



Configuring Centralized Voice Mail for an Avaya™ IP Office Server using an Avaya Intuity™ Audix® Co-located with Various Avaya IP-PBXs - Issue 1.0

Abstract

These Application Notes describe a configuration of Avaya Intuity™ Audix® based centralized voice mail for an Avaya™ IP Office Server, when the central Avaya IP-PBX is an Avaya™ IP600 Internet Protocol Communications Server, an Avaya™ G600 Media Gateway controlled by an Avaya™ S8100 Media Server or an Avaya™ G700 Media Gateway controlled by an Avaya™ S8300 Media Server. Primary Rate Interface and H.323 configurations are described.

1 Introduction

These Application Notes describe a configuration of Avaya™ IP Office server with centralized voicemail coverage by an Avaya Intuity™ Audix®. The calls and message waiting updates transverse a Primary Rate Interface (PRI) or an H.323 trunk between the Avaya™ IP Office Server and an Avaya IP-PBX. The central IP- PBX configured is an Avaya IP600 server, an Avaya™ S8100 Media Server with G600 Media Gateway or an Avaya S8300 Media Server with G700 Media Gateway. **Figure 1** shows the PRI based configuration described in these Application Notes. **Figure 2** shows the configuration for H.323 based centralized messaging.

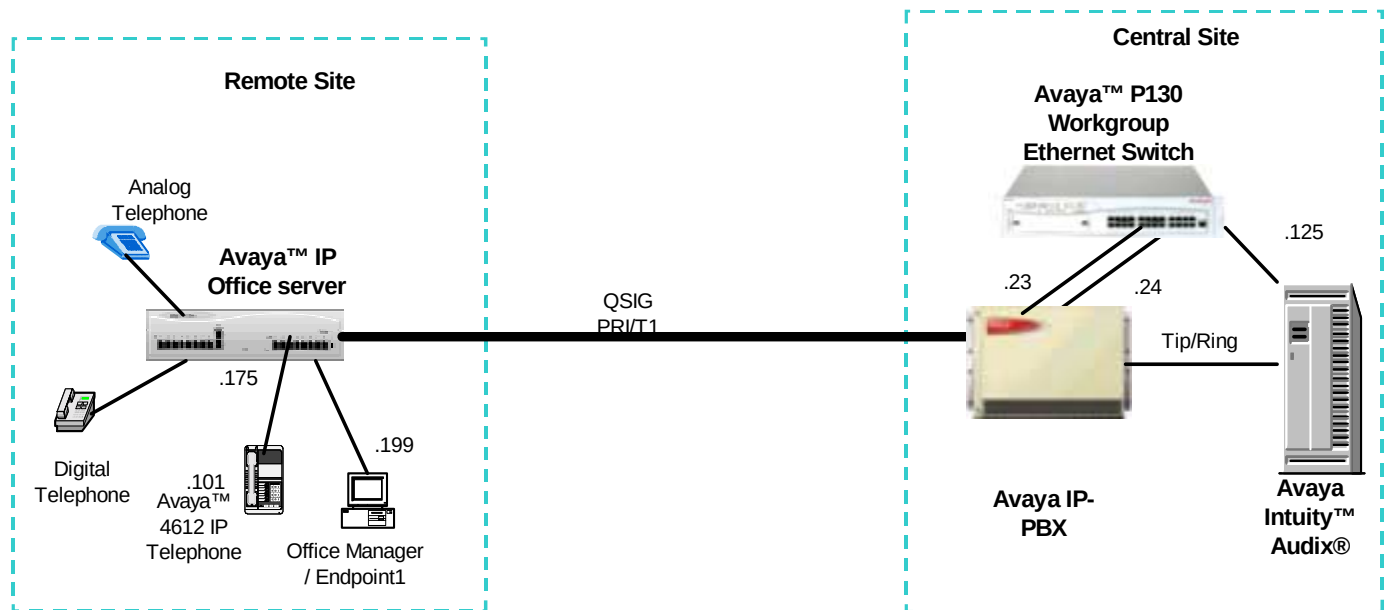


Figure 1: PRI-based Centralized Messaging

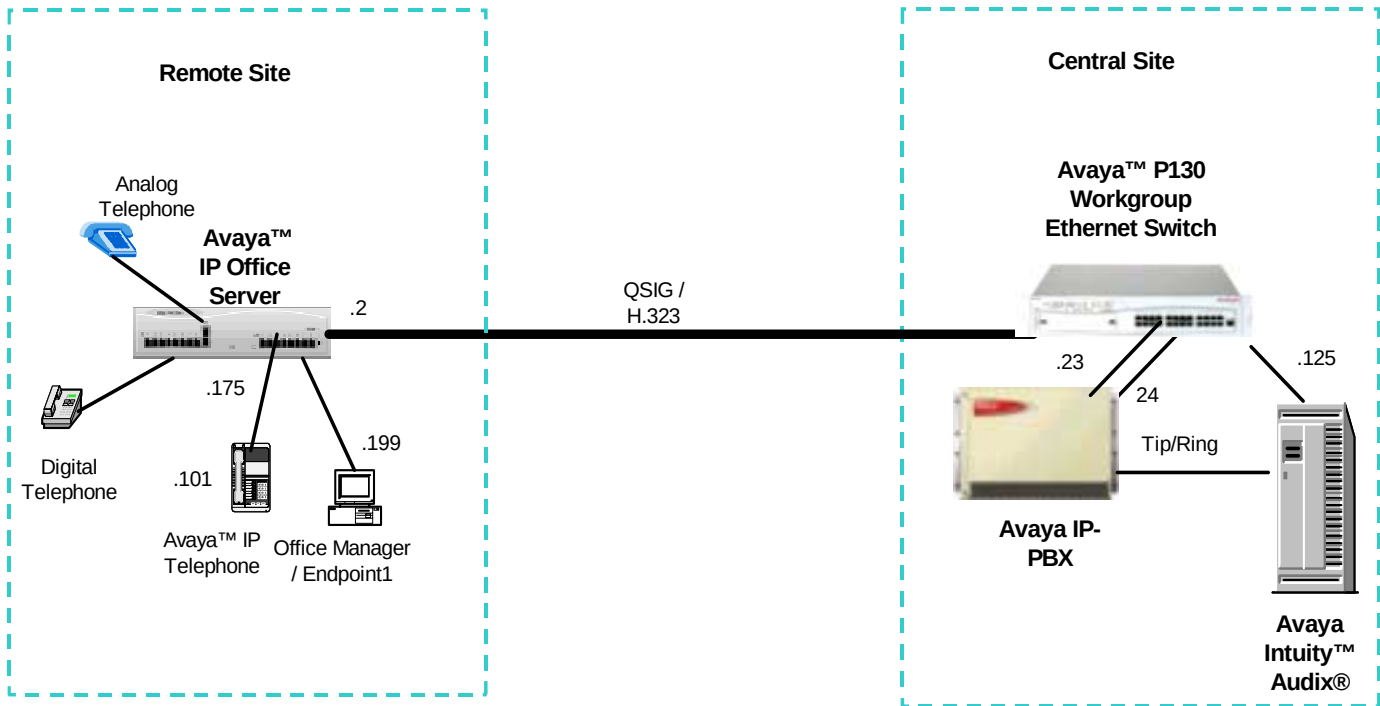


Figure 2: H.323 Based Centralized Messaging

2 Equipment and Software Validated

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

Equipment	Software/Firmware
Avaya™ IP406 Office Server	R1.3 (100)
Avaya™ IP600 Internet Protocol Communication Server	R010c.01.0.037.2
Avaya™ S8100 Media Server	R1.2
Avaya™ S8300 Media Server	R1.2
Avaya™ 4612 IP Telephone	1.72
Avaya™ 6400 Series Telephone	N/A
Avaya™ P133 G2 Workgroup Ethernet Switch	2.9.2
Avaya Intuity™ Audix®	R4.4

3 Configure the Avaya IP Office Server

This section describes Avaya IP Office server specific configuration for this feature.

3.1 Centralized Audix License

Before performing this step, ensure that a valid Avaya IP Office Server Feature Key Server is properly installed and active.

1. From the Manager Configuration Tree, Select **License**, and right click **New** to install the Centralized Audix software license and select **OK**.
2. Under the File menu item, select **Save**. Select **OK** on the “Sending Config to” dialogue box to install the configuration file and reboot the Avaya IP Office Server.
3. After the Avaya IP Office Server recovers, check under the License area to ensure that the Central Audix license indicates “Valid” in the “Status” column.

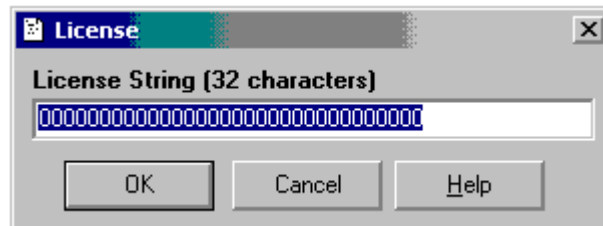
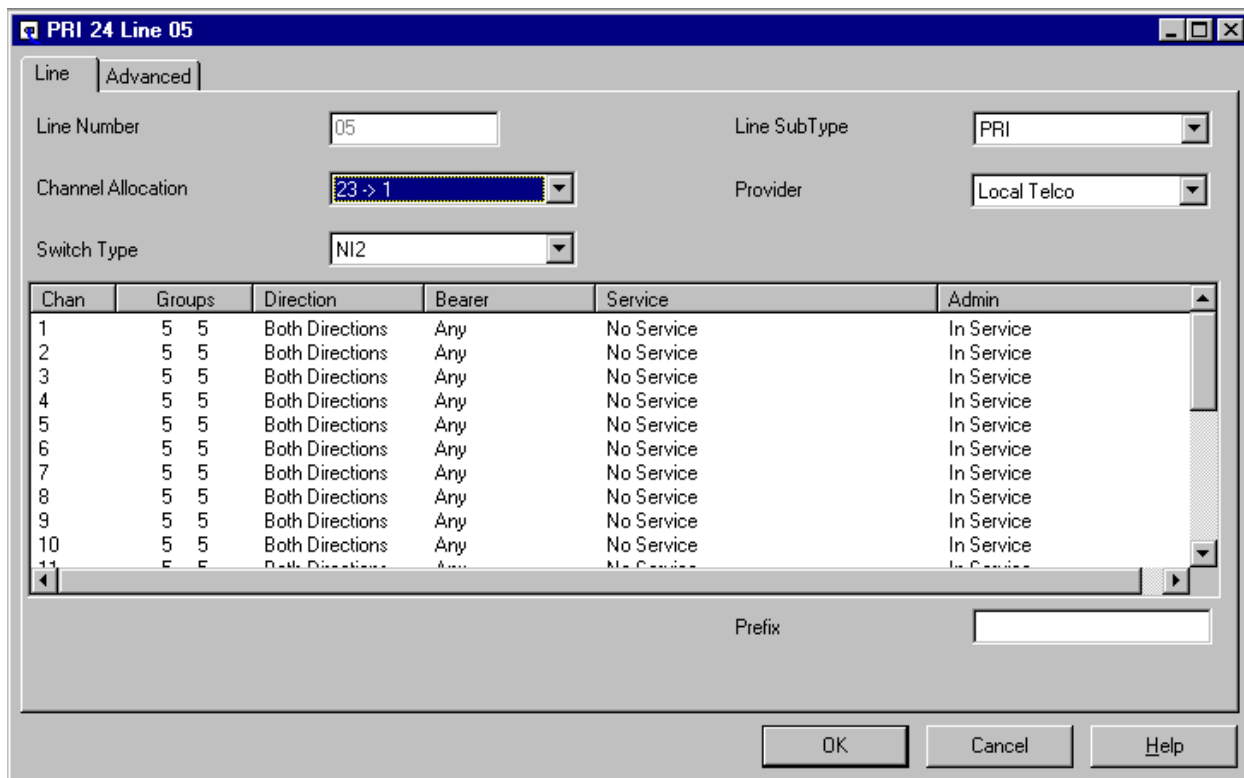


Figure 3: License Entry

3.2 QSIG PRI Configuration

Follow this section only if the IP Office server is connected to the centralized PBX via PRI. Otherwise, for H.323, skip to **Section 3.3**. This trunk will carry all messaging traffic and may also be used for other voice calls.

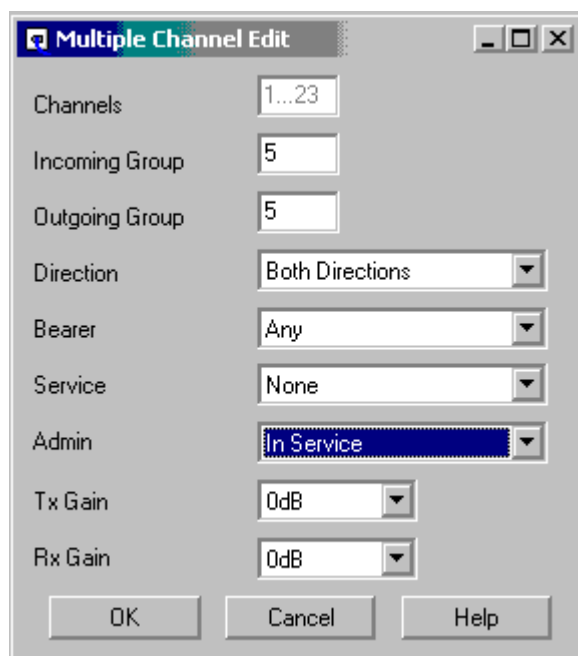
1. From the Manager Configuration Tree “Line” section, double-click the line associated with the T1 interface that will be used to connect to the central PBX.
2. As shown in **Figure 4**, set the **Switch Type** to **NI-2** (National ISDN-2). Assign the PRI channels to unique incoming and outgoing trunk groups and set the **Admin** value to **in service**. Note that as shown in **Figure 5**, the shift key can be used with selection to assign the same values to multiple channels. The number of channels must be equal to the number of channels allocated on the central PBX Trunk Group form, with the **Channel Allocation** in the opposite direction. If there is multiplexing equipment between the systems, include only those channels that will be passed end to end through the multiplexing equipment.



The image shows the 'PRI 24 Line 05' configuration window. It has two tabs: 'Line' and 'Advanced'. The 'Line' tab is active, showing fields for Line Number (05), Line SubType (PRI), Channel Allocation (23 -> 1), Provider (Local Telco), and Switch Type (NI2). Below these fields is a table with 6 columns: Chan, Groups, Direction, Bearer, Service, and Admin. The table contains 11 rows of data. At the bottom of the window are buttons for OK, Cancel, and Help.

Chan	Groups	Direction	Bearer	Service	Admin
1	5 5	Both Directions	Any	No Service	In Service
2	5 5	Both Directions	Any	No Service	In Service
3	5 5	Both Directions	Any	No Service	In Service
4	5 5	Both Directions	Any	No Service	In Service
5	5 5	Both Directions	Any	No Service	In Service
6	5 5	Both Directions	Any	No Service	In Service
7	5 5	Both Directions	Any	No Service	In Service
8	5 5	Both Directions	Any	No Service	In Service
9	5 5	Both Directions	Any	No Service	In Service
10	5 5	Both Directions	Any	No Service	In Service
11	5 5	Both Directions	Any	No Service	In Service

Figure 4: Avaya IP Office Server PRI Line



The image shows the 'Multiple Channel Edit' dialog box. It contains fields for Channels (1...23), Incoming Group (5), Outgoing Group (5), Direction (Both Directions), Bearer (Any), Service (None), Admin (In Service), Tx Gain (0dB), and Rx Gain (0dB). At the bottom are buttons for OK, Cancel, and Help.

Figure 5: PRI Line Multiple Channel Edit

3. If this is a direct connection, click the **Advanced** tab and ensure that the line **Framing** and **Zero Suppression** settings correspond to the settings of any multiplexing equipment or the central PBX “ds1” form. If this T1 is the only synchronous line in the system, select

Network for **Clock Quality**. Otherwise evaluate the quality of alternative clocking sources and set accordingly.

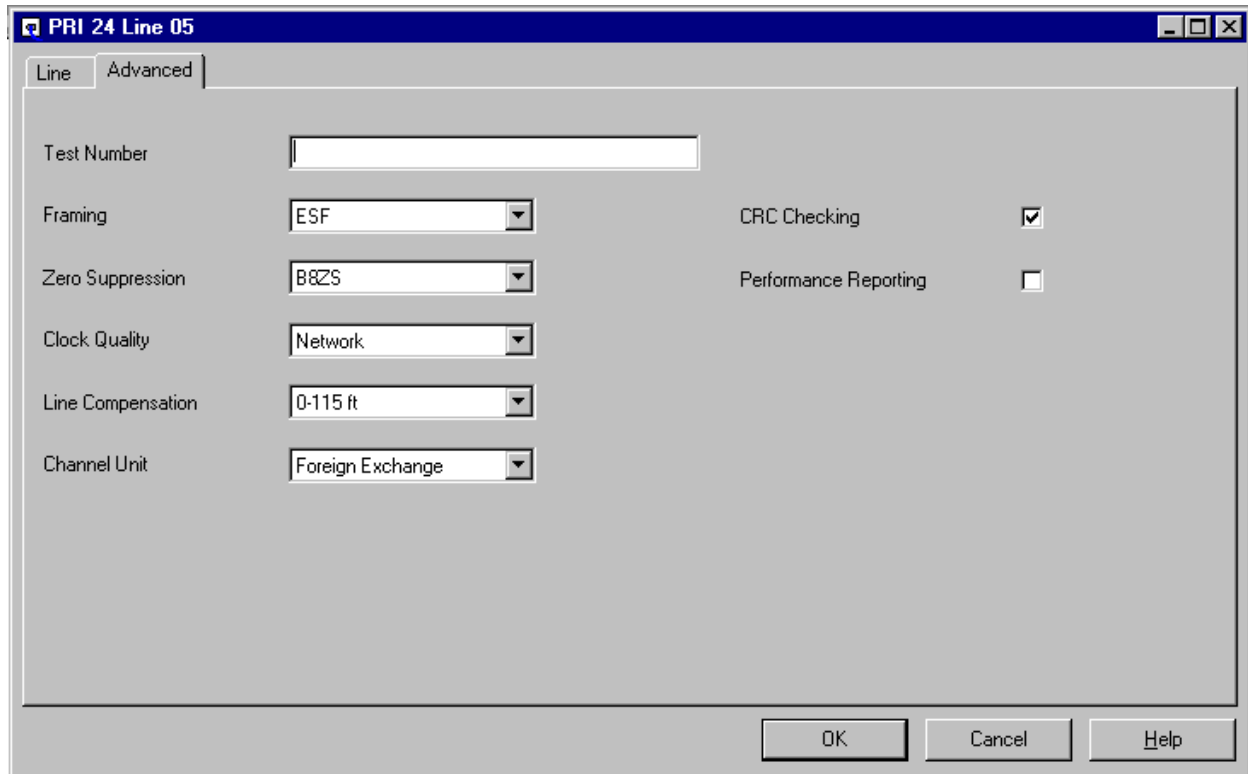
The image shows a software dialog box titled "PRI 24 Line 05". It has two tabs: "Line" and "Advanced", with "Advanced" currently selected. The dialog contains several configuration options: "Test Number" is a text input field; "Framing" is a dropdown menu set to "ESF"; "Zero Suppression" is a dropdown menu set to "B8ZS"; "Clock Quality" is a dropdown menu set to "Network"; "Line Compensation" is a dropdown menu set to "0-115 ft"; "Channel Unit" is a dropdown menu set to "Foreign Exchange"; "CRC Checking" is a checked checkbox; and "Performance Reporting" is an unchecked checkbox. At the bottom right, there are three buttons: "OK", "Cancel", and "Help".

Figure 6: PRI Line Advanced Settings

4. After saving these values to the system (and rebooting), the light associated with the PRI line will come on, if the corresponding system has been configured properly and the wiring is correct. (For direct Avaya IP Office Server to IP600 Server or G600 connections, a 25 pair to modular jack adapter and a straight through modular cord are required).
5. As with any Avaya IP Office Server PRI configuration, be sure to include an **Incoming Call Route (Figure 7)** for each station that is to be reachable for incoming calls from that PRI. This can be done through the "MSN configuration" under the "Tools" menu item or individually through the "Incoming Call Route" item under the manager configuration tree.

Figure 7: Incoming Call Route

3.3 H.323 Trunk Configuration

Follow this section only if the IP Office server is connected to the centralized PBX via H.323. For PRI instructions, see **Section 3.2**. This trunk will carry all messaging traffic and may also be used for other voice calls.

1. Under the Manager Configuration Tree “Line” selection, right click **New** to create a new line. Choose a unique **Incoming** and **Outgoing Group ID** and ensure that the number of channels is equal to the number of channels that will be administered in the central PBX “Trunk” form and is within the bandwidth allocated for voice traffic in the IP network.

Field	Value
Line Number	20
Telephone Number	
Number Of Channels	20
Outgoing Channels	20
Data Channels	20
Voice Channels	20
TEI	0
Incoming Group ID	5
International Prefix	00
Outgoing Group ID	5
National Prefix	0
Prefix	

Figure 8: VPN Line Parameters

2. Click the **VoIP** tab and enter the **Gateway IP address** of the central PBX (**Figure 9**). For IP 600 or the S8100 Media Server/G600 Media Gateway this will be the “C-LAN” address. For the S8300 Media Serv er/G700 Media Gateway, this will be the Processor IP address.
3. Enable **FastStart**, **Out of band DTMF**, and **Allow Direct Media Path** if desired.
4. Set **Compression** to **G.711ULAW 64K**. Other Voice Compression techniques can be used, but be warned that the quality of messages heard may suffer. This setting must match the first of the central PBX “IP-codec-set” values. Set **H.450** Support to **None**.

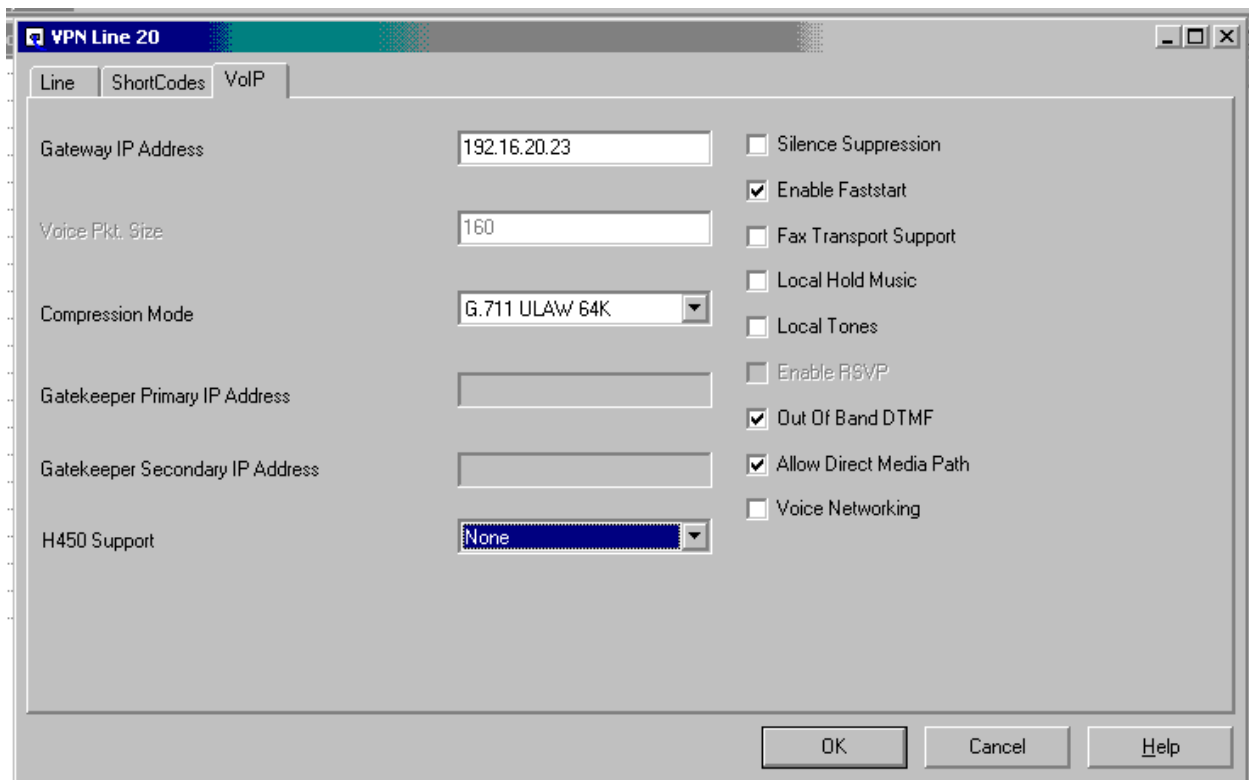


Figure 9: Line VoIP Parameters

5. From the Manager Configuration Tree select **IPRoute** and ensure that there is an entry for routing IP packets to the central PBX. Within this configuration, there is a simple default entry to bridge the packets to the LAN interface, since there is a shared LAN connection.

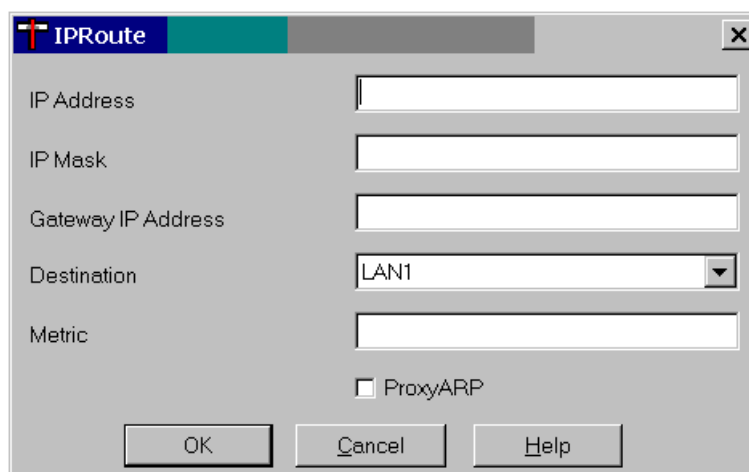


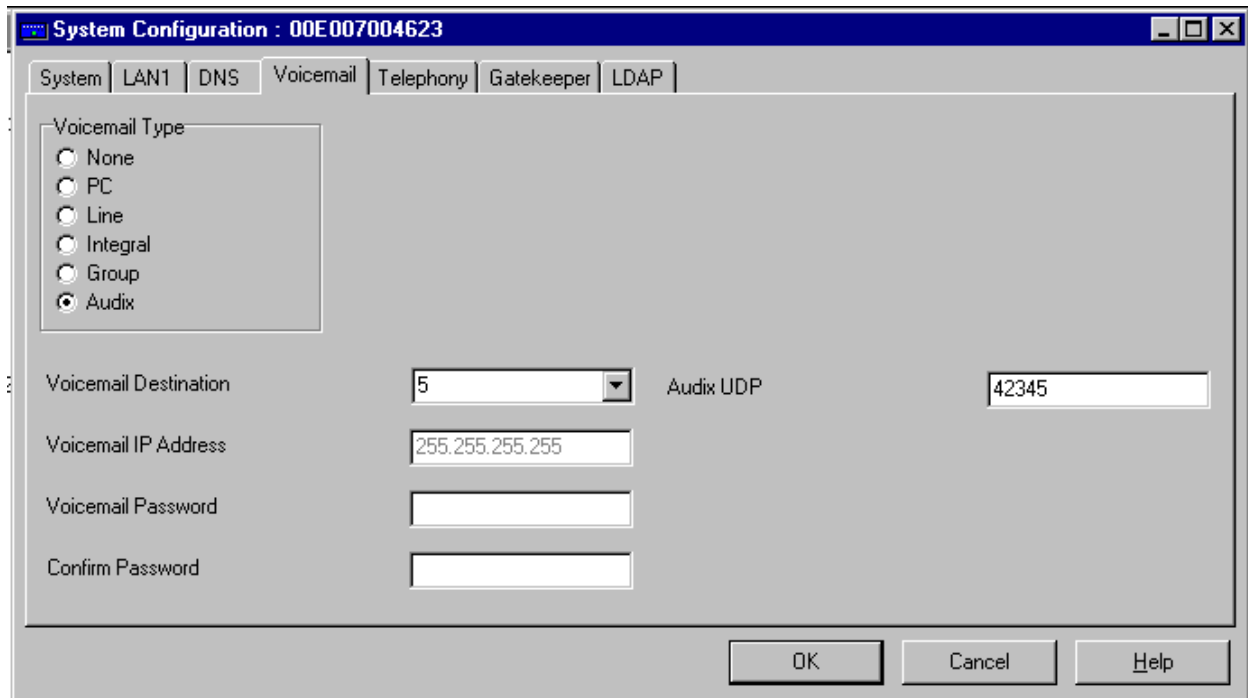
Figure 10: Default IP Route

Please see the “References” section for Application Notes describing the configuration of more complex IP networks.

6. Save this configuration to the IP Office server, which will then reboot.

3.4 System Configuration for Centralized Voicemail

1. From the Manager Configuration Tree, select **System Configuration**, select the **Voicemail** tab and select the **Audix** radio button. Enter the **Voicemail Destination** (outgoing group) of the previously created PRI or H.323 line. Under **Audix UDP** enter the central PBX extension for the Avaya Intuity Audix huntgroup.

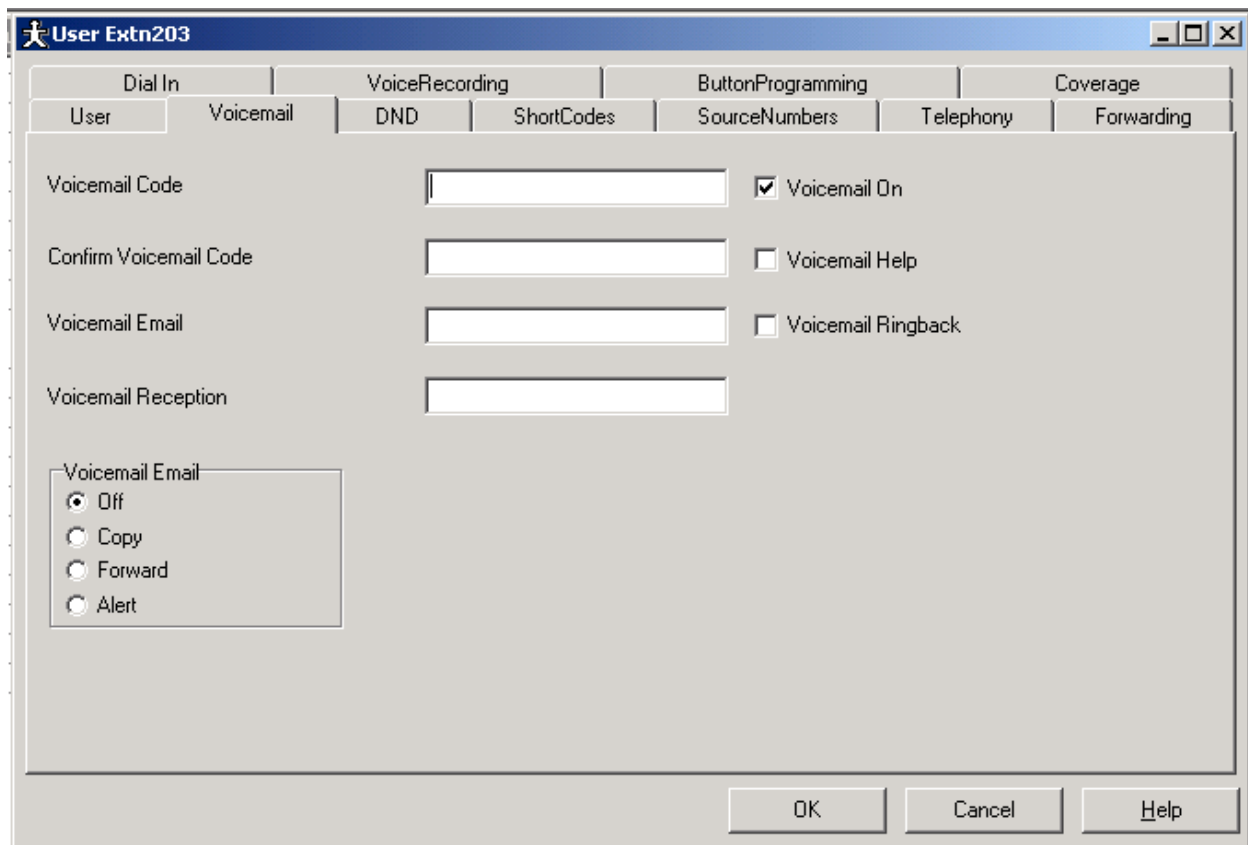


The screenshot shows a window titled "System Configuration : 00E007004623". It has several tabs: System, LAN1, DNS, Voicemail, Telephony, Gatekeeper, and LDAP. The "Voicemail" tab is selected. Inside the tab, there is a "Voicemail Type" section with radio buttons for None, PC, Line, Integral, Group, and Audix. The "Audix" radio button is selected. Below this, there are four fields: "Voicemail Destination" with a dropdown menu showing "5", "Voicemail IP Address" with a text box containing "255.255.255.255", "Voicemail Password" with an empty text box, and "Confirm Password" with an empty text box. To the right of the "Voicemail Destination" field is the "Audix UDP" label and a text box containing "42345". At the bottom right of the window are three buttons: "OK", "Cancel", and "Help".

Figure 11: System Configuration Voicemail Tab

3.5 Enable Voicemail for each user

1. For each user extension that is to use Voice mail, ensure that **Voicemail On** under the **Voicemail** tab is set.

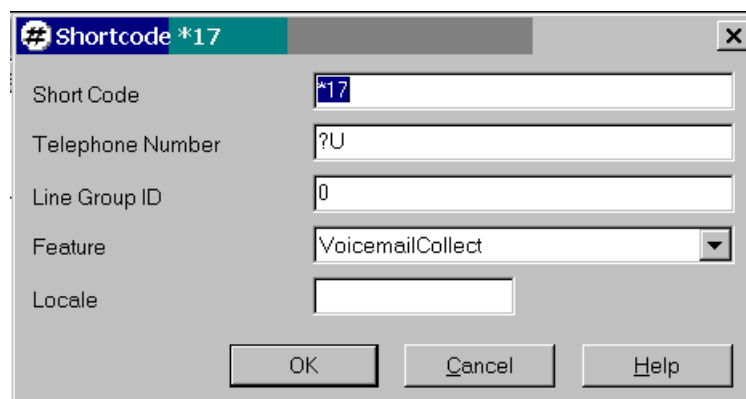


The image shows a configuration window titled "User Extn203" with a tabbed interface. The "Voicemail" tab is selected. The window contains several input fields and checkboxes for configuring voicemail settings.

Dial In	VoiceRecording	ButtonProgramming	Coverage
User	DND	ShortCodes	SourceNumbers
Voicemail	Telephony	Forwarding	
Voicemail Code		☒ Voicemail On	
Confirm Voicemail Code		☐ Voicemail Help	
Voicemail Email		☐ Voicemail Ringback	
Voicemail Reception			
Voicemail Email ☒ Off ☐ Copy ☐ Forward ☐ Alert			
OK Cancel Help			

Figure 12: User Voicemail Tab

- From the Configuration Tree, select Shortcode. The default short code “*17”, configured as shown, will route “*17” calls to the central voicemail system.



The image shows a configuration window titled "# Shortcode *17". It contains several input fields and a dropdown menu for configuring the shortcode.

Short Code	*17
Telephone Number	?U
Line Group ID	0
Feature	VoicemailCollect
Locale	
OK Cancel Help	

Figure 13 Voicemail short code

Note that a short code may be needed to direct non-messaging calls to the line to the central PBX, independent of messaging configuration.

- Save this configuration to the IP Office server, which will then reboot.

4 Configure the Central PBX

This section describes the configuration of the central Avaya PBX. All commands are run from the PBX System Access Terminal (SAT) command line interface.

4.1 Set the dial plan and Node number

1. Update the PBX dialplan as follows:
 - For Avaya IP600 Server (Definity R10) type ***change dialplan*** as shown in **Figure 14**.
 - For Media Servers running Avaya MultiVantage™ Software type ***change dialplan parameters*** as shown in **Figure 15**.
2. Ensure that the extensions that will be used (including Avaya IP Office Server extensions) are shown as extensions. Also, note the “Local Node Number” will need to match the Avaya Intuity Audix Switch Link Administration “Host Switch Number”.

```
change dialplan
                                DIAL PLAN RECORD
                                Local Node Number: 1
                                ETA Node Number:
                                Uniform Dialing Plan: 5-digit
                                UDP Extension Search Order: local-extensions-first
                                ETA Routing Pattern:
FIRST DIGIT TABLE
First
Digit - 1 -      - 2 -      - 3 -      - 4 -      - 5 -      - 6 -
1: misc
2:
3:
4:
5:
6:
7:
8:
9:
0:
*:
#:
Command:
```

Figure 14: Avaya IP600 Server (R10) change dialplan

change dialplan parameters			DIAL PLAN RECORD			Page 1 of 1		
						Local Node Number: 1		
						ETA Node Number:		
						ETA Routing Pattern:		
						UDP Extension Search Order: local-extensions-first		
change dialplan analysis			DIAL PLAN ANALYSIS TABLE			Page 1 of 3		
						Percent Full: 5		
Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type
10	3	dac	7	5	ext			
11	3	dac	*	2	fac			
12	3	dac	#	3	fac			
13	3	dac						
14	3	fac						
15	3	fac						
16	3	fac						
17	3	fac						
18	3	fac						
19	3	fac						
2	5	ext						
3	5	ext						
4	5	ext						
5	5	ext						
6	5	ext						

Figure 15: MultiVantage Software change dialplan parameters

4.2 Customer Options and Feature Settings

The commands of this section require a login with special permissions as many of these items require associated licenses.

1. If this is a Media Server running MultiVantage™ Software, type ***display system-parameters offer-options*** and ensure that this system is configured as Offer Category “A”, which is required for the QSIG supplemental features needed for centralized voice mail.
2. Type ***change system-parameters customer-options*** and ensure the following settings:
 - OPTIONAL FEATURES
 - o Page 1 and 9
 - Ensure that the capacities are sufficient.
 - o Page 2
 - **ARS? Y**
 - o Page 3
 - **ISDN-PRI? Y**
 - o Page 4
 - **Private Networking? Y**
 - **Processor Ethernet? y**
 - **Uniform Dialing Plan? Y**

- QSIG OPTIONAL FEATURES
 - o Page 7
 - **Basic Call Setup? Y**
 - **Basic Supplementary Services? Y**

change system-parameters customer-options		Page	1 of	9
OPTIONAL FEATURES				
G3 Version: V10	Maximum Ports: 500	Used		
Location: 1	Maximum XMOBILE Stations: 10	108		
		0		
IP PORT CAPACITIES				
	Maximum Administered IP Trunks: 150	20		
	Maximum Concurrently Registered IP Stations: 200	0		
	Maximum Administered Remote Office Trunks: 0	0		
	Maximum Concurrently Registered Remote Office Stations: 0	0		
	Maximum Concurrently Registered IP eCons: 0	0		
	Maximum Number of DS1 Boards with Echo Cancellation: 5	0		
	Maximum VAL Boards: 1	0		
(NOTE: You must logoff & login to effect the permission changes.)				

Figure 16: System-Parameters customer-options, page 1

change system-parameters customer-options		Page	2 of	9
OPTIONAL FEATURES				
Abbreviated Dialing Enhanced List? y	Audible Message Waiting? y			
	Authorization Codes? n			
Analog Trunk Incoming Call ID? y	CAS Branch? n			
A/D Grp/Sys List Dialing Start at 01? y	CAS Main? n			
Answer Supervision by Call Classifier? y	Change COR by FAC? y			
ARS? y	Computer Telephony Adjunct Links? n			
ARS/AAR Partitioning? y	Cvg Of Calls Redirected Off-net? n			
ARS/AAR Dialing without FAC? n	DCS (Basic)? y			
ASAI Link Core Capabilities? n	DCS Call Coverage? y			
ASAI Link Plus Capabilities? n	DCS with Rerouting? y			
	Digital Loss Plan Modification? y			
Async. Transfer Mode (ATM) Trunking? n	DS1 MSP? y			
	DS1 Echo Cancellation? y			
ATMS? y				
Attendant Vectoring? y				

Figure 17: System Parameters customer options, page 2

```
change system-parameters customer-options                               Page 3 of 9
                                OPTIONAL FEATURES

Emergency Access to Attendant? y                                     ISDN-BRI Trunks? y
Enhanced EC500? n                                                    ISDN-PRI? y
Extended Cvg/Fwd Admin? n                                           Malicious Call Trace? y
External Device Alarm Admin? y                                       Mode Code for Centralized Voice Mail? n
Flexible Billing? n
Forced Entry of Account Codes? y                                     Multifrequency Signaling? y
Global Call Classification? y Multimedia Appl. Server Interface (MASI)? n
Hospitality (Basic)? y                                               Multimedia Call Handling (Basic)? n
Hospitality (G3V3 Enhancements)? y Multimedia Call Handling (Enhanced)? n
H.323 Trunks? y
Integrated SSP Announcements? y                                     Personal Station Access (PSA)? n
IP Attendent Consoles? n
IP Stations? y
ISDN Feature Plus? n
ISDN Network Call Redirection? n
```

Figure 18: System Parameters customer options, page 3

```
change system-parameters customer-options                               Page 4 of 9
                                OPTIONAL FEATURES

Processor and System MSP? n
Private Networking? y
Processor Ethernet? y
Remote Office? n
Restrict Call Forward Off Net? y
Secondary Data Module? y
Station and Trunk MSP? n
Station as Virtual Extension? n
System Management Data Transfer? n

Tenant Partitioning? n
Terminal Trans. Init. (TTI)? n
Time of Day Routing? n
Uniform Dialing Plan? y
Usage Allocation Enhancements? n
VAL Full 1-Hour Capacity? y
Wideband Switching? n
Wireless? n

(NOTE: You must logoff & login to effect the permission changes.)
```

Figure 19: System-parameters customer-options, page 4

```
change system-parameters customer-options                               Page 7 of 9
                                QSIG OPTIONAL FEATURES

Basic Call Setup? y
Basic Supplementary Services? y
Centralized Attendant? n
Interworking with DCS? n
Supplementary Services with Rerouting? n
Transfer into QSIG Voice Mail? n
Value-Added (VALU)? n
```

Figure 20: System Parameters, customer options, page 7

3. Enter ***change system-parameters features*** and ensure the following settings:
- Page 1
 - o **Trunk-to-Trunk Transfer: all**
 - Page 7
 - o ISDN PARAMETERS
 - **QSIG TSC Extension: (Enter a valid available extension)**
 - **MWI - Number of Digits Per Voice Mail Subscriber: 5**
 - **Unknown Numbers Considered Internal for AUDIX? Y**
 - **Maximum Length: (Enter the number of digits in your dialplan) :5**

```
change system-parameters features                               Page 1 of 13
      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: tone
      Music (or Silence) on Transferred Trunk Calls? no
      DID/Tie/ISDN Intercept Treatment: attd
      Messaging Service Adjunct (MSA) Connected? n
Internal Auto-Answer of Attended/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
```

Figure 21: System Parameters Features, page 1

change system-parameters features

FEATURE-RELATED SYSTEM PARAMETERS

Page 7 of 13

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: 34999

MWI - Number of Digits Per Voice Mail Subscriber: 5

Feature Plus Ext:

National CPN Prefix: 0

International CPN Prefix: 00

Pass Prefixed CPN to ASAI? y

Unknown Numbers Considered Internal for AUDIX? y

Maximum Length: 5

USNI Calling Name for Outgoing Calls? y

Path Replacement with Measurements? y

QSIG Path Replacement Extension:

Path Replace While in Queue/Vectoring? n

Figure 22: System-parameters features page 7

4.3 General IP addressing and Administration

1. Enter **change ip-codec-set 1** to enter the codec to be used between the Avaya IP Office Server and the central PBX, if an H.323 trunk is to be used. Note that the first entry should corresponds to any specific setting in the Avaya IP Office Server VPN Line form VoIP tab. If this is not possible within this region, use the **signaling-group** form (Figure 52) to specify a **Far-End Network Region** with an ip-codec-set that can be configured that way.

change ip-codec-set 1

Page 1 of 1

IP Codec Set

Codec Set: 1

	Audio Codec	Silence Suppression	Frames Per Pkt	Packet Size(ms)
1:	G.711MU	n	2	20
2:				
3:				
4:				
5:				
6:				
7:				

Figure 23: IP Codec Set

2. Enter **change ip-network region 1** to ensure the network region settings are set properly if H.323 trunks are to be used.

```

change ip-network-region 1                                     Page 1 of 2
                                IP Network Region

      Region: 1
      Name: Domain 1

Audio Parameters                                Direct IP-IP Audio Connections? y
  Codec Set: 1                                IP Audio Hairpinning? y
  Location:
  UDP Port Range                                RTCP Enabled? y
    Min: 49000                                RTCP Monitor Server Parameters
    Max: 65535                                Use Default Server Parameters? y

DiffServ/TOS Parameters
  Call Control PHB Value: 34
  VoIP Media PHB Value: 46
  BBE PHB Value: 43
  Resource Reservation Parameters
  802.1p/Q Enabled? n
  RSVP Enabled? n

```

Figure 24: ip-network-region

3. Enter **change node-names audix-msa** and ensure the Avaya Intuity Audix IP address (as in the Avaya Intuity Audix TCP/IP Administration/Network Addressing section) and a name to refer to the Avaya Intuity Audix System is entered.

```

change node-names audix-msa
                                AUDIX-MSA NODE NAMES

Audix Names   IP Address   MSA Names   IP Address
IAaudix      192.16 .200.25  msa         . . .

```

Figure 25: Node-Names Audix

4. Enter **change node-names ip**. Enter the IP addresses of the endpoints in the column of the table that corresponds to the configuration.

	H.323 to IP Office	No H.323 to IP Office
IP600 Server or G600 Media Gateway	C-LAN, MEDPRO and IP Office	C-LAN card
S8300 Media Server/G700 Media Gateway	Processor and IP Office	Processor

change node-names ip			IP NODE NAMES
Name	IP Address		
IP600-Clan	192.16	.20.23	
IP600-Medpro	192.16	.20.24	
IPoffice	192.16	.50.2	
default	0	.0 .0 .0	

Figure 26: C-LAN/MEDPRO Node-names IP

change node-names ip			IP NODE NAMES
Name	IP Address		
Procr	192.16	.20.24	
IPoffice	192.16	.50.2	
default	0	.0 .0 .0	

Figure 27: S8300 Media Server node-names-ip

5. Type **change ip-interfaces** to enable the PBX interfaces, assign a network region and add a gateway address for routing, if necessary. Note that for the S8300 Media Server /G700 Media Gateway only an entry for the Processor node name is needed.

Change ip-interfaces										Page 1 of 6
IP INTERFACES										
Enable	Eth Pt	Type	Slot	Code	Sfx	Node Name	Subnet Mask	Gateway Address	Net Rgn	
y		C-LAN	01A04	TN799	C	IP600-Clan	255.255.255.0	192.16 .20.1	1	
y		MEDPRO	01A05	TN2302		IP600-Medpro	255.255.255.0	192.16 .20.1	1	
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.
n							255.255.255.0	.	.	.

Figure 28: IP Interfaces

6. Skip this step on S8300 Media Server/G700 Media Gatewaysystems. Type **add or change data-module ext**, where **ext** is a valid dial plan extension to ensure there is a data-module associated with the C-LAN port. The Link number will be used later in the *communication-interface processor channel* form when assigning TCP channels for the Avaya Intuity-PBX signaling communication.

```

Change data-module 20000
                                DATA MODULE

Data Extension: 20000          Name: clan ip 1a04
Type: ethernet
Port: 01A0417
Link: 1

Network uses 1's for Broadcast Addresses? y

```

Figure 29: data-module

Check that the ethernet interface of the C-LAN card is enabled with the ***change ethernet-options*** command.

```

change ethernet-options
                                ETHERNET OPTIONS

Enable
Eth Pt Type Slot Code Sfx Auto Speed Duplex
y C-LAN 01A04 TN799 C n 10Mbps Half
y MEDPRO 01A05 TN2302 y

```

Figure 30: Ethernet Options

7. Type ***change communication-interface processor-channels*** to configure the TCP connections for the Avaya Intuity Audix. As shown in **Figure 31**, one “processor channel”, in this case the first, is assigned to the audix application for exchanging call related information and for sending message waiting updates to the local switch. A second “processor channel” is added to handle message waiting updates to the second switch, in this case the Avaya IP Office Server.

For the S8300 Media Server/G700 Media Gateway, enter “**p**” in the **link** column; otherwise enter the link number from the data-module form.

Enter the audix node name from the *node-names audix-msa* form administered previously. It is very important that the “**Chan**” number match the “TCP Port” number on the Avaya Intuity Audix “Switch Link Administration” form for the corresponding switch. Leave the “Destination Port” as 0. The **Machine ID** field is an index into the “change isdn mwi-prefixes” form and so should have a unique entry for the “**qsig-mwi**” line.

Once the entries are made, set each line to enable “**y**”.

change communication-interface processor-channels										Page 1 of 8
PROCESSOR CHANNEL ASSIGNMENT										
Proc	Chan	Enable	Appl.	Gtwy	To	Mode	Interface	Destination	Session	Mach
							Link/Chan	Node	Port	Local/Remote ID
	1:	y	audix		s	1	5002	IAudix	0	1 1 1
	2:	y	qsig-mwi		s	1	6002	IAudix	0	2 1 2
	3:	n							0	
	4:	n							0	
	5:	n							0	
	6:	n							0	
	7:	n							0	
	8:	n							0	
	9:	n							0	
	10:	n							0	
	11:	n							0	
	12:	n							0	
	13:	n							0	
	14:	n							0	
	15:	n							0	
	16:	n							0	

Figure 31: Processor Channel Assignment

8. Type **change isdn mwi-prefixes**. Choose the **Machine ID** that corresponds to the **Machine ID** entry from the qsig-mwi line on the *communication-interface processor-channels* form. Enter **Routing digits** to prepend to the extensions of the message waiting update messages. Under “**Audix Mach ID**”, enter the machine ID of the Avaya Intuity Audix (“Audix Number” of **Figure 59**).

In this configuration, the message waiting updates come with the 5 digit Avaya IP Office Server extension of the form “7xxxx” as this is the numbering used in the Avaya Intuity Audix mailboxes. There must be an entry in this form. Here, the routing digits to prepend are “*877”. “*8” is the Automatic Alternate Routing access code. The remaining number becomes of the form “777-xxxx”.

The rest of pertinent routing administration will be described in **Section 4.7**.

change isdn mwi-prefixes							
MESSAGE WAITING INDICATION SUBSCRIBER NUMBER PREFIXES							
Machine ID	Inserted Digits	Routing Digits	AUDIX Mach ID	Machine ID	Inserted Digits	Routing Digits	AUDIX Mach ID
1:				11:			
2:		*877	1	12:			
3:				13:			
4:				14:			
5:				15:			
6:				16:			
7:				17:			
8:				18:			
9:				19:			
10:				20:			

Figure 32: ISDN Message Waiting prefixes

9. Type **change isdn private-numbering** as shown in **Figure 33**. This configuration passes identification numbers in level 0 format (as extensions). If these numbers were to be passed

in RNX-XXXX¹ format, the appropriate code for the PBX to prepend would be entered in the Level 1 Code field.

```
change isdn private-numbering

                                ISDN NUMBERING - PRIVATE FORMAT

Network Level: 0                PBX Identifier:
Level 2 Code:                  Deleted Digits: 0
Level 1 Code:
```

Figure 33: ISDN private-numbering

4.4 Avaya Intuity Audix Hunt Group and Analog Port Configuration

This section describes the configuration of the analog ports associated with the Avaya Intuity Audix System.

1. Type **change cor 21**, where 21 will be the class of restriction applied to the audix ports. (Use **add cor 21** to add a new class of restriction, if needed.) Ensure that calling party and called party restriction are set to **none**.

```
change cor 21                                     Page 1 of 4

                                CLASS OF RESTRICTION

COR Number: 21
COR Description:

FRL: 0                                           APLT? y
Can Be Service Observed? n                     Calling Party Restriction: none
Can Be A Service Observer? n                   Called Party Restriction: none
Time of Day Chart: 1                           Forced Entry of Account Codes? n
Priority Queuing? n                             Direct Agent Calling? n
Restriction Override: none                     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                   Hear VDN of Origin Annc.? n
Send ANI for MFE? n                           Add/Remove Agent Skills? 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? n
Can Use Directed Call Pickup? n
Group Controlled Restriction: inactive
```

Figure 34: Class of Restriction, page 1

¹ RNX-XXXX is a private numbering plan expression, where RNX originally corresponded to a particular PBX in the same way that a public telephone number's exchange code would correspond to a particular central office.

change cor 21

Page 2 of 4

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: 21

Figure 35: Class of Restriction, page 2

change cor 21

Page 3 of 4

CLASS OF RESTRICTION

CALLING PERMISSION (Enter "y" to grant permission to call specified COR)

0? y	12? y	24? y	36? y	48? y	60? y	72? y	84? y
1? y	13? y	25? y	37? y	49? y	61? y	73? y	85? y
2? y	14? y	26? y	38? y	50? y	62? y	74? y	86? y
3? y	15? y	27? y	39? y	51? y	63? y	75? y	87? y
4? y	16? y	28? y	40? y	52? y	64? y	76? y	88? y
5? y	17? y	29? y	41? y	53? y	65? y	77? y	89? y
6? y	18? y	30? y	42? y	54? y	66? y	78? y	90? y
7? y	19? y	31? y	43? y	55? y	67? y	79? y	91? y
8? y	20? y	32? y	44? y	56? y	68? y	80? y	92? y
9? y	21? y	33? y	45? y	57? y	69? y	81? y	93? y
10? y	22? y	34? y	46? y	58? y	70? y	82? y	94? y
11? y	23? y	35? y	47? y	59? y	71? y	83? y	95? y

Figure 36: Class of Restriction, page 3

2. Type **change cos** and ensure that **Data Privacy=y**, **Restrict Call Fwd-Off Net=n**, and **QSIG Call Offer Originations=y**. This configuration uses class of service 5.

change cos																
	CLASS OF SERVICE															
	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	n	y	n	y	y	n	n	y	y	n	n	y	y	n	n	y
Data Privacy	n	y	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	y	y	y	y	n	y	y	y	y	y	y	y	y	y	y
Call Forwarding Busy/DA	n	n	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	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
QSIG Call Offer Originations	n	n	n	n	n	y	n	n	n	n	n	n	n	n	n	n

Figure 37: Class of Service

3. Type ***add*** or ***change station ABCDE***, where ABCDE is the extension of the first station in the Avaya Intuity Audix hunt group (the extensions administered here must match the corresponding extensions administered in Avaya Intuity Audix in the “Voice Equipment” menu item). Set the Type to “**2500**” and the Class of Restriction (**COR**) and Class of Service (**COS**) to the values selected in the previous step. Also, on page 2, ensure **switch-hook flash** is set to “**y**” (to enable “*T” type transfers).

change station 42309	Page 1 of 3
STATION	
Extension: 42309	Lock Messages? n
Type: 2500	Security Code: TN: 1
Port: 01A1001	Coverage Path 1: COR: 21
Name: Iaudix-42301	Coverage Path 2: COS: 5
	Hunt-to Station: Tests? n
STATION OPTIONS	
Loss Group: 1	Message Waiting Indicator: none
Off Premises Station? n	
	Remote Office Phone? n

Figure 38: Station Form, page 1

change station 42309	Page 2 of 3
STATION	
FEATURE OPTIONS	
LWC Reception: none	Coverage Msg Retrieval? n
LWC Activation? n	Auto Answer: none
LWC Log External Calls? n	Data Restriction? n
CDR Privacy? n	Call Waiting Indication? n
Redirect Notification? y	Att. Call Waiting Indication? n
Per Button Ring Control? n	Distinctive Audible Alert? n
Bridged Call Alerting? n	Adjunct Supervision? y
Switchhook Flash? y	
Ignore Rotary Digits? n	Per Station CPN - Send Calling Number?
H.320 Conversion? n	
Service Link Mode: as-needed	Audible Message Waiting? n
Multimedia Mode: basic	
MWI Served User Type:	Coverage After Forwarding? s
	Direct IP-IP Audio Connections? y
Emergency Location Ext: 42309	IP Audio Hairpinning? y

Figure 39: Station Form, page 2

4. Type **add** or **change hunt-group 99** where 99 is a hunt group to be used for Avaya Intuity Audix coverage. The group extension will be used on the Avaya IP Office Server System/Voicemail tab and is the extension that can be directly dialed to retrieve messages. Set the group type to **“ucd-mia”** and the **COR** (Class of Restriction) as chosen in the previous step. **Message Center** must be set to **“audix”** on page 2 and also set **“Calling Party Number to Intuity Audix?”** to **“y”**.

change hunt-group 99	Page 1 of 10
HUNT GROUP	
Group Number: 99	ACD? n
Group Name: Audix-VoiceMail	Queue? y
Group Extension: 42345	Vector? n
Group Type: ucd-mia	Coverage Path:
TN: 1	Night Service Destination:
COR: 21	MM Early Answer? n
Security Code:	
ISDN Caller Display: grp-name	
Queue Length: 6	
Calls Warning Threshold:	Port:
Time Warning Threshold:	Port:

Figure 40: Hunt-Group, page 1

```

change hunt-group 99                                     Page 2 of 10
                                     HUNT GROUP
                                     Message Center: audix

Calling Party Number to INTUITY AUDIX? y
                                     LWC Reception: none

First Announcement Extension:          Delay (sec):

```

Figure 41: Avaya IP600 Server Hunt-group, page 2

```

change hunt-group 99                                     Page 2 of 60
                                     HUNT GROUP
                                     Message Center: audix

                                     Message Center AUDIX Name: IAaudix

                                     Primary? y
Calling Party Number to INTUITY AUDIX? y
                                     LWC Reception: none
                                     AUDIX Name: IAaudix
                                     Messaging Server Name:

First Announcement Extension:          Delay (sec):

```

Figure 42: MultiVantage Software Huntgroup, page 2

Add the stations that were administered previously into the hunt group list on page 3.

```

Change hunt-group 99                                     Page 3 of 10
                                     HUNT GROUP
Group Number: 99      Group Extension: 42345      Group Type: ucd-mia
Member Range Allowed: 1 - 200      Administered Members (min/max): 1 /1
                                     Total Administered Members: 1

GROUP MEMBER ASSIGNMENTS
Ext  Name                                     Ext  Name
1 : 42309 Iaudix-42309                       14 :
2 :                                           15 :
3 :                                           16 :
4 :                                           17 :
5 :                                           18 :
6 :                                           19 :
7 :                                           20 :
8 :                                           21 :
9 :                                           22 :
10 :                                          23 :
11 :                                          24 :
12 :                                          25 :
13 :                                          26 :

At End of Member List

```

Figure 43: Hunt-group, page 3

4.5 QSIG/PRI Trunk Group

This section describes the configuration steps to establish a PRI trunk group to the Avaya IP Office Server supporting the QSIG protocol. If H.323 trunks are to be used, skip to **Section 4.6**.

1. Type **add or change ds1 CCCSS**, where CCCSS is the carrier shelf and slot position of the DS1 circuit pack that will be used to connect to the Avaya IP Office Server. Make sure that the Bit Rate, Line Coding and Framing Mode match the Avaya IP Office Server PRI line settings (ESF and B8ZS). Ensure the following settings:
 - **Connect** to “**pbx**” and
 - **Interface** to “**Network**”
 - **Country Protocol**: “**1**”
 - **Protocol Version**: “**b**” (for U.S. National ISDN-2).

```
change ds1 01a09                                     Page 1 of 2
                                                    DS1 CIRCUIT PACK

      Location: 01A09                                Name: IPOffice-QSIG
      Bit Rate: 1.544                                Line Coding: b8zs
Line Compensation: 1                                Framing Mode: esf
      Signaling Mode: isdn-pri
      Connect: pbx                                    Interface: network
CentreVu Long Timers? n                            Country Protocol: 1
Interworking Message: PROgress                      Protocol Version: b
Interface Companding: mulaw                         CRC? n
      Idle Code: 11111111
                                                    DCP/Analog Bearer Capability: 3.1kHz

      Slip Detection? n                               Near-end CSU Type: other
      Echo Cancellation? n
```

Figure 44: DS1, page 1

```
change ds1 01a09                                     Page 2 of 2
                                                    DS1 CIRCUIT PACK

      ESF DATA LINK OPTIONS

      Network Management Protocol: tabs
Send ANSI-T1.403 One-Second Performance Reports? n
      Far-end CSU Address: b
```

Figure 45: DS1, page 2

2. Type **add** (or **change**) **trunk group 7** and make sure in particular to set:

Page 1:

- **Supplemental Service Protocol** to “b”
- **Numbering Format:** (blank)

```

change trunk-group 7                                     Page 1 of 10
                                     TRUNK GROUP

Group Number: 7                      Group Type: isdn          CDR Reports: y
  Group Name: IPOFFICE QSIG PRI      COR: 21                TN: 1          TAC: 107
  Direction: two-way                Outgoing Display? y      Carrier Medium: PRI/BRI
  Dial Access? y                    Busy Threshold: 99        Night Service:
Queue Length: 99
Service Type: tie                      Auth Code? n          TestCall ITC: rest
                                     Far End Test Line No:

TestCall BCC: 4
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: ascend                  QSIG Value-Added? n
                                     Digital Loss Group: 13
Calling Number - Delete:              Insert:              Numbering Format:
  Bit Rate: 1200                      Synchronization: async Duplex: full
Disconnect Supervision - In? y Out? y
Answer Supervision Timeout: 0
  
```

Figure 46: Trunk Group, page 1

Set the items as shown in page 2 except the NCA-TSC Trunk Number that will be set in later step.

```

change trunk-group 7                                     Page 2 of 10
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? y
  Used for DCS? n                      Numbering Format: private
  Suppress # Outpulsing? n             Outgoing Channel ID Encoding: preferred  UII IE Treatment: service-provider
                                     Replace Restricted Numbers? n
                                     Replace Unavailable Numbers? n
                                     Send Called/Busy/Connected Number: y

  Send UII IE? y
  Send UCID? n
  Send Codeset 6/7 LAI IE? y           Ds1 Echo Cancellation? n
                                     Modify Reroute Number? n
  Path Replacement with Retention? y

                                     Network (Japan) Needs Connect Before Disconnect? n
  
```

Figure 47: Trunk Group, page 2

3. Type **change** or **add signaling group 7**. Set:
 - **Maximum number of Non-Call Associated Temporary Signaling Connections** to anything greater than 0.
 - **Supplemental Service Protocol** to “b” (for QSIG).
 - **Trunk Group for NCA TSA** to “7” (the trunk group from the previous step)

Temporary Signaling Connections are used for message waiting updates to the Avaya IP Office Server.

```

change signaling-group 7

                                SIGNALING GROUP

Group Number: 7                Group Type: isdn-pri
                                Associated Signaling? y
                                Primary D-Channel: 01A0924
                                Max number of NCA TSC: 10
                                Max number of CA TSC: 0
                                Trunk Group for NCA TSC: 7
                                X-Mobility/Wireless Type: NONE
                                Network Call Transfer? n
                                Trunk Group for Channel Selection: 7
                                Supplementary Service Protocol: b
  
```

Figure 48: Signaling-group

4. Type **change trunk group 7** and enter each channel on page 4. The “**Sig Grp**” (signaling group) for each member should be the group established in the previous step. Please ensure the number and selection of ports entered on this form correspond to the number and selection of ports from the Avaya IP Office Server line form.

```

change trunk-group 7

                                TRUNK GROUP
                                Administered Members (min/max): 1/23
                                Total Administered Members: 23
                                Page 4 of 10

GROUP MEMBER ASSIGNMENTS

Port      Code Sfx Name      Night      Sig Grp
1: 01A0901 TN464 G      Night      7
2: 01A0902 TN464 G      Night      7
3: 01A0903 TN464 G      Night      7
4: 01A0904 TN464 G      Night      7
5: 01A0905 TN464 G      Night      7
6: 01A0906 TN464 G      Night      7
7: 01A0907 TN464 G      Night      7
8: 01A0908 TN464 G      Night      7
9: 01A0909 TN464 G      Night      7
10: 01A0910 TN464 G      Night      7
11: 01A0911 TN464 G      Night      7
12: 01A0912 TN464 G      Night      7
13: 01A0913 TN464 G      Night      7
14: 01A0914 TN464 G      Night      7
15: 01A0915 TN464 G      Night      7
  
```

Figure 49: Trunk Group Members, page 4

5. On page 2 (**Figure 47**), set Non-Call Associated Trunk member to any member of this trunk group, which must be done **after** the member entries are made on page 4 (**Figure 49**).

4.6 QSIG/H.323 Trunk Group

This section describes the configuration steps to establish an H.323 trunk group to the Avaya IP Office Server supporting the QSIG protocol. If PRI trunks are to be used, go to **Section 4.5**.

1. Type **add** (or **change**) **trunk group 7** and make sure in particular to set:

Page 1:

- **Supplemental Service Protocol** to “b”
- **Numbering Format:** (blank)

change trunk-group 7		Page 1 of 22
TRUNK GROUP		
Group Number: 7	Group Type: isdn	CDR Reports: y
Group Name: H.323 to IP Office	COR: 21	TN: 1 TAC: 107
Direction: two-way	Outgoing Display? y	Carrier Medium: IP
Dial Access? y	Busy Threshold: 255	Night Service:
Queue Length: 1		
Service Type: tie	Auth Code? n	TestCall ITC: rest
	Far End Test Line No:	
TestCall BCC: 4		
TRUNK PARAMETERS		
Codeset to Send Display: 6	Codeset to Send National IEs: 6	
Max Message Size to Send: 260	Charge Advice: none	
Supplemental Service Protocol: b	Digit Handling (in/out): enbloc/enbloc	
Trunk Hunt: ascend		
Calling Number - Delete:	Insert:	Digital Loss Group: 13
Bit Rate: 1200	Synchronization: async	Numbering Format:
Disconnect Supervision - In? y Out? y	Duplex: full	
Answer Supervision Timeout: 0		

Figure 50: Trunk Group, page 1

Set the items as shown in page 2 except the **NCA-TSC Trunk Member**, which will be set in later step. Specifically, the items to be changed are:

- **Send Name: y**
- **Send Calling Number: y**
- **Hop Dgt: y**
- **Numbering Format: private**
- **Send Connected Number: y**

change trunk-group 7		Page 2 of 22
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
Used for DCS? n	Hop Dgt? y	
Suppress # Outpulsing? n	Numbering Format: private	
Outgoing Channel ID Encoding: preferred	UII IE Treatment: service-provider	
	Replace Restricted Numbers? n	
	Replace Unavailable Numbers? n	
	Send Connected Number: y	
Send UII IE? y		
Send UCID? n		
Send Codeset 6/7 LAI IE? y		
Path Replacement with Retention? y		
	Network (Japan) Needs Connect Before Disconnect? n	

Figure 51: Trunk Group, page 2

2. Type **change** or **add signaling group 7**. Set:

- **Maximum number of Non-Call Associated Temporary Signaling Connections** to a number greater than 0.
- **Supplemental Service Protocol** to “b” (for QSIG).
- **Trunk Group for NCA TSA** to “7” (the trunk group from the previous step)
- **Near-end Node Name and Far-end Node Name** will be from the **node-names ip** form – either the C-LAN name for the C-LAN based systems or the processor name for the S8300 Media Server/G700 Media Gateway system.

Temporary Signaling Connections are used for Message Waiting updates to the Avaya IP Office Server.

Direct IP-IP Audio connections are disabled in this configuration, since all messaging calls must go through the MEDPRO resource to reach the Avaya Intuity Audix via the analog ports.

change signaling-group 7 Page 1 of 1

SIGNALING GROUP

Group Number: 7 Group Type: h.323
Remote Office? n Max number of NCA TSC: 10
Max number of CA TSC: 0
Trunk Group for NCA TSC: 7

Trunk Group for Channel Selection: 7
Supplementary Service Protocol: b

Near-end Node Name: procr Far-end Node Name: IPOffice
Near-end Listen Port: 1720 Far-end Listen Port: 1720
Far-end Network Region: 1

LRQ Required? n Calls Share IP Signaling Connection? n
RRQ Required? n Bypass If IP Threshold Exceeded? n

Direct IP-IP Audio Connections? n
IP Audio Hairpinning? n
Interworking Message: PROgress

Figure 52: Signaling-group

3. Type **change trunk group 7** and enter each channel as “IP” in the “port” column on page 4. After the form is submitted, “IP” will be automatically replaced with a virtual port number, as shown in **Figure 53**. The signaling group for each member must be the group established in the previous step. Please ensure the number of ports entered on this form correspond to the number of ports from the Avaya IP Office Server line form.

change trunk-group 7 Page 6 of 6

TRUNK GROUP

Administered Members (min/max): 1/20
Total Administered Members: 20

GROUP MEMBER ASSIGNMENTS

Port	Code Sfx	Name	Night	Sig Grp
1: T00001				7
2: T00002				7
3: T00003				7
4: T00004				7
5: T00005				7
6: T00006				7
7: T00007				7
8: T00008				7
9: T00009				7
10: T00010				7
11: T00011				7
12: T00012				7
13: T00013				7
14: T00014				7
15: T00015				7

Figure 53: Trunk Group Membership, page 6

4. On page 2 (**Figure 51**) set **Non-Call Associated Trunk member** to any member of this trunk group, **after** the member entries are made on page 6 (**Figure 53**).

1. To configure uniform dial plan routing for routing calls through Automatic Alternate Routing (AAR) over this trunk group. Type ***change udp 7*** (Avaya IP600 Server, **Figure 54**) or ***change uniform-dialplan*** (MultiVantage Software, **Figure 55**) and ensure that Avaya IP Office Server extensions, in this case from 70000 through 72999, are routed through Automated Alternate Routing, with a unique pre-pended three digit code, via the entry of **AARCode 777**.

change udp 7

UNIFORM DIALING PLAN
Ext Codes: 7ddxx

Ext Code: 7xxxx Type: AARCode 777

dd	Type	dd	Type	dd	Type	dd	Type	dd	Type
0x:		1x:		2x:		3x:		4x:	
00:		10:		20:		30: UDPCode 730		40: UDPCode 740	
01:		11:		21:		31: UDPCode 730		41: UDPCode 740	
02:		12:		22:		32: UDPCode 730		42: UDPCode 740	
03:		13:		23:		33: UDPCode 730		43: UDPCode 740	
04:		14:		24:		34: UDPCode 730		44: UDPCode 740	
05:		15:		25:		35: UDPCode 735		45: UDPCode 745	
06:		16:		26:		36: UDPCode 735		46: UDPCode 745	
07:		17:		27:		37: UDPCode 735		47: UDPCode 745	
08:		18:		28:		38: UDPCode 735		48: UDPCode 745	
09:		19:		29:		39: UDPCode 735		49: UDPCode 745	

Figure 54: Avaya IP600 Server change udp

[illegible]

Figure 55: MultiVantage Software change uniform-dialplan

Type **change aar analysis 7**, where 7 is the first digit of the 7-digit AAR number to route. In this case, all 7 digit AAR calls beginning with “777” go to Route Pattern 7. These “777” numbers are created from the AAR analysis and the “isdn mwi-prefixes” form.

change aar analysis 7						Page 1 of 2	
AAR DIGIT ANALYSIS TABLE							
						Percent Full: 5	
	Dialed String	Total Min Max		Route Pattern	Call Type	Node Num	ANI Req'd
7		7	7	254	aar		n
777		7	7	7	aar		n

Figure 56: change aar analysis

- Type “**change route pattern X**” where X is the route pattern to send the calls to the proper trunk group (from the change aar analysis form).
Set the **Grp No.** to the Trunk Group number from the trunk group that was established in **Section 4.5** or **4.6**. In earlier routing, a 7 digit number was created from the original 5 digits and now the original 5 digit number is restored by deleting the first 3 digits and reinserting the original leading digit, 7 in this case.

Also important on this form is to set the **TSC** value to “**Y**” on the lower half of the form for the line associated with the routed trunk group. This enables use of this route pattern for the message waiting updates to the remote switch, which are based on Temporary Signaling Connections. Also the **route-pattern Numbering Format** should be set to “**lev0-pvt**” to ensure that calling party numbers are sent in the proper private number format.

change route-pattern 7									
Pattern Number: 7									
Grp. No.	FRL	NPA	Pfx Mrk	Hop Lmt	Toll List	No. Del	Inserted Dgts	DCS/ QSIG Intw	IXC
1: 7		0				3	7	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	BAND	No. Numbering LAR
	0	1	2	3	4	W	Request		Dgts Format Subaddress
1:	y	y	y	y	y	n	y	none	rest lev0-pvt 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

Figure 57: change route-pattern

5 Avaya Intuity Audix Configuration

This section provides specific configuration settings with minimal instruction. Refer to Avaya Intuity Audix documentation for general Avaya Intuity Audix configuration instructions.

Steps to configure the Avaya Intuity Audix include:

- 1) Administer the Switch Interface
 - a. TCP/IP
 - b. Voice Ports
- 2) Change the machine specific information
- 3) Add subscribers (mailboxes)

This document assumes the user has the proper login and password. Most steps start at the Avaya Intuity Audix Main Menu, pictured below.

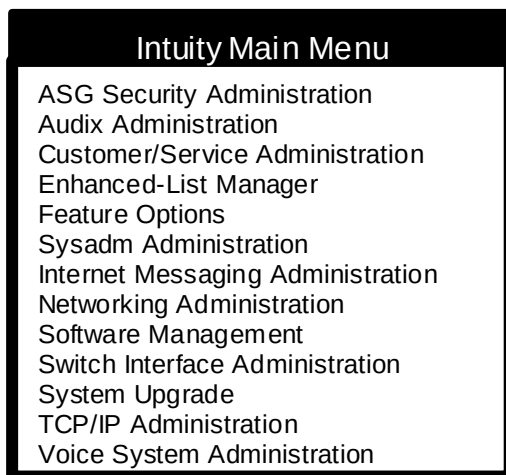


Figure 58: Avaya Intuity Audix Main Menu

1. Follow the steps of Avaya Intuity Messaging Solutions Documentation [INTYLAN] to administer and test TCP/IP connectivity.

The IP Address assigned to the Avaya Intuity Audix must be the IP Address of the Avaya IP600 Server or Media Server running MultiVantage Software ***change node-names audix*** form.

2. Start at the Avaya Intuity Main Menu and select:
Switch Interface Administration
Call Data Interface Administration
Switch Link Administration

Verify that the extension length is consistent with the PBX dialplan. The **Host Switch Number** must match the “Local Node Number” of the Avaya IP600 Server or

MultiVantage Software “*change dialplan*” form. The **Audix Number** must match the Audix Number used in the Avaya IP600 Server or MultiVantage Software *change isdn mwi-prefixes* form.

With this form, the client end of two TCP connections is established to the Avaya IP600 Server or MultiVantage Software platform. The first connection is for call signaling for calls that come to the Avaya Intuity Audix (e.g., coverage calls) and message waiting indication updates for the Avaya IP600 Server or MultiVantage Software platform. The second TCP connection is for forwarding Message Waiting indications through the local Avaya IP600 Server or MultiVantage Software platform to the remote Avaya IP Office Server.

The **IP Address/Host Name** field is the IP Address of the Avaya IP600 Server C-LAN card, Media Gateway C-LAN card or S8300 Media Server processor, depending on the system. TCP ports for each must match the ports of the Avaya IP600 Server or MultiVantage Software *communication-interface processor-channels* form.

Switch Link Administration					
Switch Link Type	: LAN		Country :	UNITED STATES	
Extension Length	: 5		Switch :	DEFINITY OVERLAN	
Host Switch Number	: 1				
Audix Number	: 1				
Switch Number	IP Address/Host Name	TCP Port	Switch Number	IP Address/Host Name	TCP Port
1	192.16.200.23	5002	2	192.16.200.23	6002

Figure 59: Switch Link Administration

3. If the corresponding Avaya IP600 Server administration has been completed, verify that both links are up by performing the following steps:

From the **Customer/Services Administration** menu, select:

Diagnostics

Switch Link Diagnostics

Link Diagnostics

Verify that the window displays the status of both the Link and the Session as “UP”. Otherwise, check through the administration procedures performed to this point.

4. Follow the procedures of Avaya Intuity Messaging Solutions documentation [INTYLAN] and ensure that each port is administered with the extension of the corresponding port that it

will be wired to on the central IP-PBX. Avaya Intuity Audix requires a voice port administered for each simultaneous call.

- From the Main Menu, select “Audix Administration” and type “**change machine**” at the prompt. If necessary, update the extension information to reflect the Avaya IP Office Server extensions covered.

If this form is changed, follow the procedures to stop and start the Avaya Intuity Audix Application to ensure that the changes take effect.

- To add a mailbox, from the prompt, type “**add subscriber xxxxx**” where xxxxx is the extension number. In the form, ensure that the Switch Number is the same as the switch number for the Avaya IP Office Server used on the Avaya Intuity Audix Switch Link Administration Form (**Figure 60**).

Active		Alarms:		Logins: 2	
Add subscriber 72101				Page 1 of 2	
Subscriber					
Name:	Mr. Testbox	Locked?	<u>n</u>		
Extension:	72101	Password:	_____		
COS:	Class01	Miscellaneous 1:	_____		
Switch Number:	2	Miscellaneous 2:	_____		
Community ID:	<u>1</u>	Miscellaneous 3:	_____		
Secondary Ext:	_____	Miscellaneous 4:	_____		
Account Code:	_____	Covering Extension:	_____		
		Broadcast Mailbox:	n		
Email Address:	_____				

Figure 60: add subscriber

6 Verification

A simple test of this configuration would be:

- From an Avaya IP Office Server extension, dial another extension, wait for Avaya Intuity Audix to answer and leave a voice message.
- Observe the message waiting light activation
- From the called extension, dial “*17” and enter “#”, followed by the password to listen to and delete the message
- Observe that the message waiting light extinguishes.

General troubleshooting tools to consider:

- Ping must succeed from system to system before H.323 trunk or Avaya Intuity Audix connection troubleshooting.
- Use the “status trunk X” command from the Avaya IP 600 Server or Media Server running MultiVantage Software to check the health of the trunks.

- Place voice calls between the Avaya IP600 Server or Media Server running MultiVantage Software and the Avaya IP Office to validate the basic routing.

7 Conclusion

These Application Notes have presented configuration instructions of centralized Avaya Intuity Audix for the Avaya IP Office server. Readers can use these Application Notes to replicate this configuration or adapt to a specific customer situation.

8 Additional References

From www.avaya.com:

- [IPO CNTL] IP Office Job Aid – “Centralized Audix”
- [INTYLAN] Intuity Message Solutions – Using a LAN to Integrate with Definity ECS (585-313-604)
- [DEFNET] Definity ECS Release 10 Administration for Network Connectivity 555-233-504

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