

Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya Meeting Exchange Express 2.0 with Avaya AuraTM Session Manager R5.2 – Issue 1.0

Abstract

These Application Notes present a sample configuration for interoperability between Avaya Meeting Exchange Express and Avaya AuraTM Session Manager. The Avaya Meeting Exchange Express is a standalone single server SIP audio conference solution. A SIP trunk was configured between the Avaya Meeting Exchange Express and Avaya AuraTM Session Manager. The compliance testing covered access to the conferencing services provided by Avaya Meeting Exchange Express. Testing was conducted at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the sample configuration steps required for interoperability between the Avaya Meeting Exchange Express 2.0 Conference Bridge and Avaya AuraTM Session Manager 5.2. The test cases focused on conferencing features which are available via the Telephone User Interface (TUI). Both In-Band and Out-Of-Band DTMF were verified during TUI menu access. All calls to and from Avaya Meeting Exchange Express are routed via the SIP trunk from Avaya AuraTM Session Manager.

Avaya Meeting Exchange Express 2.0 with Avaya Aura™ Session Manager 5.2



Figure 1: Avaya Meeting Exchange Express and Avaya Aura[™] Session Manager

2. Equipment and Software Validated

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

Equipment	Software
Avaya S6100 Server	Avaya Meeting Exchange Express 2.0 (3.0.0.36)
Avaya S8720 Server	Avaya Aura TM Communication Manager Access Element
	5.2.1 SP1 02.1.016.4-18111
Avaya G650 Media Gateway	• TN2312BP HW15 FW049
	 TN2602AP HW08 FW049
	• TN799DP HW01 FW034
Avaya S8510 Server	Avaya Aura [™] System Manager R5.2
	5.2.7.0 SP 1.1.0.0.8
Avaya S8510 Server	Avaya Aura [™] Session Manager R5.2
	5.2.0.1.520017 SP0
Avaya Telephones	
9620 SIP	R2.6.2.8
9650 H.323	R3.1
2420 Digital	NA

3. Configure Avaya Aura[™] Session Manager

This section details the configuration set-up of Session Manager (SM). Session Manager manages all SIP communications between configured SIP Entities, detailed later in this section. It also manages registration and control of Avaya SIP endpoints using Communication Manager Feature Server. Configuration is accomplished by accessing the browser-based GUI of System Manager, using the URL http://<ip-address>/SMGR where <ip-address> is the IP address of System Manager. Refer to Section 8 Reference [1].

3.1.1. Configure SIP Domain

SIP domains are created as part of the basic configuration. There will be at least one SIP domain for which SM is the authoritative SIP controller. In these sample notes **silstack.com** was used as the main domain. Session Manager can also deal with traffic from other domains, hence the multiple SIP domain entries listed in the image below.

AVAYA	Avaya Aura™ System 5.2	Manager	Weli 2011	come, admin Last Logge D 1:21 PM	d on at Mar. 02, Help Log off
Home / Network Routing Policy / Asset Management Communication System Management User Management Monitoring Durits - Durits - Durits	SIP Domains Domain Management Edit New Duplicate Delete 5 Items Refresh	More Actions 🝷	1		Filter: Enable
Network Routing Policy	□ Name	Туре	Default	Notes	
Adaptations	Cs1k.avava.com	sin			
Dial Patterns		sip	п		
Entity Links		sip		rom 3rd party- Tom	
Locations		sip		min ord party Tom	
Regular Expressions	Stackocsmedi SII Stack com	sip			
Routing Policies SIP Domains	Select : All, None (0 of 5 Selected)	2.5	and the second		
SIP Entities					
Time Ranges					
Personal Settings					
> Security					
▶ Applications					
▶ Settings					
▶ Session Manager					

To create a new SIP Domain, expand **Network Routing Policy** \rightarrow **SIP Domains.** Click **New**. Under **Name** add a descriptive name. Select **sip** from the **Type** drop down box. Under **Notes**, add a brief description. Click **Commit** to save.

Αναγα	Avaya Aura™ Sysl 5.2	tem Manage	r ^w	'elcome, admin Last Loi D10 6:51 PM	gged on at Mar. 02, Help Log off
Home / Network Routing Policy /	SIP Domains				
 Asset Management Communication System Management 	Domain Management				Commit Cance
▶ User Management					
▶ Monitoring	1 Item Refresh				Filter: Enable
▼Network Routing Policy	Name	Туре	Default	Notes	
Adaptations	* DomainName	sip +	Г	SIP Domain Name	
Dial Patterns			a Martin		
Entity Links					
Locations	* Input Required				Commit Cance
Regular Expressions					
Routing Policies					
SIP Domains					
SIP Entities					
Time Ranges					
Personal Settings					

3.1.2. Configure Locations

Locations are used to identify logical and/or physical locations where SIP Entities reside, for purposes of bandwidth management or location-based routing. For this sample configuration, a common location was used for all Avaya equipment

avaya	Avaya Aura™ Systen 5.2	Manager Welcome, admin Last I	.ogged on at May 12, Help Log off
Iome / Network Routing Policy /	Locations		
Asset Management	Location		
Communication System Management User Management	Edit New Duplicate Delete	More Actions Commit	
Monitoring	8 Items Pefrech		Filter: Enable
Network Routing Policy			
Adaptations	L Name	Notes	
Dial Patterns		Lab. Test Domain. SILStack Domain	
Entity Links			
Locations	Interop-CME-7 1		
Pogular Euprossions			
Regular Expressions			
Roughy Policies	Nortel		
SIP Domains	SiemensHiPath	HiPath 4000	
SIP Entities	Stack Enterprise	Main Office for Stack Testing	
Time Ranges	Select : All, None (0 of 8 Selected)		
Personal Settings			
Security			
Applications			
Settings			
Session Manager			

To create a Location, expand Network Routing Policy \rightarrow Locations. Click New. In the General section, under Name add a descriptive name. Under Notes add a brief description. In the Location Pattern section select Add, under IP Address Pattern, enter an IP address pattern used to logically identify the location. Under Notes add a brief description. Click Commit to save.

AVAYA	Avaya Aura™ System Manager ^{Welcome, adi} 5.2	min Last Logged on at Mar, O3, M Help Log off
Home / Network Routing Policy /	Locations / Location Details	
 Asset Management Communication System Management 	Location Details	Commit Cancel
 User Management 	General	
Monitoring	* Name: Location Name	
▼ Network Routing Policy	Notes: Location Notes	
Adaptations		
Dial Patterns	Managed Bandwidth:	
Entity Links	* Average Bandwidth per Call: 80 Kbit/sec 💌	
Locations	* Time to Live (secs): 2600	
Regular Expressions		
Routing Policies		
SIP Domains	Location Pattern	
SIP Entities	Add Remove	
Time Ranges	1 Item Refresh	Filter: Enable
Personal Settings	IP Address Pattern Notes	
▶ Security	IP Address Bange	Associate with Location
Applications		
▶ Settings	Select : All, None (0 of 1 Selected)	
Session Manager		
Shortcuts	* Input Required	Commit Cancel

3.1.3. Configure SIP Entity

Each SIP device (other than registering devices such as Avaya SIP Phones) that communicates with SM requires a SIP Entity configuration. This section details the steps to create SIP Entities for connection to the Meeting Exchange Express (MXE). Expand Network Routing Policy and select SIP Entities. Click New. In the General section, under Name add a descriptive name e.g. MXExpress. Under FQDN or IP Address add the IP Address of the MXE server. From the Type drop down box, select SIP Trunk. Under Notes add a brief description. From the Location drop down box, select the appropriate location. From the Time Zone drop down box, select the appropriate TZ. From the SIP Link Monitoring drop down box select Link Monitoring Disabled. Click Commit to save.



3.1.4. Configure SIP Entity Links

The next step is to create SIP Entity Links, which include the transport parameters to be used for communications between the SM and external SIP devices. Create a SIP Entity Link for MXE. Expand Network Routing Policy \rightarrow Entity Links. Click New. Under Name enter a suitable identifier e.g. MXExpress. Under SIP Entity 1 drop-down menu select the appropriate SM Entity. Under Protocol drop-down menu select TCP. Under Port enter 5060. Under SIP Entity 2 drop-down menu select the SIP Entity added previously, MXExpress. (Next fields not shown in screenshot). Under Port enter 5060. Set Trusted as ticked. Under Notes add a brief description. Click Commit to save.

AVAYA	Avaya Aur 5.2	a™ System Mar	ager	Welcome 2010 11:	e, admin Last Logg 13 AM	ed on at May 14, Help Log off
Home / Network Routing Policy /	'Entity Links					
▶ Asset Management	Entity Links					Commit Cancel
Communication System Management						
▶ User Management						
Monitoring	1 Item Refresh					Filter: Enable
▼Network Routing Policy	Name	SIP Entity 1	Protocol	Port	SIP Entity 2	
Adaptations	* MXExpress	* SessionManager 💌	TCP -	* 5060	* MXExpress	
Dial Patterns	•					•
Entity Links						
Locations						
Regular Expressions	* Input Required					Commit Cancel
Routing Policies						
SIP Domains						
SIP Entities						
Time Ranges						
Personal Settings						
▶ Security						
▶ Applications						
▶ Settings						
▶ Session Manager						

Note: Some of the parameters are not visible in the screenshot below.

3.1.5. Configure Routing Policy

Create a Routing Policy to route traffic to MXE. Expand **Network Routing Policy**. Select **Routing Policies**. Click **New**. Under **Name** enter a suitable identifier. Under **Notes** enter a suitable description. Under **SIP Entity as Destination** click on **Select**. Choose the appropriate SIP Entity that is to be the call destination. Click **Commit** to save.

▶ Asset Management	Routing	Policy Details	5								Co	ommit C	ancel
Communication System													
User Management	Gener	al											
► Monitoring			* Nam	e: M×E	xpress	}							
▼ Network Routing Policy			Disable	d: 🗆									
Adaptations			Note	s: MXE	xpress	Routing							
Dial Patterns			-										
Entity Links	STP F	ntity as Des	tination										
Locations			cinación										
Regular Expressions	Select												
Routing Policies	Name	L.	FQDN or I	P Addre	55			Т	/pe		Notes		
SIP Domains	MXExp	ress	10.10.9.200					SI	P Trunk	(MXExpr	ess	
SIP Entities		10											
Time Ranges	Time (of Day		17									
Personal Settings	Add	Remove Vi	ew Gaps/Ove	rlaps									
Security	1 Iton	Dofrach									ç	ilton En	abla
Applications	1 Iten	Refresh		1						_	r	nicer, en	ane
> Settings		Ranking 1 🔺	Name 2 🛎	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Note
Session Manager		0	24/7	ম	M	N		ম	M	অ	00:00	23:59	Time Range 24/7
Shortcuts	•												Þ
Change Password Help for Routing Policy Details	Select	: : All, None (O	of 1 Selected)									-
fields	D' 1 D												

3.1.6. Configure Dial Pattern

As one of its main functions, SM routes SIP traffic between connected devices. Dial Patterns are created as part of the configuration to manage SIP traffic routing. Create a Dial Pattern for calls to the MXE. Expand **Network Routing Policy**. Select **Dial Patterns**. Click **New**. Under **Pattern** enter a dial string pattern e.g. **53** (all calls to 5 digit extensions beginning with **53** will be routed to MXE). Under **SIP Domain** drop-down menu select **All**. Under **Notes** enter a suitable description. Under the **Originating Locations and Routing Policies**, click on **Add**. The **Originating Location and Routing Policy List** screen will be displayed. (Screen shot not shown). Select **ALL** as the **Originating Location**, and under **Routing Policies**, select the routing policy created in **Section 3.1.5**. Click **Commit** to save.

Asset Management	Dial Pattern Details Commit Cancel
Management	General
> Monitorina	* Pattern: 53
Network Routing Policy	* Min: 5
Adaptations	* May: 5
Dial Patterns	
Entity Links	Emergency Call:
Locations	SIP Domain: -ALL-
Regular Expressions	Notes: MXExpress Dial Pattern
Routing Policies	
SIP Domains	Originating Locations and Routing Policies
SIP Entities	Add Remove
Time Ranges	1 Item Refresh
Personal Settings	Delate Atra Deutica Deutica Deutica
▶ Security	Originating Location Name 1 Location Policy Rank 2 Policy Policy Notes Name Disabled Destination
▶ Applications	
▶ Settings	
Session Manager	Select : All. None (0 of 1 Selected)
Shortcuts	
Change Password	Denied Originating Locations
Help for Dial Pattern Details fields	Add Remove

4. Configure Avaya Meeting Exchange Express

This section details the configuration set-up of Meeting Exchange Express. It is assumed that the MXE has been installed and licensed in accordance with Avaya installation procedure, refer to **Section 8 Reference [2]** for more details. Configuration is accomplished by accessing the browser-based GUI of MXE, using the URL https://<MXE-ip-address>/mx. Log in using the installer credentials Refer to **Section 8 Reference [2]**. (Screen shot not shown).

4.1. Configure Conference Pool Resources

This parameter sets the amount of ports which will be available for scheduled conferences. In this sample configuration **100** ports out of **300** are reserved for scheduled conferences. For these application notes, the default demand conferences were used for testing. Select **Configurations** \rightarrow **Global Settings**. On this page, set the **Reserved Port Pool** value. Click on **Submit** to save changes.

AVAYA	Meeting Exchang Install E	e Express Edition	
Help Log Out Installation	Configuration Provisioning		Reset Server
Help Log Out Installation System Configuration Global Settings Conference Defaults Directories Blast Dial Controls Playback Controls Adhoc Controls Web Conferencing Scheduled Jobs Recurrent Booking Bridge Configuration Media Server SIP Agent System Maps URI to Service Map TelNum to URI Map System Prompts Prompt Sets Conference Maps Moderator Key Map Participant Key Map Reports SNMP SNMP Settings	Configuration Provisioning Global Settings System Date and Time System Name System IP Address * Mail Server IP Address SIP Proxies Employed Gateway Installed Default Conference Phone Number Default Conference SIP URI * Overbooking Percentage * Reserved Port Pool Max Retries on Error Submit * Required Fields	2010.05.12 02:02 PM IST svxtal2942 10.10.9.200 127.0.0.1	Reset Server
SNMP Threshold Settings	© 2008 Avaya I Versi	nc. All Rights Reserved.	

4.2. Configure SIP Agent Contact Details

Select Configurations \rightarrow SIP Agent. For SIP Address enter details in SIP URI format e.g. sip:NUM@MXE-IPaddress:5060;transport=tcp where NUM is the MXE dial in access number, MXE-IPaddress is the IP address of the MXE server. Transport is TCP using default SIP port 5060. A similar SIP URI is required as the Contact. Use the same URI enclosed with <> brackets. Click on Submit to save changes.

AVAYA	Meeting Exchang Install	je Express Edition Engineer	
Help Log Out Installation	Configuration Provisioning		Reset Server
System Configuration Global Settings	SIP Agent		
Conterence Detaults Directories Blast Dial Controls	* SIP Address	sip:53123@10.10.9.200:5060;transport= tcp	
Playback Controls Adhoc Controls	* Differentiated Service TOS Value	4	
Web Conferencing Scheduled Jobs	* Ethernet VLAN Value	10	
Recurrent Booking Bridge Configuration	Contact	<pre><sip:53123@10.10.9.200:5060;transport =tcp></sip:53123@10.10.9.200:5060;transport </pre>	
Media Server SIP Agent System Maps	SIPPING Notification Interval	1	
URI to Service Map TelNum to URI Map	Submit * Required Fields		
Prompt Sets Conference Maps			
Moderator Key Map Participant Key Map			
Report Configuration Reports			
SNMP			
SNMP Threshold Settings			
	© 2008 Avaya I Vers	inc. All Rights Reserved.	

4.3. Configure TelNum To URI Map

For MXE dial-out, the system requires a **TelNum To URI** entry. For this sample configuration, a wildcard dial-out pattern was configured, sending all calls to SM. Select **System Maps** \rightarrow **TelNum to URI Map.** Select **Add**.



Enter the wildcard pattern * as the **Telephone Number Pattern**. In the **SIP URI Pattern** field enter the default dial-out pattern **sip:**\$0@SM100 IPaddress:5060;transport=tcp. Where \$0 is a variable parameter, the value is set as the number being dialed. SM100 IPaddress is the IP address of the Session Manager SM100 card, followed by the SIP default port, and transport is indicated as **tcp.** Enter a suitable description as the **Comment**. Click on Add to apply changes.

Add TelNum t	o URI Map Parameter	
* Order	1	
* Telephone Number Pattern	*	
* SIP URI Pattern	sip:\$0@135.64.186.46:5060;transport=tcp	
Comment	Dial Out to ASM	
Comment Add Cancel * Re	quired Fields	
1		1

4.4. Configure URI to Service Map

For calls incoming to MXE, some general **URI to Service Map** configurations are required. MXE comes with a default configuration of URI to Service Map entries. For access to the Conference Playback facility, a specific entry was added. Select **Configurations** \rightarrow **URI to Service Map.** Select **Add**.



For URI Pattern enter .*sip:CPB_DDI@.* where CPB_DDI is the dial in number for Conference Recording Playback. Enter Conference Recording Playback from the Service Name drop down box. Select ConferencePlaybackCallFlow from the Call Flow drop down box. Select welcomeToConferencePlayback from the Greeting drop down box. Click on Add to apply changes.

ĸ	URI Pattern	.*sip:53120@.*	
×	Service Name	Conference Recording Playback	
ĸ	Call Flow	ConferencePlaybackCallFlow	
	Greeting	welcomeToConferencePlayback	•
	Language	English	

When MXE refers to the **URI to Service Map** it selects a matching pattern starting at the top of the list. The default **URI to Service Map** entry **.*sips?:.***@**.*** will be matched with any incoming call. Therefore the entry for **Conference Recording Playback** was moved to the top of the order list. Select the tick box beside the entry and click on **Move UP**. Repeat until the **Conference Recording Playback** is at the top of the list

AVAYA	Meeting Exchange Express Edition Install Engineer					
Help Log Out Installation	Configuration Provisioning			Reset Server		
System Configuration Global Settings Conference Defaults Directories Blast Dial Controls Playback Controls Adhoc Controls Web Conferencing Scheduled Jobs Recurrent Booking Bridge Configuration Media Server SIP Agent System Maps URI to Service Map TelNum to URI Map System Prompts Prompt Sets Conference Maps Moderator Key Map Participant Key Map Report Configuration Reports SNMP SNMP Settings SNMP Threshold Settings	URI to Service Map Add Succeeded Order URI Pattern 1 .*sips?:*@.* 2 .*sips?:AdhocDirect([0-9]*)@.* 3 .*sips?:ReservationSetupNoVMB@.* 4 **sips?:ReservationSetupNoVMB@.* ✓ 5 .*sip:S3120@.*	Service Name Default Ad Hoc Conference Direct Access Ad Hoc Reservation Factory VM Bypass Ad Hoc Reservation Factory No VM Bypace Conference Recording Playback Move Down 5 Rows/Page: 10 Refu	Call Flow BasicCallFlow DirectCallFlow ReservationSetup ConferencePlaybackCall	Greeting greeting directGreeting FlowwelcomeToConferencePlayback		
© 2008 Avaya Inc. All Rights Reserved. Version: 3.0.0.36						

The screenshot below illustrates desired order of URI to Service Map entries.

Αναγα	Meeting Exchange Express Edition Install Engineer					
Help Log Out Installation	Configuration Provisioning			Reset Server		
System Configuration Global Settings Conference Defaults Directories Blast Dial Controls	URI to Service Map	Service Name Conference Recording Plavback	Call Flow ConferencePlaybackCall	Greeting FlowwelcomeToConferencePlavback		
	☐ 2 .*sips?:.*@.*	Default	BasicCallFlow	greeting		
Adbac Controls	3 .*sips?:AdhocDirect([0-9]*)@.*	Ad Hoc Conference Direct Access	DirectCallFlow	directGreeting		
Web Conferencing Scheduled Jobs	☐ 4 .*sips?:ReservationSetup@.* ☐ 5 .*sips?:ReservationSetupNoVMB@.	Ad Hoc Reservation Factory VM Bypass Ad Hoc Reservation Factory No VM Bypass	ReservationSetup			
			ReservationSetup			
Bridge Configuration Media Server SIP Agent System Maps URI to Service Map TelNum to URI Map System Prompts Prompt Sets Conference Maps Moderator Key Map Participant Key Map Report Configuration Reports SNMP SNMP Settings SNMP Threshold Settings	Add Edit Delete Move Up << < Page 1 of 1 >>> Total:	Move Down 5 Rows/Page: 10 Refi	resh			
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To apply all the changes, click on the **Reset Server** button. Select **Yes**, wait approx 1 minute for the bridge to reset.



5. Verification Steps

This section provides details on how to verify the set-up of the main components of this sample configuration.

Verify MXE server processes by logging into the MXE via ssh terminal. Refer to **Section 8 Reference [2].** Use the command **sudo lc status all** to list the status of the MXE processes.

```
[craft@svxtal2942 ~]$ sudo lc status all
dbx is running.
httpd is running.
jboss is running.
notificationCtrlServer is running.
postgresql is running.
[craft@svxtal2942 ~]$
```

Carry out test calls. Dial **53123** for generic conference call access. Verify that the greeting "Welcome, you've reached the audio conference system" is heard. Enter a valid conference access code e.g. **22346**#. Verify that the prompt message "at the tone, please state your name, then press the pound key" is heard. Follow the menu options and verify successful entry to the conference. Press ***8** to perform a roster playback check. Verify that the system prompts with roster name and the number callers in conference. Dial **53120** for access to the Conference Playback facility; verify the welcome message "Welcome to the conference playback...." is heard.

6. Conclusion

These Application Notes describe the steps for configuring Avaya Meeting Exchange Express with Avaya AuraTM Session Manager. Call access to Avaya Meeting Exchange Express including general conference access, conference recording playback, Moderator dial out and DTMF controls were tested. All test cases were completed successfully and the configuration described in these Application Notes has been successfully compliance tested.

Note: The interoperability configuration of the Avaya Meeting Exchange Express *SIP Element* on Avaya Aura[™] Session Manager requires *SIP Entity Monitoring* to be disabled as detailed in Section 3.1.3 of this document.

7. Additional References

Listed below are documents referenced in this Application Notes. These documents are available at the Avaya Support website. <u>Http://support.avaya.com</u>

- [1] Configuring Avaya AuraTM Session Manager 5.2 with Avaya AuraTM Communication Manager Access Element, Avaya Voice Portal and Avaya AuraTM Communication Manager Feature Server – Issue 1.0
- [2] Avaya Meeting Exchange Express 2.0 Installation and Configuration Guide 04-602593

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