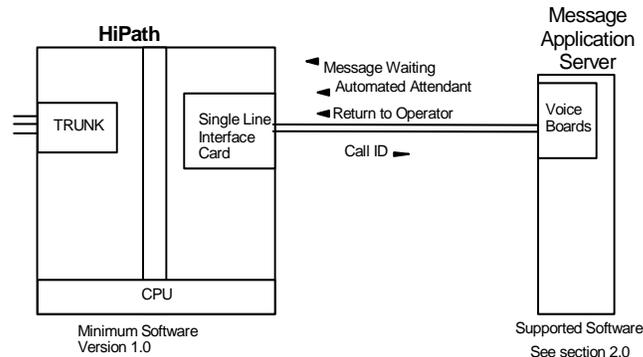


Configuration Note 88059 – Version H (1/10)

Siemens HiPath 4000



With Inband integration, one pathway between the PBX and the Avaya Message Application Server transmits both call information and voice communications

MAS Requirements

¹Release Note:

Should features of the integration not function optimally when integrated to a PBX or MM that may be operating on an unsupported software release as defined Section 2.0 and 3.1, customers will need to upgrade their PBX and/or MM to a supported software release.

PBX hardware requirements

1.0 METHOD OF INTEGRATION

With Inband integration, one pathway between the Siemens HiPath and the Avaya Message Application Server (MAS) transmits both call information and voice communications. The pathway is provided by 2-wire analog single-line circuits that connect to Dialogic cards in the MAS. Each Dialogic port simulates 2-wire analog lines. Calls to the MAS ports are preceded by the called party information from the PBX in DTMF format. The MAS then answers and plays the appropriate greeting. Message Waiting Indication is set and canceled using DTMF commands over the same pathway.

2.0 AVAYA MESSAGE APPLICATION SERVER REQUIREMENTS

- Dialogic D/41JCT-LS or D/120JCT-LS cards (4 and 12 port/cards)
- Software Releases ¹: 1.1, 2.0, 3.0, 3.1, 4.0, 5.x

3.0 PBX HARDWARE REQUIREMENTS

- SLMA-24 (Q2246-x) interface card - 24 port analog card, one channel per MAS port required.
- CR8 (Additional DTMF receivers as required).
- **Cables:**
 - RJ11 four-wire telephone cord, one per MAS port

NOTE: The customer must provide the necessary hardware.

PBX software requirements

3.1 PBX SOFTWARE REQUIREMENTS

- Minimum Software ^{1 (see page 1)}: Version 1.0

Supported integration features

4.0 SUPPORTED INTEGRATION FEATURES

[✓] Items are supported

System Forward to Personal Greeting

All Calls	[✓]
Ring/no answer	[✓]
Busy	[✓]
Busy/No Answer	[]

Station Forward to Personal Greeting

All Calls	[✓]
Ring/no answer	[✓]
Busy	[✓]
Busy/No Answer	[]

Auto Attendant	[✓]
Call Me	[✓]
Direct Call	[✓]
External Call ID (ANI)	[]
Find Me	[]
Internal Call ID	[✓]
Message Waiting	[✓]
Multiple Call Forward	[✓]
Multiple Greetings	[✓]
N+1	[]
Outcalling	[✓]
Return to Operator	[✓]

IMPORTANT: PBX options or features not described in this Configuration Note are not supported with this integration. To implement options/features not described in this document, please contact the Avaya Switch Integration product manager.

Configuring the Legend to integrate with the MAS

Configuring the HiPath 4000 Master Hunt Group

5.0 CONFIGURING THE HIPATH TO INTEGRATE

The following programming is intended for certified PBX technicians/engineers. These programming steps must be completed to configure the HiPath to integrate with the MAS. The SCSU Record applies to all voice channels of the MAS.

DIS-SCSU:3500,ALL;

H500: AMO SCSU STARTED

```

----- USER DATA -----
STNO      =3500          COS1      =20          DPLN      =0          SPDI      =0
PEN       = 1- 1-115-   0      COS2      =20          ITR       =0          SPDC1     =
DVCFIG    =ANATE        LCOSV1   =15          COSX      =0          SPDC2     =
INS       =YES          LCOSV2   =15          CBKB      =NO
          ALARMNO =0      LCOSD1   =15          HMUSIC    =0          RCBKNA    =NO
SSTNO     =NO          COTRACE  =NO      LCOSD2   =15          SPEC      =SSTN    &SUFDIAL
COFIDX    =0          DIAL     =DTMF   PULSTYPE=          PULSLEV   =
CCTIDX    =          ACKST    =          TEXTSEL   =
DHPAR     =DTMFST &PREDIA
CONN      =DIR  FLASH  =YES   DTMFBLK  =NO          WITKEY    :NO
    
```

```

----- ACTIVATION IDENTIFIERS FOR FEATURES -----
FWDS      :NO  FWDF      :NO  FWDD      :NO  DND       :NO  CWT       :NO
HTOS      :NO  HTOF      :NO  HTOD      :NO  VCP       :NO
    
```

```

----- FEATURES AND GROUP MEMBERSHIPS -----
PUGR      :          HUNTING GROUP : YES   SERVICE(S): VCE
NIGHT OPTION : NO
    
```

```

----- STATION ATTRIBUTES (AMO SDAT) -----
NONE
    
```

NOTE: Ensure the MAS port extensions do not have Do Not Disturb (DND) in their Class of Service.

Configuring the HiPath 4000 Hunt Group Members

AMO-SCSU -169 STATION CONFIGURATION OF SWITCHING UNIT

DIS-SA:3500,,;

H500: AMO SA STARTED

```

+-----+-----+-----+-----+-----+
| STATION HUNTING FOR ALL DPLN | SERVICE = VCE |
+-----+-----+-----+-----+-----+
| CD | NAME AND | TYP | | |
|   | CALL PROG. STATE | | |
|   |           1 111 2 | L | C |
|   | 12345 67890 123 2 | I | Y |
|   |                   | N | C |
+-----+-----+-----+-----+-----+
| 3500 | .**** * | * | * | STNO :
|   | MAS HUNT |   |   |   | 3500,
|   |           |   |   |   | 3502,
|   |           |   |   |   | 3504,
|   |           |   |   |   | 3505,
|   |           |   |   |   | 3506,
|   |           |   |   |   | 3507,
|   |           |   |   |   | 3508,
|   |           |   |   |   | 3508,
+-----+-----+-----+-----+-----+
    
```


DIS-WABE:GEN,*530,;

H500: AMO WABE STARTED

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS	
CODE	CALL PROGRESS STATE	DIGIT ANALYSIS	RESERVED/CONVERT
	1 11111 11112 22		DNI/ADD-INFO
	0 12345 67890 12345 67890 12	RESULT	*=OWN NODE
*530 * *	MBOFF	

AMO-WABE -169 DIALLING PLANS, FEATURE ACCESS CODES

Display General System Data

DIS-ZAND:ALLDATA;

H500: AMO ZAND STARTED

GENERAL SYSTEM DATA:
=====

```

TRANSFER = EXTEND , ALERTN = NO ,
AUTHUP = TA
RNGBKTN = YES , TRANSINH = NO ,
NIGHT = TA
ITRFRWD = YES , HOLDTN = MUSIC , ANATESIG = TONE ,
DSSLT = 5 , CODTN = YES , CONFSSUB = YES ,
DATEDIS = MMDD, CNTRYCD = K , RCLLT = NO ,
MELODY = 1, TRCD = , CPBLOWL = 80 ,
CPBUPPL = 100, CUTHRU1A = YES , PREDIA = YES ,
SIUANN = D, CO = NO , COEXN = 0 ,
CBKNO = 5 , SEVDIG = NO , PNNO = 1 -1 -100,
DISPMODE = MODE1, PNODECD = 100 , ROUTOPTP = NO ,
ROUTOPTD = YES , CALLOFF = YES , PARARING = YES ,
DSSDEST = YES , ONEPARTY = YES , MSGDELAY = NO ,
EXCOCO = YES , TRDGTPR = NO , COANN = YES ,
HOTDIAL = NO , TRANSTOG = NO , NOCFW = NO ,
HOLDHUNT = NO , POSTDDL = YES , EXBUSYOV = NO ,
OVRMST = NO , OVRHUNT = NO , CONITPRO = NO ,
RECHUNT = YES , CALLACMP = NO ;
    
```

DIS-ZAND:ALLDATA2;

H500: AMO ZAND STARTED

GENERAL SYSTEM DATA 2:
=====

```

HOTELNUM = NO , XFPGMAS = YES ,
DSSPICUP = YES , FASTCFNA = YES ,
DISPCHES = NO , DISCLHNT = NO ,
FWDWACKN = NO , BSYHANDF = NO ,
FWDMAX = 5 , FWDVMS1 = YES
TRCCSN7 = NO , FWDUNDTR = NO
COSIND = NO , TRANSCO = NO
ANSES = NO , OLISFREE = ONHOOK ,
TEXTDISP = CENTER, PABXSELL = HICOM ,
DSPOWNNO = YES , DIRREC = NO ,
CSDTYPE = STANDARD, CONFNTCD = NO ,
LNR = YES , ROLCKVCM = NO ,
FACBUF = 1 , VCMTRANS = NO ,
HOWLTONE = NO , DISPNUUN = PRIVATE NUMBER ,
DISPTGNA = YES , POSTDRED = NO ,
GRCALL = NO , MAILSCRL = NO ,
ACTIVE TEXTSEL = AMERICAN ,
RELOAD TEXTSEL = AMERICAN ,
INDNADIS = YES , UUS = DIV ,
    
```

```

NOCFWTAC = NO ,      ISYNCHG = NO ,
ROUTTONE = NO ,      SOFTREST = SIMPLEX ,
CALWTANA = NO ,      CBPBUSY = YES ,
SWSTAT   = YES ,     VIRSUBNO = NO ,
ECN      = ,
OOSTONE  = NO ,      TYPEDNIS = INTDNIS ,
CONFTONE = YES ,     DISPTONE = YES ,
CAMPON   = YES ,     USRINGTY = K;
    
```

```

DIS-ZAND:VMI;
H500: AMO ZAND STARTED
VOICE MAIL INTERFACE
=====
    
```

```

MWIOPEN = NO ,      ALEN      = 4 ,      BLEN      = 4 ,
DTMFCTRL = NO ,     PICKUP    = NO ,     NARELOUT  = NO ,
PIN      = NO ;
    
```

AMO-ZAND -169 SYSTEM DATA

Define Callback Key

```

DIS-TAPRO:STD,14,OPTIT12,L,;
H500: AMO TAPRO STARTED
    
```

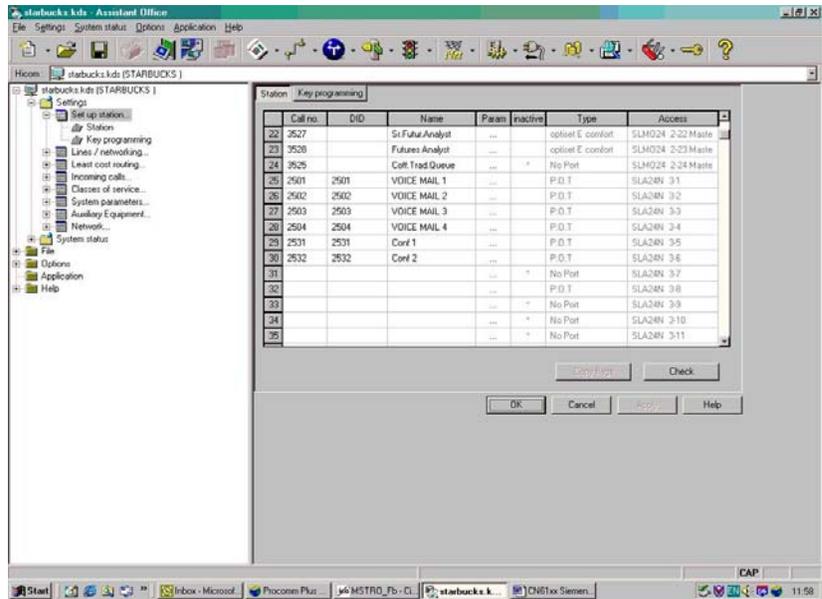
STD	DIGTYP	"SERVICE INFORMATION"	KEY LAYOUT				
14	OPTIT12	"2 LINE STD USER	"				
		1 MB 2 CNCT 3 CONS 4 HOLD 5 SPKR					
		6 MUTE 7 SPDI 8 NAME 9 FWD 10 RCUTOFF					
		11 LINE 12 LINE					
	OPTIA1	1 NAME 2 NAME 3 NAME 4 NAME 5 DSS					
		6 DSS 7 DSS 8 DSS 9 NAME 10 NAME					
		11 NAME 12 NAME 13 NAME 14 NAME 15 NAME					
	OPTIA2	1 VACANT 2 VACANT 3 VACANT 4 VACANT 5 VACANT					
		6 VACANT 7 VACANT 8 VACANT 9 VACANT 10 VACANT					
		11 VACANT 12 VACANT 13 VACANT 14 VACANT 15 VACANT					
	OPTIA3	1 VACANT 2 VACANT 3 VACANT 4 VACANT 5 VACANT					
		6 VACANT 7 VACANT 8 VACANT 9 VACANT 10 VACANT					
		11 VACANT 12 VACANT 13 VACANT 14 VACANT 15 VACANT					
	OPTIA4	1 VACANT 2 VACANT 3 VACANT 4 VACANT 5 VACANT					
		6 VACANT 7 VACANT 8 VACANT 9 VACANT 10 VACANT					
		11 VACANT 12 VACANT 13 VACANT 14 VACANT 15 VACANT					

AMO-TAPRO-169 PROGRAMMABLE KEY DEFINITION FOR DIGITAL TERMINALS

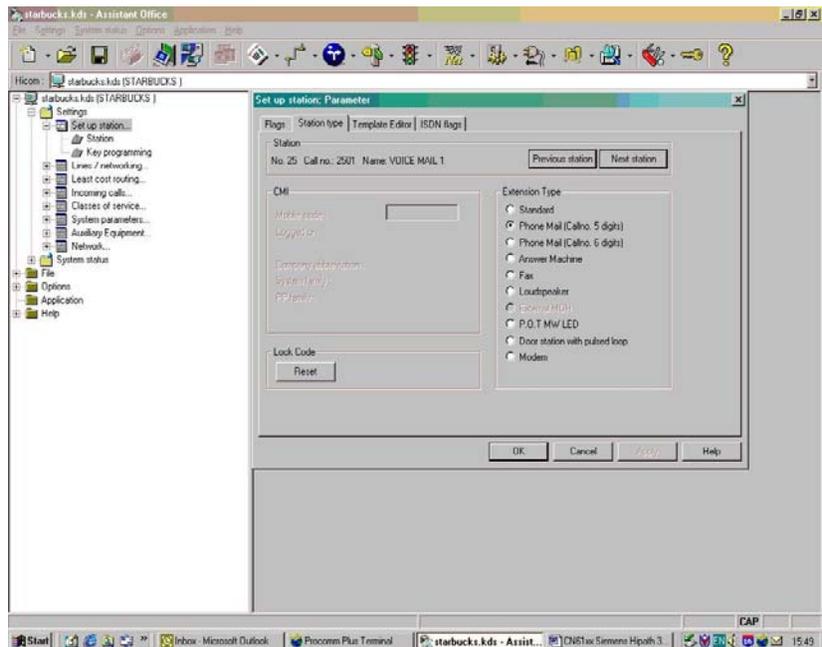
The MB key is necessary for the message waiting light. If lit, the user can press it (followed by pressing the $\sqrt{\quad}$ key) and the call to VM will integrate. If not lit, the call will not always integrate. Recommend that a second key (rep dial) be programmed with the main MAS hunt group extension number for calling VM in order to achieve direct call integration.

Define Voice Mail Digit Length

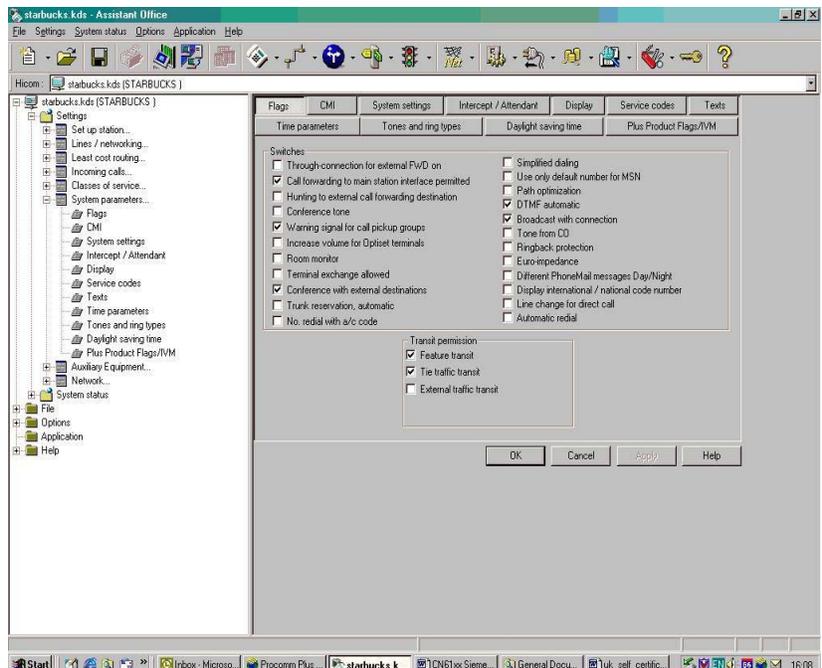
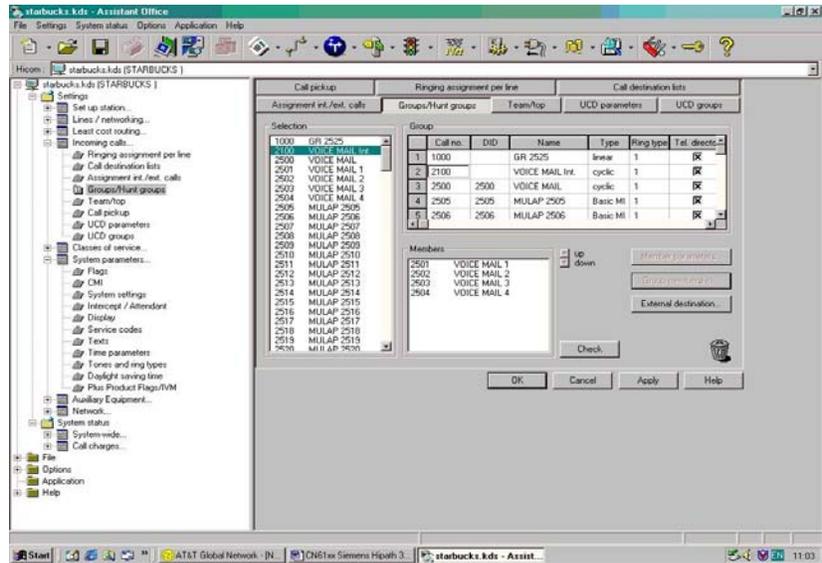
The following screen shots reflect the above programming via the administrator's GUI interface.



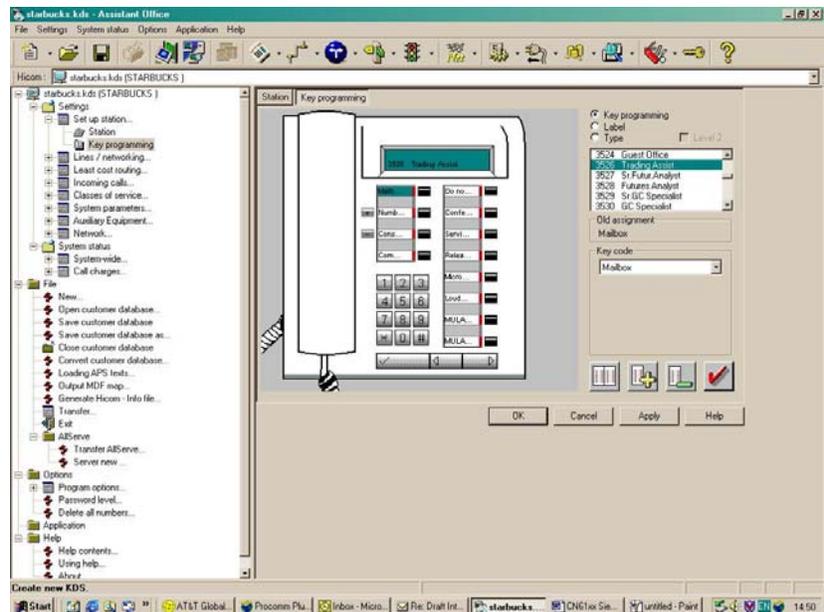
- Double click on the voice mail extension “param” columns from the above screen and click on the “Station Type” tab. Check the extension type listed as “Phone Mail (Callno. 5-digits)”. Ensure this is repeated for all voice mail ports. The screen is shown below:



- Go to Settings/System parameter/flags and ensure the box labelled “activate DTMF automatically” is ticked as shown below:
 - Go to Settings/Incoming/Groups/Hunt groups. Create the internal direct dial hunt group number. The example screen shot below illustrates the hunt group set-up:
- Add voice mail ports as members to both hunt groups
 - Set hunting to “cyclic” for both groups
 - Configure call forwarding on no answer, forwarding on busy, etc.



- Go to Settings/Set up station/Key programming to program each user station with a Mailbox key. Verify this key is programmed and the MAS Engineer knows the position of the key. The screen capture



below illustrates the Mailbox Key set-up:

Note: The MULAP (Multi-Line Appearance) button can be used if the customer wants. Normally, users have only one line on their phone to route callers to the MAS if the user is on the phone, away from their desk, or out of the office. For example, if they have 2 lines, they get a second MULAP on each extension. So when the first MULAP (which is printed on the business cards, etc.) is busy, the call goes to the second MULAP. Then the user can see and hear the second call. The user can choose to answer the call or allow it to ring. After typically 3 rings the call will be routed to the MAS. This is a special requirement not normally used. If required, consult the MULAP programming with the PBX Engineer. The MULAP must be programmed correctly on the PBX; otherwise it can result on wrong numbers sent to the MAS.

The normal diverts of busy, ring-no-answer and immediate can be programmed by the user if allowed by the COS of their particular extension. It is recommended that all MAS users be given a COS that allows them to set-up the busy, immediate and ring-no-answer diverts for everyday voice mail use with the Optiset menu. The busy divert should be enabled at all times to cover periods when the user is on the phone. The ring-no-answer divert will cover periods when they are away from their desk for a short period of time. The

immediate divert should be used when they are away from the office outside normal business hours or in a meeting etc.

Save these PBX changes.

Please refer to the Consideration section at the end of this document for special PBX programming considerations.

Configuring the MAS

6.0 CONFIGURING THE MESSAGE APPLICATION SERVER

Configuring the MAS platform for proper PBX integration requires configuring several containers accessed within the **Voice Mail System Configuration** application.

- Access the **Voice Mail System Configuration** application from the MAS program group. Expand all fields so all-applicable options are visible.

The following programming is a continuation from the Message Application Server Installation Guide:

1. Select the **Voice Mail Domain**
 2. Expand **PBXs**
 3. Select the newly created **Other**
 4. Access the **General (Dialogic) PBX Configuration** tab
 5. **Go Off Hook when Port Disabled** = Enable by checking the box
 6. **Pause before Digits (ms)** = 250
 7. **Pause Interval for Comma in Dial String (ms)** = 2000
 8. **DTMF Inter-Digit Delay during Dialing (ms)** = 80
 9. **DTMF Length during Dialing (ms)** = 80
 10. **DTMF Length during Detection (ms)** = 50
- Next access the **Transfer/Outcall** tab
 1. **Transfer Mode** = Blind
 2. **Transfer Prefix Code** = &,A
 3. **Transfer Completion Code** = &
 4. **Transfer Release Code when Busy** = & ,
 5. **Transfer Release Code when No Answer** = & ,
 6. **Transfer Release Code when Reject** = & ,
 7. **Flash Time Interval (ms)** = 500
 8. **Enable Call Progress** = Enable by checking the box

Support NOTE
for MM 1.1 & 2.0 only:

- Limit Requests should be checked.
- Maximum Requests per Minute should be set for 200.

9. **Start Delay for Call Progress (ms) = 1000**

- Next access the **Hangup Detection** tab
 1. **Maximum Continuous Tone before Hanging Up (ms) = 6000**
 2. **Hangup String = Leave Blank**
 3. **Hangup String Timeout (ms) = 0**
 4. **Minimum Duration For Drop in Loop Current (ms) = 300**
 5. **Maximum Silence before Hanging Up (ms) = 6000**
 6. Select **OK** to save changes
- Next access the **Message Waiting Indicator (MWI)** tab
 1. **Enable Message Waiting Indicator (MWI) = Enable** by checking the box
 2. **MAS MWI Server =** Enter the name of the MWI server created during the installation procedure.
 3. **Scheduled MWI updates: Active or Inactive = Configure as per customer requirements.***
 4. **Limit requests = Leave Unchecked**
 5. **Maximum Requests per Minute = <grayed out>**
 6. **Message Application Servers that Support MWI =** This box should contain a list of MAS servers capable of placing MWI requests.
 7. Select **OK** to save changes

*Note: The Scheduled MWI updates parameter is only available on MM 3.x

- Next select **Voice Server** and access **Telephony Interface (Dialogic Analog)**
 1. Select the **Analog** tab
 2. **Playback Volume = 2**
 3. **Number of Ports =** Enter the number of ports in your system

Note: The MAS service must be restarted to allow port enabling

4. Enable each **Port** by checking the checkbox next to the **Port** field
 5. **Extension =** Enter the proper extension number assigned to each port
 6. **Incoming Ring Count = 1**
 7. **Primary ID = Leave Blank**
 8. **Secondary ID = Leave Blank**
 9. Select **OK** to save changes
- Next access the **Port Groups** tab under the MAS name
 1. Click **Add Group** Radio Button
 2. Name Group **MWI** (or something you can remember)
 3. Uncheck **Incoming** under **Port Group Usage**

4. Access the **Port Group Usage** tab and uncheck all **Ports**, except the port(s) you will be using for MWI.
 5. Return to the **Port Groups** General tab and ensure the **Default Group** under **Port Groups** is checked for both **Incoming** and **Outgoing** under **Port Group Usage**.
 6. Access the **Port Group Usage** tab and check all **Ports**, except the port(s) you will be using for MWI.
 7. Select **OK** to save changes
- Next access **PBX Integration**
 1. Select the General tab
 2. Click on **Inband** to set as the Integration Type
 3. Access the **Inband** tab
 4. **Maximum Inter-digit Gap (ms)** = 500
 5. **Pause before Inband Digits (ms)** = 100
 6. **DTMF On Time (ms)** = 80
 7. **Search Entire String for Reason Code** = Leave blank
 8. **Location of Inband reason code** = 1
 9. **Log Inband Packets** = Leave blank
 10. **Fixed Length Packets** = Enable by checking the box
 11. **Filler Character** = <None>
 12. **Delimiter Character** = *
 13. **Right Alignment of Digits in a Field** = Leave blank
 14. **Request String Supported** = Leave blank
 - Access the **Protocol Settings** button within the same tab
 1. **Call Packet Type** = Direct Call
 2. **Codes for Call Type:**
Code 1 = ***1
 3. **Field Type Settings:**
Called Id = Leave blank
Calling Id = 5 **Length** = 4
Trunk Id = Leave blank
 4. Next select **Call Packet Type** = Divert:
 5. **Codes for Call Type:**
Code 1 = ***3
 6. **Field Type Settings:**
Called Id = 9 **Length** = 4
Calling Id = 5 **Length** = 4
Trunk Id = Leave blank
 7. Next select **Call Packet Type** = No Answer Extension:
 8. **Codes for Call Type:**
Code 1 = ***4

9. **Field Type Settings:**

Called Id = 9 Length = 4

Calling Id = 5 Length = 4

Trunk Id = Leave blank

10. Select **OK** to save changes

Note: The fixed length of the number integration fields can be programmed in the PBX between 6 and 15 digits. Please check the integration string sent by the switch with the Operational History Event viewer tool/program and change the 'Length' settings accordingly. For example, on a Direct Call Packet Type using 4 digit extensions (e.g. 8999), you would use:

Calling ID = 5 Length = 4

In this example, the History Trace should indicate: ***18999, with ***1 as the Direct code followed by 8999, the extension number being 4 digits in Length.

- Within the **Inband** tab, access the **MWI Settings** button
 1. **Port Group Name** = Select the port group to be used for MWI
 2. **Max. MWI Sessions** = Enter the maximum number of MWI sessions allowed at one time. The Default value is 1
 3. **Indicator On/Off signals must use same port** = Click to turn on
 4. **Indicator On:** **Prefix = *532 Suffix = Leave blank**
 5. **Indicator Off:** **Prefix = *530 Suffix = Leave blank**
 6. Select **OK** to save changes

Note: The numeric values shown are examples only. Confirm how these MWI Feature Access Codes are set up on your switch.

After making these changes, return to "Configuring the voicemail system" within the Message Application Server Installation Guide. Ensure you are prompted to restart the Message Application Server services to apply these changes.

8.0 CONSIDERATIONS/ALTERNATIVES

8.1 While on soft hold, callers may hear one of the following: Music on hold, silence, ring-back, or waiting tone.

8.2 Please ensure you obtain all the PBX settings for cadences, flash times, phone forwarding activation/deactivation codes, message waiting on/off codes and transfer sequences. These will vary from PBX to PBX. The MAS should be programmed to match.

Important notes regarding this integration

- 8.3 Message waiting indication should be dedicated to one port in Port Group.** Ensure this designated port is not in the hunt group.
- 8.4 Please note that full integration of Centralized voice mail using CorNet-N is not supported at present.** It is however possible to call a voice mail group on another system but it is not possible to set a message waiting indication across the network.
- 8.5 It is recommended to have the voice mail ports on the PBX as sequential on the same PBX line card.**
- 8.6 SSTN is required to support analog port disconnect supervision.**
- 8.7 Find Me is not supported with Inband integrations.**

- continued on next page -

CHANGE HISTORY		
Revision	Issue Date	Reason for Change
Version A	06/09/04	GA
Version B	09/16/04	Updated to meet MM Release 2.0
Version C	02/01/05	Removed 2 nd Hunt Group as it is not required.
Version D	04/11/06	Added: <ul style="list-style-type: none"> • MM 3.0 to support release section 2.0 • New Scheduled MWI parameter updates parameter noted for MM3.0
Version E	05/05/08	Updated to support MM 4.0
Version F	2/02/09	Updated to support MM 5.0; Limit Requests for MWI changed in Section 6.0
Version G	07/09	Updated to support MM 5.1
Version H	01/19/10	Added note indicator to titles of Section 2.0 and 3.1; added corresponding note in sidebar; removed word “supported” in same sections for MAS releases and PBX Software releases. Removed Draft lines from Change History.

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