



Avaya Solution & Interoperability Test Lab

Application Notes for Mutare Emergency Event Notification with Avaya Communication Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Mutare Emergency Event Notification to successfully interoperate with Avaya Communication Manager. Emergency Event Notification enables a broadcaster to automatically call designated members in the event of an emergency or significant event. The ISDN–PRI interface of Avaya Communication Manager is used by the Emergency Event Notification application to send the calls to the member’s telephones or cell phones. Information in these Application Notes has been obtained through interoperability 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 a compliance-tested configuration comprised of Avaya Communication Manager and Mutare Emergency Event Notification (EEN). Mutare EEN enables a broadcaster to automatically call people in the event of an emergency or significant event. A broadcast can be initiated from any telephone or computer anywhere in the world at any time. Mutare EEN can notify members via telephone, cell phone, pager, email and PDA. Mutare EEN provides the following features.

- Notification – Mutare EEN simultaneously places live calls and send emails for rapid notification. Allows recipients to indicate their acknowledgement, and/or availability to respond to the situation. All contact attempts and member responses are logged, this provides a complete audit trail of the notification process.
- Accuracy – Mutare EEN sends a scheduled email on a recurring basis with a link to the web site to remind members to update their contact information.
- Activation – Mutare EEN can be activated by any authorized person from any phone by dialing a secure access number, selecting the list(s) of individuals to be contacted, recording the broadcast announcement and requested action steps.
- Reporting – The broadcaster can access the web site to determine the status of the notification and the list of confirmed responders at any time.

Mutare EEN interfaces to Avaya Communication Manager via ISDN-PRI trunks. The Mutare EEN server has a Dialogic D/240 Voice Card that connects to the DS1 interface on Avaya Communication Manager. The DS1 channels are used by Mutare EEN to initiate and receive calls to and from Avaya Communication Manager.

Figure 1 depicts an overview of the Mutare EEN integration to Avaya Communication Manager. The configuration consists of a pair of redundant Avaya S8700 Media Servers, an Avaya MCC1 Media Gateway, Avaya digital and IP Telephones, and Mutare EEN server.

The Mutare EEN server contains a Dialogic Voice Card that is physically connected to the DS1 Interface circuit pack in Avaya MCC1 Media Gateway. A 23 channel ISDN-PRI tie trunk is configured between the Mutare EEN server application and Avaya Communication Manager. The trunk is used by Mutare EEN to initiate calls to Avaya Communication Manager and to receive calls from Avaya Communication Manager.

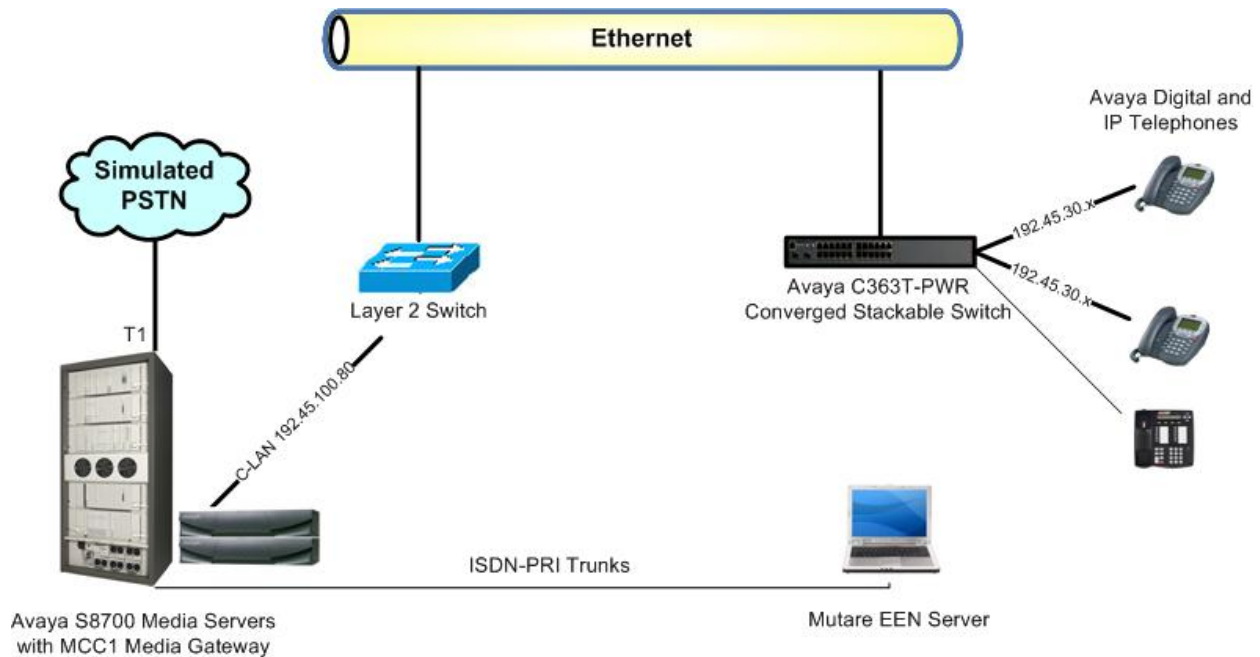


Figure 1: Avaya Communication Manager and Mutare EEN

2. Equipment and Software Validated

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

Equipment	Software
Avaya S8700 Media Servers	Avaya Communication Manager 3.1.2 (R013X.01.2.632.1)
Avaya MCC1 Media Gateway	
TN2312BP IP Server Interface	HW03 FW031
TN799DP C-LAN Interface	HW01 FW017
TN2302AP IP Media Processor	HW13 FW111
TN464GP DS1 Interface	HW02 FW018
Avaya 4610 and 4612 IP Telephones	FW 2.6 (4610) FW 1.830 (4612)
Avaya 8400 Digital Telephone	-
Avaya C363T-PWR Converged Stackable Switch	4.5.14
Mutare Dell PowerEdge 800 Server	Windows 2003 Mutare EEN 3.2 (with patch 3.2b)
Dialogic Voice Card (D/240JCT-T1)	6.0

3. Configure Avaya Communication Manager

This section provides the procedures for configuring Avaya Communication Manager. The following steps will be followed:

- Configure DS1 Circuit Pack.
- Configure ISDN Trunks.
- Configure Inbound Extensions.

It is assumed that the Avaya Communication Manager is enabled with feature licenses for ISDN-PRI.

The administration on Avaya Communication Manager is performed through the System Access Terminal (SAT) interface. The Avaya Site Administration application can be used to access the SAT interface via a telnet session. Log in to the SAT interface using a login and password with the appropriate access permissions.

3.1. Configure DS1 Circuit Pack

The following steps demonstrate the configuration on Avaya Communication Manager for the DS1 Circuit Pack and Signaling Group.

Step	Description
1.	<p>Enter the add ds1 xxxxx command, where xxxxx is the location of the DS1 circuit pack. Configure the following.</p> <ul style="list-style-type: none"> • Name – enter any descriptive name. • Line Coding – set to “b8zs”. • Framing Mode – set to “esf”. • Signaling Mode – set to “isdn-pri”. • Connect – set to “pbx”. • Interface – set to “network”. • Interworking Message – set to “PROGress” when calls are routed over all ISDN trunks. When calls are routed over non-ISDN trunks (i.e. Central Office trunks) set to “ALERTing”. • Protocol Version – set to “b”. <p>The remaining fields can retain the default values.</p> <pre data-bbox="349 940 1344 1419"> add ds1 1b17 Page 1 of 2 DS1 CIRCUIT PACK Location: 01B17 Name: Mutare EEN Bit Rate: 1.544 Line Coding: b8zs Line Compensation: 1 Framing Mode: esf Signaling Mode: isdn-pri Connect: pbx Interface: network TN-C7 Long Timers? n Country Protocol: 1 Interworking Message: PROGress Protocol Version: b Interface Companding: mulaw CRC? n Idle Code: 11111111 DCP/Analog Bearer Capability: 3.1kHz T303 Timer(sec): 4 Slip Detection? n Near-end CSU Type: other Block Progress Indicator? n </pre>

Step	Description
2.	<p>Enter the add signaling group n command, where n is any unused signaling group number. Configure the following.</p> <ul style="list-style-type: none"> • Group Type – set to “isdn-pri”. • Primary D-Channel – set to the 24th channel of the DS1 circuit pack configured in Step 1. <p>The remaining fields can retain the default values.</p> <pre data-bbox="342 558 1352 873"> add signaling-group 200 Page 1 of 5 SIGNALING GROUP Group Number: 200 Group Type: isdn-pri Associated Signaling? y Max number of NCA TSC: 0 Primary D-Channel: 01B1724 Max number of CA TSC: 0 Trunk Group for NCA TSC: Trunk Group for Channel Selection: Supplementary Service Protocol: a </pre>

3.2. Configure ISDN Trunks

The following steps demonstrate the configuration on Avaya Communication Manager for the ISDN Trunks between Avaya Communication Manager and the Mutare EEN application.

Step	Description
1.	<p>Enter the add trunk group n command, where n is any unused trunk group number. Configure the following.</p> <ul style="list-style-type: none"> • Group Type – set to “isdn”. • Group Name – enter a descriptive name. • TAC – enter a trunk access code number that is valid under the provisioned dial plan. • Dial Access – set to “y”. • Service Type – set to “tie”. <p>The remaining fields can retain the default values.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <pre> add trunk-group 200 Page 1 of 21 TRUNK GROUP Group Number: 200 Group Type: isdn CDR Reports: y Group Name: Mutare EEN COR: 1 TN: 1 TAC:1200 Direction: two-way Outgoing Display? n Carrier Medium:PRI/BR Dial Access? y Busy Threshold: 255 Night Service: Queue Length: 0 Service Type: tie Auth Code? n TestCall ITC:rest Far End Test Line No: TestCall BCC: 4 </pre> </div>

Step	Description
2.	<p>On Page 3 of the trunk-group form, configure the following.</p> <ul style="list-style-type: none"> • Send Name – set to “y”. • Send Calling Number – set to “y”. • Format – set to “public”. When set to “public”, the Numbering- Public/Unknown format table on Avaya Communication Manager will be used to determine the ISDN Call Identification (ANI) that is displayed. • Send Connected Number – set to “y”. <pre> add trunk-group 200 Page 3 of 21 TRUNK FEATURES ACA Assignment? n Measured: none Wideband Support? n Internal Alert? n Maintenance Tests? y Data Restriction? n NCA-TSC Trunk Member: Send Name: y Send Calling Number: y Send EMU Visitor CPN? n Used for DCS? n Suppress # Outpulsing? n Format: public Outgoing Channel ID Encoding: preferred UUI IE Treatment: service-provider Replace Restricted Numbers? n Replace Unavailable Numbers? n Send Connected Number: y Hold/Unhold Notifications? n Modify Tandem Calling Number? n Send UUI IE? y Send UCID? n Send Codeset 6/7 LAI IE? y Dsl Echo Cancellation? n Apply Local Ringback? n US NI Delayed Calling Name Update? n Network (Japan) Needs Connect Before Disconnect? n </pre>

Step	Description
3.	<p data-bbox="293 233 829 264">On Page 5 and 6, configure the following.</p> <ul data-bbox="342 275 1425 380" style="list-style-type: none"> <li data-bbox="342 275 1425 338">• Port – enter xxxxxxz. Where xxxxxx is the board number of the DS1 circuit pack configured in Section 3.1 Step 1, and zz is the channel number. <li data-bbox="342 348 1425 380">• Sig Grp – enter the Signaling Group number configured in Section 3.1 Step 2. <p data-bbox="293 422 1463 527">Repeat this procedure for the desired number of trunk group members. For the compliance test, all twenty-three trunk group members were added to enable twenty-three simultaneous outgoing or incoming PRI calls.</p> <div data-bbox="310 562 1495 1188" style="border: 1px solid black; padding: 5px;"> <pre data-bbox="321 569 1414 1136"> add trunk-group 200 TRUNK GROUP Administered Members (min/max): 1/23 GROUP MEMBER ASSIGNMENTS Total Administered Members: 23 Port Code Sfx Name Night Sig Grp 1: 01B1701 TN464 F 200 2: 01B1702 TN464 F 200 3: 01B1703 TN464 F 200 4: 01B1704 TN464 F 200 5: 01B1705 TN464 F 200 6: 01B1706 TN464 F 200 7: 01B1707 TN464 F 200 8: 01B1708 TN464 F 200 9: 01B1709 TN464 F 200 10: 01B1710 TN464 F 200 11: 01B1711 TN464 F 200 12: 01B1712 TN464 F 200 13: 01B1713 TN464 F 200 14: 01B1714 TN464 F 200 15: 01B1715 TN464 F 200 </pre> </div> <div data-bbox="310 1262 1495 1829" style="border: 1px solid black; padding: 5px;"> <pre data-bbox="321 1268 1414 1822"> add trunk-group 200 TRUNK GROUP Administered Members (min/max): 1/23 GROUP MEMBER ASSIGNMENTS Total Administered Members: 23 Port Code Sfx Name Night Sig Grp 16: 01B1716 TN464 F 200 17: 01B1717 TN464 F 200 18: 01B1718 TN464 F 200 19: 01B1719 TN464 F 200 20: 01B1720 TN464 F 200 21: 01B1721 TN464 F 200 22: 01B1722 TN464 F 200 23: 01B1723 TN464 F 200 24: 25: 26: 27: 28: 29: 30: </pre> </div>

3.3. Configure Inbound Extensions

The following steps demonstrate the routing configuration on Avaya Communication Manager required for calling into the Mutare EEN application. Automatic Alternate Routing (AAR) will be used to route calls over the ISDN-PRI trunk to the Mutare EEN application.

Step	Description
1.	<p>In this testing the five digit numbers: 22291, 22292, and 22293, were used as the inbound called numbers. When a phone on Avaya Communication Manager dials these numbers, the UNIFORM DIAL PLAN TABLE will route the call to the AAR digit analysis table.</p> <pre data-bbox="321 642 1479 1020"> change uniform-dialplan 222 Page 1 of 2 UNIFORM DIAL PLAN TABLE Percent Full: 0 Matching Insert Node Matching Insert Node Pattern Len Del Digits Net Conv Num Pattern Len Del Digits Net Conv Num 22291 5 0 aar n 22291 5 0 aar n 22292 5 0 aar n 22292 5 0 aar n 22293 5 0 aar n 22293 5 0 aar n 48 5 0 aar n 48 5 0 aar n n n n n </pre>

Step	Description																																																																																																		
2.	<p>The following screen illustrates the AAR analysis on the dialed digits “22291”, “22292” and “22293”. Enter the change aar analysis d command, where d is any digit. Add an entry as follows:</p> <ul style="list-style-type: none"> • Dialed String – enter the inbound called numbers configured in Step 1. • Total Min and Total Max – set to “5”. • Route Pattern – enter the number of an unused route pattern. The route pattern will be defined in the next step. • Call Type – set to “aar”. <div data-bbox="293 564 1507 1081" style="border: 1px solid black; padding: 5px;"> <pre>change aar analysis 22291 Page 1 of 2 AAR DIGIT ANALYSIS TABLE Percent Full: 8</pre> <table border="1" data-bbox="365 674 1218 1081"> <thead> <tr> <th>Dialed String</th> <th>Total Min</th> <th>Total Max</th> <th>Route Pattern</th> <th>Call Type</th> <th>Node Num</th> <th>ANI Reqd</th> </tr> </thead> <tbody> <tr><td>22291</td><td>5</td><td>5</td><td>200</td><td>aar</td><td></td><td>n</td></tr> <tr><td>22292</td><td>5</td><td>5</td><td>200</td><td>aar</td><td></td><td>n</td></tr> <tr><td>22293</td><td>5</td><td>5</td><td>200</td><td>aar</td><td></td><td>n</td></tr> <tr><td>224</td><td>7</td><td>7</td><td>p45</td><td>aar</td><td></td><td>n</td></tr> <tr><td>2241520</td><td>7</td><td>7</td><td>p73</td><td>aar</td><td></td><td>n</td></tr> <tr><td>225</td><td>7</td><td>7</td><td>p74</td><td>aar</td><td></td><td>n</td></tr> <tr><td>226</td><td>7</td><td>7</td><td>226</td><td>aar</td><td></td><td>n</td></tr> <tr><td>227</td><td>7</td><td>7</td><td>p12</td><td>aar</td><td></td><td>n</td></tr> <tr><td>228</td><td>7</td><td>7</td><td>p69</td><td>aar</td><td></td><td>n</td></tr> <tr><td>22815990</td><td>8</td><td>8</td><td>p75</td><td>aar</td><td></td><td>n</td></tr> <tr><td>229</td><td>7</td><td>7</td><td>p76</td><td>aar</td><td></td><td>n</td></tr> <tr><td>2299</td><td>5</td><td>5</td><td>183</td><td>aar</td><td></td><td>n</td></tr> <tr><td>230</td><td>7</td><td>7</td><td>p54</td><td>aar</td><td></td><td>n</td></tr> </tbody> </table> </div>	Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Reqd	22291	5	5	200	aar		n	22292	5	5	200	aar		n	22293	5	5	200	aar		n	224	7	7	p45	aar		n	2241520	7	7	p73	aar		n	225	7	7	p74	aar		n	226	7	7	226	aar		n	227	7	7	p12	aar		n	228	7	7	p69	aar		n	22815990	8	8	p75	aar		n	229	7	7	p76	aar		n	2299	5	5	183	aar		n	230	7	7	p54	aar		n
Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Reqd																																																																																													
22291	5	5	200	aar		n																																																																																													
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224	7	7	p45	aar		n																																																																																													
2241520	7	7	p73	aar		n																																																																																													
225	7	7	p74	aar		n																																																																																													
226	7	7	226	aar		n																																																																																													
227	7	7	p12	aar		n																																																																																													
228	7	7	p69	aar		n																																																																																													
22815990	8	8	p75	aar		n																																																																																													
229	7	7	p76	aar		n																																																																																													
2299	5	5	183	aar		n																																																																																													
230	7	7	p54	aar		n																																																																																													

Step	Description
3.	<p>Enter the change route-pattern r command, where r is the number of the route pattern specified in Step 2. Add a routing preference entry as follows:</p> <ul style="list-style-type: none"> • Grp No – enter the number of the trunk group configured in Section 3.2 Step 1. • FRL – assign a Facility Restriction Level to this routing preference. “0” is the least restrictive. <pre> change route-pattern 200 Page 1 of 3 Pattern Number: 200 Pattern Name: SCCAN? n Secure SIP? n Grp FRL NPA Pfx Hop Toll No. Inserted DCS/ IXC No Mrk Lmt List Del Digits QSIG Dgts Intw 1: 200 0 2: 3: 4: 5: 6: BCC VALUE TSC CA-TSC ITC BCIE Service/Feature PARM No. Numbering LAR 0 1 2 3 4 W Request Dgts Format Subaddress 1: y y y y y n n rest none 2: y y y y y n n rest none 3: y y y y y n n rest none 4: y y y y y n n rest none 5: y y y y y n n rest none 6: y y y y y n n rest none </pre>

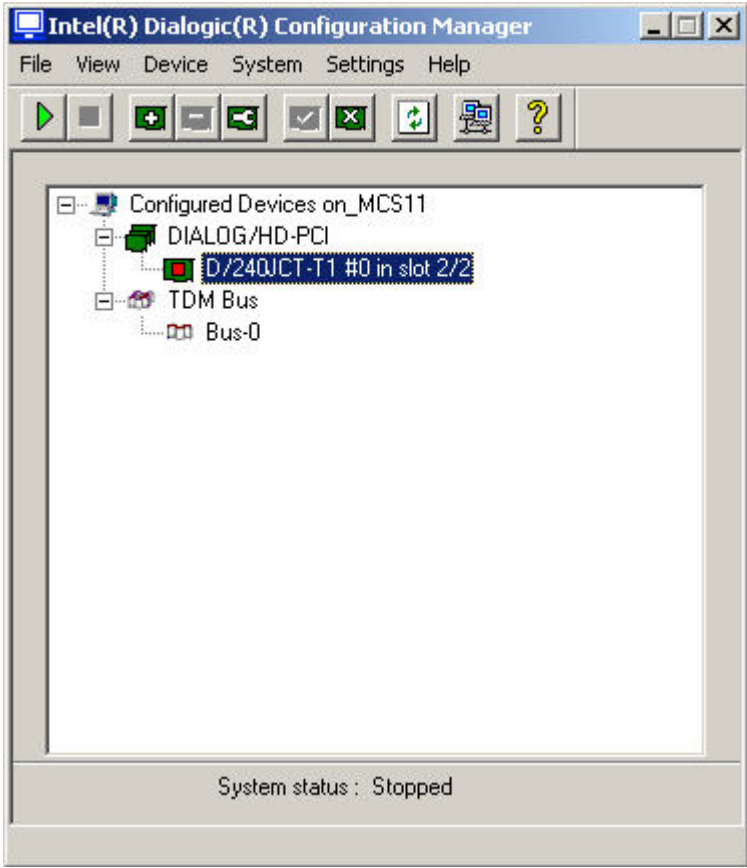
4. Configure Mutare EEN 3.2

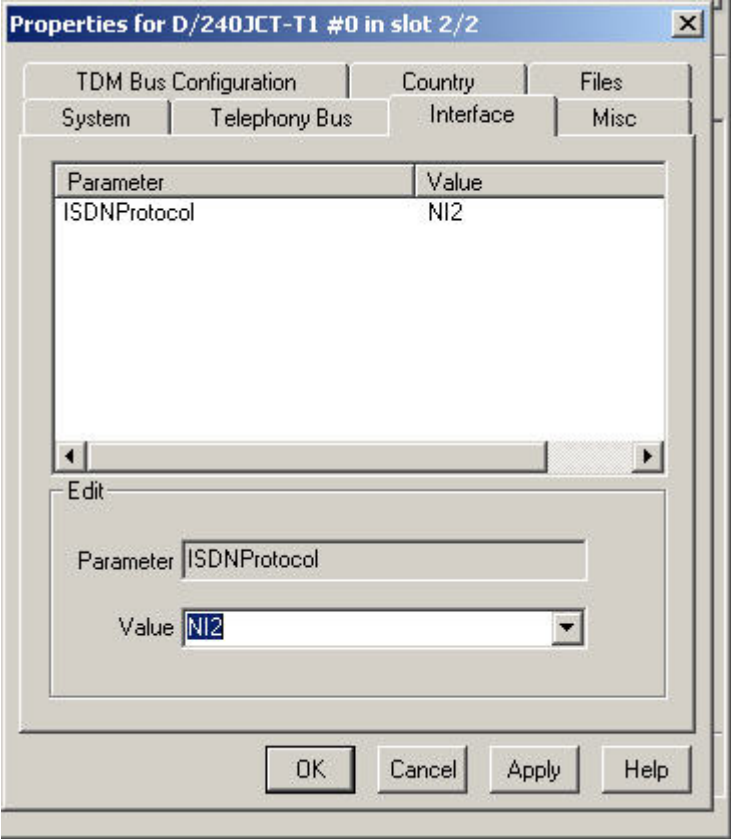
The following steps describe the configuration to integrate Mutare EEN with Avaya Communication Manager.

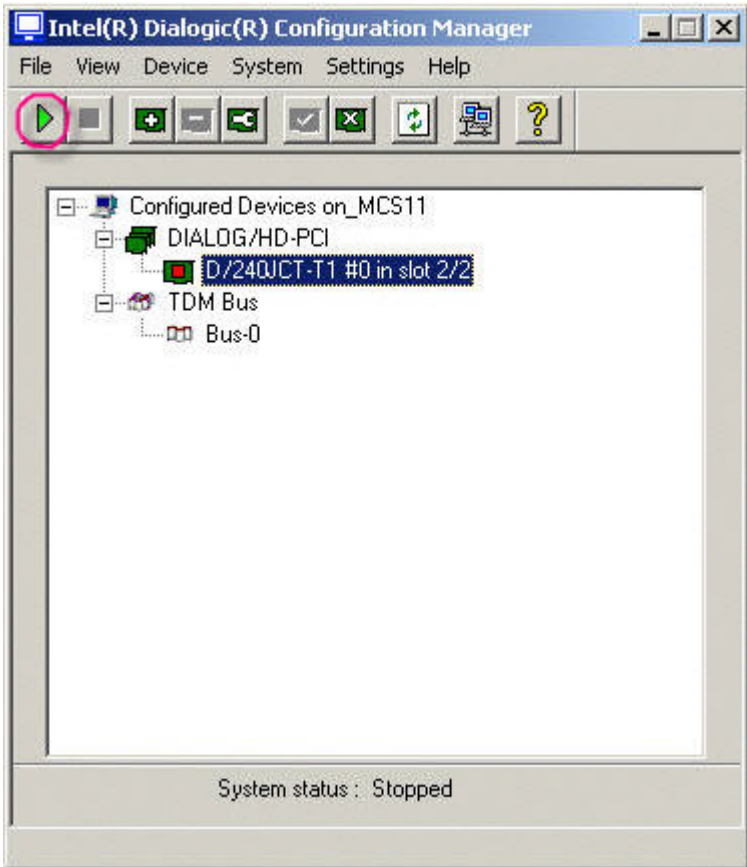
- Configure Dialogic D/240
- Configure the Mutare ini File
- Configure Pronexus vbvConfig
- Configure SQL Database

4.1. Configure Dialogic D/240

The Voice Board installed on the Mutare EEN server is the Dialogic D/240JCT-T1. The following steps describe the configuration of the Dialogic board.

Step	Description
1.	<p>Start the Dialogic Configuration Manager on the Mutare EEN server by selecting Start → Programs → Intel Dialogic System Release → Configuration Manager –DCM. Double-click on the entry D/240JCT-T1 #0 in slot 2/2.</p> 

Step	Description
2.	<p>Select the Interface tab. From the drop down list for the Value field, select “NI2”. Click OK.</p>  <p>The screenshot shows a dialog box titled "Properties for D/240JCT-T1 #0 in slot 2/2". It has several tabs: "TDM Bus Configuration", "Country", "Files", "System", "Telephony Bus", "Interface", and "Misc". The "Interface" tab is currently selected. Inside the dialog, there is a table with two columns: "Parameter" and "Value". The table contains one row with "ISDNProtocol" in the "Parameter" column and "NI2" in the "Value" column. Below the table is an "Edit" section with a "Parameter" text box containing "ISDNProtocol" and a "Value" dropdown menu with "NI2" selected. At the bottom of the dialog are four buttons: "OK", "Cancel", "Apply", and "Help".</p>

Step	Description
3.	<p>Select the entry D/240JCT-T1 #0 in slot 2/2. Click on the green arrow icon to start the software.</p>  <p>The screenshot shows the Intel(R) Dialogic(R) Configuration Manager window. The title bar reads 'Intel(R) Dialogic(R) Configuration Manager'. The menu bar includes 'File', 'View', 'Device', 'System', 'Settings', and 'Help'. The toolbar contains several icons, with a green play button icon circled in red. The main area displays a tree view of 'Configured Devices on_MCS11', with 'D/240JCT-T1 #0 in slot 2/2' selected. Below the tree view, the status bar indicates 'System status : Stopped'.</p>

4.2. Configure the Mutare ini File

On the Mutare EEN server, edit the **EEN** and **EEN1** sections of the mutare.ini file found in the C:\od directory.

The following fields need to be configured in the **EEN** section of the mutare.ini file.

- **Base Port** – set to “1”.
- **Ports** – set to the number of ports in the ISDN-PRI trunk group. The compliance testing used 23 ports, as configured in **Section 3.2 Step 3**.
- **Outcall Ports** – set to the maximum number of ports to be used for outgoing calls.
- **Line Type** – set to “D” for Digital.
- **SAPI Rate** – set to “-2”.
- **Startup Delay** – set to the time (ms) to wait before running when launched as a service. This number should be greater or equal to 25000 ms.
- **DNISxxxxx** – set xxxxx to the incoming extension as configured in **Section 3.3**. These extensions allow callers to perform different activities on the Mutare EEN application.

The following fields need to be configured in the **EEN1** section of the mutare.ini file.

- **ANINumber** – set to the calling number that will be displayed.
- **ANIName** – set to the calling name that will be displayed.
- **Call In Phone** – set to the phone number for members to call-in to retrieve broadcasts. In this test configuration the Call In Phone number was “22291”.
- **Call In Phone2** – set to the phone number for members using pagers, to call-in to retrieve broadcasts.
- **Company Name** – enter a descriptive name for this application.

The remaining fields can retain the default values.

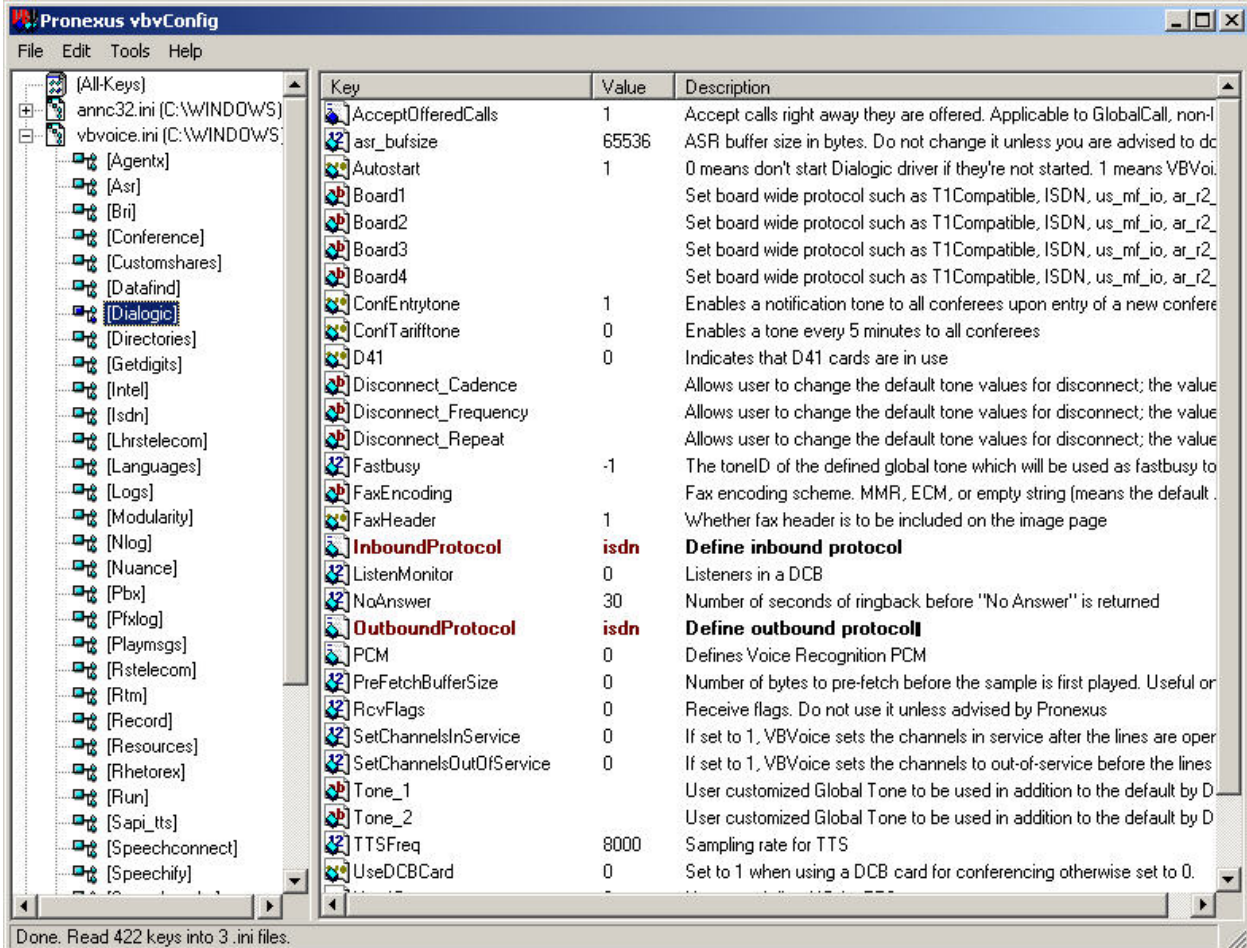
```
[Common]
MaxLogSize=10000000

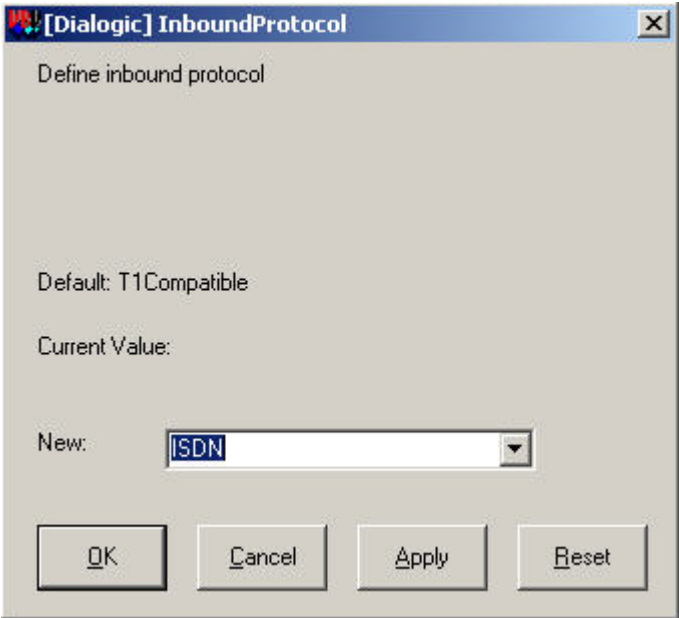
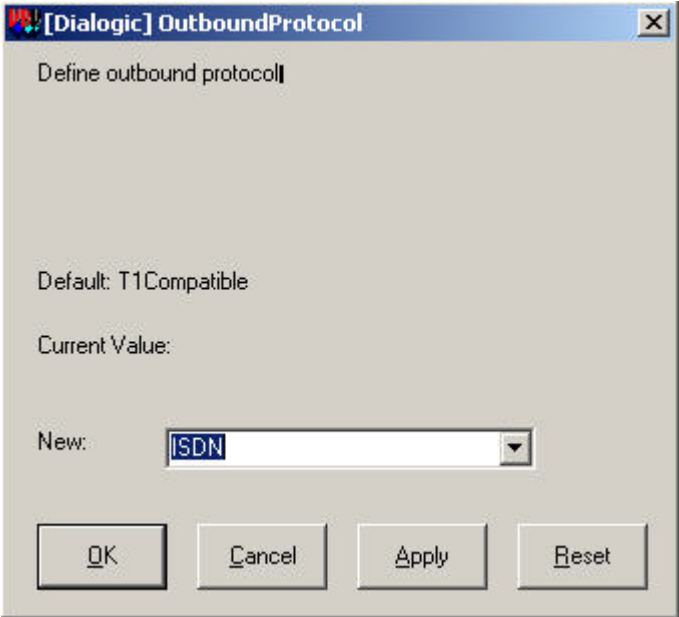
[EEN]
Base Port=1
Ports=23
Outcall Ports=20
Line Type=D
Connection=Provider=sqloledb;Data Source=MCS11;Initial Catalog=EEN-MCS_32;User
Id=EENMCS;Password=33nizc001;
Debug=1
Dead Port Delay=60
SAPI Rate=-2
Startup Delay=30000
DNIS22292=admin,1
DNIS22293=record,1
DNIS22291=callin,1

[EEN1]
'Mutare-Avaya
ANINumber=22291
ANIName=MUTARE-AVAYA EEN
Send HTML=Y
From Address=een@mutare.com
Update URL=http://mcs11/
Call In Phone=22291
Call In Phone2=22291
Company Name=Mutare-Avaya
Cutoff Days=1
Answer Mode=0
Broadcast Seconds=120
Hello Delay=3600
```

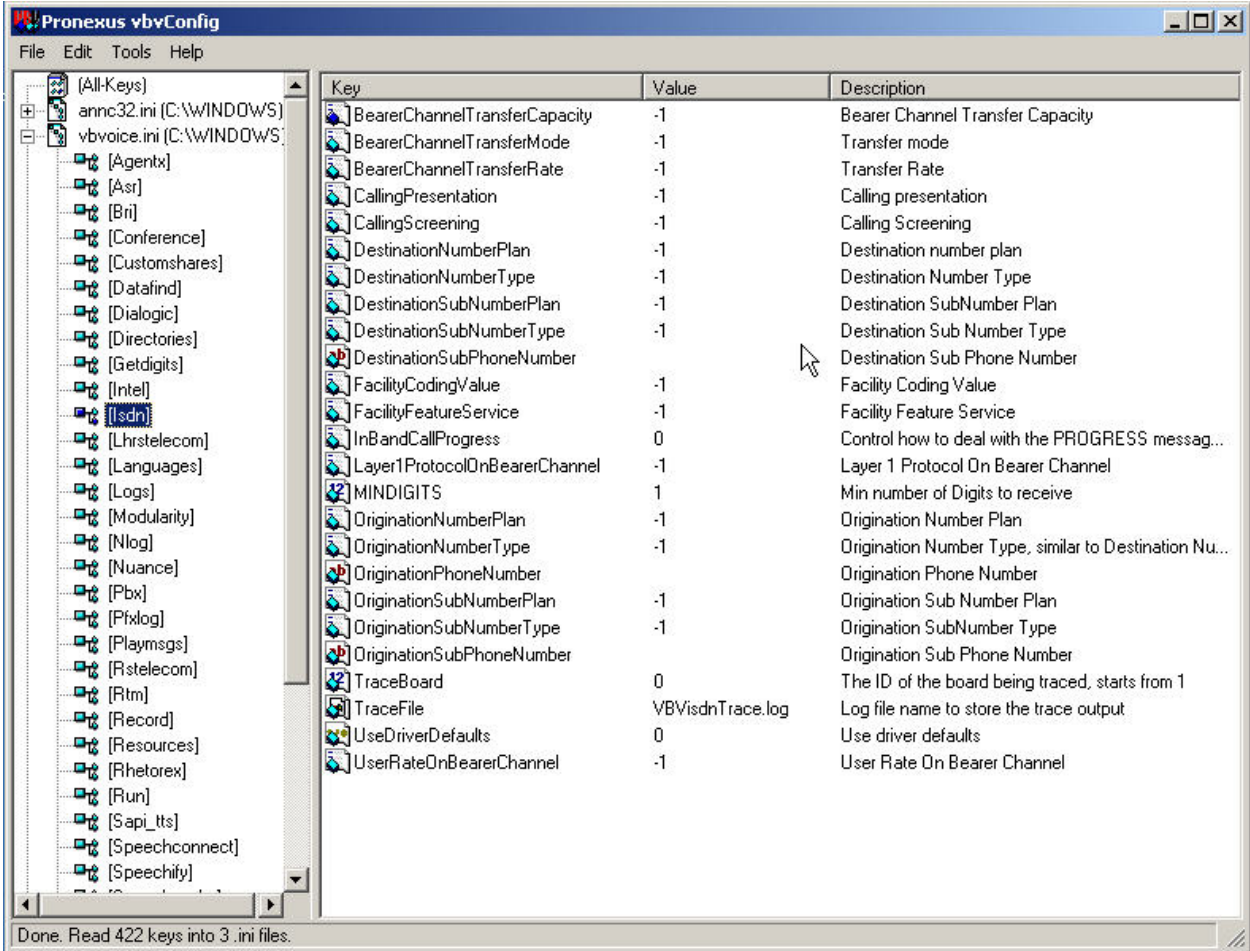
4.3. Configure Pronexus vbvConfig

Pronexus is the interface between the Dialogic drivers and the EEN Application. The following steps describe the configuration of Pronexus.

Step	Description																																																																																										
1.	<p>Start the vbvConfig configuration screen on the Mutare EEN server by selecting Start → Programs → Pronexus → VBVConfig → VBVConfig. In the Pronexus vbvConfig window open the vbvoice.ini folder. Select [Dialogic] in the left pane. Double click InboundProtocol in the right pane.</p>  <table border="1" data-bbox="613 709 1533 1535"> <thead> <tr> <th>Key</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>AcceptOfferedCalls</td> <td>1</td> <td>Accept calls right away they are offered. Applicable to GlobalCall, non-l</td> </tr> <tr> <td>asr_bufsize</td> <td>65536</td> <td>ASR buffer size in bytes. Do not change it unless you are advised to dc</td> </tr> <tr> <td>Autostart</td> <td>1</td> <td>0 means don't start Dialogic driver if they're not started. 1 means VBvoi</td> </tr> <tr> <td>Board1</td> <td></td> <td>Set board wide protocol such as T1Compatible, ISDN, us_mf_io, ar_r2_</td> </tr> <tr> <td>Board2</td> <td></td> <td>Set board wide protocol such as T1Compatible, ISDN, us_mf_io, ar_r2_</td> </tr> <tr> <td>Board3</td> <td></td> <td>Set board wide protocol such as T1Compatible, ISDN, us_mf_io, ar_r2_</td> </tr> <tr> <td>Board4</td> <td></td> <td>Set board wide protocol such as T1Compatible, ISDN, us_mf_io, ar_r2_</td> </tr> <tr> <td>ConfEntrytone</td> <td>1</td> <td>Enables a notification tone to all conferees upon entry of a new confere</td> </tr> <tr> <td>ConfTarriftone</td> <td>0</td> <td>Enables a tone every 5 minutes to all conferees</td> </tr> <tr> <td>D41</td> <td>0</td> <td>Indicates that D41 cards are in use</td> </tr> <tr> <td>Disconnect_Cadence</td> <td></td> <td>Allows user to change the default tone values for disconnect; the value</td> </tr> <tr> <td>Disconnect_Frequency</td> <td></td> <td>Allows user to change the default tone values for disconnect; the value</td> </tr> <tr> <td>Disconnect_Repeat</td> <td></td> <td>Allows user to change the default tone values for disconnect; the value</td> </tr> <tr> <td>Fastbusy</td> <td>-1</td> <td>The toneID of the defined global tone which will be used as fastbusy to</td> </tr> <tr> <td>FaxEncoding</td> <td></td> <td>Fax encoding scheme. 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Step	Description
2.	<p>The [Dialogic] InboundProtocol window will appear. From the drop down list, select “ISDN” for the New field. Click OK.</p> 
3.	<p>In the Pronexus vbvConfig window, double click OutboundProtocol in the right pane. The [Dialogic] OutboundProtocol window will appear. From the drop down list, select “ISDN” for the New field. Click OK.</p> 

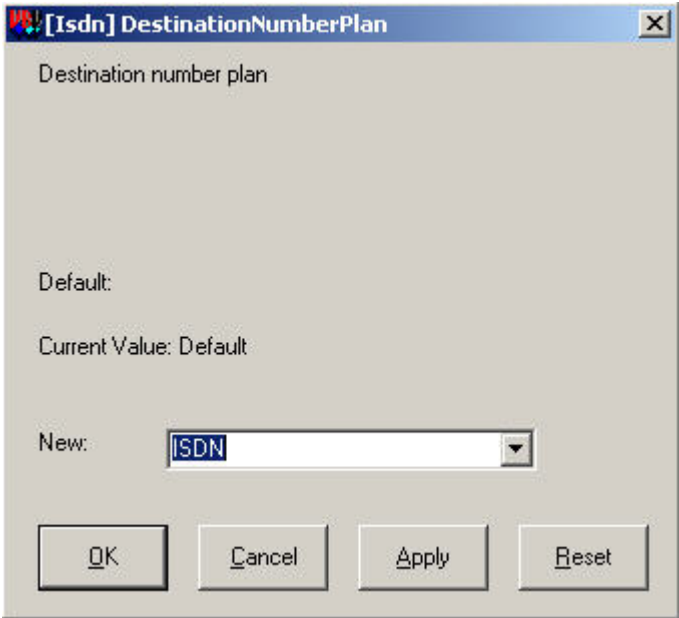
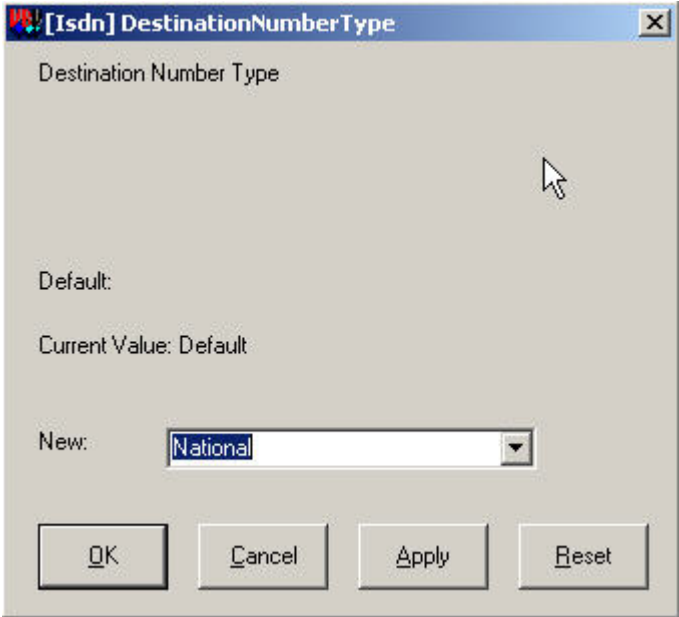
Step	Description
4.	In the Pronexus vbvConfig window, select [Isdn] in the left pane. Double click DestinationNumberPlan in the right pane.

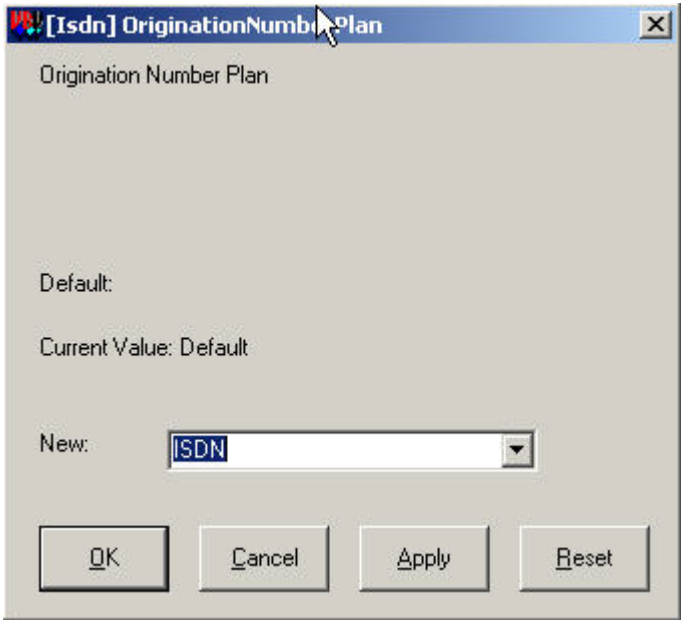
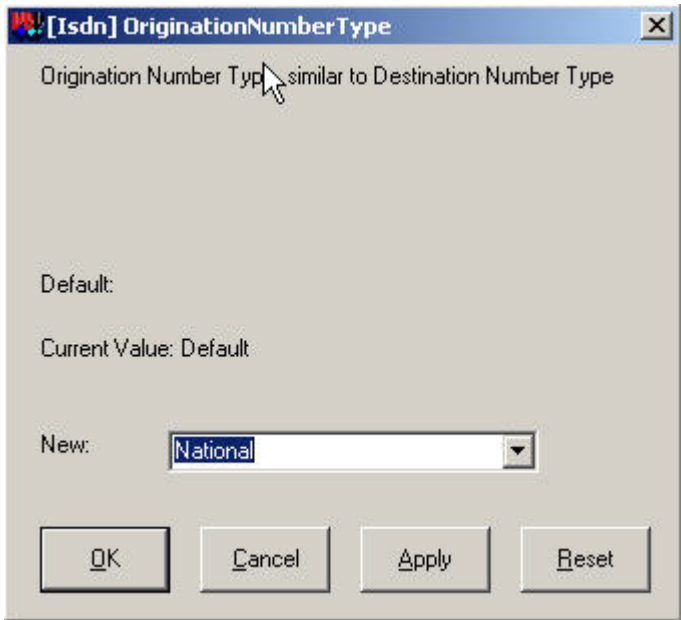


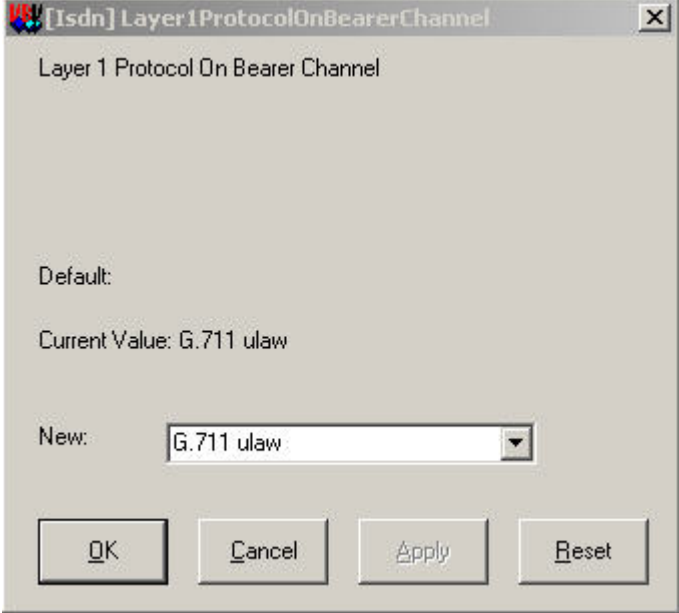
The screenshot shows the Pronexus vbvConfig application window. The left pane displays a tree view of configuration keys, with '[Isdn]' selected. The right pane displays a table of configuration keys with columns for Key, Value, and Description. The 'DestinationNumberPlan' key is highlighted with a mouse cursor.

Key	Value	Description
BearerChannelTransferCapacity	-1	Bearer Channel Transfer Capacity
BearerChannelTransferMode	-1	Transfer mode
BearerChannelTransferRate	-1	Transfer Rate
CallingPresentation	-1	Calling presentation
CallingScreening	-1	Calling Screening
DestinationNumberPlan	-1	Destination number plan
DestinationNumberType	-1	Destination Number Type
DestinationSubNumberPlan	-1	Destination SubNumber Plan
DestinationSubNumberType	-1	Destination Sub Number Type
DestinationSubPhoneNumber	-1	Destination Sub Phone Number
FacilityCodingValue	-1	Facility Coding Value
FacilityFeatureService	-1	Facility Feature Service
InBandCallProgress	0	Control how to deal with the PROGRESS messag...
Layer1ProtocolOnBearerChannel	-1	Layer 1 Protocol On Bearer Channel
MINDIGITS	1	Min number of Digits to receive
OriginationNumberPlan	-1	Origination Number Plan
OriginationNumberType	-1	Origination Number Type, similar to Destination Nu...
OriginationPhoneNumber	-1	Origination Phone Number
OriginationSubNumberPlan	-1	Origination Sub Number Plan
OriginationSubNumberType	-1	Origination SubNumber Type
OriginationSubPhoneNumber	-1	Origination Sub Phone Number
TraceBoard	0	The ID of the board being traced, starts from 1
TraceFile	VBVisdnTrace.log	Log file name to store the trace output
UseDriverDefaults	0	Use driver defaults
UserRateOnBearerChannel	-1	User Rate On Bearer Channel

Done. Read 422 keys into 3 .ini files.

Step	Description
5.	<p>The [Isdn] DestinationNumberPlan window will appear. From the drop down list, select “ISDN” for the New field. Click OK.</p> 
6.	<p>In the Pronexus vbvConfig window, double click DestinationNumberType in the right pane. The [Isdn] DestinationNumberType window will appear. From the drop down list, select “National” for the New field. Click OK.</p> 

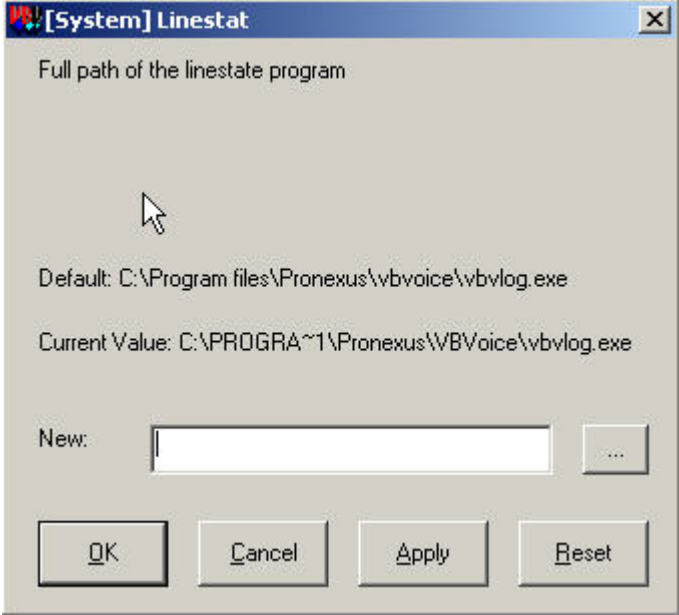
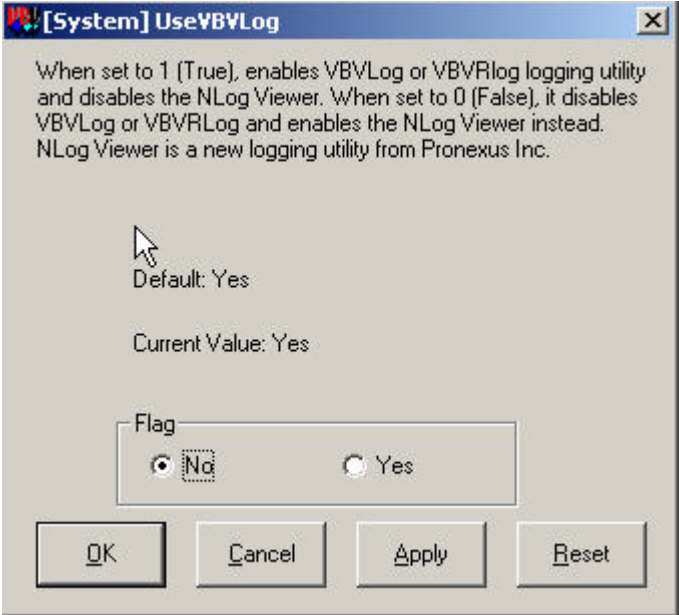
Step	Description
7.	<p>In the Pronexus vbvConfig window, double click OriginationNumberPlan in the right pane. The [Isdn] OriginationNumberPlan window will appear. From the drop down list, select "ISDN" for the New field. Click OK.</p> 
8.	<p>In the Pronexus vbvConfig window, double click OriginationNumberType in the right pane. The [Isdn] OriginationNumberType window will appear. From the drop down list, select "National" for the New field. Click OK.</p> 

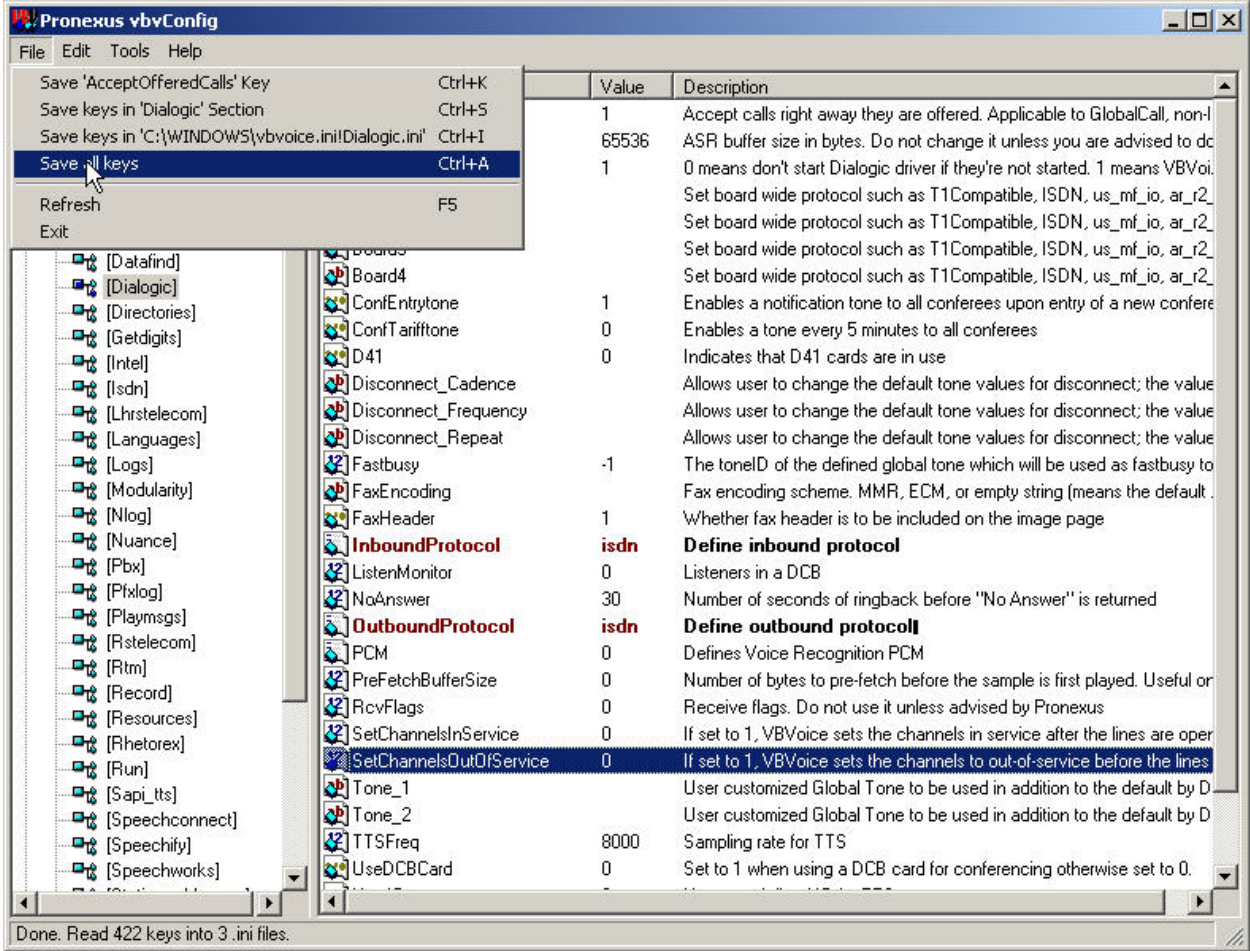

Step	Description
9.	<p>In the Pronexus vbvConfig window, double click Layer1ProtocolOnBearerChannel in the right pane. The [Isdn] Layer1ProtocolOnBearerChannel window will appear. From the drop down list, select “G.711 ulaw” for the New field. Click OK.</p> 

Step	Description
10.	In the Pronexus vbvConfig window, select [System] in the left pane. Double click Linestat in the right pane.

Key	Value	Description
BringLogWindowToFront	1	Whether, at startup, to b...
DeleteOldLogs	0	Number of days of log fil...
DialPadMapping_Q	1	Assigns a digit to letter '...
DialPadMapping_Z	1	Assigns a digit to letter '...
Digits1		Customizable 'Digits' VB...
Digits2		Customizable 'Digits' VB...
Digits3		Customizable 'Digits' VB...
Digits4		Customizable 'Digits' VB...
Digits5		Customizable 'Digits' VB...
EnableEventingTimer	0	Enable eventing timer c...
EnableRuntimeChange	0	Enable runtime change
EnhanceRTCheck	0	Perform enhance runtim...
EventingTimerThreshold	0	Used only when Enable...
HandleChannelIdle	1	Force a channel thread ...
IgnorePhraseErrors	0	Ignore phrase errors
IniRedirect		Used for Modular VBVo...
Linestat	C:\PROGRA~1\Pronexus\VBVoice\vbvlog.exe	Full path of the line...
Logs	1	Enable logging
OffHookIdle	0	Busy out lines on shutdo...
PfxLogLevel	0	Diagnostic log level (log ...
PlayEntryAfterError	1	Play Entry greeting after ...
PostMessage	1	To Post a send a windo...
SayZeroHundredHours	0	Used in vbvTime24 time...
SecureLog	0	To flush event logs after...
UseVBVLog	1	When set to 1 (True), en...

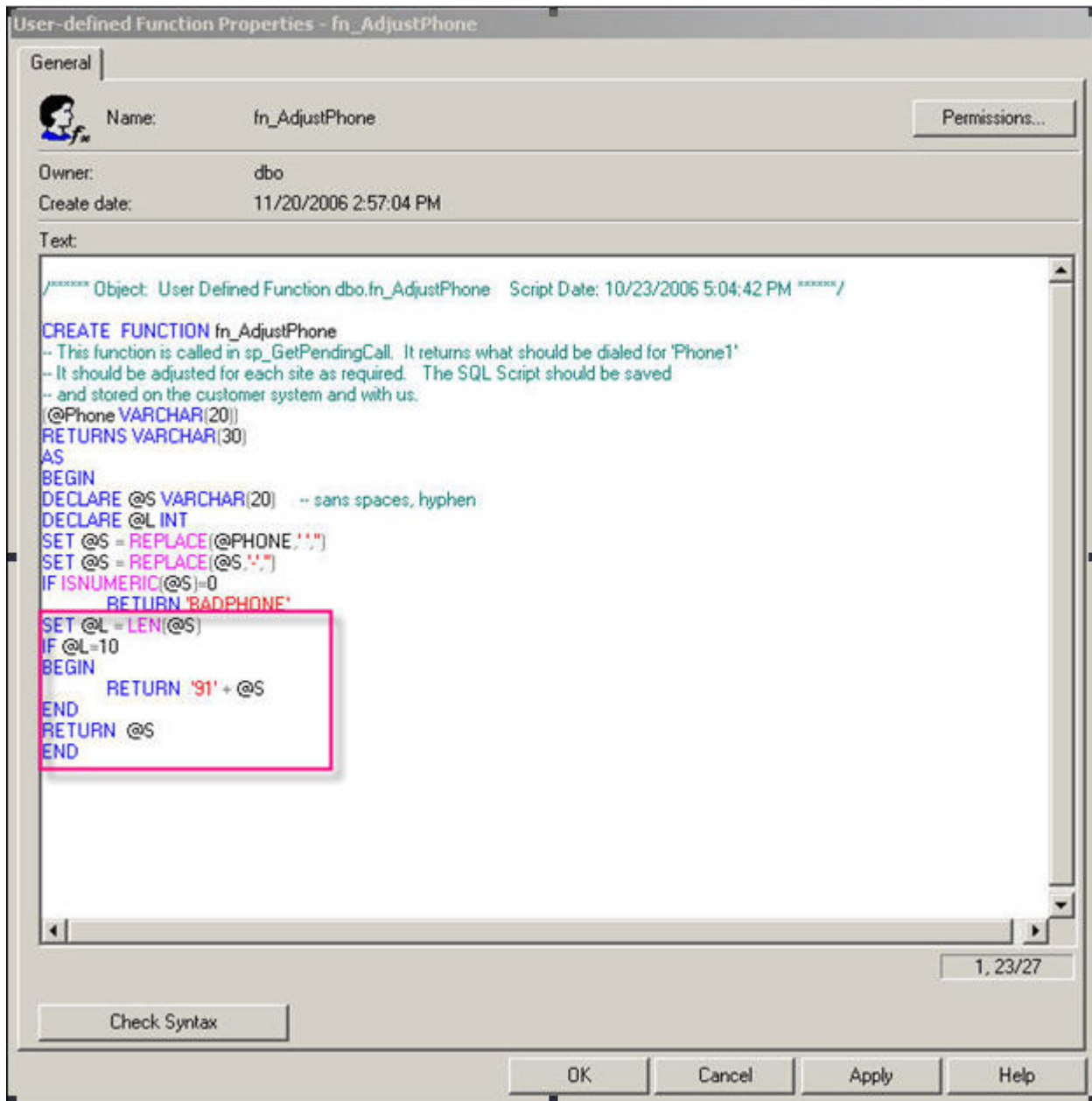
Done. Read 422 keys into 3 .ini files.

Step	Description
11.	<p>The [System] Linestat window will appear. Delete any entry in the New field. Click OK.</p> 
12.	<p>In the Pronexus vbvConfig window, double click UseVBVLog in the right pane. The [System] UseVBVLog window will appear. Select the “No” radio button for the Flag field. Click OK.</p> 

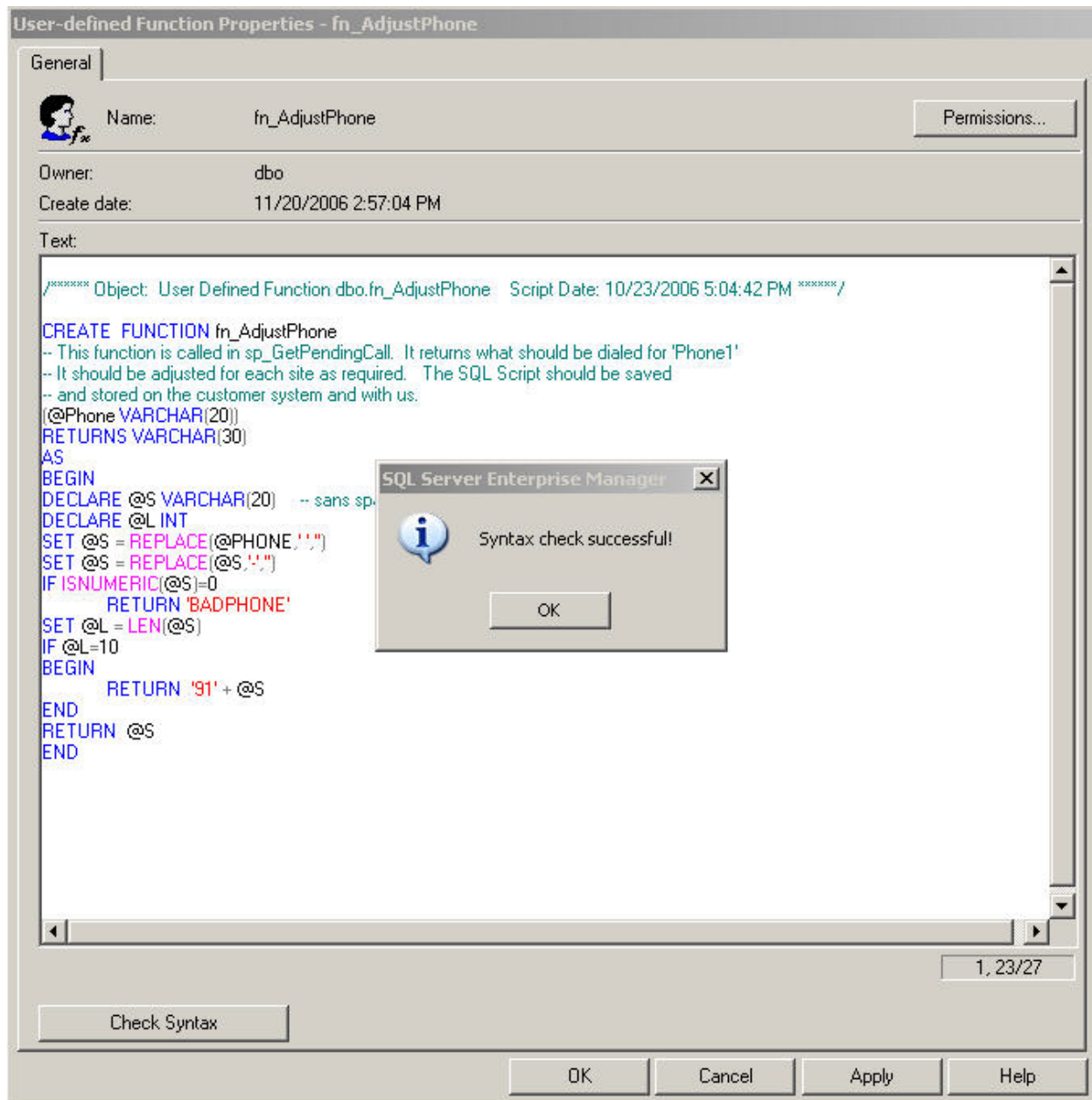
Step	Description
13.	<p>In the Pronexus vbvConfig window, select File → Save all keys.</p> 
14.	<p>The Backup Reminder window will appear. Click OK.</p> 

4.4. Configure SQL Database

On the Mutare EEN server, the user function “fn_AdjustPhone.sql” needs to be changed based on the routing rules on Avaya Communication Manager. Launch the SQL Server Enterprise Manager Console, navigate to the User Defined Function and open the **fn_AdjustPhone** function. In the test configuration, 10 digit dialed numbers would pre-append the digits “91” before being sent to Avaya Communication Manager, while 5 digit numbers would be send as is. Once the function is configured, press **Check Syntax**.



Click **OK** in the pop-up window. Then click **OK** in the **User-defined Function Properties – fn_AdjustPhone** window.



5. Interoperability Compliance Testing

The interoperability compliance testing covered feature functionality and serviceability. Feature functionality focused on verifying that Mutare EEN 3.2 could successfully broadcast and receive calls over the ISDN-PRI trunks. Serviceability testing verified that the Mutare EEN server recovered from adverse conditions, such as rebooting, power failure and network disconnect.

5.1. General Test Approach

All feature functionality test cases were performed manually to verify proper operation. The general test approach entailed:

- Verified Broadcasts can be initiated from the website.
- Verified Broadcasts can be initiated from any telephones.
- Verified the following outbound calling scenarios from the Mutare EEN application.
 - Calls using 10 digit numbers.
 - Calls using 5 digit number.
 - Calls to busy tone.
 - Calls to no answer.
 - Calls to reorder tones.
 - Calls to answering machine.
 - Calls to fax/modem tones.
 - Calls to trunks busy tone.
 - Calls using trunk access codes.
 - Calls over CO trunks.
 - Call answered.
 - Calls receive DNIS.
 - Calls can hear the recorded prompts.
 - Calls can send the DTMF input.
 - Multiple outbound calls over ISDN-PRI trunks.
- Verify the following inbound calling scenarios to the Mutare EEN application.
 - Inbound calls are delivered.
 - ANI information is received.
 - Messages can be recorded.
 - Broadcasts can be initiated.
 - Multiple inbound calls over ISDN-PRI trunks.

5.2. Test Results

All feature and serviceability tests passed. The Mutare Emergency Event Notification 3.2 successfully broadcasted and received calls over the ISDN-PRI trunks. For serviceability testing, Mutare was able to resume broadcasting calls after restoration of connectivity to the Mutare EEN server, from network disconnect/re-connect, and Mutare EEN server resets.

6. Verification

6.1. Avaya Verification

Verify the status of the ISDN trunk group by using the **status trunk n** command, where **n** is the trunk group number administered in **Section 3.2**. When the trunks are connected and idle, verify the **Service State** for each connected trunk is “in-service/idle” as shown below.

```
status trunk 200
```

Page 1

TRUNK GROUP STATUS

Member	Port	Service State	Mtce Connected Ports Busy
0200/001	01B1701	in-service/idle	no
0200/002	01B1702	in-service/idle	no
0200/003	01B1703	in-service/idle	no
0200/004	01B1704	in-service/idle	no
0200/005	01B1705	in-service/idle	no
0200/006	01B1706	in-service/idle	no
0200/007	01B1707	in-service/idle	no
0200/008	01B1708	in-service/idle	no
0200/009	01B1709	in-service/idle	no
0200/010	01B1710	in-service/idle	no
0200/011	01B1711	in-service/idle	no
0200/012	01B1712	in-service/idle	no
0200/013	01B1713	in-service/idle	no
0200/014	01B1714	in-service/idle	no

Page down to Page 2 and verify the remaining trunk group members are “in-service/idle” as shown below.

```
status trunk 200
```

TRUNK GROUP STATUS

Member	Port	Service State	Mtce Connected Ports Busy
0200/015	01B1715	in-service/idle	no
0200/016	01B1716	in-service/idle	no
0200/017	01B1717	in-service/idle	no
0200/018	01B1718	in-service/idle	no
0200/019	01B1719	in-service/idle	no
0200/020	01B1720	in-service/idle	no
0200/021	01B1721	in-service/idle	no
0200/022	01B1722	in-service/idle	no
0200/023	01B1723	in-service/idle	no

Verify the status of the ISDN signaling group by using the **status signaling-group n** command, where **n** is the signaling group number administered in **Section 3.1**. Verify that the signaling group is “in-service” as indicated in the **Group State** and the **Primary D-Channel Level 3 State** fields shown below. For this application, a Secondary D-Channel is not administered and will show “no-link” in the **Secondary D-Channel Level 3 State** field.

```
status signaling-group 200
      STATUS SIGNALING GROUP

      Group ID: 200                               Active NCA-TSC Count: 0
      Group Type: isdn-pri                         Active CA-TSC Count: 0
      Signaling Type: facility associated signaling
      Group State: in-service

      Primary D-Channel

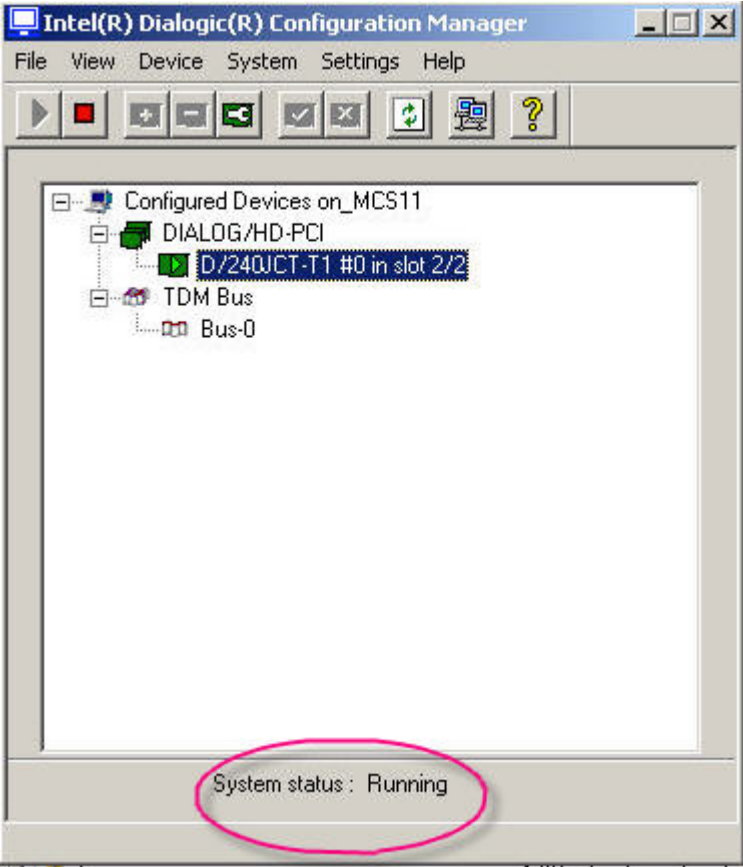
      Port: 01B1724          Level 3 State: in-service

      Secondary D-Channel

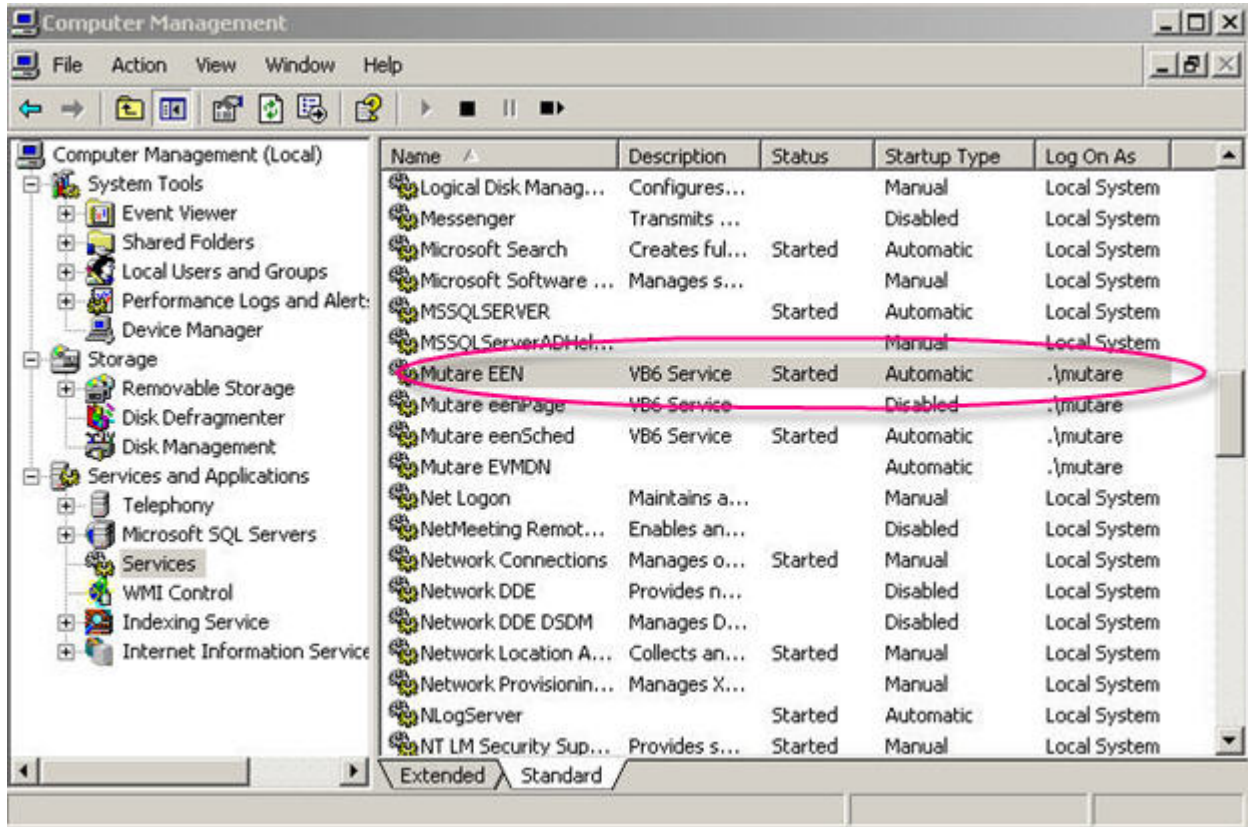
      Port:                  Level 3 State: no-link
```

6.2. Mutare EEN Verification

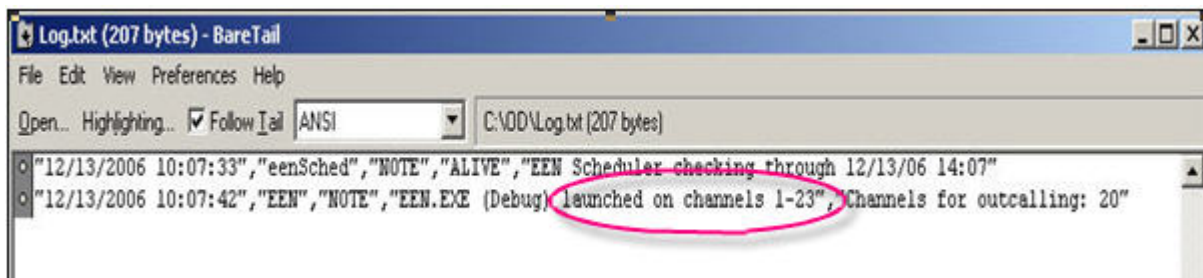
Verify the Dialogic D/240 voice card has started by selecting **Start → Programs → Intel Dialogic System Release → Configuration Manager –DCM** on the Mutare EEN server. Select the entry **D/240JCT-T1 #0 in slot 2/2**. Verify the **System status** displays “Running”.



Verify the Mutare EEN Services status displays “Started” by using the Computer Management tool on the Mutare EEN server.



Verify the ISDN-PRI trunks are available on the Mutare EEN application by displaying the Log.txt file in the C:/od directory. Verify the log file displays “launched on channels 1-x”, x being the number of channels in the trunk group.



7. Support

If technical support is required for the Mutare Emergency Event Notification solution, contact Mutare Support on 1(847)496-9000 or send email to support@mutare.com.

8. Conclusion

These Application Notes describe the required configuration steps for Mutare Emergency Event Notification 3.2 to successfully interoperate with Avaya Communication Manager using ISDN-PRI trunks. Functionality and serviceability were successfully validated. The configuration described in these Application Notes has been successfully compliance tested.

9. Additional References

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

- *Administrator Guide for Avaya Communication Manager*, Document 03-300509, Issue 2, February 2006, available at <http://support.avaya.com>

Mutare product documentation is available on request from <http://www.mutare.com>.

- *EEN List Administrator's Guide*
- *EEN Broadcaster's Guide*
- *EEN System Administrator's Guide*
- *EEN Owner Guide*
- *EEN Pre-Installation Checklist*

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