



Avaya Solution and Interoperability Test Lab

Application Notes for TelStrat Engage Record v3.3 with Avaya Aura Contact Center Release 6.1 and Avaya Communication Server 1000 Release 7.5 – Issue 1.0

Abstract

These Application Notes describe a solution comprised of Avaya Aura Contact Center Release 6.1 and TelStrat Engage Record v3.3. During the compliant testing, the TelStrat Engage Record v3.3 was able to connect to the CCMS MLS server, acquire and monitor keys the of IP Phone, and record Voice over IP calls made from/to IP Phone of Avaya Communication Server 1000.

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 interoperability compliance testing is to verify that the TelStrat Engage Record v3.3 (hereafter referred as TelStrat ER) can successfully connect to the Avaya Aura Contact Center (hereafter referred as AACC) Meridian Link Server (MLS) server and record Voice over IP calls for the IP Phones of Avaya Communication Server 1000 Release 7.5 (hereafter referred as CS1000).

2. General Test Approach and Test Results

The general test approach was to verify the Engage Record 3.3 is able to acquire and monitor keys of IP Phones of CS1000 by communicating with the MLS server of AACC system, duplicate the media stream of monitored IP Phone and save recorded calls.

2.1. Interoperability Compliance Testing

The focus of this compliance testing was to prove and verify that the TelStrat ER was able to interoperate with AACC and CS 1000 system. The following areas were tested:

- TelStrat ER successfully utilizes the CCMS MLS server to provide Global Logging (record all calls)
- Selective Recording based on a combination of ACD Agent, DNIS, CLID, Port Numbers, DN, Day/Time, Days of week, and Call Duration.
- Quality Monitoring: 1 of n calls
- Record On-Demand.
- Agent Resiliency Information.
- Multiple DN Call Recording.

2.2. Test Results

The objectives outlined in the section 2.1 were verified and met. All test cases were executed and they all passed.

2.3. Support

Technical support for TelStrat can be obtained by contacting TelStrat via email at support@telstrat.com or by calling +1 972-633-4548.

3. Reference Configuration

Figure 1 illustrates the network diagram configuration used during the compliant testing event between the TelStrat ER and AACC.

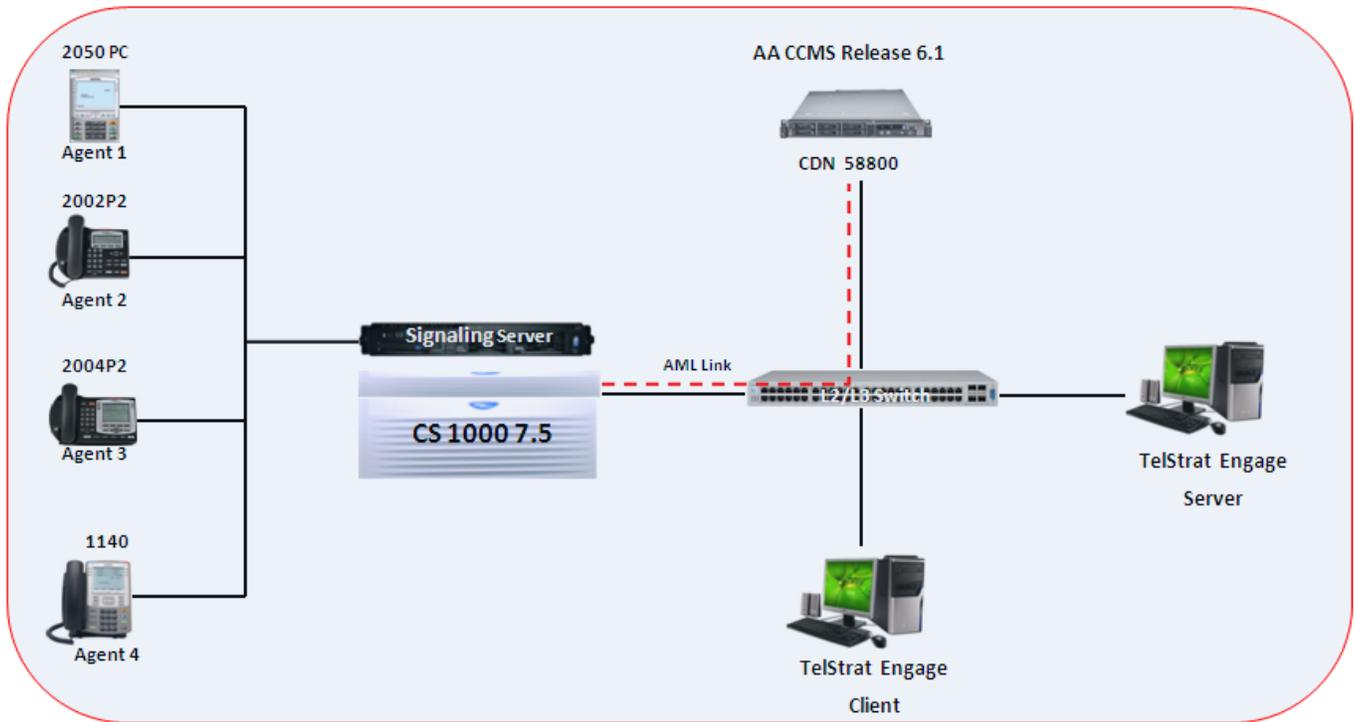


Figure 1: Network Diagram Configuration

4. Equipment and Software Validated

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

Equipment	Software/Firmware
Avaya CS1000	SW Version : 7.50 Q
Avaya Aura Contact Center	6.1 SP3
Avaya IP Soft Phone 2050	3.04.0003
Avaya IP Phone 2004P2	0692D93
Avaya IP Phone 2002P2	0604DC5
Avaya IP Phone 1140	0625C60
Engage Record Server OS	Windows 2008 Server SP2
TelStrat Engage Record Server	3.3.0.3
Engage Client OS	Windows XP Pro SP3

5. Configure Avaya CS 1000

This document assumes that the CS1000 is properly installed and configured. These Application Notes provide the necessary configuration that has to be done on CS1000 to work with AACC and TelStrat ER. For more information about how to install and configure Avaya CS 1000, refer to **Section 11 [1]**.

5.1. Create ELAN for AACC application on the Call Server

Log in to the command line interface of Call Server as administrator and issue overlay LD 17 as shown in **Figure 2** to create a new ELAN for the AACC application.

```
>
OVL000
>ld 17
CFN000
MEM AVAIL: (U/P): 102804775      USED U P: 616291 231283      TOT: 103652349
DISK SPACE NEEDED: 438 KBYTES
DCH          AVAIL:    249      USED:      6      TOT:    255
AML          AVAIL:      9      USED:      7      TOT:     16
REQ  chg
TYPE  adan
ADAN  new elan 19
CTYP  elan
DES   AACCC60
LCTL

MEM AVAIL: (U/P): 102804486      USED U P: 616551 231312      TOT: 103652349
DISK SPACE NEEDED: 438 KBYTES
DCH          AVAIL:    249      USED:      6      TOT:    255
AML          AVAIL:      9      USED:      7      TOT:     16

ADAN DATA SAVED
ADAN

REQ █
```

Figure 2: Create a new ELAN

5.2. Create VAS for the ELAN of AACCC on the Call Server

Log in to the command line interface of Call Server as administrator and issue overlay LD 17 as shown in **Figure 3** to create a value added server (VAS) for the ELAN 19 above of the AACCC application.

```

>ld 17
CFN000
MEM AVAIL: (U/P) : 102804496      USED U P: 616551 231302      TOT: 103652349
DISK SPACE NEEDED: 438 KBYTES
DCH          AVAIL:    249      USED:    6      TOT:    255
AML          AVAIL:    9        USED:    7      TOT:    16
REQ  chg
TYPE vas
VAS new
VSID 19
ELAN 19
SECU yes
INTL
MCNT
VSID
VAS

MEM AVAIL: (U/P) : 102804486      USED U P: 616551 231312      TOT: 103652349
DISK SPACE NEEDED: 438 KBYTES
DCH          AVAIL:    249      USED:    6      TOT:    255
AML          AVAIL:    9        USED:    7      TOT:    16
REQ

```

Figure 3: Create a new VAS for ELAN

5.3. Enable the IPIE feature for IP call recording on the Call Server

Log in to the command line interface of Call Server as administrator and issue overlay LD 17 as shown in Figure 4 to enable the Enhanced Unsolicited Status Message (USM) IE (IPIE).

```

>ld 17
CFN000
MEM AVAIL: (U/P) : 102804486      USED U P: 616551 231312      TOT: 103652349
DISK SPACE NEEDED: 438 KBYTES
DCH          AVAIL:    249      USED:    6      TOT:    255
AML          AVAIL:    9        USED:    7      TOT:    16
REQ  chg
TYPE parm
LPIB
IPIE yes
SBA_ADM_INS
SBA_USER
BCAP
IDLE_SET_DISPLAY CS1kA
  MODIFY
ICON
MSEC

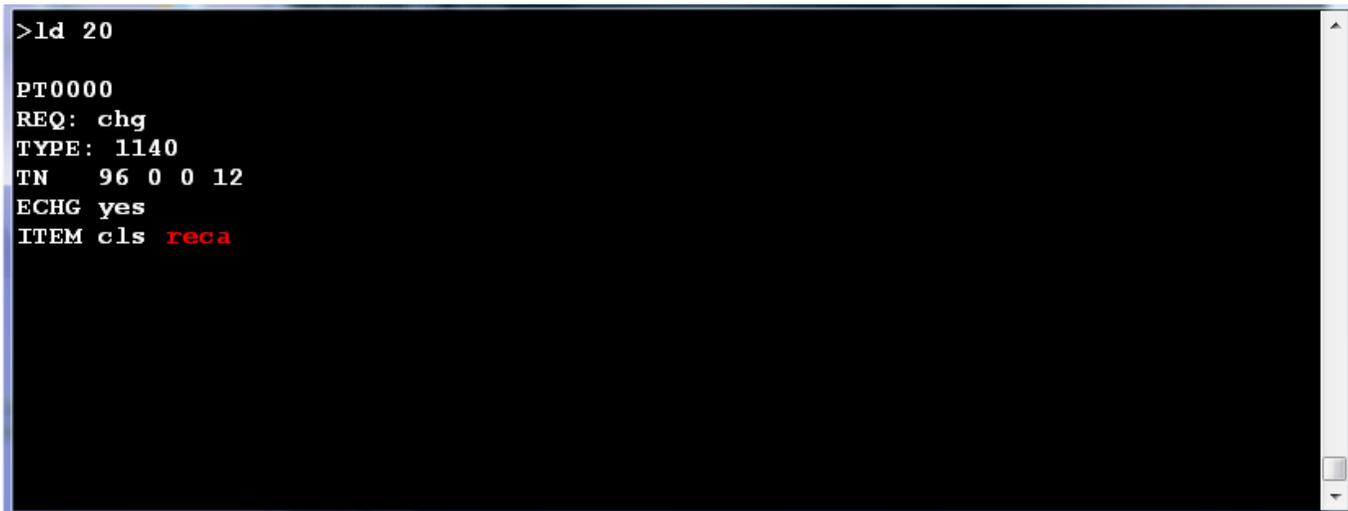
MEM AVAIL: (U/P) : 102804486      USED U P: 616551 231312      TOT: 103652349
DISK SPACE NEEDED: 438 KBYTES
DCH          AVAIL:    249      USED:    6      TOT:    255
AML          AVAIL:    9        USED:    7      TOT:    16
REQ
REQ █

```

Figure 4: Enable IPIE

5.4. Enable class of service RECA for IP Phone

Log in to the command line interface of Call server as administrator and issue overlay LD 20 as shown in **Figure 5** to enable the recoding allowed (RECA) class of service for IP Phone.



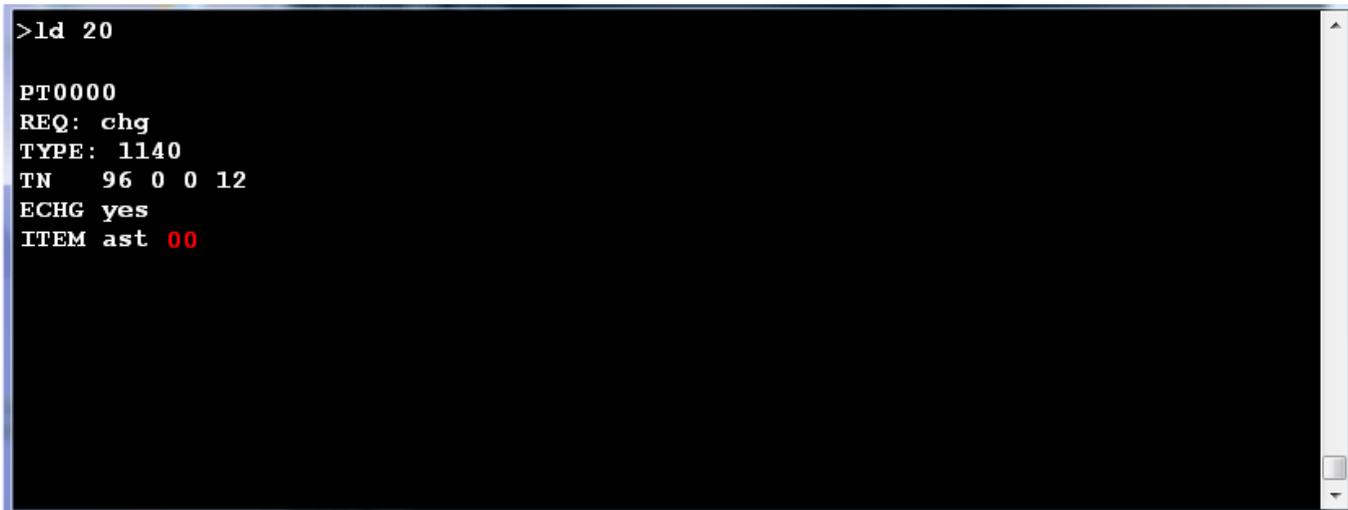
```
>ld 20

PT0000
REQ: chg
TYPE: 1140
TN 96 0 0 12
ECHG yes
ITEM cls reca
```

Figure 5: Enable RECA class of service for IP Phone

5.5. Configure the Associated Set Assignment (AST) for IP phone

Log in to the command line interface of Call Server as administrator and issue overlay LD 20 as shown in **Figure 6** to define which key of IP Phone is recorded by assigning the AST with a number of key. In this example, the AST is set to 00 which is the key 0 of 1140 IP phone and TelStrat ER will monitor and record this key.



```
>ld 20

PT0000
REQ: chg
TYPE: 1140
TN 96 0 0 12
ECHG yes
ITEM ast 00
```

Figure 6: Define key number 00 in the AST field

6. Configure Avaya AACC 6.1

This document assumes that the AACC 6.1 system accompanying with MLS server was properly installed and configured, for more information how to install and configure the AACC please refer to **Section 11 [2]**.

7. Configure TelStrat ER Server

This section provides the detail configuration on the TelStrat ER server and client for recording VoIP calls on CS1000.

7.1. Configure TelStrat ER Server

Log in to the TelStrat ER server as administrator and to configure VoIP Engine for the Engage Server, navigate to menu **Start > All Programs > TelStrat > VOIP Engine Configuration**, the VOIP Engine Configuration panel appears as shown in Figure 7.



Figure 7: Engage VoIP Engine Console window

The VOIP Engine window appears as shown in **Figure 8**. Set the following fields as shown:

- CTI Option: Nortel MLS Server
- TN Format Option: Large
- MLS Server Name: 1192.168.1.51 → IP address of MLS CCMS server
- Dual Stream Recorder IP: 192.168.1.56 → IP address of Engage server
- Calls To Record: All Trunk/Internal Calls
- And leave other fields as their value default

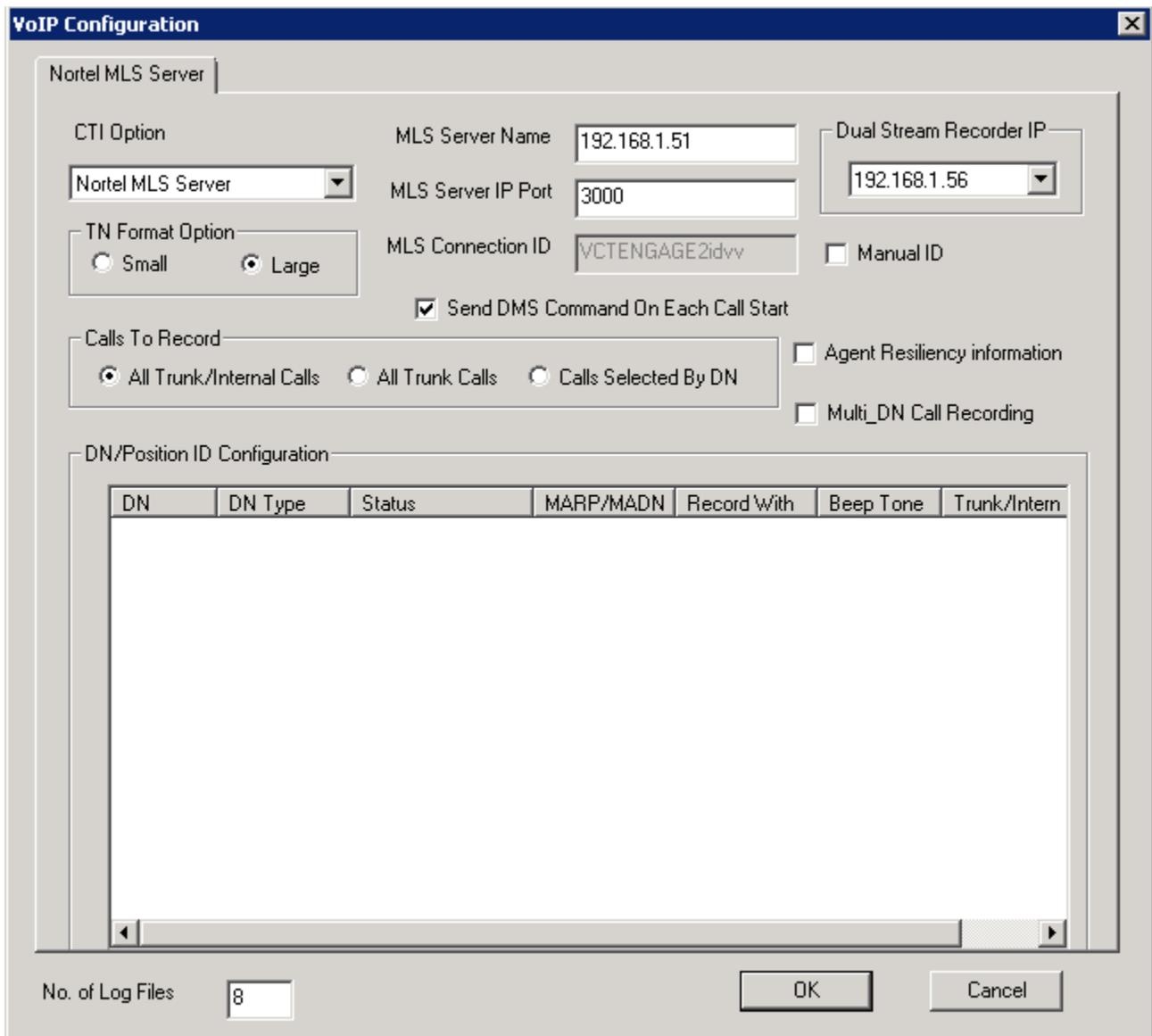


Figure 8: VoIP Configuration window

7.2. Add a regular DN/ACD Position ID to TelStrat ER Server

To monitor and record for a DN/ Position of agent phone, it needs to be configured by adding the DN in the **DN/Position IP Configuration** window. Right click on the white space of the **DN/Position ID Configuration** section and select **Add** button as shown in **Figure 9**.

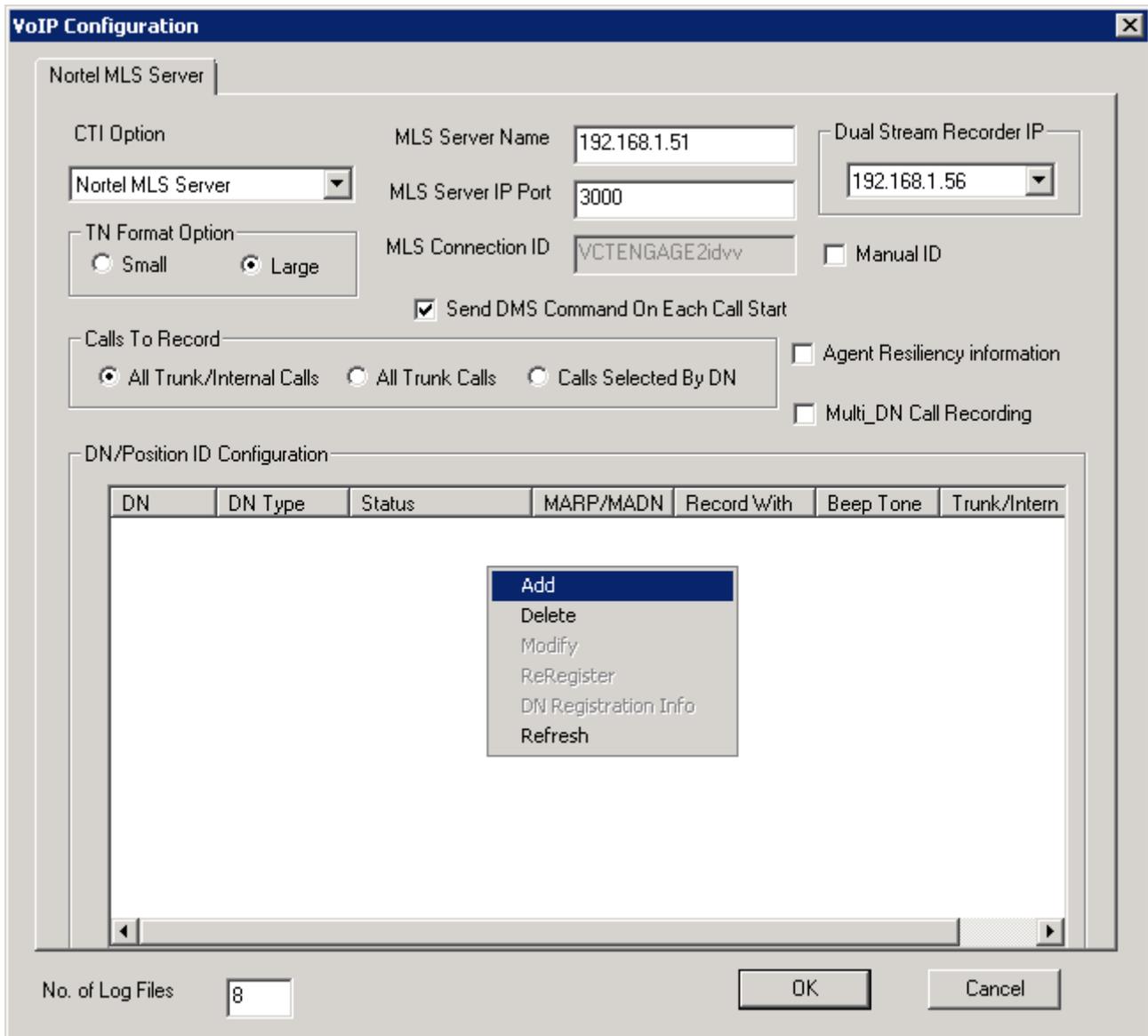


Figure 9: Sample of adding DN

The **DN Registration** window appears as shown in **Figure 10**.

Note:

- There are two types of DN: ACD Position ID of agent and Regular DN
- There are two types of Recoding: Mirroring and Dual Stream but only Dual Stream was tested during the compliance testing.

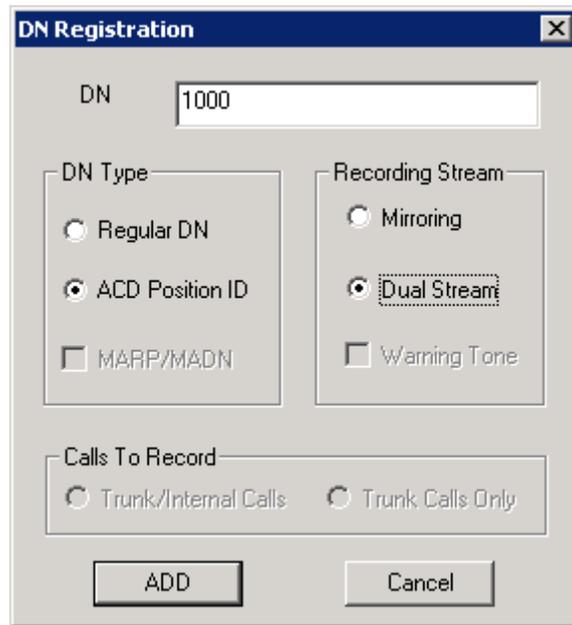


Figure 10: DN Registration window

The ACD position 1000 is successfully added to the Engage Server. The status initially shows “Not initialized” as shown in **Figure 11** and the “Not Initialized” is initially reflected as successful registration of DN.

VoIP Configuration

Nortel MLS Server

CTI Option: Nortel MLS Server

MLS Server Name: 192.168.1.51

MLS Server IP Port: 3000

Dual Stream Recorder IP: 192.168.1.56

TN Format Option: Small Large

MLS Connection ID: VCTENGAGE2idvv

Manual ID

Send DMS Command On Each Call Start

Calls To Record: All Trunk/Internal Calls All Trunk Calls Calls Selected By DN

Agent Resiliency information

Multi_DN Call Recording

DN/Position ID Configuration

DN	DN Type	Status	MARP/MADN	Record With	Beep Tone	Trunk/Intern Calls
1000	Position ID	Not Initialized	No	Dual Stream	Disabled	Trunk/Internal

No. of Log Files: 8

OK Cancel

Figure 11: VoIP Configuration with DN's status

As soon as a VoIP call made from/to this DN, the status will change to "Success" as shown in **Figure 12**.

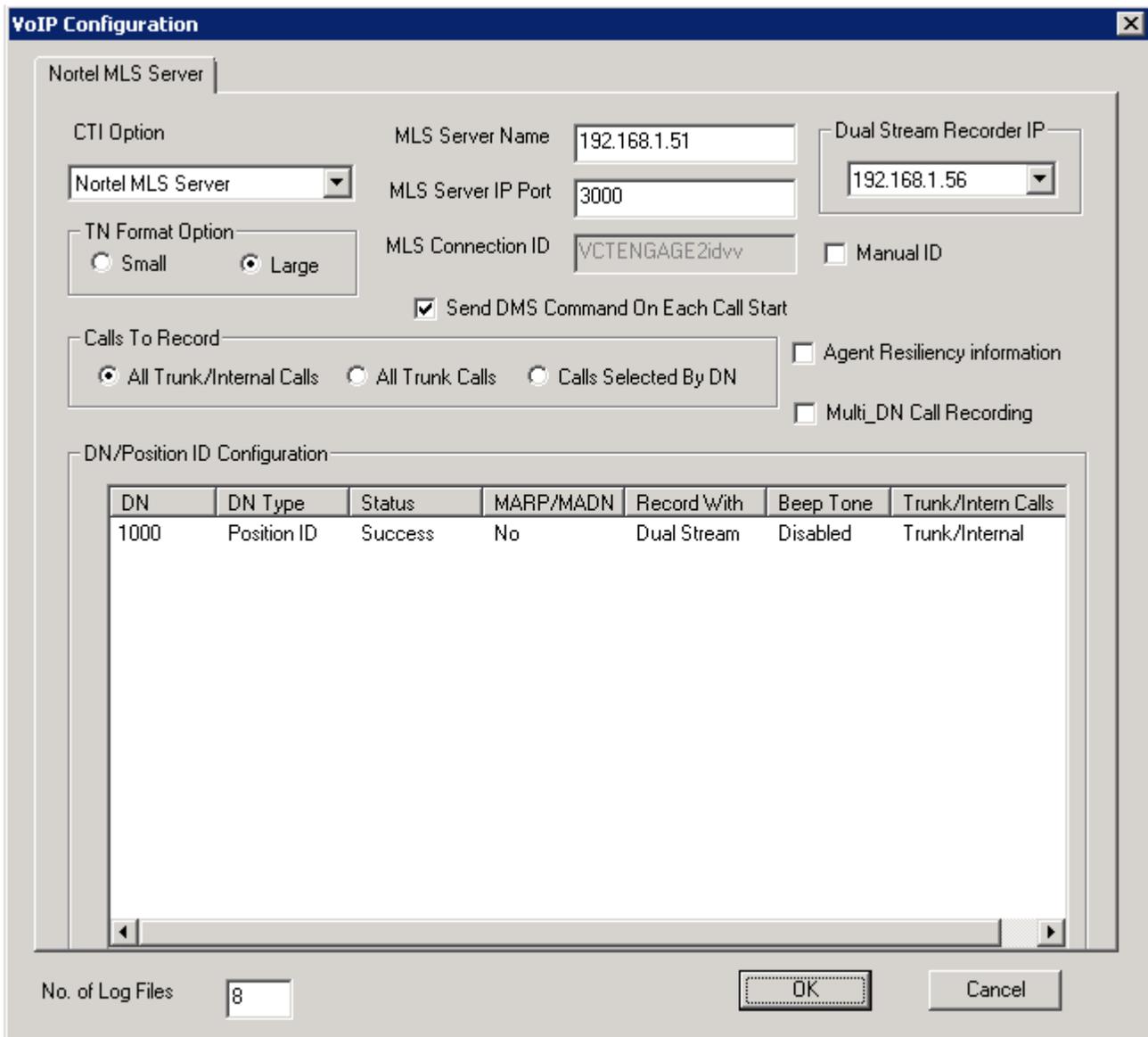


Figure 12: VoIP Configuration with DN's status

7.3. Add DN with MARP/MADN supported

In order to add DN with MARP/MADN supported in CS1000, right click on the space of **DN/Position ID Configuration** section and select the **Add** button.

The DN Registration appears as shown in **Figure 13**, click on the **MARP/MADN** checkbox to enable this feature and then click on the **Add** button to complete adding the DN.

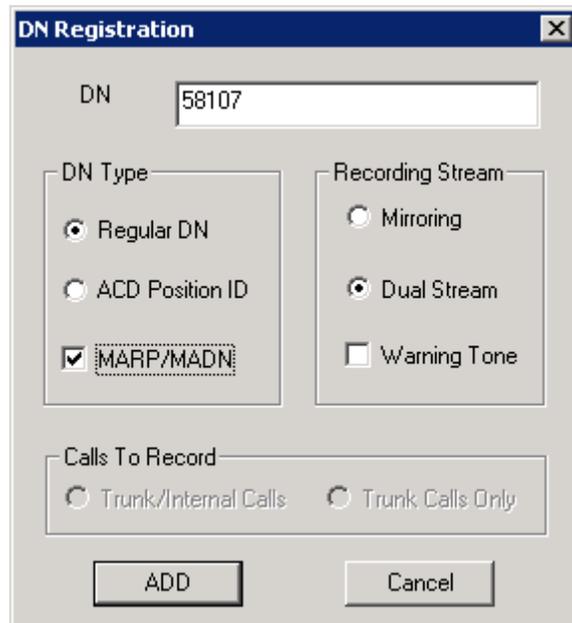


Figure 13: Adding DN with MARP/MADN support

The status of MARP/MADN DN initially shows “**OK(0), Fail(Y)**” where Y is the number of MARP/MADN DN as shown in **Figure 14** and the “Not Initialized” is initially reflected as Fail(Y) for each appearance of the DN which will update to OK(x). However, any actual appearances that failed registration, such as AST Not Set or Device Not Present (etc.), will remain reflected as Fail (#) unless corrected.

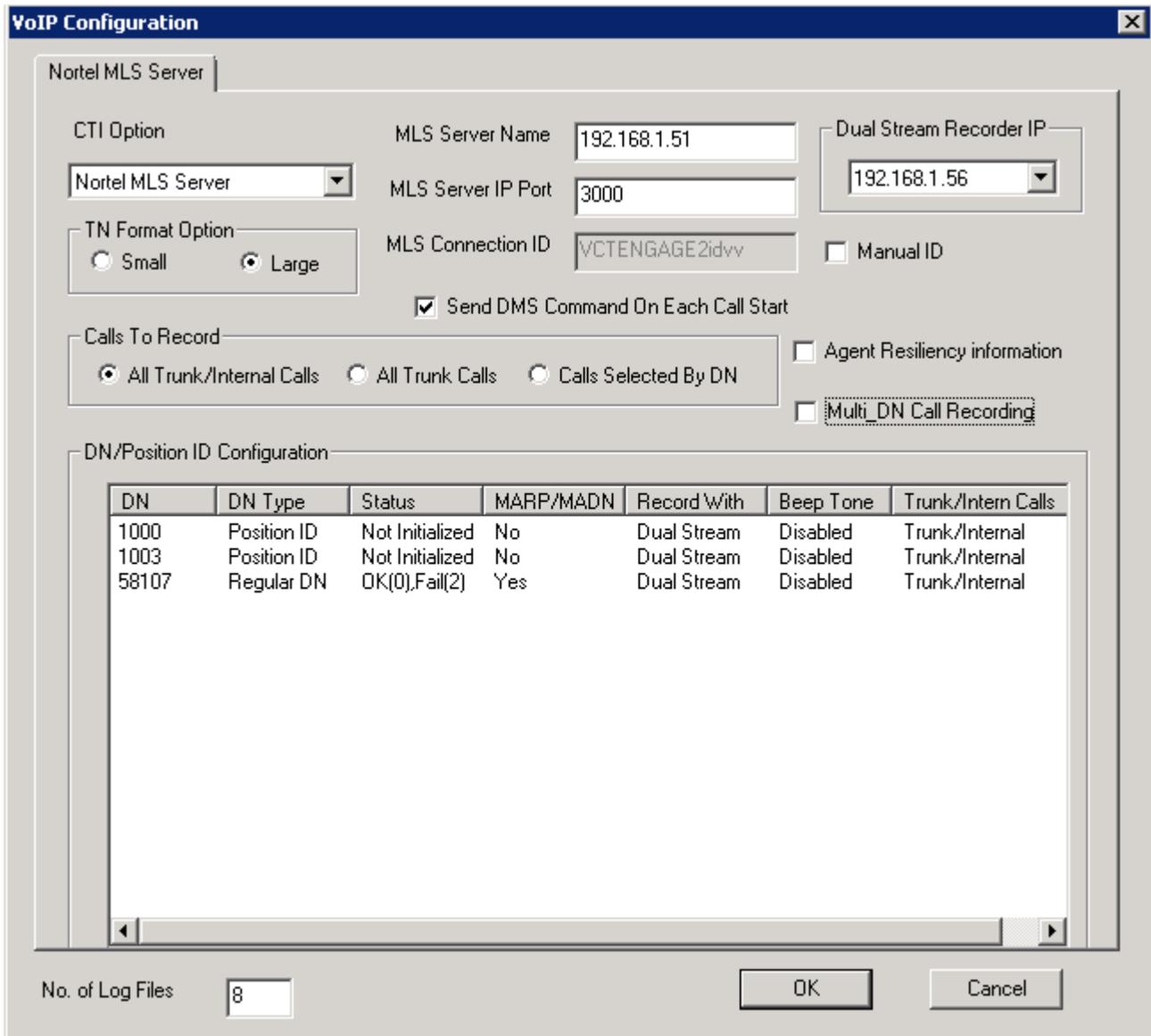


Figure 14: VoIP Configuration with DN's status

As soon as calls are made from/to the MARP/MADN DN's, the status is going to be changed to "OK(2)Fail(0)" as shown in **Figure 15**.

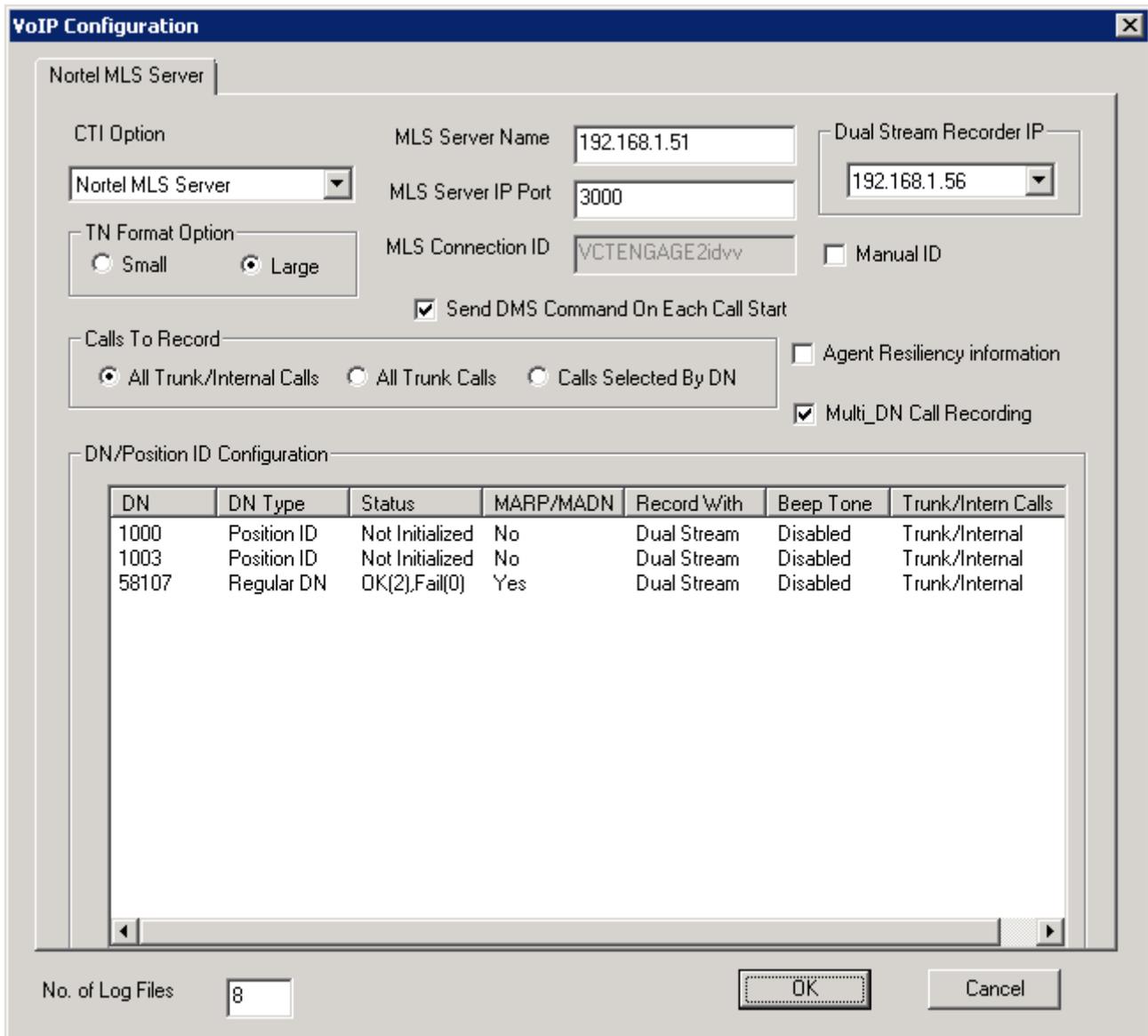


Figure 15: VoIP Configuration with DN's status

7.4. Enable Multi_DN Call Recording and Agent Resiliency Information features on the TelStrat ER Server

To enable these features on the Engage Server, open the VOIPEngine Configuration window again following the instructions in section 7.1.

The VoIP Configuration appears as shown in **Figure 16**. Check on the **Multi_DN Recording** and **Agent Resiliency information** check boxes and then click **OK** button to close the VoIP Configuration window.

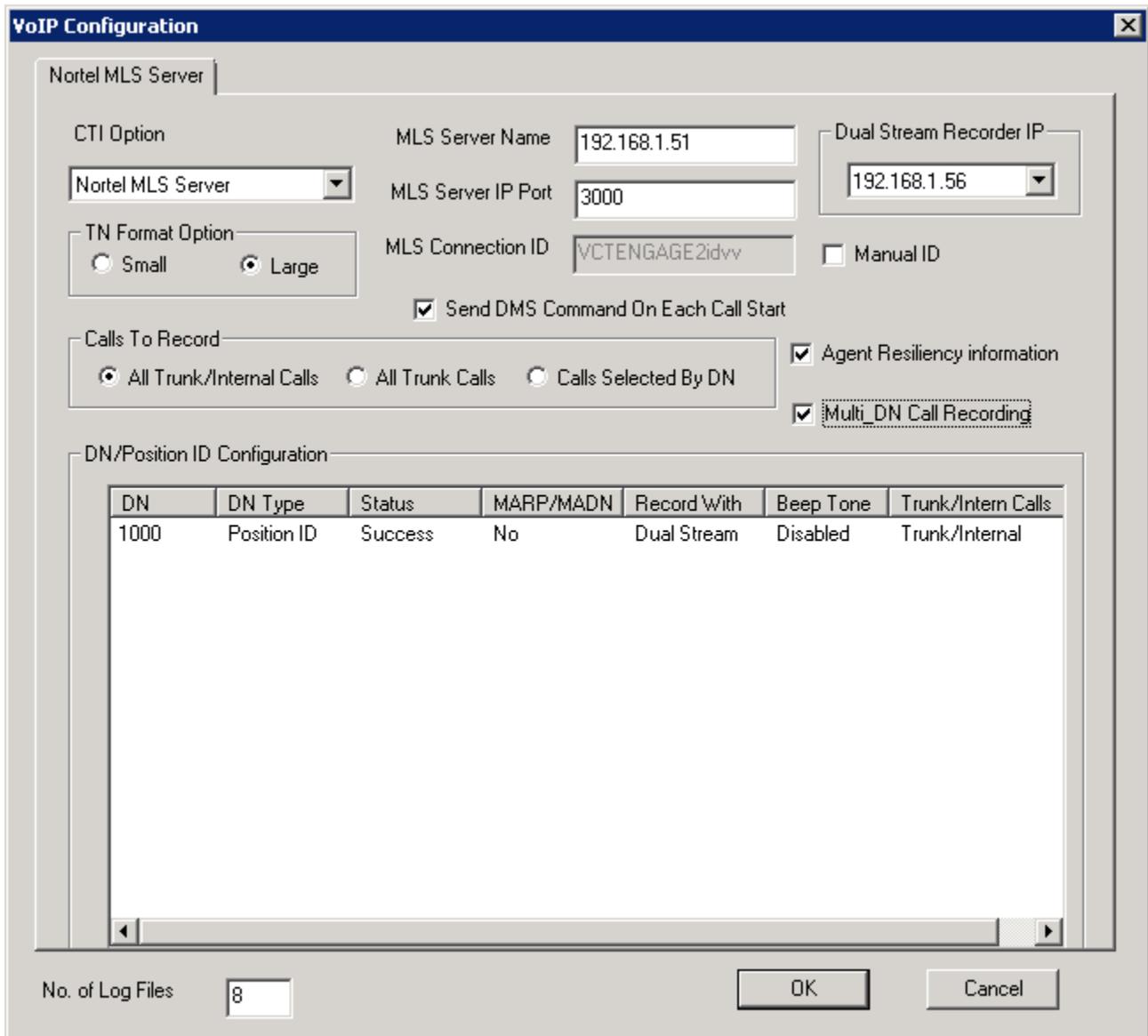


Figure 16: Muil_DN Call Recording and Agent Resiliency Information features enabled

Stop and start the TelStrat VoIPEngine service in the services category of Windows for these changes to be affected.

TelStrat BCMEngine	Telstrat BCM Recording Service	Started	Manual
TelStrat Centralized Error Server	TelStrat Centralized Error Server	Started	Automatic
TelStrat Voice Recording Server	TelStrat CommSrv Voice Recording Comm...	Started	Automatic
TelStrat VOIPEngine	TelStrat VoIP Recording Service	Started	Automatic
Terminal Services	Allows users to connect interactively to a...	Started	Automatic
Terminal Services Configuration	Terminal Services Configuration service (...)	Started	Manual
Terminal Services UserMode Port Redirector	Allows the redirection of Printers/Drives/...	Started	Manual

Figure 17: TelStrat VoIPEngine Service

Note:

- The Multi_DN Recording feature of Telstrat ER benefits from a new feature from Contact Center release 7.0 (NES CC7.0) called Multiple DN Registration that enables CTI third party application can control as how many keys of IP Phone as they want via MLS server without assigning the Associated Assignment Set (AST) for IP Phone.
- The Multiple DN Registration feature needs to be enabled in the license of Contact Center to use this feature.

8. Configure TelStrat Engage Client

This section explains the configuration using the TelStrat ER Client to add Automatic Call Distribution (ACD) Agents and ports that will be monitored for recording.

It is assumed that the TelStrat ER Server has been successfully installed and the required recording services are running on it. Assumption is also made that the TelStrat ER Client has been successfully installed. For additional information on TelStrat ER suite installation and configuration refer to **Section 11 [3]**.

To access the TelStrat ER Client, navigate to **Start > All Programs > TelStrat Engage > Engage Client** from the equipment it is installed on.

Enter credentials and IP address of TelStrat ER server as shown in **Figure 18** and then click the **OK** button.



Figure 18: TelStrat Engage logon window

The main window of TelStrat ER Client is shown in **Figure 19**.

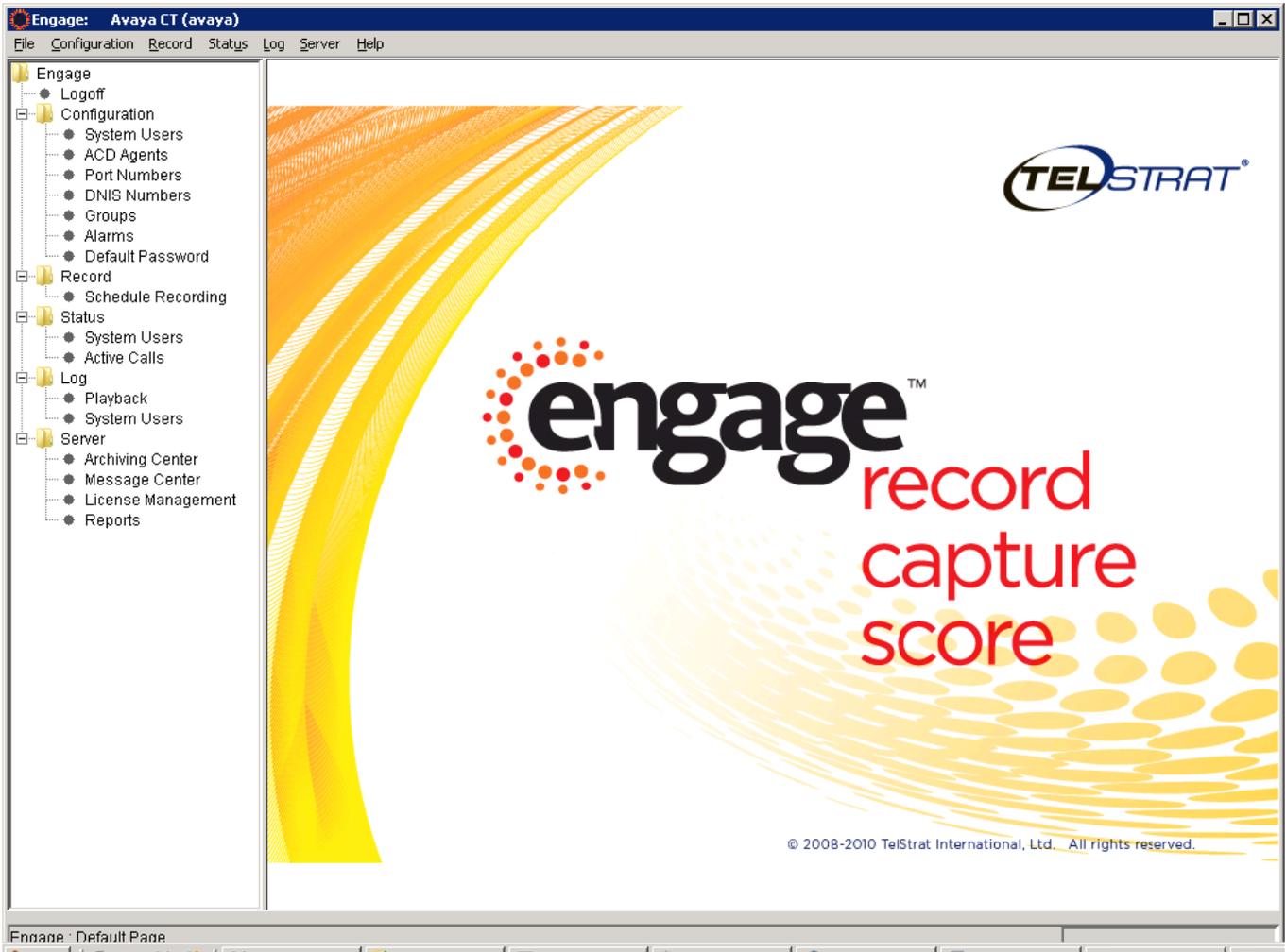


Figure 19: TelStrat ER Client

8.1. Create ACD Agent

To add the ACD Agent that the TelStrat ER Server needs to record, navigate to **Engage > Configuration > ACD Agents**. On the right hand window pane under the column **ACD Agents**, right click the mouse button and the **Create** option is provided as shown in **Figure 20**.

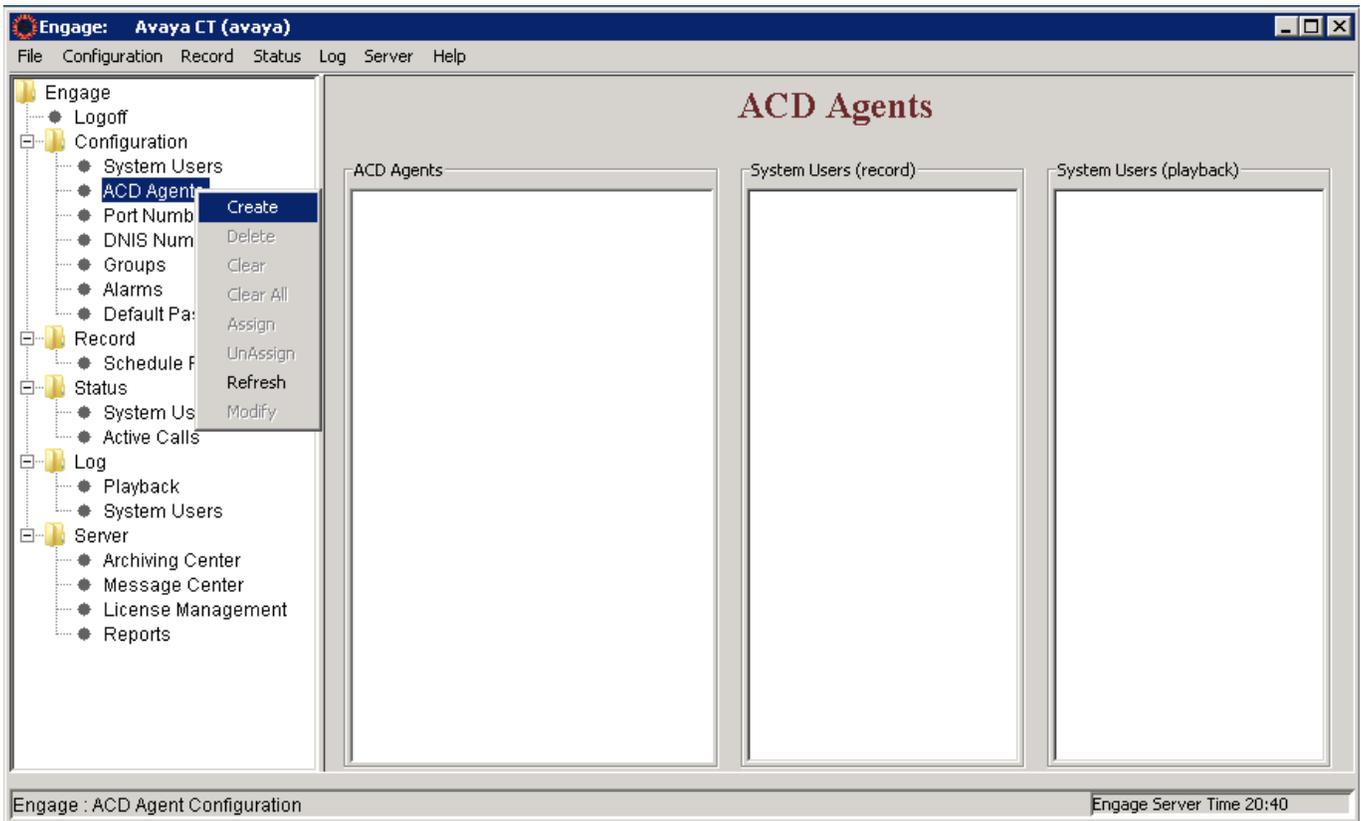


Figure 20: Adding ACD Agents

Enter the login ID in the **ACD Agent** field and last and first name in the Name field and press **OK** as shown in **Figure 21**. The information in **Name** field is optional.

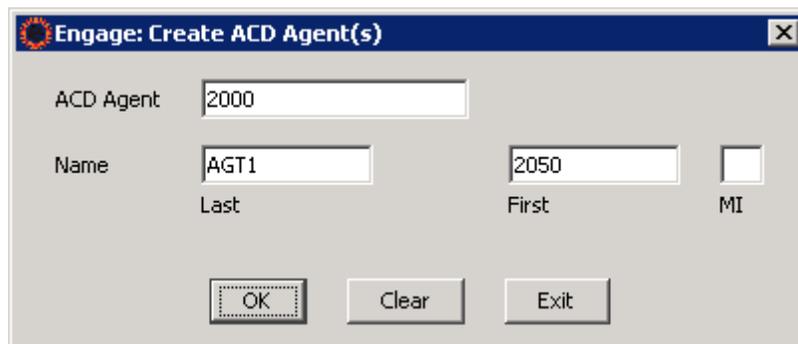


Figure 21: Create ACD Agent

8.2. Create Port Numbers

To add port numbers, navigate to **Engage > Configuration > Port Numbers**, click right mouse on the **Port Numbers** tab, and select the **Create** option as shown in **Figure 22**.

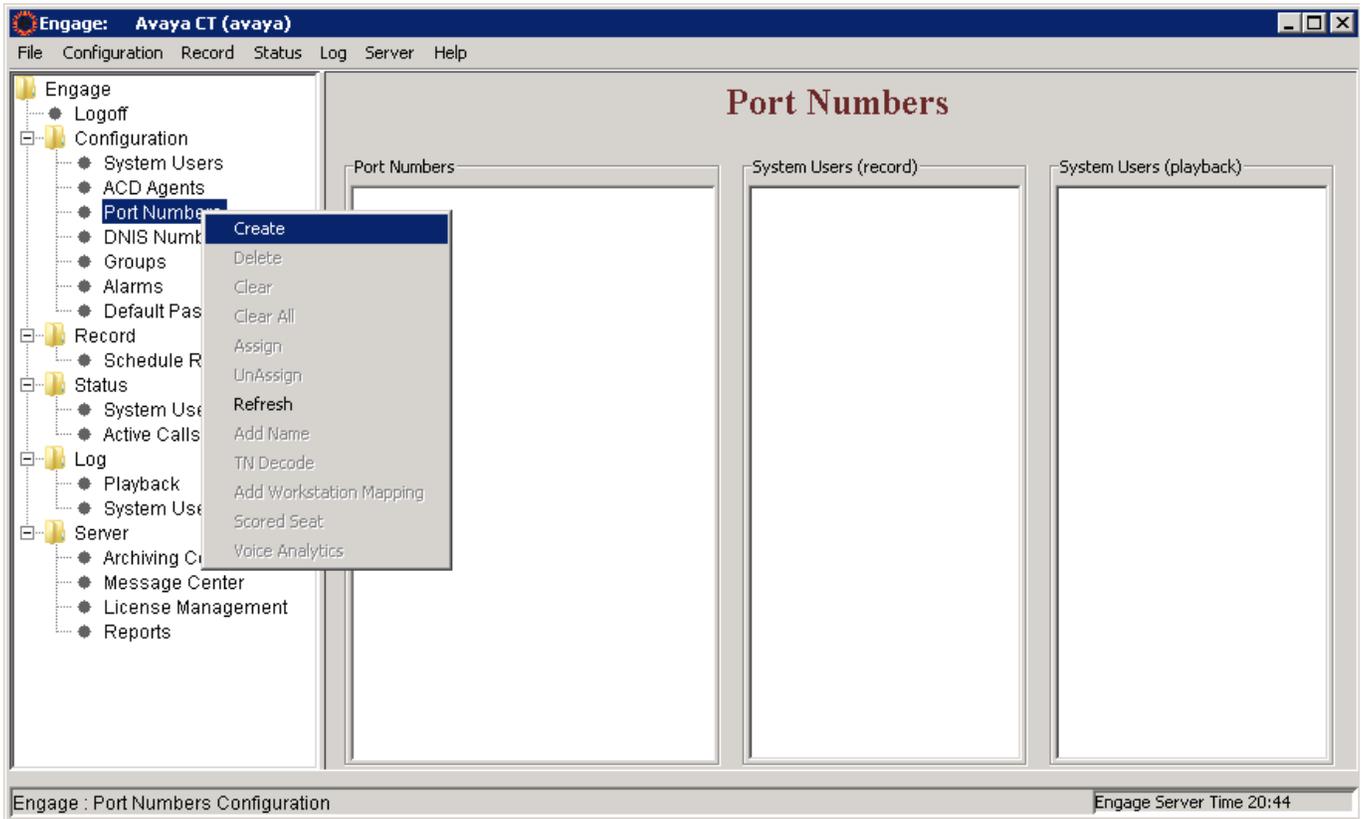


Figure 22: Adding Port Numbers

The **Engage Port No** window appears, click on the **VoIP** option box, and enter the **Loop, Shelf, Card** and **Channel numbers** respectively with TN of recorded IP Phones in the CS1000 system as shown in **Figure 23**.

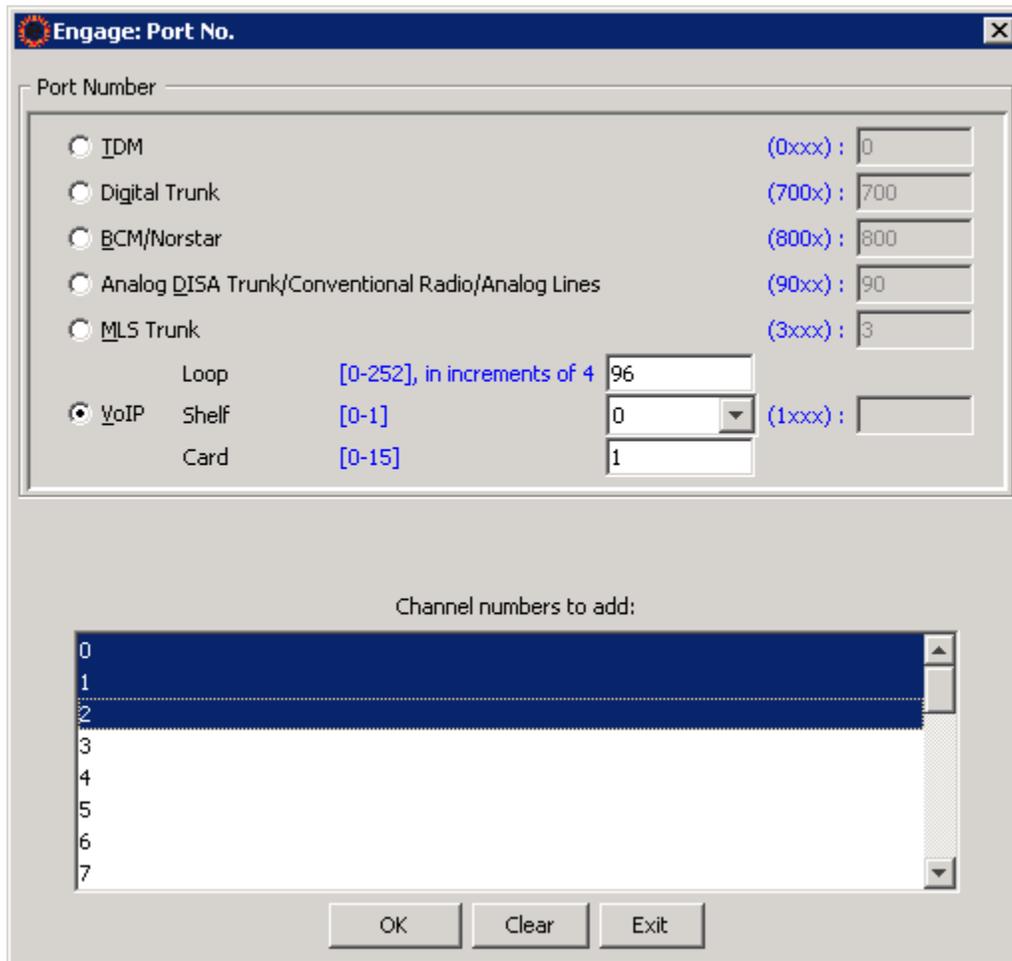


Figure 23: Adding Port Numbers

Click the **OK** button to complete adding the port numbers as shown in **Figure 24**.

Note: Select a range of channel numbers by selecting the first channel, holding down the Shift key of keyboard and selecting the ending channel.

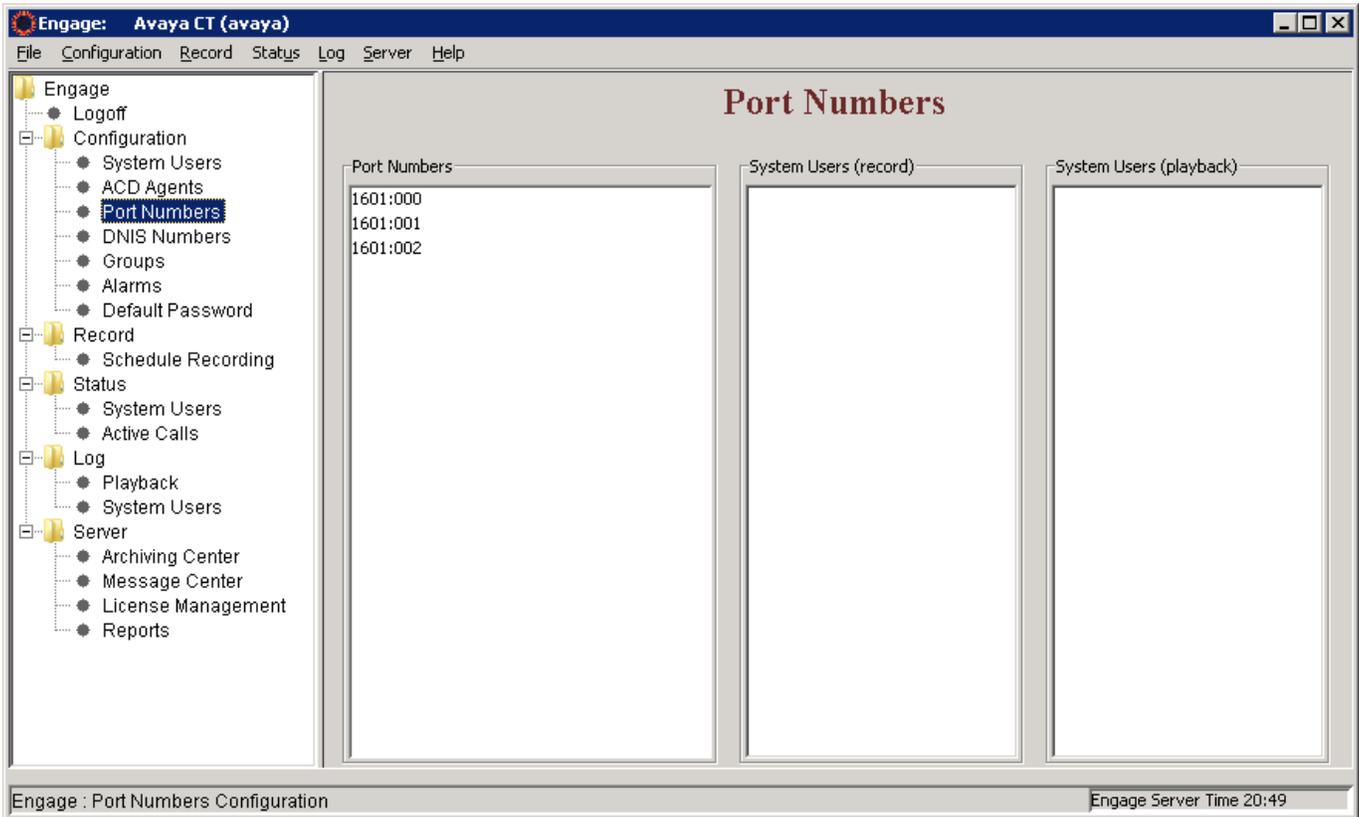


Figure 24: Port Numbers shown up in the Port Numbers window

8.3. Create Recording Criteria

This section describes the recording criteria that can be built using the TelStrat ER Client to record calls going on the IP Phones. Example criteria discussed in this section are Selective recording (record calls as per filters Phones) and Quality monitor recording (recording calls based on frequency of calls).

Selective recording is where incoming/outgoing calls are recorded of selected components of ACD Agents, DN and Port Numbers etc.

To create a Selective recording criterion, navigate to **Engage > Record > Schedule Recording** and right click the mouse button on the **Schedule Recording** tab and select the **Create** option as shown in **Figure 25**.



Figure 25: Create a Schedule Recording

The **New Criteria** window appears as shown in **Figure 26**, enter a name in the **Criteria Name** box and click **OK** button to go to the **Schedule Recording Criteria Options** window.

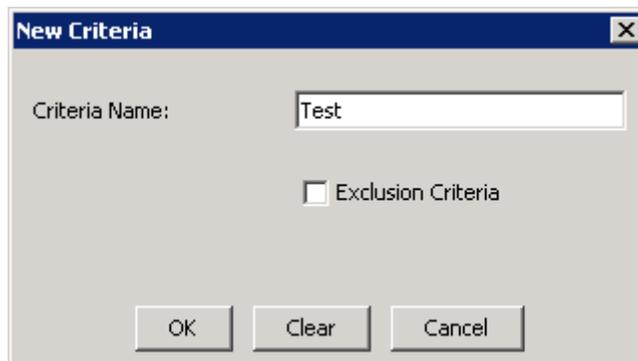


Figure 26: New Criteria window

The **Test** criteria rule has been built to record selective calls. **Figure 27** shows the ACD Agent being selected so that all incoming/outgoing calls made to/from this ACD Agent set is recorded.

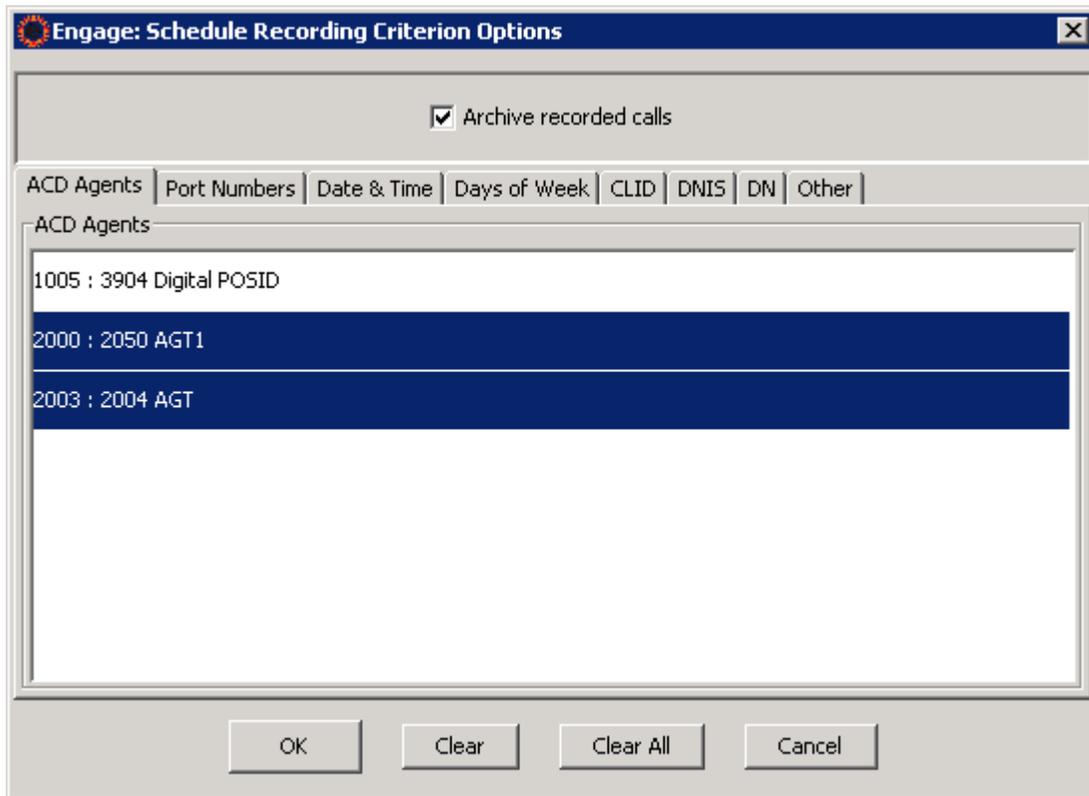


Figure 27: ACD Agent set being added to the Global Criteria

Figure 28 shows all the **Port Numbers** being selected so that all incoming/outgoing calls made through these channels are recorded.

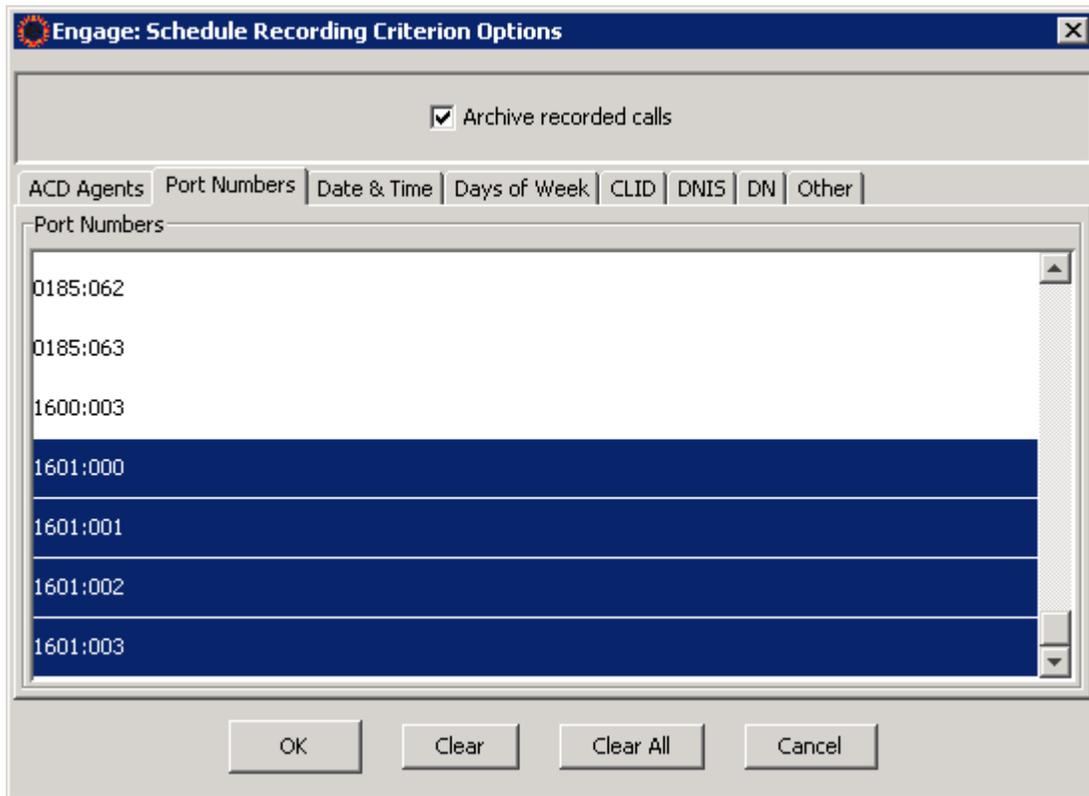


Figure 28: Port Numbers being added to the Global Criteria

If DN/s need to be added to this criteria then go to the **DN** tab of the criteria and right click the mouse button and an **Add** option will be presented as shown in **Figure 29**.

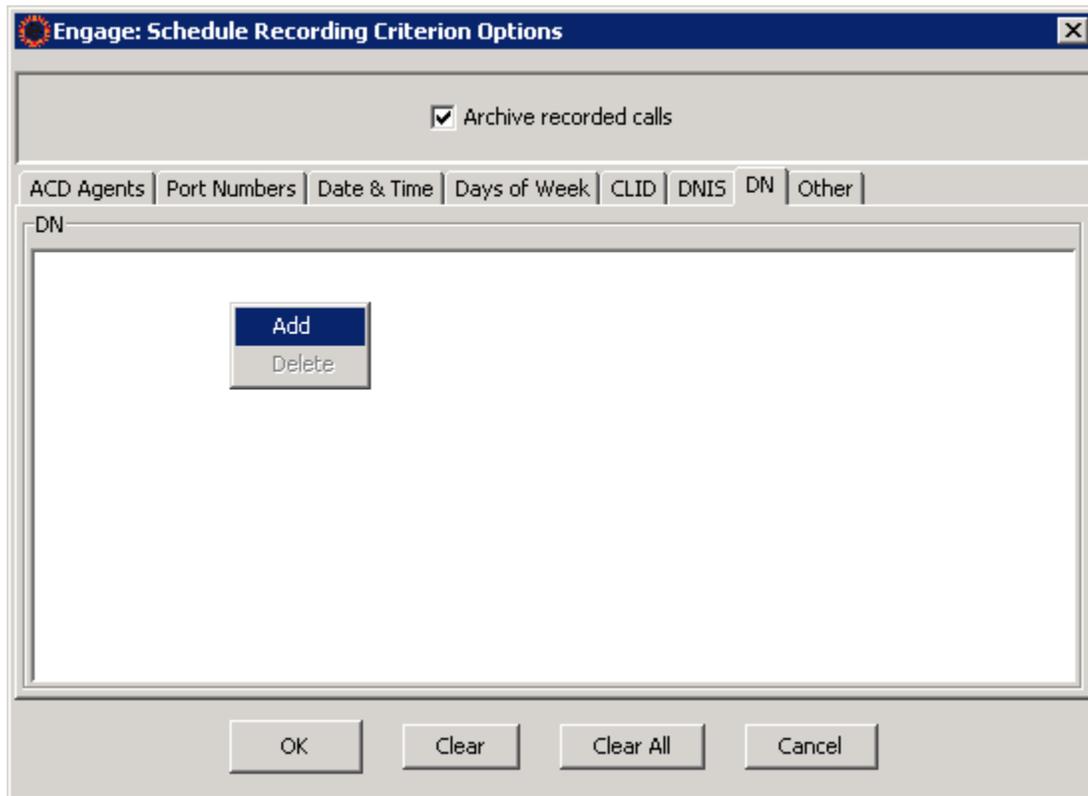


Figure 29: Adding DN to Criteria

Add a DN, for example 58801 as shown in **Figure 30** below.

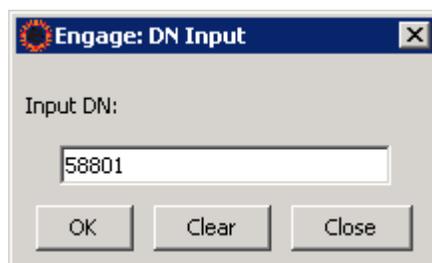


Figure 30: DN Input window

Now the required DN/s can be selected as shown in **Figure 31** and included into the **Test** criteria. Press **OK** to complete configuring the **Test** criteria.

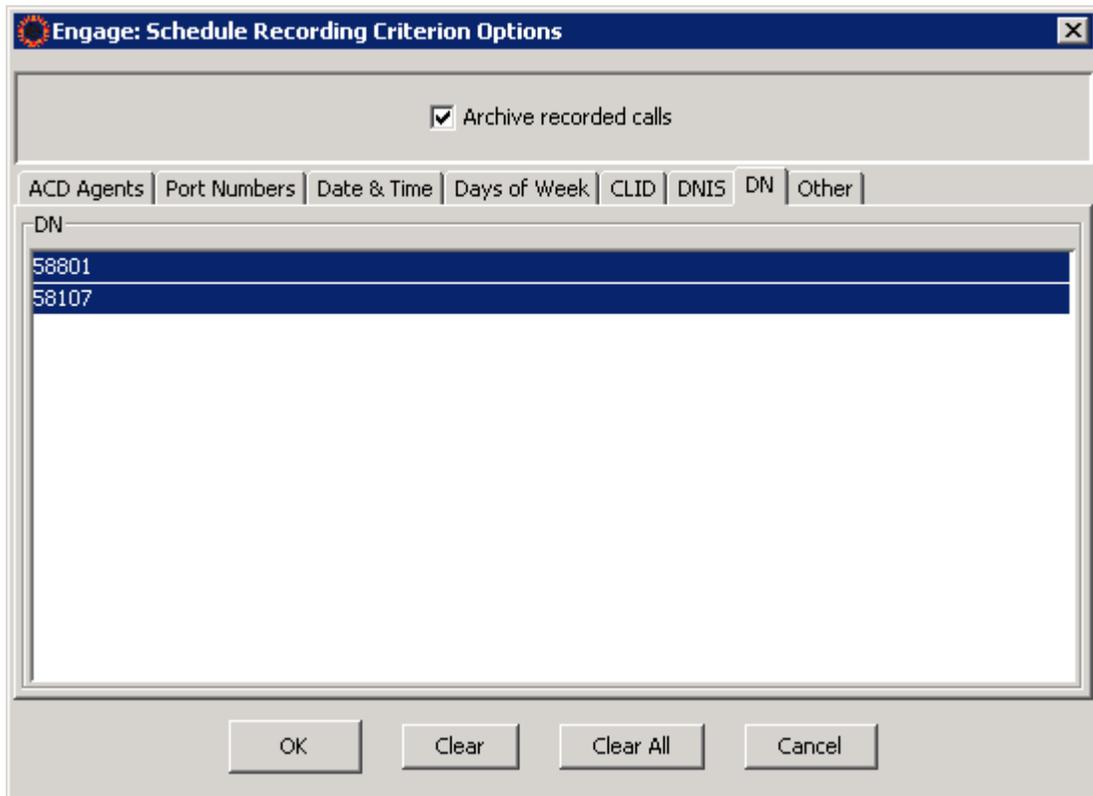


Figure 31: Selected DNs added to the Test Criteria

Figure 32 shows the Test criteria have been built successfully. Press **OK**.



Figure 32: Recording Criteria Created Successfully

Figure 33 shows a snap shot of the **Test** criteria showing the ACD Agents, Port Numbers and DN that will be included as part of the selective recording.

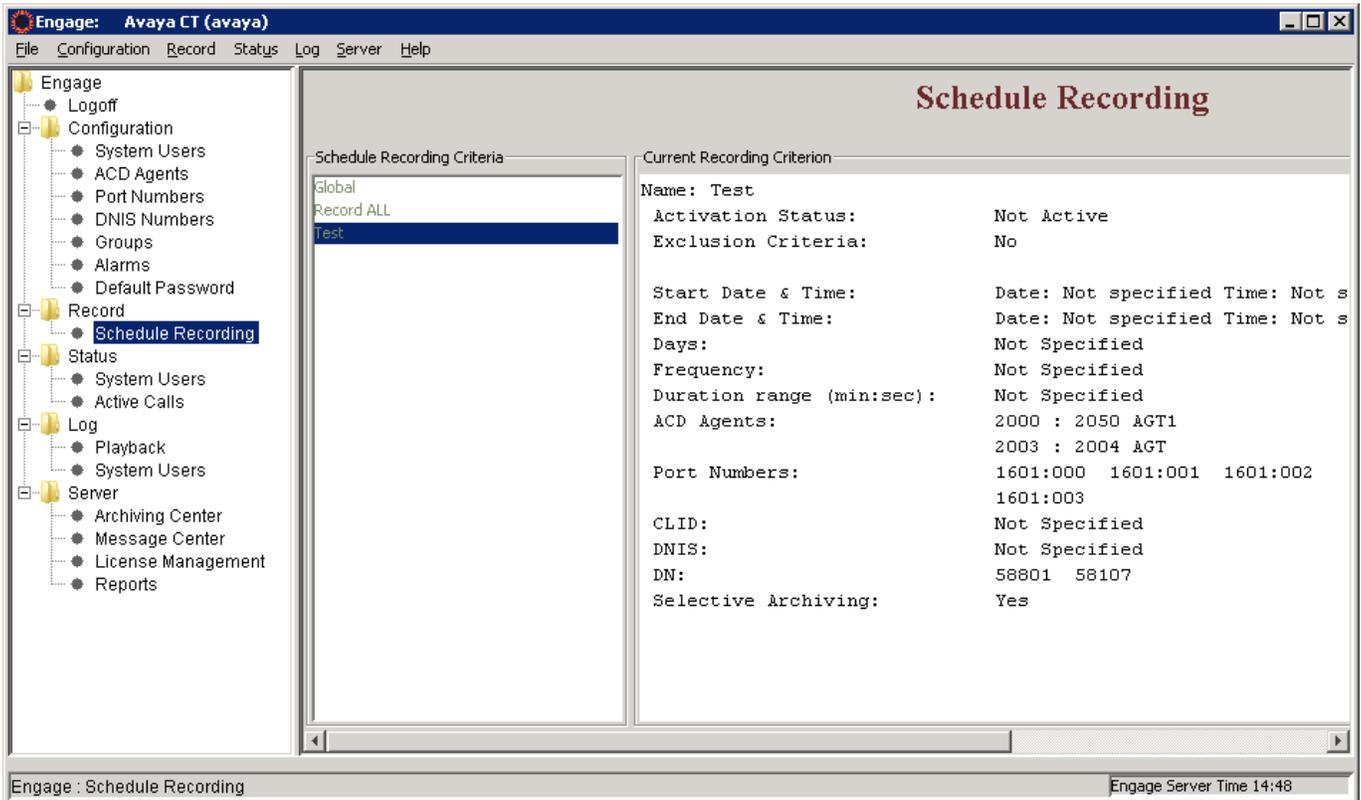


Figure 33: Selective Criteria Detail

Quality monitor recording is where for example 1 out of 3 calls are recorded. The frequency of calls that need to be recorded can be configured in these criteria.

To create a Quality monitoring recording criteria, navigate to **Engage > Record > Schedule Recording** and right click the mouse button on the **Schedule Recording** tab and select the **Create** option as shown in **Figure 25**.

In the **New Criteria** window type the **Criteria Name** as **Quality1of3** and press **OK**.

Quality1of3 criteria is built by selecting the frequency of calls that need to be recorded from the **Other** tab as shown in **Figure 34** below. In this example 1 of 3 calls will be recorded for Quality monitoring. Other components like ACD Agents, Port Numbers, and DN etc can also be selected as explained previously.

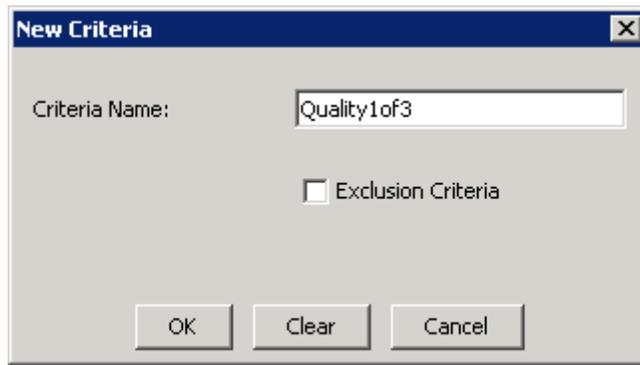


Figure 34: Quality 1 of 3 Criteria

Figure 35 shows a snap shot of the **Quality 1 of 3** criteria showing the selected frequency of calls that needs to be recorded for Quality monitoring along with the ACD Agents, Port Numbers and DN.

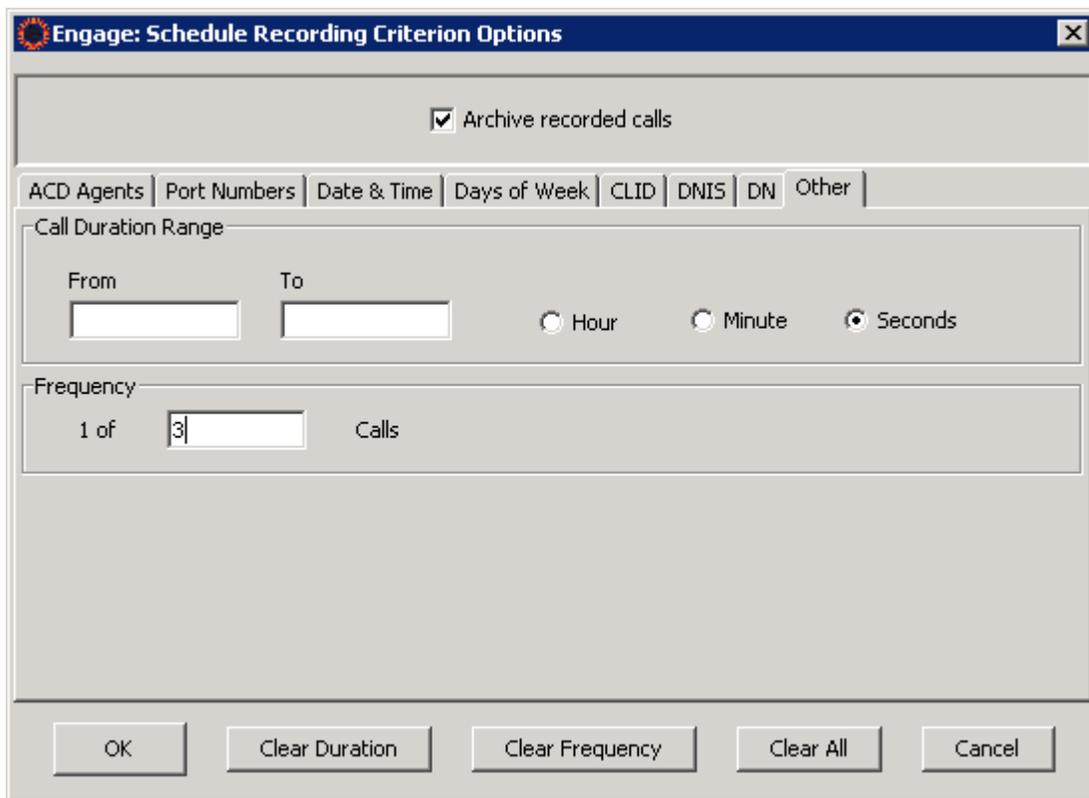


Figure 35: Frequency criterion recording

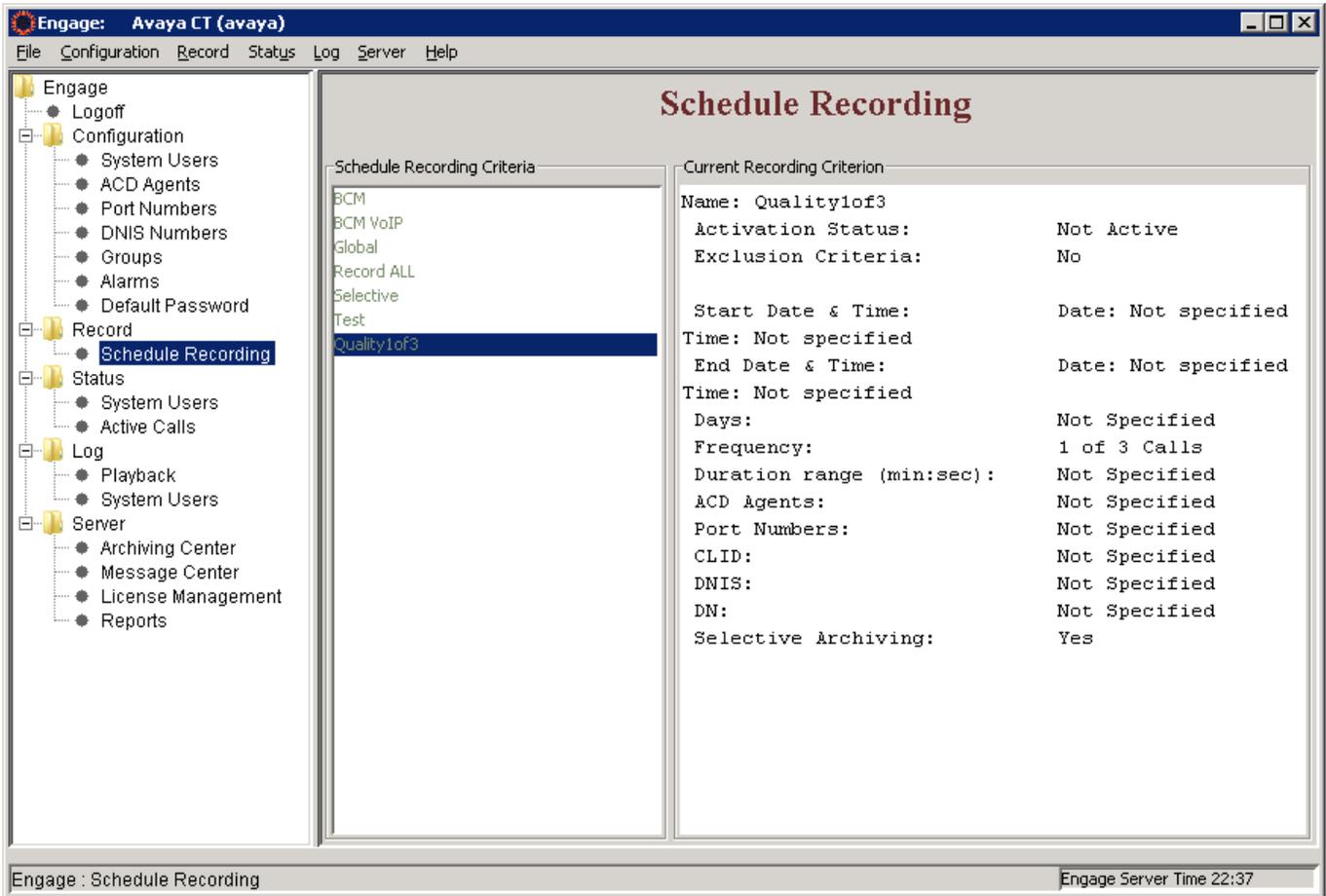


Figure 35: Quality 1 of 3 Criteria Detail

Once the criteria are built, they need to be activated before the calls can be recorded. In the example shown in **Figure 36**, the **Test** criteria can be activated by highlighting the **Test** criteria, right click the mouse button and press **Activate**.

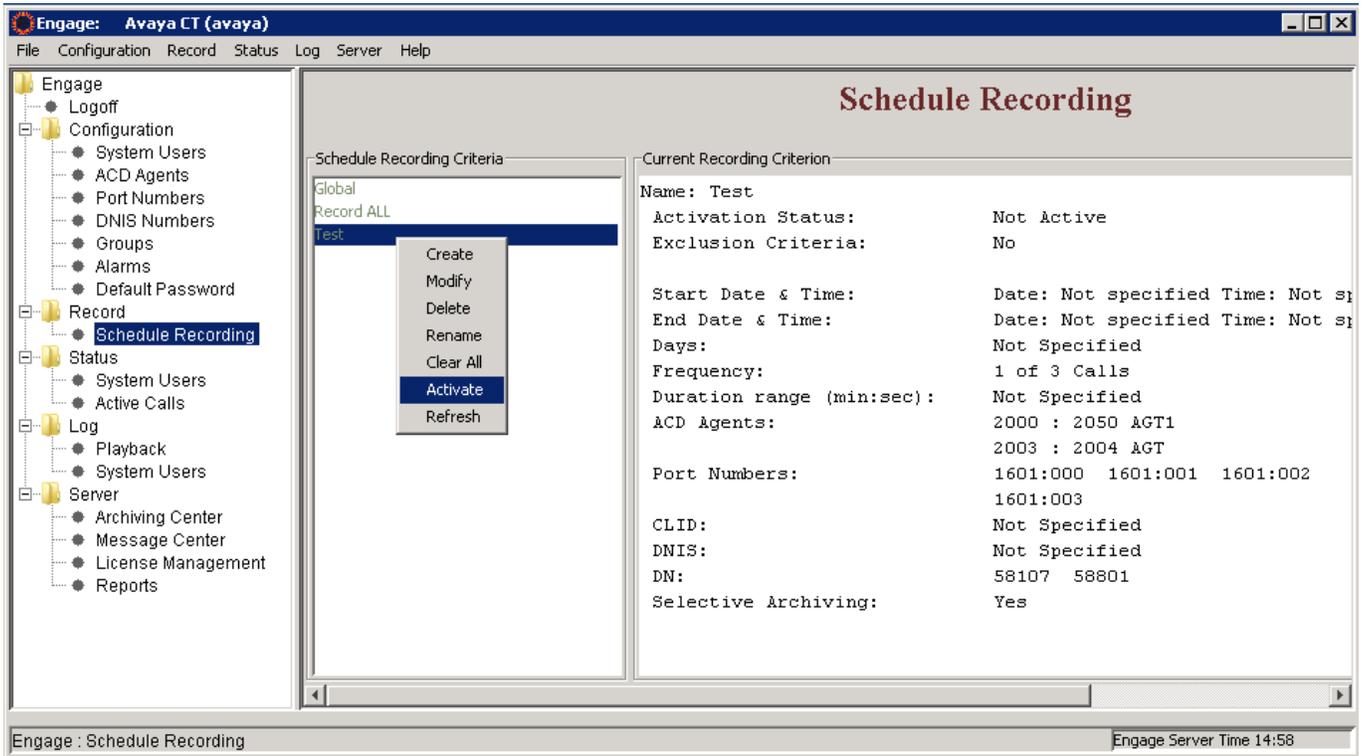


Figure 36: Activate a criteria recording

Figure 37 below shows the Test criteria is now active.

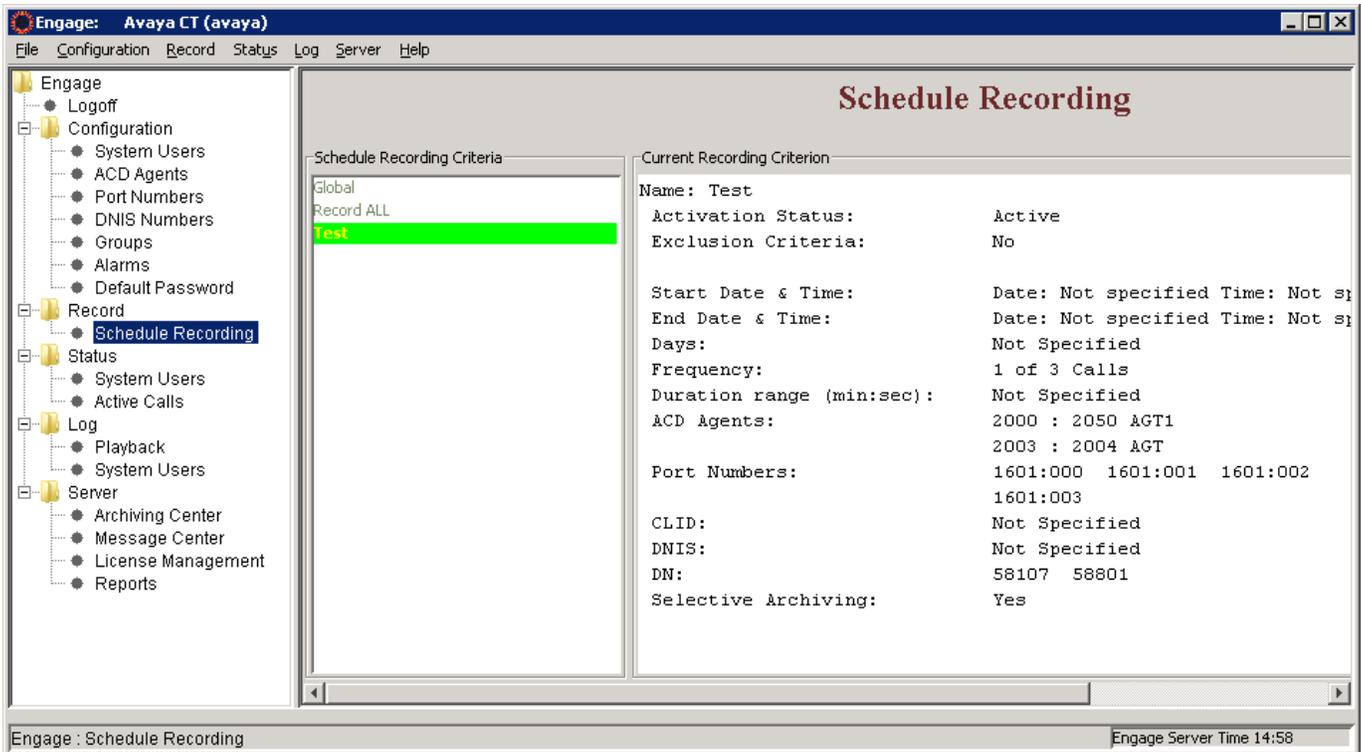


Figure 37: The Test criteria recording activated

In order to see the status of a call that is being recorded, left click the mouse on the **Active Calls** under the **Status** menu tree, the Active Calls will display on the right hand side of TelStrat ER Client as shown in **Figure 38**.



Figure 38: Active Calls window

Recorded calls can be replayed by navigating to **Engage > Log > Playback**, selecting a recorded call from the Playback log, right click on the mouse button and press **Play** as shown on **Figure 39** below.

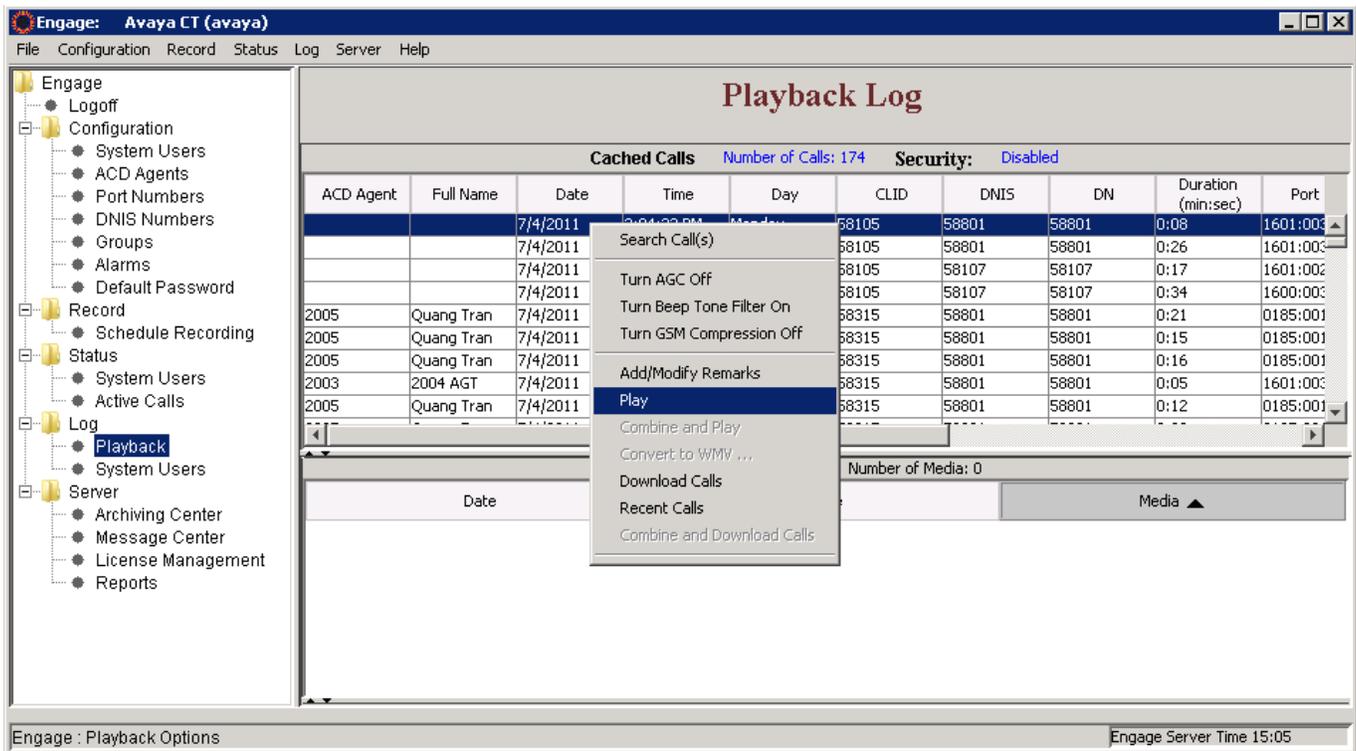


Figure 39: Play back a recorded call

9. Verification Steps

The following are typical steps to verify the interoperability between the TelStrat ER and AACC and Avaya CS1000.

- Connect the TelStrat ER server to the AACC MLS server.
- Verify the TelStrat ER server successfully connects to the MLS server by right clicking on the *VoIP Engine* icon on the system tray of the Windows taskbar and selecting *Status Info* option button.
- Add an ACD Position ID and regular DN to the TelStrat ER server by following section 7.2.
- The TelStrat ER can acquire and monitor keys of IP Phone by either AST or Multi DN Registration of AACC.
 - To check DNs that are acquired and monitored by AST, log in to the command line interface of Call server and issue overlay LD 20 as shown below:

```
admin@cppm1:-
UPWD
DANI NO
SPID NONE
AST 00 03
IAPG 0
AACS YES
ACQ AS: TN, AST-DN, AST-POSID
ASID 16
SFNB 1 2 3 4 5 6 7 8 9 10 11 12 13 15 16 17 18 19 22 24 25 26 28 29
    31 33 34 35 36 37 38 39
SFRB 1 2 15
USFB 1 2 3 4 5 6 7 9 10 11 12 13 14 15
CALB 0 1 3 4 5 6 8 9 10 11 12
FCTB 1
ITNA NO
DGRP
PRI 01
MLWU_LANG 0
MLNG ENG
DNDR 0
KEY 00 ACD 58801 0 1003
    AGN
    01 NRD
    02 MSB
    03 SCR 58103 0
    CPND
    CPND_LANG ROMAN
    NAME NetIQ 1
    XPLN 13
    DISPLAY_FMT FIRST, LAST
04
```

Figure 40: Check AST field of IP Phone

- To check a DN that is acquired and monitored by Multiple DN Registration, log in to the command line interface of Call server and issue overlay LD 20 as shown below:

```

admin@cppm1:-
UDI RCC HBTD AHD IPND DDGA NAMA MIND PRSD NRWD NRCN NROD
DRDD EXRO
USMD USRD ULAD CCBD RTDD RBDD RBHD PGND OCBD FLXD FTTC DNDY DNOS MCBN
FDSD NOVD VOLA VOUD CDMR PRED RECA MCDD T87D SBMD
KEM2 MSNV FRA PKCH MUTA MWTD DVLD CROD ELCD
CPND LANG ENG
HUNT
PLEV 02
PUID
UPWD
DANI NO
AST
IAPG 0
AACS YES
ACQ AS: MDR
ASID 16
MRCN 0 1
SFNB 1 2 3 4 5 6 7 8 11 12 13 18 22 24 25 26 28 29 31 33 34 35 36 37 38 39
SFRB 32 33 34 35 36 37 38 39
USFB 1 2 3 4 5 6 7 9 10 11 12 13 14 15
CALB 0 1 3 4 5 6 8 9 10 11 12
FCTB
ITNA NO
DGRP
MLWU LANG 0
MLNG ENG
DNDR 0
KEY 00 SCR 58014 0 MARP
01 SCR 58107 0
CPND
CPND LANG ROMAN
NAME DN 58107
XPLN 13
DISPLAY_FMT FIRST, LAST
02

```

Figure 41: Check MRCN field in TN of IP Phone

- Create recording criteria with adding ACD Position ID and DNs that are acquired and monitored by following section 7.3
- Place VoIP calls to these DNs and check the *Active Calls* of TelStrat ER client window to see the status should be *busy* and its other information such as port number, CLID... should be correct.
- Terminate these calls and go to the *Playback* of TelStrat ER client to replay the VoIP calls with multimedia player; the audio should be full and clear.

10. Conclusion

All of the executed test cases have passed and met the objectives outlined in **Section 8**. The TelStrat Engage Record Server v 3.3 is considered compliant with Avaya Aura Contact Center Release 6.1 and Avaya Communication Server 1000 Release 7.5.

11. Additional References

Product documentation for Avaya CS 1000 products may be found at:
<https://support.avaya.com/css/Products/>

Product documentation for Engage Record products may be found at:
<http://www.telstrat.com/>

[1] Avaya CS1000 Documents:

Avaya Communication Server 1000E Installation and Commissioning (NN43041-310)
Avaya CS 1000 Co-resident Call Server and Signaling Server Fundamentals (NN43001-509, 03.01)
Avaya CS 1000 Element Manager System Reference - Administration (NN43001-632, 05.04)

[2] Avaya Aura Contact Center documents:

Avaya Aura™ Contact Center Planning and Engineering (NN44400-210)
Avaya Aura™ Contact Center Installation (NN44400-311)
Avaya Aura™ Contact Center Server Administration (NN44400-610)
Avaya Aura™ Contact Center Overview (NN44400-111)
Avaya Aura™ Contact Center Fundamentals (NN44400-110)
Avaya Aura™ Contact Center Manager Administration – Client Administration (NN44400-611)

[3] Engage Record documents:

Engage Contact Center Suite Installation Guide
Engage Contact Center Suite System Administration Guide

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