



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Starfish Notify Me with Modular Messaging 5.0 - Issue 1.0

Abstract

These Application Notes describe the procedure to configure Starfish Notify Me application to work with Avaya Modular Messaging 5.0. The Avaya Modular Messaging solution contains an Avaya Message Application Server, Message Storage Server and a supplementary server used as a Web Subscriber Options server. In addition, Avaya Aura™ Communication Manager and various Avaya H.323 endpoints were used.

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 objective of this compliance test is to verify Starfish Associates Notify Me application can interoperate with Avaya Modular Messaging (MM). The Starfish Associates application utilizes the existing Notify Me functionality provided by Avaya MM by populating the Notify Me subscriber option with additional rules. Starfish Associates Notify Me application is installed on the Web Subscriber Options server (WSO) and communicates with the other elements of MM via an IP network. These elements include Avaya Message Storage Server (MSS) for information on subscribers configured on MM and the Avaya Message Application Server (MAS) for information on subscriber options. **Figure 1** illustrates the network topology of the lab environment used for compliance testing.

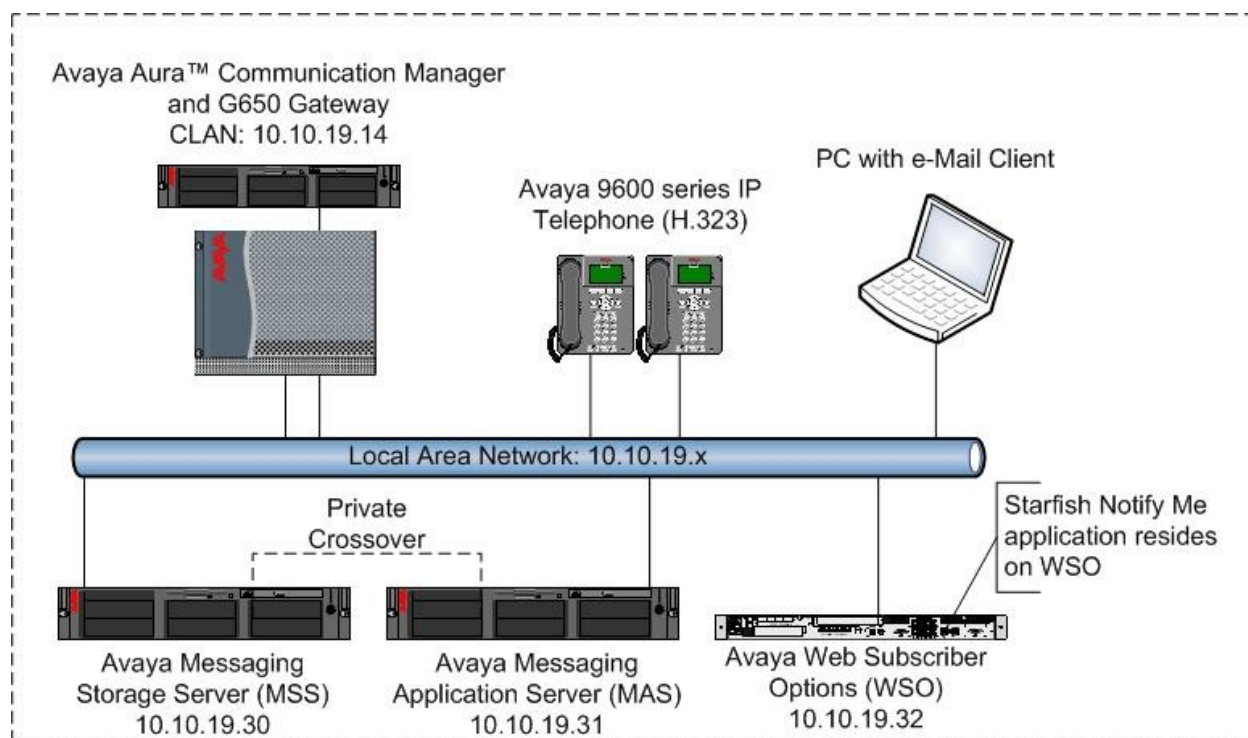


Figure 1: Test Environment Network Topology

2. Equipment and Software Validated

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

Equipment	Software
Avaya Message Application Server	5.0 Patch MM500014
Avaya Message Store Server	5.0 Patch MM500014
Avaya S8500 Server	Avaya Aura™ Communication Manager 5.2.0 – S8720-15-02.0.947.3 Patch 17684
Avaya G650 Media Gateway - CLAN - TN799DP - MedPro - TN 2602AP	HW16 FW032 .(35) HW08 FW048. (51)
Starfish Notify Me	Version 1.0

3. Configure Avaya Aura™ Communication Manager

This section describes the steps for configuring Communication Manager for use with MM. A H.323 trunk is established between Communication Manager and MM, this H.323 trunk will provide the connectivity between Communication Manager and MM. When using a G650 Media Gateway with Communication Manager there must have at least one CLAN and Medpro card installed in the system to create a H.323 trunk. For the purposes of these Application Notes it is assumed that both a CLAN and Medpro resource have already been installed and the administration associated with installing these resources is not covered here.

3.1. Confirm Necessary Optional Features

Log into the Communication Manager System Access Terminal (SAT) interface and use the **display system-parameters customer-options** command to determine these values. The license file installed on the system controls the maximum values for these attributes. If a required feature is not enabled or there is insufficient capacity, contact an authorized Avaya sales representative to add additional capacity.

- Verify available **Maximum Administered H.323 Trunks** supported by the system is sufficient for the number of trunks required between Communication Manager and MM.
- Verify available **Maximum Concurrently Registered IP Stations** supported by the system is sufficient for the number of endpoints required.

display system-parameters customer-options		Page 2 of 11
OPTIONAL FEATURES		
IP PORT CAPACITIES		USED
Maximum Administered H.323 Trunks: 100		0
Maximum Concurrently Registered IP Stations: 180		0
Maximum Administered Remote Office Trunks: 0		0
Maximum Concurrently Registered Remote Office Stations: 0		0

Figure 2: System-Parameters Customer-Options Form – Page 2

On **Page 3** verify the following as shown in **Figure 3**.

- **ARS and ARS/AAR Partitioning** are set to **y**.
- If the Find Me feature of MM is to be used then the option **Cvg of Calls Redirected Off-Net** must be set to **y**.

display system-parameters customer-options		Page 3 of 11
OPTIONAL FEATURES		
Abbreviated Dialing Enhanced List? n	Audible Message Waiting? n	
Access Security Gateway (ASG)? n	Authorization Codes? n	
Analog Trunk Incoming Call ID? n	CAS Branch? n	
A/D Grp/Sys List Dialing Start at 01? n	CAS Main? n	
Answer Supervision by Call Classifier? n	Change COR by FAC? n	
ARS? y	Computer Telephony Adjunct Links? y	
ARS/AAR Partitioning? y	Cvg Of Calls Redirected Off-net? y	
ARS/AAR Dialing without FAC? y	DCS (Basic)? n	
ASAI Link Core Capabilities? n	DCS Call Coverage? n	

Figure 3: System-Parameters Customer-Options Form – Page 3

On **Page 4** verify the following as shown in **Figure 4**.

- **ISDN-PRI** is set to **y**.
- **IP Trunks** is set to **y**.

display system-parameters customer-options		Page 4 of 11
OPTIONAL FEATURES		
Emergency Access to Attendant? y	IP Stations? y	
Enable 'dadmin' Login? y	ISDN Feature Plus? n	
Enhanced Conferencing? y	ISDN/SIP Network Call Redirection? n	
Enhanced EC500? y	ISDN-BRI Trunks? n	
Enterprise Survivable Server? n	ISDN-PRI? y	
Enterprise Wide Licensing? n	Local Survivable Processor? n	
ESS Administration? n	Malicious Call Trace? n	
Extended Cvg/Fwd Admin? y	Media Encryption Over IP? y	
External Device Alarm Admin? n	Mode Code for Centralized Voice Mail? n	
Five Port Networks Max Per MCC? n	Multifrequency Signaling? y	
Flexible Billing? n	Multimedia Call Handling (Basic)? n	
Forced Entry of Account Codes? n	Multimedia Call Handling (Enhanced)? n	
Global Call Classification? n	Multimedia IP SIP Trunking? n	
Hospitality (Basic)? y		
Hospitality (G3V3 Enhancements)? n		
IP Trunks? y		
IP Attendant Consoles? n		
(NOTE: You must logoff & login to effect the permission changes.)		

Figure 4: System-Parameters Customer-Options Form – Page 4

On **Page 5** verify the following as shown in **Figure 5**

- **Private Networking** is set to **y**.
- **Uniform Dialing Plan** is set to **y**.

display system-parameters customer-options		Page 5 of 11
OPTIONAL FEATURES		
Multinational Locations? n	Station and Trunk MSP? n	
Multiple Level Precedence & Preemption? n	Station as Virtual Extension? n	
Multiple Locations? n		
	System Management Data Transfer? n	
Personal Station Access (PSA)? n	Tenant Partitioning? n	
PNC Duplication? n	Terminal Trans. Init. (TTI)? n	
Port Network Support? y	Time of Day Routing? n	
Posted Messages? n	TN2501 VAL Maximum Capacity? y	
	Uniform Dialing Plan? y	
Private Networking? y	Usage Allocation Enhancements? y	
Processor and System MSP? n		

Figure 5: System-Parameters Customer-Options Form – Page 5

On **Page 8** verify the following as shown in **Figure 6**.

- **Basic Call Setup** is set to **y**.
- **Basic Supplementary Services** is set to **y**.
- **Supplementary Services with Rerouting** is set to **y**.
- **Transfer into QSIG Voice Mail** is set to **y**.
- **Value-Added (VALU)** is set to **y**.

display system-parameters customer-options		Page 8 of 11
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	

Figure 6: System-Parameters Customer-Options Form – Page 8

If the Find Me feature is to be used with MM then use the command **display system-parameters coverage-forwarding** to verify the following as shown in **Figure 7**.

- **Activate Answer Detection (Preserves SBA) On Final CCRON Cvg Point** option is set to **y**.

```
display system-parameters coverage-forwarding                               Page 2 of 2
      SYSTEM PARAMETERS CALL COVERAGE / CALL FORWARDING

COVERAGE OF CALLS REDIRECTED OFF-NET (CCRON)

      Coverage Of Calls Redirected Off-Net Enabled? y
Activate Answer Detection (Preserves SBA) On Final CCRON Cvg Point? y
      Ignore Network Answer Supervision? n
      Disable call classifier for CCRON over ISDN trunks? n
      Disable call classifier for CCRON over SIP trunks? n
```

Figure 7: System-Parameters Coverage-Forwarding Form – Page 2

Use the **display system-parameters features** command to verify the following on **Page 8**.

- Verify that there are extensions configured for **QSIG/ETSI TSC Extension** and **QSIG Path Replacement Extension**, these can be set to any valid unassigned extension.
- **MWI - Number of Digits Per Voice Mail Subscriber** should be set to the number of digits used for mailbox extensions. This setting must be the same as the extension length set on MM.
- Verify that **Path Replacement with Measurements** is set to **y**.

```
display system-parameters features                                         Page 8 of 18
      FEATURE-RELATED SYSTEM PARAMETERS

ISDN PARAMETERS

      Send Non-ISDN Trunk Group Name as Connected Name? n
      Display Connected Name/Number for ISDN DCS Calls? n
      Send ISDN Trunk Group Name on Tandem Calls? n

PARAMETERS FOR CREATING
QSIG SELECTION NUMBERS
      Network Level: 0
      Level 2 Code:
      Level 1 Code:

      QSIG/ETSI TSC Extension: 29000
MWI - Number of Digits Per Voice Mail Subscriber: 4
      Feature Plus Ext:
      National CPN Prefix:
      International CPN Prefix:
      Pass Prefixed CPN: ASAI? n      VDN/Vector? n
      Unknown Numbers Considered Internal for AUDIX? y      Maximum Length: 5
      USNI Calling Name for Outgoing Calls? n
      Path Replacement with Measurements? y
      QSIG Path Replacement Extension: 29001
      Send QSIG Path Replacement Conf. Event to ASAI? y
      Path Replace While in Queue/Vectoring? n
```

Figure 8: System-Parameters Features Form – Page 8

3.2. Administer IP Node Names

The node names defined here will be used in other configuration screens to define a H.323 signaling group between Communication Manager and the MAS. In the **IP Node Names** form, assign the node **Name** and **IP Address** for the MAS server as shown in **Figure 9**. In this case, **devcmas1** and **10.10.19.31** are the name and IP Address for the MAS server. It's worth noting that the CLAN node name and IP address that the MAS will connect with is also entered here (node name **clan**).

change node-names ip		Page 1 of 2	
		IP NODE NAMES	
Name	IP Address		
clan	10.10.19.14		
medpro	10.10.19.7		
default	0.0.0.0		
devcmas1	10.10.19.31		

Figure 9: IP Node Names Form

3.3. Administer IP Network Region

In the sample configuration used for compliance testing only one network region is used. Although thorough coverage of network regions is beyond the scope of these Application Notes, a brief summary follows: Analog and digital devices can derive a network region from the configuration of the gateway or cabinet to which the device is connected. Avaya IP Telephones can derive a network region from an IP network map, which associates ranges of IP addresses with a network region. In the absence of a defined IP network mapping, an Avaya IP Telephone will be considered to be in the network region of the C-LAN or processor interface to which it has registered. Other devices, such as C-LANs, Media Processors, and Media Gateways can be specifically configured to a network region. IP trunks derive a network region from its associated signaling group.

Use the **change ip-network-region x** command to set the following values, where **x** is the number of the ip network region.

- The **Location** field should be set to **1**.
- Set the **UDP Port Min** to **5000** and the **UDP Port Max** to **5999**. By default the UDP port min and max is set to 2048 and 3329 respectively, however MM uses ports **5000** to **5999**.
- The **Codec Set** is set to the number of the IP codec set to be used for calls within the IP network region. In this case, codec set **3** will be used.

Although not highlighted, note also that the **IP Network Region** form is used to set the QoS packet parameters that provides priority treatment for signaling and audio packets over other data traffic. These parameters may need to be aligned with the specific values expected by the IP network.

change ip-network-region 30		Page 1 of 19
IP NETWORK REGION		
Region: 30		
Location: 1	Authoritative Domain:	
Name: Modular Messaging		
MEDIA PARAMETERS		
Codec Set: 3	Intra-region IP-IP Direct Audio: no	
UDP Port Min: 5000	Inter-region IP-IP Direct Audio: no	
UDP Port Max: 5999	IP Audio Hairpinning? n	
DIFFSERV/TOS PARAMETERS		
RTCP Reporting Enabled? y		
Call Control PHB Value: 46	RTCP MONITOR SERVER PARAMETERS	
Audio PHB Value: 46	Use Default Server Parameters? y	
Video PHB Value: 26		
802.1P/Q PARAMETERS		
Call Control 802.1p Priority: 6		
Audio 802.1p Priority: 6		
Video 802.1p Priority: 5	AUDIO RESOURCE RESERVATION PARAMETERS	
H.323 IP ENDPOINTS	RSVP Enabled? n	
H.323 Link Bounce Recovery? y		
Idle Traffic Interval (sec): 20		
Keep-Alive Interval (sec): 5		
Keep-Alive Count: 5		

Figure 10: IP Network Region Form

3.4. Administer IP Codec Sets

Open the **IP Codec Set** form for the codec set specified in the **IP Network Region** form in **Figure 11**. Enter the codecs eligible to be used, in this case **G711MU** will be used, the codec defined here must match the codec used by the MAS server that the Communication Manager will connect to.

change ip-codec-set 3				Page 1 of 2
IP Codec Set				
Codec Set: 3				
Audio	Silence	Frames	Packet	
Codec	Suppression	Per Pkt	Size(ms)	
1: G.711MU	n	2	20	

Figure 11: IP Codec Set Form

3.5. Administer IP Signaling Group

To create the signaling group for the H.323 trunk, use the command **add signaling-group x** where **x** is the number of the signaling group to create. For this compliance test signaling group **30** was selected.

- Set the **Group Type** field to be **h.323**.
- The **TSC Supplementary Service Protocol** field to **b**.
- The **Near-end Node Name** is set to the name of the CLAN that will be used to process the signaling. The **clan** name is assigned in the **IP Node Names** form.
- The **Far-end Node Name** is set to the name of the MAS that was entered into the **IP Node Names** form in **Figure 9**.
- Set the **Far-end Network Region** field to the number of the ip network region created in **Section 3.3**, i.e. **30**.
- Set the **Max number of NCA TSC** and **Max number of CA TSC** to **10** to allow for MWI interrogation.
- Set the **Trunk Group for NCA TSC** and **Trunk Group for Channel Selection** to **30**, the number of the trunk group to be used, this can only be done after the trunk group is administered, covered in **Section 3.6**.

add signaling-group 30			
SIGNALING GROUP			
Group Number: 30	Group Type: h.323		
	Remote Office? n	Max number of NCA TSC: 10	
	SBS? n	Max number of CA TSC: 10	
IP Video? n		Trunk Group for NCA TSC: 30	
Trunk Group for Channel Selection: 30			
TSC Supplementary Service Protocol: b		Network Call Transfer? n	
T303 Timer(sec): 10			
H.245 DTMF Signal Tone Duration(msec):			
Near-end Node Name: clan	Far-end Node Name: devcmas1		
Near-end Listen Port: 1720	Far-end Listen Port: 1720		
	Far-end Network Region: 30		
LRQ Required? n	Calls Share IP Signaling Connection? n		

Figure 12: Signaling Group Form

3.6. Administer H.323 Trunk Group

To create a H.323 trunk group use the command **add trunk-group x** where **x** is the number of the trunk group to create. For this compliance test trunk group **30** was selected.

- Set the **Group Type** field to be **isdn**.
- Add a descriptive name into the **Group Name** field.
- Set the **TAC** field to a valid dial access code (dac) according to the dial plan configuration, i.e., **330**.
- Set the **Carrier Medium** field to **H.323**.
- Set the **Service Type** field to **tie**.

add trunk-group 30		Page 1 of 21	
TRUNK GROUP			
Group Number: 30	Group Type: isdn	CDR Reports: y	
Group Name: MM Trunk	COR: 1	TN: 1	TAC: 330
Direction: two-way	Outgoing Display? n	Carrier Medium: H.323	
Dial Access? y	Busy Threshold: 255	Night Service:	
Queue Length: 0			
Service Type: tie	Auth Code? n		
Member Assignment Method: manual			

Figure 13: Trunk Group Form – Page 1

On **Page 2** of the Trunk Group form the following values should be set, as shown below.

- Set the **Supplementary Service Protocol** field to **b**.
- Set the **Digit Handling (in/out)** field to be **overlap/enbloc**.
- Set the **Format** field to **unk-unk**, this will mean the trunk group will reference private numbering for outgoing calls, the administration of the private numbering is covered in **Section 3.7** of these Application Notes.

add trunk-group 30		Page 2 of 21	
Group Type: isdn			
TRUNK PARAMETERS			
Codeset to Send Display: 6	Codeset to Send National IEs: 6		
	Charge Advice: none		
Supplementary Service Protocol: b	Digit Handling (in/out): overlap/enbloc		
Digit Treatment:	Digits:		
	Digital Loss Group: 18		
Incoming Calling Number - Delete:	Insert:	Format: unk-unk	
Disconnect Supervision - In? y Out? n			
Answer Supervision Timeout: 0			
CONNECT Reliable When Call Leaves ISDN? n			

Figure 14: Trunk Group Form – Page 2

On **Page 3** of the Trunk Group form the following values should be set, as shown below.

- Set the **Send Calling Number** field to **y**. This will ensure that the extension number calling to MM is sent by the trunk group.

```

change trunk-group 30
TRUNK FEATURES
    ACA Assignment? n
    Measured: none
    Internal Alert? n
    Maintenance Tests? y
    Data Restriction? n
    NCA-TSC Trunk Member: 1
    Send Name: n
    Send Calling Number: y
    Used for DCS? n
    Hop Dgt? n
    Send EMU Visitor CPN? n
    Suppress # Outpulsing? n
    Format: private
    UI IE Treatment: service-provider
    Replace Restricted Numbers? n
    Replace Unavailable Numbers? n
    Send Called/Busy/Connected Number: n
    Hold/Unhold Notifications? y
    Modify Tandem Calling Number? n
    Send UI IE? y
    Send UCID? n
    Send Codeset 6/7 LAI IE? y

```

Page 3 of 21

Figure 15: Trunk Group Form – Page 3

On **Page 4** of the trunk-group form the following values should be set, as shown below.

- Set the **Path Replacement Method** field to **always**.
- Set the **QSIG Value-Added** field to **y**.
- Set the **QSIG-Value Coverage Encoding** field to **proprietary**.

```

change trunk-group 30
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: always
    SBS? n
    Display Forwarding Party Name? y
    Character Set for QSIG Name: eurofont
    QSIG Value-Added? y
    QSIG-Value Coverage Encoding: proprietary

```

Page 4 of 21

Figure 16: Trunk Group Form – Page 4

3.7. Administer Private Numbering

To ensure that the caller number is correctly presented to MM, the trunk group references the Private Numbering table, use the command **change private-numbering x** where **x** is the number of the private numbering table to be edited. The following values should be set, as shown below.

- Set **Ext Len** field to **4**, this is the length of the extensions that will be using the table.
- Set **Ext Code** to match the leading digits of extension ranges to be used.
- Set **Trk Grp(s)** to **30**, this is the number of the trunk group that will use this entry.
- Set **Total Len** to **4**, this is the total length of the calling number that will be presented by the trunk group.

change private-numbering 1				Page 1 of 2	
NUMBERING - PRIVATE FORMAT					
Ext Len	Ext Code	Trk Grp(s)	Private Prefix	Total Len	
4	1	30		4	Total Administered: 1 Maximum Entries: 540

Figure 17: Private Numbering Form

3.8. Administer Hunt Group

It is common practice to use a higher number such as '99' for hunt groups that will be used for administrative functions such as voicemail but this is a matter of preference and for this compliance test hunt group **30** was selected. To create a hunt group use the command **add hunt-group x** where **x** is the number of the hunt group to create. The following values should be set, as shown below.

- Set **Group Name** field to a descriptive name for the hunt group.
- Set **Group Extension** to an available extension, this will be the number that subscribers dial in order to access voicemail.
- Set **Group Type** to be **ucd-mia**.
- Set **ISDN/SIP Caller Display** field to **mbr-name**.

add hunt-group 30		Page 1 of 60	
HUNT GROUP			
Group Number: 30		ACD? n	
Group Name: Modular Messaging		Queue? n	
Group Extension: 1990		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: mbr-name			

Figure 18: Hunt Group Form – Page 1

On **Page 2** of the hunt-group form the following values should be set

- Set **Message Center** field to **qsig-mwi**.
- Set **Send Reroute Request** field to **y**.
- Set **Voice Mail Number** field to the voice mail number used on the MAS, in this case **1990**.
- Set **Routing Digits (e.g. AAR/ARS Access Code)** to be the AAR feature access code, in this case **8**.

change hunt-group 30		Page 2 of 60	
HUNT GROUP			
LWC Reception: none		AUDIX Name:	
Message Center: qsig-mwi Send Reroute Request: y Voice Mail Number: 1990			
Routing Digits (e.g. AAR/ARS Access Code): 8		Provide Ringback? n	
TSC per MWI Interrogation? y			

Figure 19: Hunt Group Form – Page 2

3.9. Administer Route Pattern

Use the **add route pattern x** command to administer the route pattern where **x** is the number of the route pattern to be added, the following values should be set, as shown below.

- Set the **Grp No** field to the number of the trunk group administered in **Section 3.6**.
- Set the **TSC** field to **y**.
- Set **CA-TSC Request** to **as-needed**.
- Set the **Numbering Format** field to **unk-unk**.

add route-pattern 30												Page 1 of 3	
Pattern Number: 30												Pattern Name: Modular Message	
SCCAN? n												Secure SIP? n	
Grp No		FRL	NPA	Pfx	Hop	Toll	No.	Inserted				DCS/ IXC	
		Mrk	Lmt	List	Del	Digits				QSIG			
					Dgts				Intw				
1:	30	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	as-needed	rest		unk-unk	none	
2:	y	y	y	y	y	n	n		rest			none	

Figure 20: Route-Pattern Form

3.10. Administer AAR routing

When the hunt group is accessed it will dial the AAR access code and voicemail number administered on **Page 2** of the hunt group form shown in **Section 3.8**. Use the **change aar analysis** command to administer the AAR routing, the following values should be set, as shown below.

- Set the **Dialed String** to **1990**, this must match the voicemail number configured on **Page 2** of the hunt group form.
- Set the **Total Min** and **Max** to **4**, this is equal to the length of the dialed string.
- Set the **Route Pattern** field to the number of the route pattern used to access the trunk group connecting to MM.

change aar analysis 1						Page 1 of 2	
AAR DIGIT ANALYSIS TABLE							
Location: all					Percent Full:		1
Dialed	Total		Route	Call	Node	ANI	
String	Min	Max	Pattern	Type	Num	Reqd	
1990	4	4	30	aar		n	
2	5	5	1	aar		n	
3	5	5	3	aar		n	
4	7	7	999	aar		n	
5	5	5	999	aar		n	

Figure 21: AAR Analysis Form

4. Configure Avaya Modular Messaging Features

During installation of MM the services and type of switch connection required would be specified in the Data Collection Tool (DCT) however there are some features which need to be configured after installation. The following section will describe the steps required to enable the features used in this Compliance test. To configure the features covered in this section the Voice Mail System Configuration (VMSC) program will be used, the VMSC is accessed from the MAS by clicking on **Start → Programs → Avaya Modular Messaging → Voice Mail System Configuration**.

4.1. Administer Call Me Feature

To configure the Call Me feature,

- Double-click **Call Me** under the Voice Mail Domain (VMD). The VMD in the figure below is called **DCVMD**, this will open the **Call Me Voice Mail Domain** window.
- On the **General** tab, click the **Enable Call Me** checkbox.
- In the **MAS Call Me Server** field enter the machine name of the MAS on which the Call Me service will be enabled, such as **DEVCMAS1**.
- Click **OK** to close the **Call Me** window.

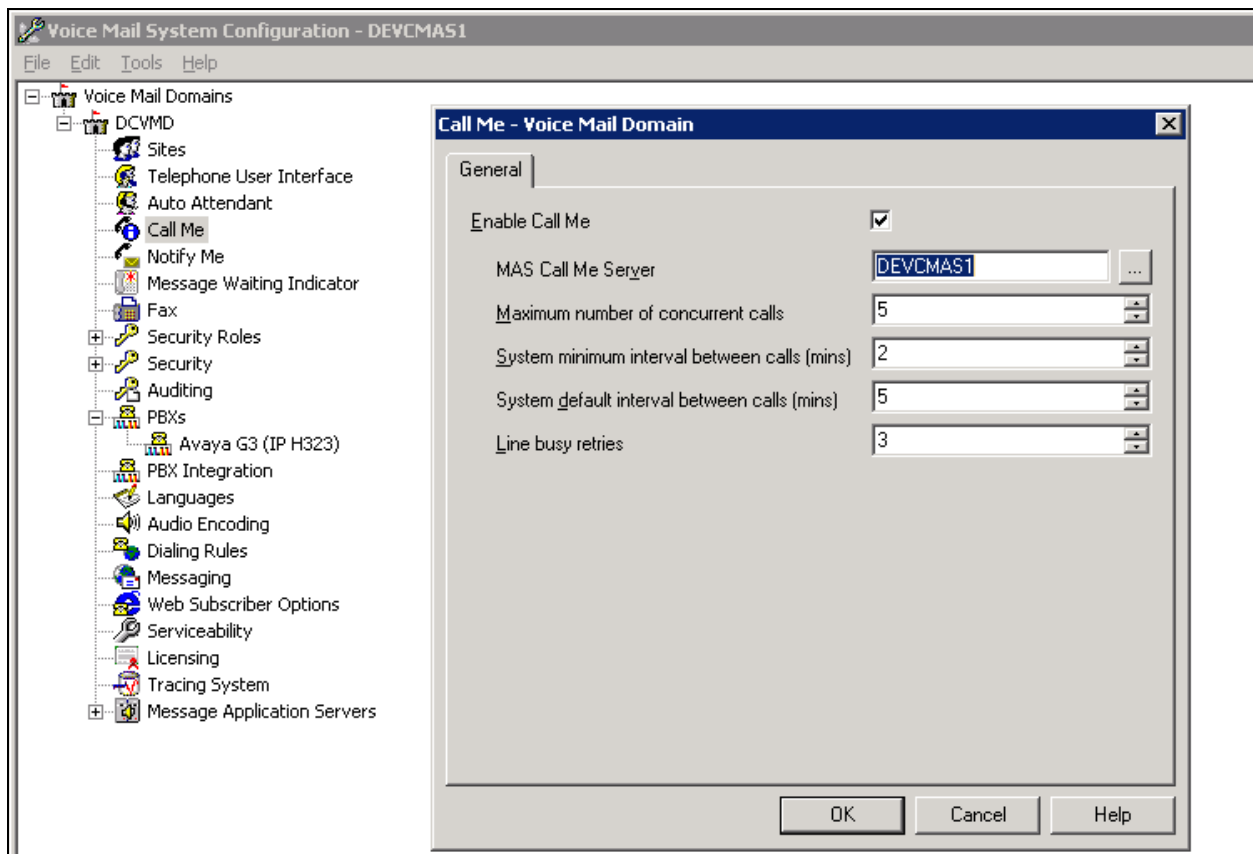


Figure 22: Call Me Service

4.2. Verify Notify Me Feature

The Notify Me feature is configured by default. To make sure Notify Me for the VMD is activated:

- Double-click **Notify Me**.
- On the **General** tab, verify the **Enable Notify Me** checkbox is checked.
- Click **OK**.

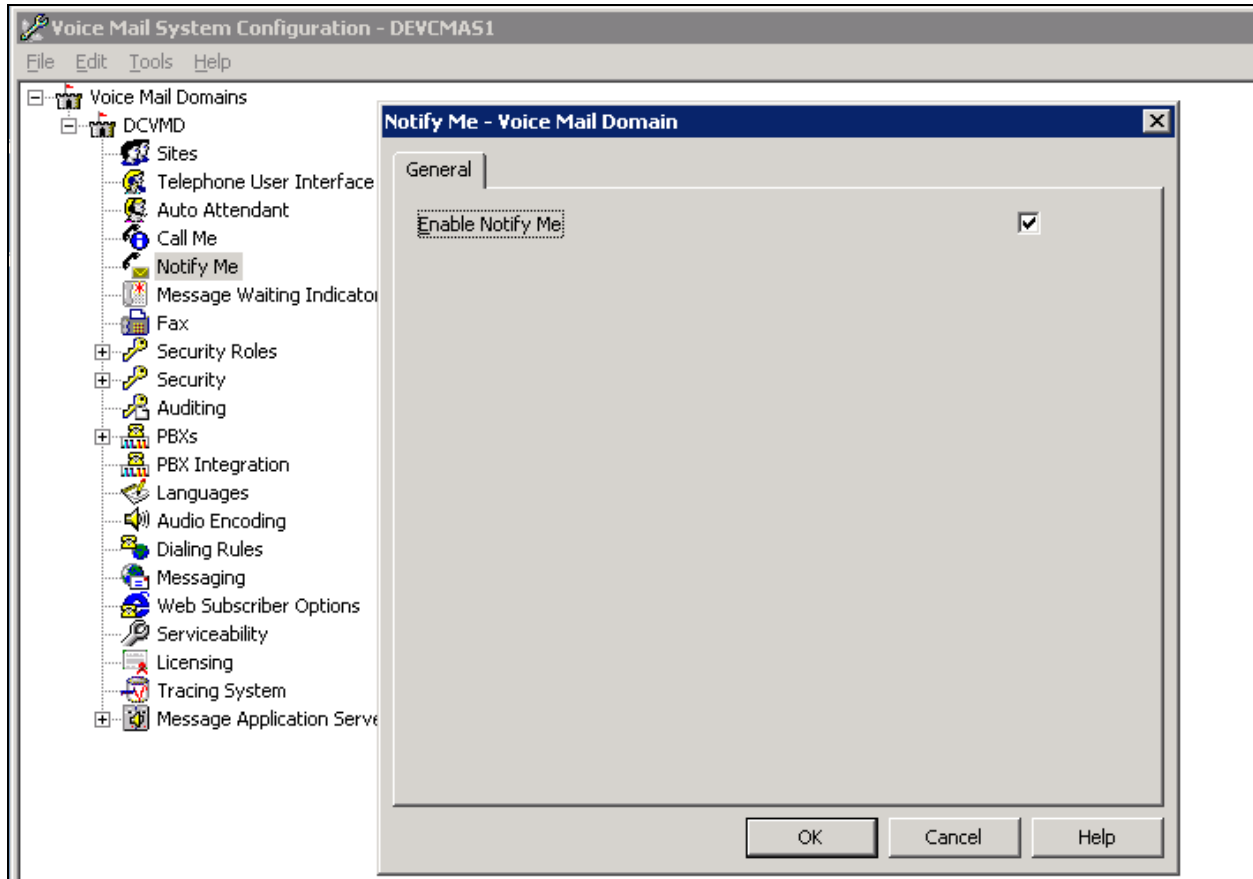


Figure 23: Notify Me

4.3. Verify Switch Connection Settings

The type of switch connection is determined by the settings specified in the DCT. To verify the existing settings and update the required fields:

- Expand **PBXs** under the VMD.
- Double-click **Avaya G3 (IP H323)**.
- On the **Transfer/Outcall** tab, verify the **Transfer Mode** is set to **Full** to prevent callers being disconnected when calls are routed back to the MAS.

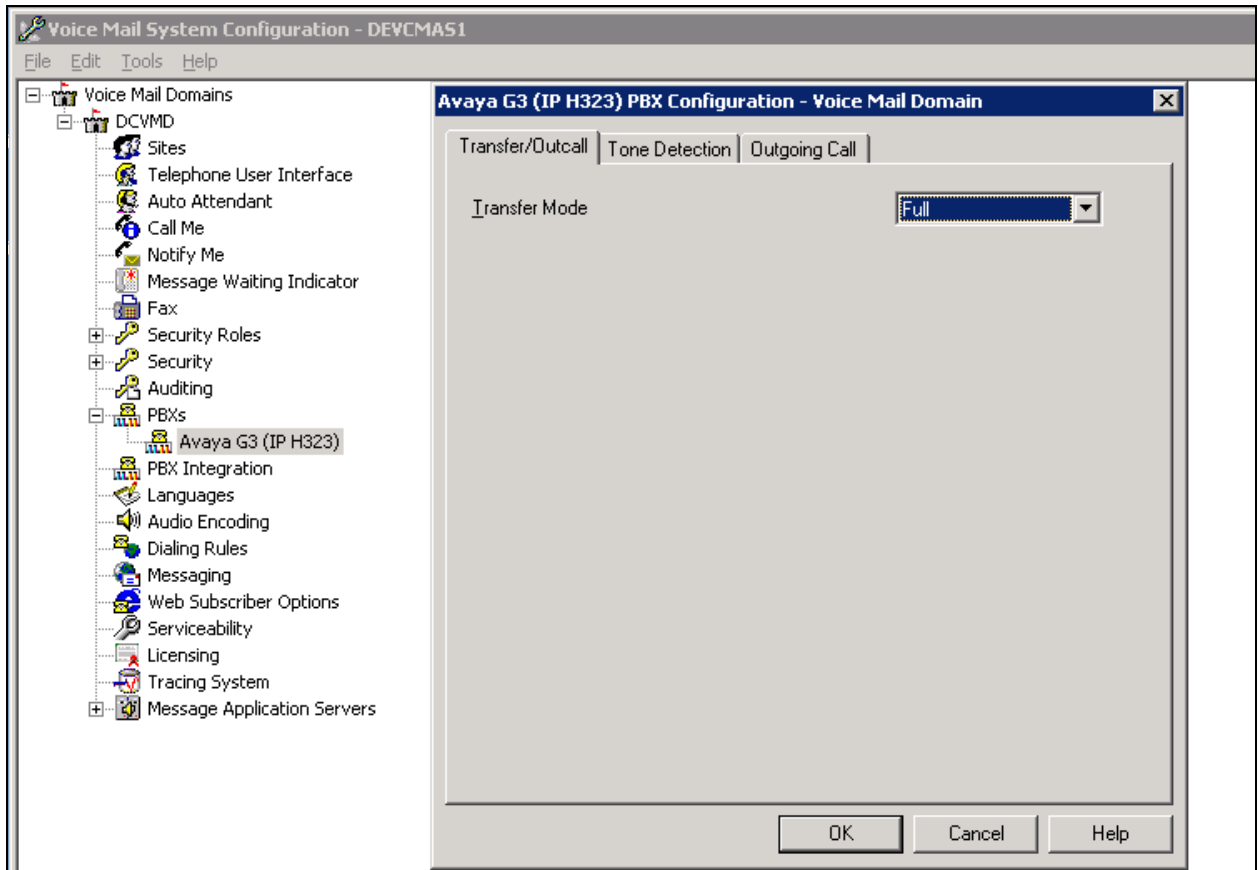


Figure 24: VMD PBX –Transfer/Outcall Tab

On the **Outgoing Call** tab, verify the following settings:

- The **Layer 1 Protocol** field should be set to **G711u-law**.
- The **Number Type** field should be set to **Local**.
- The **Number Plan** field should be set to **Private**.
- The **Origin Number** field should be set to **1990**, this is the number entered in the **Voice Mail Number** field on **Page 2** of the Hunt Group form, **Section 3.8**.

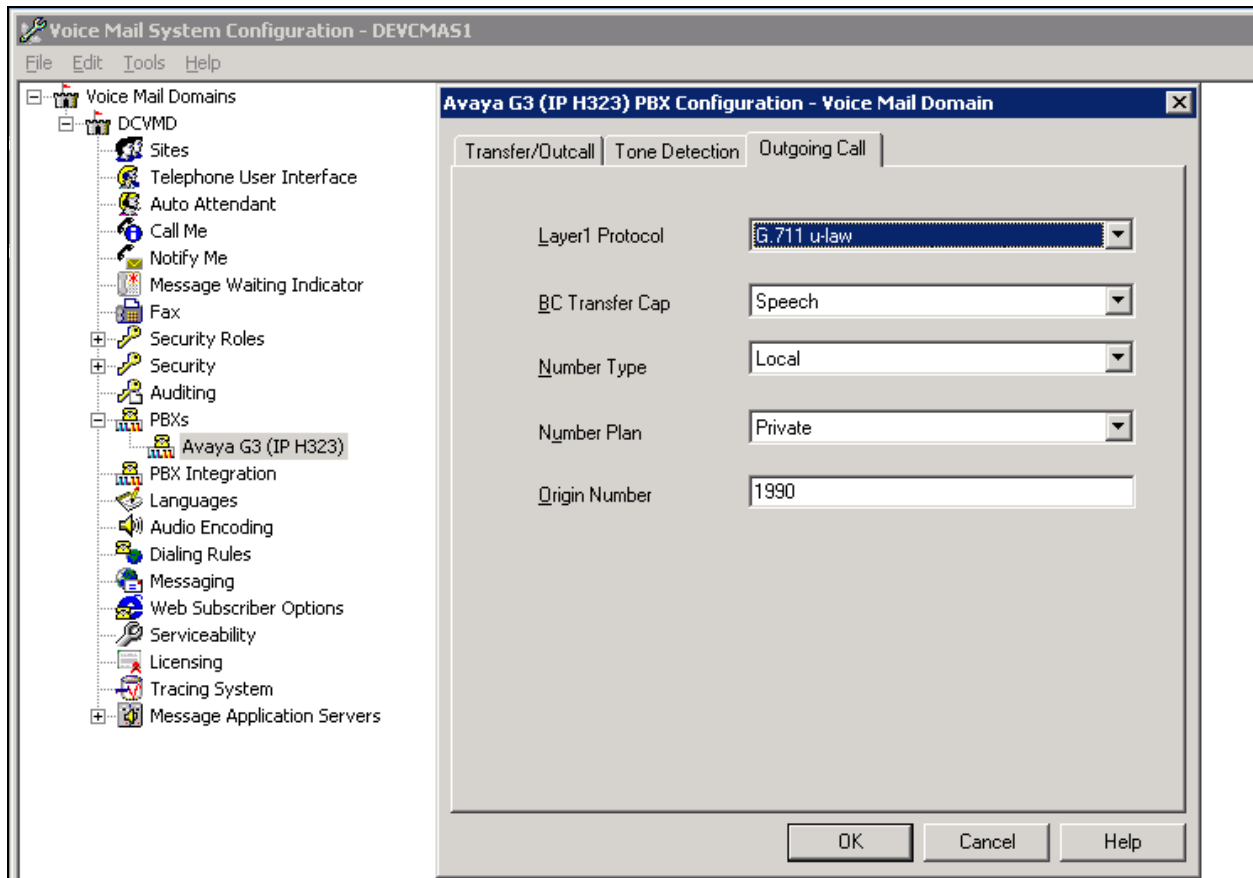


Figure 25: VMD PBX –Outgoing Call Tab

4.4. Administer Message Waiting Indicator

To administer the Message Waiting Indicator, double-click **Message Waiting Indicator** to verify the following settings:

- Check the **Enable Message Waiting Indicator (MWI)** check box to enable MWI.
- The **MAS MWI server** field should be set to the machine name of the MAS that will act as the MWI server.
- Set **Scheduled MWI updates** field to **Active**.
- Leave **Limit requests** unchecked.
- In the window **Message Application Servers that Support MWI** include the MAS servers that will be used for MWI, in the configuration for these Application Notes there is only one MAS as shown below.

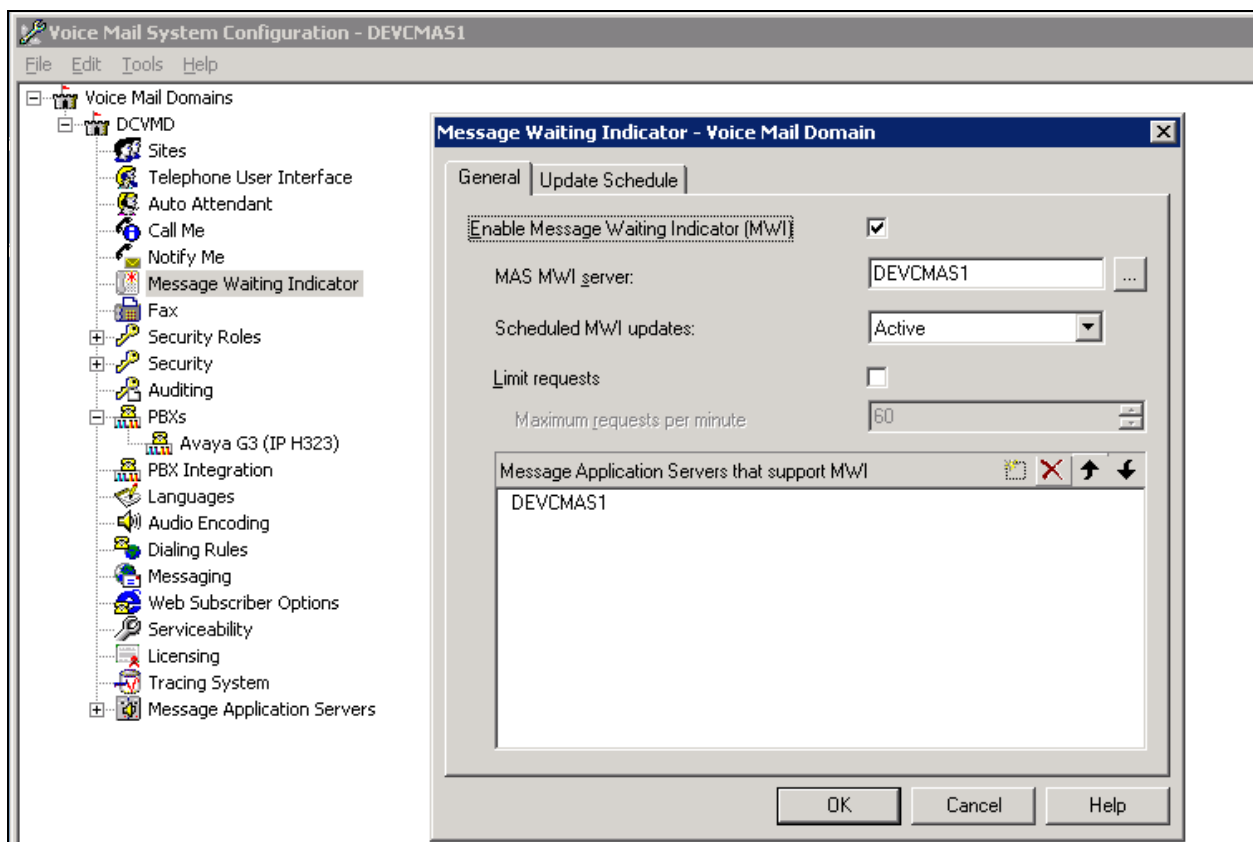


Figure 26: Message Waiting Indicator

4.5. Administer MAS Telephony Interface

To access the Telephony Interface for the MAS connecting to the switch expand **Message Application Servers** at the bottom of the options for VMD and expand **DEVCMAS1**, this is the name of the MAS to be administered. Verify the following settings as shown below:

- Double click **Telephony Interfaces (IP H323)** to open the **Telephony Interfaces – DEVCMA1** window.
- Leave the **Playback Volume** field at the default value of **2**.
- Set the **Maximum Concurrent Calls** field to **30** to match the number of members configured in the trunk group on Communication Manager.
- Click **OK** to save any changes.

Before continuing, the MAS service should be restarted; this can be done by double-clicking the **Monitor** icon on the desktop, Click **Services (Local)** in the left pane. In the right pane of the Monitor window, right-click **MM Messaging Application Server** and select **Restart**, the system restarts the messaging service (not shown).

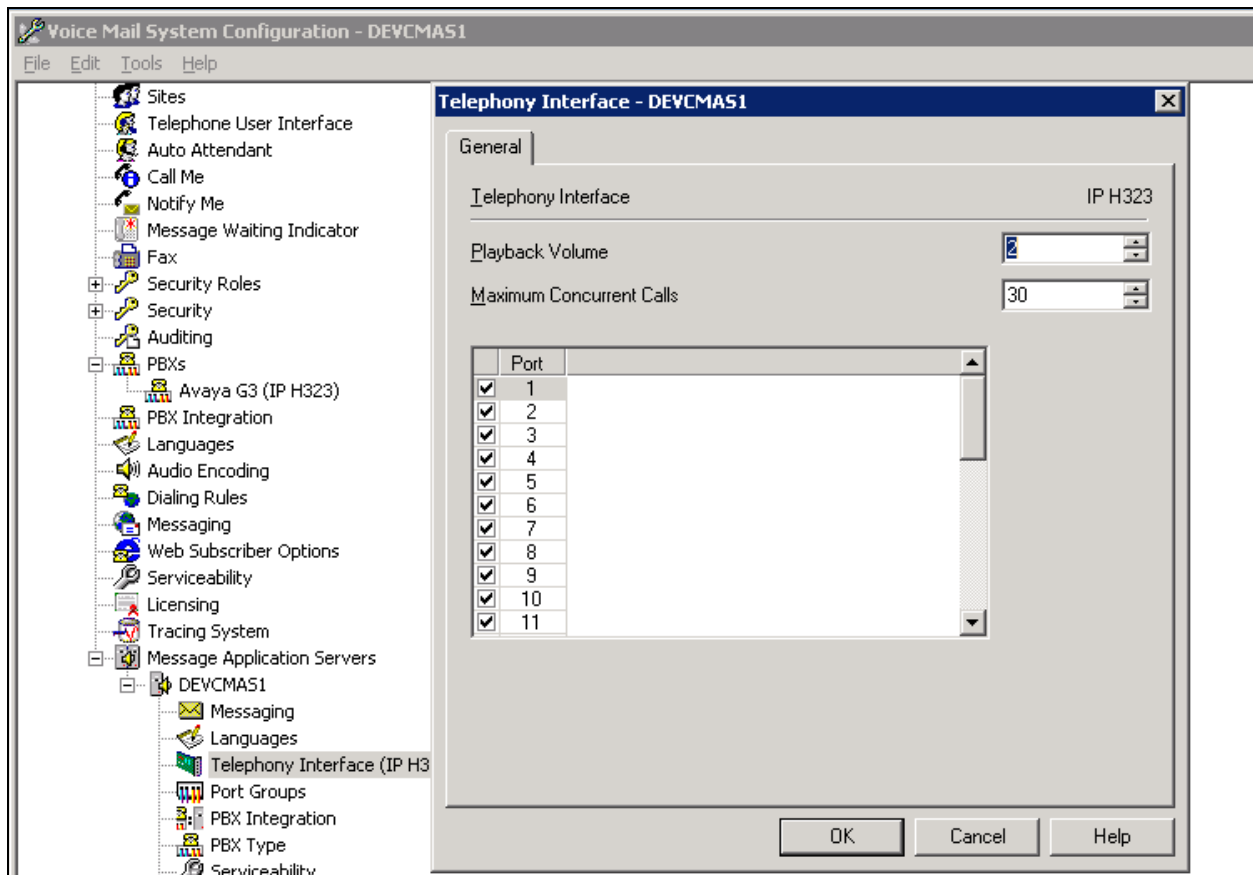


Figure 27: MAS Telephony Interface

4.6. Administer Port Groups

A new port group should be set up to reserve capacity for the use of MWI.

- Double click **Port Groups** to open the **Port Groups – DEVCMAS1** window.
- Scroll to the bottom of **Port Group Members** on the left hand side and un-check the last member in the list.
- Click the **Add Group** button and the **Add New Group** window will appear.
- In the **Port Group Name** field enter **MWI** or another descriptive name.
- Click **OK** to save the changes.

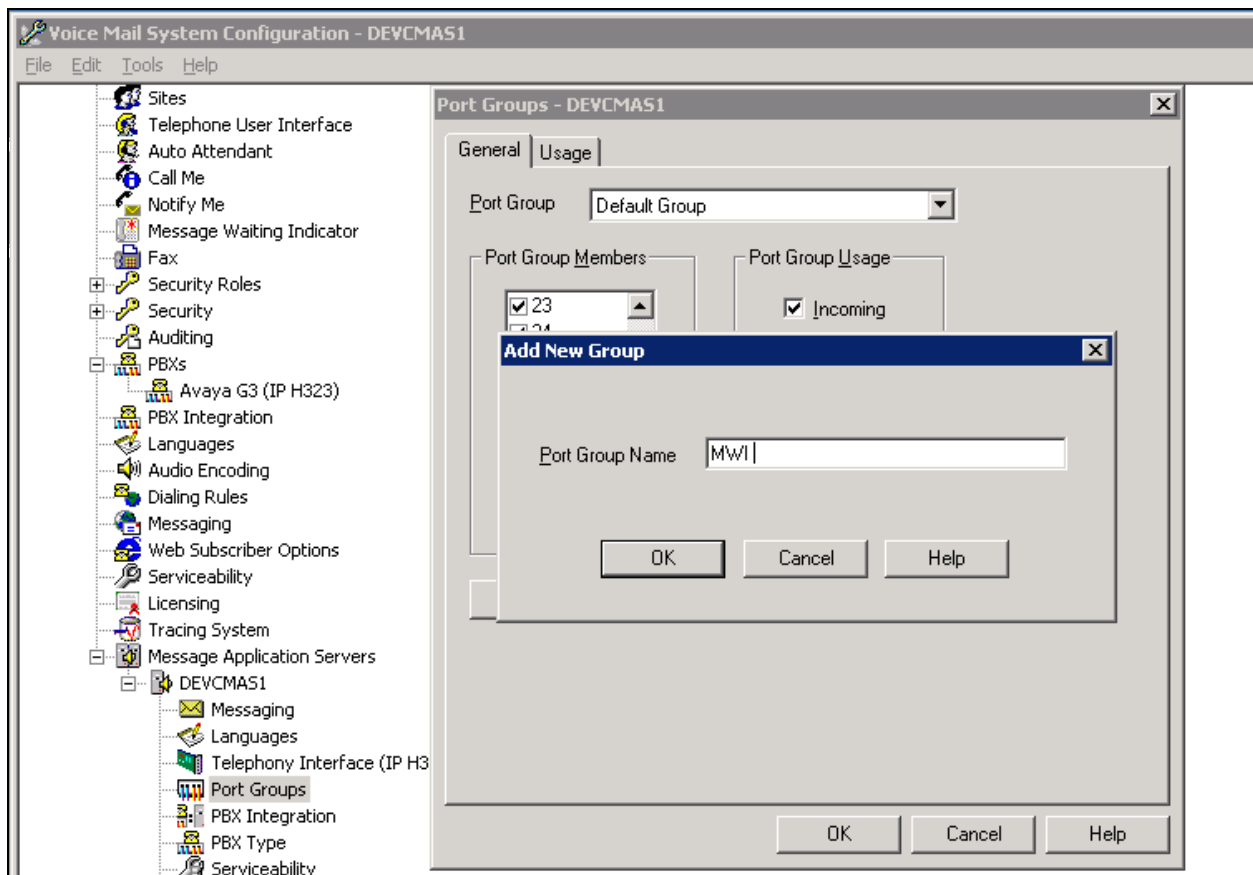


Figure 28: MAS Port Groups – Add New Group

Back in the **Port Groups – DEVCMA51** window; select **MWI** from the **Port Group** drop down menu.

- Under **Port Group Usage** on the right hand side un-check the **Incoming** check box.
- Under **Port Group Members** on the left hand side un-check all the members except for the last one in the list.
- Click **OK** to save the changes.

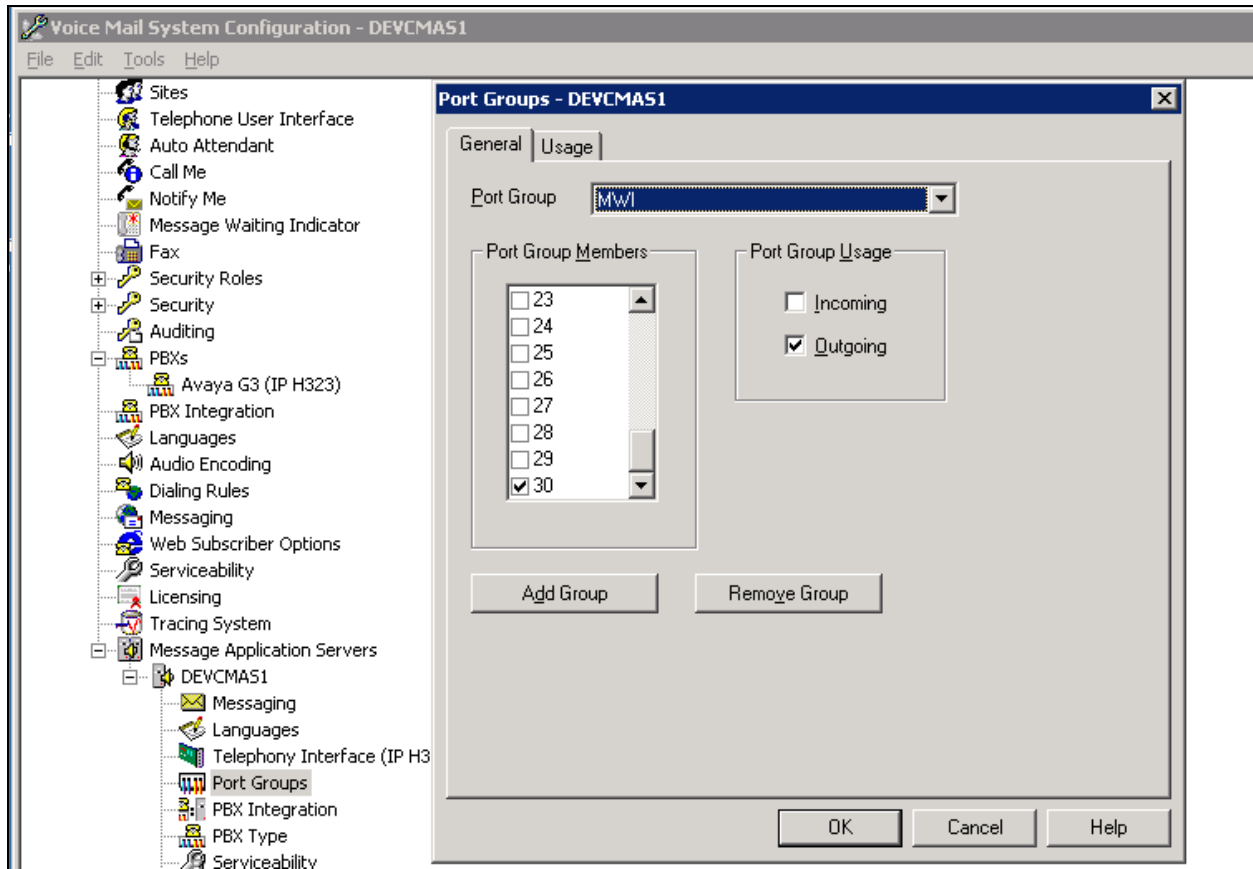


Figure 29: MAS Port Groups – General Tab

4.7. Administer MAS PBX Integration

Verify the following settings for the MAS PBX Integration as shown below.

- Double click **PBX Integration**.
- On the **General** tab verify the **IP** radio button is checked.

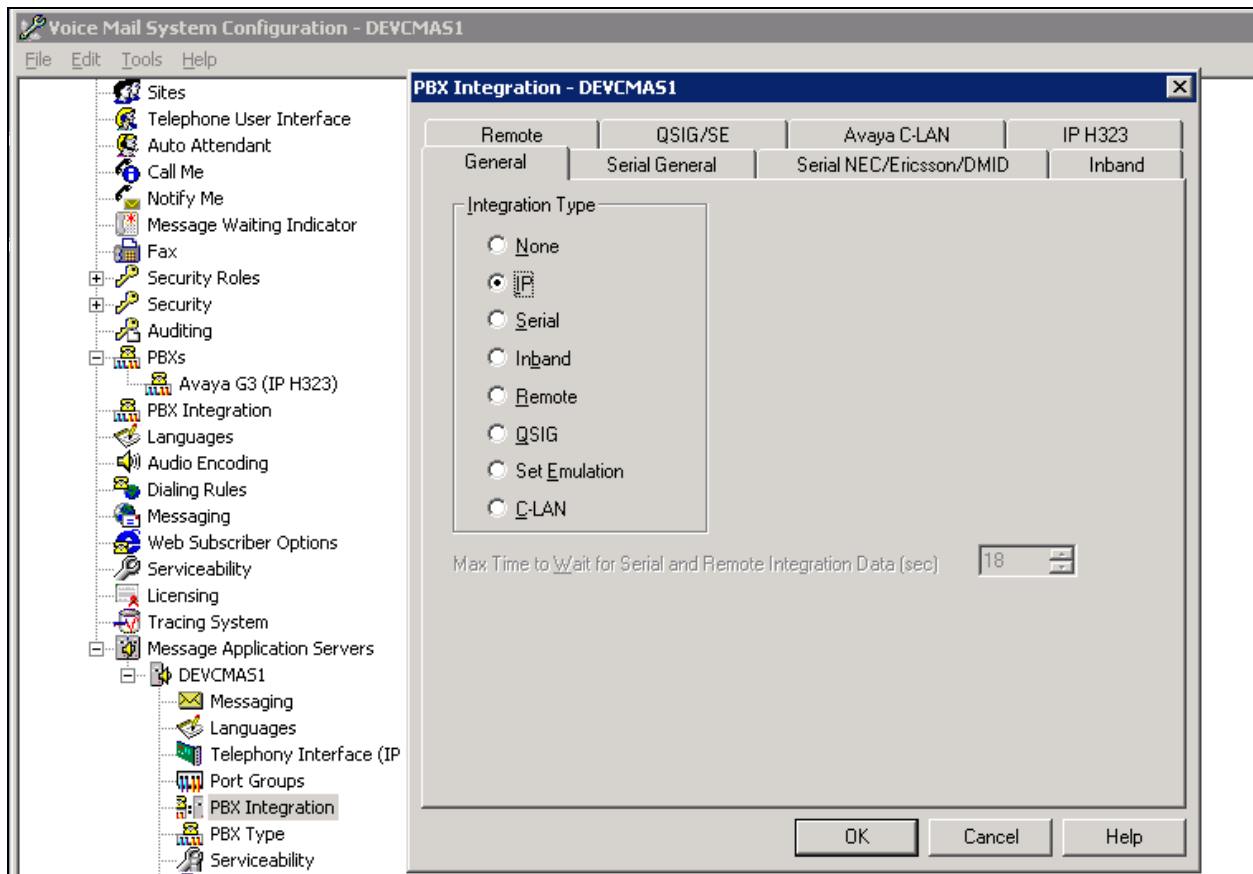


Figure 30: MAS PBX Integration – General Tab

On the **IP H323** tab the settings shown below should be entered.

- The **MAS Corporate IP Address** field should be set to **10.10.19.31**, this is the corporate IP address of the MAS.
- The **PBX IP Address** field should be set to **10.10.19.14**, this is the IP address of the CLAN card used for the H.323 trunk on Communication Manager.
- The **Port** field should be set to **1720**.
- The **UDP Port Range** should be set to **5000-5999** to match what was configured in the IP network region in Communication Manager, covered in **Section 3.3**.
- The **Packet size** field should be set to **40**.
- The **Enable Tunneling** check box should be checked.
- The **Enable Fast Start** check box should be checked.
- The **Silence Suppress** check box should be un-checked.
- The **Max MWI Sessions** field should be set to **1**.
- Select **MWI** from the drop down menu for **Port Group Name**.
- Under **IP Supported Codecs** highlight **G.711-uLaw-64k** and click **Move Up** if it is not the first codec in the list.
- Click **OK** to save changes.

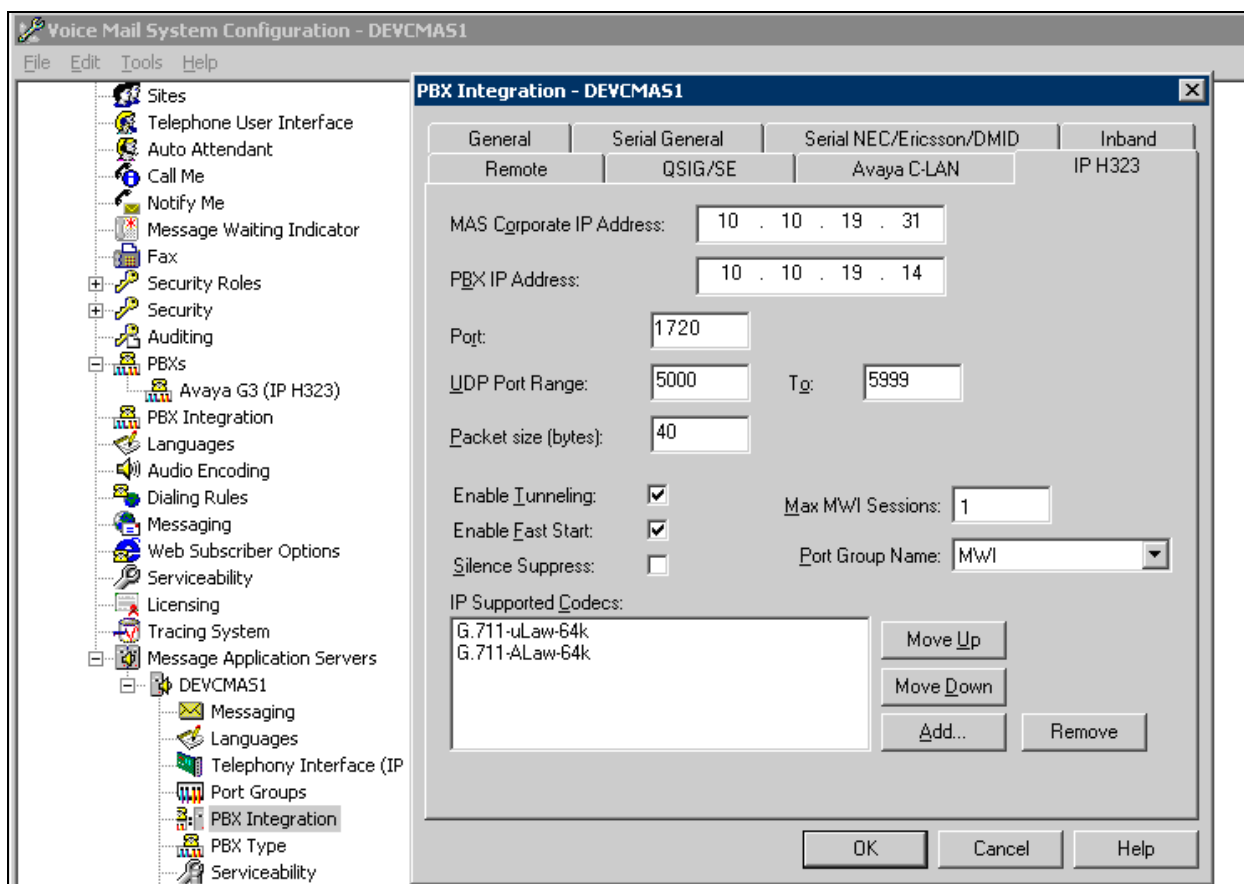


Figure 31: MAS PBX Integration - IP H323 Tab

5. Avaya Message Storage Server Configuration

This section describes the steps to complete the administration of the MSS to work with the Notify Me application and covers the following areas:

- Administer trusted server
- Administer Class of Service
- Administering subscribers

The MSS is administered from a web interface which can be accessed by using the URL <https://10.10.19.30/> where 10.10.19.30 is the corporate IP address of the MSS.

5.1. Administer Trusted Server

The MSS requires the WSO to be added as a trusted sever. To do this, on the left hand side of the page under **Messaging Administration**, click on **Trusted Servers**. Click the **Add Trusted server** button and enter the follow values as shown below:

- Set the **Trusted Server Name** field to **WSO**, this can be any descriptive name.
- Set the **Password** field to **Avaya123\$**, this can be any memorable password.
- Set the **Machine Name / IP Address** field to **10.10.19.32**, this is the corporate IP address of the WSO server.
- Set the **Special Type** field to **DEM Server**.
- Set the **LDAP Connection Security** field to **No encryption required**.
- All other fields can retain their default values.

Help Log Off		This server	
Add Trusted Server			
Trusted Server Name	WSO	Password	Avaya123\$
		Confirm Password	Avaya123\$
Machine Name / IP Address	10.10.19.32	Service Name	DEM Server
Minutes of Inactivity Before Alarm	0	Default Community	1
Access to Cross Domain Delivery	no	Special Type	DEM Server
LDAP Access Allowed	yes	LDAP Connection Security	No encryption required
IMAP4 Super User Access Allowed	no	IMAP4 Super User Connection Security	Must use SSL or encrypted SASL
<div>Save Back Help</div>			

Figure 32: Trusted Server

5.2. Administer Class of Service

The Class of Service defines the services and features that each subscriber will have access to. On the left hand side of the MSS administration page under **Messaging Administration**, click on **Classes-Of-Service** and highlight the Class of Service that will be assigned to subscribers, click the **Edit the Selected COS** button, this will open the **Edit-Class-of-Service** screen where the follow values are entered as shown below

- Set the **Message Waiting Indication Allowed** field to **yes**.
- Set the **Call Me Allowed** field to **yes**.
- Set the **Find Me Allowed** field to **yes**.
- Set the **Notify Me Allowed** field to **yes**.
- Set the **Call Handling** field to **yes**.
- Set the **Call Screening** field to **yes**.
- Set the **Record Mailbox Greetings** field to **yes**.
- Set the **Restrict Client Access** field to **no**.
- All other fields can be left as default.

Class of Service Number: 0		Class of Service Name: class00	
MESSAGE RETENTION SETTINGS			
Retain New Messages (days)	<input type="checkbox"/> Forever 45	Retain Saved Messages (days)	<input type="checkbox"/> Forever 45
Retain Filed Messages (days)	<input type="checkbox"/> Forever 45		
MAILBOX AND MESSAGE SIZES			
Maximum Mailbox Size	36 Minutes	Maximum Call Answer Message	5 Minutes
Maximum Voice Mail Message	5 Minutes		
SUBSCRIBER FEATURES and SERVICES			
Time Zone	Use System Timezone		
Message Waiting Indication Allowed	yes	Call Me Allowed	yes
Find Me Allowed	yes	Notify Me Allowed	yes
Call Handling	yes	Call Screening	yes
Outbound Fax Calls	no	Extended Absence Greeting Allowed	yes
Inbound Fax	no	Aria TUI Date & Time Playback	Never
Page via PBX	no	Record Mailbox Greetings	yes
Caller Application Announcement Recording	no	Caller Application	(none)
Telephone User Interface	MM Aria	Restrict Client Access	no
Personal Operator Configuration	no	Unsent Message Allowed	no
<input type="button" value="Back"/> <input type="button" value="Save"/> <input type="button" value="Help"/>			

Figure 33: Class of Service

5.3. Administer Subscribers

Each mailbox on the system must be administered as a subscriber. To add a subscriber on the left hand side of the MSS administration page under **Messaging Administration**, click on **Subscriber Management**, enter the mailbox number to be added in the **Local Subscriber Mailbox Number** field and click the **Add or Edit** Button (not shown). This will open the **Add Local Subscriber** screen where the following values are entered, as shown below.

- Set the **Last Name** field and the **First Name** field to the surname and forename of the subscriber that will use the mail box, for this compliance test **user** was used for the last name and **1000** was used for the first name so that the subscriber would appear in the system as user.1000.
- Set the **Mailbox Number** to the extension configured on Communication Manager for the subscriber.
- Set the **PBX extension** to the extension configured on Communication Manager for the subscriber.
- Set the **Class Of Service** to the class of service administered in **Section 5.2**.
- Set the **Email Handle** field to the user part of the email address to be used for the subscriber. The remainder of the mail address is displayed below the **Email Handle** field. In the figure below, the email address would be **user.1000@devcmss.devavaya.com**.
- All other fields can be left at their default values.

BASIC INFORMATION * (Required Fields)			
*Last Name	<input type="text" value="user"/>	First Name	<input type="text" value="1000"/>
*Password	<input type="text"/>	*Mailbox Number	<input type="text" value="1000"/>
*Numeric Address	<input type="text" value="1000"/>	PBX Extension	<input type="text" value="1000"/>
*Class Of Service	<input type="text" value="0 - class00"/>	*Community ID	<input type="text" value="1"/>

SUBSCRIBER DIRECTORY	
Email Handle	<input type="text" value="user.1000@devcmss.devavaya.com"/>
Telephone Number	<input type="text"/>
Common Name	<input type="text" value="1000 user"/>
ASCII Version of Name	<input type="text" value="user, 1000"/>

Figure 34: Add Subscriber

Click the **Save** button to commit the changes.

<input type="button" value="Save"/>	<input type="button" value="Delete"/>	<input type="button" value="Launch Subscriber Options"/>
<input type="button" value="Back"/>	<input type="button" value="Help"/>	

Figure 35: Save Subscriber

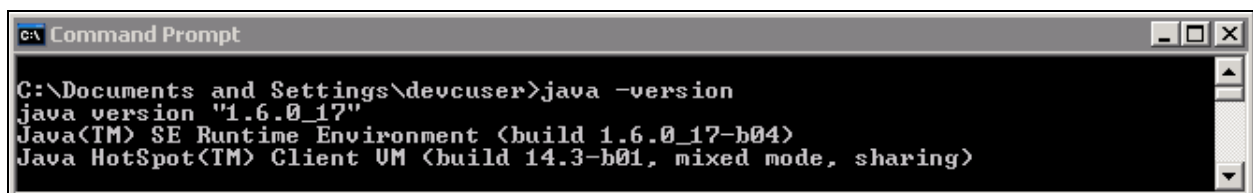
6. Configure Starfish Notify Me

The Starfish Notify Me application is installed on the WSO and communicates with the MAS and MSS over the IP network. This section describes the steps required for configuring the Starfish Notify Me application and will cover the following areas:

- Verifying Java version installed
- Host file configuration
- Installation of the software
- Administration of configuration files

6.1. Verify Java Version

The Starfish Notify Me application requires a minimum of Java 1.6 to be installed. To check the Java version installed on the WSO open a command prompt by clicking **Start→Run**, type **cmd** and click **OK**. In the command prompt window type **java -version** and press **return** the version of Java will be displayed on the following line as shown below.



```
C:\Documents and Settings\devcuser>java -version
java version "1.6.0_17"
Java(TM) SE Runtime Environment (build 1.6.0_17-b04)
Java HotSpot(TM) Client VM (build 14.3-b01, mixed mode, sharing)
```

Figure 36: Java Version

6.2. Host File Configuration

Both the host files on the MAS and WSO require specific entries for the Starfish Notify Me application to function. To access the hosts file browse to **C: → WINDOWS → system32 → drivers → etc** and open the **hosts** file using notepad. The entry required should take the following format: <IP Address> <Fully Qualified Domain Name> <Machine Name>. The host file located on the WSO server, must contain the fully qualified domain name (FQDN) and the machine name of the MAS. Do not remove the local host entry. The WSO host file should contain two entries similar to the example below:

```
127.0.0.1    localhost
10.10.19.31  devcmas1.devcavaya.com  devcmas1
```

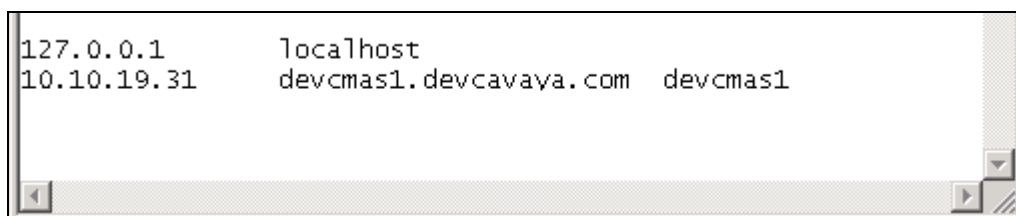


Figure 37: WSO Host File

The host file located on the MAS contains more information because it contains the private address entries for the MAS and MSS as well as the public IP addresses for all machines, the entries should follow the same format as the WSO host file. Below are the entries that require verification on the MAS.

```
127.0.0.1      localhost  
10.10.19.30    devcmss.devcavaya.com    devcmss  
10.10.19.31    devcmas1.devcavaya.com    devcmas1
```

A screenshot of a text-based host file. The file contains 14 lines of entries, each with an IP address, a hostname, and an alias. The entries are: 127.0.0.1 localhost; 10.10.19.30 devcmss.devcavaya.com devcmss; 192.168.1.1 mss1 devcmss.devcavaya.local; 10.10.19.31 devcmas1.devcavaya.com devcmas1; 192.168.1.250 mas1 devcmas1.devcavaya.local; 192.168.1.249 mas2; 192.168.1.248 mas3; 192.168.1.247 mas4; 192.168.1.246 mas5; 192.168.1.245 mas6; 192.168.1.244 mas7; 192.168.1.243 mas8; 192.168.1.242 mas9; 192.168.1.241 mas10. The text is displayed in a monospaced font within a window that has a scrollbar on the right and a status bar at the bottom.

```
127.0.0.1      localhost  
10.10.19.30    devcmss.devcavaya.com    devcmss  
192.168.1.1    mss1    devcmss.devcavaya.local  
10.10.19.31    devcmas1.devcavaya.com    devcmas1  
192.168.1.250  mas1    devcmas1.devcavaya.local  
192.168.1.249  mas2  
192.168.1.248  mas3  
192.168.1.247  mas4  
192.168.1.246  mas5  
192.168.1.245  mas6  
192.168.1.244  mas7  
192.168.1.243  mas8  
192.168.1.242  mas9  
192.168.1.241  mas10
```

Figure 38: MAS Host File

6.3. Starfish Notify Me Service

The Starfish Notify Me application has two parts, a utility which is manually run and a service which monitors new users. These are installed under **C:\Starfish** in three sub folders. The **NotifyMeUtility** folder contains libraries, configuration files and an executable for the Notify Me utility. The **NotifyMe** folder contains libraries, configuration files and the executable for the Notify Me service. The **InstallCert** folder contains files related to SSL certification installation. The application service is controlled by a configuration file named **config.ini** which resides in the **Notify Me** folder. The following values must be set within the file as shown below.

- The **MSSTrustedServerPassword** field should be set to **Avaya123\$** this is the trusted server password that was set in **Section 5.1**.
- The **UseRanges** field should be set to **true** this tells the application to use the include and exclude ranges at the bottom of the file.
- The **MSSIPAddress** field should be set to **10.10.19.30**, this is the corporate IP address of the MSS.
- The **ServiceURL** field should be set to **https://devcmas1.devcavaya.com/WSOWebService/Service1.svc?wsdl**, this is the URL for the service located on the MAS that the Notify Me service will access.
- The **GlobalMailID** field should be set to **iapprove@devcmss.devcavaya.com**, this is the mail address that the application will set within the Notify Me rule.
- The **MSSLDAPURL** field should be set to **ldap://10.10.19.30\389**, this is the URL the service will use to access LDAP on the MSS.
- The **ServiceName** field should be set to **Service1**.
- The **IncludeRanges** field should be set to **1000-1049**, this is the range of extensions that will be included to have a rule created by the application.
- The **ExcludeRanges** field should be set to **1020-1029**, this is the range of extensions that will be excluded by the application and will not have a rule created.
- All other fields are left with default values.

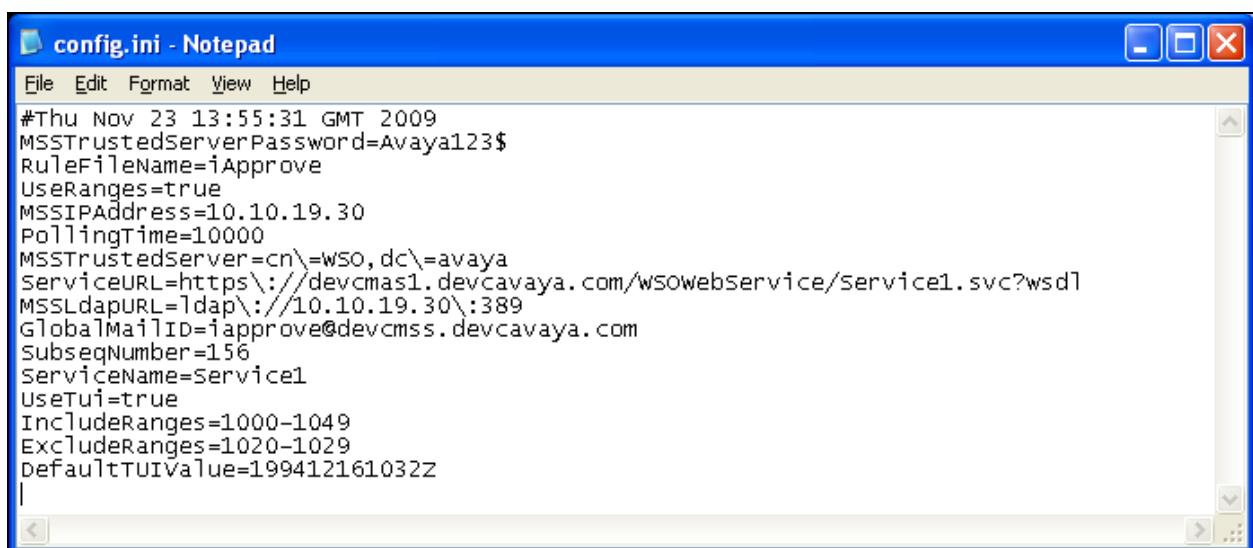


Figure 39: Service Config.ini File

To install the Notify Me service open a command prompt as described in **Section 7.1** and change directory by running the command **cd /Starfish/NotifyMe**, at the prompt type **C:\WINDOWS\Microsoft.NET\Framework\v2.0.50727\instalUtil.exe NotifyMeService.exe** and press return, the application installation will then be displayed in the command window.

6.4. Starfish Notify Me Utility

The application utility is controlled by a configuration file named **config.ini** which resides in the **NotifyMeUtility** folder. The following values must be set within the file as shown below.

- The **GlobalMailID** field should be set to **iapprove@devcmss.devcavaya.com**, this is the mail address that the application will set within the Notify Me rule.
- The **ServiceURL** field should be set to **https://devcmas1.devcavaya.com:55443/WSOWebService/Service1.svc?wsdl**, this is the URL for the service located on the MAS that the Notify Me service will access.
- The **MSSLDAPURL** field should be set to **ldap://10.10.19.30:389**, this is the URL the service will use to access LDAP on the MSS.
- The **MSSTrustedServerPassword** field should be set to **Avaya123\$**, this is the trusted server password that was set in **Section 5.1**.
- The **MSSIPAddress** field should be set to **10.10.19.30**, this is the corporate IP address of the MSS.
- The **ServiceName** field should be set to **Service1**.
- The **UseRanges** field should be set to **true**, this tells the application to use the include and exclude ranges at the bottom of the file.
- The **IncludeRanges** field should be set to **1000-1049**, this is the range of extensions that will be included to have a rule created by the application.
- The **ExcludeRanges** field should be set to **1020-1029**, this is the range of extensions that will be excluded by the application and will not have a rule created.
- All other fields are left with default values.

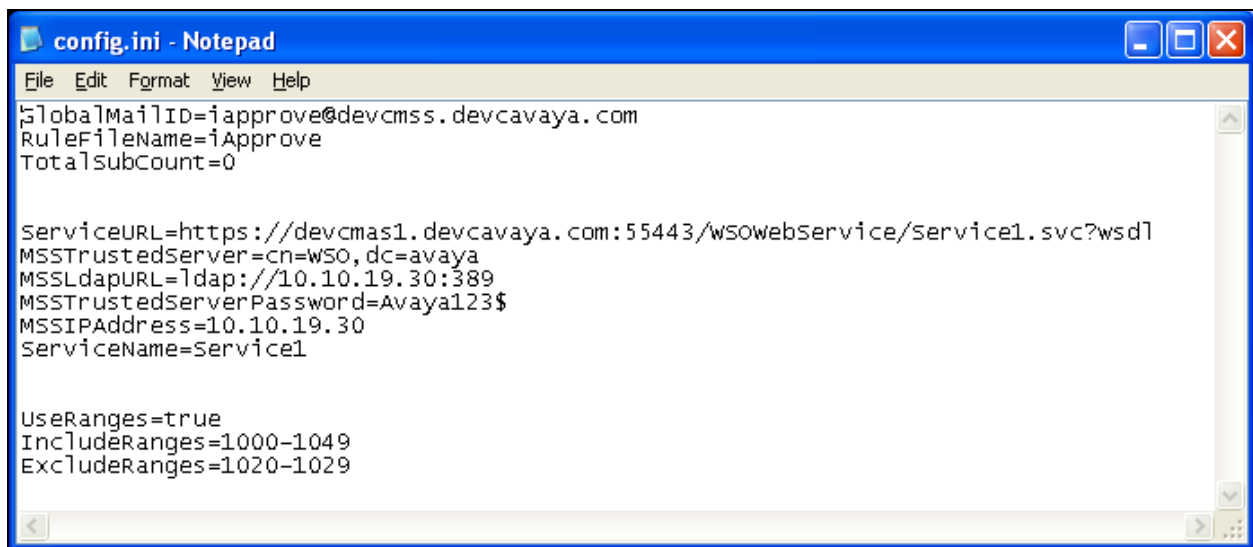


Figure 40: Utility Config.ini File

7. Configure IMAP4 Mail Client

To confirm the functionality of the Starfish Notify Me application an e-mail client is required. Avaya MM supports the use of IMAP4 e-mail clients, Microsoft Outlook Express 6.0 can be configured as an IMAP4 e-mail client and this section describes the steps needed to achieve this. Start Microsoft Outlook Express. Click **Tools→Account**, and select **Add→Mail**. Follow the screens for configuring the IMAP email client.

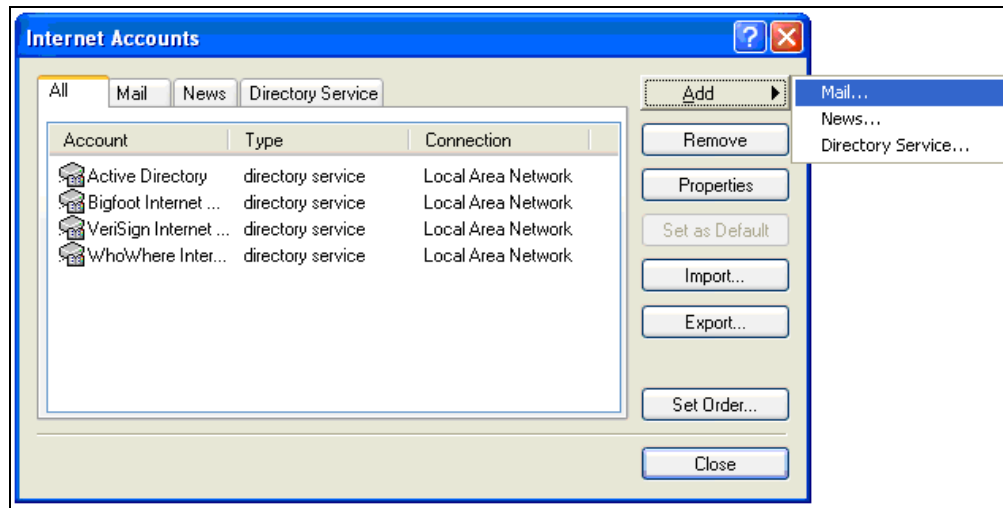


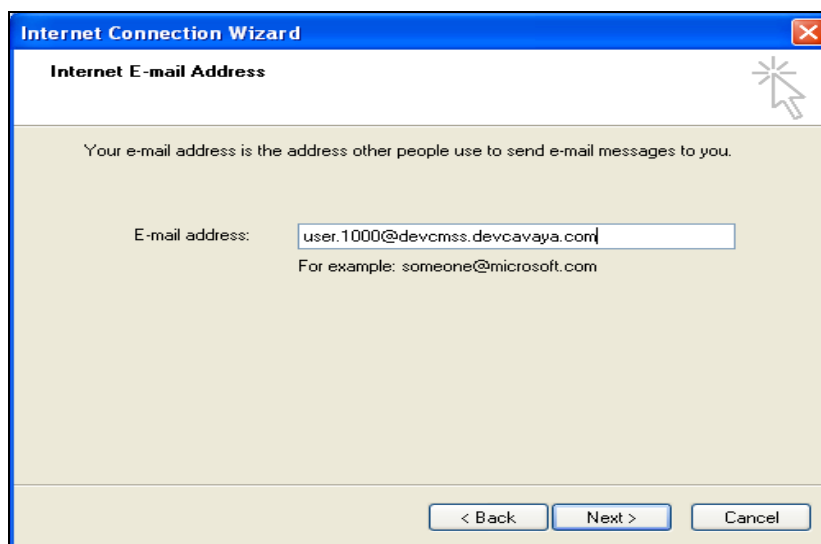
Figure 41: Outlook Express – Add Account

On the **Your Name** screen in the **Display name** field enter the name of the MM subscriber. In **Figure 41**, a display name of **User 1000** is used. Click **Next** to reach the next screen.



Figure 42: Outlook Express – Your Name Screen

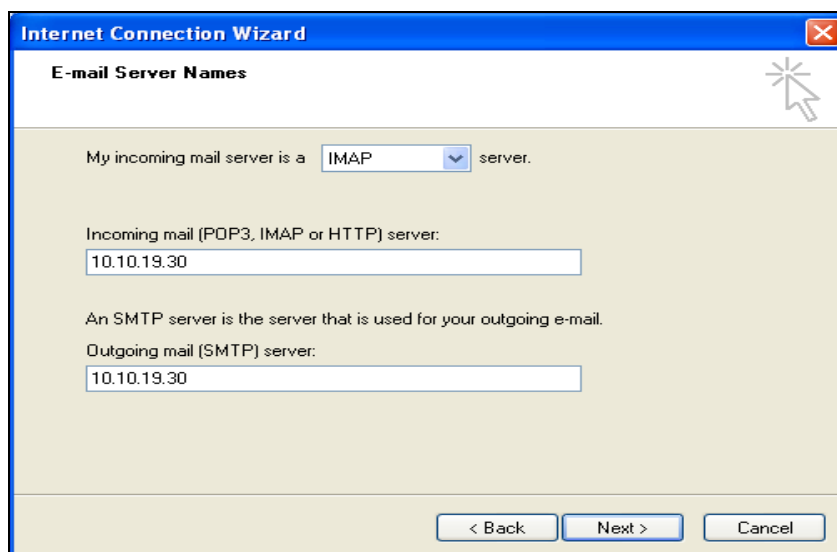
On the **Internet E-mail Address** screen in the **E-mail address** field enter the email address that is set up when the subscriber is initially provisioned on the MSS, covered in **Section 5.3**. In the figure below, an email address of **user.1000@dvecmss.devcavaya.com** is used. Click **Next** to reach the next screen.



The screenshot shows a window titled "Internet Connection Wizard" with a sub-header "Internet E-mail Address". Below the header, there is a text box with the instruction: "Your e-mail address is the address other people use to send e-mail messages to you." Below this, the label "E-mail address:" is followed by a text input field containing "user.1000@dvecmss.devcavaya.com". Below the input field, there is a small text example: "For example: someone@microsoft.com". At the bottom of the window, there are three buttons: "< Back", "Next >", and "Cancel".

Figure 43: Outlook Express – Internet Email Address Screen


On the **E-mail Server Names** screen select **IMAP** from the drop down menu and enter the IP address of the MSS as the **Incoming mail server**. To send emails via SMTP the **Outgoing mail server** IP address must be entered. In this configuration the MSS is used as the outgoing mail server. This will allow users to forward emails to other subscriber's IMAP email accounts. Click **Next** to reach the next screen.



The screenshot shows a window titled "Internet Connection Wizard" with a sub-header "E-mail Server Names". Below the header, there is a text box with the instruction: "My incoming mail server is a" followed by a dropdown menu showing "IMAP" and the word "server". Below this, there is a text input field for the "Incoming mail (POP3, IMAP or HTTP) server:" containing "10.10.19.30". Below this, there is a text input field for the "Outgoing mail (SMTP) server:" containing "10.10.19.30". At the bottom of the window, there are three buttons: "< Back", "Next >", and "Cancel".

Figure 44: Outlook Express – Email Server Names Screen

The **Account name** entered is the subscriber mailbox number and the **Password** is the subscriber password both of which are set up when the subscriber is initially provisioned on the MSS, covered in **Section 5.3**. Click **Next** to reach the next screen.



The screenshot shows the 'Internet Connection Wizard' window with the 'Internet Mail Logon' tab selected. It prompts the user to enter their account name and password. The account name 'user.1000' is entered in the 'Account name' field. The password field is masked with dots. The 'Remember password' checkbox is checked. Below the password field, there is a note about Secure Password Authentication (SPA) and an unchecked checkbox for 'Log on using Secure Password Authentication (SPA)'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Internet Connection Wizard

Internet Mail Logon

Type the account name and password your Internet service provider has given you.

Account name: user.1000

Password: ●●●●●●

☒ Remember password

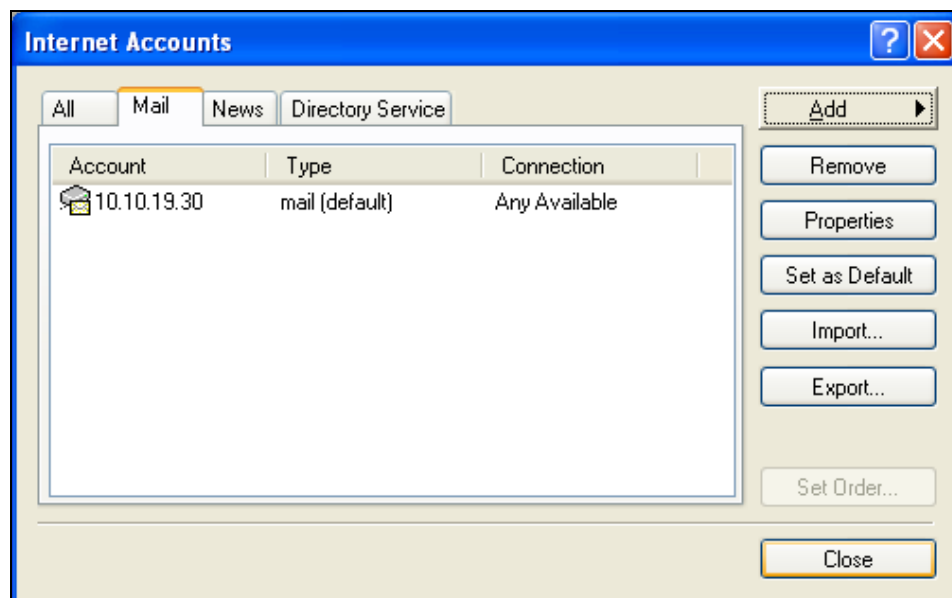
If your Internet service provider requires you to use Secure Password Authentication (SPA) to access your mail account, select the 'Log On Using Secure Password Authentication (SPA)' check box.

☐ Log on using Secure Password Authentication (SPA)

< Back Next > Cancel

Figure 45: Outlook Express – Internet Mail Logon Screen

The new account is created as shown below. In this case the account is **10.10.19.30**. Click **Close**.



The screenshot shows the 'Internet Accounts' dialog box. It has tabs for 'All', 'Mail', 'News', and 'Directory Service'. The 'Mail' tab is selected. On the right, there are buttons for 'Add', 'Remove', 'Properties', 'Set as Default', 'Import...', 'Export...', 'Set Order...', and 'Close'. The main area displays a table with one account listed.

Account	Type	Connection
10.10.19.30	mail (default)	Any Available

Buttons: Add, Remove, Properties, Set as Default, Import..., Export..., Set Order..., Close

Figure 46: Outlook Express – Created Account

Click **Yes** to the dialog **Would you like to download folders from the mail server you added?**

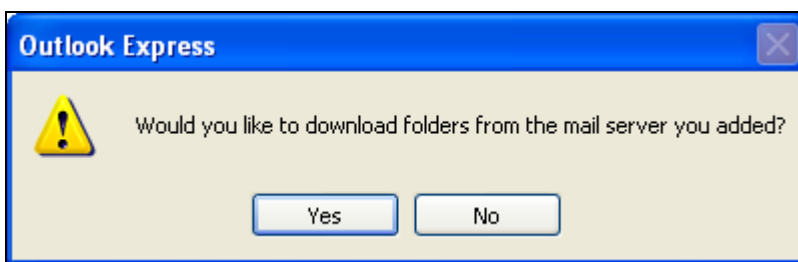


Figure 47: Outlook Express – Folder Synchronization

8. Verification Steps

Verification of the Starfish Notify Me application service can be achieved by the following steps:

- Add a new subscriber using the MSS administration web page.
- Dial that subscriber and leave a message on their voice mail.
- Ensure that the MWI light on the subscriber's telephone lights up.
- Verify that an email is then received to the Outlook Express email client configured with the mail address configured in the utility config.ini file.

This verifies that the Notify Me rule was created correctly by the Starfish Notify Me service.

Verification of the Starfish Notify Me application utility requires the Starfish Notify Me application service to be stopped on the WSO. Once the service has stopped:

- Add a new subscriber using the MSS administration web page.
- Run the Starfish Notify Me application utility.
- Dial that subscriber and leave a message on their voice mail.
- Ensure that the MWI light on the subscriber's telephone lights up.
- Verify that an email is then received to the Outlook Express email client configured with the mail address configured in the utility config.ini file.

This verifies that the Notify Me rule was created and executed correctly after the utility was run.

9. Conclusion

These Application Notes describe the steps required to configure Avaya MM to work with the Starfish Notify Me application. The compliance test verified successfully that the Starfish Notify Me application can interoperate with Avaya MM. The sample configuration shown in these Application Notes is representative of a basic enterprise customer configuration and is intended to provide configuration guidance to supplement other Avaya product documentation. These Application Notes are based upon formal interoperability compliance testing as part of the Avaya DevConnect program.

10. Additional References

The Avaya product documentation is available at <http://support.avaya.com>.

- [1] *Modular Messaging Release 5.0 Data Collection Tool Help*, Feb 2009.
- [2] *Modular Messaging Release 5.0 with the Avaya MSS - Messaging Application Server (MAS) Administration Guide*, Feb 2009.
- [3] *Modular Messaging Release 5.0 Data Collection Tool Help*, Feb 2009.
- [4] *Modular Messaging for the Avaya Message Storage Server (MSS) Configuration Release 5.0 Installation and Upgrades*, Feb 2009.
- [5] *Avaya Modular Messaging Web Subscriber Options Release 5.0 Server Installation*, Feb 2009.
- [6] *CN88014 - Avaya Definity G3, Prologix & S8300/S8400/S8500/S87x0 Date: 07/09 Rev: AP Intg Type: H.323*, July 2009.
- [7] *Administering Avaya Aura™ Communication Manager*, May 2009, Document Number 03-300509.

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