



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Netcall QueueBuster with Avaya Communication Manager using E1 Trunks - Issue 1.0

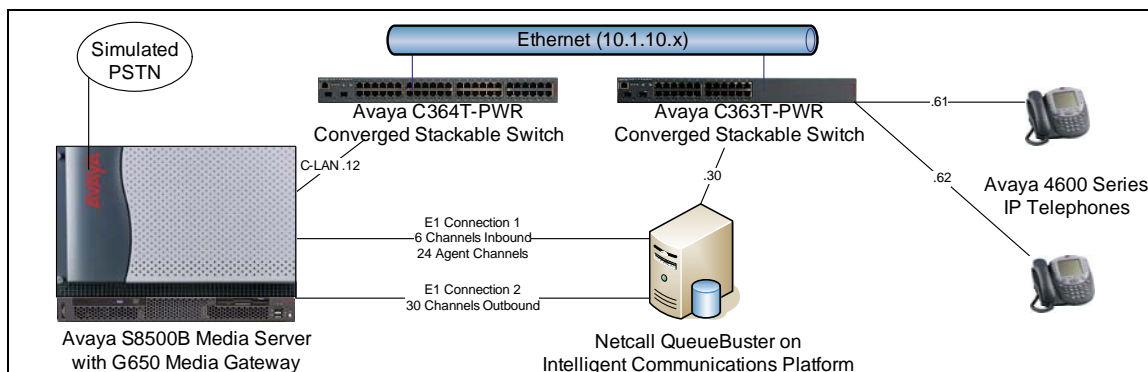
Abstract

These Application Notes describe the configuration steps required for Netcall QueueBuster to successfully interoperate with Avaya Communication Manager. The objective of the test was to evaluate interoperability of the products in a contact center, offering automated callbacks to inbound callers.

Information in these Application Notes has been obtained through interoperability compliance testing and additional technical discussions. Testing was conducted via the *DeveloperConnection* Program at the Avaya Solution and Interoperability Test Lab.

1 Introduction

These Application Notes describe the configuration steps required for the Netcall QueueBuster product to successfully interoperate with Avaya Communication Manager.



Netcall QueueBuster runs on the Netcall Intelligent Communications Platform (ICP), which is a server supporting the range of Netcall callback and productivity solutions.

The Netcall ICP running QueueBuster uses Intel Dialogic boards to connect to Avaya Communication Manager using E1 or T1 connections. One board is used for calls inbound from Avaya Communication Manager to QueueBuster and also for calls outbound from QueueBuster to Avaya Communication Manager agents. The other board is used solely for callback calls to customers and can either route through Avaya Communication Manager or connect straight into the Public Switched Telephone Network (PSTN)

Integration is achieved using Integrated Services Digital Network (ISDN) messaging over the D-Channel. E1 trunk groups were used for the compliance testing and the E1 connection for callback calls to customers was routed through Avaya Communication Manager

Netcall QueueBuster gives customers an alternative to queuing. When a caller is in a queue, they can opt to use QueueBuster to call them back when an agent becomes available. The call will be routed into QueueBuster for the caller to record their name, and choose whether to be called back on the number presented as ANI or enter a different number. QueueBuster then calls an Avaya Communication Manager VDN/vector and queues for an available agent. When an agent answers the call, QueueBuster announces the name of the person being called back, commences dialing the customer, and connects the agent to the outbound trunk. If the call to the customer is unsuccessful, QueueBuster will announce the reason to the agent and give them the option to reschedule the call.

2 Equipment and Software Validated

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

| Equipment | Software |
|---|--|
| Avaya S8500B Media Server | Avaya Communication Manager R013.01.2.632.1 |
| Avaya G650 Media Gateway: <ul style="list-style-type: none">• TN2464BP UDS1 Circuit Pack• TN2464CP UDS1 Circuit Pack | HW05/FW019 HW02/FW019 |
| Avaya 4620SW IP Telephones (H.323) | 2.4 |
| Avaya 4625SW IP Telephones (H.323) | 2.5 |
| Netcall QueueBuster running on Netcall Intelligent Communications Platform | 2.4.15k 2.4 |
| Intel Dialogic Board | Windows 2000 5.00.2195 SP4 6.0 (build 61) |

3 Configure Avaya Communication Manager

This section provides the procedures for configuring Avaya Communication Manager. The procedures include the following areas.

- Verify Avaya Communication Manager license.
- Administer DS-1 boards and trunk groups.
- Administer call routing.
- Administer VDNs and vectors.

The detailed administration of some contact center devices, such as ACD/Skill groups and logical agents are assumed to be in place and are not covered in these Application Notes. For administration of contact center devices, refer to the appropriate documentation in **Section 9**.

For the compliance testing, agents with physical station extensions of “10001, 10002, 10003” and logical agent identifiers of “15001, 15002, 15003” were used. All the agents were assigned two skills; hunt group 1 was used as the main skill for incoming calls, hunt group 401 was used as the skill for calls from QueueBuster.

3.1 Verify Avaya Communication Manager License

Use the “display system-parameters customer-options” command, verify that the **ISDN-PRI** customer option is set to “y” on **Page 4**.

```
change system-parameters customer-options                               Page 4 of 11
                                OPTIONAL FEATURES

Emergency Access to Attendant? y                                     IP Stations? y
  Enable 'dadmin' Login? y                                           Internet Protocol (IP) PNC? n
  Enhanced Conferencing? y                                           ISDN Feature Plus? n
    Enhanced EC500? y                                               ISDN Network Call Redirection? n
Enterprise Survivable Server? n                                       ISDN-BRI Trunks? n
  Enterprise Wide Licensing? n                                       ISDN-PRI? y
    ESS Administration? n                                           Local Survivable Processor? n
      Extended Cvg/Fwd Admin? y                                       Malicious Call Trace? y
      External Device Alarm Admin? n                                   Media Encryption Over IP? y
Five Port Networks Max Per MCC? n   Mode Code for Centralized Voice Mail? n
  Flexible Billing? n
Forced Entry of Account Codes? n                                       Multifrequency Signaling? y
  Global Call Classification? y Multimedia Appl. Server Interface (MASI)? n
    Hospitality (Basic)? y                                           Multimedia Call Handling (Basic)? n
Hospitality (G3V3 Enhancements)? n   Multimedia Call Handling (Enhanced)? n
  IP Trunks? y

IP Attendant Consoles? y
(NOTE: You must logoff & login to effect the permission changes.)
```

Verify that the **Lookahead Interflow (LAI)** and **Vectoring (Basic)** customer options are both set to “y” on **Page 6**. LAI is not required for QueueBuster but is recommended as it allows the Avaya Communication Manager vector to route the call to the next vector step when QueueBuster is busy or unavailable.

```
change system-parameters customer-options                               Page 6 of 11
                                CALL CENTER OPTIONAL FEATURES

                                Call Center Release: 3.0

                                ACD? y                                Reason Codes? n
                                BCMS (Basic)? y                        Service Level Maximizer? n
                                BSR Local Treatment for IP & ISDN? n    Service Observing (Basic)? y
                                Business Advocate? n                  Service Observing (Remote/By FAC)? y
                                Call Work Codes? n                    Service Observing (VDNs)? y
                                DTMF Feedback Signals For VRU? n        Timed ACW? n
                                Dynamic Advocate? n                    Vectoring (Basic)? y
                                Expert Agent Selection (EAS)? y          Vectoring (Prompting)? n
                                EAS-PHD? y                              Vectoring (G3V4 Enhanced)? n
                                Forced ACD Calls? n                    Vectoring (3.0 Enhanced)? n
                                Least Occupied Agent? n                Vectoring (ANI/II-Digits Routing)? n
                                Lookahead Interflow (LAI)? y             Vectoring (G3V4 Advanced Routing)? n
                                Multiple Call Handling (On Request)? n   Vectoring (CINFO)? n
                                Multiple Call Handling (Forced)? n       Vectoring (Best Service Routing)? n
                                PASTE (Display PBX Data on Phone)? y     Vectoring (Holidays)? n
                                (NOTE: You must logoff & login to effect the permission changes.)
                                Vectoring (Variables)? n
```

If any of the abovementioned customer options are not set, contact the Avaya sales team or business partner for a new license.

3.2 Administer DS-1 Boards and Trunk Groups

Two DS-1 boards are used.

- The first DS-1 is used for Avaya Communication Manager to route incoming calls into QueueBuster and for QueueBuster to route calls to Avaya Communication Manager agents. For the purposes of these Application Notes, this DS-1 shall be referred to as the internal DS-1.
- The second DS-1 is used for QueueBuster to route outgoing calls to Avaya Communication Manager for onward routing to customers. For the purposes of these Application Notes, this DS-1 shall be referred to as the external DS-1.

Both DS-1s are configured in the same way. Use the “add ds1 x” command, where “x” is the slot number where the DS-1 board is inserted. Configure the fields as follows.

- **Name:** Enter a descriptive name.
- **Bit Rate:** “2.048”
- **Line Coding:** “hdb3”
- **Signaling Mode:** “isdn-pri”
- **Connect:** “pbx”
- **Interface:** “network”
- **Country Protocol:** “etsi”
- **Protocol Version:** “a”
- **Interface Companding:** “alaw”

| | | | |
|--------------------------------------|--|--------------------------|--|
| add ds1 01a05 | | Page 1 of 1 | |
| DS1 CIRCUIT PACK | | | |
| Location: 01A05 | | Name: Netcall | |
| Bit Rate: 2.048 | | Line Coding: hdb3 | |
| Signaling Mode: isdn-pri | | Interface: network | |
| Connect: pbx | | Country Protocol: etsi | |
| TN-C7 Long Timers? n | | Protocol Version: a | |
| Interworking Message: PROgress | | CRC? y | |
| Interface Companding: alaw | | Idle Code: 11111111 | |
| DCP/Analog Bearer Capability: 3.1kHz | | | |
| T303 Timer(sec): 4 | | | |
| Slip Detection? n | | Near-end CSU Type: other | |

Three trunk groups are used.

- The first trunk group routes calls from Avaya Communication Manager into QueueBuster and consists of the first 6 ports of the internal DS-1. For the purposes of these Application Notes, this trunk group will be referred to as the inbound trunk group.
- The second trunk group routes calls from QueueBuster to Avaya Communication Manager agents and consists of the last 24 ports of the internal DS-1. For the purposes of these Application Notes, this trunk group will be referred to as the agent trunk group.
- The third trunk group routes calls from QueueBuster to Avaya Communication Manager for onward routing to customer numbers and consists of all 30 ports of the external DS-1. For the purposes of these Application Notes, this trunk group will be referred to as the outbound trunk group.

The number of ports in each trunk group may vary; the values used in the compliance testing are consistent with a large proportion of the installed base.

All three trunk groups are configured in the same way. Use the “add trunk-group x” command, where “x” is an available trunk group number. Configure the fields on **Page 1** as follows.

- **Group Type:** “isdn”
- **Group Name:** Enter a descriptive name.
- **TAC:** Enter a valid trunk access code.

| | | |
|-----------------------------|-----------------------|-------------------------|
| add trunk-group 16 | | Page 1 of 21 |
| TRUNK GROUP | | |
| Group Number: 16 | Group Type: isdn | CDR Reports: y |
| Group Name: Netcall Inbound | COR: 1 | TN: 1 TAC: 716 |
| Direction: two-way | Outgoing Display? n | Carrier Medium: PRI/BRI |
| Dial Access? y | Busy Threshold: 255 | Night Service: |
| Queue Length: 0 | | |
| Service Type: public-ntwrk | Auth Code? n | TestCall ITC: rest |
| | Far End Test Line No: | |
| TestCall BCC: 4 | | |

Configure the fields on **Page 2** as follows.

- **Supplementary Service Protocol:** Enter “c” to use the ETSI protocol.
- **Disconnect Supervision:** Enter “y” in both **In** and **Out** fields.

| | | |
|---------------------------------------|--|--------------|
| add trunk-group 16 | | Page 2 of 21 |
| Group Type: isdn | | |
| TRUNK PARAMETERS | | |
| Codeset to Send Display: 6 | Codeset to Send National IEs: 6 | |
| Max Message Size to Send: 260 | Charge Advice: none | |
| Supplementary Service Protocol: c | Digit Handling (in/out): enbloc/enbloc | |
| Trunk Hunt: ascend | QSIG Value-Added? n | |
| | Digital Loss Group: 13 | |
| Incoming Calling Number - Delete: | Insert: | Format: |
| Bit Rate: 1200 | Synchronization: async | Duplex: full |
| Disconnect Supervision - In? y Out? y | | |
| Answer Supervision Timeout: 0 | | |

Two signaling groups are used (one for each DS-1 board). Both are configured in the same way. Use the “add signaling-group x” command, where “x” is an available signaling group number. Configure the fields on **Page 1** as follows.

- **Primary D-Channel:** Enter “x16”, where “x” is the slot number of the DS-1 board.
- **Trunk Group for Channel Selection:** Enter one of the trunk groups that will be configured on the DS-1 this signaling group serves.

| | | |
|---------------------------------------|--------------------------------|--|
| SIGNALING GROUP | | |
| Group Number: 16 | Group Type: isdn-pri | |
| Associated Signaling? y | Max number of NCA TSC: 0 | |
| Primary D-Channel: 01A0516 | Max number of CA TSC: 0 | |
| | Trunk Group for NCA TSC: | |
| Trunk Group for Channel Selection: 16 | X-Mobility/Wireless Type: NONE | |
| Supplementary Service Protocol: a | | |

The final step is to assign the DS-1 ports to the trunk groups. Use the “change trunk-group x” command, where “x” is the number of the trunk group to be configured. On **Page 5** assign ports as follows:

- **Inbound Trunk Group:** Assign ports 1 – 6 of the internal DS-1 to ports 1-6 on the inbound trunk group form. Enter the signaling group of the internal DS-1 in the **Sig Grp** field for each trunk.
- **Agent Trunk Group:** Assign ports 7 – 31 (omitting 16) of the internal DS-1 to ports 1-24 on the agent trunk group form. Enter the signaling group of the internal DS-1 in the **Sig Grp** field for each trunk.
- **Outbound Trunk Group:** Assign ports 1 – 31 (omitting 16) of the external DS-1 to ports 1-30 on the outbound trunk group form. Enter the signaling group of the external DS-1 in the **Sig Grp** field for each trunk.

| | | | | | |
|--------------------------|---------|----------|------|-------------------------------------|---------|
| add trunk-group 16 | | | | Page 5 of 21 | |
| | | | | TRUNK GROUP | |
| | | | | Administered Members (min/max): 1/6 | |
| GROUP MEMBER ASSIGNMENTS | | | | Total Administered Members: 6 | |
| | Port | Code Sfx | Name | Night | Sig Grp |
| 1: | 01A0501 | TN2464 | B | | 16 |
| 2: | 01A0502 | TN2464 | B | | 16 |
| 3: | 01A0503 | TN2464 | B | | 16 |
| 4: | 01A0504 | TN2464 | B | | 16 |
| 5: | 01A0505 | TN2464 | B | | 16 |
| 6: | 01A0506 | TN2464 | B | | 16 |

The trunk groups used for the compliance testing are summarized in the following table.

| Type | Group No. | DS-1 Board | Channels | Signaling Group |
|----------|-----------|------------|-------------|-----------------|
| Inbound | 16 | Internal | 1-6 | 16 |
| Agent | 17 | Internal | 7-15, 17-31 | 16 |
| Outbound | 18 | External | 1-15, 17-31 | 18 |

3.3 Administer Call Routing

During the compliance testing, Automatic Alternate Routing (AAR) was used to route calls from the Avaya Communication Manager vector over the QueueBuster inbound trunk. To achieve this, firstly use the “change uniform dial-plan 0” command to add an entry as follows.

- **Matching Pattern:** Enter the complete string used to route to QueueBuster in the inbound vector in **Section 3.4** .
- **Len:** Enter the total number of digits used to dial QueueBuster.
- **Net:** “aar”

| | | | | | | | | | | | | | | |
|---------------------------|-----|-----|--------|-----|------|------|----------|-----|-----|-------------|-----|------|------|--|
| change uniform-dialplan 0 | | | | | | | | | | 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 | |
| 2 | 5 | 0 | | aar | n | | | | | | | n | | |
| 3 | 5 | 0 | | aar | n | | | | | | | n | | |
| 5 | 5 | 0 | | aar | n | | | | | | | n | | |
| 6 | 5 | 0 | | aar | n | | | | | | | n | | |
| 880000 | 6 | 0 | | aar | n | | | | | | | n | | |

Next, use the “change aar analysis 0” command to add an entry as follows.

- **Dialed String:** Enter the complete string used to dial QueueBuster.
- **Total:** Enter the total number of digits used to dial QueueBuster in both **Min** and **Max** fields.
- **Route Pattern:** Enter an available route-pattern number.
- **Call Type:** “aar”

| | | | | | | | | |
|--------------------------|--------|-------|-----|---------|------|------|-------------|--|
| change aar analysis 0 | | | | | | | Page 1 of 2 | |
| AAR DIGIT ANALYSIS TABLE | | | | | | | | |
| Percent Full: | | | | | | | 0 | |
| | Dialed | Total | | Route | Call | Node | ANI | |
| | String | Min | Max | Pattern | Type | Num | Reqd | |
| 2 | | 5 | 5 | 2 | aar | | n | |
| 3 | | 5 | 5 | 3 | aar | | n | |
| 4 | | 5 | 5 | 4 | aar | | n | |
| 5 | | 5 | 5 | 5 | aar | | n | |
| 50099 | | 5 | 5 | 1 | lev0 | | n | |
| 50100 | | 5 | 5 | 1 | lev0 | | n | |
| 600 | | 5 | 5 | 600 | aar | | n | |
| 601 | | 5 | 5 | 601 | aar | | n | |
| 7 | | 5 | 5 | 3 | aar | | n | |
| 82 | | 6 | 6 | 82 | aar | | n | |
| 83 | | 6 | 6 | 83 | aar | | n | |
| 86 | | 6 | 6 | 86 | aar | | n | |
| 880000 | | 6 | 6 | 88 | aar | | n | |

Next, use the “change route-pattern x” command, where “x” is the route-pattern entered in the previous step. Configure the fields on **Page 1** as follows.

- **Grp No:** Enter the number of the inbound trunk-group.
- **FRL:** “0”

| | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|------|-----|----------|----------|------|--|--------|------|-------------|------|--|
| change route-pattern 88 | | | | | | | | | | | | | Page 1 of 3 | | |
| Pattern Number: 88 Pattern Name: QB Inbound | | | | | | | | | | | | | | | |
| SCCAN? n Secure SIP? n | | | | | | | | | | | | | | | |
| Grp | FRL | NPA | Pfx | Hop | Toll | No. | Inserted | DCS/ IXC | | | | | | | |
| No | | | Mrk | Lmt | List | Del | Digits | QSIG | | | | | | | |
| | | | | | | | | Intw | | | | | | | |
| 1: | 16 | 0 | | | | | | | | | | | n | user | |
| 2: | | | | | | | | | | | n | user | | | |
| 3: | | | | | | | | | | | n | user | | | |
| 4: | | | | | | | | | | | n | user | | | |
| 5: | | | | | | | | | | | n | user | | | |
| 6: | | | | | | | | | | | n | user | | | |
| 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 | | | |

QueueBuster needs to be able to dial out via Avaya Communication Manager using the Automatic Route Selection (ARS) feature access code. Use the “change feature-access-codes” command, enter a value in the **Automatic Route Selection (ARS) – Access Code 1** field on **Page 1**. Note that this value may vary. For the compliance testing “9” was used for the ARS feature access code.

| | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-------------------|--|--|
| change feature-access-codes | | | | | | | | | | | | | | | Page 1 of 5 | | |
| FEATURE ACCESS CODE (FAC) | | | | | | | | | | | | | | | | | |
| Abbreviated Dialing List1 Access Code: *01 | | | | | | | | | | | | | | | | | |
| Abbreviated Dialing List2 Access Code: *02 | | | | | | | | | | | | | | | | | |
| Abbreviated Dialing List3 Access Code: *03 | | | | | | | | | | | | | | | | | |
| Abbreviated Dial - Prgm Group List Access Code: *04 | | | | | | | | | | | | | | | | | |
| Announcement Access Code: *05 | | | | | | | | | | | | | | | | | |
| Answer Back Access Code: *06 | | | | | | | | | | | | | | | | | |
| Attendant Access Code: | | | | | | | | | | | | | | | | | |
| Auto Alternate Routing (AAR) Access Code: 888 | | | | | | | | | | | | | | | | | |
| Auto Route Selection (ARS) - Access Code 1: 9 | | | | | | | | | | | | | | | | | |
| Automatic Callback Activation: *10 | | | | | | | | | | | | | | | Access Code 2: | | |
| Call Forwarding Activation Busy/DA: *11 All: *12 | | | | | | | | | | | | | | | Deactivation: #10 | | |
| Call Park Access Code: *13 | | | | | | | | | | | | | | | Deactivation: #12 | | |
| Call Pickup Access Code: *14 | | | | | | | | | | | | | | | | | |
| CAS Remote Hold/Answer Hold-Unhold Access Code: *15 | | | | | | | | | | | | | | | | | |
| CDR Account Code Access Code: *16 | | | | | | | | | | | | | | | | | |
| Change COR Access Code: | | | | | | | | | | | | | | | | | |
| Change Coverage Access Code: *18 | | | | | | | | | | | | | | | | | |
| Contact Closure Open Code: *19 | | | | | | | | | | | | | | | Close Code: #19 | | |
| Contact Closure Pulse Code: *20 | | | | | | | | | | | | | | | | | |

3.4 Administer VDNs and Vectors

Two VDN/vector combinations are used.

- The first VDN/vector combination queues to an agent skill and gives the caller an option to be routed to QueueBuster. For the purposes of these Application Notes, this VDN/vector combination will be referred to as the inbound VDN/vector.
- The second VDN/vector combination receives calls from QueueBuster and queues them for an available agent. For the purposes of these Application Notes, this VDN/vector combination will be referred to as the agent VDN/vector.

The inbound vector requires an **announcement** step as this sends a D-Channel “connected” event, which is required by QueueBuster. The vector queues the call to a skill and then uses a **collect** step which asks the caller to dial 1 for QueueBuster. A **route-to** step is used to route the calls into QueueBuster (if the caller had dialed 1). There follows an example inbound vector which may be modified for different call treatments.

```
change vector 400                                     Page 1 of 3
                                     CALL VECTOR
Number: 400      Name: ACM>QB
Basic? y    EAS? y    G3V4 Enhanced? n    Meet-me Conf? n    Lock? n
Prompting? n    LAI? y    G3V4 Adv Route? n    ANI/II-Digits? n    ASAI Routing? y
Variables? n    3.0 Enhanced? n    CINFO? n    BSR? n    Holidays? n
01 wait-time    2    secs hearing ringback
02 announcement 18010
03 queue-to     skill 1    pri m
04 collect      1    digits after announcement 18011
05 route-to     number 880000    with cov n if digit    = 1
06 announcement 18012
07 stop
```

The agent vector requires an **announcement** step as this sends a D-Channel “connected” event, which is required by QueueBuster. Use a **queue-to** step to route the calls initiated by QueueBuster to agents. There follows an example agent vector which may be modified for different call treatments.

```
change vector 401                                     Page 1 of 3
                                     CALL VECTOR
Number: 401      Name: QB Agent
Basic? y    EAS? y    G3V4 Enhanced? n    Meet-me Conf? n    Lock? n
Prompting? n    LAI? y    G3V4 Adv Route? n    ANI/II-Digits? n    ASAI Routing? y
Variables? n    3.0 Enhanced? n    CINFO? n    BSR? n    Holidays? n
01 wait-time    2    secs hearing ringback
02 announcement 18010
03 queue-to     skill 401    pri m
04 stop
```

Both VDNs are configured in the same way. Use the “add vdn x” command, where “x” is an available VDN number. Configure the fields on **Page 1** as follows.

- **Name:** Enter a descriptive name.
- **Vector Number:** Enter the number of the vector to be associated with this VDN.

| | |
|------------------------------|-------------|
| add vdn 17400 | Page 1 of 2 |
| VECTOR DIRECTORY NUMBER | |
| Extension: 17400 | |
| Name*: ACM>QB | |
| Vector Number: 400 | |
| Meet-me Conferencing? n | |
| Allow VDN Override? n | |
| COR: 1 | |
| TN*: 1 | |
| Measured: none | |
| 1st Skill*: | |
| 2nd Skill*: | |
| 3rd Skill*: | |
| * Follows VDN Override Rules | |

The following table summarizes the VDNs and vectors used in the compliance testing.

| Type | VDN | Vector | Skill |
|---------|-------|--------|-------|
| Inbound | 17400 | 400 | 1 |
| Agent | 17401 | 401 | 401 |

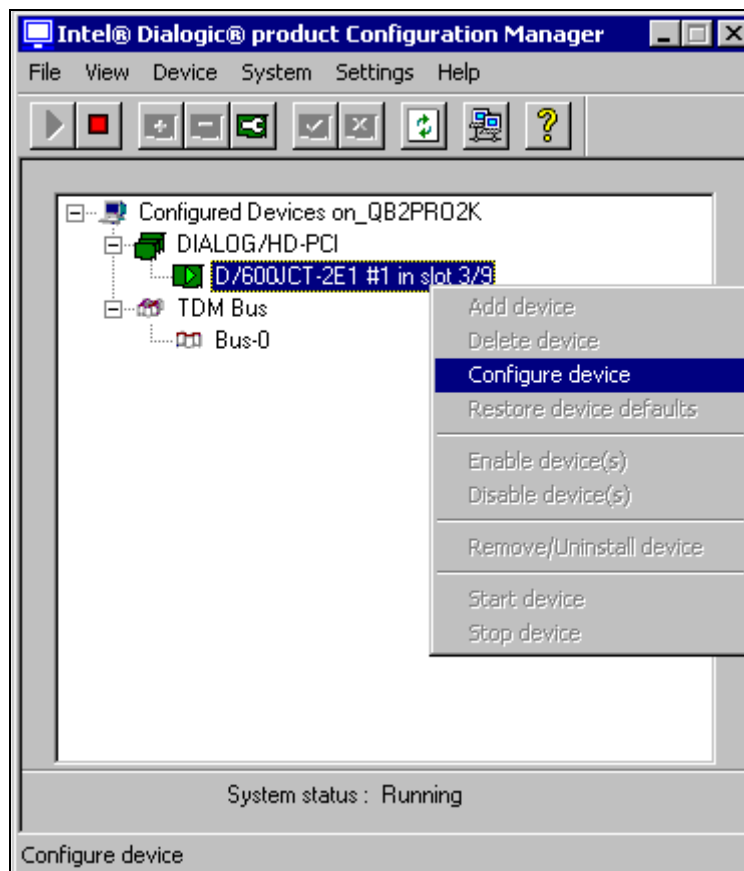
4 Configure QueueBuster

This section provides the procedures for configuring Netcall QueueBuster. The procedures include the following areas:

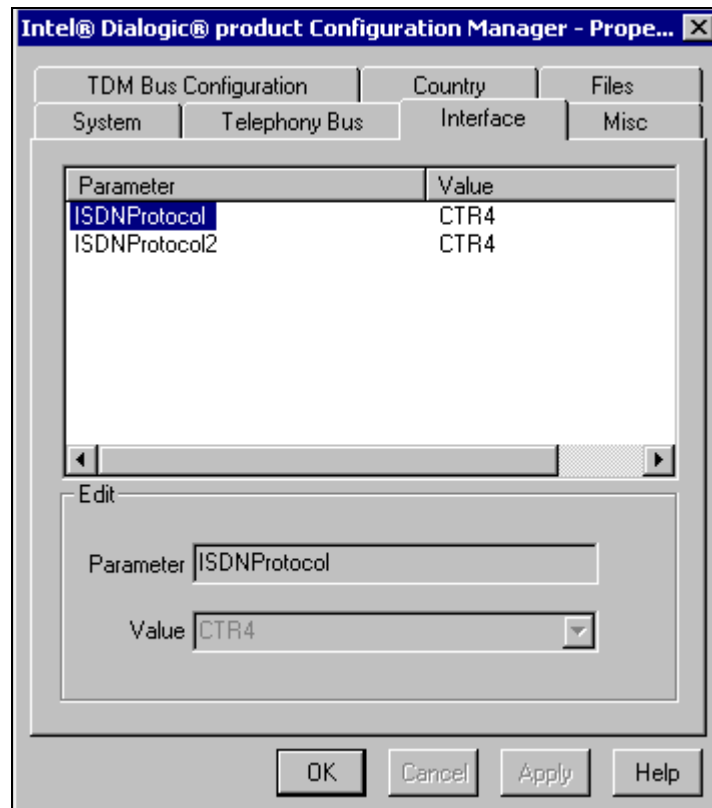
- Administer the Dialogic board
- Administer QueueBuster

4.1 Administer the Dialogic Board

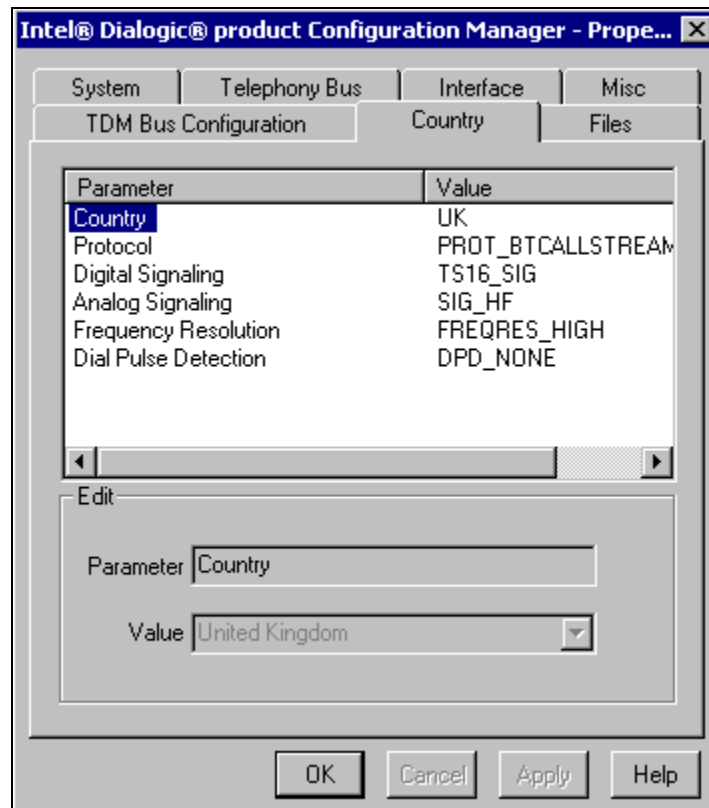
On the ICP server running QueueBuster, open the Dialogic Configuration Manager (DCM) located at the file path “Program Files\Dialogic\BIN\NCM.exe” on the drive where the application was installed. Right-click on the required board, select **Configure device** from the drop-down menu.



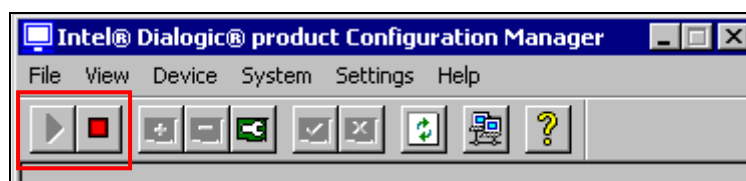
In the **Properties** dialogue box click on the **Interface** tab and set the protocol for each interface to “CTR4”.



Next, click on the **Country** tab and ensure that the **Country** parameter is set to the country where the application is installed, then click **OK**.

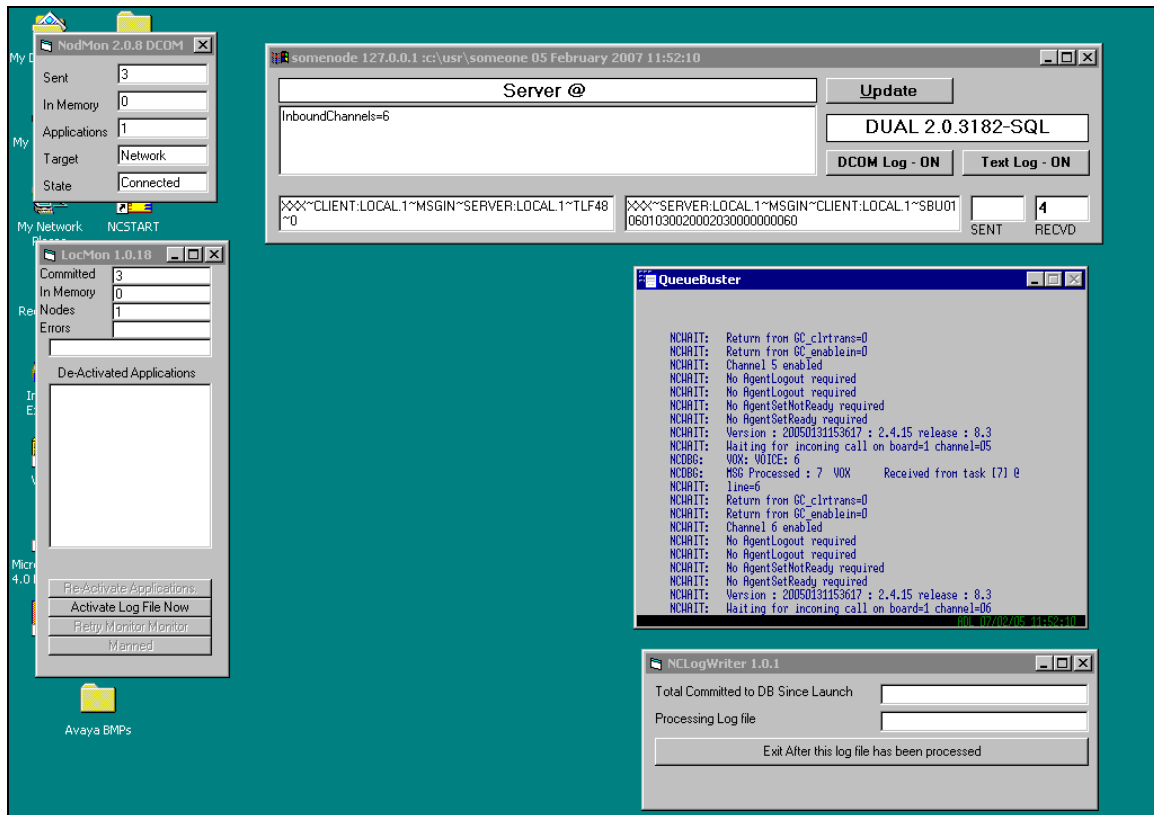


At this point, the Dialogic card is configured. If any changes are made to the card's configuration the card should be restarted using the **stop** and **start** buttons on the left side of the DCM task bar.

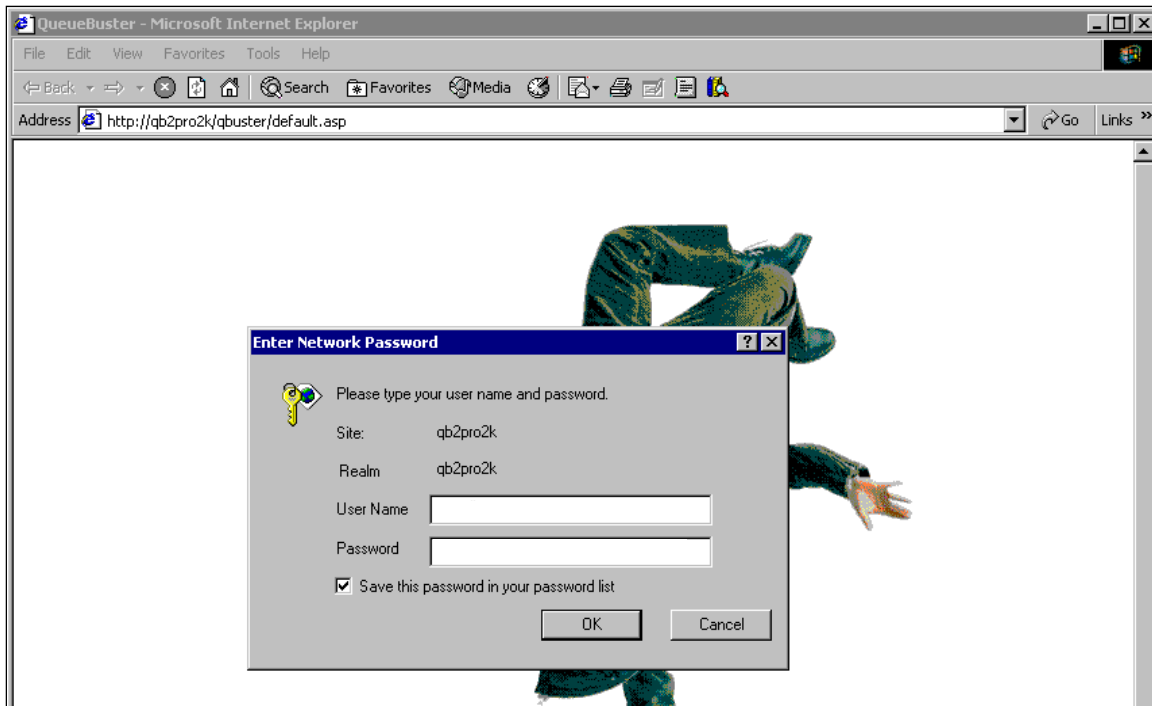


4.2 Administer QueueBuster

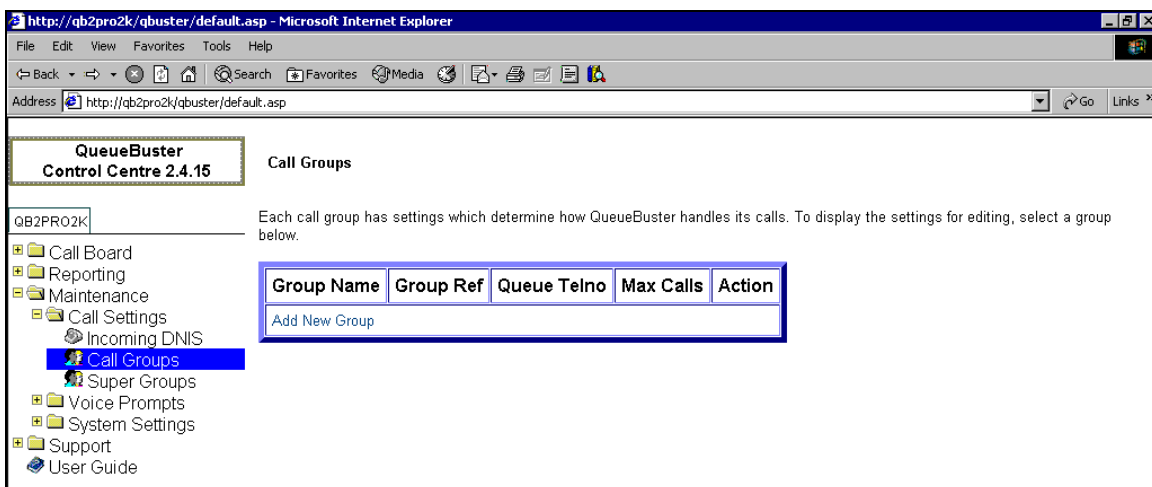
QueueBuster will start automatically on booting the ICP server. If QueueBuster needs to be started manually open the Windows **Start** menu and select “Programs>Startup>Executiv”. Once started, the following components of QueueBuster should appear on the desktop: **NodMon**, **LocMon**, **somenode**, **QueueBuster** and **NCLogWriter**.



To start administering QueueBuster, open a browser window and enter the following into the address bar; “http://qb2pro2k/qbuster/default.asp” where qb2pro2k is the hostname of the ICP server (this may vary). The **Enter Network Password** dialog box will appear. Log in using an appropriate user name and password.



The **QueueBuster Control Centre** main menu now loads. Next, select **Maintenance>Call Settings>Call Groups** to bring up the **Call Groups** page.



Select **Add New Group**, this brings up the **Call Group Maintenance** page. Configure the following fields and leave the rest at their default values.


- **Group Name:** Enter a descriptive name for the group.
- **Queue Telno:** Enter the agent VDN number configured in **Section 3.4**.
- **Allow Repeat Callers:** “Yes” was selected for the compliance testing to allow the same ANI to call into QueueBuster more than once.

Once the configuration is complete, click on the **Add Now** button at the bottom of the form.






QueueBuster Control Centre 2.4.15

Call Group Maintenance




The settings below determine how QueueBuster handles callbacks to this group.

Where you see , hover the mouse to read more information.


Group settings:

| | |
|--------------------|--|
| Group Name | <input type="text" value="Avaya"/> |
| Group Ref | <input type="text" value="17"/> |
| Super Group | <input type="text" value="QueueBuster"/> |
| Queue Telno | <input type="text" value="17401"/> |
| Queue Availability | <input type="text" value="08:00"/> to <input type="text" value="22:00"/> every day  More... |
| Clear-Down Time | <input type="text" value="0"/> mins  |
| Queue Timeout | <input type="text" value="120"/> mins  |
| Answer Timeout | <input type="text" value="40"/> Seconds  |
| Max Calls | <input type="text" value="30"/>  Current System capacity:30 |

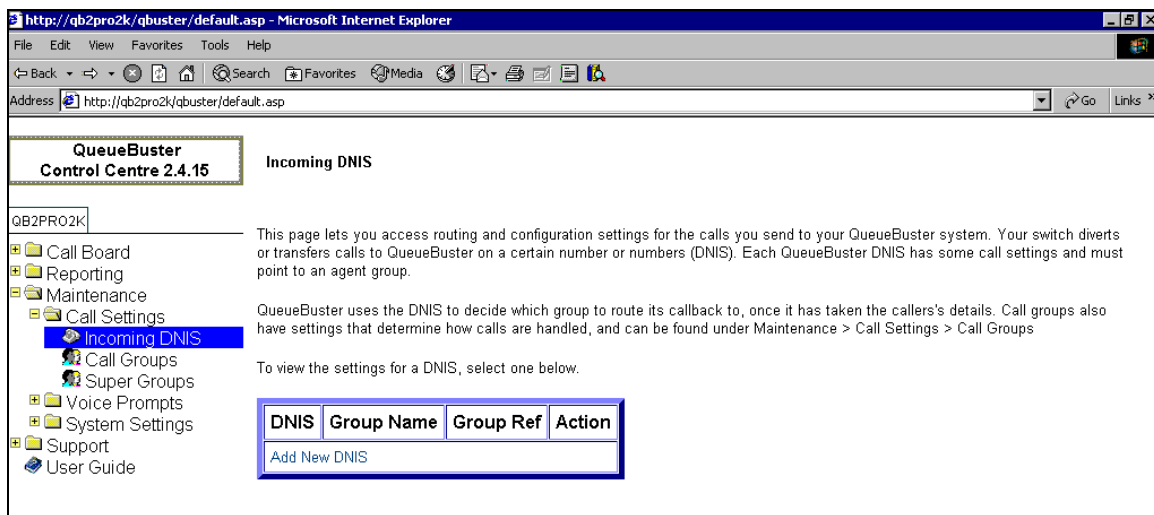
Agent settings:

| | |
|-------------------------|--|
| Agent Detect | <input type="text" value="One To accept"/>  |
| Retry Agent failures | <input type="text" value="60"/> times, with a <input type="text" value="1"/> minute interval  |
| Agent Call Rescheduling | <input type="text" value="Off"/>  |

Caller settings:

| | |
|---------------------------|--|
| Allow Repeat callers ? | <input type="text" value="Yes"/> |
| Bar Mobile callers ? | <input type="text" value="No"/> |
| Retry Unavailable callers | All <input type="text" value="3"/> times, with a <input type="text" value="15"/> minute interval  Advanced... |

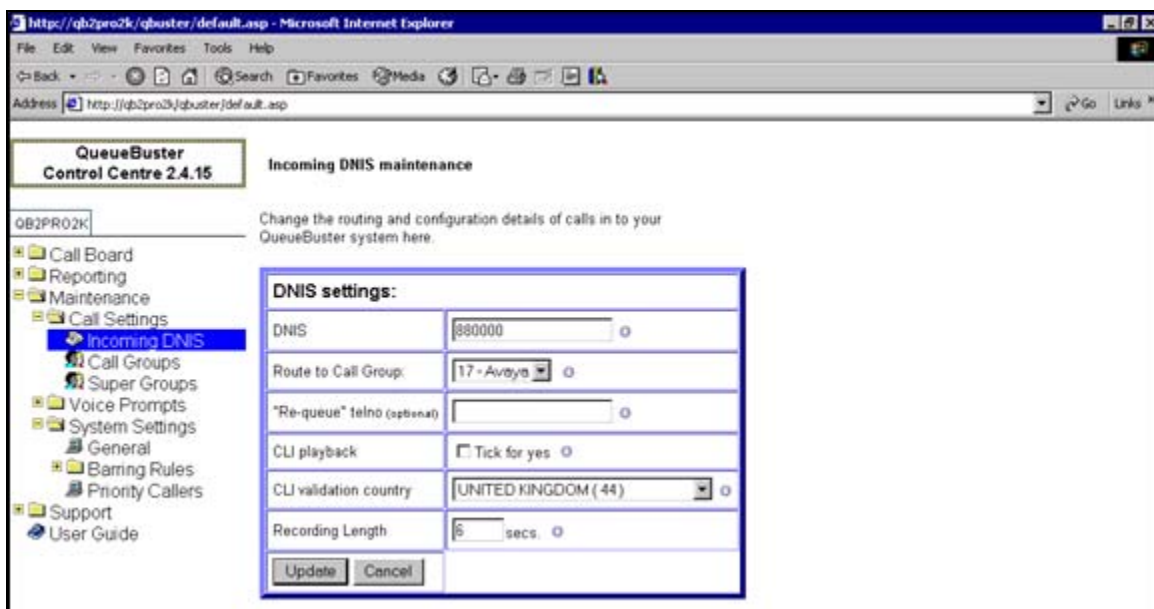
Next, create the incoming DNIS and add the call group to it. To do this, select **Maintenance>Call Settings>Incoming DNIS** from the menu, this brings up the **Incoming DNIS** page.



Select **Add New DNIS**, this brings up the **Incoming DNIS maintenance** page. Configure the following fields and leave the rest at their default values.

- **DNIS:** Enter the number from the route-to step of the incoming VDN (see **Section 3.4**).
- **Route to Call Group:** Ensure this is set to the call group configured on the previous page.
- **CLI Validation Country:** Ensure this is set to the country where the system is installed.

Once completed, click on the **Update** button at the bottom of the form.



Next, select **Maintenance>System Settings>General** to open up the **General system settings** page. On this page ensure that the **System Country** field is set to the country where the system is installed, and that the **Dialout Prefix setting** field is set to match the ARS feature access code in Avaya Communication Manager configured in **Section 3.3**. Leave the remaining fields at their default values. Once completed, click on the **Update** button at the bottom of the form.

The screenshot shows the 'General system settings' page for QueueBuster Control Centre 2.4.15. The browser window title is 'http://qb2pro2k/qbuster/default.asp - Microsoft Internet Explorer'. The address bar shows 'http://qb2pro2k/qbuster/default.asp'. The page has a left-hand navigation menu with the following items: Call Board, Reporting, Maintenance, Call Settings, Incoming DNIS, Call Groups, Super Groups, Voice Prompts, System Settings (highlighted), Barring Rules, Priority Callers, Support, and User Guide. The 'System Settings' section is expanded, and the 'General' sub-section is selected. The main content area is titled 'General system settings' and contains the following fields and controls:

| | |
|----------------------------|--|
| System name | QB2PRO2K |
| Background Colour | <input type="button" value="Pick Colour >"/> <input type="button" value="Restore default"/> |
| Foreground Colour | <input type="button" value="Pick Colour >"/> <input type="button" value="Restore default"/> |
| Performance summary hours | Start: 09:01 hh:mm Finish: 17:30 hh:mm |
| System country | UNITED KINGDOM (44) |
| Default Queue Availability | 08:00 to 22:00 every day <input data-bbox="974 913 1031 934" type="button" value="More..."/> |
| Background Dialling | NO |
| Retry Unavailable callers | All 3 times, with a 15 minute interval <input data-bbox="1031 997 1128 1018" type="button" value="Advanced..."/> |
| Voice detect settings | Don't monitor first 0 secs. Detect on 0 hits in 0 samples. |
| Dialout Prefix setting | 9 |
| Ignore customers ANI / CLI | <input type="checkbox"/> |
| Caller survival time | 0 secs. |

At the bottom of the form are two buttons: and .

5 Interoperability Compliance Testing

The interoperability compliance test included both feature and serviceability testing.

The feature testing focused on verifying Netcall QueueBuster's ability to request and respond to Avaya Communication Manager features including:

- Inbound calls into QueueBuster.
- Call-back calls made from QueueBuster using the original ANI and using different numbers entered by the caller.
- Using the agent telephone to hold/transfer/conference whilst on a call initiated by QueueBuster.

The serviceability testing focused on verifying Netcall QueueBuster's ability to recover from an outage condition, such as disconnecting the E1 link or loss of power.

5.1 General Test Approach

All feature and serviceability test cases were performed manually. The verification included checking call states at the telephone sets, and capturing ISDN message traces.

5.2 Test Results

All feature and serviceability test cases passed successfully.

6 Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Communication Manager and Netcall QueueBuster.

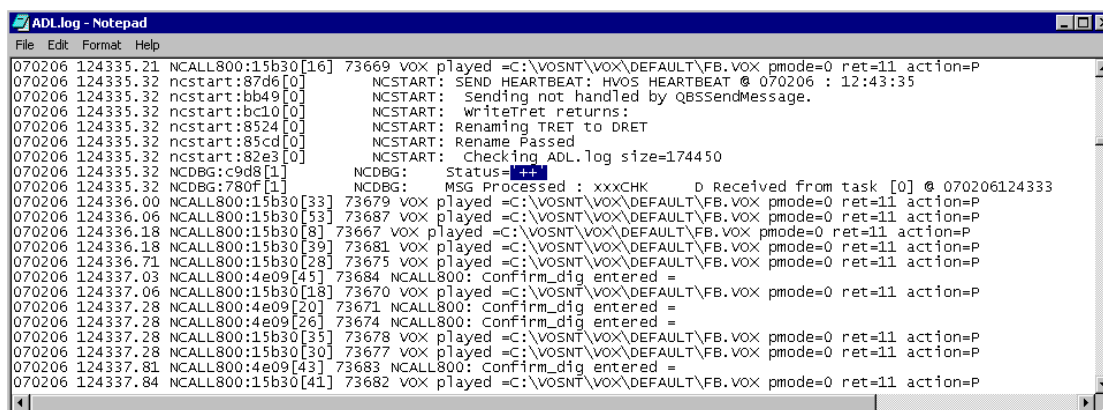
6.1 Verify Avaya Communication Manager

Use the “status trunk x” command, where “x” is one of the trunk groups used by QueueBuster, verify that the status of each trunk in the group is “in service/idle”.

| status trunk 16 | | | | Page | 1 |
|--------------------|---------|------------|-------|----------------|------------|
| TRUNK GROUP STATUS | | | | | |
| Member | Port | Service | State | Mtce Connected | Ports Busy |
| 0016/001 | 01A0501 | in-service | idle | no | |
| 0016/002 | 01A0502 | in-service | idle | no | |
| 0016/003 | 01A0503 | in-service | idle | no | |
| 0016/004 | 01A0504 | in-service | idle | no | |
| 0016/005 | 01A0505 | in-service | idle | no | |
| 0016/006 | 01A0506 | in-service | idle | no | |

6.2 Verify Netcall QueueBuster

Open the file “vosnt\exe\ADL.log” on the drive where QueueBuster is installed, verify that the E1 links are up by searching for the most recent **NCDBG** line with a status of “++”. Each “+” represents an E1 link that is in service. An out of service E1 link would be represented by a “-”.



```
070206 124335.21 NCALL800:15b30[16] 73669 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
070206 124335.32 ncstart:87d6[0] NCSTART: SEND HEARTBEAT: HVOS HEARTBEAT @ 070206 : 12:43:35
070206 124335.32 ncstart:bb49[0] NCSTART: Sending not handled by QBSSendMessage.
070206 124335.32 ncstart:bc10[0] NCSTART: WriteTret returns:
070206 124335.32 ncstart:8524[0] NCSTART: Renaming TRET to DRET
070206 124335.32 ncstart:85cd[0] NCSTART: Rename Passed
070206 124335.32 ncstart:82e3[0] NCSTART: Checking ADL.log size=174450
070206 124335.32 NCDBG:c9d8[1] NCDBG: Status=++
070206 124335.32 NCDBG:780f[1] NCDBG: MSG Processed : xxxCHK D Received from task [0] @ 070206124333
070206 124336.00 NCALL800:15b30[33] 73679 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
070206 124336.06 NCALL800:15b30[53] 73687 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
070206 124336.18 NCALL800:15b30[8] 73667 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
070206 124336.18 NCALL800:15b30[39] 73681 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
070206 124336.71 NCALL800:15b30[28] 73675 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
070206 124337.03 NCALL800:4e09[45] 73684 NCALL800: Confirm_dig entered =
070206 124337.06 NCALL800:15b30[18] 73670 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
070206 124337.28 NCALL800:4e09[20] 73671 NCALL800: Confirm_dig entered =
070206 124337.28 NCALL800:4e09[26] 73674 NCALL800: Confirm_dig entered =
070206 124337.28 NCALL800:15b30[35] 73678 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
070206 124337.28 NCALL800:15b30[30] 73677 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
070206 124337.81 NCALL800:4e09[43] 73683 NCALL800: Confirm_dig entered =
070206 124337.84 NCALL800:15b30[41] 73682 VOX played =C:\VOSNT\VOX\DEFAULT\FB.VOX pmode=0 ret=11 action=P
```

7 Support

For technical support on QueueBuster, contact the Netcall Helpdesk on +44 207 570 8714. Technical support emails can be sent to customer.services@netcall.com.

8 Conclusion

These Application Notes describe the configuration steps required for successful interoperability of Netcall QueueBuster with Avaya Communication Manager using E1 trunks. All feature and serviceability test cases were completed successfully.

9 Additional References

This section references the product documentation that is relevant to these Application Notes.

- *Documentation for Avaya Communication Manager(3.1.2), Media Gateways and Servers*, Document ID 03-300151, Issue 5, February 2006, available at: <http://support.avaya.com>.
- The *QueueBuster User Guide* can be downloaded from the QueueBuster Customer Area (password required), available at: <http://www.hyperphonelink.com/NetCallWebInterface/Netcall/Engine/Load.aspx>.

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