



Avaya Solution & Interoperability Test Lab

Application Notes for the T3 Telecom Software T3main Messaging Platform and Avaya Communication Manager using QSIG over a T1 Trunk – Issue 1.0

Abstract

These Application Notes describe the configuration procedures required for the T3 Telecom Software T3main Messaging Platform to successfully interoperate with Avaya Communication Manager using QSIG over a T1 Trunk.

The T3 Telecom Software T3main Messaging Platform is a unified messaging solution supporting Voicemail, Auto Attendant, Fax, Recorded Announcements, Speech Recognition, Voice Transcription, Voice Authentication and Interactive Voice Response. The compliance test focused only on the Auto Attendant and Voicemail capabilities.

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

1. Introduction

These Application Notes describe the configuration procedures required for the T3 Telecom Software T3main Messaging Platform to successfully interoperate with Avaya Communication Manager using QSIG over a T1 Trunk.

The T3 Telecom Software T3main Messaging Platform is a unified messaging solution supporting Voicemail, Auto Attendant, Fax, Recorded Announcements, Speech Recognition, Voice Transcription, Voice Authentication and Interactive Voice Response. The compliance test focused only on the Auto Attendant and Voicemail capabilities.

Figure 1 illustrates a sample configuration consisting of a pair of Avaya S8710 Servers, an Avaya G650 Media Gateway, an Avaya SIP Enablement Services (SES) server, and the T3main Messaging Platform (T3main). Avaya Communication Manager is installed on the Avaya S8710 Servers. The solution described herein is also extensible to other Avaya Servers and Media Gateways. Avaya 4600 Series SIP IP Telephones, one-X Desktop Edition, Avaya 4600 Series H.323 IP Telephones, and Avaya 6400 and 8400 Series Digital Telephones, are included in **Figure 1** to demonstrate calls between the T3main and H.323, SIP and digital telephones. The analog PSTN telephone is also included to demonstrate calls routed by Avaya Communication Manager between the T3main and the PSTN. The T3main runs on a Linux server and is connected to the Avaya Media Gateway by a QSIG T1 trunk.

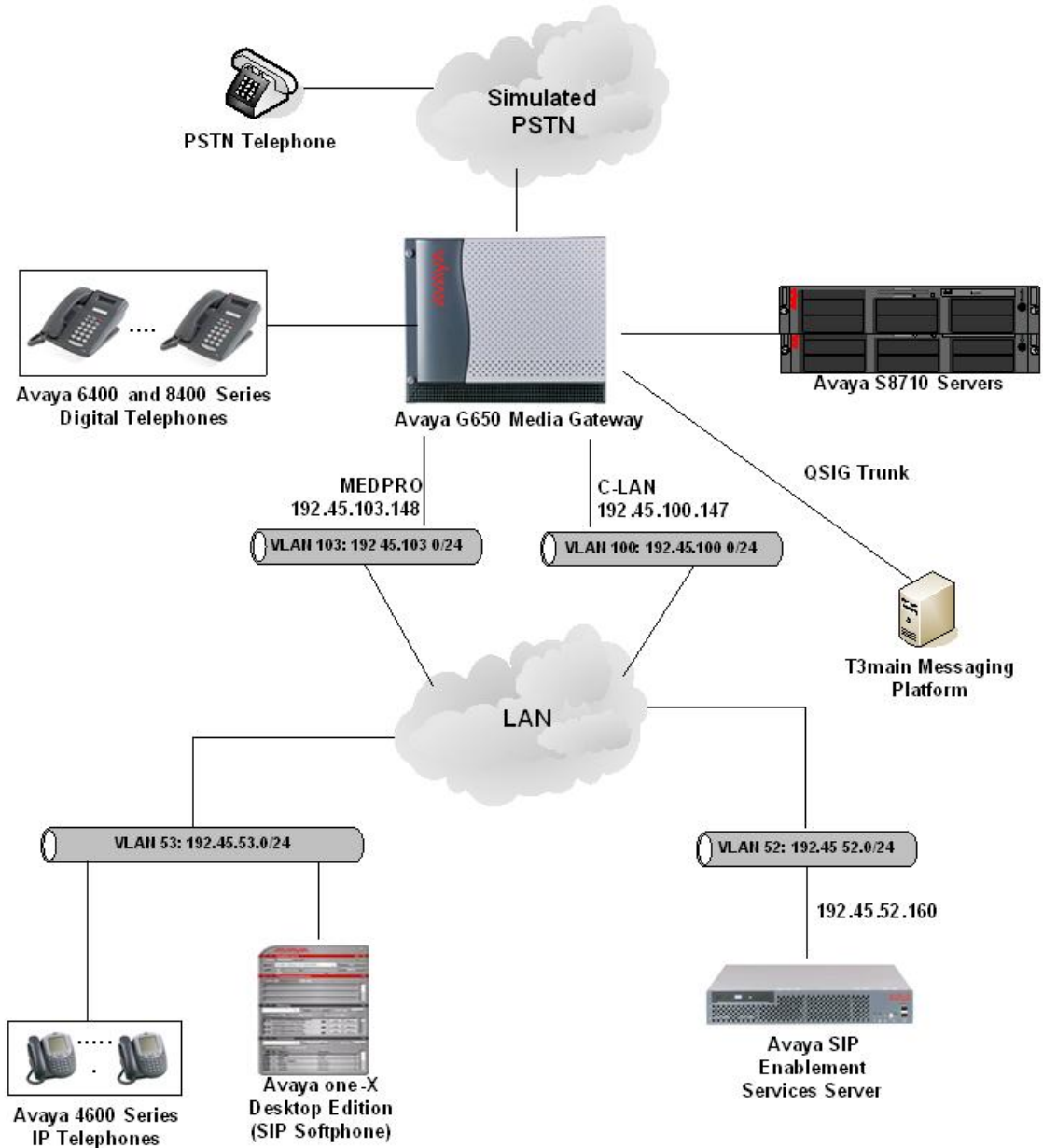


Figure 1: The T3main Messaging Platform QSIG Test Configuration

2. Equipment and Software Validated

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

Equipment	Software/Firmware
Avaya S8710 Servers	Avaya Communication Manager 5.0 (R015x.00.0.825.4)
Avaya G650 Media Gateway	-
TN464GP DS1 Card	HW02 FW 019
TN2312BP IP Server Interface	HW12 FW 40
TN799DP C-LAN Interface	HW01 FW 24
TN2302AP IP Media Processor	HW20 FW 117
Avaya S8500C SIP Enablement Services Server	Avaya SES 5.0 (SES-5.0.0.0-825.31)
Avaya 4600 Series SIP Telephones	2.2.2 (4610SW SIP) 2.3 (4602SW H.323) 2.6 (4610SW H.323) 2.5 (4625SW H.323)
oneX Desktop Edition	2.1 SP2
Avaya 6400 and 8400 Series Digital Telephones	-
Avaya C364T-PWR Converged Stackable Switch	4.5.14
T3 Telecom Software, Inc. Media Server	10.4.6 running on CentOS Linux version 4.5 Kernel 2.6.9-55

3. Configure Avaya Communication Manager

This section describes the necessary configuration on Avaya Communication Manager to interoperate with the T3main. The configuration of Avaya Communication Manager was performed using the System Access Terminal (SAT). Configuration in the following sections is only for the fields where a value needs to be entered or modified. Default values are used for all other fields. After completion of the configuration in this section, perform a **save translations** command to make the changes permanent. Refer to [1] for additional details.

Step	Description
1.	<p>Use the display system-parameters customer-options command to verify that the ISDN-PRI feature is enabled by the presence of a y next to the ISDN-PRI field. If the feature is not enabled, contact an authorized Avaya sales representative to make the appropriate changes.</p> <pre data-bbox="302 793 1416 1360"> display system-parameters customer-options Page 4 of 10 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? y Enhanced EC500? y ISDN Network Call Redirection? n Enterprise Survivable Server? n ISDN-BRI Trunks? y Enterprise Wide Licensing? n ISDN-PRI? y ESS Administration? n Local Survivable Processor? n Extended Cvg/Fwd Admin? n Malicious Call Trace? n External Device Alarm Admin? n Media Encryption Over IP? n 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? n 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? n (NOTE: You must logoff & login to effect the permission changes.) </pre>
2.	<p>On Page 8, verify that Basic Call Setup and Basic Supplementary Services are enabled. This is indicated by a y next to the respective fields.</p> <pre data-bbox="302 1507 1416 1780"> display system-parameters customer-options Page 8 of 10 QSIG OPTIONAL FEATURES Basic Call Setup? y Basic Supplementary Services? y Centralized Attendant? n Interworking with DCS? n Supplementary Services with Rerouting? y Transfer into QSIG Voice Mail? y Value-Added (VALU)? y </pre>

Step	Description
3.	<p>Use the display dialplan analysis command to view the existing dial plan. The first two bolded entries shown below indicate that dialed digits starting with 5 or 7 that are five digits in length will be interpreted as extensions. The third bolded entry shown below indicates that 8 will be interpreted as a feature access code (FAC). This information will be used in subsequent steps.</p> <pre data-bbox="302 449 1398 842"> display dialplan analysis DIAL PLAN ANALYSIS TABLE Page 1 of 12 Percent Full: 3 Dialed Total Call Dialed Total Call Dialed Total Call String Length Type String Length Type String Length Type 1 3 dac 2 5 aar 4 5 ext 5 5 ext 7 5 ext 8 1 fac 9 1 fac * 3 fac # 3 fac </pre>
4.	<p>Coverage to voicemail is accomplished by routing the call to the QSIG trunk via Automatic Alternate Routing (AAR). Use the change feature-access-codes command to provide a digit string to be dialed to access AAR. The digit string must be consistent with the existing dial plan for a FAC as shown in Step 3.</p> <pre data-bbox="302 1062 1411 1591"> change feature-access-codes FEATURE ACCESS CODE (FAC) Page 1 of 7 Abbreviated Dialing List1 Access Code: Abbreviated Dialing List2 Access Code: Abbreviated Dialing List3 Access Code: Abbreviated Dial - Prgm Group List Access Code: Announcement Access Code: *11 Answer Back Access Code: *12 Attendant Access Code: Auto Alternate Routing (AAR) Access Code: 8 Auto Route Selection (ARS) - Access Code 1: 9 Access Code 2: Automatic Callback Activation: *16 Deactivation: #16 Call Forwarding Activation Busy/DA: *17 All: *18 Deactivation: #18 Call Park Access Code: *19 Call Pickup Access Code: *20 CAS Remote Hold/Answer Hold-Unhold Access Code: CDR Account Code Access Code: Change COR Access Code: Change Coverage Access Code: Contact Closure Open Code: Close Code: Contact Closure Pulse Code: </pre>

Step	Description
5.	<p>Use the change system-parameters features command to configure additional QSIG parameters. Enter any unused extension in the QSIG TSC Extension and QSIG Path Replacement Extension fields. In the MWI – Number of Digits Per Voice Mail Subscriber field, enter the number of digits used for extensions.</p> <pre data-bbox="300 415 1414 947"> change system-parameters features Page 8 of 17 FEATURE-RELATED SYSTEM PARAMETERS ISDN PARAMETERS Send Non-ISDN Trunk Group Name as Connected Name? n Display Connected Name/Number for ISDN DCS Calls? y Send ISDN Trunk Group Name on Tandem Calls? n QSIG TSC Extension: 76001 MWI - Number of Digits Per Voice Mail Subscriber: 5 Feature Plus Ext: National CPN Prefix: International CPN Prefix: Pass Prefixed CPN to ASAI? n Unknown Numbers Considered Internal for AUDIX? n USNI Calling Name for Outgoing Calls? n Path Replacement with Measurements? y QSIG Path Replacement Extension: 76002 Path Replace While in Queue/Vectoring? n </pre>
6.	<p>Add the DS1 board to the configuration by using the add ds1 d command, where <i>d</i> indicates the carrier and slot where the board is installed. Enter any descriptive name in the Name field. Set all fields in bold to the values indicated. The T3main is always shipped pre-configured with the QSIG Interface as peer-slave and Side as b. Therefore, Avaya Communication Manager must set the Interface to <i>peer-master</i> and Side to <i>a</i>.</p> <pre data-bbox="300 1205 1414 1724"> add ds1 1a07 Page 1 of 2 DS1 CIRCUIT PACK Location: 001V5 Name: QSIG-TRK Bit Rate: 1.544 Line Coding: b8zs Line Compensation: 1 Framing Mode: esf Signaling Mode: isdn-pri Interface: peer-master Connect: pbx Peer Protocol: Q-SIG TN-C7 Long Timers? n Side: a Interworking Message: PROgress CRC? n Interface Companding: mulaw Idle Code: 11111111 DCP/Analog Bearer Capability: 3.1kHz T303 Timer(sec): 4 Slip Detection? n Near-end CSU Type: other Echo Cancellation? n </pre>

Step	Description
7.	<p>Create a signaling group by using add signaling-group s command, where <i>s</i> is the number of an unused signaling group. Set the fields in bold to the values shown below. The Primary D-Channel field is set to the 24th channel of the DS1 board in slot 1a07 added to the configuration in Step 6. The Trunk Group for Channel Selection and Trunk Group for NCA TSC fields will be populated in the subsequent steps after the trunk group has been created.</p> <pre data-bbox="300 485 1398 753"> add signaling-group 41 Page 1 of 1 SIGNALING GROUP Group Number: 41 Group Type: isdn-pri Associated Signaling? y Max number of NCA TSC: 10 Primary D-Channel: 001A0724 Max number of CA TSC: 0 Trunk Group for NCA TSC: Trunk Group for Channel Selection: Supplementary Service Protocol: b </pre>
8.	<p>Create a trunk group by using add trunk-group t command, where <i>t</i> is the number of an unused trunk group. Set the fields in bold to the values shown below. The Group Name can be any descriptive name. The TAC must be chosen to be consistent with the existing dial plan.</p> <pre data-bbox="300 978 1414 1272"> add trunk-group 41 Page 1 of 21 TRUNK GROUP Group Number: 41 Group Type: isdn CDR Reports: y Group Name: T3-Platform COR: 1 TN: 1 TAC: 141 Direction: two-way Outgoing Display? y Carrier Medium: PRI/BRI 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>
9.	<p>On Page 2, set the fields in bold to the values indicated. Setting the Supplementary Service Protocol to b indicates that QSIG will be used to provide these services on this trunk.</p> <pre data-bbox="300 1461 1414 1835"> add trunk-group 41 Page 2 of 21 Group Type: isdn TRUNK PARAMETERS Codeset to Send Display: 0 Codeset to Send National IEs: 6 Max Message Size to Send: 260 Charge Advice: none Supplementary Service Protocol: b Digit Handling (in/out): enbloc/enbloc Trunk Hunt: ascend QSIG Value-Added? n Digital Loss Group: 13 Incoming Calling Number - Delete: Insert: Format: unk-unk Bit Rate: 1200 Synchronization: async Duplex: full Disconnect Supervision - In? y Out? n Answer Supervision Timeout: 0 Administer Timers? n </pre>

Step	Description
10.	<p data-bbox="298 233 1390 373">On Page 3, enable the trunk to send name and calling number information and use a format of unknown-private as indicated by the fields in bold. The NCA-TSC Trunk Member field will be populated in a later step. It cannot be added until the trunk members have been added.</p> <div data-bbox="298 415 1416 930" style="border: 1px solid black; padding: 5px;"> <pre data-bbox="318 426 1328 905"> add trunk-group 41 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 Hop Dgt? n Send EMU Visitor CPN? n Used for DCS? n Format: unk-pvt Suppress # Outpulsing? n 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? y Modify Tandem Calling Number? y Send UUI IE? y Dsl Echo Cancellation? n Send UCID? y Send Codeset 6/7 LAI IE? y Apply Local Ringback? N Show ANSWERED BY on Display? y Network (Japan) Needs Connect Before Disconnect? n </pre> </div>
11.	<p data-bbox="298 974 1187 1005">On Page 4, enable Path Replacement by entering y next to this field.</p> <div data-bbox="298 1045 1416 1411" style="border: 1px solid black; padding: 5px;"> <pre data-bbox="318 1056 1328 1388"> add trunk-group 41 Page 4 of 21 QSIG TRUNK GROUP OPTIONS Diversion by Reroute? y Path Replacement? y Path Replacement with Retention? n Path Replacement Method: better-route SBS? n Display Forwarding Party Name? y Character Set for QSIG Name: eurofont QSIG Value-Added? n </pre> </div>

Step	Description
12.	<p>On Page 5, enter the group members. For each DS1 port to be added as a member of the trunk group, enter the port number in the Port field and the corresponding signaling group for that port in the Sig Grp field. The Code field is filled in automatically. In the compliance test, each of the 23 bearer channels of the DS1 board added in Step 6 were added to this group. The signaling channel for each of these ports is the signaling channel configured in Step 7. Submit the form.</p> <pre data-bbox="302 487 1416 1029"> add trunk-group 41 Page 5 of 21 TRUNK GROUP Administered Members (min/max): 1/23 GROUP MEMBER ASSIGNMENTS Total Administered Members: 23 Port Code Sfx Name Night Sig Grp 1: 001A0701 TN464 2: 001A0702 TN464 3: 001A0703 TN464 4: 001A0704 TN464 5: 001A0705 TN464 6: 001A0706 TN464 7: 001A0707 TN464 8: 001A0708 TN464 9: 001A0709 TN464 10: 001A0710 TN464 11: 001A0711 TN464 12: 001A0712 TN464 13: 001A0713 TN464 14: 001A0714 TN464 15: 001A0715 TN464 </pre>
13.	<p>Use the change trunk-group 41 command to modify the trunk group added in Step 8. On Page 3, select any existing trunk member to use as the NCA-TSC Trunk Member.</p> <pre data-bbox="302 1180 1416 1625"> change trunk-group 41 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: 23 Send Name: y Send Calling Number: y Used for DCS? n Hop Dgt? n Send EMU Visitor CPN? n Suppress # Outpulsing? n Format: unk-pvt 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? y Send UUI IE? y Modify Tandem Calling Number? y Send UCID? y Send Codeset 6/7 LAI IE? y Ds1 Echo Cancellation? n </pre>

Step	Description
14.	<p>Use the change signaling-group 41 command to modify the signaling group created in Step 7. Set the Trunk Group for Channel Selection field and Trunk Group for NCA TSC field to the number of the trunk group created in Step 8.</p> <pre data-bbox="302 380 1401 646"> change signaling-group 41 Page 1 of 1 SIGNALING GROUP Group Number: 41 Group Type: isdn-pri Associated Signaling? y Max number of NCA TSC: 10 Primary D-Channel: 001A0724 Max number of CA TSC: 0 Trunk Group for NCA TSC: 41 Trunk Group for Channel Selection: 41 Supplementary Service Protocol: b </pre>
15.	<p>Use the change private-numbering 0 command to configure private format parameters. Make sure that the bolded Ext Code field value matches the dialplan entry in Step 3.</p> <pre data-bbox="302 800 1385 1052"> change private-numbering 0 Page 1 of 2 NUMBERING - PRIVATE FORMAT Ext Ext Trk Private Total Len Code Grp(s) Prefix Len 5 2 5 3 5 5 5 7 Total Administered: 2 Maximum Entries: 540 </pre>

Step	Description
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16. Create a route pattern that will use the QSIG trunk that connects to the T3main. To do this, use the **change route-pattern r** command, where **r** is the number of an unused route pattern. Enter a descriptive name for the **Pattern Name** field. Set the **Grp No** field to the trunk group number created for the QSIG trunk. Set the Facility Restriction Level (**FRL**) field to a level that allows access to this trunk for all users that require it. The value of **0** is the least restrictive level. Set the Prefix Mark (**Pfx Mrk**) field to **1**. Set the **TSC** field to **y**. Set the **Numbering Format** to **unk-unk**.

```

change route-pattern 41                                     Page 1 of 3
                Pattern Number: 11  Pattern Name: T3-QSIG
                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: 41   0      1
2:
3:
4:
5:
6:
                n user
                n user
                n user
                n user
                n user
                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  y  none      rest                unk-unk  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

```

17. Create an entry in the AAR Digit Analysis Table to map a set of dialed digits to the route pattern created in the previous step. Any dialed string that does not conflict with another entry in the table can be used. For the compliance test, the dial string of 76000 was used. Use the **change aar analysis 7** command to modify entries in the table that start with **7**. Add an entry in the table for 76000. Set each field of the entry to the value shown in bold below.

```

change aar analysis 7                                     Page 1 of 2
                AAR DIGIT ANALYSIS TABLE
                Percent Full: 3

  Dialed      Total      Route      Call      Node      ANI
  String      Min      Max      Pattern  Type      Num      Reqd
  7           7       7       254     aar       n
  76000      5       5       41      aar       n
  8           7       7       254     aar       n
  9           7       7       254     aar       n
                n
                n
                n

```


Step	Description
18.	<p>Create a hunt group using the add hunt-group <i>h</i> command, where <i>h</i> is the number of an unused hunt group. This hunt group will provide the access number for the T3main. Enter any descriptive name for the Name field. Enter an unused extension for the Group Extension field. The same Group Extension field value will be used in Section 4, Step 2.</p> <pre data-bbox="302 449 1414 764"> add hunt-group 6 Page 1 of 60 HUNT GROUP Group Number: 4 ACD? n Group Name: T3 QSIG Queue? n Group Extension: 76000 Vector? n Group Type: ucd-mia Coverage Path: TN: 1 Night Service Destination: COR: 1 MM Early Answer? n Security Code: Local Agent Preference? n ISDN/SIP Caller Display: </pre>
19.	<p>On Page 2, set the Message Center field to <i>qsig-mwi</i>. Calls to the T3main will be routed to the proper route pattern via AAR. As a result, set the Routing Digits field to the AAR feature access code defined in Step 4. Set the Voice Mail Number to the digit string defined in Step 17 to select the correct route pattern to access the T3main.</p> <pre data-bbox="302 989 1414 1304"> add hunt-group 6 Page 2 of 60 HUNT GROUP LWC Reception: none AUDIX Name: Message Center: qsig-mwi Send Reroute Request: y Voice Mail Number: 76000 Routing Digits (e.g. AAR/ARS Access Code): 8 Provide Ringback? n </pre>

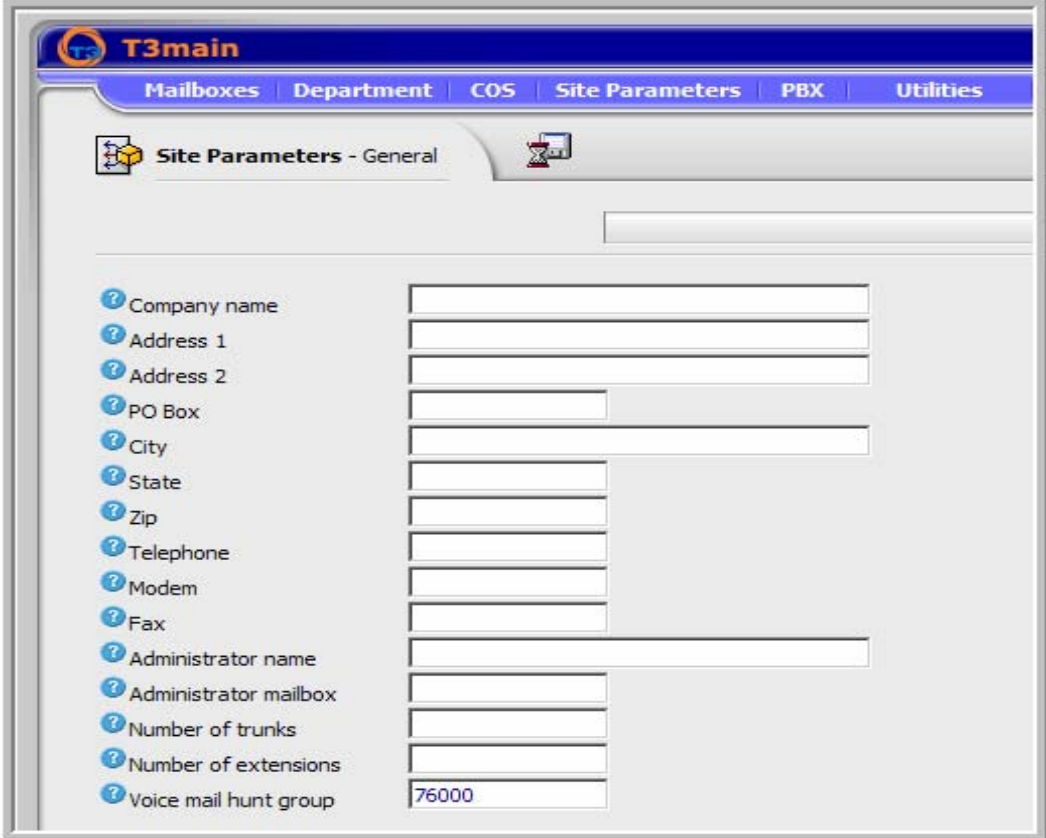
Step	Description
20.	<p>Create a coverage path that will use the T3main hunt group when calls are not answered, busy or sent to coverage. Use the add coverage path n command where n is the number of an unused coverage path. Set the first point in the coverage path to be hunt group 6 configured in Step 18 by setting the Point1 field to h6.</p> <pre> add coverage path 2 Page 1 of 1 COVERAGE PATH Coverage Path Number: 2 Next Path Number: Hunt after Coverage? n Linkage COVERAGE CRITERIA Station/Group Status Inside Call Outside Call Active? n n Busy? y y Don't Answer? y y Number of Rings: 2 All? n n DND/SAC/Goto Cover? y y Holiday Coverage? n n COVERAGE POINTS Terminate to Coverage Pts. with Bridged Appearances? n Point1: h6 Rng: Point2: Point4: Point5: Point3: Point6: </pre>
21.	<p>Each station that will use the T3main for voicemail must be configured to use the correct coverage path. Use the change station s command where s is the extension of the station to be modified. Set the Coverage Path 1 field to the coverage path configured in Step 20.</p> <pre> change station 54001 Page 1 of 5 STATION Extension: 54001 Lock Messages? n BCC: 0 Type: 4620 Security Code: * TN: 1 Port: S00008 Coverage Path 1: 2 COR: 1 Name: IP-54001 Coverage Path 2: COS: 1 Hunt-to Station: STATION OPTIONS Loss Group: 19 Personalized Ringing Pattern: 1 Message Lamp Ext: 54001 Speakerphone: 2-way Mute Button Enabled? y Display Language: english Expansion Module? n Survivable GK Node Name: Media Complex Ext: Survivable COR: internal IP SoftPhone? n Survivable Trunk Dest? y Customizable Labels? y </pre>

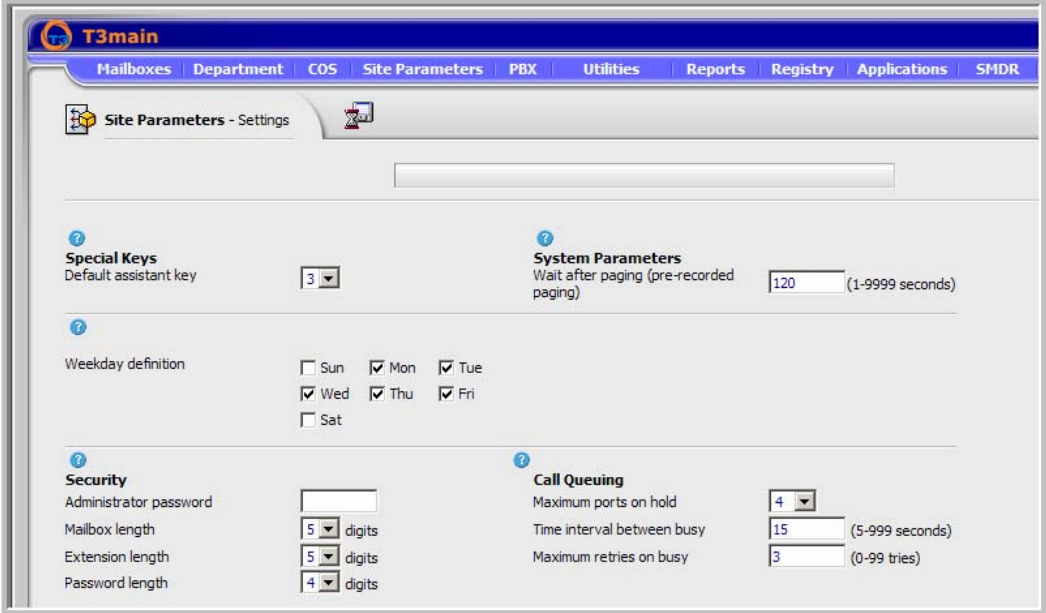
Step	Description
22.	<p data-bbox="298 233 1382 302">Lastly, each station that will use the T3main for voicemail must be configured to use <i>qsig-mwi</i> as the MWI Served User Type.</p> <div data-bbox="298 338 1398 905" style="border: 1px solid black; padding: 10px;"> <pre data-bbox="318 352 1344 856"> change station 54001 Page 2 of 5 STATION FEATURE OPTIONS LWC Reception: spe Auto Select Any Idle Appearance? n LWC Activation? y Coverage Msg Retrieval? y LWC Log External Calls? n Auto Answer: none CDR Privacy? n Data Restriction? n Redirect Notification? y Idle Appearance Preference? n Per Button Ring Control? n Bridged Idle Line Preference? n Bridged Call Alerting? y Restrict Last Appearance? n Active Station Ringing: single Conf/Trans on Primary Appearance? n EMU Login Allowed? n H.320 Conversion? n Per Station CPN - Send Calling Number? Service Link Mode: as-needed Multimedia Mode: enhanced MWI Served User Type: qsig-mwi Audible Message Waiting? n Display Client Redirection? n Select Last Used Appearance? n Coverage After Forwarding? s Direct IP-IP Audio Connections? y Emergency Location Ext: 54001 Always Use? n IP Audio Hairpinning? y </pre> </div>

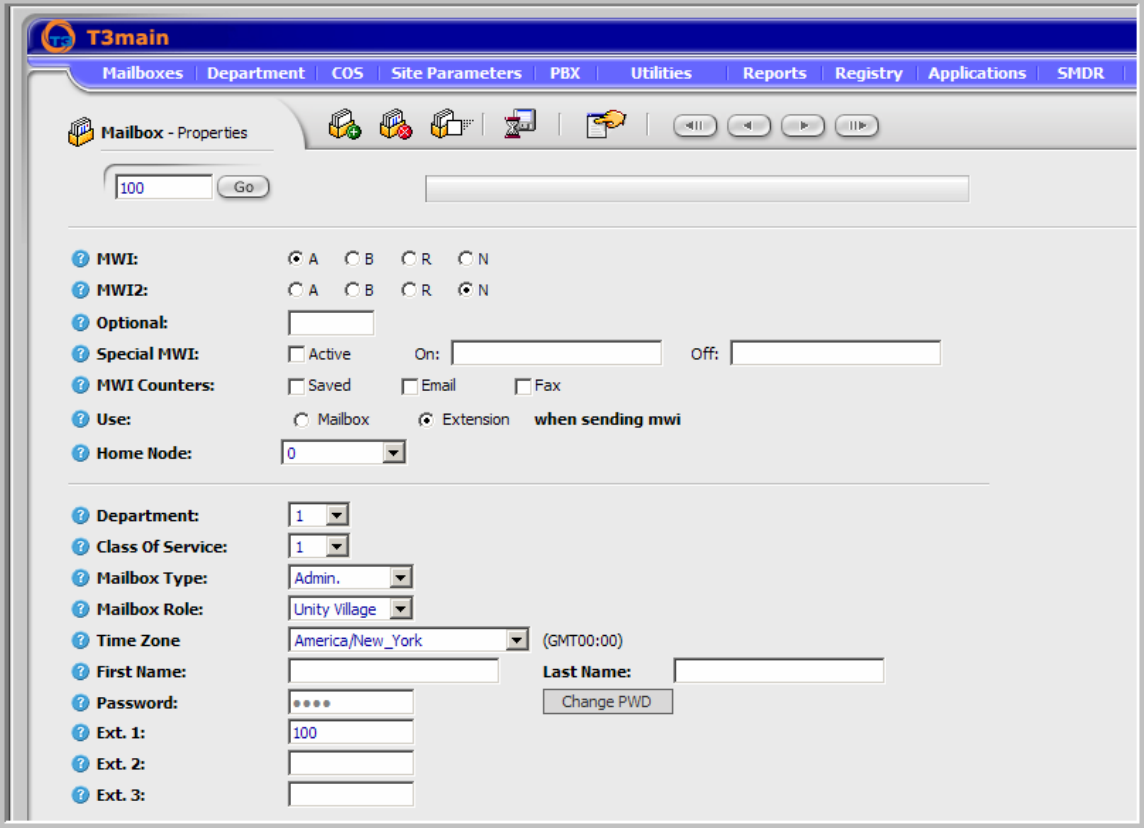
4. Configure the T3 Telecom Software T3main Messaging Platform

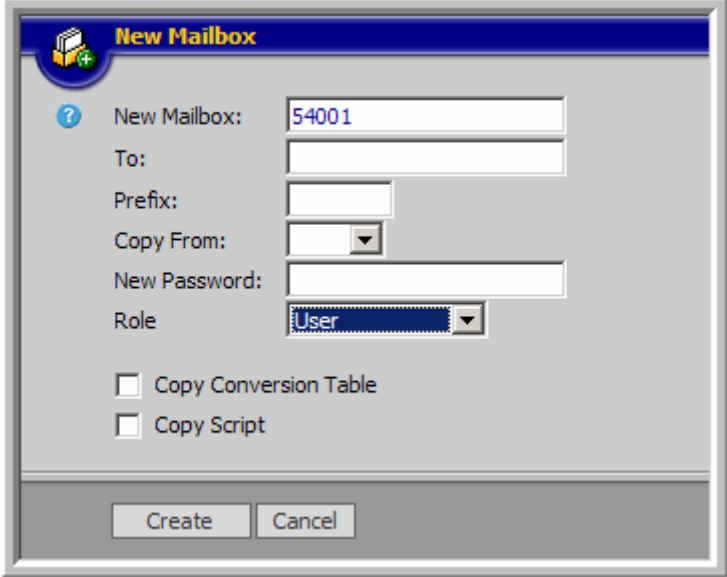
This section describes the steps for configuring the T3main for QSIG operation. Voicemail features are required to be configured and for each extension a mailbox must be created. For additional information on manipulating mailboxes and any other feature of the T3main, please refer to [3].

Step	Description
1.	<p data-bbox="298 594 1416 659">From a web browser, enter the IP address of the T3main in the Address field. Enter an authorized User Name and Password on the login page and click Enter System.</p> 

Step	Description
2.	<p>At the T3main page, navigate to Site Parameters -> General to configure the Voice mail hunt group field for the QSIG Integration to match the value in the Group Extension field in Section 3, Step 18.</p>  <p>The screenshot shows the T3main web interface. At the top, there is a navigation bar with tabs for Mailboxes, Department, COS, Site Parameters, PBX, and Utilities. The 'Site Parameters - General' tab is selected. Below the navigation bar, there is a list of configuration fields, each with a question mark icon to its left. The fields are: Company name, Address 1, Address 2, PO Box, City, State, Zip, Telephone, Modem, Fax, Administrator name, Administrator mailbox, Number of trunks, Number of extensions, and Voice mail hunt group. The 'Voice mail hunt group' field contains the value '76000'.</p>

Step	Description
3.	<p>At the T3main page, navigate to Site Parameters → Settings and configure the Mailbox length and Extension Length fields to match the dialplan set in Section 3, Step 3.</p> 

Step	Description
4.	<p>At the T3main page, navigate to Mailbox → Properties. Select the New Mailbox icon (with a green + sign) from the row of icons at the top of the window.</p>  <p>The screenshot shows the T3main interface with the 'Mailbox - Properties' window open. The top navigation bar includes 'Mailboxes', 'Department', 'COS', 'Site Parameters', 'PBX', 'Utilities', 'Reports', 'Registry', 'Applications', and 'SMDR'. The 'Mailboxes' tab is active, and the 'New Mailbox' icon (a green plus sign) is highlighted. Below the navigation bar, there is a search box containing '100' and a 'Go' button. The main content area contains several configuration sections:</p> <ul style="list-style-type: none"> MWI: Radio buttons for A, B, R, N. A is selected. MWI2: Radio buttons for A, B, R, N. N is selected. Optional: A text input field. Special MWI: Checkboxes for Active, Saved, Email, Fax. On and Off text input fields. MWI Counters: Checkboxes for Saved, Email, Fax. Use: Radio buttons for Mailbox and Extension. Extension is selected, with the text 'when sending mwi' next to it. Home Node: A dropdown menu showing '0'. Department: A dropdown menu showing '1'. Class Of Service: A dropdown menu showing '1'. Mailbox Type: A dropdown menu showing 'Admin.'. Mailbox Role: A dropdown menu showing 'Unity Village'. Time Zone: A dropdown menu showing 'America/New_York' with '(GMT00:00)' next to it. First Name: A text input field. Last Name: A text input field. Password: A text input field with four asterisks. A 'Change PWD' button is next to it. Ext. 1: A text input field containing '100'. Ext. 2: A text input field. Ext. 3: A text input field.

Step	Description
5.	<p>A pop-up window appears. Enter the desired number for the new mailbox in the New Mailbox field. In the compliance test, the mailbox was given the same number as the user's extension on Avaya Communication Manager. Click Create.</p> 

5. Interoperability Compliance Testing

This section describes the compliance testing used to verify the interoperability between the T3 Telecom Software T3main Messaging Platform and Avaya Communication Manager using QSIG over a TI trunk. This section covers the general test approach and the test results.

5.1. General Test Approach

The general test approach was to verify the following features and functionality of T3main Messaging Platform:

- T3main successfully leaves and retrieves voice mail messages from internal and external extensions.
- T3main successfully performs Message Waiting Indicator (MWI) operation.
- T3main successfully calls the automated attendant from an external number.
- T3main successful calls the automated attendant and then transfers to another extension.
- T3main successfully calls to the automated attendant and voicemail from SIP, H.323, and digital endpoints.
- T3main successfully recognizes DTMF transmissions.
- T3main successfully holds, transfers and conferences calls using the auto attendant.
- T3main successfully recovers after network outages or system restarts.

5.2. Test Results

The test objectives of **Section 5.1** were verified.

6. Verification Steps

This section provides verification steps that may be performed to verify that the solution described in these Application Notes is configured properly.

- Verify the trunk group is in-service. To do this, use the **status trunk t** command, where *t* is the number of the trunk group to be verified.
- Verify the signaling group is in-service. To do this, use the **status signaling-group s** command, where *s* is the number of the signaling group to be verified.
- Verify a call can be placed to the T3main by dialing the hunt group extension.
- Verify a call can be placed to an internal extension and the call covers to voicemail. Leave a message. Verify that the MWI on the destination extension is activated.
- Verify the message can be retrieved for this extension from voicemail by dialing the hunt group extension. Verify that the MWI on the user's extension is deactivated.
- Verify a call from an external number to the hunt group DID number is answered by the automated attendant and can be transferred to a user's extension.

7. Support

Technical support for the T3main Messaging Platform can be obtained from T3 Telecom Software. See the website at www.myt3.com for contact information.

8. Conclusion

These Application Notes describe the configuration procedures required for the T3 Telecom Software T3main Messaging Platform to successfully interoperate with Avaya Communication Manager using QSIG over a T1 Trunk.

The T3 Telecom Software T3main Messaging Platform is a unified messaging solution supporting Voicemail, Auto Attendant, Fax, Recorded Announcements, Speech Recognition, Voice Transcription, Voice Authentication and Interactive Voice Response. The compliance test focused only on the Auto Attendant and Voicemail capabilities.

9. Additional References

The following Avaya product documentation can be found at <http://support.avaya.com>.

[1] *Administrator Guide for Avaya Communication Manager*, Issue 4, January 2008, Document Number 03-300509

[2] *Administration for Network Connectivity for Avaya Communication Manager*, Issue 13, January 2008, Document Number 555-233-504

The following T3main product documentation is available from T3 Telecom Software. Visit <http://www.myt3.com> for company and product information.

[3] *T3main System Manual*, Version 10.4.6, January 2008.

[4] *T3main Voice Messaging User Guide*, April 2008.

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