



Avaya Solution & Interoperability Test Lab

Application Notes for Noble Systems CTI Server with Avaya Communication Manager – Issue 1.0

Abstract

The Noble Systems CTI Server was compliance tested with Avaya Communication Manager. The test evaluates the Adjunct Switch Application Interface (ASAI) protocol interoperability of these products in an inbound and outbound agent blended call center environment. All test cases were completed successfully. Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the Developer Connection Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the compliance test configuration used to test the Noble Systems CTI Server 102, herein referred to as CTI Server, with Avaya S8700 Media Server and an Avaya MCC1 Media Gateway. **Figure 1** provides a high level topology.

The Noble Systems CTI Server communicates with Avaya Communication Manager using the native ASAI protocol. The CTI Server is a software module that resides in the Noble Systems host and is used as the PBX communication server for the CTI Blended Agent Gateway, herein referred to as CTI BAG. The CTI BAG uses the CTI Server to allow for call center agents to move between inbound and outbound call work. Calls coming from the public network are routed to Avaya Communication Manager and queued to an agent hunt group and the CTI BAG makes an agent available to receive inbound calls from the agent hunt group queue and outbound calls from the Noble Systems dialer.

Integration with Avaya Communication Manager Version was achieved using the ASAI protocol via TCP/IP. On the Avaya S8700 Media Server with Avaya MCC1 Media Gateway, the physical interface was provided using a TN799DP C-LAN board. The Co-RES Definity LAN Gateway feature was enabled within Avaya Communication Manager. On Avaya Communication Manager, ASAI Core and ASAI Plus software features were enabled.

The T1 line shown in **Figure 1** is used by the CTI BAG to place outbound calls. The configuration of the T1 line is not the focus of this Application Notes and will not be covered.

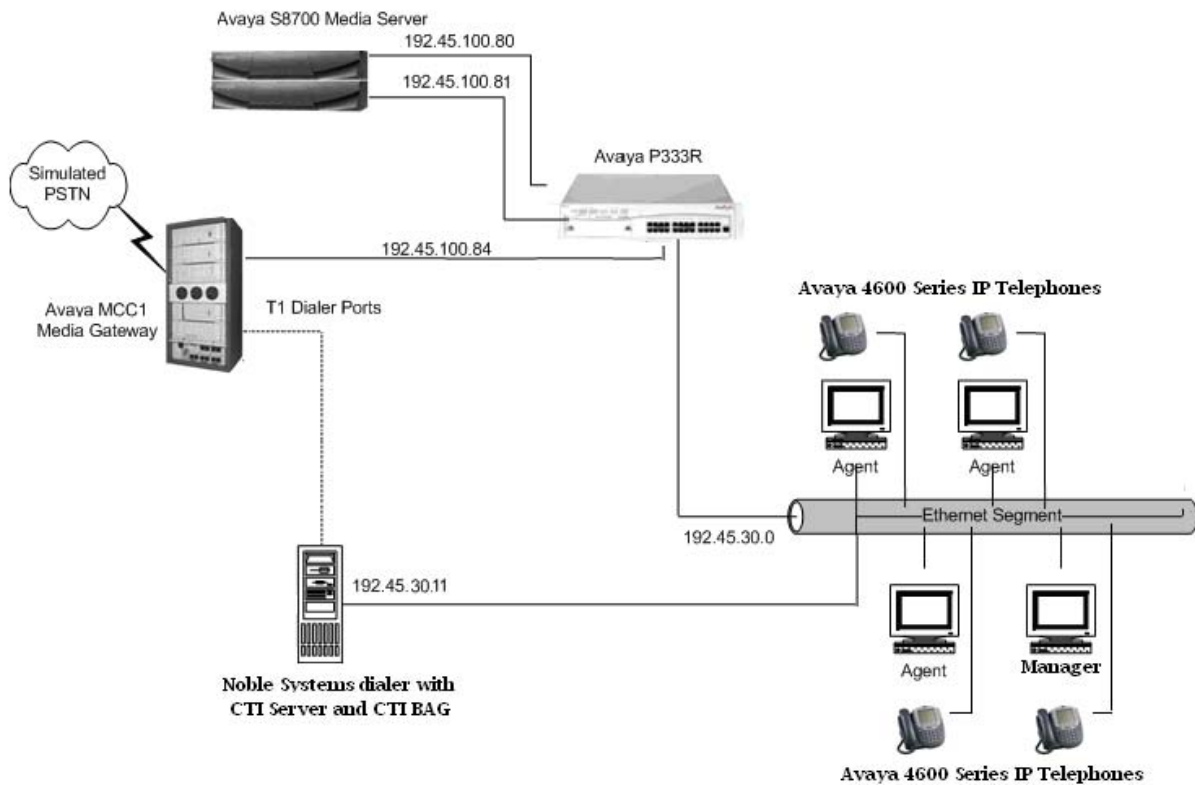


Figure 1: Noble Systems CTI Server Compliance Test Sample Configuration

2. Equipment and Software Validated

The following equipment and software were used for the test configuration.

Equipment	Software
Avaya S8700 Media Server with an Avaya MCC1 Media Gateway	Avaya Communication Manager 2.2 (R012x.02.0.111.4)
Avaya TN799DP C-LAN Interface	HW01 FW012
Avaya 4600 Series IP Telephones	1.8.3 (4624) 2.1.3 (4610)
Avaya P333R Stackable Switch	3.9.1
Noble Systems Blended Agent Gateway (BAG) <ul style="list-style-type: none"> CtiServer 	102

3. Configure the Avaya S8700 Media Server

3.1. Computer Telephony Integration (CTI) Link

It is assumed that the Avaya Media Server is enabled with feature licenses for Vectoring, ASAI Link Core Capabilities, and Expert Agent Selection. Although the Expert Agent Selection feature was enabled for the testing, the feature is not required. Implementation of the required CTI link type on Avaya Communication Manager can be achieved using the following series of steps. These steps are performed through the System Access Terminal (SAT) interface. The Avaya Site Administration program can be used to access the SAT interface via a Telnet session.

Step	Description
1.	<p>Verify that ASAI Link Core Capabilities, ASAI Link Plus Capabilities, and Co-Res DEFINITY LAN Gateway are set to “y” on the “display system-parameters customer-options” form. If they are not set to “y”, contact your Avaya sales team or business partner. A system license file controls the settings on the customer-options form.</p> <div><pre>display system-parameters customer-options Page 3 of 11 OPTIONAL FEATURES Abbreviated Dialing Enhanced List? y Audible Message Waiting? y Access Security Gateway (ASG)? n Authorization Codes? y Analog Trunk Incoming Call ID? y Backup Cluster Automatic Takeover? n A/D Grp/Sys List Dialing Start at 01? y CAS Branch? n Answer Supervision by Call Classifier? y CAS Main? n ARS? y Change COR by FAC? n ARS/AAR Partitioning? y Computer Telephony Adjunct Links? y ARS/AAR Dialing without FAC? y Co-Res DEFINITY LAN Gateway? y ASAI Link Core Capabilities? y Cvg Of Calls Redirected Off-net? y ASAI Link Plus Capabilities? y DCS (Basic)? y Async. Transfer Mode (ATM) PNC? n DCS Call Coverage? y Async. Transfer Mode (ATM) Trunking? y DCS with Rerouting? y ATM WAN Spare Processor? n ATMS? y Digital Loss Plan Modification? n Attendant Vectoring? n DS1 MSP? n DS1 Echo Cancellation? n (NOTE: You must logoff & login to effect the permission changes.)</pre></div>

2.	<p>Add a CTI link and set the values as shown below. Enter a valid extension number in the Extension field. Enter “ASAI-IP” in the Type field. The CTI link number and extension number may vary. Enter a descriptive name in the Name field. The rest of the values may be left at their defaults.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <div style="display: flex; justify-content: space-between;"> add cti-link 16 Page 1 of 2 </div> <div style="text-align: center; margin-top: 10px;">CTI LINK</div> <div style="margin-top: 10px;"> CTI Link: 16 Extension: 24997 Type: ASAI-IP Name: Noble Systems </div> <div style="text-align: right; margin-top: 10px;">COR: 1</div> </div>																																																																
3.	<p>Go to Page 2 of the cti-link form. Set the Event Minimization field to “n”. The rest of the values may be left at their defaults. Submit these changes.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <div style="display: flex; justify-content: space-between;"> add cti-link 16 Page 2 of 2 </div> <div style="text-align: center; margin-top: 10px;">CTI LINK</div> <div style="margin-top: 10px;">FEATURE OPTIONS</div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> Event Minimization? n Special Character for Restricted Number? n </div> </div>																																																																
4.	<p>Add an entry for the C-LAN card and the Noble Systems CTI Server in the node-names form. In this case “clan-1b04” and “192.45.100.84” were entered as the node name and IP address of the C-LAN card. Also, “noblesystems” and “192.45.30.11” were entered as the node name and IP address of the Noble Systems CTI Server. The node names and IP addresses will vary. Submit these changes.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <div style="display: flex; justify-content: space-between;"> change node-names ip Page 1 of 1 </div> <div style="text-align: center; margin-top: 10px;">IP NODE NAMES</div> <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;">Name</th> <th style="width: 30%;">IP Address</th> <th style="width: 30%;">Name</th> <th style="width: 30%;">IP Address</th> </tr> </thead> <tbody> <tr> <td>clan-1b04</td> <td>192.45 .100.84</td> <td></td> <td>. . .</td> </tr> <tr> <td>clanP2-1a04</td> <td>192.168.61 .21</td> <td></td> <td>. . .</td> </tr> <tr> <td>clanP27-2a03</td> <td>172.16 .252.200</td> <td></td> <td>. . .</td> </tr> <tr> <td>clanP7-3a04</td> <td>192.168.1 .10</td> <td></td> <td>. . .</td> </tr> <tr> <td>default</td> <td>0 .0 .0 .0</td> <td></td> <td>. . .</td> </tr> <tr> <td>devcon32-1a03</td> <td>192.45 .100.36</td> <td></td> <td>. . .</td> </tr> <tr> <td>devcon33-1a03</td> <td>192.45 .100.16</td> <td></td> <td>. . .</td> </tr> <tr> <td>medpro-1b05</td> <td>192.45 .100.85</td> <td></td> <td>. . .</td> </tr> <tr> <td>noblesystems</td> <td>192.45 .30 .11</td> <td></td> <td>. . .</td> </tr> <tr> <td>procr</td> <td>192.45 .100.81</td> <td></td> <td>. . .</td> </tr> <tr> <td>prowlerP2-1a05</td> <td>192.168.61 .22</td> <td></td> <td>. . .</td> </tr> <tr> <td>prowlerP27-2b04</td> <td>172.16 .252.201</td> <td></td> <td>. . .</td> </tr> <tr> <td>prowlerP7-3b04</td> <td>192.168.1 .20</td> <td></td> <td>. . .</td> </tr> <tr> <td>testroom3</td> <td>192.45 .30 .240</td> <td></td> <td>. . .</td> </tr> <tr> <td>tr3cvlanr9</td> <td>192.45 .30 .100</td> <td></td> <td>. . .</td> </tr> </tbody> </table> </div>	Name	IP Address	Name	IP Address	clan-1b04	192.45 .100.84		. . .	clanP2-1a04	192.168.61 .21		. . .	clanP27-2a03	172.16 .252.200		. . .	clanP7-3a04	192.168.1 .10		. . .	default	0 .0 .0 .0		. . .	devcon32-1a03	192.45 .100.36		. . .	devcon33-1a03	192.45 .100.16		. . .	medpro-1b05	192.45 .100.85		. . .	noblesystems	192.45 .30 .11		. . .	procr	192.45 .100.81		. . .	prowlerP2-1a05	192.168.61 .22		. . .	prowlerP27-2b04	172.16 .252.201		. . .	prowlerP7-3b04	192.168.1 .20		. . .	testroom3	192.45 .30 .240		. . .	tr3cvlanr9	192.45 .30 .100		. . .
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5. Add the C-LAN card to the system configuration using the “**add ip-interface 1b04**” command. Note that the slot number will vary. Enter the node name assigned in Step 4 for the C-LAN card in the **Node Name** field. The values to be entered in the **Subnet Mask, Gateway Address, Network Region, VLAN, Auto** and **Number of CLAN Sockets Before Warning** fields will be determined by the network administrator. Set the **Enable Ethernet Port** field to “n”. The C-LAN interface will be enabled later. Submit these changes.

```
change ip-interface 1b04                                     Page 1 of 1

                                IP INTERFACES

                                Type: C-LAN
                                Slot: 01B04
                                Code/Suffix: TN799 D
                                Node Name: clan-1b04
                                IP Address: 192.45 .100.84
                                Subnet Mask: 255.255.255.0
                                Gateway Address: 192.45 .100.1
                                Enable Ethernet Port? n
                                Network Region: 2
                                VLAN: n

                                ETHERNET OPTIONS
                                Auto? y

Number of CLAN Sockets Before Warning: 400
```

6. Add a new data module using the “**add data-module 20032**” command. Note that the extension number will vary. Enter a descriptive name in the **Name** field. Enter “ethernet” in the **Type** field. Ethernet connections must be assigned to port 17 on the C-LAN circuit pack. Therefore, enter the slot location and port 17 in the **Port** field as shown. Note that the slot location will vary. Enter a link number not previously assigned on this switch in the **Link** field. Submit these changes.

```
add data-module 20032                                         Page 1 of 1

                                DATA MODULE

                                Data Extension: 20032
                                Name: data module for clan
                                Type: ethernet
                                Port: 1b0417
                                Link: 6

Network uses 1's for Broadcast Addresses? y
```

7. Enter the “**change ip-interface 1b04**” command. Set the **Enable Ethernet Port** field to “y”. Submit this change.

```
change ip-interface 1b04                                     Page 1 of 1

                                IP INTERFACES

                                Type: C-LAN
                                Slot: 01B04
                                Code/Suffix: TN799 D
                                Node Name: clan-1b04
                                IP Address: 192.45 .100.84
                                Subnet Mask: 255.255.255.0
                                Gateway Address: 192.45 .100.1
                                Enable Ethernet Port? y
                                Network Region: 2
                                VLAN: n

                                ETHERNET OPTIONS
                                Auto? y
```

8. Add a new IP service using the “**change ip-services**” command. Enter “DLG” in the **Service Type** field and “y” in the **Enabled** field. Enter the node name added in Step 4 above for the C-LAN card in the **Local Node** field.

```
change ip-services                                     Page 1 of 3

                                IP SERVICES

                                Service      Enabled      Local      Local      Remote      Remote
                                Type          Node        Port       Node       Port
                                SAT            clanP27-2a03 5023      any        0
                                SAT            clan-1b04    5023      any        0
                                DLG            clan-1b04  5678      any
```

9. Go to Page 3 of the ip-services form. Enter “16” in the **CTI Link** field, “y” in the **Enabled** field, the node name assigned in Step 4 for the Noble Systems CTI Server in the **Client Name** field and “16” in the **Client Link** field. Note that the CTI Link number should be the same link number as in step 2. The Client Name and the Client Link number may vary. Submit these changes.

```
change ip-services                                     Page 3 of 3

                                DLG Administration

                                CTI Link   Enabled   Client Name   Client Link   Client Status
                                1           n        WhitefieldSrv 1           idle
                                15          y        testroom3     3           in use
                                16         y        noblesystems 1         idle
```

- 10.** Enter the “**change system-parameters features**” command. On Page 5, set the **Create Universal Call ID (UCID)** field to “y” and enter “27” into the **UCID Network Node ID** field. Note that the UCID Network Node ID will vary based on site configuration.

```
change system-parameters features                               Page 5 of 14
                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM PRINTER PARAMETERS
    System Printer Endpoint: 55898                               Lines Per Page: 60

Emergency Extension Forwarding (min): 10

SYSTEM-WIDE PARAMETERS
    Switch Name: SIL-pbx27

MALICIOUS CALL TRACE PARAMETERS
    Apply MCT Warning Tone? n    MCT Voice Recorder Trunk Group:
    Delay Sending RElease (seconds)? 0
SEND ALL CALLS OPTIONS
    Send All Calls Applies to: station    Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
    Create Universal Call ID (UCID)? y    UCID Network Node ID: 27
```

- 11.** Navigate to Page 12. Set the **Send UCID to ASAI** field to “y”. Submit these changes.

```
change system-parameters features                               Page 12 of 14
                        FEATURE-RELATED SYSTEM PARAMETERS

AGENT AND CALL SELECTION
    MIA Across Splits or Skills? y
    ACW Agents Considered Idle? y
    Call Selection Measurement: current-wait-time
    Service Level Supervisor Call Selection Override? y
    Auto Reserve Agents: none

ASAI
    Copy ASAI UUI During Conference/Transfer? n
    Call Classification After Answer Supervision? n
    Send UCID to ASAI? y

CALL MANAGEMENT SYSTEM
    Adjunct CMS Release:

    BCMS/VuStats LoginIDs? y
    BCMS/VuStats Measurement Interval: half-hour
    BCMS/VuStats Abandon Call Timer (seconds):
    Validate BCMS/VuStats Login IDs? n
    Clear VuStats Shift Data: on-login
    Remove Inactive BCMS/VuStats Agents? n
```


3.2. Expert Agent Selection and Call Vectoring

While the Expert Agent Selection (EAS) feature is not required to interoperate with Noble Systems CTI Server, EAS was used in the test configuration. The screens below demonstrate how to configure basic call center functionality with EAS enabled.

3.2.1. Call Vectoring for Inbound Calls

Inbound calls are queued to the Hunt-Group 181. Note that the Noble Systems CTI Server does not perform adjunct call routing.

Step	Description
1.	<p>Use the “Add hunt-group 181” command to create a hunt-group and set the ACD, Queue and Vector fields to “y”. Enter a descriptive group name in the Group Name field and a valid extension in the Group Extension field. Other field values can be set based on customer requirements.</p> <div><pre>add hunt-group 181 Page 1 of 3 HUNT GROUP Group Number: 181 ACD? y Group Name: Noble sys Inb Queue? y Group Extension: 50052 Vector? y Group Type: ead-mia TN: 1 COR: 1 MM Early Answer? n Security Code: ISDN Caller Display: Queue Limit: unlimited Calls Warning Threshold: Port: Time Warning Threshold: Port:</pre></div>

2. Navigate to Page 2 of the hunt-group form and set the **Skill** field to “y”. Other field values can be set based on customer requirements. Submit changes.

```
add hunt-group 181                                     Page 2 of 3
                                     HUNT GROUP

                                     Skill? y      Expected Call Handling Time (sec): 180
                                     AAS? n        Service Level Target (% in sec): 80 in 20
                                     Measured: internal
                                     Supervisor Extension:

                                     Controlling Adjunct: none

                                     VuStats Objective:
                                     Timed ACW Interval (sec):
                                     Multiple Call Handling: none

                                     Redirect on No Answer (rings):
                                     Redirect to VDN:
                                     Forced Entry of Stroke Counts or Call Work Codes? n
```

3. Repeat steps 1 and 2 to add hunt group 182 with Group Extension 50053.

4. Use the “**add agent-loginID**” command to create an agent ID to be used by the CTI Server. Enter a descriptive name in the **Name** field and enter an appropriate password in the **Password** and **Password (enter again)** fields.

```
add agent-loginID 20511                               Page 1 of 2
                                     AGENT LOGINID

                                     Login ID: 20511
                                     Name: Noble Sys
                                     TN: 1
                                     COR: 1
                                     Coverage Path:
                                     Security Code:

                                     AAS? n
                                     AUDIX? n
                                     LWC Reception: spe
                                     LWC Log External Calls? n
                                     AUDIX Name for Messaging:

                                     LoginID for ISDN Display? n
                                     Password: 1234
                                     Password (enter again): 1234
                                     Auto Answer: station

                                     WARNING: Agent must log in again before skill changes take effect
```

5. Navigate to Page 2 of the agent-loginID form. Set the Skill Number (SN) field to the hunt group number 181. The Skill Level (SL) field can be set to 1 or other values based on customer requirements.

```
add agent-loginID 20511                                     Page 2 of 2
                                AGENT LOGINID
    Direct Agent Skill:
    Call Handling Preference: skill-level

    SN      SL      SN      SL      SN      SL      SN      SL
    1: 181    1      16:      31:      46:
    2:      17:      32:      47:
    3:      18:      33:      48:
    4:      19:      34:      49:
    5:      20:      35:      50:
    6:      21:      36:      51:
    7:      22:      37:      52:
    8:      23:      38:      53:
    9:      24:      39:      54:
    10:     25:      40:      55:
    11:     26:      41:      56:
    12:     27:      42:      57:
    13:     28:      43:      58:
    14:     29:      44:      59:
    15:     30:      45:      60:
```

6. Repeat Steps 4 and 5 to add agent-loginID 20512 – 20514.

7. Use the “**add vdn 20611**” command to add a Vector Directory Number (VDN) 20611. Enter 611 in the **Vector Number** field.

```
add vdn 20611                                               Page 1 of 2
                                VECTOR DIRECTORY NUMBER

                                Extension: 20611
                                Name: Noble sys Inb
                                Vector Number: 611

                                Meet-me Conferencing? n
                                Allow VDN Override? n
                                COR: 1
                                TN: 1
                                Measured: internal
                                Acceptable Service Level (sec): 100

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

8. Configure the call vector 611, specified in Step 7, to send all incoming customer calls to the hunt-group 181.

```
change vector 611                                     Page 1 of 3

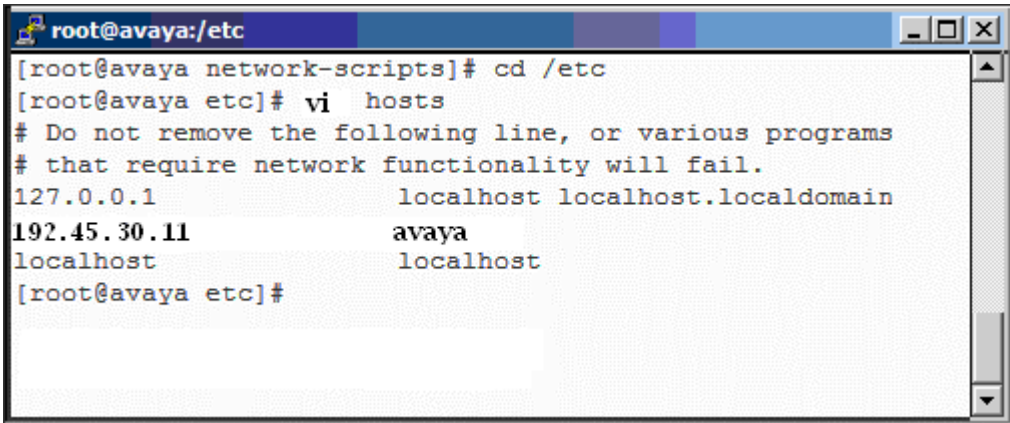
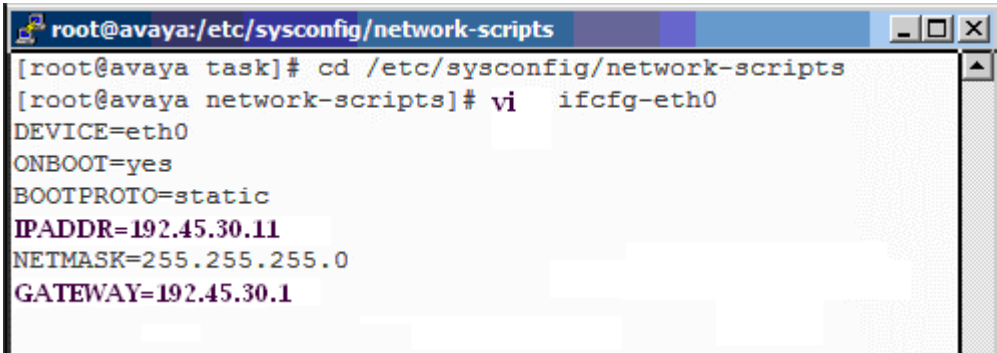
                                CALL VECTOR

      Number: 611                                Name: Noble System In
Multimedia? n                                Meet-me Conf? n                Lock? n
      Basic? y      EAS? y      G3V4 Enhanced? y      ANI/II-Digits? y      ASAI Routing? y
Prompting? y      LAI? y      G3V4 Adv Route? y      CINFO? y      BSR? n      Holidays? n
Variables? n
01 queue-to      skill 181 pri t
02
03
04
05
06
07
08
09
10
11
```

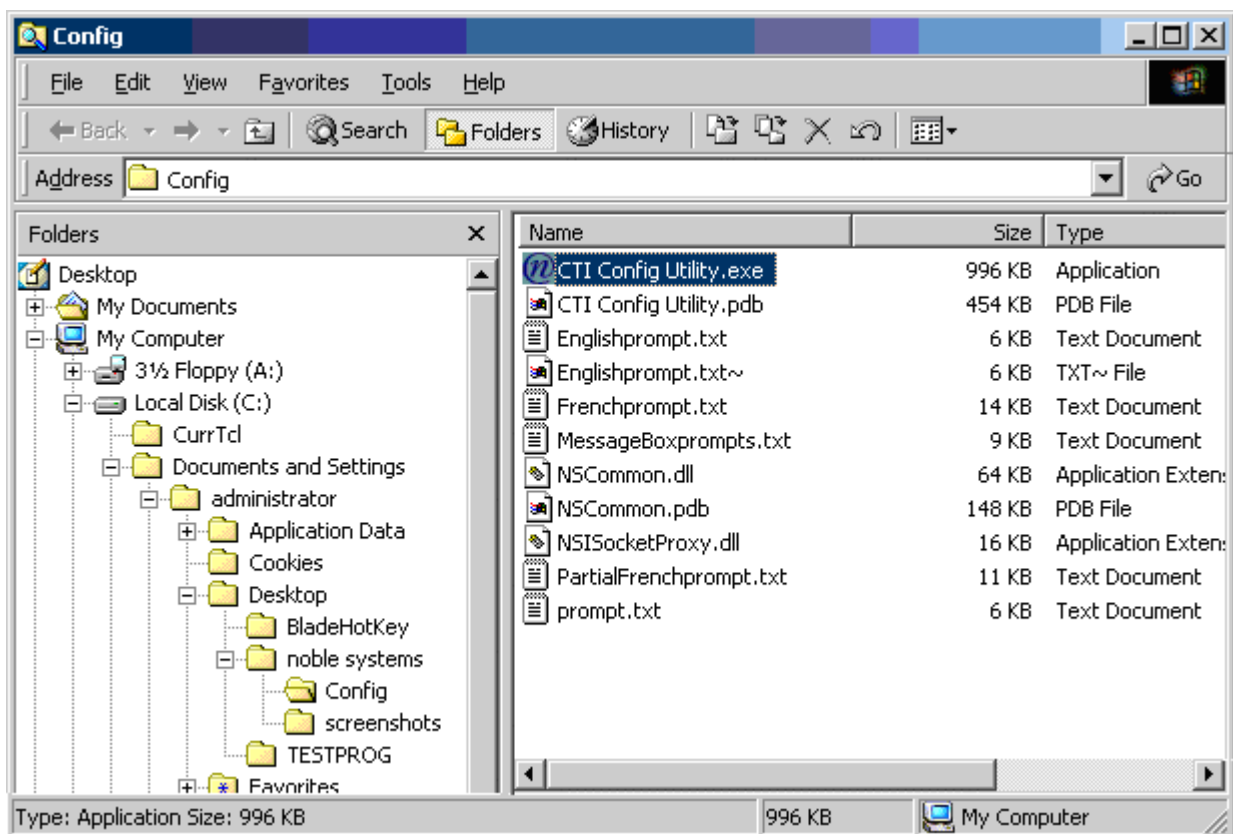
4. Configure the Noble Systems Blended Agent Gateway

Initial provisioning of the CTI BAG is done by Noble Systems on behalf of their customers. This includes configuration of the CTI BAG and agent PC. The following provides an overview of the configuration steps necessary to enable the CTI BAG to begin inbound and outbound call processing.

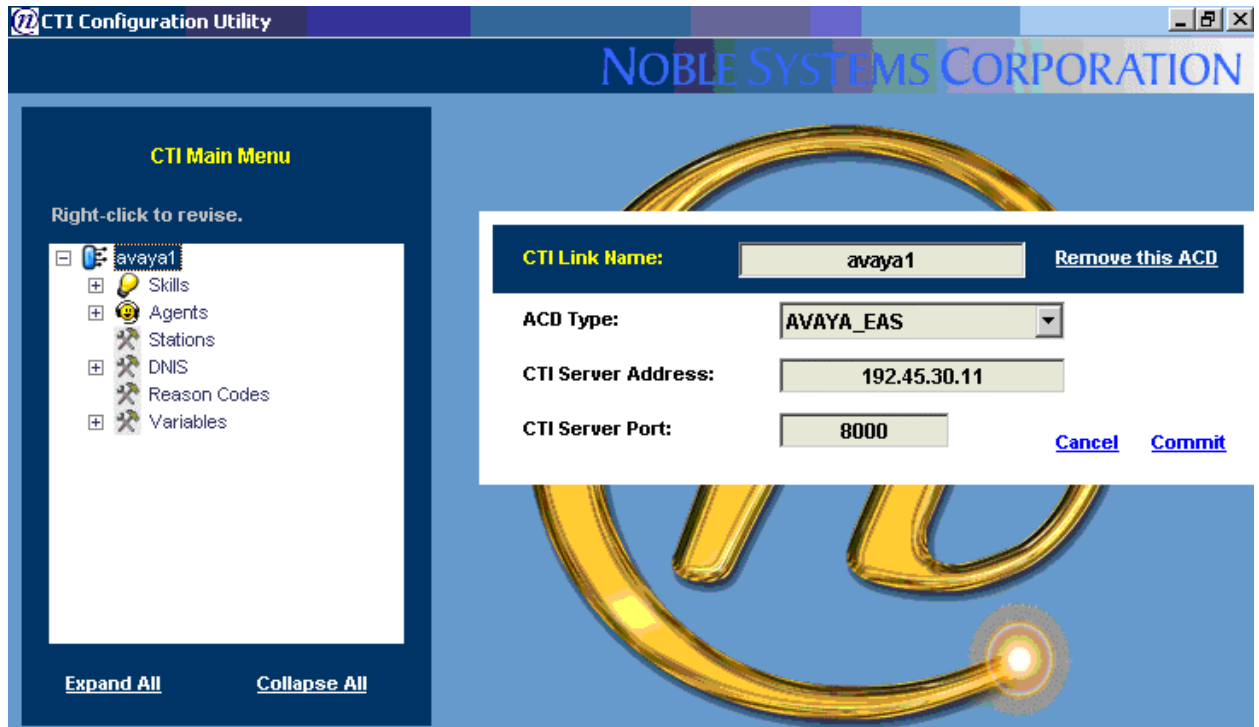
4.1. The Blended Agent Gateway Network Configuration

Step	Description
1.	<p>Change the directory to “/etc”, and then open the “hosts” file. In the “hosts” file, add the CTI Server host IP address and the host name.</p>  <pre>root@avaya:/etc [root@avaya network-scripts]# cd /etc [root@avaya etc]# vi hosts # Do not remove the following line, or various programs # that require network functionality will fail. 127.0.0.1 localhost localhost.localdomain 192.45.30.11 avaya localhost localhost [root@avaya etc]#</pre>
2.	<p>Change the directory to “/etc/sysconfig/network-scripts”, and then open the “ifcfg-eth0” file. Enter the IP address of the CTI Server and the gateway address in the IPADDR field and the GATEWAY field respectively.</p>  <pre>root@avaya:/etc/sysconfig/network-scripts [root@avaya task]# cd /etc/sysconfig/network-scripts [root@avaya network-scripts]# vi ifcfg-eth0 DEVICE=eth0 ONBOOT=yes BOOTPROTO=static IPADDR=192.45.30.11 NETMASK=255.255.255.0 GATEWAY=192.45.30.1</pre>

4.2. Configure the ACD Link

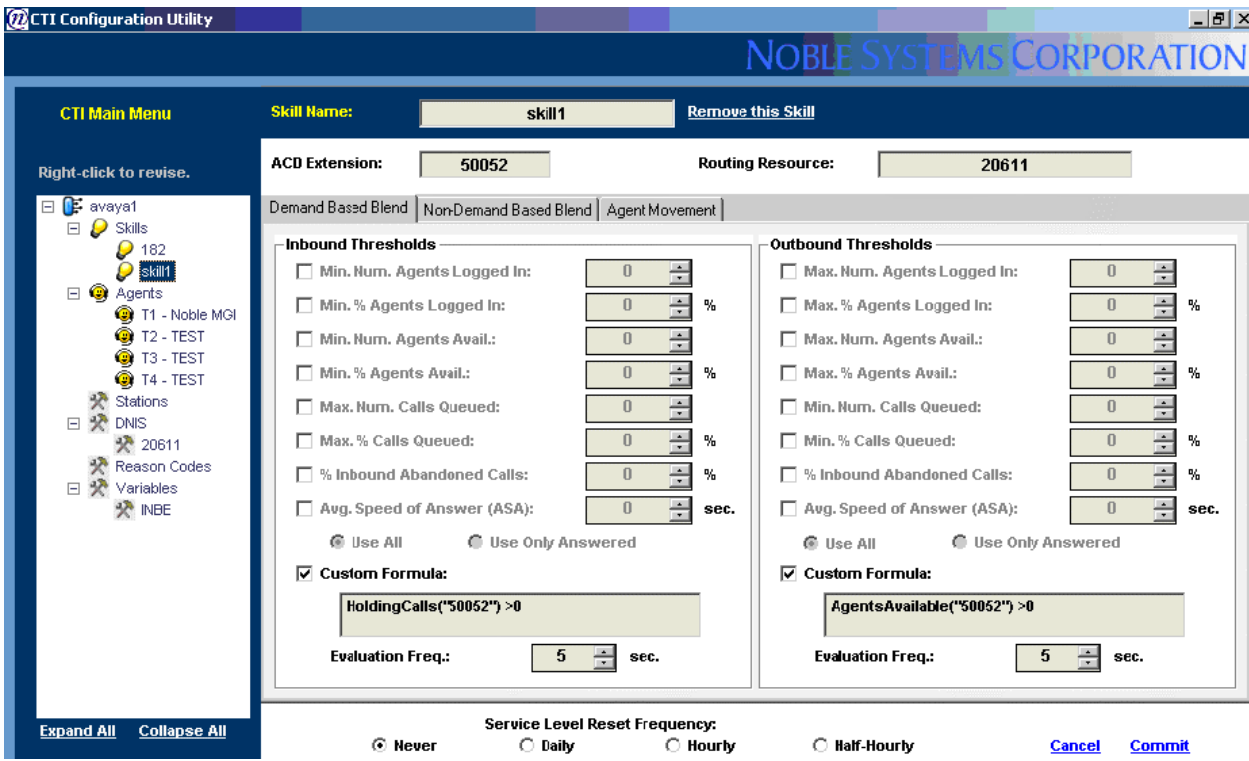
Step	Description																																				
1.	<p>Navigate to Documents and Settings → administrator → Desktop → noble systems → Config, and then launch the CTI Config Utility.exe. Note that the path may vary.</p>  <p>The screenshot shows a Windows Explorer window with the title bar 'Config'. The address bar shows the path 'Config'. The left pane shows the folder tree with 'Desktop' expanded, showing 'My Documents', 'My Computer', '3 1/2 Floppy (A:)', 'Local Disk (C:)', 'CurrTcl', 'Documents and Settings', 'administrator', 'Application Data', 'Cookies', 'Desktop', 'BladeHotKey', 'noble systems', 'Config', 'screenshots', 'TESTPROG', and 'Favorites'. The right pane shows a list of files in the 'Config' folder:</p> <table><tr><th>Name</th><th>Size</th><th>Type</th></tr><tr><td>CTI Config Utility.exe</td><td>996 KB</td><td>Application</td></tr><tr><td>CTI Config Utility.pdb</td><td>454 KB</td><td>PDB File</td></tr><tr><td>Englishprompt.txt</td><td>6 KB</td><td>Text Document</td></tr><tr><td>Englishprompt.txt~</td><td>6 KB</td><td>TXT~ File</td></tr><tr><td>Frenchprompt.txt</td><td>14 KB</td><td>Text Document</td></tr><tr><td>MessageBoxprompts.txt</td><td>9 KB</td><td>Text Document</td></tr><tr><td>NSCommon.dll</td><td>64 KB</td><td>Application Extension</td></tr><tr><td>NSCommon.pdb</td><td>148 KB</td><td>PDB File</td></tr><tr><td>NSISocketProxy.dll</td><td>16 KB</td><td>Application Extension</td></tr><tr><td>PartialFrenchprompt.txt</td><td>11 KB</td><td>Text Document</td></tr><tr><td>prompt.txt</td><td>6 KB</td><td>Text Document</td></tr></table> <p>The status bar at the bottom shows 'Type: Application Size: 996 KB' and '996 KB' next to a 'My Computer' icon.</p>	Name	Size	Type	CTI Config Utility.exe	996 KB	Application	CTI Config Utility.pdb	454 KB	PDB File	Englishprompt.txt	6 KB	Text Document	Englishprompt.txt~	6 KB	TXT~ File	Frenchprompt.txt	14 KB	Text Document	MessageBoxprompts.txt	9 KB	Text Document	NSCommon.dll	64 KB	Application Extension	NSCommon.pdb	148 KB	PDB File	NSISocketProxy.dll	16 KB	Application Extension	PartialFrenchprompt.txt	11 KB	Text Document	prompt.txt	6 KB	Text Document
Name	Size	Type																																			
CTI Config Utility.exe	996 KB	Application																																			
CTI Config Utility.pdb	454 KB	PDB File																																			
Englishprompt.txt	6 KB	Text Document																																			
Englishprompt.txt~	6 KB	TXT~ File																																			
Frenchprompt.txt	14 KB	Text Document																																			
MessageBoxprompts.txt	9 KB	Text Document																																			
NSCommon.dll	64 KB	Application Extension																																			
NSCommon.pdb	148 KB	PDB File																																			
NSISocketProxy.dll	16 KB	Application Extension																																			
PartialFrenchprompt.txt	11 KB	Text Document																																			
prompt.txt	6 KB	Text Document																																			

2. From the CTI Configuration Utility, right click in the Main Menu to create a new ACD. In this example, the CTI Link Name used is “avaya1”. The link name is arbitrary; any unique name may be used. Select “Avaya_EAS” from the **ACD Type** drop down list, and enter the CTI Server Address and CTI Server Port in the **CTI Server Address** field and **CTI Server Port** field respectively. Click **Commit**.



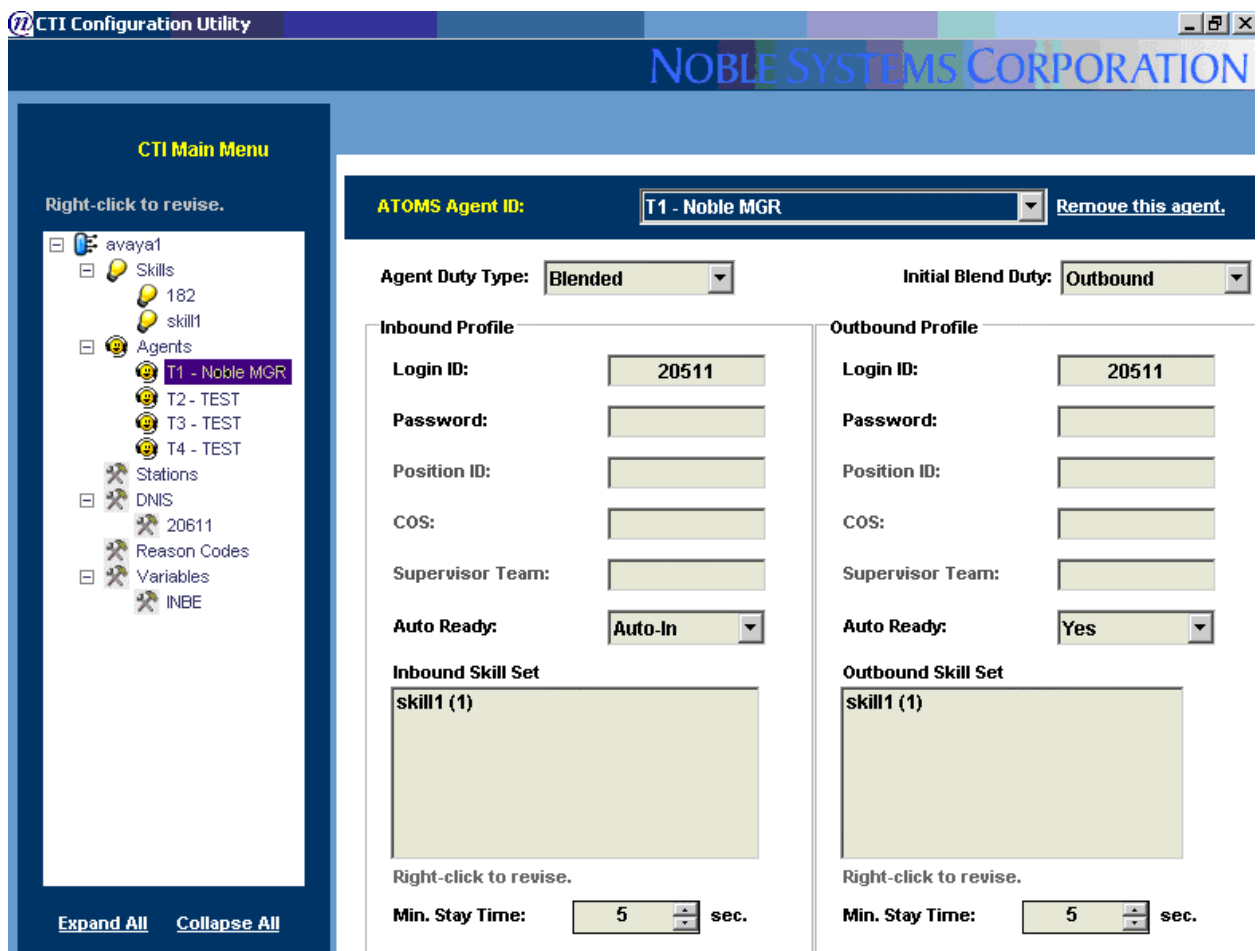
4.3. Configure the CTI SKILL

Configure the CTI BAG CTI Skill Rule to dynamically move agents between handling inbound ACD routed calls and Noble Systems dialer routed outbound calls.

Step	Description
1.	<p>From the CTI Configuration Utility, click avaya1 → Skills → skill1. The Skill form appears. In this example, the Skill Name used is “skill1”. This skill name is arbitrary; any unique name may be used. Enter “50052” and “20611” in the ACD Extension field and Routing Resource field respectively. Note that the value 50052 is the hunt-group extension defined in Step 1 of Section 3.1.1 and the value 20611 is the VDN number defined in Step 7 of section 3.3.1. Check the Custom Formula box. Open the formula editor by double clicking the text area for “Custom Formula”. In the formula editor, enter “HoldingCalls(“50052”) >0” in both Inbound Thresholds and Outbound Thresholds text boxes. Select the desired evaluation frequency from the Evaluation Freq drop down list. Click Commit.</p> 

4.4. Configure the CTI Agent

In the following configuration, agents are configured as CTI-enabled blended agents. Upon login, the agent will be set to receive outbound calls. Based on the CTI Skill defined in Step 1 of Section 4.3, the CTI BAG dynamically moves agents between handling inbound ACD/VDN routed calls and Noble Systems dialer routed outbound calls.

Step	Description
1.	<p>From the CTI Configuration Utility, click avaya1 → Agents. Right click to add a new Agent. A drop down list of configured ATOMS Agent IDs will be displayed. Select the appropriate agent ID for the configuration. In this example, 'T1-Noble MGR' is used. Select "Blended" from the Agent Duty Type drop down list and "Outbound" from the Initial Blend Duty drop down list respectively. Enter the agent ID in the Login ID field. Select "Auto-In" from the Inbound Profile's Auto Ready drop down list. Select "Yes" from the Outbound Profile Auto Ready drop down list. Enter "skill1 (1)" in the Inbound Skill Set and Outbound Skill Set text boxes. Select a minimum stay time from the Min. Stay Time drop down lists. Click Commit.</p> 

- | | |
|----|----------------------------------------------|
| 2. | Repeat Step 1 to configure the other agents. |
|----|----------------------------------------------|

5. Interoperability Compliance Testing

Interoperability compliance testing covered feature functionality and serviceability testing. Feature functionality testing focused on ASAI exchange messages. Serviceability testing verified that the CTI Server recovered from adverse conditions, such as disconnecting the Ethernet cable to the CTI Server. Testing data was collected from the Avaya S8700 Media Server and the Noble Systems CTI Server system.

5.1. General Test Approach

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**:

- Ability to establish the CTI link with Avaya Communication Manager.
- Ability to monitor hunt group queue.
- Ability to logon agent and receive inbound calls.
- Ability to logoff agent for taking outbound calls.
- Ability to re-establish the CTI link with Avaya Communication Manager after recovering from adverse conditions.

5.2. Test Results

All test cases passed successfully. No errors were detected.

6. Verification Steps

1. The CTI link status can be verified on Avaya Communication Manager through the System Access Terminal (SAT) interface. The Avaya Site Administration program can be used to access the SAT interface via a Telnet session.

Enter “status dlg cti-link”. Verify that the **Service State** column for the CTI Link assigned in Step 2 of Section 3.1 shows **established**.

```

C:\ Telnet 192.45.100.80
status dlg cti-link

                        DLG CTI LINK STATUS

CTI  Client          Uers Mnt  Local Node      Service  Msgs  Msgs
Lnk  Name/Link         Busy      Node      State    Sent   Rcvd
1    cceserver/2       4   no   clan-1b04       established  915   915
15   testroom3/3      4   no   clan-1b04       established   15    15
16   noblesystems/1   1   no   clan-1b04       established 1173  1173

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

```

2. While an agent is in outbound work mode, place a call to the VDN and verify that the agent receives the inbound call.
Hang up the call. Verify that the agent is logged out from the hunt group.
3. Type **busy cti-link 16** from the SAT. After thirty seconds, type **release cti-link 16**. Verify that the CTI link status on the CTI Server changes from “Down” to “Ready”.

7. Support

For technical support on the Noble Systems CTI Server, contact Noble Systems Support at 1-888- 966-2539 or via e-mail at tars@noblesys.com.

8. Conclusion

The Noble Systems CTI Server 102 was compliance tested with Avaya Communication Manager. All feature functionality and serviceability test cases completed successfully.

9. Additional References

The following documents can be found at <http://support.avaya.com>:

- [1] *Administrator's Guide for Avaya Communication Manager, Issue 9, January 2005; Doc ID: 555-233-506*
- [2] *Feature Description and Implementation for Avaya Communication Manager, Issue 2, January 2005; Doc ID: 555-245-205*
- [3] *Administration for Network Connectivity for Avaya Communication Manager, Issue 9.1, January 2005; Doc ID: 555-233-504*
- [4] *Avaya Communication Manager Call Center Software Call Vectoring and Expert Agent Selection (EAS) Guide, Issue 1, June 2004; Doc ID: 07-300186*

The following documents can be found on the Noble Systems installation CD:

- [1] *CTI Blend User Manual, v100, March 2005.*
- [2] *DCR Setup v3.6.1, March 2005.*
- [3] *DCR User Manual v3.6.1, October 2004*

9.1. Acronym Expansion

ACD	Automatic Call Distribution
ATOMS	Noble Systems Automated Telephone Organization Management System
ASAI	Adjunct Switch Application Interface
CTI BAG	Noble Systems CTI Blended Agent Gateway
CTI	Computer Telephony Integration
CTI Server	Noble Systems CTI Server
EAS	Expert Agent Selection
PSTN	Public Switched Telephone Network
VDN	Vector Directory Number

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