



Avaya Solution & Interoperability Test Lab

Application Notes for IPC System Interconnect 16.01 with Avaya Modular Messaging 5.2 and Avaya Aura® Session Manager 6.1 in a Centralized Messaging Environment using SIP Trunks – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for IPC System Interconnect 16.01 to interoperate with Avaya Modular Messaging 5.2 and Avaya Aura® Session Manager 6.1 in a centralized messaging environment using SIP trunks to Avaya Aura® Session Manager.

IPC System Interconnect is a trading communication solution. In the compliance testing, IPC System Interconnect used SIP trunks to Avaya Aura® Session Manager, for IPC turret users to obtain voice messaging services from Avaya Modular Messaging. The Avaya Modular Messaging system in the Central site supported local subscribers from Avaya Aura® Communication Manager at the Central site, and from IPC turret users at the Remote site.

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

1. Introduction

These Application Notes describe the configuration steps required for IPC System Interconnect 16.01 to interoperate with Avaya Modular Messaging 5.2 and Avaya Aura® Session Manager 6.1 in a centralized messaging environment using SIP trunks to Avaya Aura® Session Manager.

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2. General Test Approach and Test Results

The feature test cases were performed manually. Calls were manually established among IPC turret users with Avaya SIP, Avaya H.323, PSTN users, and/or the Avaya Modular Messaging voicemail pilot to verify various call scenarios. The Avaya Modular Messaging Web Subscriber Options web-based interface was used to configure subscriber features such as Call Me.

The serviceability test cases were performed manually by disconnecting and reconnecting the LAN connection to the IPC ESS server.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing included subscriber login, greeting, voice message, message waiting indicator, call forward, multiple call forward, personal operator, auto attendant, find me, call me, call sender, and transfer.

The serviceability testing focused on verifying the ability of IPC System Interconnect to recover from adverse conditions, such as disconnecting/reconnecting the LAN connection to the IPC ESS server.

2.2. Test Results

All test cases were executed. The following were the observations from the compliance testing.

- IPC does not offer the Coverage feature, therefore coverage to voicemail for the turret users were accomplished by setting the Modular Messaging pilot number as the Call Forwarding destination for the users.
- The configuration in **Section 6** to set Modular Messaging to read the SIP History Information records in a different way has a direct impact on the proper identification of calling party number for Vectoring scenarios.
- When an IPC turret user calls an Avaya user that has calls forwarded to another IPC turret user that doesn't answer the call, the calling IPC turret user will continued to hear ringing instead of the greeting for the called Avaya user.
- IPC cannot pass on subsequent DTMF digits after a call has diverted, therefore the following scenarios will not work properly: personal operator for IPC turret users, and IPC calling an Avaya user whom has another IPC turret user as the Find Me destination. The DTMF digit to reach the personal operator, and the DTMF digit to accept the call at the Find Me destination will be ignored.

2.3. Support

Technical support on IPC System Interconnect can be obtained through the following:

- **Phone:** (800) NEEDIPC, (203) 339-7800
- **Email:** systems.support@ipc.com

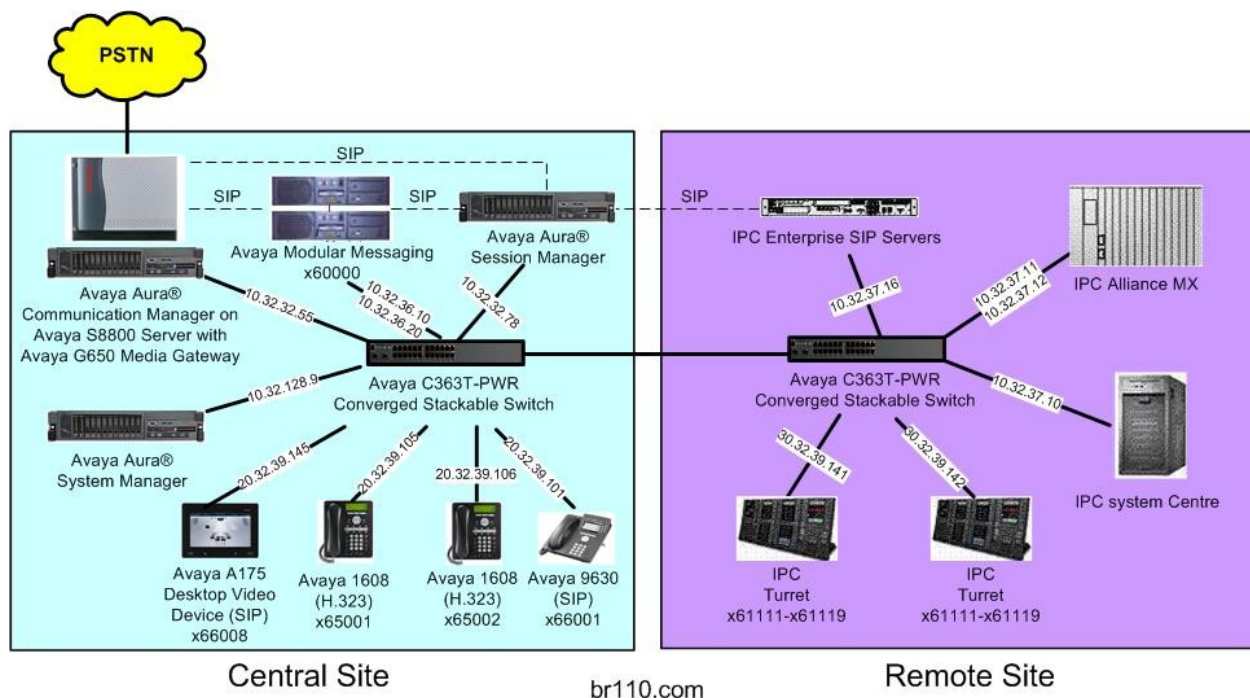
3. Reference Configuration

As shown in the test configuration below, IPC System Interconnect at the Remote Site consists of the Enterprise SIP Server (ESS), Alliance MX, System Center, and Turrets. SIP trunks are used from IPC System Interconnect to Avaya Aura® Session Manager, to reach Avaya Modular Messaging for voice messaging services.

The detailed administration of basic connectivity among Avaya Aura® Communication Manager, Avaya Aura® Session Manager, and Avaya Modular Messaging is not the focus of these Application Notes and will not be described.

The configuration of Avaya Aura® Session Manager is performed via the web interface of Avaya Aura® System Manager. The detailed administration of SIP trunks among Avaya Aura® Communication Manager, Avaya Aura® Session Manager, and IPC System Interconnect, to enable IPC turret users to reach users on Avaya Aura® Communication Manager and on the PSTN, is assumed to be in place with details described in [4].

These Application Notes will focus on the additional configuration required to support IPC turret users as local subscribers on Avaya Modular Messaging.



4. Equipment and Software Validated

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

Equipment	Software
Avaya Modular Messaging <ul style="list-style-type: none">• Messaging Storage Server• Messaging Application Server	5.2 SP8 5.2 SP8
Avaya Aura® Communication Manager on Avaya S8800 Server	6.0.1 SP2 with special patch 18993 (R016x.00.1.510.1-18993)
Avaya G650 Media Gateway <ul style="list-style-type: none">• TN799DP C-LAN Circuit Pack• TN2302AP IP Media Processor	HW01 FW038 HW20 FW122
Avaya Aura® Session Manager	6.1 SP2
Avaya Aura® System Manager	6.1 SP2
Avaya A175 Desktop Video Device (SIP)	1.0.2
Avaya 1608 IP Telephone (H.323)	1.3
Avaya 9630 IP Telephone (SIP)	2.6.4
IPC System Interconnect <ul style="list-style-type: none">• Alliance MX• Enterprise SIP Server• System Center<ul style="list-style-type: none">○ SIPX Line Card• Turrets	SipProxy-2.00.01-13 16.01.01.04.0005 16.01.01.04.0005 16.01.01.04.0005 16.01.01.04.0005 16.01.01.04.0005

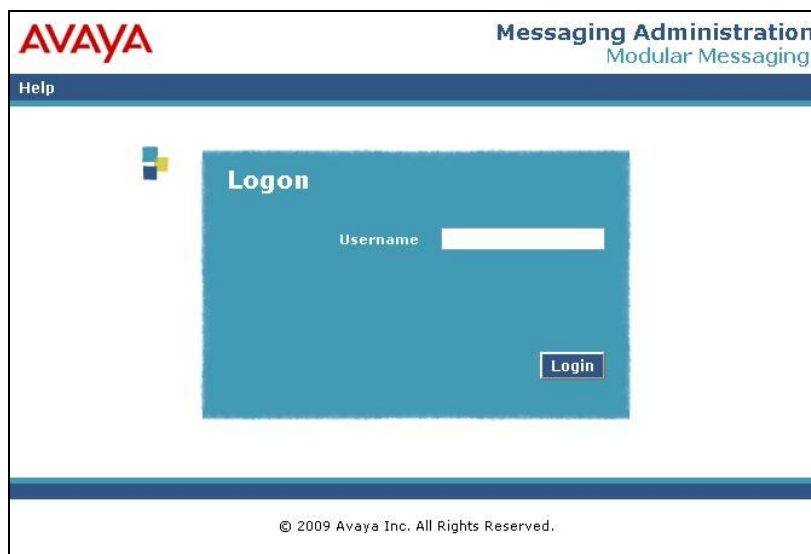
5. Configure Avaya Modular Messaging MSS

This section provides the procedures for configuring IPC turret users as local subscribers on Avaya Modular Messaging. The subscriber management is configured on the Messaging Storage Server (MSS) component. The configuration procedures include the following areas:

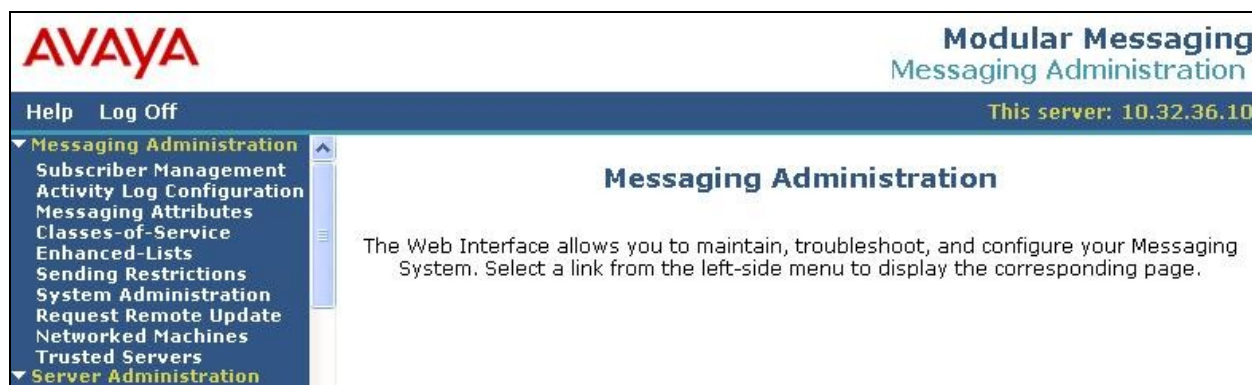
- Launch messaging administration
- Administer subscriber extension ranges
- Administer subscribers

5.1. Launch Messaging Administration

Access the MSS web interface by using the URL “http://ip-address” in an Internet browser window, where “ip-address” is the IP address of the MSS server. The **Logon** screen is displayed. Log in using a valid user name and password. The **Password** field will appear after a value is entered into the **Username** field.



The **Messaging Administration** screen appears, as shown below.



5.2. Administer Subscriber Extension Ranges

Select **Messaging Administration > Networked Machines** from the left pane, to display the **Manage Networked Machines** screen. Select the MSS server from the table listing, and click **Edit the Selected Networked Machine** toward the bottom right of the screen.

The screenshot shows the 'Manage Networked Machines' screen. On the left is a navigation pane with 'Messaging Administration' expanded, showing 'Networked Machines' selected. The main area has a table with one entry: 'brmss1' with IP '10.32.36.10' and '11' total subscribers. Below the table are buttons: 'Display Report of Networked Machines', 'Delete the Selected Networked Machine', 'Add a New Networked Machine', 'Edit the Selected Networked Machine', 'Display Network Snapshot', and 'Display Report of Networked Machine Ranges'.

Machine	IP Address	Machine Type	Total Subs
brmss1	10.32.36.10	local	11

The **Edit Networked Machine** screen is displayed. Under the **MAILBOX NUMBER RANGES** section, locate an available entry line and enter the desired starting and ending mailbox numbers to be used for the IPC subscribers as necessary. In the compliance testing, the existing entry covered the 61xxx extensions used by the IPC turret users.

The screenshot shows the 'Edit Networked Machine' screen for machine 'brmss1'. It contains fields for 'Machine Name', 'IP Address', 'Machine Type' (tcpip), 'Mailbox Number Length' (5), 'Default Community' (1), 'Updates In' (yes), 'Updates Out' (yes), 'LDAP Port' (56389), and 'Log Updates In' (no). At the bottom is a 'MAILBOX NUMBER RANGES' table with columns for 'Prefix', 'Starting Mailbox Number', and 'Ending Mailbox Number'. The first row shows a range from 60000 to 69999.

Machine Name	brmss1	Password	
		Confirm Password	
IP Address	10.32.36.10	Machine Type	tcpip
Mailbox Number Length	5	Default Community	1
Updates In	yes	Updates Out	yes
LDAP Port	56389	Log Updates In	no

Prefix	Starting Mailbox Number	Ending Mailbox Number
	60000	69999

5.3. Administer Subscribers

Select **Messaging Administration > Subscriber Management** from the left pane, to display the **Manage Subscribers** screen. For the **Local Subscriber Mailbox Number** field toward the top of the screen, enter the first IPC turret user extension to add as a local subscriber, in this case “61118”. Click **Add or Edit**.

The screenshot shows the Avaya Modular Messaging Messaging Administration interface. The left pane lists navigation options under 'Messaging Administration' and 'Server Administration'. The main area is titled 'Manage Subscribers'. At the top, there is a field for 'Local Subscriber Mailbox Number' with the value '61118' and an 'Add or Edit' button. Below this is a table with columns: 'Machine Name', 'Local Subscriber Mailboxes', 'Total Subscribers', and 'Filtered Subscribers'. The table lists two categories: 'Local Subscribers' and 'Remote Subscribers'. The 'Local Subscribers' row shows 'brmss1' with 18 local mailboxes and 19 total subscribers. The 'Remote Subscribers' row shows 'internet' with 0 local mailboxes and 0 total subscribers. Each row has a 'Filter' button and a 'Manage' button.

	Machine Name	Local Subscriber Mailboxes	Total Subscribers	Filtered Subscribers
Local Subscribers	brmss1	18	19	19
Remote Subscribers	internet		0	0

The **Add Local Subscriber** screen is displayed next. Enter the desired string into the **Last Name**, **First Name**, and **Password** fields.

In the compliance testing, the same telephone extensions for the IPC subscribers were used for the **Mailbox Number**, **Numeric Address**, and **PBX Extension** fields. Select the appropriate **Class Of Service**, and retain the default values in the remaining fields.

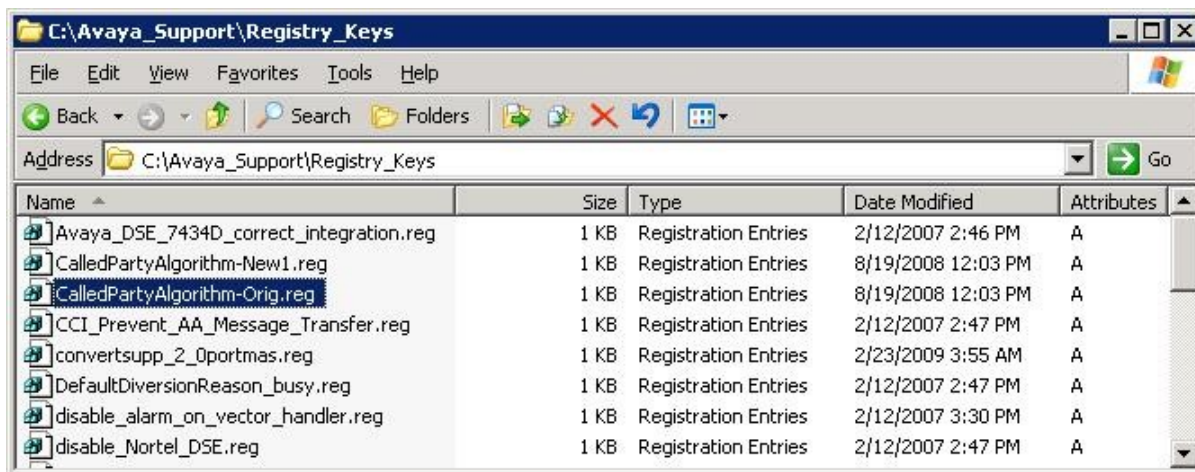
Scroll down to the bottom of the screen and click **Save** (not shown). Repeat this section to add all IPC subscribers.

The screenshot shows the 'Add Local Subscriber' screen in the Avaya Modular Messaging Messaging Administration interface. The left pane is the same as the previous screenshot. The main area is titled 'Add Local Subscriber'. It contains a 'BASIC INFORMATION * (Required Fields)' section with several input fields: '*Last Name' (IPC), 'First Name' (Trad 8), '*Password' (masked with dots), '*Mailbox Number' (61118), '*Numeric Address' (61118), 'PBX Extension' (61118), '*Class Of Service' (0 - class00), and '*Community ID' (1). Each field has a corresponding label and a text input box or a dropdown menu.

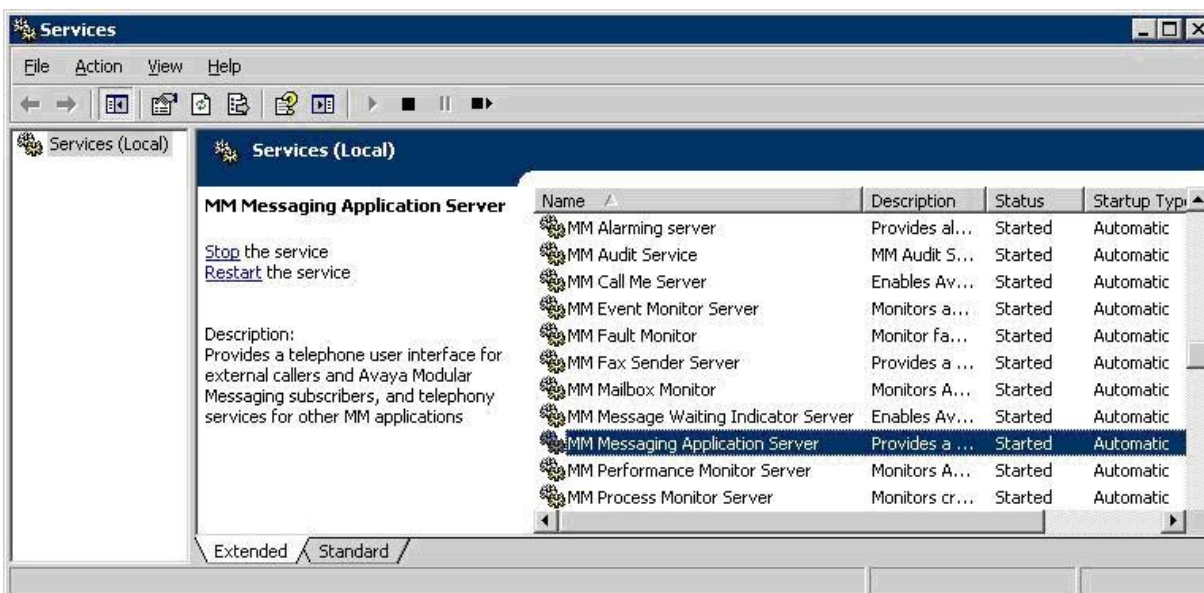
6. Configure Avaya Modular Messaging MAS

This section provides the procedures for configuring the Avaya Messaging Application Server (MAS) servers. A change is needed on each MAS server, to set the way Modular Messaging reads the SIP History Information records for proper integration with IPC. Note that enabling this setting has an impact on the proper identification of calling party number for Vectoring call scenarios.

From the first MAS server, navigate to the **C:\Avaya_Support\Registry_Keys** directory, and double-click on **CalledPartyAlgorithm-Orig.reg**.



Select **Start > Settings > Control Panel > Administrative Tools > Services**, to display the **Services** screen. Navigate to the **MM Messaging Application Server** entry, right-click on the entry and select **Restart**. Repeat these procedures on all MAS servers.



7. Configure Avaya Aura® Session Manager

This section provides the procedures for configuring Avaya Aura® Session Manager. The procedures include the following areas:

- Launch System Manager
- Administer dial patterns

7.1. Launch System Manager

Access the System Manager web interface by using the URL “https://ip-address” in an Internet browser window, where “ip-address” is the IP address of the System Manager server. Log in using the appropriate credentials.

The screenshot shows the Avaya Aura® System Manager 6.1 login interface. At the top, the Avaya logo is on the left and the title "Avaya Aura® System Manager 6.1" is on the right. Below the title bar is a red navigation bar with the text "Home / Log On". The main heading is "Log On". On the left side, there is a box containing the following text: "Recommended access to System Manager is via FQDN.", a link "Go to central login for Single Sign-On", and a note: "If IP address access is your only option, then note that authentication will fail in the following cases:". Below this note is a bulleted list: "• First time login with 'admin' account" and "• Expired/Reset passwords". On the right side, there are two input fields: "User ID:" and "Password:". Below these fields are "Log On" and "Cancel" buttons. At the bottom right, there is a link "Change Password".

7.2. Administer Dial Patterns

In the subsequent screen (not shown), select **Elements > Routing** to display the **Introduction to Network Routing Policy** screen (not shown). Click **Routing > Dial Patterns** from the left pane to display the **Dial Patterns** screen (not shown). Locate and click on the dial pattern that corresponds to the Modular Messaging pilot number, in this case “66666”.

The **Dial Pattern Details** screen is displayed. In the **Originating Locations and Routing Policies** sub-section, add or modify the entry as desired to allow IPC turret users to reach Modular Messaging. In the compliance testing, a new entry was created to allow for call origination from the existing IPC location, as shown below.

AVAYA Avaya Aura® System Manager 6.1 Help | About | Change Password | Log off admin

Routing Home

Home / Elements / Routing / Dial Patterns - Dial Pattern Details

Dial Pattern Details Help ? Commit Cancel

General

* Pattern: 66666

* Min: 5

* Max: 5

Emergency Call: ☐

SIP Domain: br110.com

Notes: Test Room 1C110 MAS

Originating Locations and Routing Policies

Add Remove

2 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location Name ¹ ▲	Originating Location Notes	Routing Policy Name	Rank ² ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	BR-1C110	Test Room 1C110	To-BR110-MAS	0	<input type="checkbox"/>	BR110-MAS	
<input type="checkbox"/>	IPC-Loc	Test Room 1C110 (IPC)	To-BR110-MAS	0	<input type="checkbox"/>	BR110-MAS	

Select : All, None

8. Configure IPC System Interconnect

This section provides the procedures for configuring IPC System Interconnect. The procedures include the following areas:

- Launch One Management System
- Administer voicemail buttons

The configuration of IPC System Interconnect is typically performed by IPC installation technicians. The procedural steps are presented in these Application Notes for informational purposes.

8.1. Launch One Management System

Access the One Management System web interface by using the URL “http://ip-address/oneview” in an Internet browser window, where “ip-address” is the IP address of IPC System Center. Log in using the appropriate credentials.

The **Login** screen is displayed. Enter the appropriate credentials. Check **I agree to the terms and conditions**, and click **Login**.

The **License Login** screen is displayed next (not shown). Enter the appropriate password and click **Login**. In the subsequent **Login Information** screen (not shown), click **Continue**.

OneMS
One Management System

Login English ▼

Username

Password

Reset Login

TERMS AND CONDITIONS ☒ I agree to the terms and conditions.

Access to this system and/or network and the information in it are lawfully available only for approved purposes by employees of IPC or other users authorized by IPC. Other than where prohibited by law and subject to legal requirements, IPC reserves the right to review any information in any form on this system and/or network at any time.

This system is for the use of authorized users only. All individuals using this computer system are subject to having their activities on this system monitored and recorded. Anyone using this system expressly consents to such monitoring.

8.2. Administer Voicemail Buttons

The screen below is displayed next, with the **Main Menu** screen in the forefront. Select **BUTTON CONFIG > Button Data View**, as shown below.

The screenshot shows the IPC OneView Alarm screen. A 'Main Menu' overlay is displayed in the center, listing various configuration options. The 'BUTTON CONFIG' option is highlighted. To the right, a table displays alarm data with columns 'DDI Ext', 'Time Rep', and 'Time'. The table contains 8 rows of data, all with a red background.

DDI Ext	Time Rep
-1	2011-06-10 09:21:34
-1	2011-06-10 09:21:35
-1	2011-06-10 09:21:35
-1	2011-06-10 09:21:35
-1	2011-06-10 09:21:46
-1	2011-06-10 09:22:11
-1	2011-06-10 09:22:13
-1	2011-06-10 09:22:14

The **Button Data View** screen is displayed. For **TRID**, select the ID of the trader whose button sheet is being configured, in this case “1”. For **Button Class**, select “MODULE BUTTON”.

The screenshot shows the IPC OneView Button Data View screen. The 'TRID' field is set to '1' and the 'Button Class' field is set to 'MODULE BUTTON'. There are 'Submit' and 'Cancel' buttons. To the right, a table displays alarm data with columns 'Ext', 'Time Rep', and 'Time'. The table contains 3 rows of data, all with a red background.

Ext	Time Rep
	2011-06-10 09:21:34
	2011-06-10 09:21:35
	2011-06-10 09:21:35

- **Button Type:** “VOICE MAIL”
- **Extended:** A desired name to use for the phone display.
- **Speed Dial:** The extension number of the IPC subscriber.
- **VM system:** The voicemail pilot number, in this case “66666”.

IPC OneView		LOG OUT	MAIN MENU	2 WORK AREAS			C:\		sxdb1
Button Data View Trid:1, Button Class: MODULE BUTTON									
Select column :		<input type="text"/>	Go						
	Button #	Button Type	Extended	Speed Dial /	Incoming	Line LAC /	Line	VM system	
123	141	LINE	SI 61118		HPr NRg FI CLI	61118	2		
124	142	LINE	SI 61119		HPr NRg FI CLI	61119	2		
125	143	VOICE MAIL	S8VM	61118	NOT APPLICAB	-1	2	66666	
126	144	VOICE MAIL	S9VM	61119	NOT APPLICAB	-1	2	66666	
127	145	BUTTON SEQUE	Suppress CLI	1314	NOT APPLICAB	-1	2		
128	146	BUTTON SEQUE	Toggle CLI	1318	NOT APPLICAB	-1	2		
129	147	BUTTON SEQUE	Privacy	1211	NOT APPLICAB	-1	2		
130	148	BUTTON SEQUE	Get CLI	1315	NOT APPLICAB	-1	2		

9. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Modular Messaging, Avaya Aura® Session Manager, and IPC System Interconnect.

Place a call from an IPC turret user to the Modular Messaging pilot number. Verify that Modular Messaging recognizes the calling party as a local subscriber.

10. Conclusion

These Application Notes describe the configuration steps required for IPC System Interconnect 16.01 to successfully interoperate with Avaya Modular Messaging 5.2 and Avaya Aura® Session Manager 6.1 in a centralized messaging environment using SIP trunks to Avaya Aura® Session Manager. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

11. Additional References

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

1. *Administering Avaya AuraTM Communication Manager*, Document 03-300509, Issue 6.0, Release 6.0, June 2010, available at <http://support.avaya.com>.
2. *CN 88011 Avaya S8xx0 SIP Integration using Avaya Session Manager*, Version M, August 2010, available at <http://support.avaya.com>.
3. *Avaya Modular Messaging for the Avaya Message Store Server (MSS) Configuration*, Release 5.0, February 2009, available at <http://support.avaya.com>.
4. *Application Notes for IPC System Interconnect 16.01 with Avaya Aura® Communication Manager 6.0.1 and Avaya Aura® Session Manager 6.1 using SIP Trunks*, Issue 1.0, available at <http://support.avaya.com>.
5. *Nexus Suite 2.0 SPI Patch11 or Higher Deployment Guide*, Part Number B02200161, Revision Number 01, available upon request to IPC Support.

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