEDED: 101 KBYTES
DCH          AVAIL:   251   USED:     4   TOT:   255
AML          AVAIL:    12   USED:     4   TOT:    16
REQ  chg
TYPE  adan
ADAN  new elan 17
CTYP  elan
DES   For_AACC
LCTL

MEM AVAIL: (U/P): 36461800   USED U P: 8292209 125860   TOT: 44879869
DISK SPACE NEEDED: 101 KBYTES
DCH          AVAIL:   251   USED:     4   TOT:   255
AML          AVAIL:    12   USED:     4   TOT:    16

ADAN DATA SAVED
ADAN █

```

**Figure 4: Create the ELAN for the Contact Center application**

### 5.2.2. Create a Value Added Server (VAS) for the ELAN

Log in the Call server as an administrator under the command line mode (overlay) and issue command LD 17 to create a Value Added Server (VAS) for the ELAN 17 above as shown in **Figure 5**.

```

admin@cphpm3:-
> ld 17
CFN000
MEM AVAIL: (U/P): 36461800   USED U P: 8292209 125860   TOT: 44879869
DISK SPACE NEEDED: 101 KBYTES
DCH          AVAIL:   251   USED:     4   TOT:   255
AML          AVAIL:    12   USED:     4   TOT:    16
REQ  chg
TYPE  vas
VAS  new
VSID  17
ELAN  17
SECU  yes
INTL
MCNT
VSID
VAS

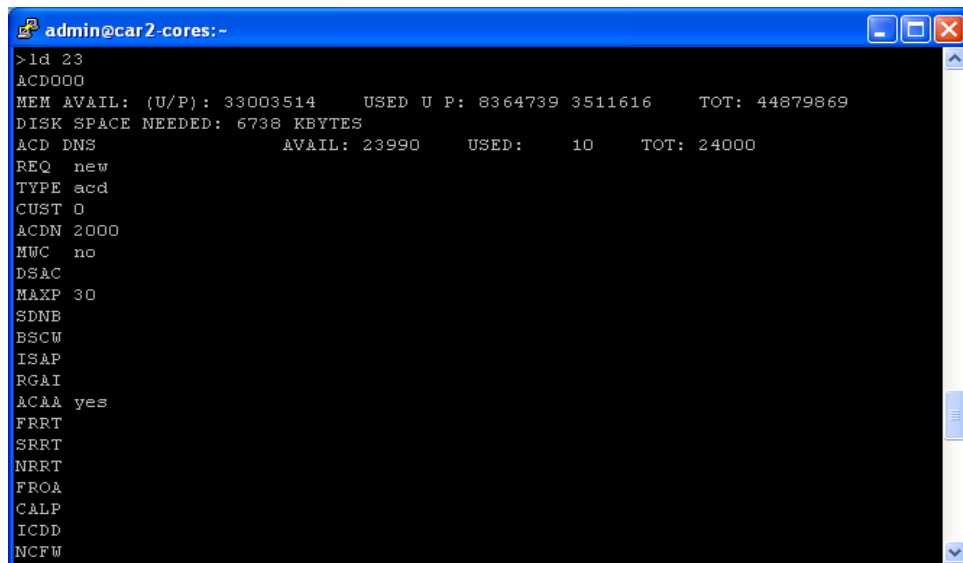
MEM AVAIL: (U/P): 36461782   USED U P: 8292209 125878   TOT: 44879869
DISK SPACE NEEDED: 101 KBYTES
DCH          AVAIL:   251   USED:     4   TOT:   255
AML          AVAIL:    12   USED:     4   TOT:    16
REQ  █

```

**Figure 5: Create the VAS for the ELAN of Contact Center**

### 5.2.3. Create an ACD Queue

Log in the Call server as an administrator under the command line mode (overlay) and issue command LD 23 to create an Automatic Call Distribution (ACD) DN as shown in **Figure 6**:

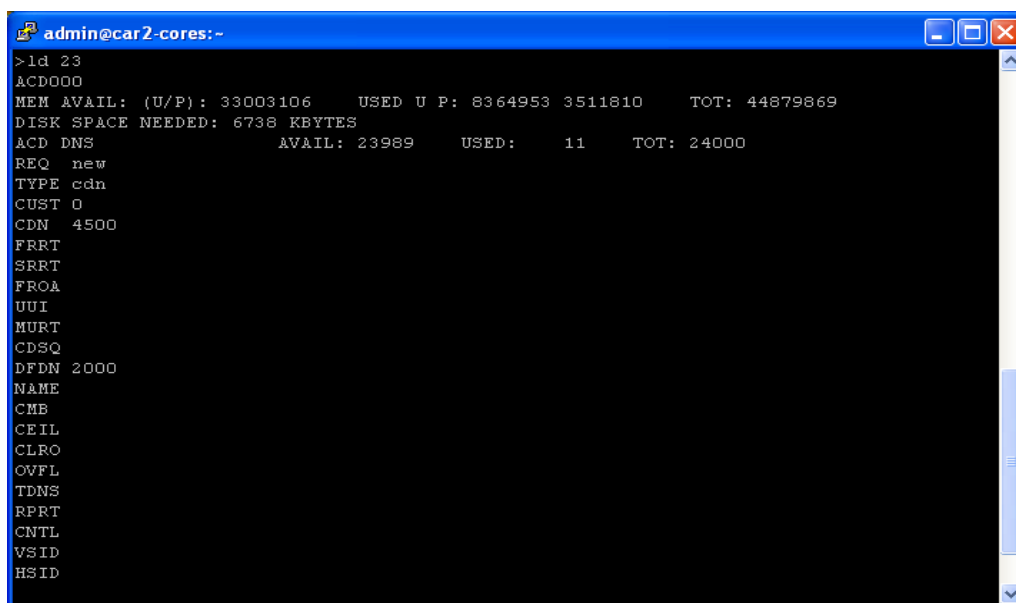


```
admin@car2-cores:~  
>ld 23  
ACD000  
MEM AVAIL: (U/P): 33003514      USED U P: 8364739 3511616      TOT: 44879869  
DISK SPACE NEEDED: 6738 KBYTES  
ACD DNS      AVAIL: 23990      USED:      10      TOT: 24000  
REQ new  
TYPE acd  
CUST 0  
ACDN 2000  
MWC no  
DSAC  
MAXP 30  
SDNE  
BSCW  
ISAP  
RGAI  
ACAA yes  
FRRT  
SRRT  
NRRT  
FROA  
CALP  
ICDD  
NCFW
```

Figure 6: Create the ACD queue

#### 5.2.4. Create a Controlled DN (CDN)

Log in the Call server as an administrator under the command line mode (overlay) and issue command LD 23 to create a Controlled DN (CDN) as shown in **Figure 7**:

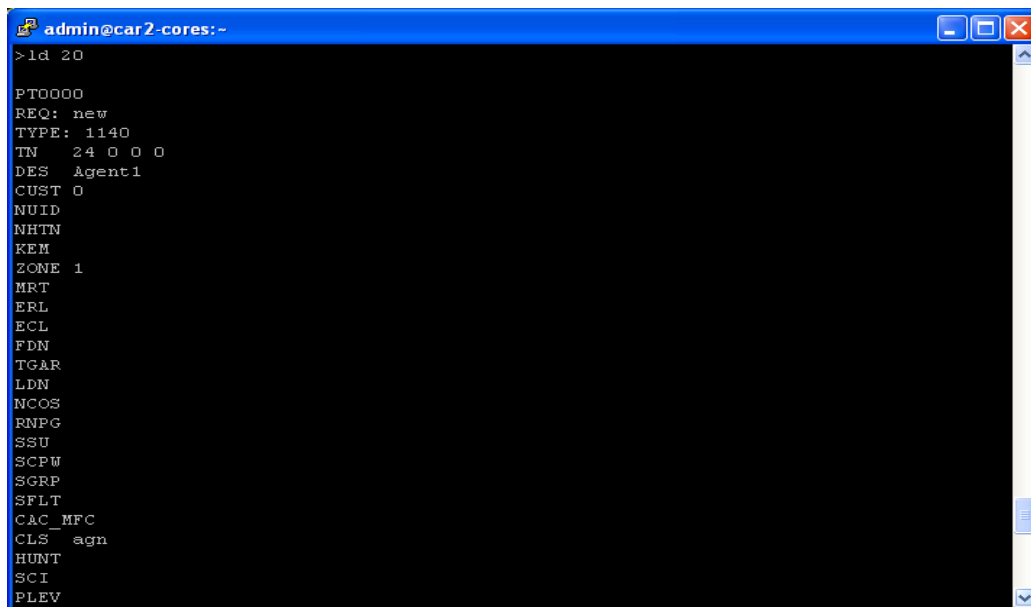


```
admin@car2-cores:~  
>ld 23  
ACD000  
MEM AVAIL: (U/P): 33003106      USED U P: 8364953 3511810      TOT: 44879869  
DISK SPACE NEEDED: 6738 KBYTES  
ACD DNS      AVAIL: 23989      USED:      11      TOT: 24000  
REQ new  
TYPE cdn  
CUST 0  
CDN 4500  
FRRT  
SRRT  
FROA  
UUI  
MURT  
CDSQ  
DFDN 2000  
NAME  
CMB  
CEIL  
CLRO  
OVFL  
TDNS  
RPRT  
CNTL  
VSID  
HSID
```

Figure 7: Create the Controlled DN for the Contact Center

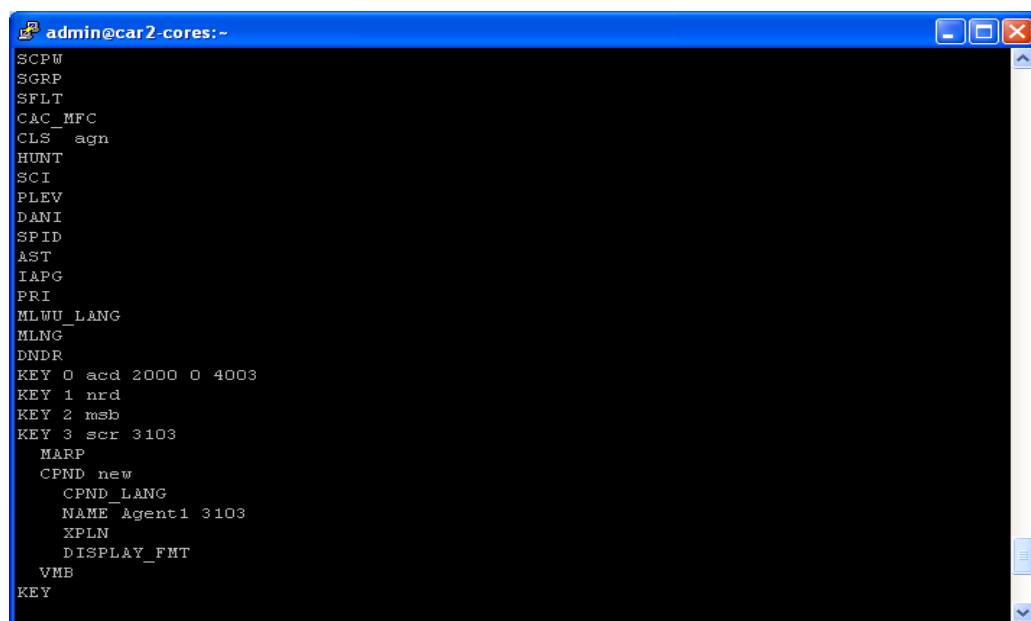
#### 5.2.5. Create ACD Agent Phone

Log in the Call server as an administrator under the command line mode (overlay) and issue command LD 20 to create an agent phone as shown in **Figure 8** and **9**:



```
admin@car2-cores:~  
>ld 20  
  
PT0000  
REQ: new  
TYPE: 1140  
TN 24 0 0 0  
DES Agent1  
CUST 0  
NUID  
NHTN  
KEM  
ZONE 1  
MRT  
ERL  
ECL  
FDN  
TGAR  
LDN  
NCOS  
RNPG  
SSU  
SCPW  
SGRP  
SFLT  
CAC_MFC  
CLS agn  
HUNT  
SCI  
PLEV
```

Figure 8: Create the ACD agent phone



```
admin@car2-cores:~  
SCPW  
SGRP  
SFLT  
CAC_MFC  
CLS agn  
HUNT  
SCI  
PLEV  
DANI  
SPID  
AST  
IAPG  
PRI  
MLUU_LANG  
MLNG  
DNDR  
KEY 0 acd 2000 0 4003  
KEY 1 nrd  
KEY 2 msb  
KEY 3 scr 3103  
MARP  
CPND new  
CPND_LANG  
NAME Agent1 3103  
XPLN  
DISPLAY_FMT  
VMB  
KEY
```

Figure 9: Create the ACD agent phone (cont)

## 5.3. Provision the configurations for Emergency 911

This section describes the steps on how to provision the configurations for the emergency 911 feature in the Call Server.

### 5.3.1. Create a Route Data Block (RDB)

Log in the Call server as an administrator under the command line mode (overlay) and issue command LD 16 to create a DID Route Data Block (RDB) as shown in **Figure 10** and **11**:

```
admin@car2-cores:~
>ld 16
RDB000
MEM AVAIL: (U/P): 32994895   USED U P: 8372084 3512890   TOT: 44879869
DISK SPACE NEEDED: 6739 KBYTES
RAN RTE          AVAIL:    512    USED:      0    TOT:    512
REQ new
TYPE rdb
CUST 0
ROUT 1
DES 911T
TKTP DID
TW_ROUTE
M911_ANI YES
M911_TRK TYPE 911T
M911_FORM 2
ANI2_CLID NO
M911_ABAN YES
M911_TONE YES
SAT
IDEF
RCLS
DTRK YES
DGTP
DSEL
PTYP
CNDP
STEP
ACOD 8001
CLEN
```

Figure 10: Create the Route Data Block for the emergency 911

```
admin@car2-cores:~
ACOD 8001
CLEN
TARG
SGRP
OABS
INST
MFC
CNTL
DRNG
CDR YES
INC YES
LAST YES
QREC YES
OAL YES
AIA YES
OAN YES
OPD YES
NDP
NATL
CFWR
IDOP
VRAT
MUS
PANS
MANO
FRL
OHQ
OHQT
TTBL
```

Figure 11: Create the Route Data Block for the emergency 911 (cont)

### 5.3.2. Create Trunks for the DID Route

Log in the Call server as an administrator under the command line mode (overlay) and issue command LD 16 to create a DID Route Data Block (RDB) as shown in **Figure 11**:

```
admin@c ppm3:~
REQ NEW
TYPE DID
TN 8 1
DES 911T
PDCA
PCML
CUST 0
NCOS
RTMB 1 1

B-CHANNEL SIGNALING
ATDN 4500

AST
CLS UNR DTN
TKID

NEW TRK      TN 008 01      RT 4      MB 1

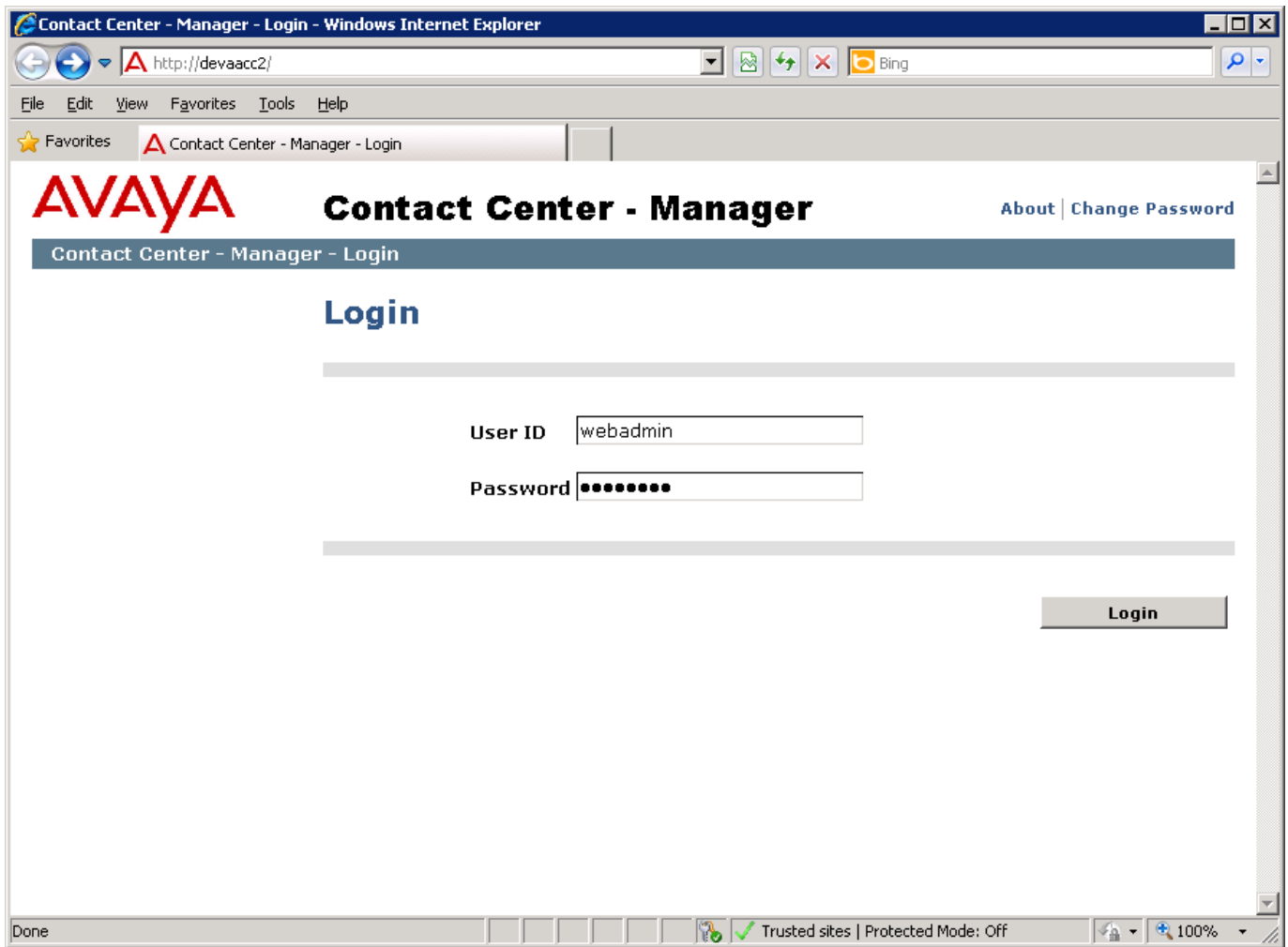
MEM AVAIL: (U/P): 36467711      USED U P: 8289275 122883      TOT: 44879869
DISK SPACE NEEDED: 95 KBYTES
AST                                AVAIL: 32755      USED: 12      TOT: 32767
ITG ISDN TRUNKS                   AVAIL: 32767      USED: 0      TOT: 32767
IP PEER H.323 TRUNKS              AVAIL: 32767      USED: 0      TOT: 32767
RAN CON                           AVAIL: 32767      USED: 0      TOT: 32767
```

Figure 12: Create the emergency 911 Trunk

## 6. Configure Avaya Aura® Contact Center

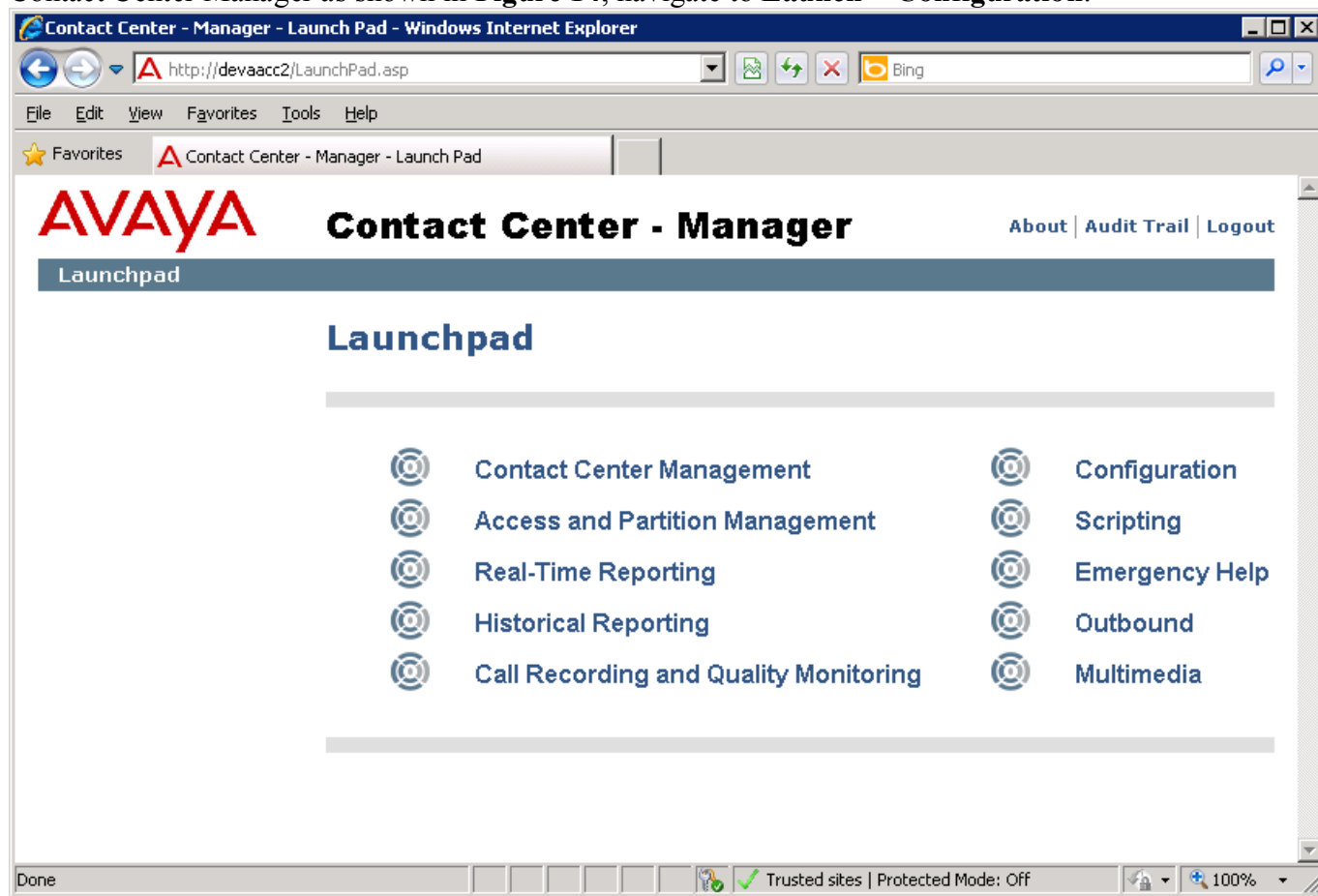
This document assumes that the Avaya Aura® Contact Center system was properly installed, configured and operated as per the product document, for more information about how to install, configure and administer please refer to **Section 10 [2]**. This section provides additional steps in adding the new agent, configuring the CDN number, SkillSet, Route and Phone Sets in the Contact Center Manager.

To launch Contact Center Manager webpage, open the Internet Explorer browser and type IP address or name of Contact Center Manager into the address bar. In the login page of Contact Center Manager display, enter username **webadmin** and its password and then click on the **Login** button to log in as shown in **Figure 13**.



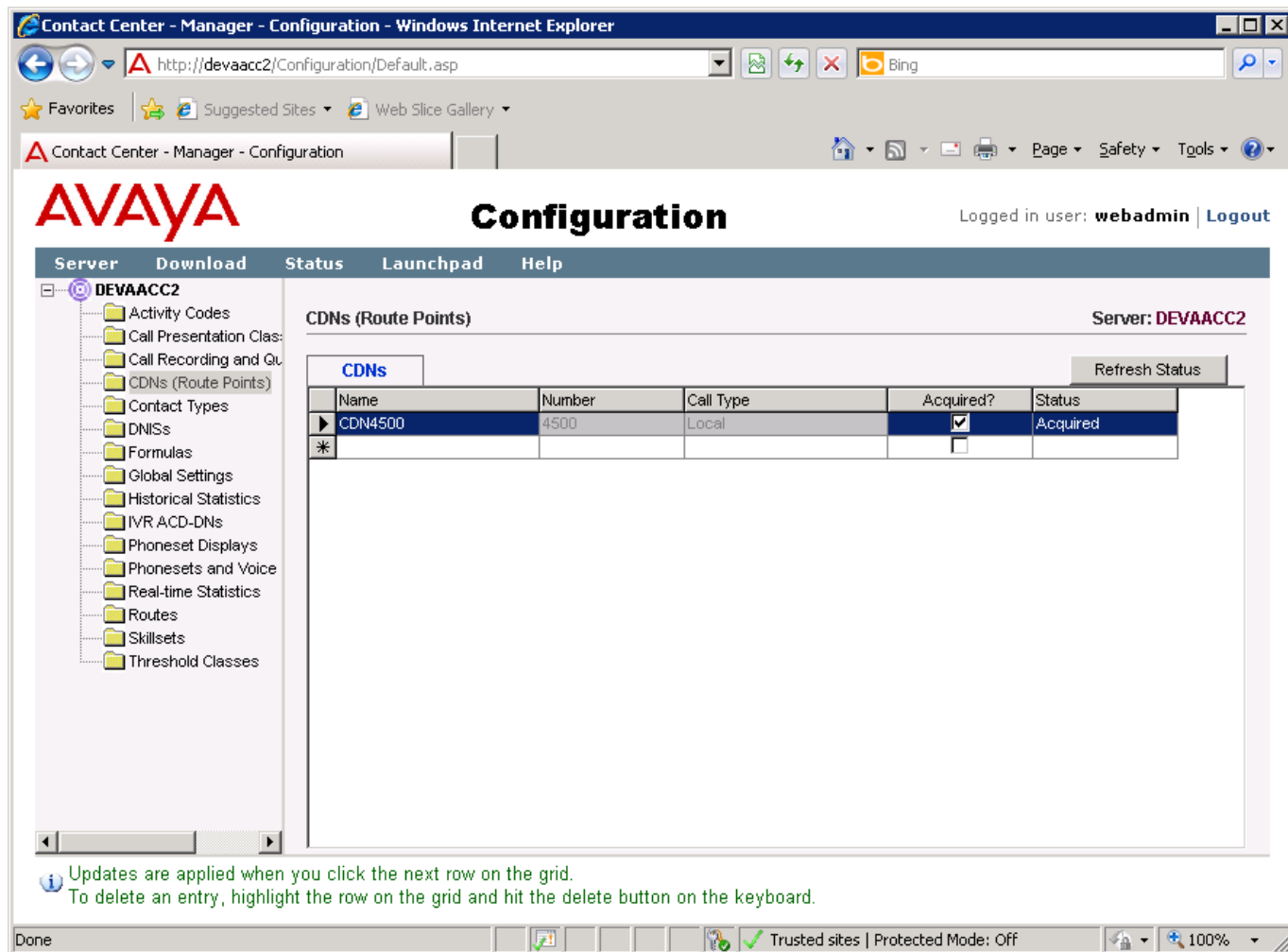
**Figure 13: The Contact Center Manager login page**

To configure a CDN number of Call server in the Contact Center Manager webpage, from homepage of Contact Center Manager as shown in **Figure 14**, navigate to **Launch > Configuration**.



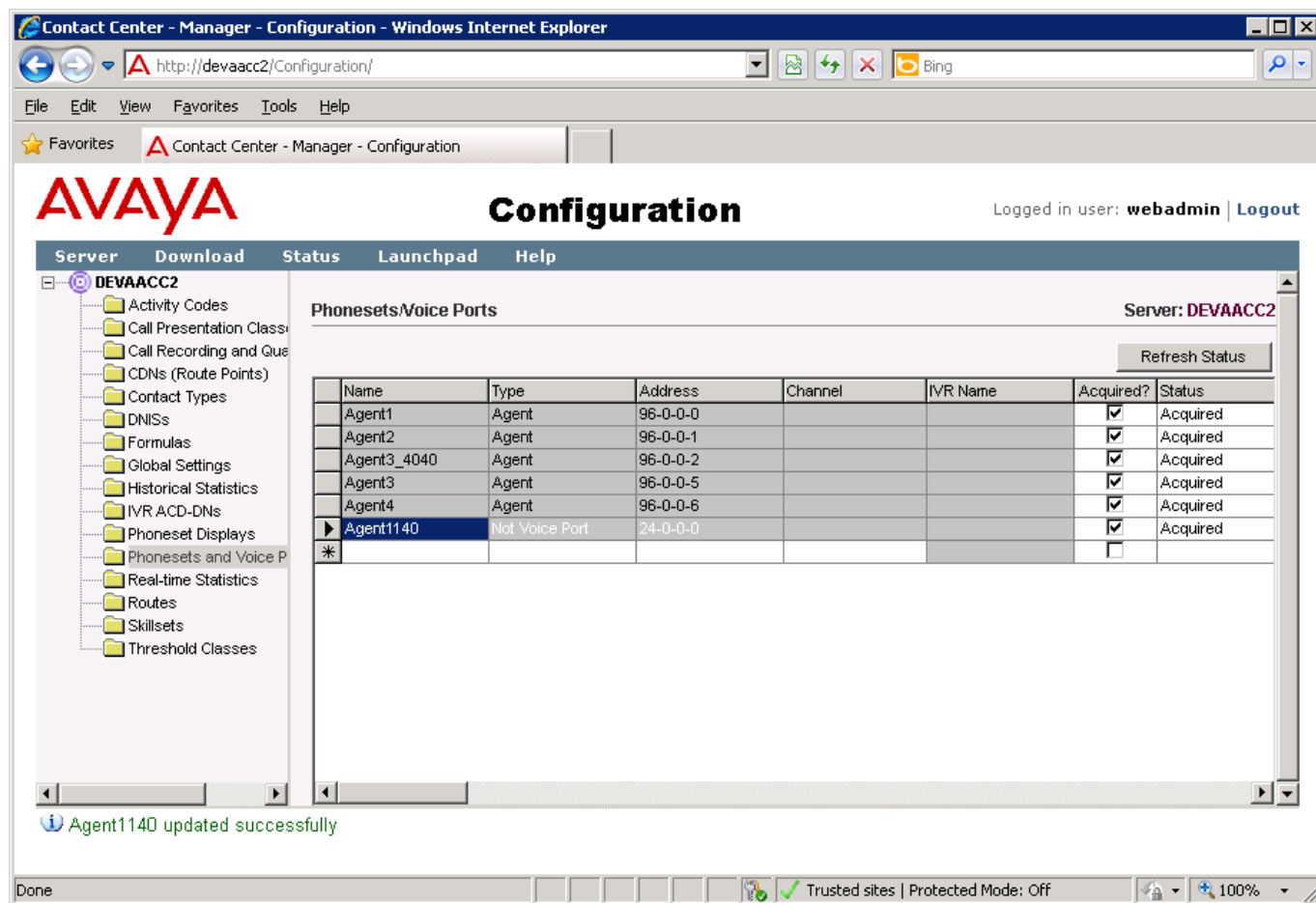
**Figure 14: The Contact Center Manager Homepage**

The Configuration page displays, on left side of Configuration window, expand tree menu of Contact Center Manager (CCM) server and click on the CDNs (Route Points) folder, the CDNs (Route Points) section now appears in the right side of Configuration page, enter a name and the number of CDN number that was created in Section 5.2.4 and then check on the checkbox of Acquired? column as shown in Figure 15.



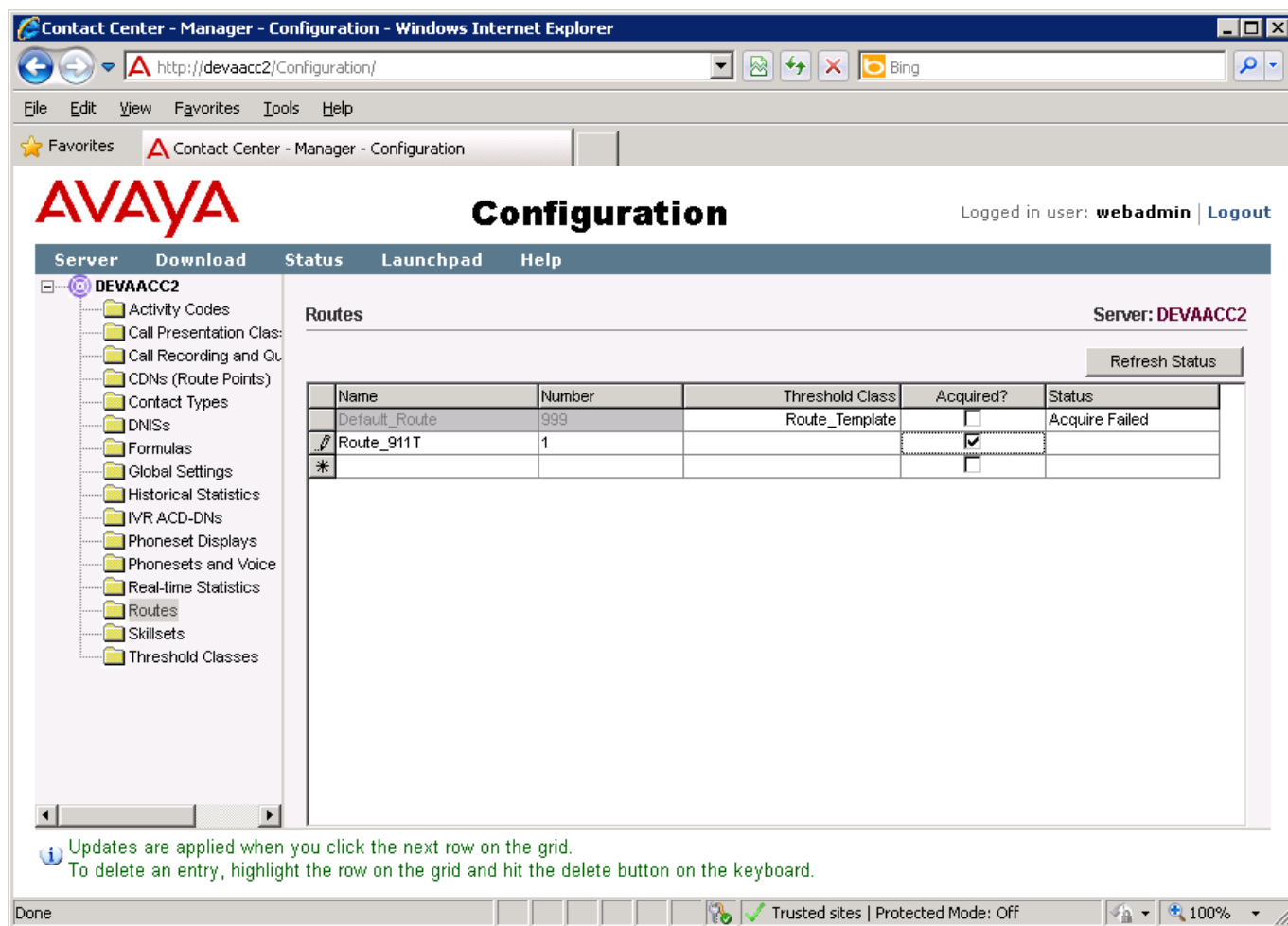
**Figure 15: Configure the CDN DN in the Contact Center Manager**

To configure phone sets of agent of Call Server in the Contact Center Manager webpage, from homepage of Contact Center Manager, navigate to **Launch > Configuration**. The **Configuration** page now appears, on left side of **Configuration** window, expand tree menu of **CCM** server and click on the **Phone Sets and Voice Ports** folder, the **Phone Sets and Voice Ports** section appears in the right side of **Configuration** page, enter name and the TN addresses of agent and supervisor that were created in **Section 5.2.5** and then check on the checkbox of **Acquired?** column as shown in **Figure 16**.



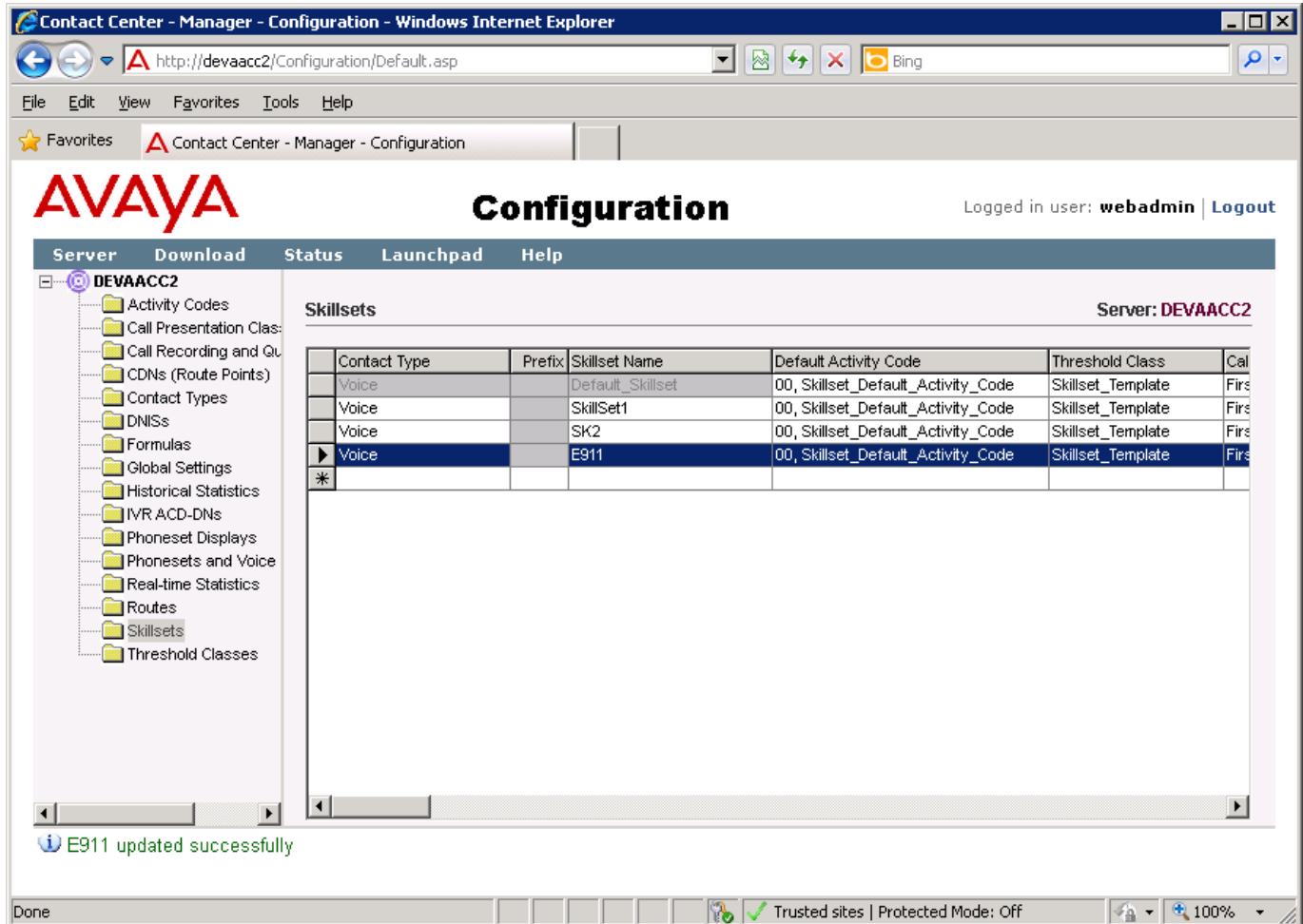
**Figure 16: Configure phone set for the ACD agent**

To configure the Route of Call Server in the **Contact Center Manager** webpage, from homepage of Contact Center Manager, navigate to **Launch > Configuration**. The **Configuration** page now appears, on left side of **Configuration** window, expand tree menu of CCM server and click on the **Routes** folder, the **Routes** section appears in the right side of **Configuration** page, enter the name and route number that were created in **Section 5.3.1** and then check on the checkbox of **Acquired?** column as shown in **Figure 17**.



**Figure 17: Configure Route in the Contact Center Manager**

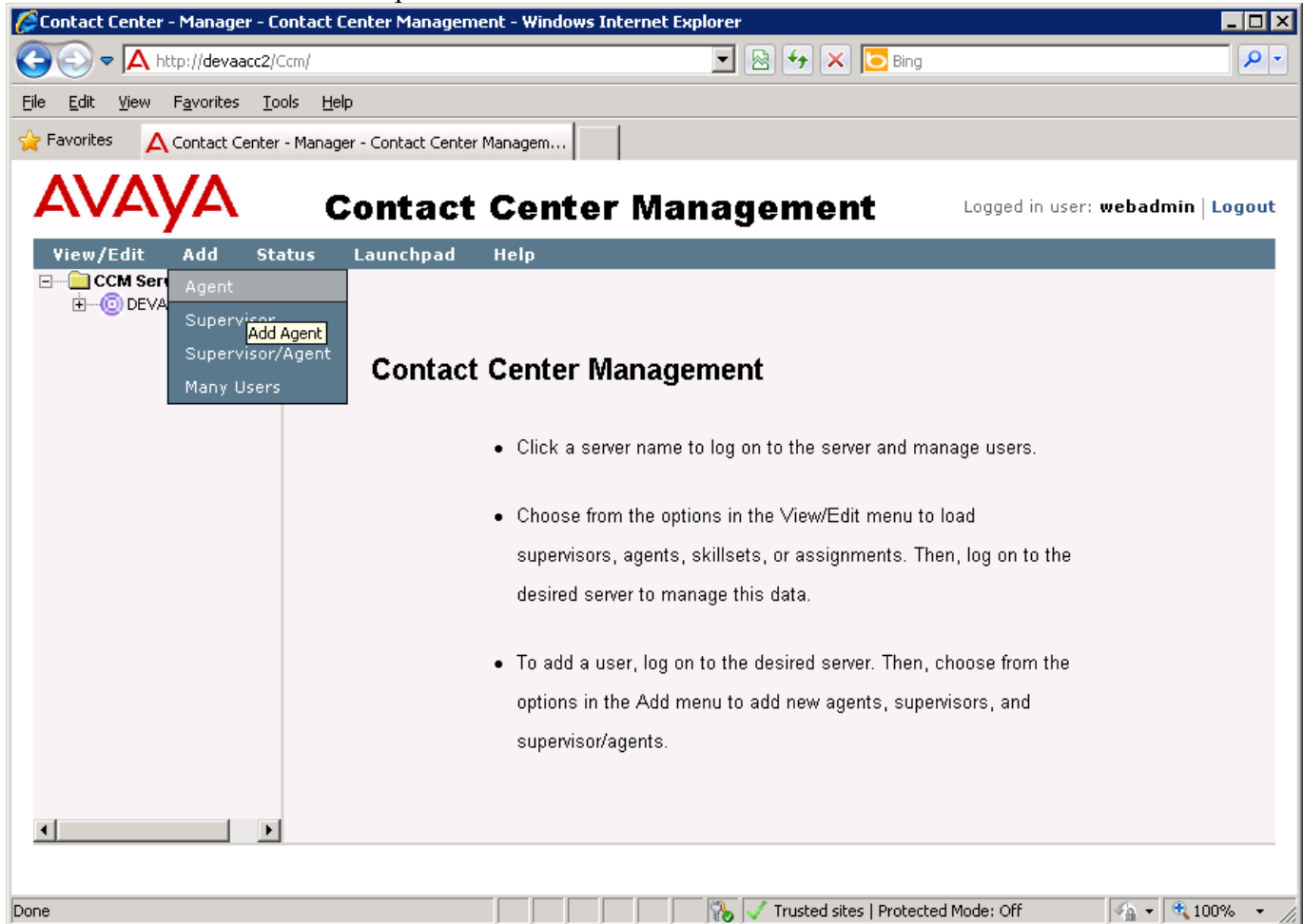
To configure the Skillset in the Contact Center Manager webpage, from homepage of Contact Center Manager, navigate to **Launch > Configuration**. The **Configuration** page now appears, on left side of **Configuration** window, expand tree menu of CCM server and click on the **Skillsets** folder, the **Skillsets** section appears in the right side of **Configuration** page, enter the Contact Type and Skillset name as shown in **Figure 18**.



**Figure 18: Configure the Skillset for agent in the Contact Center Manager**

To create agent login in the Contact Center Manager webpage, from homepage of Contact Center Manager, navigate to **Launch > Contact Center Management** and in the **Contact Center Management** page, navigate to menu **Add** and select the **Agent** as shown in **Figure 19** and **20**.

Click the **Submit** button to complete.



**Figure 19: Adding the agent login in the Contact Center Manager**

Contact Center - Manager - Contact Center Management - Windows Internet Explorer

http://devaacc2/Ccm/Default.asp

File Edit View Favorites Tools Help

AVAYA Contact Center Management

Logged in user: webadmin | Logout

View/Edit Add Status Launchpad Help

CCM Servers (Supervisors)

DEVAACC2

Supervisor Default

New Agent Details: 1140 Agent Server: DEVAACC2

**User Details**

First Name: 1140 User Type: Agent

Last Name: Agent Login ID: 1006

Title: Personal DN: 3102

Department: ACD Queue: 2000

Language: English ACD Queue Error:

Comment:

**Agent Information**

Primary Supervisor: Supervisor Default Call Presentation: Call\_Centre\_Administrator

Agent Key: Threshold: Agent\_Template

Login Status: Logged Out Tn Name:

**Skillsets**

Skillset Name	Contact Type	Priority
Assign Skillsets		
Show all skillsets on server DEVAACC2 where:		
Skillset name contains		
Search List All		
Skillset Name (4)		
Default_Skillset	Voice	Unassigned
E911	Voice	1
SK2	Voice	Unassigned
SkillSet1	Voice	Unassigned

Clear Submit Create New Create Many

Done Trusted sites | Protected Mode: Off 100%

Figure 20: Adding the agent login in the Contact Center Manager (cont)

## 7. Configure Vesta System

This document assumes that the Vesta system was properly installed and configured by a Cassidian Engineer. This section provides steps of how to use the Vesta application in the workstation PC to control and display the emergency 911 calls.

To log agent in by using the Vesta client application, on the workstation PC where the Vesta agent dashboard application is installed, go to the menu **Start > Program > PEI Product > Vesta**. The Vesta application login is shown in **Figure 21**, enter the login ID and password to log in the agent.

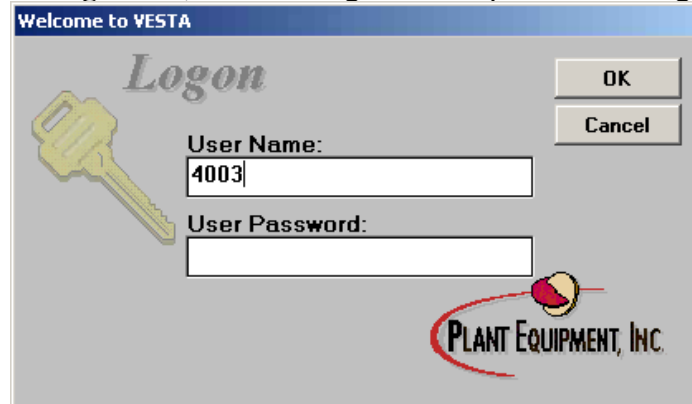


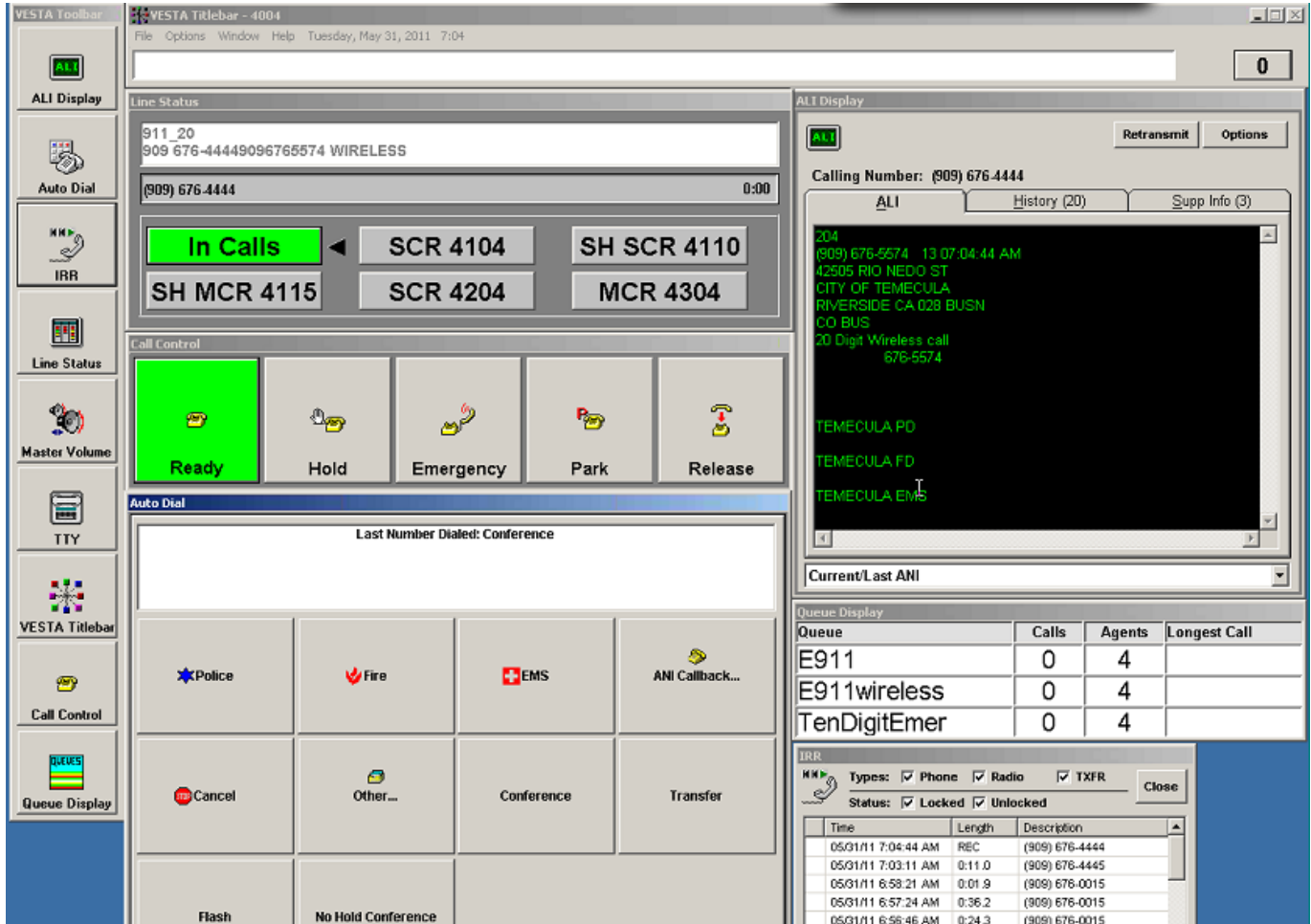
Figure 21: The Vesta login window

Figure 22 below shows the Vesta agent dashboard application successfully logged the agent in.



**Figure 22: The Vesta agent dashboard window**

To receive the ACD incoming call, on the Vesta agent dashboard as shown in **Figure 22**, click on the **Not Ready** button, the **Not Ready** button turns to **Ready** and the color of button changes from Red to Green and ready to receive the ACD call as shown in **Figure 23**.



**Figure 23: The Vesta agent dashboard with the Ready status**

To answer the ACD incoming call, on the Vesta agent dashboard as shown in **Figure 23**, click on the **In Calls** button as shown in **Figure 24**.

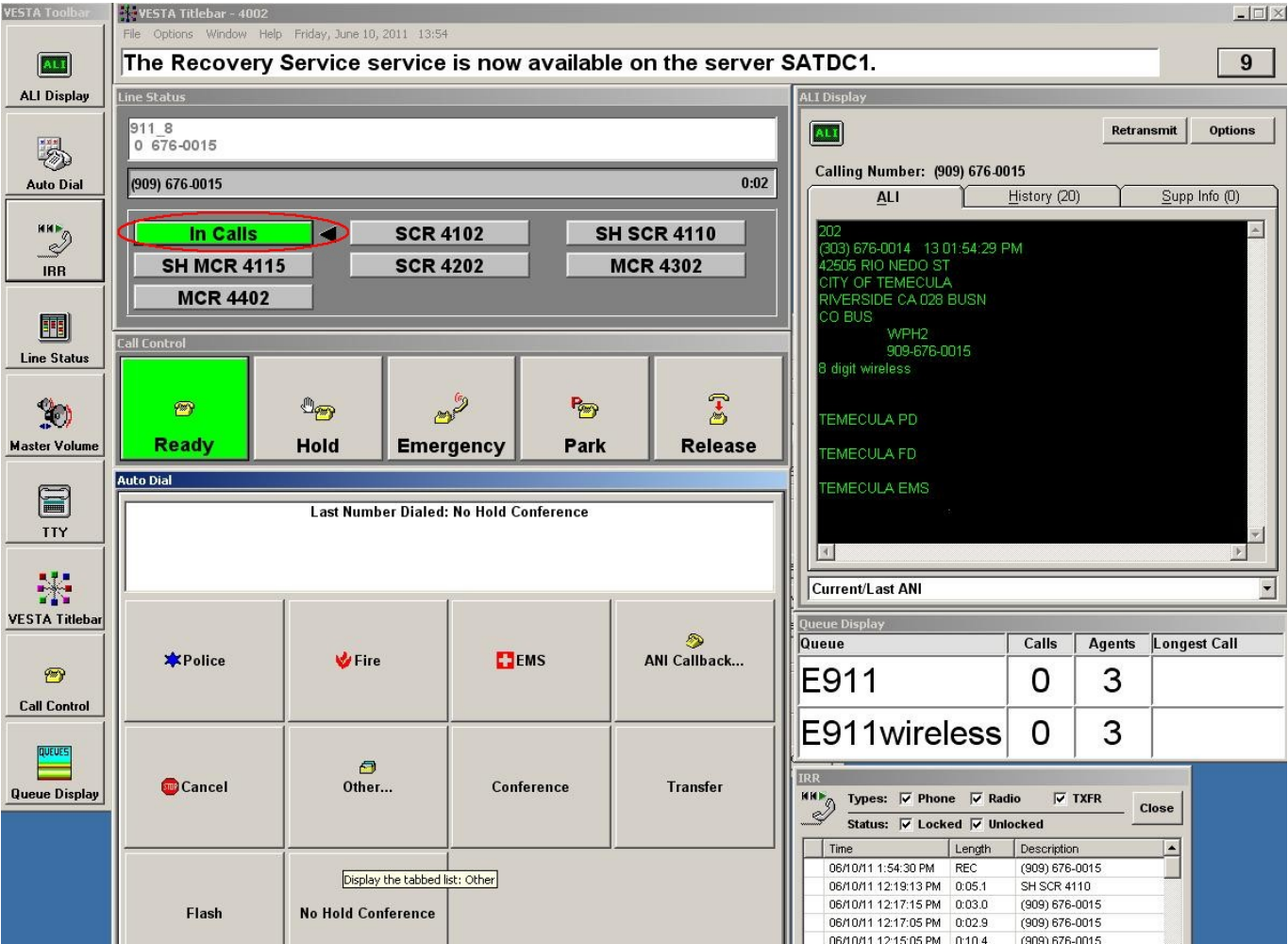
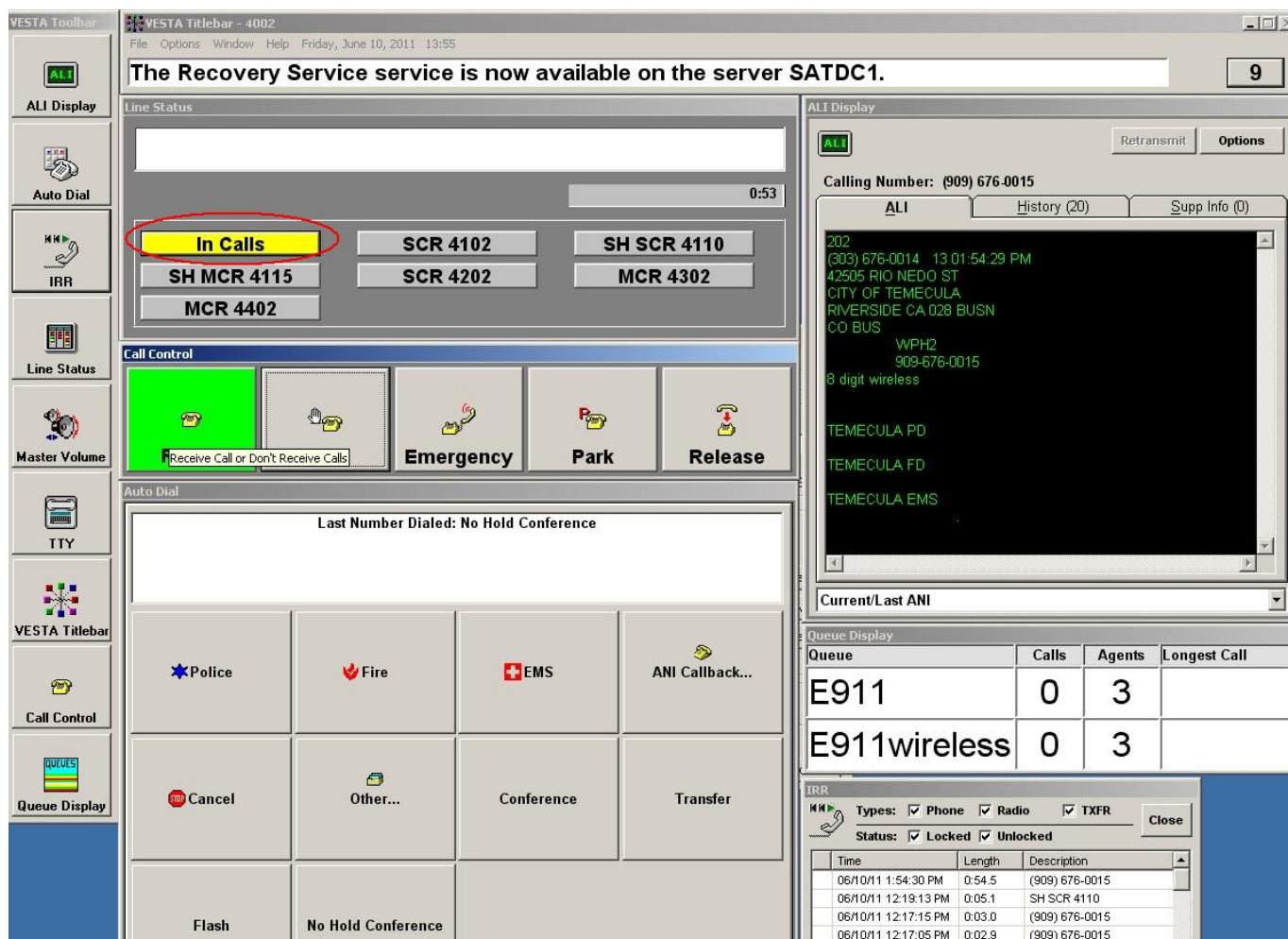


Figure 24: The Vesta agent dashboard with the In Calls status

To release the ACD call, on the Vesta agent dashboard as shown in **Figure 24**, click on the **Release** button to release the call (not shown in figure).

To hold the ACD call, on the Vesta agent dashboard as shown in **Figure 24**, click on the **Hold** button to hold the call as shown in **Figure 25** and to retrieve the call, click on the yellow **In Calls** button that are being in Yellow as the call on hold.(not shown in Figure).



**Figure 25: The Vesta agent dashboard with the Hold status**

To park the ACD call, on the Vesta agent dashboard as shown in **Figure 24**, click on the **Park** button and the Park button now turns to **Unpark** as shown in **Figure 26**.

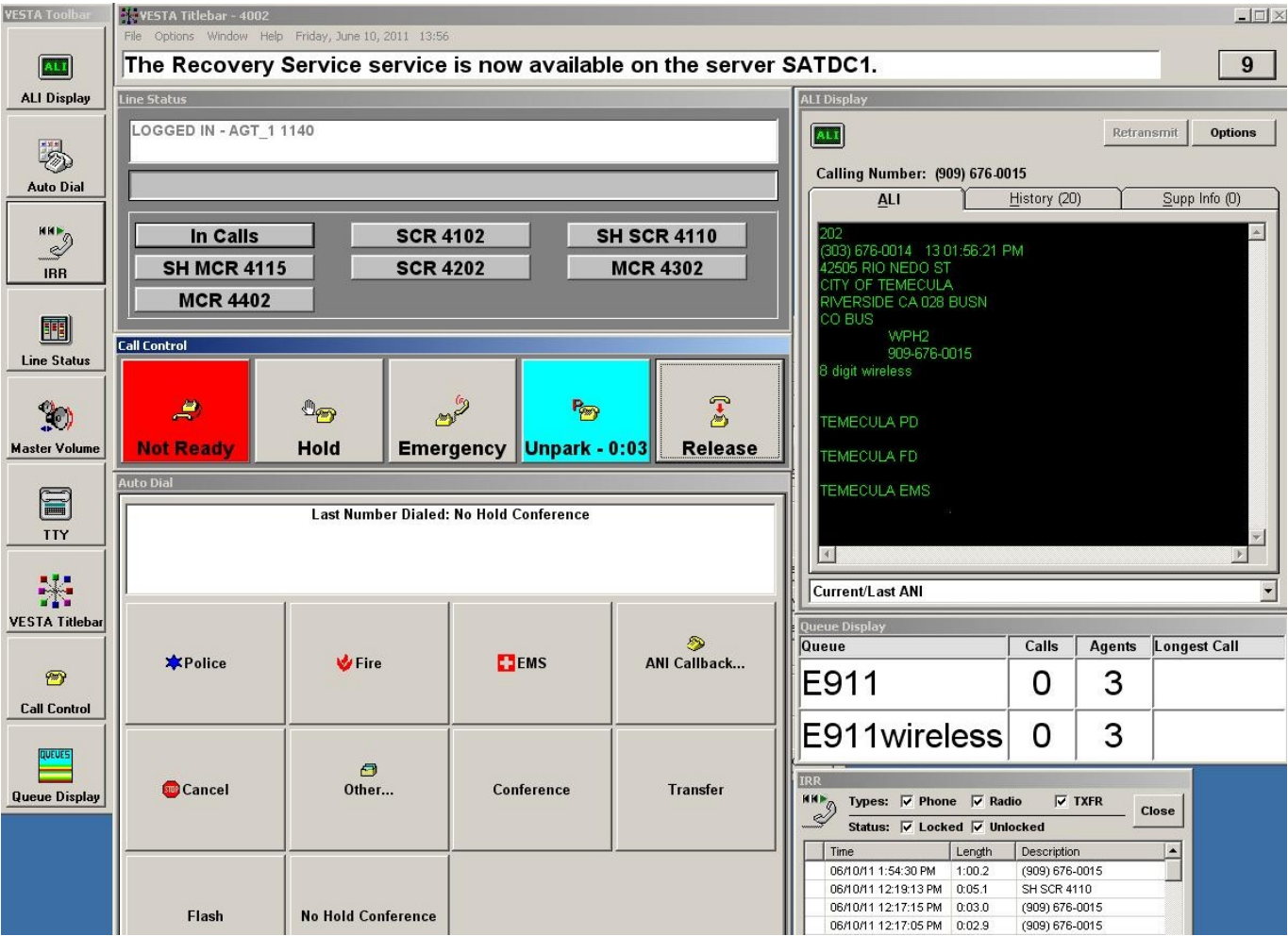
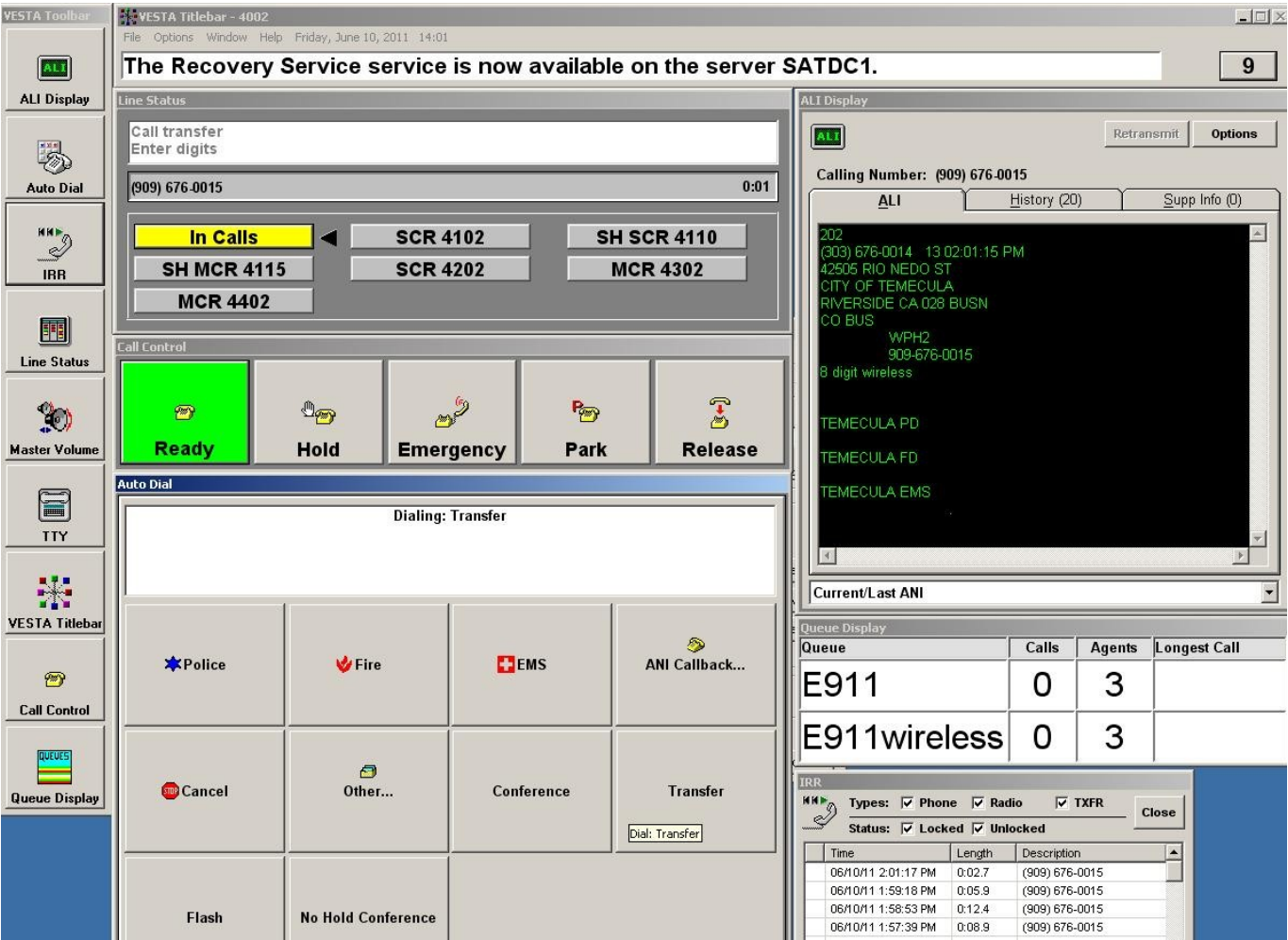


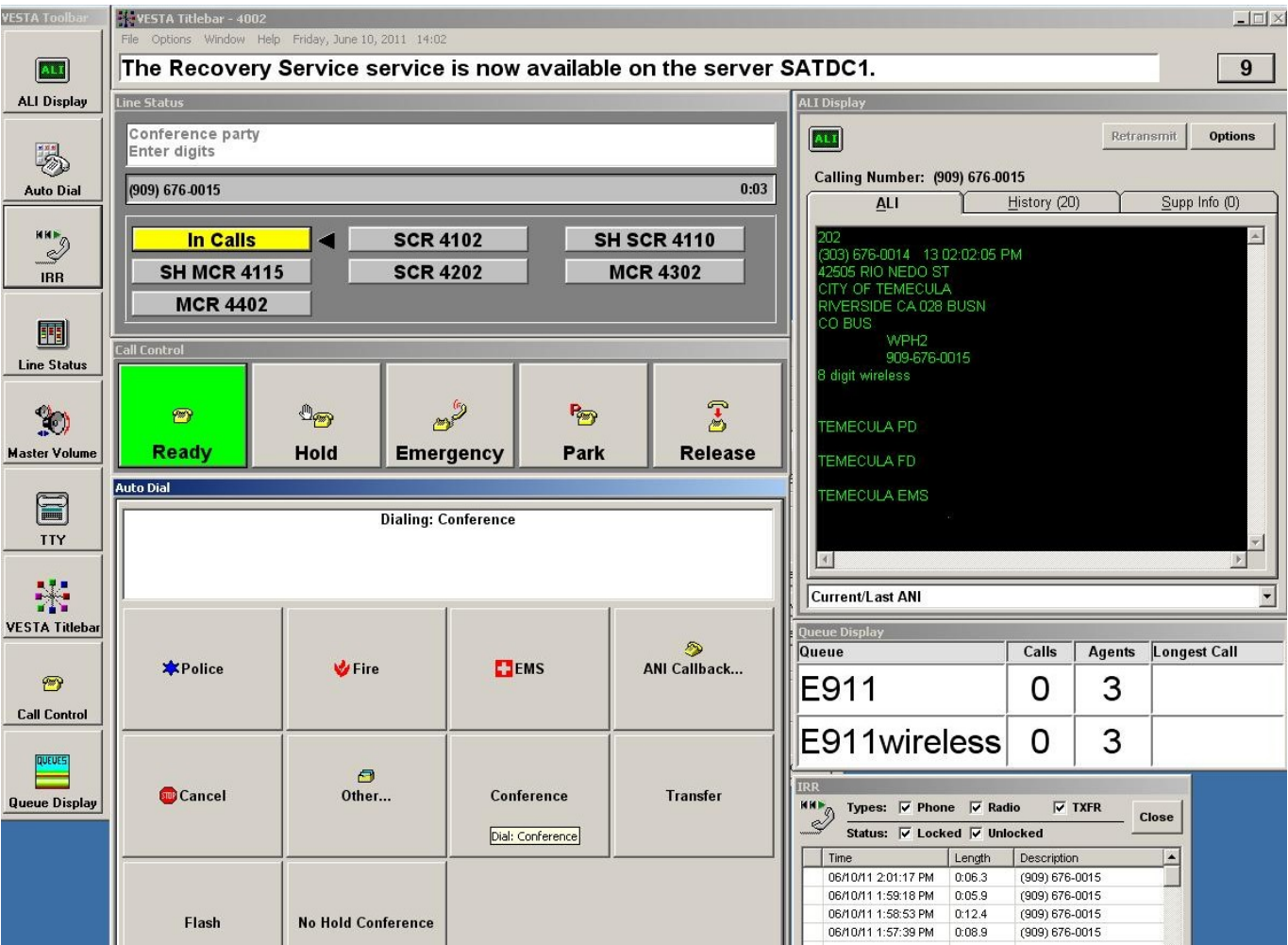
Figure 26: The Vesta agent dashboard with the call Park status.

To transfer the ACD call, on the Vesta agent dashboard as shown in **Figure 24**, click on the **Transfer** button and then enter any valid DN in the **Redial** box to transfer the call to as shown in **Figure 27**.



**Figure 27: The Vesta agent dashboard in the Transfer status**

To conference the ACD call with other party, on the Vesta agent dashboard as shown in **Figure 24**, click on the **Conference** button and then enter any valid DN in the **Redial** box to invite this DN into the conference as shown in **Figure 28**.



**Figure 28: The Vesta agent dashboard with the Conference status**

To do the No Hold Conference the ACD call with other party, on the Vesta agent dashboard as shown in **Figure 24**, click on the **No Hold Conference** button and then enter any valid DN in the **Redial** box to invite this DN into conference (not shown in figure).

## 8. Verification Steps

The following are typical steps to verify the interoperability between the Vesta system version 2.20 SP5 and Avaya Communication Server 1000 Release 7.5 and Avaya Aura® Contact Center 6.1

- Create 3 ACD agent Phones that consist of IP 1140E, digital 3905 and M2216 phone in Call Server.
- Acquire these agents by the Contact Center Manager.
- Use the Vesta agent dashboard to log these agents in.
- Use the ANI Simulator proprietary device to generate the emergency 911 calls.
- Configure the Vesta server to collect the information sent to agent phone from the Call Server.
- Handle the ACD calls on agent phone by using the Vesta agent dashboard.
- Check the audio path and CLID for every emergency 911 call.

## 9. Conclusions

All of the executed test cases have passed and met the objectives as outlined in **Section 2**. The Cassidian Vesta version 2.20 SP5 is considered compliant with Avaya Communication Server 1000 Release 7.5 and Avaya Aura® Contact Center Release 6.1.

## 10. Additional References

Product documentation for Avaya products may be found at:

<https://support.avaya.com/css/Products/>

Product documentation for Cassidian Vesta products may be found at:

<http://www.cassidiancommunications.com/>

[1] Avaya Communication Server 1000 Documents:

*Avaya Communication Installation and Commissioning*, Doc# NN43041-310, Issue 05.04, Date May 2011.

*Avaya Communication Server 1000 Unified Communications Management Common Services Fundamentals*, Doc # NN43001-116, Issue 05.11, Date June 2011.

*Avaya Communication Server 1000 Co-resident Call Server and Signaling Server Fundamentals*, Doc # NN43001-509, Issue 03.02, Date June 2011.

*Avaya Communication Server 1000 Element Manager System Reference - Administration*, Doc# NN43001-632, Issue 05.09, Date July 2011.

[2] Avaya Aura® Contact Center Documents:

*Avaya Aura® Contact Center Planning and Engineering*, Doc# NN444000-210, Issue 03.02, Date July 2011.

*Avaya Aura® Contact Center Overview*, Doc# NN44400-111, Issue 03.01, Date June 2011.

*Avaya Aura® Contact Center Fundamentals*, Doc# NN44400-110, Issue 03.01, Date June 2011.

*Avaya Aura® Contact Center Installation*, Doc# NN44400-311, Issue 03.01, Date June 2011. *Avaya Aura® Contact Center Server Administration*, Doc# NN44400-610, Issue 03.01, Date June, 2011.

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