



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya Communication Manager, Avaya Modular Messaging or Avaya INTUITY™ AUDIX® LX to Support IPC Information Systems Alliance MX using QSIG – Issue 1.0

Abstract

The Application Notes describe how to configure Avaya Communication Manager to support the IPC Information Systems Alliance MX using QSIG. The Application Notes also describe steps to configure Avaya Modular Messaging or Avaya INTUITY™ AUDIX® LX which can be used to provide messaging functionality.

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

1. Introduction

The Application Notes describe how to configure Avaya Communication Manager to support the IPC Information Systems Alliance MX using QSIG. The Application Notes also describe steps to configure Avaya Modular Messaging or Avaya INTUITY™ AUDIX® LX which can be used to provide messaging functionality.

The Alliance MX is a voice technology product designed to provide a high resiliency platform for provision of telephony and other associated services to financial traders. The Alliance MX provides its users with connectivity to various telephone transport services. Included in the transport services is E1 connectivity for connection within the private network where the signaling protocol is QSIG.

QSIG is a peer equal signaling system used to control voice communication and other services between two or more private automatic branch exchanges (PABXs). QSIG is normally utilized by IPC to connect the Alliance MX and an associated PABX so that routed voice communication can be established between the two entities.

Avaya Modular Messaging and Avaya INTUITY™ AUDIX® LX are the two Avaya messaging systems validated with IPC to support existing and new customers' requirements.

These Application Notes describe detail configuration steps for

- Avaya Communication Manager (Section 4)
 - System parameters
 - QSIG link to Alliance MX
 - QSIG link to Avaya Modular Messaging
 - C-LAN integration for Avaya INTUITY™ AUDIX® LX
- Avaya Modular Messaging (Section 5)
- Avaya INTUITY™ AUDIX® LX (Section 6)

The Alliance MX configuration is not documented in these Application Notes based on IPC's support policy. IPC engineers are responsible for the installation and maintenance of the Alliance MX products.

1.1. Interoperability Compliance Testing

The interoperability compliance testing included feature and serviceability testing. The feature testing focused on verifying the Alliance MX's ability to request and respond to Avaya Communication Manager, Avaya Modular Messaging and Avaya INTUITY™ AUDIX® LX features over a QSIG link.

The serviceability testing focused on verifying the Alliance MX's ability to recover from an outage condition, such as busy out the QSIG link and disconnecting the cable for the QSIG link. In addition to simplistic routed voice communication (basic call), the interoperability compliance testing covers the following supplementary services and features:

- Provisioning and display of both calling and connected party name and number.
- Restriction of both calling and connected party name and number.
- Transfer, with informational phases.
- Call forward (busy, unconditional and no reply), with informational phases, by either forward switch methodology or reroute methodology.
- Message Waiting Indicator (MWI).
- Auto Attendant.
- EC500.

1.2. Support

Technical support for the IPC products can be obtained from IPC. See the support link at www.ipc.com for contact information.

Technical support for the Avaya products can be obtained from Avaya. See the support link at support.avaya.com for contact information.

2. Reference Configuration

Figure 1 illustrates the configuration used to verify these Application Notes. It consists of Avaya Communication Manager, Avaya Modular Messaging Servers, Avaya INTUITY™ AUDIX® LX server, Avaya H.323 Phones, DCP phones, Avaya Attendant Console, IPC Alliance MX, IPC System Center and IPC turrets.

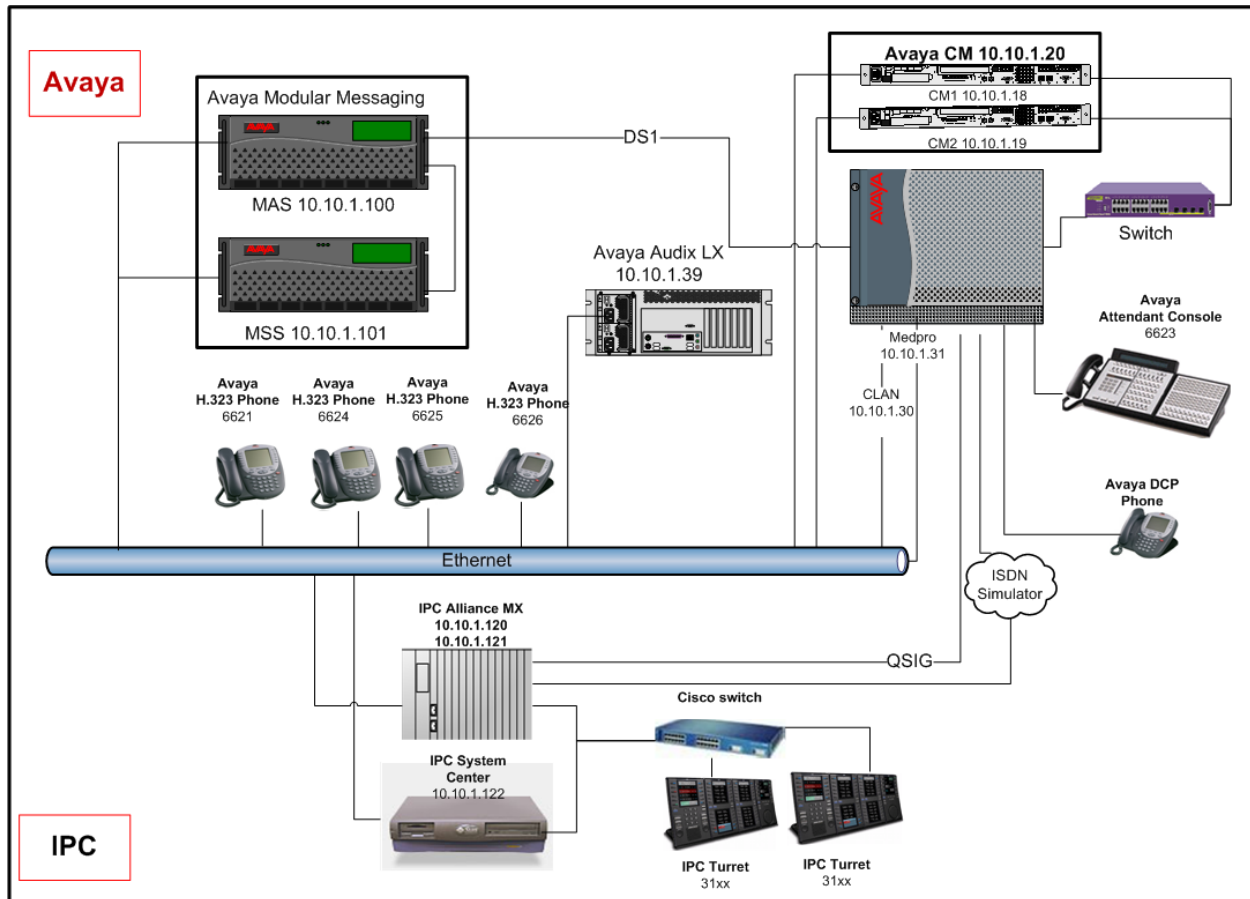


Figure 1: Network Diagram of the Compliance Tested Configuration

3. Equipment and Software Validated

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

Equipment	Software
Avaya S8730 Servers	Avaya Communication Manager 5.1.1sp2 Build 415.1-16823
Avaya G650 Media Gateway : <ul style="list-style-type: none">• IPSI (TN2312AP)• C-LAN (TN799DP)• MEDPRO (TN2302AP)• Digital Line (TN2214CP)• DS1 Interface (TN2464CP)• DS1 Interface (TN2464BP)	HW02 FW044 HW01 FW026 HW11 FW118 HW05 FW015 HW02 FW019 HW05 FW019
Avaya Modular Messaging Servers (S3500) : <ul style="list-style-type: none">• Messaging Application Server (MAS)• Messaging Storage Server (MSS)	4.0 sp2 Build 7.2.696.3
Avaya S3210 Server	Audix LX 2.0
Avaya 4620SW IP Telephones	2.9 (H.323)
Avaya 2420 Digital Telephones	---
Avaya 302D Attendant Console	---
IPC Information Systems Alliance MX	Alliance Release 15.2
IPC System Center	Alliance Release 15.2
Sun ULTRA 25	
IPC IQMAX Turrets	Alliance Release 15.2

4. Avaya Communication Manager

The steps in this section describe the Avaya Communication Manager configuration needed to support QSIG integration with the Alliance MX product. These Application Notes assumes that the references configuration depicted in **Figure 1** is already in place.

4.1. Configure Avaya Communication Manager Licenses and Features

Step	Description
1.	<p>Use the display system-parameters special-applications command. On Page 3, verify that (SA8440) - Unmodified QSIG Reroute Number? is set to y. To support this feature, Password and Key are required. If this option is not set, please contact Avaya sales team or business partner for a proper license file.</p> <div><pre>display system-parameters special-applications SPECIAL APPLICATIONS (SA8141) - LDN Attendant Queue Priority? n (SA8143) - Omit Designated Extensions From Displays? n (SA8146) - Display Update for Redirected Calls? n (SA8156) - Attendant Priority Queuing by COR? n (SA8157) - Toll Free Vectoring until Answer? n (SA8201) - Start Time and 4-Digit Year CDR Custom Fields? n (SA8202) - Intra-switch CDR by COS? n (SA8211) - Prime Appearance Preference? n (SA8240) - Station User Admin of FBI? n (SA8312) - Meet-Me Paging? n (SA8323) - Idle Call Preference Display? n (SA8339) - PHS X-Station Mobility? n (SA8348) - Map NCID to Universal Call ID? n (SA8428) - Station User Button Ring Control? n (SA8434) - Delay PSTN Connect on Agent Answer? n (SA8439) - Forward Held-Call CPN? n (SA8440) - Unmodified QSIG Reroute Number? y (SA8475) - Russian SOSM? n</pre><p>Page 3 of 8</p></div>

Step	Description
2.	<p>Use the display system-parameters customer-options command. On Page 4, verify that ISDN-PRI is set to y.</p> <div> <pre> display system-parameters customer-options OPTIONAL FEATURES Emergency Access to Attendant? y IP Stations? y Enable 'dadmin' Login? y Enhanced Conferencing? y ISDN Feature Plus? y Enhanced EC500? y ISDN/SIP Network Call Redirection? y 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? 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? n Multimedia Call Handling (Basic)? y Hospitality (Basic)? y Multimedia Call Handling (Enhanced)? y Hospitality (G3V3 Enhancements)? n Multimedia IP SIP Trunking? y IP Trunks? y IP Attendant Consoles? n (NOTE: You must logoff & login to effect the permission changes.) </pre> </div> <p>On Page 5, verify that Private Networking and Uniform Dialing Plan are both set to y.</p> <div> <pre> display system-parameters customer-options OPTIONAL FEATURES Multinational Locations? y Station and Trunk MSP? n Multiple Level Precedence & Preemption? y Station as Virtual Extension? n Multiple Locations? y System Management Data Transfer? n Personal Station Access (PSA)? y Tenant Partitioning? n PNC Duplication? y Terminal Trans. Init. (TTI)? y Port Network Support? y Time of Day Routing? n Posted Messages? y TN2501 VAL Maximum Capacity? y Uniform Dialing Plan? y Usage Allocation Enhancements? y Private Networking? y Processor and System MSP? n Processor Ethernet? y Wideband Switching? n Wireless? n Remote Office? n Restrict Call Forward Off Net? y Secondary Data Module? y </pre> </div> <p>On Page 8, verify that Basic Call Setup, Basic Supplementary Services, Centralized Attendant, Supplementary Services with Rerouting and Transfer into QSIG Voice Mail are all set to y.</p> <div> <pre> display system-parameters customer-options QSIG OPTIONAL FEATURES Basic Call Setup? y Basic Supplementary Services? y Centralized Attendant? y Interworking with DCS? n Supplementary Services with Rerouting? y Transfer into QSIG Voice Mail? y Value-Added (VALU)? y </pre> </div>

Step	Description
3.	<p>Use the change system-parameters features command to show the configuration after the module was added; verify DID/Tie/ISDN/SIP Intercept Treatment is set to attd.</p> <div data-bbox="302 310 1484 762" style="border: 1px solid black; padding: 10px;"> <pre> display system-parameters features Page 1 of 17 FEATURE-RELATED SYSTEM PARAMETERS Self Station Display Enabled? y Trunk-to-Trunk Transfer: all Automatic Callback - No Answer Timeout Interval (rings): 3 Call Park Timeout Interval (minutes): 10 Off-Premises Tone Detect Timeout Interval (seconds): 20 AAR/ARS Dial Tone Required? y Music/Tone on Hold: none Music (or Silence) on Transferred Trunk Calls? no DID/Tie/ISDN/SIP Intercept Treatment: attd Internal Auto-Answer of Attd-Extended/Transferred Calls: transferred Automatic Circuit Assurance (ACA) Enabled? n Abbreviated Dial Programming by Assigned Lists? n Auto Abbreviated/Delayed Transition Interval (rings): 2 Protocol for Caller ID Analog Terminals: Bellcore Display Calling Number for Room to Room Caller ID Calls? n </pre> </div> <p>On Page 8 define the QSIG/ETSI TSC Extension and MWI – Number of Digits Per Voice mail Subscriber fields.</p> <div data-bbox="302 898 1484 1398" style="border: 1px solid black; padding: 10px;"> <pre> display system-parameters features Page 8 of 17 FEATURE-RELATED SYSTEM PARAMETERS ISDN PARAMETERS PARAMETERS FOR CREATING QSIG SELECTION NUMBERS Send Non-ISDN Trunk Group Name as Connected Name? n Network Level: 0 Display Connected Name/Number for ISDN DCS Calls? n Level 2 Code: Send ISDN Trunk Group Name on Tandem Calls? n Level 1 Code: Send Custom Messages Through QSIG? n QSIG/ETSI TSC Extension: 6666 MWI - Number of Digits Per Voice Mail Subscriber: 4 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: 6667 Send QSIG Path Replacement Conf. Event to ASAI? y Path Replace While in Queue/Vectoring? n </pre> </div>

Step	Description
	<p data-bbox="297 233 1292 302">On Page 9 set the CPN/ANI/ICLID Replacement for Restricted Calls and CPN/ANI/ICLID Replacement for Unavailable Calls fields to be restricted.</p> <div data-bbox="318 310 1500 835" style="border: 1px solid black; padding: 10px;"> <pre data-bbox="337 321 1344 772"> display system-parameters features Page 9 of 17 FEATURE-RELATED SYSTEM PARAMETERS CPN/ANI/ICLID PARAMETERS CPN/ANI/ICLID Replacement for Restricted Calls: restricted CPN/ANI/ICLID Replacement for Unavailable Calls: restricted DISPLAY TEXT Identity When Bridging: principal INTERNATIONAL CALL ROUTING PARAMETERS Local Country Code: International Access Code: ENBLOC DIALING PARAMETERS Enable Enbloc Dialing without ARS FAC? n CALLER ID ON CALL WAITING PARAMETERS Caller ID on Call Waiting Delay Timer (msec): 200 </pre> </div>

Step	Description
4.	<p>Use the change feature-access-codes command to assign private network access code. (Modified fields are shown in bold type).</p> <div data-bbox="315 310 1495 810"> <pre> change feature-access-codes Page 1 of 8 FEATURE ACCESS CODE (FAC) 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: Answer Back Access Code: #3 Attendant Access Code: Auto Alternate Routing (AAR) Access Code: 1 Auto Route Selection (ARS) - Access Code 1: *7 Access Code 2: Automatic Callback Activation: *4 Deactivation: #4 Call Forwarding Activation Busy/DA: *2 All: *3 Deactivation: #2 Call Forwarding Enhanced Status: Act: 622 Deactivation: 623 Call Park Access Code: #5 Call Pickup Access Code: *6 CAS Remote Hold/Answer Hold-Unhold Access Code: #6 CDR Account Code Access Code: Change COR Access Code: Change Coverage Access Code: </pre> </div> <p>On Page 2, Verify Per Call CPN Blocking Code Access Code is assigned.</p> <div data-bbox="315 894 1495 1394"> <pre> change feature-access-codes Page 3 of 8 FEATURE ACCESS CODE (FAC) Leave Word Calling Send A Message: *8 Leave Word Calling Cancel A Message: #8 Limit Number of Concurrent Calls Activation: Deactivation: Malicious Call Trace Activation: Deactivation: Meet-me Conference Access Code Change: PASTE (Display PBX data on Phone) Access Code: Personal Station Access (PSA) Associate Code: Dissociate Code: Per Call CPN Blocking Code Access Code: 606 Per Call CPN Unblocking Code Access Code: 607 Posted Messages Activation: Deactivation: Priority Calling Access Code: 653 Program Access Code: Refresh Terminal Parameters Access Code: Remote Send All Calls Activation: Deactivation: Self Station Display Activation: 624 Send All Calls Activation: *1 Deactivation: #1 </pre> </div>

4.2. Configure QSIG Link to Alliance MX

Step	Description
1.	<p>Use the add ds1 n command (not shown) to configure the TN2464CP DS1 Circuit Pack that will be used for the QSIG connection between Avaya Communication Manager and the Alliance MX. The output of the change ds1 n command is used to show the configuration after the module was added (modified fields are shown in bold type).</p> <pre> change ds1 01a09 Page 1 of 1 DS1 CIRCUIT PACK Location: 01A09 Name: QSIG-ipc Bit Rate: 2.048 Line Coding: hdb3 Signaling Mode: isdn-pri Connect: pbx Interface: peer-master TN-C7 Long Timers? n Peer Protocol: Q-SIG Interworking Message: PROGress Side: a Interface Companding: alaw CRC? y Idle Code: 11111111 Channel Numbering: timeslot DCP/Analog Bearer Capability: 3.1kHz T303 Timer(sec): 4 Disable Restarts? n Slip Detection? n Near-end CSU Type: other </pre>
2.	<p>Use the add signaling-group n command (not shown) to add a signaling group for the QSIG connection between Avaya Communication Manager and the Alliance MX. The output of the change signaling group n command is used to show the configuration after the signaling group was added (modified fields are shown in bold type). Max number of NCA TSC at least set to 2, one for Alliance MX, one for Avaya Communication Manager.</p> <pre> change signaling-group 4 Page 1 of 1 SIGNALING GROUP Group Number: 4 Group Type: isdn-pri Associated Signaling? y Max number of NCA TSC: 5 Primary D-Channel: 01A0916 Max number of CA TSC: 5 Trunk Group for NCA TSC: 4 Trunk Group for Channel Selection: 4 TSC Supplementary Service Protocol: b Network Call Transfer? n </pre>

Step	Description
3.	<p>Use the add trunk-group <i>n</i> command (not shown) to add a QSIG trunk between Avaya Communication Manager and the Alliance MX. The output of the change trunk-group <i>n</i> command is used to show the configuration after the trunk group was added (modified fields are shown in bold type).</p> <div> <pre> change trunk-group 4 Page 1 of 21 TRUNK GROUP Group Number: 4 Group Type: isdn CDR Reports: y Group Name: IPC COR: 1 TN: 1 TAC: 502 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> </div> <p>Page 2 of the trunk group form is shown below.</p> <div> <pre> change trunk-group 4 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: b Digit Handling (in/out): overlap/enbloc Digit Treatment: Digits: Trunk Hunt: descend Digital Loss Group: 13 Incoming Calling Number - Delete: Insert: Format: Bit Rate: 1200 Synchronization: async Duplex: full Disconnect Supervision - In? y Out? n Answer Supervision Timeout: 0 Administer Timers? n CONNECT Reliable When Call Leaves ISDN? n </pre> </div> <p>Page 3 of the trunk group form is shown below.</p> <div> <pre> change trunk-group 4 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: 1 Send Name: y Send Calling Number: y Hop Dgt? n Send EMU Visitor CPN? n Used for DCS? n Suppress # Outpulsing? n Format: private Outgoing Channel ID Encoding: preferred UII IE Treatment: service-provider Replace Restricted Numbers? y Replace Unavailable Numbers? y Send Connected Number: y Hold/Unhold Notifications? y Modify Tandem Calling Number? n Send UII IE? y Send UCID? n Send Codeset 6/7 LAI IE? y Dsl Echo Cancellation? n Modify Reroute Number? n Apply Local Ringback? n Show ANSWERED BY on Display? y Network (Japan) Needs Connect Before Disconnect? n </pre> </div>

Step	Description
	<p>Page 4 of the trunk group form is shown below.</p> <div> <pre> change trunk-group 4 QSIG TRUNK GROUP OPTIONS Page 4 of 21 TSC Method for Auto Callback: drop-if-possible 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> <p>Page 5 of the trunk group form is shown below.</p> <div> <pre> change trunk-group 4 TRUNK GROUP Administered Members (min/max): 1/30 Total Administered Members: 30 GROUP MEMBER ASSIGNMENTS Port Code Sfx Name Night Sig Grp 1: 01A0901 TN2464 C 2: 01A0902 TN2464 C 3: 01A0903 TN2464 C 4: 01A0904 TN2464 C 5: 01A0905 TN2464 C 6: 01A0906 TN2464 C 7: 01A0907 TN2464 C 8: 01A0908 TN2464 C 9: 01A0909 TN2464 C 10: 01A0910 TN2464 C 11: 01A0911 TN2464 C 12: 01A0912 TN2464 C 13: 01A0913 TN2464 C 14: 01A0914 TN2464 C 15: 01A0915 TN2464 C </pre> </div>
4.	<p>Use the change dialplan analysis command to define the number range for the IPC turrets. In this example, add an entry in the Dial Plan Analysis Table for 4-digit numbers beginning with 31 to use the Uniform Dial Plan (UDP) table. 31xx is IPC extensions.</p> <div> <pre> change dialplan analysis DIAL PLAN ANALYSIS TABLE Location: all Percent Full: 1 Dialed Total Call Dialed Total Call Dialed Total Call String Length Type String Length Type String Length Type 1 1 fac 88 4 ext 2 4 udp 972 5 udp 3 4 ext 99 4 ext 30 9 udp * 2 fac 3005 8 udp # 2 fac 31 4 udp 33 4 udp 38 5 aar 4 4 aar 4 5 ext 5 3 dac 6 3 fac 61 4 ext 66 4 ext 77 4 ext </pre> </div>

Step	Description
5.	<p>Use the change uniform-dialplan <i>n</i> command to add an entry to route 4-digit numbers beginning with 31 using Alternate Automatic Routing (AAR).</p> <div> <pre> change uniform-dialplan 0 UNIFORM DIAL PLAN TABLE Page 1 of 2 Percent Full: 0 Matching Insert Node Pattern Len Del Digits Net Conv Num 30 9 0 aar n 31 4 0 aar n 33 4 0 aar n 8889 4 0 aar n 972 5 0 aar n </pre> </div>
6.	<p>Use the change route-pattern <i>n</i> command to route calls for route pattern 4 using trunk group 4 which is the QSIG trunk between Avaya Communication Manager and the Alliance MX.</p> <div> <pre> change route-pattern 4 Pattern Number: 4 Pattern Name: IPC-QSIG SCCAN? n Secure SIP? n Page 1 of 3 Grp FRL NPA Pfx Hop Toll No. Inserted DCS/ IXC No Mrk Lmt List Del Digits QSIG Intw 1: 4 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 M 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 </pre> </div>

Step	Description
7.	<p>Use the change aar analysis <i>n</i> command to specify which route pattern to use based upon the number dialed. Add an entry in the AAR Digit Analysis Table to route 4-digit calls beginning with 31 using route pattern 4 via the QSIG trunk between Avaya Communication Manager and the Alliance MX.</p> <pre> change aar analysis 0 AAR DIGIT ANALYSIS TABLE Location: all Percent Full: 1 Dialed Total Route Call Node ANI String Min Max Pattern Type Num Req'd 2 4 4 999 aar n 30 9 9 1 aar n 3005 8 8 1 aar n 31 4 4 4 aar n 33 4 4 6 aar n 38 5 5 3 aar n 4 4 4 3 aar n 5 7 7 999 aar n 7777 4 4 6 aar n 8889 4 4 2 aar n 9 7 7 999 aar n 972 5 5 5 aar n </pre>
8.	<p>Use the change private-numbering <i>n</i> command to add entries, so that calls placed from stations with a 4-digit Avaya extension beginning with a 66 routed over all trunk groups will send a 4-digit calling party number to the far end.</p> <pre> change private-numbering 0 NUMBERING - PRIVATE FORMAT Ext Ext Trk Private Total Len Code Grp(s) Prefix Len 4 66 4 Total Administered: 1 Maximum Entries: 540 </pre>

4.3. Configure QSIG Link to Avaya Modular Messaging

Step	Description
1.	<p>Use the add ds1 n command (not shown) to configure the TN2464CP DS1 Circuit Pack that will be used for the QSIG connection between Avaya Communication Manager and Avaya Modular Messaging. The output of the change ds1 n command is used to show the configuration after the module was added (modified fields are shown in bold type).</p> <pre> change ds1 01a08 Page 1 of 1 DS1 CIRCUIT PACK Location: 01A08 Name: MM-E1-QSIG Bit Rate: 2.048 Line Coding: hdb3 Signaling Mode: isdn-pri Connect: pbx Interface: peer-master TN-C7 Long Timers? n Peer Protocol: Q-SIG Interworking Message: PROGress Side: a Interface Companding: alaw CRC? n Idle Code: 11111111 Channel Numbering: timeslot DCP/Analog Bearer Capability: 3.1kHz T303 Timer(sec): 4 Disable Restarts? n Slip Detection? n Near-end CSU Type: other </pre>
2.	<p>Use the add signaling-group n command (not shown) to add a signaling group for the QSIG connection between Avaya Communication Manager and Avaya Modular Messaging. The output of the change signaling group n command is used to show the configuration after the signaling group was added (modified fields are shown in bold type).</p> <pre> change signaling-group 2 Page 1 of 1 SIGNALING GROUP Group Number: 2 Group Type: isdn-pri Associated Signaling? y Max number of NCA TSC: 10 Primary D-Channel: 01A0816 Max number of CA TSC: 10 Trunk Group for NCA TSC: 2 Trunk Group for Channel Selection: 2 TSC Supplementary Service Protocol: b Network Call Transfer? n </pre>

Step	Description
3.	<p>Use the add trunk-group <i>n</i> command (not shown) to add a QSIG trunk between Avaya Communication Manager and Avaya Modular Messaging. The output of the change trunk-group <i>n</i> command is used to show the configuration after the trunk group was added (modified fields are shown in bold type).</p> <div> <pre> change trunk-group 2 Page 1 of 21 TRUNK GROUP Group Number: 2 Group Type: isdn CDR Reports: y Group Name: QSIG-E1-MM COR: 1 TN: 1 TAC: 501 Direction: two-way Outgoing Display? n Carrier Medium: PRI/BRI Dial Access? n 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> <p>Page 2 of the trunk group form is shown below.</p> <div> <pre> change trunk-group 2 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: b Digit Handling (in/out): enbloc/enbloc Trunk Hunt: cyclical 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 CONNECT Reliable When Call Leaves ISDN? n </pre> </div> <p>Page 3 of the trunk group form is shown below.</p> <div> <pre> change trunk-group 2 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: 2 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? n Send UUI IE? y Send UCID? n Send Codeset 6/7 LAI IE? y Dsl Echo Cancellation? n Modify Reroute Number? n Apply Local Ringback? n Show ANSWERED BY on Display? y Network (Japan) Needs Connect Before Disconnect? n </pre> </div>

Step	Description
	<p>Page 4 of the trunk group form is shown below.</p> <div> <pre> change trunk-group 2 QSIG TRUNK GROUP OPTIONS TSC Method for Auto Callback: drop-if-possible 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> <p>Page 4 of 21</p> </div> <p>Page 5 of the trunk group form is shown below.</p> <div> <pre> change trunk-group 2 TRUNK GROUP Administered Members (min/max): 1/29 GROUP MEMBER ASSIGNMENTS Total Administered Members: 29 Port Code Sfx Name Night Sig Grp 1: 01A0801 TN2464 C 2: 01A0802 TN2464 C 3: 01A0803 TN2464 C 4: 01A0804 TN2464 C 5: 01A0805 TN2464 C 6: 01A0806 TN2464 C 7: 01A0807 TN2464 C 8: 01A0808 TN2464 C 9: 01A0809 TN2464 C 10: 01A0810 TN2464 C 11: 01A0811 TN2464 C 12: 01A0812 TN2464 C 13: 01A0813 TN2464 C 14: 01A0814 TN2464 C 15: 01A0815 TN2464 C </pre> <p>Page 5 of 21</p> </div>
4.	<p>Use the change dialplan analysis command to define Avaya Modular Messaging voice mail number as an extension in the Dial Plan Analysis Table. In this example, 88xx is configured.</p> <div> <pre> change dialplan analysis DIAL PLAN ANALYSIS TABLE Location: all Percent Full: 1 Dialed Total Call Dialed Total Call Dialed Total Call String Length Type String Length Type String Length Type 1 1 fac 88 4 ext 2 4 udp 972 5 udp 3 4 ext 99 4 ext 30 9 udp * 2 fac 3005 8 udp # 2 fac 31 4 udp 33 4 udp 38 5 aar 4 4 aar 4 5 ext 5 3 dac 6 3 fac 61 4 ext 66 4 ext 77 4 ext </pre> <p>Page 1 of 12</p> </div>

Step	Description
5.	<p>Use the change uniform-dialplan <i>n</i> command to add an entry to route Avaya Modular Messaging voice mail number 8889 using Alternate Automatic Routing (AAR).</p> <pre> change uniform-dialplan 0 UNIFORM DIAL PLAN TABLE Page 1 of 2 Percent Full: 0 Matching Insert Node Pattern Len Del Digits Net Conv Num 22 4 0 aar n 30 9 0 aar n 3005 8 0 aar n 31 4 0 aar n 33 4 0 aar n 8889 4 0 aar n 972 5 0 aar n </pre>
6.	<p>Use the change route-pattern <i>n</i> command (not shown) to route calls for pattern 2 using trunk group 2 which is the QSIG trunk between Avaya Communication Manager and Avaya Modular Messaging. The output of the change route-pattern <i>n</i> command is used to show the configuration after the module was added (modified fields are shown in bold type).</p> <pre> change route-pattern 2 Pattern Number: 2 Pattern Name: QSIG-E1-MM SCCAN? n Secure SIP? n Page 1 of 3 Grp FRL NPA Pfx Hop Toll No. Inserted DCS/ IXC No Mrk Lmt List Del Digits QSIG Dgts Intw 1: 2 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 M 4 W Request Dgts Format Subaddress 1: y y y y y n y none rest unk-unk rehu 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>

Step	Description																																																																																											
7.	<p>Use the change aar analysis <i>n</i> command to specify which route pattern to use based upon the number dialed. Add an entry in the AAR Analysis Table to route 4-digit calls of dialed string 8889 using route pattern 2 via the QSIG trunk between Avaya Communication Manager and Avaya Modular Messaging.</p> <p>Note: It is important to note that the AAR entry is the only number to which IPC turrets should call forward to if they wish to divert their calls to Avaya Modular Messaging.</p> <div><pre>change aar analysis 0</pre><div><div>AAR DIGIT ANALYSIS TABLE</div><div>Location: all</div><div>Percent Full: 1</div><div><div>Page 1 of 2</div><table><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 Req'd</th></tr><tr><td>2</td><td>4</td><td>4</td><td>999</td><td>aar</td><td></td><td>n</td></tr><tr><td>30</td><td>9</td><td>9</td><td>1</td><td>aar</td><td></td><td>n</td></tr><tr><td>3005</td><td>8</td><td>8</td><td>1</td><td>aar</td><td></td><td>n</td></tr><tr><td>31</td><td>4</td><td>4</td><td>4</td><td>aar</td><td></td><td>n</td></tr><tr><td>33</td><td>4</td><td>4</td><td>6</td><td>aar</td><td></td><td>n</td></tr><tr><td>38</td><td>5</td><td>5</td><td>3</td><td>aar</td><td></td><td>n</td></tr><tr><td>4</td><td>4</td><td>4</td><td>3</td><td>aar</td><td></td><td>n</td></tr><tr><td>5</td><td>7</td><td>7</td><td>999</td><td>aar</td><td></td><td>n</td></tr><tr><td>7777</td><td>4</td><td>4</td><td>6</td><td>aar</td><td></td><td>n</td></tr><tr><td>8889</td><td>4</td><td>4</td><td>2</td><td>aar</td><td></td><td>n</td></tr><tr><td>9</td><td>7</td><td>7</td><td>999</td><td>aar</td><td></td><td>n</td></tr><tr><td>972</td><td>5</td><td>5</td><td>5</td><td>aar</td><td></td><td>n</td></tr></table></div></div></div>	Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Req'd	2	4	4	999	aar		n	30	9	9	1	aar		n	3005	8	8	1	aar		n	31	4	4	4	aar		n	33	4	4	6	aar		n	38	5	5	3	aar		n	4	4	4	3	aar		n	5	7	7	999	aar		n	7777	4	4	6	aar		n	8889	4	4	2	aar		n	9	7	7	999	aar		n	972	5	5	5	aar		n
Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Req'd																																																																																						
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972	5	5	5	aar		n																																																																																						
8.	<p>Use the change hunt-group <i>n</i> command to configure a hunt group to be used as the Call Coverage Point for the Call Coverage Path assigned to the Avaya Messaging Application Server’s subscribers. This Voice Mail Number is going to be used as the Avaya Modular Messaging Access Number. This hunt group is configured with no members assigned to it. Page 1 of the hunt-group form is shown below.</p> <div><pre>change hunt-group 2</pre><div><div>HUNT GROUP</div><div><div>Group Number: 2</div><div>Group Name: QSIG E1</div><div>Group Extension: 8888</div><div>Group Type: ucd-mia</div><div>TN: 1</div><div>COR: 1</div><div>Security Code:</div><div>ISDN/SIP Caller Display: grp-name</div></div><div><div>ACD? n</div><div>Queue? n</div><div>Vector? n</div><div>Coverage Path: 2</div><div>Night Service Destination:</div><div>MM Early Answer? n</div><div>Local Agent Preference? n</div></div></div></div>																																																																																											

Step	Description
	<p>On Page 2, Voice Mail Number must be administered in the Voice Mail System Configuration PBX→Outgoing Call tab of MAS.</p> <p>Note: It is important to note that the Voice Mail Number is the only number to which IPC turrets should call forward to if they wish to divert their calls to Avaya Modular Messaging. Group Extension is used for Avaya extensions to access Avaya Modular Messaging voice mailbox.</p> <div data-bbox="318 480 1497 779" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> change hunt-group 2 Page 2 of 60 HUNT GROUP LWC Reception: none AUDIX Name: Message Center: qsig-mwi Send Reroute Request: n Voice Mail Number: 8889 Routing Digits (e.g. AAR/ARS Access Code): 1 Provide Ringback? n TSC per MWI Interrogation? n </pre> </div>

4.4. Configure C-LAN integration for Avaya INTUITY™ AUDIX® LX

Step	Description
1.	<p>Enter display dialplan parameters command to assign Local Node Name. Ensure PBX has an assigned Local Node Name, if there is no assigned number, enter 1. For Audix LX integration, this number will be used as the machine ID in Audix administration and processor-channels.</p> <pre> display dialplan parameters DIAL PLAN PARAMETERS Local Node Number: 1 ETA Node Number: ETA Routing Pattern: UDP Extension Search Order: local-extensions-first AAR/ARS Internal Call Prefix: AAR/ARS Internal Call Total Length: Retry ARS/AAR Analysis If All-Location Entry Inaccessible? n EXTENSION DISPLAY FORMATS Inter-Location/sat Intra-Location 6-Digit Extension: xx.xx.xx xx.xx.xx 7-Digit Extension: xxx-xxxx xxx-xxxx 8-Digit Extension: xx.xx.xx.xx xx.xx.xx.xx 9-Digit Extension: xxx-xxx-xxx xxx-xxx-xxx 10-Digit Extension: xxx-xxx-xxxx xxx-xxx-xxxx 11-Digit Extension: xxx-xxx-xxxx xxx-xxx-xxxx 12-Digit Extension: xxx-xxx-xxxx xxx-xxx-xxxx 13-Digit Extension: xxx-xxx-xxxx xxx-xxx-xxxx </pre>
2.	<p>Use the change dialplan analysis command to define 4-digit begins with 99 as an extension in the Dial Plan Analysis Table. 9999 is the Voice Mail Number used for Avaya INTUITY™ AUDIX® LX.</p> <pre> change dialplan analysis DIAL PLAN ANALYSIS TABLE Location: all Percent Full: 1 Dialed Total Call Dialed Total Call Dialed Total Call String Length Type String Length Type String Length Type 1 1 fac 88 4 ext 2 4 udp 972 5 udp 3 4 ext 99 4 ext 30 9 udp * 2 fac 3005 8 udp # 2 fac 31 4 udp 33 4 udp 38 5 aar 4 4 aar 4 5 ext 5 3 dac 6 3 fac 61 4 ext 66 4 ext 77 4 ext </pre>

Step	Description
3.	<p>Use add station <i>n</i> command (not shown) to add analog stations, in this example, 9900, 9901, 9902 and 9903. The change station <i>n</i> command is used to show the configuration of extensions created. For example:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> change station 9900 STATION Extension: 9900 Lock Messages? n BCC: 0 Type: 2500 Security Code: 1234 TN: 1 Port: 01A1104 Coverage Path 1: 1 COR: 1 Name: Audix Port 2 Coverage Path 2: COS: 1 Hunt-to Station: Tests? n STATION OPTIONS XOIP Endpoint type: auto Time of Day Lock Table: Loss Group: 1 Message Waiting Indicator: led Off Premises Station? n Message Lamp Ext: 9900 Survivable COR: internal Survivable Trunk Dest? y </pre> </div> <p>Page 2 of the station form is shown below.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> change station 9900 STATION FEATURE OPTIONS LWC Reception: audix LWC Activation? y Coverage Msg Retrieval? y LWC Log External Calls? n Auto Answer: none CDR Privacy? n Data Restriction? y Redirect Notification? y Call Waiting Indication: n Per Button Ring Control? n Att. Call Waiting Indication: n Bridged Call Alerting? n Distinctive Audible Alert? y Switchhook Flash? y Adjunct Supervision? y Ignore Rotary Digits? n H.320 Conversion? n Per Station CPN - Send Calling Number? Service Link Mode: as-needed Multimedia Mode: basic MWI Served User Type: AUDIX Name: Intuity Coverage After Forwarding? s Multimedia Early Answer? n Direct IP-IP Audio Connections? y IP Audio Hairpinning? n Emergency Location Ext: 9900 </pre> </div>

Step	Description
4.	<p>The change cor <i>n</i> command is used to define a unique Class of Restriction (COR).</p> <div> <div>change cor 1</div> <div> <div>Page 1 of 23</div> <div> CLASS OF RESTRICTION COR Number: 1 COR Description: Audix Ports FRL: 0 APLT? y Can Be Service Observed? n Calling Party Restriction: none Can Be A Service Observer? n Called Party Restriction: none Partitioned Group Number: 1 Forced Entry of Account Codes? n Priority Queuing? n Direct Agent Calling? n Restriction Override: all Facility Access Trunk Test? n Restricted Call List? n Can Change Coverage? n Access to MCT? y Fully Restricted Service? n Group II Category For MFC: 7 Send ANI for MFE? n MF ANI Prefix: Automatic Charge Display? n Hear System Music on Hold? y PASTE (Display PBX Data on Phone)? n Can Be Picked Up By Directed Call Pickup? y Can Use Directed Call Pickup? y Group Controlled Restriction: inactive </div> </div> </div> <p>Page 2 of the COR form is shown below.</p> <div> <div>change cor 1</div> <div> <div>Page 2 of 23</div> <div> CLASS OF RESTRICTION MF Incoming Call Trace? n Brazil Collect Call Blocking? n Block Transfer Display? n Block Enhanced Conference/Transfer Displays? y Remote Logout of Agent? n Station Lock COR: 1 TODSL Release Interval (hours): Outgoing Trunk Disconnect Timer (minutes): Line Load Control: 1 Maximum Precedence Level: ro Preemptable? y MLPP Service Domain: Station-Button Display of UUI IE Data? n Service Observing by Recording Device? n ERASE 24XX USER DATA UPON Dissociate or unmerge this phone: none EMU login or logoff at this phone: none Mask CPN/NAME for Internal Calls? n </div> </div> </div> <p>Page 4 of the COR form is shown below.</p> <div> <div>change cor 1</div> <div> <div>Page 4 of 23</div> <div> CLASS OF RESTRICTION CALLING PERMISSION (Enter "y" to grant permission to call specified COR) 0? y 15? y 30? y 44? y 58? y 72? y 86? y 1? y 16? y 31? y 45? y 59? y 73? y 87? y 2? y 17? y 32? y 46? y 60? y 74? y 88? y 3? y 18? y 33? y 47? y 61? y 75? y 89? y 4? y 19? y 34? y 48? y 62? y 76? y 90? y 5? y 20? y 35? y 49? y 63? y 77? y 91? y 6? y 21? y 36? y 50? y 64? y 78? y 92? y 7? y 22? y 37? y 51? y 65? y 79? y 93? y 8? y 23? y 38? y 52? y 66? y 80? y 94? y 9? y 24? y 39? y 53? y 67? y 81? y 95? y 10? y 25? y 40? y 54? y 68? y 82? y 96? y 11? y 26? y 41? y 55? y 69? y 83? y 97? y 12? y 27? y 42? y 56? y 70? y 84? y 98? y </div> </div> </div>

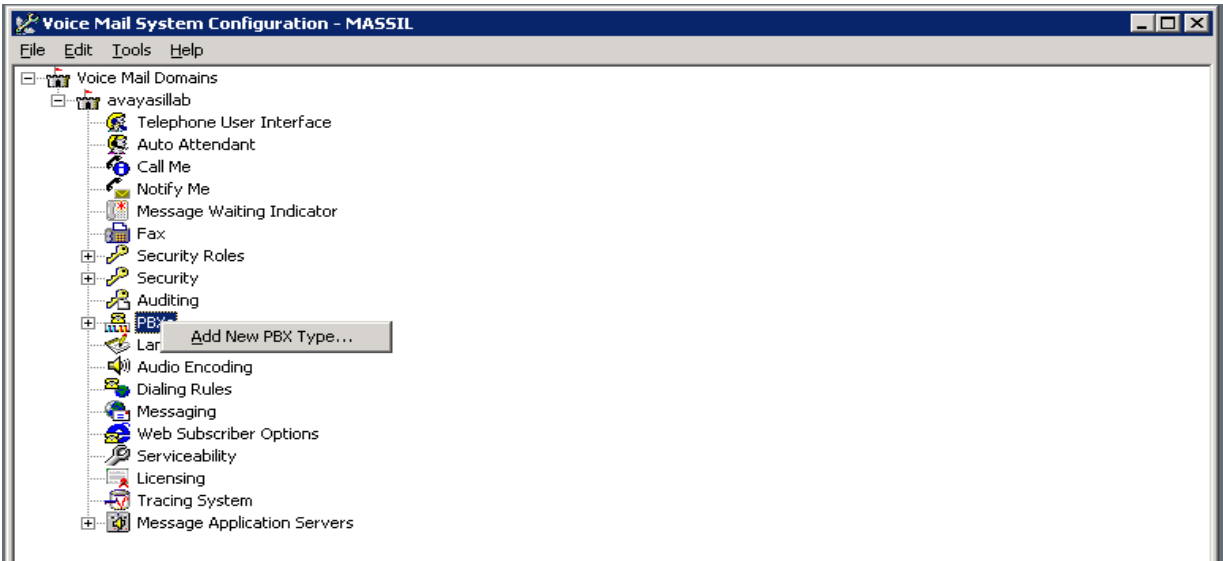
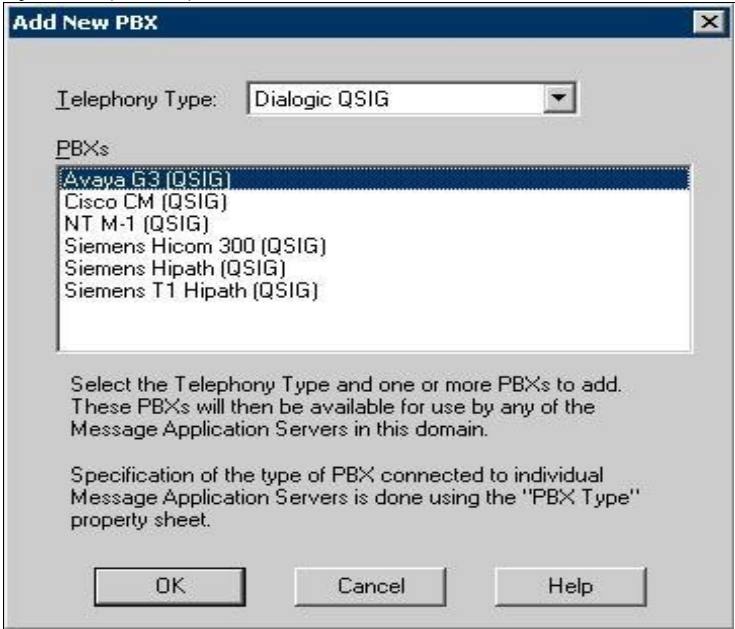
Step	Description																																																																																																																																																																																																																																																																																																																																																																																						
5.	<div><p>The change cos command is used to assign a unique Class of Service (COS) for the voice port. The following setting depends on the features or functions to be used.</p><div><div>change cos</div><div>Page 1 of 2</div><div><div>CLASS OF SERVICE</div><table><tr><th></th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr><tr><td>Auto Callback</td><td>n</td><td>y</td><td>y</td><td>n</td><td>y</td><td>n</td><td>y</td><td>n</td><td>y</td><td>n</td><td>y</td><td>n</td><td>y</td><td>n</td><td>y</td><td>n</td></tr><tr><td>Call Fwd-All Calls</td><td>y</td><td>y</td><td>n</td><td>y</td><td>y</td><td>n</td><td>n</td><td>y</td><td>y</td><td>n</td><td>n</td><td>y</td><td>y</td><td>n</td><td>n</td><td>y</td></tr><tr><td>Data Privacy</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>y</td><td>y</td><td>y</td><td>y</td><td>n</td><td>n</td><td>n</td><td>n</td><td>y</td><td>y</td><td>y</td></tr><tr><td>Priority Calling</td><td>n</td><td>y</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td></tr><tr><td>Console Permissions</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Off-hook Alert</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Client Room</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Restrict Call Fwd-Off Net</td><td>y</td><td>n</td><td>n</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td></tr><tr><td>Call Forwarding Busy/DA</td><td>n</td><td>y</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Personal Station Access (PSA)</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Extended Forwarding All</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Extended Forwarding B/DA</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Trk-to-Trk Transfer Override</td><td>n</td><td>y</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>QSIG Call Offer Originations</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Contact Closure Activation</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr></table></div></div><p>Page 2 of the COS form is shown below. .</p><div><div>change cos</div><div>Page 2 of 2</div><div><div>CLASS OF SERVICE</div><table><tr><th></th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr><tr><td>VIP Caller</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Masking CPN/Name Override</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Call Forwarding Enhanced</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td></tr><tr><td>Priority Ip Video</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr><tr><td>Ad-hoc Video Conferencing</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td><td>n</td></tr></table></div></div></div>		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Auto Callback	n	y	y	n	y	n	y	n	y	n	y	n	y	n	y	n	Call Fwd-All Calls	y	y	n	y	y	n	n	y	y	n	n	y	y	n	n	y	Data Privacy	n	n	n	n	n	y	y	y	y	n	n	n	n	y	y	y	Priority Calling	n	y	n	n	n	n	n	n	n	y	y	y	y	y	y	y	Console Permissions	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Off-hook Alert	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Client Room	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Restrict Call Fwd-Off Net	y	n	n	y	y	y	y	y	y	y	y	y	y	y	y	y	Call Forwarding Busy/DA	n	y	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Personal Station Access (PSA)	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Extended Forwarding All	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Extended Forwarding B/DA	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Trk-to-Trk Transfer Override	n	y	n	n	n	n	n	n	n	n	n	n	n	n	n	n	QSIG Call Offer Originations	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Contact Closure Activation	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	VIP Caller	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Masking CPN/Name Override	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Call Forwarding Enhanced	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	Priority Ip Video	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	Ad-hoc Video Conferencing	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
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6.	<div><p>The change ip-interface n command is used to configure IP interface screen.</p><div><div>change ip-interface 01a02</div><div>Page 1 of 2</div><div><div>IP INTERFACES</div><div><div>Type: C-LAN Slot: 01A02 Code/Suffix: TN799 D Node Name: clan IP Address: 10 .10 .1 .30 Subnet Mask: 255.255.255.0 Gateway Address: 10 .10 .1 .5 Link: 1 Enable Ethernet Port? y Network Region: 1 VLAN: n Allow H.323 Endpoints? y Allow H.248 Gateways? y Gatekeeper Priority: 5 Target socket load and Warning level: 400 Receive Buffer TCP Window Size: 8320 ETHERNET OPTIONS Auto? y</div></div></div></div></div>																																																																																																																																																																																																																																																																																																																																																																																						

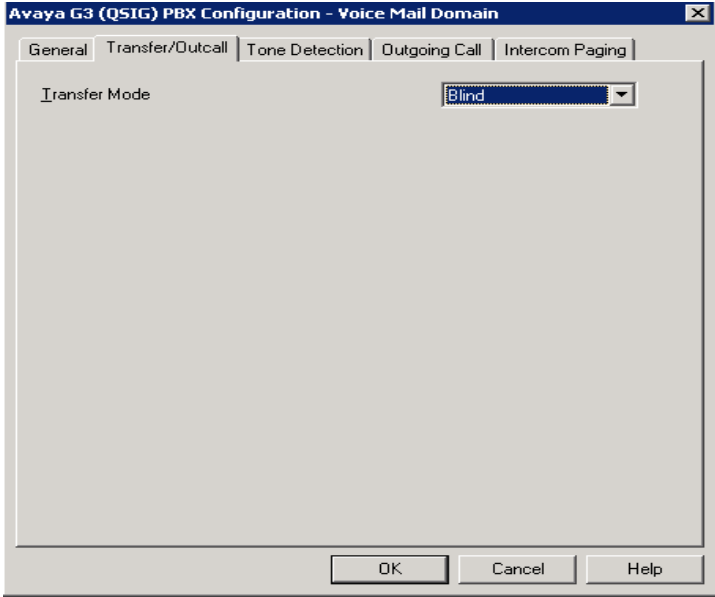
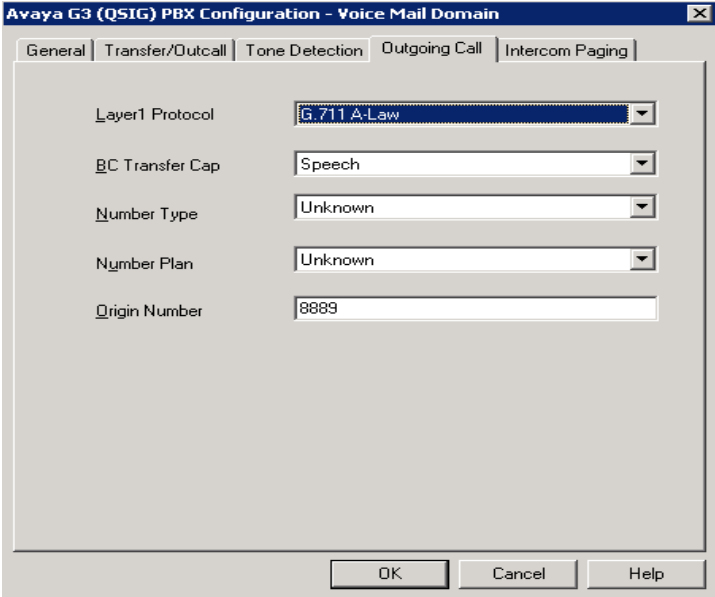
Step	Description
7.	<p>Use the change hunt-group <i>n</i> command to configure a hunt group to be used as the Call Coverage Point for the Call Coverage Path assigned to the Avaya INTUITY™ AUDIX® LX subscribers.</p> <div> <pre> change hunt-group 1 HUNT GROUP Page 1 of 60 Group Number: 1 ACD? n Group Name: Audix Queue? y Group Extension: 9999 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: grp-name Queue Limit: 4 Calls Warning Threshold: Port: Time Warning Threshold: Port: </pre> </div> <p>On Page 2 of the hunt-group form is shown below.</p> <div> <pre> change hunt-group 1 HUNT GROUP Page 2 of 60 LWC Reception: audix AUDIX Name: Intuity First Announcement Extension: Delay (sec): Message Center: audix Message Center AUDIX Name: Intuity Primary? n Calling Party Number to Intuity AUDIX? y </pre> </div> <p>On Page 3</p> <div> <pre> change hunt-group 1 HUNT GROUP Page 3 of 60 Group Number: 1 Group Extension: 9999 Group Type: ucd-mia Member Range Allowed: 1 - 1500 Administered Members (min/max): 1 /4 Total Administered Members: 4 GROUP MEMBER ASSIGNMENTS Ext Name(19 characters) Ext Name(19 characters) 1: 9900 Audix Port 2 14: 2: 9901 Audix Port 4 15: 3: 9902 Audix Port 6 16: 4: 9903 Audix Port 8 17: At End of Member List </pre> </div>
8.	<p>Use the change node-names audix command to define Audix Names and IP Address.</p> <div> <pre> change node-names audix AUDIX NODE NAMES Page 1 of 1 Audix Names IP Address Intuity 10 .10 .1 .39 </pre> </div>

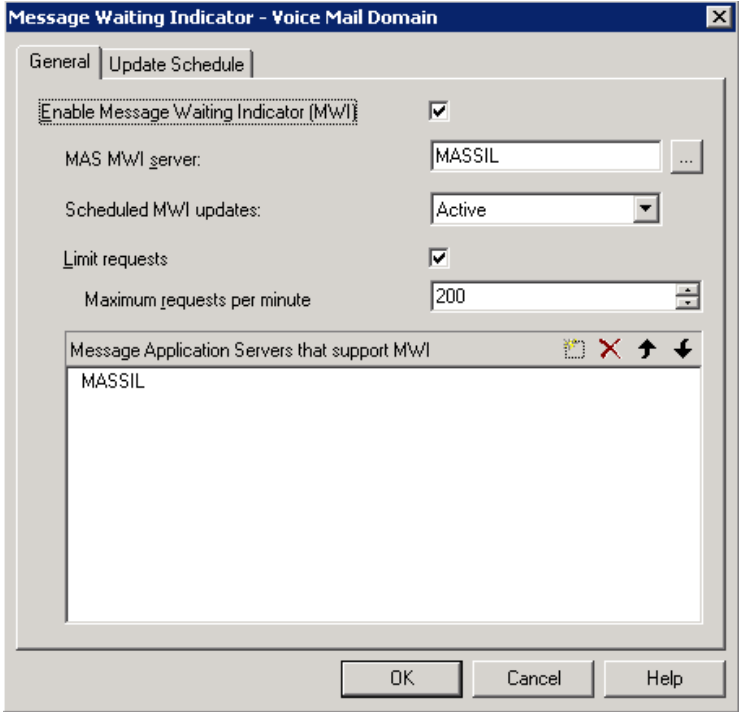
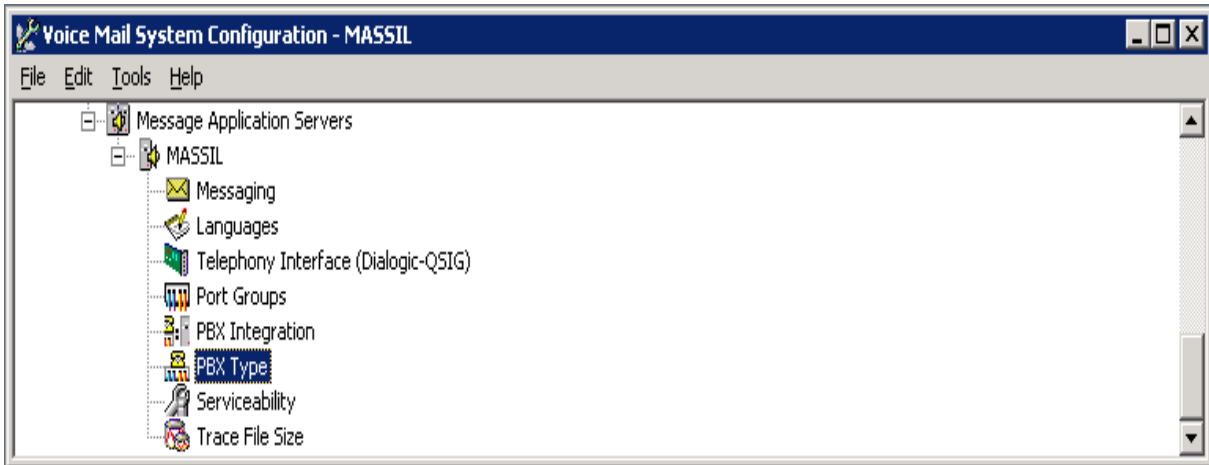
Step	Description
9.	<p>Use the change communication-interface processor-channels command to administer a processor channel for the link from Avaya Communication Manager to Avaya INTUITY™ AUDIX® LX and to support MWI (message waiting indicator) interrogation.</p> <ul style="list-style-type: none"> • Enable: Always set to y, this channel won't go active until the link is enabled on the Ethernet Data Module. • Appl: Set to audix for Avaya INTUITY™ AUDIX® LX. Set to qsig-mwi for MWI interrogation. Set to gateway for DCS, such as remote-audix integration. • Mode: Always set to s for INTUITY™ AUDIX® LX application. • Interface Link: set to 1. • Interface Chan: Set to 5002 for Avaya INTUITY™ AUDIX® LX. If using DCS, it must set begin with 6xxx. If using qsig-mwi, it also must set begin with 6xxx. • Destination Node: must match the name assigned on the node-name audix screen. • Destination Port is always set 0 for direct connection with Audix LX. • Session Local: must match the Node Number assigned on the dialplan parameters screen and also match Switch Link Administration→Host Switch Number in Avaya INTUITY™ AUDIX® LX. For qsig-mwi, it must match machine ID in the isdn mwi-prefixes screen. For all applications, they also should match Switch Link Administration→Switch Number. • Session Remote: must match the Audix Number assigned in the Avaya INTUITY™ AUDIX® LX, which is in Switch Link Administration→Audix Number. • Match ID: This field must match the Audix number assigned in the Avaya INTUITY™ AUDIX® LX and Session Remote field for Audix application. For qsig-mwi, it must match the Switch Number assigned in the Avaya INTUITY™ AUDIX® LX, which is in Switch Link Administration→Switch Number. <div> <pre> change communication-interface processor-channels PROCESSOR CHANNEL ASSIGNMENT Page 1 of 24 Proc Gtwy Interface Destination Session Mach Chan Enable Appl. To Mode Link/Chan Node Port Local/Remote ID 1: y audix s 1 5002 Intuity 0 1 1 1 2: y qsig-mwi s 1 6003 Intuity 0 2 1 2 3: y gateway s 1 6001 Intuity 0 3 1 </pre> </div>
10.	<p>Use the change isdn mwi-prefixes command to support MWI interrogation. AUDIX Mach ID must match Session Remote field and Mach ID in processor channels screen for audix application.</p> <div> <pre> change isdn mwi-prefixes MESSAGE WAITING INDICATION SUBSCRIBER NUMBER PREFIXES Page 1 of 7 Send QSIG Message Center ID? n Machine Inserted Routing AUDIX ID Digits Digits Mach ID 1: 2: 1 3: 4: 5: </pre> </div>

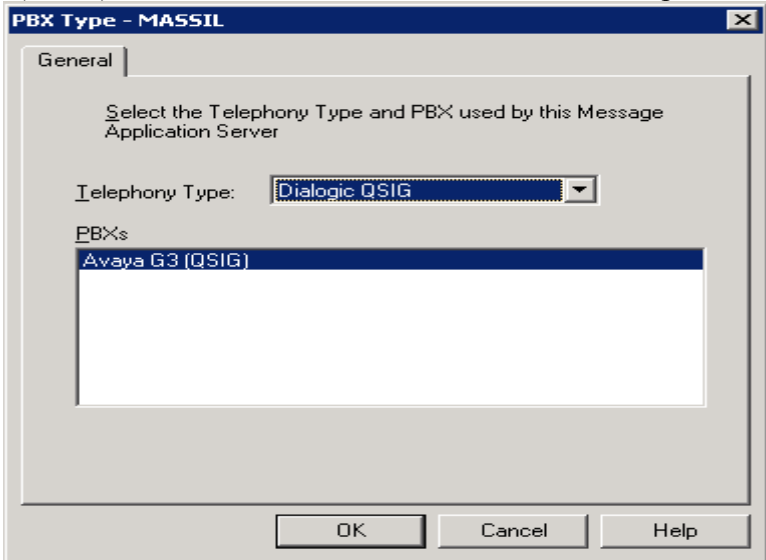
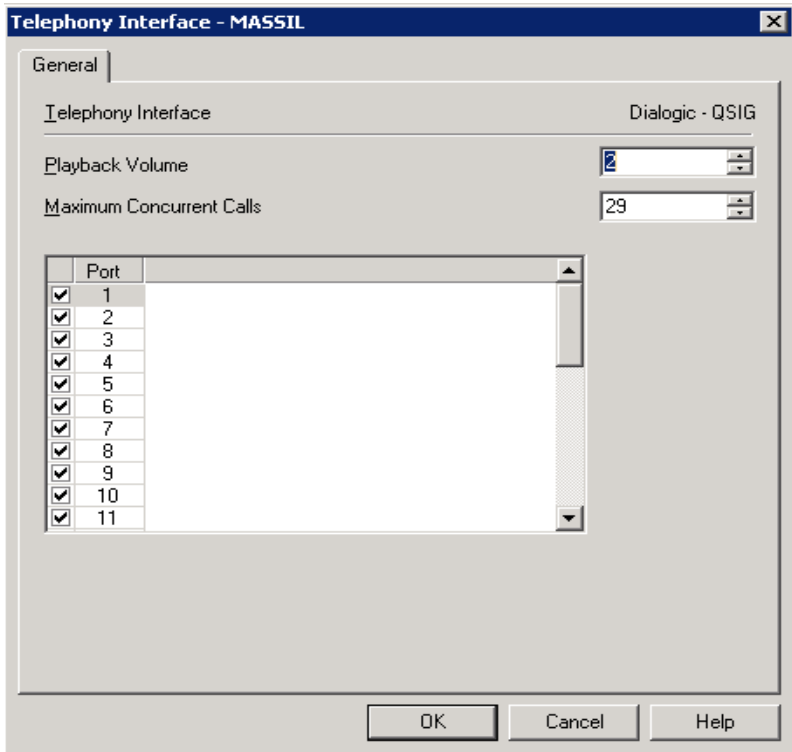
5. Configure Avaya Modular Messaging

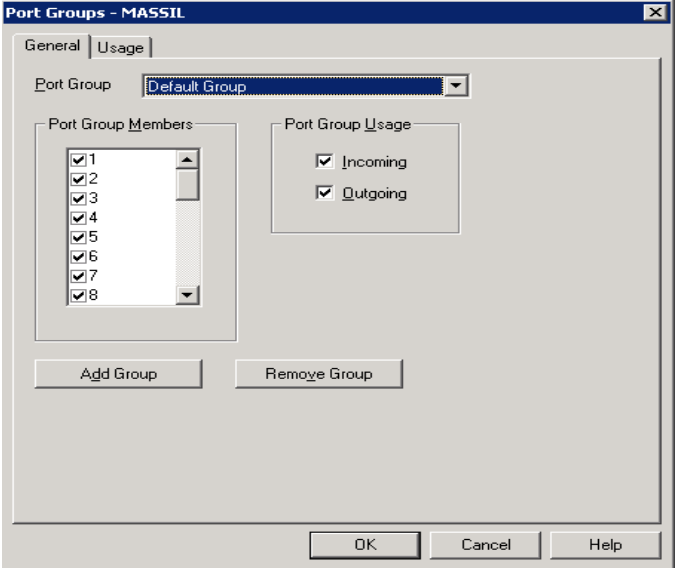
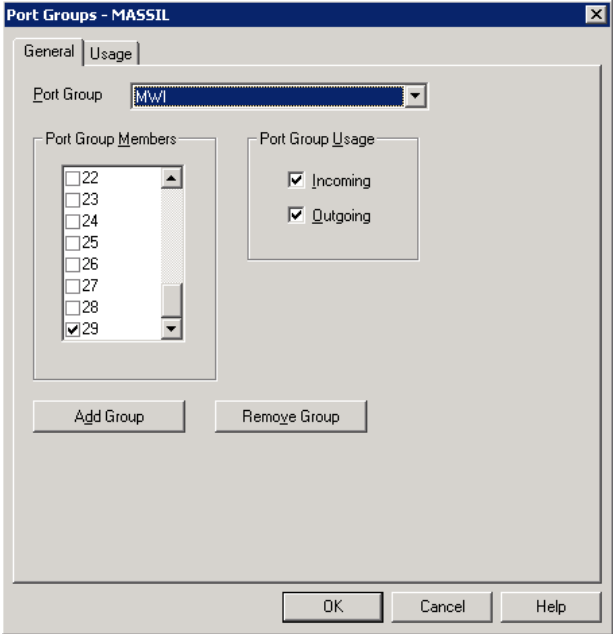
5.1. Configure Avaya Message Application Server (MAS)

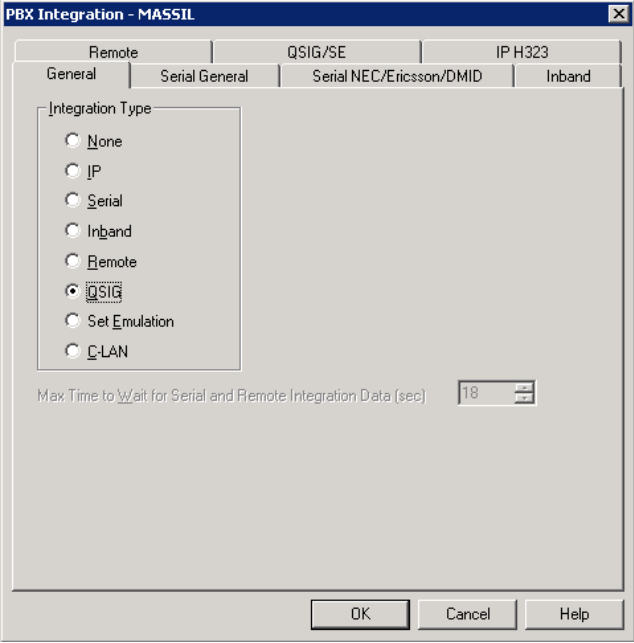
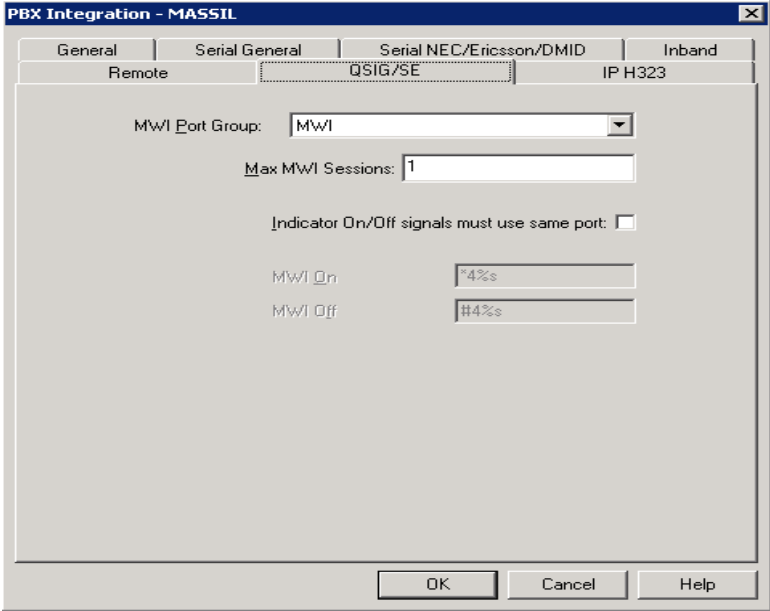
Step	Description
1.	<p>Select Start > Programs > Avaya Modular Messaging > Voice Mail System Configuration. Expand Voice Mail Domains and the administered domain name (avayasillab in the screenshot below). Right-click on PBXs and select Add New PBX Type from the drop down menu.</p>  <p>On the Add New PBX screen, select Dialogic QSIG from the Telephony Type drop down box, then select Avaya G3 (QSIG) from the PBXs box. Select OK when completed.</p> 

Step	Description
2.	<p>On the Voice Mail System Configuration - MASSIL screen (see Step 1 for screenshot), double-click on PBXs. On the Avaya G3 (QSIG) PBX Configuration screen, select the Transfer/Outcall tab. In the Transfer Mode field, select Blind. Select OK when completed</p> 
3.	<p>On the Voice Mail System Configuration - MASSIL screen (see Step 1 for screenshot), double-click on PBXs. On the Avaya G3 (QSIG) PBX Configuration screen, select the Outgoing Call tab. In the Layer1 Protocol field, select G.711 A-Law or G.711 Mu-Law depending on the Interface Companding method selected in Section 4.3 (Step 1). Select OK when completed</p> 

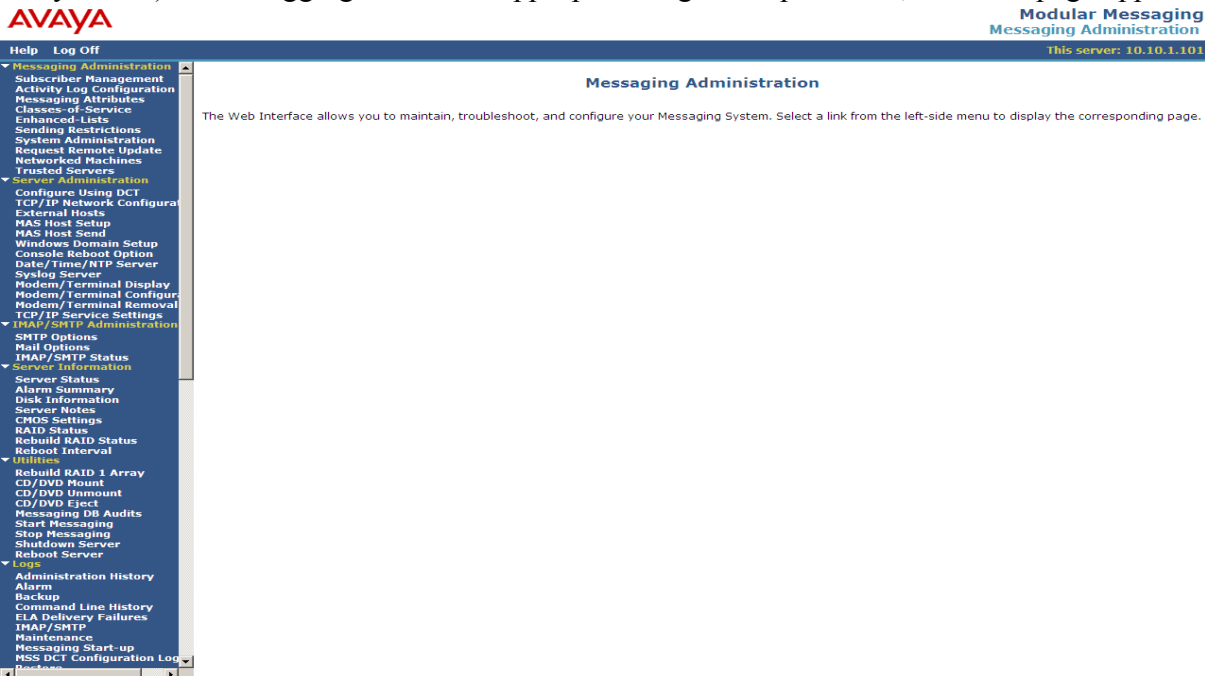
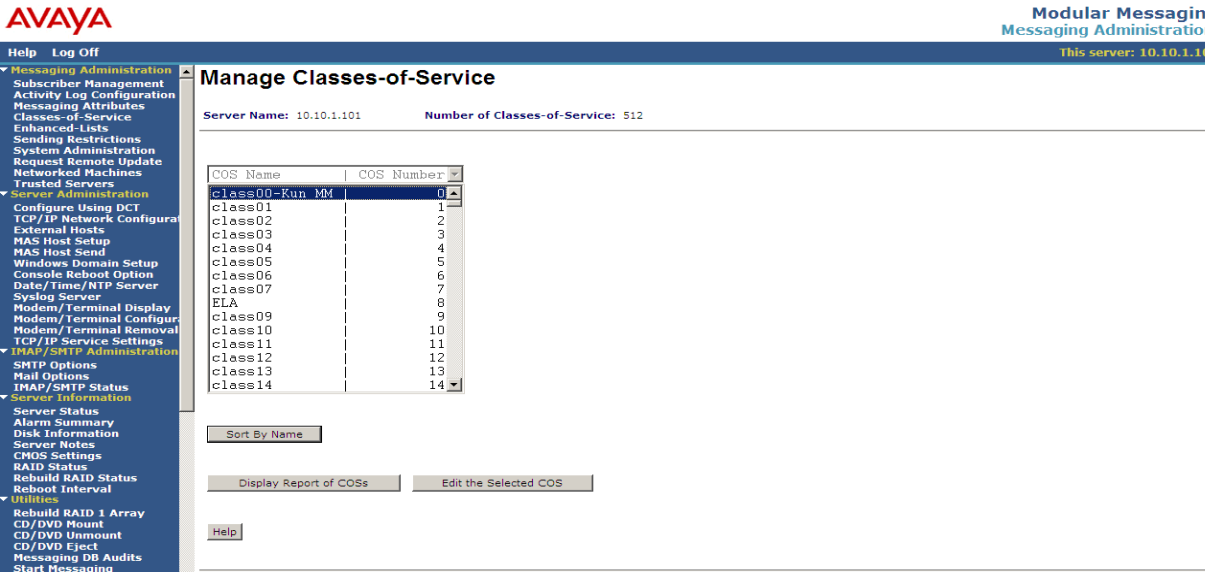
Step	Description
4.	<p>On the Voice Mail System Configuration - MASSIL screen (see Step 1 for screenshot), double-click on Message Waiting Indicator (MWI). Select MAS MWI Sever , then select OK when completed</p> 
5.	<p>On the Voice Mail System Configuration - MASSIL screen (see Step 1 for screenshot), expand Message Application Servers and the host name of the Avaya Messaging Application Server to be configured (MASSIL in the screenshot below). Double-click on PBX Type.</p> 

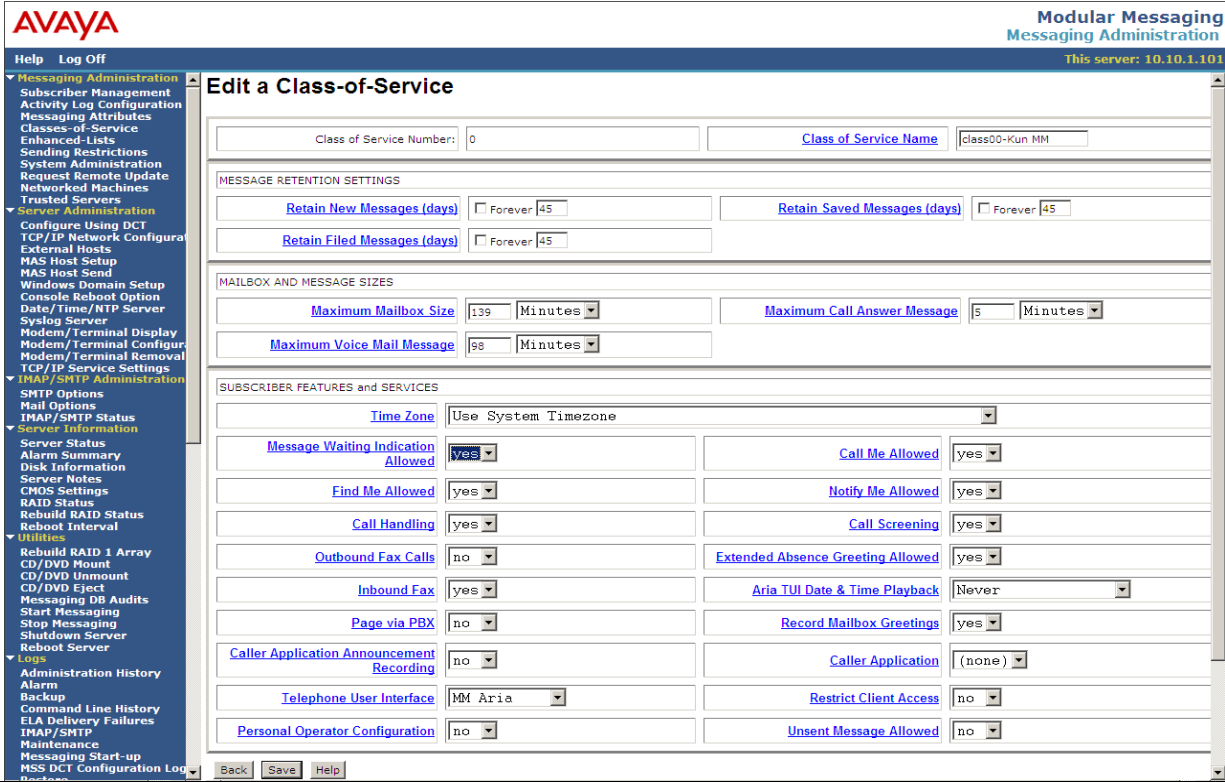

Step	Description
	<p>On the PBX Type screen select Dialogic QSIG from the Telephony Type drop down box then select Avaya G3 (QSIG) from the PBXs box. Select OK when completed.</p> 
6.	<p>On the Message Application Servers screen (see Step 5 for screenshot), double-click on Telephony Interface (Dialogic-QSIG). On the Telephony Interface screen, enter 29 in the Maximum Concurrent Calls field and ensure all the Port checkboxes are checked. Select OK when completed.</p> 

Step	Description
7.	<p>On the Message Application Servers screen (see Step 5 for screenshot), double-click on Port Groups. On the Port Groups screen, select Default Group from the Port Group drop down box and ensure all the checkboxes are checked in the Port Group Members box. Also ensure that both the Incoming and Outgoing checkboxes are checked. Select Add Group to add a port group for MWI.</p>  <p>On the Add New Group screen (not shown), enter a descriptive name for the group and select OK to return to the Port Groups screen. Select the port group that was just created from the Port Group drop down box (MWI in the screenshot below). Check a port's checkbox in the Port Group Members box (29 in the screenshot below). Also ensure that both the Incoming and Outgoing checkboxes are checked. Select OK when completed.</p> 

Step	Description
8.	<p>On the Message Application Servers screen (see Step 5 for screenshot), double-click on PBX Integration. On the PBX Integration screen, select the General tab and ensure the QSIG radio button is selected.</p>  <p>Select the QSIG/SE tab and select the port group created for MWI (in Step 7) from the MWI Port Group drop down box. Enter 1 in the Max MWI Sessions field. Select OK when completed.</p> 

5.2. Configure Avaya Message Storage Server (MSS)

Step	Description
1.	<p>From a Web browser, navigate to <code>http://<ip-addr></code> (where <code><ip-addr></code> is the IP address of the Avaya MSS). After logging in with an appropriate login and password, the main page appears.</p> 
2.	<p>Select Messaging Administration->Classes-of-Service from the left pane. From the Manage Classes-of-Service screen that is presented, select a Class of Service (COS) that will be used by subscribers using IPC turrets (in this example class00 – Kun MM was selected).</p> 

Step	Description
3.	<p>Click the Edit the Selected COS button. In the Edit a Class-of-Service screen that follows, select yes from the drop-down menu for the Message Waiting Indication Allowed field. Scroll down to the bottom of the screen and click the Save button.</p> 
4.	<p>Select Messaging Administration->Subscriber Management in the left pane. The Manage Subscribers page appears, as shown below. In the Local Subscriber Mailbox Number field, enter the extension of the desired IPC turrets and Avaya extensions and click the Add or Edit button.</p> 

Step	Description
5.	<p>In the Add Local Subscriber screen (not shown), enter the following values for subscribers which could be IPC extensions and Avaya extensions, Edit Local Subscriber could be used to view and edit the settings :</p> <ul style="list-style-type: none"> • Last Name: Enter values appropriate for this user. • Password: Enter a default password for accessing the subscriber's mailbox, from one to 15 digits. • Mailbox Number: Enter a number, from 2 to 10 digits in length, which uniquely identifies the mailbox for the purpose of logging in or addressing messages. It must be within the range of Mailbox Numbers assigned to this system and be a valid length on the local machine. In this example, extension number 3107 is used. • Numeric Address: Enter a unique address in the voice mail network. In this example, extension number 3107 is used. • Class of Service: Select the Class of Service in Step 3. • The other fields could use default settings.

AVAYA Modular Messaging
Messaging Administration
This server: 10.10.1.101

Help Log Off

Edit Local Subscriber

BASIC INFORMATION
* (Required Fields)

*Last Name	ipc-qsig2	First Name	
*Password		*Mailbox Number	3107
*Numeric Address	3107	PBX Extension	3107
*Class Of Service	0 - class00-Run MM	*Community ID	1

SUBSCRIBER DIRECTORY

Email Handle	ipc-qsig2 @mssil.du.rnd.avaya.com	Telephone Number	
Common Name	ipc-qsig2	ASCII Version of Name	ipc-qsig2

SUBSCRIBER SECURITY

Immediately Expire Password?	no	Is Mailbox Locked?	no
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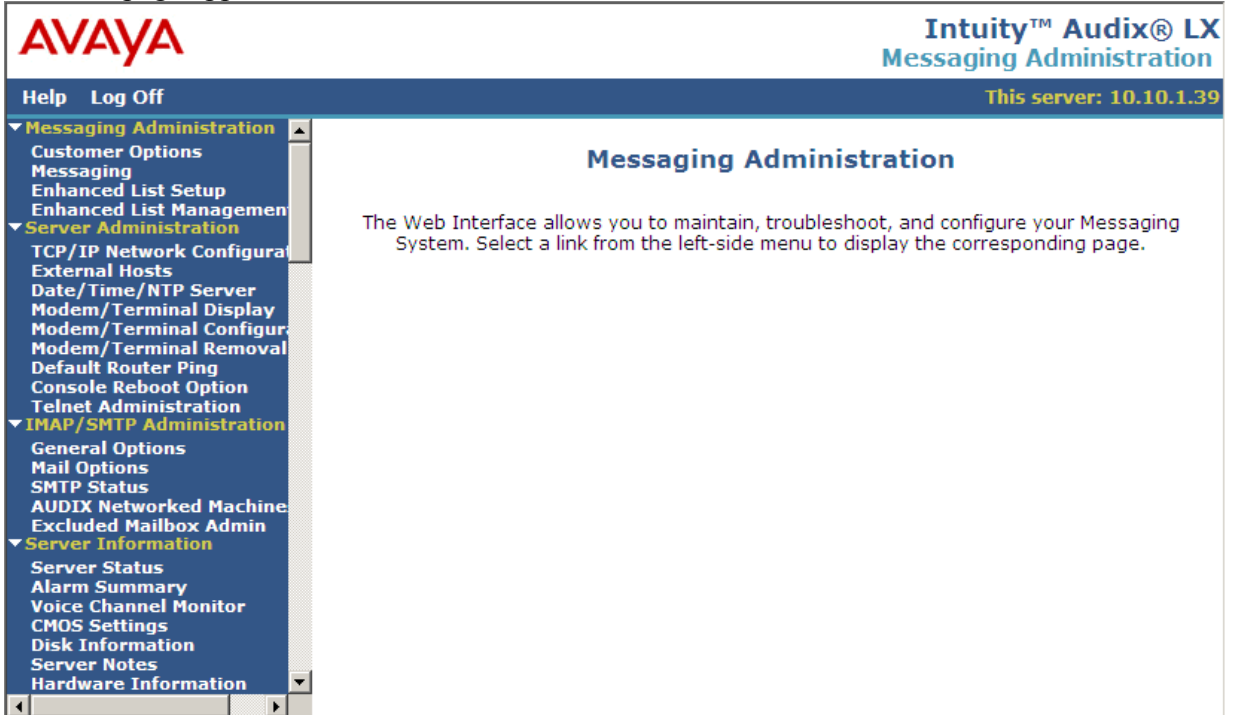
MAILBOX FEATURES

Personal Operator Mailbox		Personal Operator Schedule	Always Active
TUI Message Order	urgent first then newest	Intercom Paging	paging is off
VoiceMail Enabled	yes		

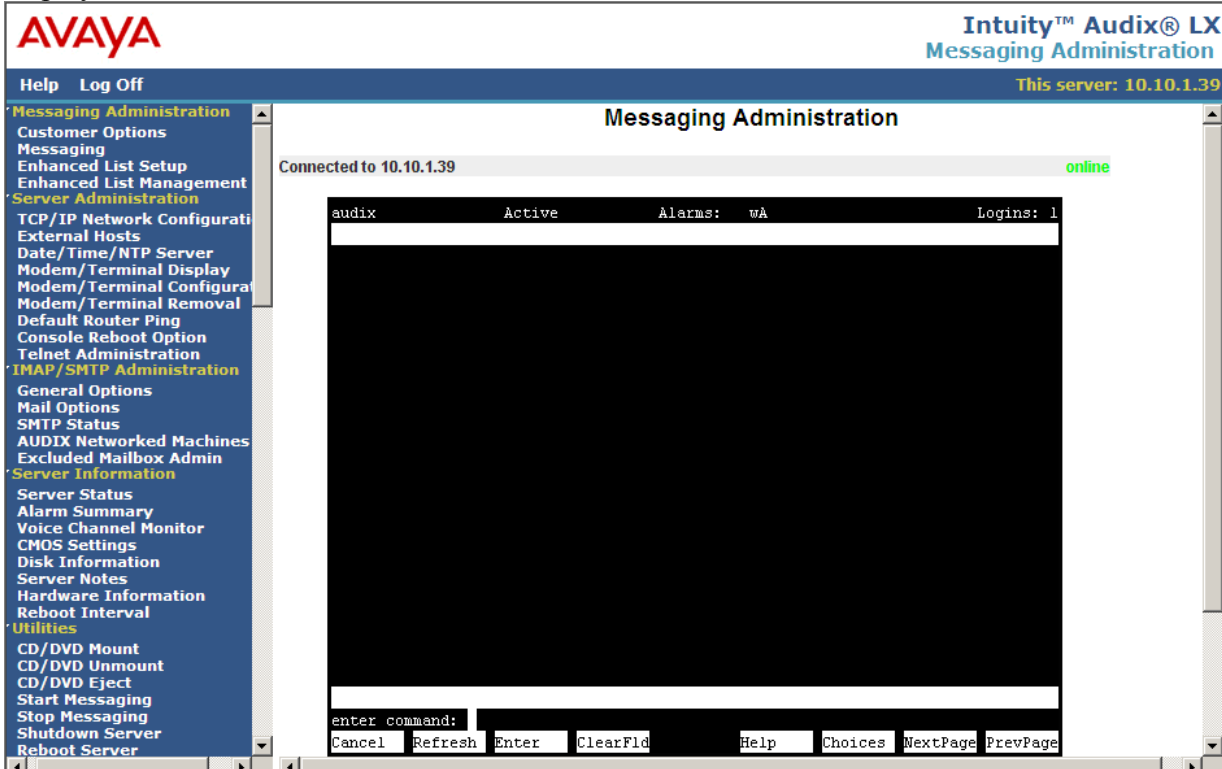
Step	Description																																																																																
6.	<p>To verify that mailboxes have been created, On the Manage Subscribers screen (see Step 4 for screenshot), select the Manage button to the right of the Local Subscribers entry. In the Manage Subscribers screen that is presented (see below), verify that the mailboxes created appear in the list of subscribers.</p> <div><div><div><div>AVAYA</div><div>Modular Messaging Messaging Administration</div><div>This server: 10.10.1.101</div></div><div><div>Help Log Off</div><div><div>▼ Messaging Administration</div><div>Subscriber Management Activity Log Configuration Messaging Attributes Classes-of-Service Enhanced-Lists Sending Restrictions System Administration Request Remote Update Networked Machines Trusted Servers</div><div>▼ Server Administration</div><div>Configure Using DCT TCP/IP Network Configur External Hosts MAS Host Setup MAS Host Send Windows Domain Setup Console Reboot Option Date/Time/NTP Server Syslog Server Modem/Terminal Display Modem/Terminal Configur Modem/Terminal Removal TCP/IP Service Settings</div><div>▼ IMAP/SMTP Administration</div><div>SMTP Options Mail Options IMAP/SMTP Status</div><div>▼ Server Information</div><div>Server Status Alarm Summary Disk Information Server Notes CMOS Settings RAID Status Rebuild RAID Status Reboot Interval</div><div>▼ Utilities</div><div>Rebuild RAID 1 Array CD/DVD Mount CD/DVD Unmount CD/DVD Eject Messaging DB Audits Start Messaging Stop Messaging Shutdown Server Reboot Server</div><div>▼ Logs</div><div>Administration History Alarm Backup Command Line History ELA Delivery Failures IMAP/SMTP Maintenance Messaging Start-up MSS DCT Configuration Log</div></div></div></div><div><div><div>Manage Local Subscribers</div><div>Subscriber Licenses Used: 16 of 50 System Mailboxes: 4</div><div>Total Subscribers: 20 Filtered Subscribers: 20</div><table><thead><tr><th>Subscriber Name</th><th>Mailbox Number</th><th>Numeric Address</th><th>COS</th><th>CID</th></tr></thead><tbody><tr><td>IPC3108</td><td>3108</td><td>3108</td><td>0</td><td>1</td></tr><tr><td>IPC3109</td><td>3109</td><td>3109</td><td>0</td><td>1</td></tr><tr><td>KunMM, 1</td><td>6620</td><td>6620</td><td>0</td><td>1</td></tr><tr><td>KunMM, 2</td><td>6621</td><td>6621</td><td>0</td><td>1</td></tr><tr><td>MM auto attendant</td><td>6640</td><td>6640</td><td>0</td><td>1</td></tr><tr><td>SES6181</td><td>6181</td><td>6181</td><td>0</td><td>1</td></tr><tr><td>SES6182</td><td>6182</td><td>6182</td><td>0</td><td>1</td></tr><tr><td>broadcast</td><td>8882</td><td>8882</td><td>500</td><td>1</td></tr><tr><td>ipc-3300</td><td>3300</td><td>3300</td><td>0</td><td>1</td></tr><tr><td>ipc-3307</td><td>3307</td><td>3307</td><td>0</td><td>1</td></tr><tr><td>ipc-SIP</td><td>3309</td><td>3309</td><td>0</td><td>1</td></tr><tr><td>ipc-qsig2</td><td>3107</td><td>3107</td><td>0</td><td>1</td></tr><tr><td>postmaster</td><td>8880</td><td>8880</td><td>500</td><td>1</td></tr><tr><td>systemela</td><td>8881</td><td>8881</td><td>8</td><td>11</td></tr><tr><td>voicemail18889</td><td>8889</td><td>8889</td><td>0</td><td>1</td></tr></tbody></table><div><div>Sort and Filter Subscribers</div><div>Launch Subscriber Options</div><div>Display Report of Subscribers</div><div>Delete the Selected Subscriber</div><div>Add a New Subscriber</div><div>Edit the Selected Subscriber</div><div>Back</div><div>Help</div></div><div><div>Page Status</div><div>Form unchanged. Saved values are shown.</div></div></div></div></div>	Subscriber Name	Mailbox Number	Numeric Address	COS	CID	IPC3108	3108	3108	0	1	IPC3109	3109	3109	0	1	KunMM, 1	6620	6620	0	1	KunMM, 2	6621	6621	0	1	MM auto attendant	6640	6640	0	1	SES6181	6181	6181	0	1	SES6182	6182	6182	0	1	broadcast	8882	8882	500	1	ipc-3300	3300	3300	0	1	ipc-3307	3307	3307	0	1	ipc-SIP	3309	3309	0	1	ipc-qsig2	3107	3107	0	1	postmaster	8880	8880	500	1	systemela	8881	8881	8	11	voicemail18889	8889	8889	0	1
Subscriber Name	Mailbox Number	Numeric Address	COS	CID																																																																													
IPC3108	3108	3108	0	1																																																																													
IPC3109	3109	3109	0	1																																																																													
KunMM, 1	6620	6620	0	1																																																																													
KunMM, 2	6621	6621	0	1																																																																													
MM auto attendant	6640	6640	0	1																																																																													
SES6181	6181	6181	0	1																																																																													
SES6182	6182	6182	0	1																																																																													
broadcast	8882	8882	500	1																																																																													
ipc-3300	3300	3300	0	1																																																																													
ipc-3307	3307	3307	0	1																																																																													
ipc-SIP	3309	3309	0	1																																																																													
ipc-qsig2	3107	3107	0	1																																																																													
postmaster	8880	8880	500	1																																																																													
systemela	8881	8881	8	11																																																																													
voicemail18889	8889	8889	0	1																																																																													

6. Configure Avaya INTUITY™ AUDIX® LX

Note: Either Avaya Modular Messaging or Avaya INTUITY™ AUDIX LX can be used as messaging systems. Both products are not required.

Step	Description
1.	<p>From a web browser, navigate to <a href="http://<ip-addr>">http://<ip-addr> (where <ip-addr> is the IP address of the Avaya INTUITY™ AUDIX® LX). After logging in with an appropriate login and password, the main page appears.</p> 

Step	Description																																																		
2.	<div>Follow Avaya Audix LX Application Notes to set up Voice System Admin , click Display under Voice Equipment Diagnostics menu to verify STATE are Inserv for all ports.</div> <div><div><div><div>AVAYA</div><div>Intuity™ Audix® LX Messaging Administration</div><div>This server: 10.10.1.39</div></div><div><div>Help Log Off</div><div>SNMP Service Control SNMP Community SNMP Users</div><div>Call Transfer Administration</div><div>Allowed Number Addition Allowed Number Deletion Allowed Number Display Denied Number Addition Denied Number Deletion Denied Number Display</div><div>Backup/Restore</div><div>Backup Restore Backup Attributes Remote Storage Configuration</div><div>Voice System Admin</div><div>Assign Chans to Groups Assign PBX Ext/Chans Assign Services/Chans Renumber Unassign Chans/Groups Unassign PBX Extensions Unassign Services/Chans Assign Number Services Display Number Services Unassign Number Services</div><div>Voice Equipment Diagnostics</div><div>Busy Diagnose Display Release Change State Voice Port Loop Around</div><div>Switch Administration</div><div>Switch Selection Switch Link Administration Call Info/MWI Parameters Link Parameters Interface Parameters Tones Administration</div></div><div><div>Display Voice Equipment</div><div>Display Voice Info :</div><div>CARD 0 STATE: Inserv CLASS: Analog(TR) O.S.INDEX: 0 NAME: D/41JCT- OPTIONS: master1,no tdm,tt FUNCTION: TipRing</div><table><tr><th>CARD</th><th>PORT</th><th>CHANNEL</th><th>STATE</th><th>TIME</th><th>SERVICE</th><th>PHONE</th><th>GROUP</th><th>OPTS</th><th>TYPE</th></tr><tr><td>0</td><td>0</td><td>0</td><td>Inserv</td><td>Jan 03 17:41:21</td><td>*DNIS_SVC</td><td>9900</td><td>0,1,2,3</td><td>talk</td><td>D/41JC</td></tr><tr><td>0</td><td>1</td><td>1</td><td>Inserv</td><td>Jan 03 22:28:59</td><td>*DNIS_SVC</td><td>9901</td><td>0,1,2,3</td><td>talk</td><td>D/41JC</td></tr><tr><td>0</td><td>2</td><td>2</td><td>Inserv</td><td>Jan 03 22:30:08</td><td>*DNIS_SVC</td><td>9902</td><td>0,1,2,3</td><td>talk</td><td>D/41JC</td></tr><tr><td>0</td><td>3</td><td>3</td><td>Inserv</td><td>Jan 03 17:42:48</td><td>*DNIS_SVC</td><td>9903</td><td>0,1,2,3</td><td>talk</td><td>D/41JC</td></tr></table><div>Help</div></div></div></div>	CARD	PORT	CHANNEL	STATE	TIME	SERVICE	PHONE	GROUP	OPTS	TYPE	0	0	0	Inserv	Jan 03 17:41:21	*DNIS_SVC	9900	0,1,2,3	talk	D/41JC	0	1	1	Inserv	Jan 03 22:28:59	*DNIS_SVC	9901	0,1,2,3	talk	D/41JC	0	2	2	Inserv	Jan 03 22:30:08	*DNIS_SVC	9902	0,1,2,3	talk	D/41JC	0	3	3	Inserv	Jan 03 17:42:48	*DNIS_SVC	9903	0,1,2,3	talk	D/41JC
CARD	PORT	CHANNEL	STATE	TIME	SERVICE	PHONE	GROUP	OPTS	TYPE																																										
0	0	0	Inserv	Jan 03 17:41:21	*DNIS_SVC	9900	0,1,2,3	talk	D/41JC																																										
0	1	1	Inserv	Jan 03 22:28:59	*DNIS_SVC	9901	0,1,2,3	talk	D/41JC																																										
0	2	2	Inserv	Jan 03 22:30:08	*DNIS_SVC	9902	0,1,2,3	talk	D/41JC																																										
0	3	3	Inserv	Jan 03 17:42:48	*DNIS_SVC	9903	0,1,2,3	talk	D/41JC																																										
3.	<div>Click the Switch Link Administration button under Switch Administration menu.</div> <div>Fill in the following fields. Switch Number and TCP Port must match processor channels screen, in Section 4.4 (Step 9). IP Address/Host Name must be C-LAN IP address.</div> <div><div><div><div>AVAYA</div><div>Intuity™ Audix® LX Messaging Administration</div><div>This server: 10.10.1.39</div></div><div><div>Help Log Off</div><div>SNMP Service Control SNMP Community SNMP Users</div><div>Call Transfer Administration</div><div>Allowed Number Addition Allowed Number Deletion Allowed Number Display Denied Number Addition Denied Number Deletion Denied Number Display</div><div>Backup/Restore</div><div>Backup Restore Backup Attributes Remote Storage Configuration</div><div>Voice System Admin</div><div>Assign Chans to Groups Assign PBX Ext/Chans Assign Services/Chans Renumber Unassign Chans/Groups Unassign PBX Extensions Unassign Services/Chans Assign Number Services Display Number Services Unassign Number Services</div><div>Voice Equipment Diagnostics</div><div>Busy</div></div><div><div>Switch Link Administration</div><div><div>Switch Link Type: LAN Host Switch Number: 1 Country: OTHER</div><div>Extension Length: 4 Audix Number: 1 Switch: DEFINITY OVERLAN</div></div><table><tr><th>Row #</th><th>Select to Delete</th><th>Switch Number</th><th>IP Address/Host Name</th><th>TCP Port</th><th>Row #</th><th>Select to Delete</th><th>Switch Number</th><th>IP Address/Host Name</th><th>TCP Port</th></tr><tr><td>1</td><td><input type="checkbox"/></td><td>1</td><td>10.10.1.30</td><td>5002</td><td>2</td><td><input type="checkbox"/></td><td>2</td><td>10.10.1.30</td><td>6003</td></tr><tr><td>3</td><td><input type="checkbox"/></td><td>3</td><td>10.10.1.30</td><td>6001</td><td></td><td></td><td></td><td></td><td></td></tr></table><div>Add Update Help</div></div></div></div>	Row #	Select to Delete	Switch Number	IP Address/Host Name	TCP Port	Row #	Select to Delete	Switch Number	IP Address/Host Name	TCP Port	1	<input type="checkbox"/>	1	10.10.1.30	5002	2	<input type="checkbox"/>	2	10.10.1.30	6003	3	<input type="checkbox"/>	3	10.10.1.30	6001																									
Row #	Select to Delete	Switch Number	IP Address/Host Name	TCP Port	Row #	Select to Delete	Switch Number	IP Address/Host Name	TCP Port																																										
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3	<input type="checkbox"/>	3	10.10.1.30	6001																																															

Step	Description
4.	<p>Select Messaging Administration->Messaging in the left pane. Fill in password, it will display the screen below.</p> 
5.	<p>Use add subscriber <i>n</i> command to create a new subscriber, and use change subscriber <i>n</i> to view or change it.</p> <p>Note: for Avaya extensions, Switch Number must be 1, for IPC extension, Switch Number must be 2 as configured on processor channel screen, in Section 4.4 (Step 9). For example: IPC extension 3107 and Avaya extension 6624.</p>

Step	Description
	<p>Connected to 10.10.1.39 online</p> <pre> audix Active Alarms: wA Logins: 1 change subscriber 3107 Page 1 of 2 SUBSCRIBER Name: IPC3107Audix Locked? n Extension: 3107 Password: COS: class01 Miscellaneous 1: Switch Number: 2 Miscellaneous 2: Community ID: 1 Miscellaneous 3: Secondary Ext: Miscellaneous 4: Account Code: Covering Extension: Broadcast Mailbox? n Email Address: 3107@audix. enter command: change subscriber 3107 Cancel Refresh Enter ClearFld Help Choices NextPage PrevPage </pre> <p>Connected to 10.10.1.39 online</p> <pre> audix Active Alarms: wA Logins: 1 change subscriber 6624 Page 1 of 2 SUBSCRIBER Name: H.323Phone6624 Locked? n Extension: 6624 Password: COS: class01 Miscellaneous 1: Switch Number: 1 Miscellaneous 2: Community ID: 1 Miscellaneous 3: Secondary Ext: Miscellaneous 4: Account Code: Covering Extension: Broadcast Mailbox? n Email Address: 6624@audix. enter command: change subscriber 6624 Cancel Refresh Enter ClearFld Help Choices NextPage PrevPage </pre>

Step	Description
6.	<p>To verify that mailboxes have been created, use command list subscribers.</p> <p>Note: Analog extensions are configured as subscribers.</p> <p>Connected to 10.10.1.39 online</p> <pre> audix Active Alarms: wA Logins: 1 list subscribers Page 1 LIST SUBSCRIBERS Name Extension COS Misc. Misc. Audix Sub 6610 6610 class01 Audix Sub 6611 6611 class00 Audix Sub 9900 9900 class00 Audix Sub 9901 9901 class00 Audix Sub 9902 9902 class00 Audix Sub 9903 9903 class00 automatedAttendant 6630 class02 Avaya6625 6625 class01 Press [NextPage], [PrevPage] or [Cancel] enter command: list subscribers Cancel Refresh Enter ClearFld Help Choices NextPage PrevPage </pre> <p>Connected to 10.10.1.39 online</p> <pre> audix Active Alarms: wA Logins: 1 list subscribers Page 2 LIST SUBSCRIBERS Name Extension COS Misc. Misc. Avaya6628 6628 class01 Avaya6629 6629 class01 H.323Phone4001 4001 class01 H.323phone6621 6621 class01 H.323Phone6624 6624 class01 H6626 6626 class01 IPC3107Audix 3107 class01 IPC3108Audix 3108 class01 Press [NextPage], [PrevPage] or [Cancel] enter command: list subscribers Cancel Refresh Enter ClearFld Help Choices NextPage PrevPage </pre>

Step	Description
7.	<p>Use command display cos 1 to view class of service (COS) for extensions.</p> <p>Connected to 10.10.1.39 online</p> <pre> audix Active Alarms: wA Logins: 1 display cos 1 Page 1 of 2 CLASS OF SERVICE Name: class01 COS Number: 1 Modified? y Addressing Format: extension Login Announcement Set: System System Multilingual is ON Call Answer Primary Annc. Set: System Call Answer Language Choice? n Call Answer Secondary Annc. Set: System PERMISSIONS Type: call-answer Announcement Control? n Outcalling? y Priority Messages? y Broadcast: none IMAPI Access? y IMAPI Message Transfer? y Fax Creation? y Trusted Server Access? y enter command: display cos 1 Cancel Refresh Enter ClearFld Help Choices NextPage PrevPage </pre> <p>Connected to 10.10.1.39 online</p> <pre> audix Active Alarms: wA Logins: 1 display cos 1 Page 2 of 2 CLASS OF SERVICE INCOMING MAILBOX Order: fifo Category Order: nuo Retention Times (days), New: 10 Old: 10 Unopened: 10 OUTGOING MAILBOX Order: fifo Category Order: unfda Retention Times(days),File Cab: 10 Delivered/Wondeliverable: 5 Voice Mail Message (seconds), Maximum Length: 1200 Minimum Needed: 32 Call Answer Message (seconds), Maximum Length: 1200 Minimum Needed: 8 End of Message Warning Time (seconds): Maximum Mailing Lists: 25 Total Entries in all Lists: 250 Mailbox Size (seconds), Maximum: 8400 Minimum Guarantee: 0 enter command: display cos 1 Cancel Refresh Enter ClearFld Help Choices NextPage PrevPage </pre>

7. General Test Approach and Test Results

All feature and serviceability test cases were performed manually. The verification included viewing call states on the Avaya telephones and IPC turrets and viewing QSIG traces.

All test cases were executed and a number of observations were made. These observations and the impact they have on the interoperability of the systems can be viewed in the IPC test schedule document in reference [3].

8. Verification Steps

The following steps can be used to verify that Avaya Communication Manager and Avaya Modular Messaging are configured correctly to support QSIG integration with the Alliance MX product.

Product:

Step	Description																																																								
1.	<p>In Avaya Communication Manager, to verify that either of the trunk groups are up, use the status trunk x command, where x is the number of the trunk group. Verify for each trunk, that Service State shows in-service/idle on an idle system.</p> <div><pre>status trunk 4</pre><div>Page 1</div><table><tr><th colspan="4">TRUNK GROUP STATUS</th></tr><tr><th>Member</th><th>Port</th><th>Service State</th><th>Mtce Connected Ports Busy</th></tr><tr><td>0004/001</td><td>01A0901</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/002</td><td>01A0902</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/003</td><td>01A0903</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/004</td><td>01A0904</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/005</td><td>01A0905</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/006</td><td>01A0906</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/007</td><td>01A0907</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/008</td><td>01A0908</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/009</td><td>01A0909</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/010</td><td>01A0910</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/011</td><td>01A0911</td><td>in-service/idle</td><td>no</td></tr><tr><td>0004/012</td><td>01A0912</td><td>in-service/idle</td><td>no</td></tr></table></div>	TRUNK GROUP STATUS				Member	Port	Service State	Mtce Connected Ports Busy	0004/001	01A0901	in-service/idle	no	0004/002	01A0902	in-service/idle	no	0004/003	01A0903	in-service/idle	no	0004/004	01A0904	in-service/idle	no	0004/005	01A0905	in-service/idle	no	0004/006	01A0906	in-service/idle	no	0004/007	01A0907	in-service/idle	no	0004/008	01A0908	in-service/idle	no	0004/009	01A0909	in-service/idle	no	0004/010	01A0910	in-service/idle	no	0004/011	01A0911	in-service/idle	no	0004/012	01A0912	in-service/idle	no
TRUNK GROUP STATUS																																																									
Member	Port	Service State	Mtce Connected Ports Busy																																																						
0004/001	01A0901	in-service/idle	no																																																						
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0004/006	01A0906	in-service/idle	no																																																						
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0004/008	01A0908	in-service/idle	no																																																						
0004/009	01A0909	in-service/idle	no																																																						
0004/010	01A0910	in-service/idle	no																																																						
0004/011	01A0911	in-service/idle	no																																																						
0004/012	01A0912	in-service/idle	no																																																						
2.	<p>To verify end-to-end connectivity and configuration, set one of the IPC turrets to call forward to voicemail, then call the IPC turret from an Avaya Communication Manager station. The call should route to the mailbox of the IPC turret. Also verify MWI works on IPC turret after leave a message on IPC turret.</p>																																																								

9. Conclusion

This Application Notes describe how to configure Avaya Communication Manager, Avaya Modular Messaging or Avaya INTUITY™ AUDIX® LX to support the IPC Information System Alliance MX using QSIG.

10. Additional References

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

- [1] *Documentation for Avaya Communication Manager (5.1), Media Gateways and Servers*, January 2008, available at:
<http://support.avaya.com>
- [2] *Modular Messaging Release 4.0 with the Avaya MSS – Messaging Application Server (MAS) Administration Guide*, May 2008, available at
<http://support.avaya.com>
- [3] *ISO QSIG Interworking Test Schedule Between IPC MX Dealerboard Release 15.2 and Avaya Communication Manager Rel.5.1*, February 2009, available on request from IPC mark.rideout@ipc.com or Avaya niu@avaya.com.
- [4] *AVAYA S8300 & S87x0/S8500 with C-LAN Connectivity Date: 03/08 Rev: E Intg Type: CLAN*, March 2008, available at
<http://support.avaya.com>

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