



## **Avaya Solution & Interoperability Test Lab**

---

# **Application Notes for MESSAGEmanager IP Fax Server Software 10.1 with Avaya Aura® Communication Manager 6.0.1 and Avaya Aura® Session Manager 6.1 via SIP Trunking – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for MESSAGEmanager IP Fax Server Software to interoperate with Avaya Aura® Communication Manager and Avaya Aura® Session Manager. MESSAGEmanager IP Fax enables users of Multifunction Devices, Email, Desktop applications, CRM and ERP applications to send and receive facsimiles (fax) over Avaya IP networks. MESSAGEmanager IP Fax communicates with Session Manager via SIP Trunking.

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.

## Table of Contents

1.	Introduction.....	3
2.	General Test Approach and Test Results.....	3
2.1.	Interoperability Compliance Testing .....	3
2.2.	Test Results .....	3
2.3.	Support.....	4
3.	Reference Configuration .....	4
4.	Equipment and Software Validated.....	5
5.	Configure Avaya Aura® Communication Manager .....	5
5.1.	Verify system-parameters customer-options.....	6
5.2.	Node Names .....	6
5.3.	Dialplan.....	7
5.4.	Configure Network Region .....	<b>Error! Bookmark not defined.</b>
5.5.	Configure IP-Codec .....	7
5.6.	Configure SIP Interface to Session Manager .....	9
5.7.	Call Routing to MESSAGEmanager IP Fax .....	11
6.	Configure Avaya Aura® Session Manager .....	13
6.1.	Routing.....	13
6.1.1.	Domains.....	16
6.1.2.	Locations .....	16
6.1.3.	SIP Entities.....	17
6.1.4.	Entity Links.....	18
6.1.5.	Time Ranges .....	18
6.1.6.	Routing Policies.....	19
6.1.7.	Dial Patterns.....	19
7.	Configure MESSAGEmanager IP Fax .....	21
8.	Verification Steps.....	23
9.	Conclusion .....	25
10.	References.....	26

# 1. Introduction

These Application Notes describe the configuration used to enable MESSAGEmanager IP Fax Server Software to interoperate with Avaya Aura® Communication Manager and Avaya Aura® Session Manager. MESSAGEmanager IP Fax allows facsimiles (fax) to be sent/received to/from both local and PSTN fax endpoints, and be subsequently printed or archived.

## 2. General Test Approach and Test Results

The compliance testing of the MESSAGEmanager IP Fax solution was performed manually. The tests were all functional in nature, and no performance testing was done. The test method employed can be described as follows:

- Communication Manager was configured to support various local IP telephones and analog fax machines, as well as a SIP Trunking connection to Session Manager.
- Session Manager was configured to connect to both Communication Manager and MESSAGEmanager IP Fax via SIP trunks.
- MESSAGEmanager IP Fax was configured to connect to Session Manager.

### 2.1. Interoperability Compliance Testing

The following tests were performed as part of the compliance testing:

- Sending of multi-page faxes to local and PSTN fax machines using T.38 fax protocol.
- Receiving of multi-page faxes from local and PSTN fax machines using T.38 fax protocol.
- Sending of faxes with different page layouts (Letter, Legal, A4).
- Sending and receiving of faxes with different resolutions (Standard, Fine).
- Sending and receiving of faxes at different transmission rates (14400bps, 9600bps).
- Verification of correct Transmitting Subscriber Identification (TSID) composition for sent and received fax messages.
- Sending and receiving of faxes using G.711 pass-through mode.
- Verifying its ability to recover from interruptions during fax transmission.
- Verifying its ability to recover from reboots to MESSAGEmanager IP Fax server and Communication Manager.
- Verifying its ability to recover from interruptions to the LAN connection between MESSAGEmanager IP Fax server and the network.

### 2.2. Test Results

All test cases specified in **Section Error! Reference source not found.** were tested successfully. The following behaviors were noted:

1. Avaya G430, G450 Media Gateways and TN2602AP IP Media Processor board support a fixed 9600bps for the T.38 fax protocol, while Avaya G250, G350, G700 Media Gateways and TN2302AP IP Media Processor board support a fixed 14400bps for the T.38 fax protocol.

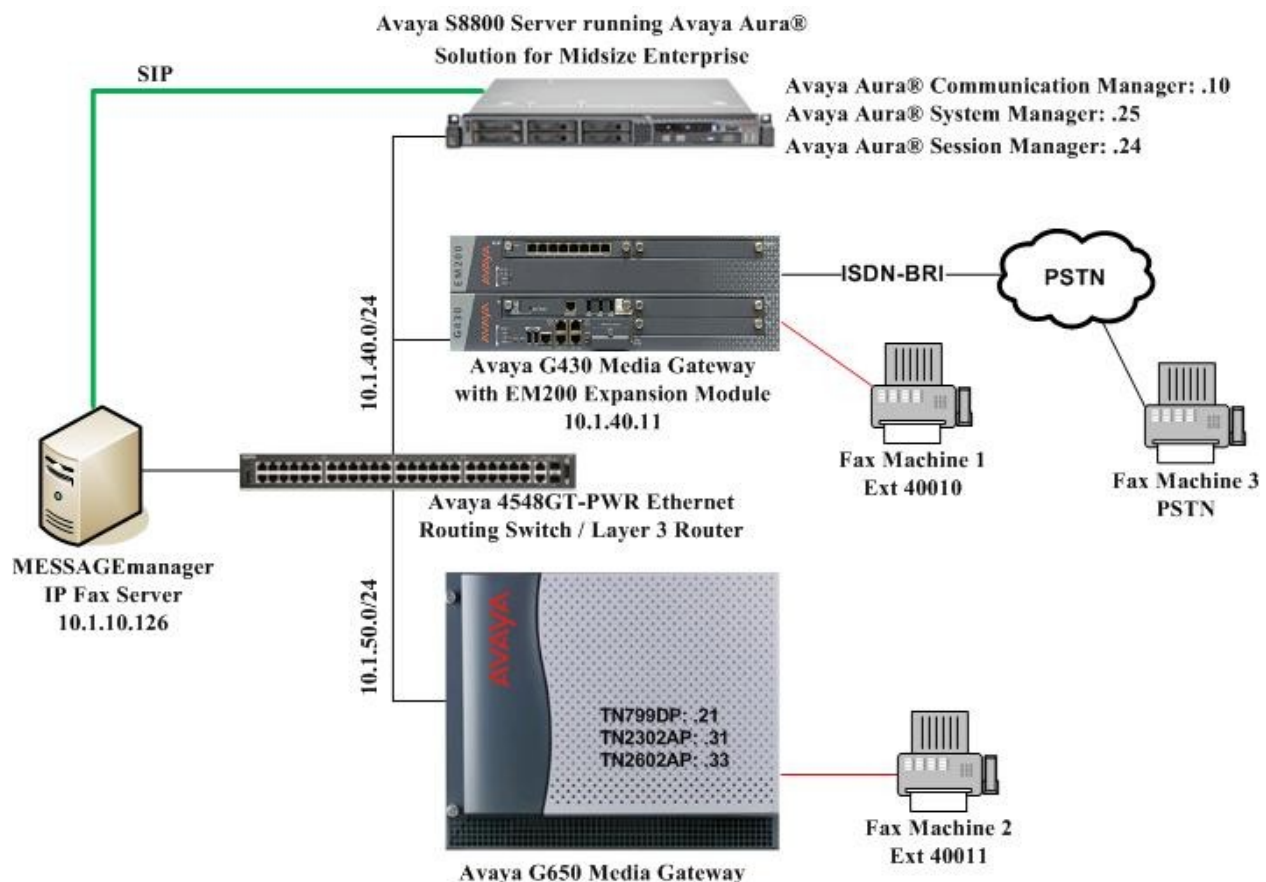
## 2.3. Support

For support on MESSAGEmanager IP Fax, contact MESSAGEmanager as follows:

- Web: <http://www.mmanager.com/support.aspx>
- Email: [support@mmanager.com](mailto:support@mmanager.com)
- Fax: +61 2 8448 8840
- Phone: +61 2 8448 8870

## 3. Reference Configuration

**Figure 1** shows the test configuration used for compliance testing. An Avaya S8800 Server running Avaya Aura® Solution for Midsize Enterprise provided the required SIP-enabled communication platform, which included Avaya Aura® Communication Manager, Avaya Aura® System Manager and Avaya Aura® Session Manager. The Avaya G430 and G650 Media Gateways provided the connections to the analog fax machines and ISDN-BRI trunks to the PSTN. MESSAGEmanager IP Fax was installed on a Windows 2003 Server and was configured to interface to Session Manager through a SIP Trunk.



**Figure 1: Test Configuration**

## 4. Equipment and Software Validated

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

Equipment	Software
Avaya S8800 Server running Avaya Aura® Solution for Midsize Enterprise	Avaya Aura® Communication Manager 6.0.1 (Service Pack 3 00.1.510.1-19009)  Avaya Aura® System Manager 6.1 Service Pack 2  Avaya Aura® Session Manager 6.1 Service Pack 2 (6.1.2.0.612004)
Avaya G650 Media Gateway - TN2312BP IP Server Interface - TN799DP C-LAN Interface (x 2) - TN2602AP IP Media Processor - TN2302AP IP Media Processor - TN2793B Analog Line	- HW15 FW054 HW01 FW040 HW02 FW059 HW20 FW121 000013
Avaya G430 Media Gateway - MM722AP BRI MM - MM711AP Analog MM	31.19.2 HW01 FW008 HW31 FW095
Avaya 4548GT-PWR Ethernet Routing Switch	V5.4.0.008
Brother MFC5840CN All-In-One Printer	-
Canon MultiPASS L90 Fax/Printer	-
MESSAGEmanager IP Fax Server Software	10.1

## 5. Configure Avaya Aura® Communication Manager

The configuration and verification operations illustrated in this section were all performed using the Communication Manager System Access Terminal (SAT).

Only those configuration details concerning the SIP interface to Session Manager and MESSAGEmanager IP Fax are shown within this section.

## 5.1. Verify system-parameters customer-options

Use the **display system-parameters customer options** command to verify that Communication Manager is configured to meet the minimum requirements to support MESSAGEmanager IP Fax. Those items shown in **bold** indicate required values or minimum capacity requirements. If these are not met in the configuration, please contact an Avaya representative for further assistance.

Parameter	Usage
Maximum Administered SIP Trunks Stations (Page 2)	The number of available licensed SIP trunks must be sufficient to accommodate the number of trunk members assigned to the trunk group used to interface to Session Manager in <b>Section 5.6</b> .
<b>display system-parameters customer-options</b> <span style="float: right;">Page 2 of 11</span>	
OPTIONAL FEATURES	
IP PORT CAPACITIES <div> <div></div> <div>USED</div> </div>	
Maximum Administered H.323 Trunks:	12000 0
Maximum Concurrently Registered IP Stations:	18000 2
Maximum Administered Remote Office Trunks:	12000 0
Maximum Concurrently Registered Remote Office Stations:	18000 0
Maximum Concurrently Registered IP eCons:	128 0
Max Concur Registered Unauthenticated H.323 Stations:	100 0
Maximum Video Capable Stations:	18000 0
Maximum Video Capable IP Softphones:	250 0
<b>Maximum Administered SIP Trunks:</b>	<b>12000 255</b>
Maximum Administered Ad-hoc Video Conferencing Ports:	12000 0
Maximum Number of DS1 Boards with Echo Cancellation:	522 0
Maximum TN2501 VAL Boards:	10 1
Maximum Media Gateway VAL Sources:	250 1
Maximum TN2602 Boards with 80 VoIP Channels:	128 0
Maximum TN2602 Boards with 320 VoIP Channels:	128 1
Maximum Number of Expanded Meet-me Conference Ports:	250 0

## 5.2. Node Names

Use the **change node-names ip** command to configure the node name for Session Manager.

Parameter	Usage
Name / IP Address	Enter an appropriate name to identify Session Manager, along with the IP address.
<b>change node-names ip</b> <span style="float: right;">Page 1 of 2</span>	
IP NODE NAMES	
Name	IP Address
CLAN-1a02	10.1.50.21
MEDPRO-1a07	10.1.50.31
MEDPRO-1a09	10.1.50.33
PN1-router	10.1.50.1
<b>SM</b>	<b>10.1.40.24</b>
default	0.0.0.0
procr	10.1.40.10
procr6	::

### 5.3. Dialplan

Use the **change dialplan analysis** command to configure the dial plan using the parameters shown below.

Dialed String	Total Length	Usage
4	5	Extension range for fax machines and MESSAGEmanager IP Fax.
#	3	Trunk Access Code used in the SIP trunk group defined in <b>Section 5.6</b> .

**change dialplan analysis**

Page 1 of 12

DIAL PLAN ANALYSIS TABLE

Location: all

Percent Full: 2

Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type
0	1	attd						
<b>4</b>	<b>5</b>	<b>ext</b>						
9	1	fac						
*	3	fac						
<b>#</b>	<b>3</b>	<b>dac</b>						

### 5.4. Configure IP-Codec

Use the **change ip-codec-set 1** command to configure the audio codecs which will be used to communicate with Session Manager. The G.711MU and G.711A codecs were used to set up the initial audio call prior to the T.38 fax protocol negotiation between Communication Manager and MESSAGEmanager IP Fax.

**change ip-codec-set 1**

Page 1 of 2

IP Codec Set

Codec Set: 1

Audio Codec	Silence Suppression	Frames Per Pkt	Packet Size (ms)
1: <b>G.711MU</b>	n	2	20
2: <b>G.711A</b>	n	2	20

On Page 2, set **FAX** to **t.38-standard** to enable T.38 fax protocol negotiations. If G.711 pass-through mode is preferred, then set **FAX** to **off**.

```
change ip-codec-set 1                                     Page 2 of 2

                                IP Codec Set

                                Allow Direct-IP Multimedia? y
                                Maximum Call Rate for Direct-IP Multimedia: 2048:Kbits
                                Maximum Call Rate for Priority Direct-IP Multimedia: 2048:Kbits

                                Mode                                Redundancy
FAX                            t.38-standard                0
Modem                            off                            0
TDD/TTY                          off                            0
Clear-channel                     n                             0
```

## 5.5. Configure Network Region

Use the **change ip-network-region** command to assign an appropriate **Authoritative Domain** to be used by Communication Manager. This name is also used in **Section 6.1.1**. Set **Codec Set** to the IP Codec defined in **Section 5.4**.

```
change ip-network-region 1                                Page 1 of 20

                                IP NETWORK REGION

Region: 1
Location: 1          Authoritative Domain: avaya.com
Name: LOCAL
MEDIA PARAMETERS
Codec Set: 1          Intra-region IP-IP Direct Audio: yes
                        Inter-region IP-IP Direct Audio: yes
                        IP Audio Hairpinning? n
UDP Port Min: 2048
UDP Port Max: 3329
DIFFSERV/TOS PARAMETERS
Call Control PHB Value: 46
Audio PHB Value: 46
Video PHB Value: 26
802.1P/Q PARAMETERS
Call Control 802.1p Priority: 6
Audio 802.1p Priority: 6
Video 802.1p Priority: 5
H.323 IP ENDPOINTS          AUDIO RESOURCE RESERVATION PARAMETERS
                        RSVP Enabled? n
H.323 Link Bounce Recovery? y
Idle Traffic Interval (sec): 20
Keep-Alive Interval (sec): 5
Keep-Alive Count: 5
```



## 5.6. Configure SIP Interface to Session Manager

Use the **add signaling-group** command to configure the Signaling Group parameters for the SIP trunk group. Assign values for this command as shown in the following table.

Parameter	Usage
Group Type	Enter the Group Type as “sip”.
Transport Method	Enter “tls”.
Near-end Node Name	Enter “procr” to designate the Processor Ethernet interface.
Near-end Listen Port	Enter “5061”.
Far-end Node Name	Enter the node name assigned to the Session Manager configured in <b>Section 5.2</b> .
Far-end Listen Port	Enter “5061”.
Far-end Network Region	Enter the Network Region configured in <b>Section 5.4</b> .
Far-end Domain	Enter the domain name assigned to the network region in <b>Section 5.4</b> .
Direct IP-IP Audio Connections	Enter “y” to turn on “shuffling”.

```

add signaling-group 3                                     Page 1 of 1
                                SIGNALING GROUP

Group Number: 3                      Group Type: sip
IMS Enabled? n                      Transport Method: tls
    Q-SIP? n                                SIP Enabled LSP? n
    IP Video? y                      Priority Video? y      Enforce SIPS URI for SRTP? y
    Peer Detection Enabled? n      Peer Server: SM

    Near-end Node Name: procr                Far-end Node Name: SM
    Near-end Listen Port: 5061              Far-end Listen Port: 5061
                                Far-end Network Region: 1
                                Far-end Secondary Node Name:

Far-end Domain: avaya.com

                                Bypass If IP Threshold Exceeded? n
Incoming Dialog Loopbacks: eliminate                RFC 3389 Comfort Noise? n
    DTMF over IP: rtp-payload                      Direct IP-IP Audio Connections? y
Session Establishment Timer(min): 3                  IP Audio Hairpinning? n
    Enable Layer 3 Test? n                          Initial IP-IP Direct Media? y
H.323 Station Outgoing Direct Media? n              Alternate Route Timer(sec): 6

```

Use the **add trunk-group** command to configure the SIP Trunk Group to Session Manager. Assign values for this command as shown in the following table.

Parameter	Usage
Group Type (Page 1)	Specify the Group Type as “sip”.
Group Name (Page 1)	Select an appropriate name to identify the device.
TAC (Page 1)	Specify a trunk access code that can be used to provide dial access to the trunk group.
Service Type (Page 1)	Designate the trunk as a “tie” line to a peer system.
Signaling Group (Page 1)	Enter the number assigned to the SIP signaling group defined above.
Number of Members (Page 1)	Specify sufficient number of members to support the maximum simultaneous connections required.
Numbering Format (Page 3)	Enter “private”.

<b>add trunk-group 3</b>	Page 1 of 21
TRUNK GROUP	
Group Number: 3	Group Type: sip CDR Reports: y
Group Name: SIP Trunk to SM	COR: 1 TN: 1 TAC: #03
Direction: two-way	Outgoing Display? n
Dial Access? n	Night Service:
Queue Length: 0	
Service Type: tie	Auth Code? n
	Member Assignment Method: auto
	Signaling Group: 3
	Number of Members: 255

<b>add trunk-group 3</b>	Page 3 of 21
TRUNK FEATURES	
ACA Assignment? n	Measured: internal
	Maintenance Tests? y
Numbering Format: private	UII Treatment: service-provider
	Replace Restricted Numbers? n
	Replace Unavailable Numbers? n
	Modify Tandem Calling Number: no
Show ANSWERED BY on Display? y	
DSN Term? n	

## 5.7. Call Routing to MESSAGEmanager IP Fax

Use the **change uniform-dialplan 0** command. Assign values for this command as shown in the following table.

Parameter	Usage
Matching Pattern	For this testing, the extension range assigned to MESSAGEmanager IP Fax is 40050 to 40059. So enter “4005” as the Matching Pattern.
Len	Enter the length of the extensions assigned to MESSAGEmanager IP Fax.
Net	Enter “aar”.

```

change uniform-dialplan 0                                     Page 1 of 2
UNIFORM DIAL PLAN TABLE                                     Percent Full: 0

Matching      Len Del      Insert      Node
Pattern      Len Del      Digits      Net Conv Num
4005          5  0          aar      n

```

Use the **change aar analysis 0**. Assign values for this command as shown in the following table.

Parameter	Usage
Dialed String	Enter the leading digits of the extensions assigned to MESSAGEmanager IP Fax
Min / Max	Enter the length of the extensions assigned to MESSAGEmanager IP Fax.
Route Pattern	Enter the number of the route pattern described on the next page.
Call Type	Enter “aar”.

```

change aar analysis 0                                         Page 1 of 2
AAR DIGIT ANALYSIS TABLE                                     Percent Full: 0
Location: all

Dialed      Total      Route      Call      Node      ANI
String      Min Max      Pattern      Type      Num      Req'd
4005        5  5        3        aar      n

```

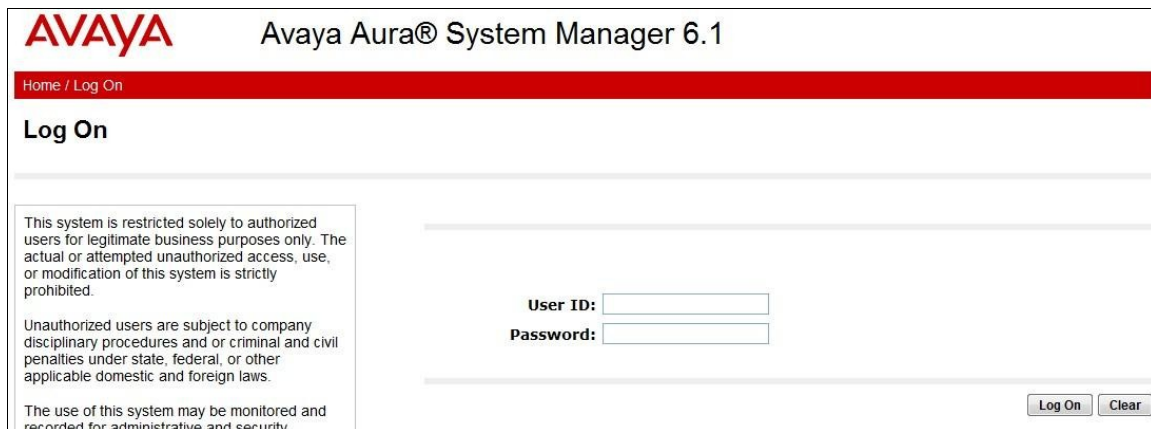
Use the **change route-pattern n** command, where **n** is the route pattern to route calls destined for MESSAGEmanager IP Fax from Communication Manager to Session Manager. Assign values for this command as shown in the following table.

Parameter	Usage
Pattern Name	Enter a descriptive name to identify the route pattern.
Grp No	Enter the number of the SIP trunk which connects to Session Manager, which is defined in <b>Section 5.6</b> .
FRL	Set the Facility Restriction Level ( <b>FRL</b> ) field to a level that allows access to this trunk for all users that require it. The value of <b>0</b> is the least restrictive level.

change route-pattern 3										Page	1	of	3
Pattern Number: 3										Pattern Name: SIP Trunk			
SCCAN? n										Secure SIP? n			
Grp	FRL	NPA	Pfx	Hop	Toll	No.	Inserted	DCS/ IXC					
No			Mrk	Lmt	List	Del	Digits	QSIG					
								Intw					
1: 3 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 n								rest none					
2: y y y y y n n								rest none					
3: y y y y y n n								rest none					
4: y y y y y n n								rest none					
5: y y y y y n n								rest none					
6: y y y y y n n								rest none					

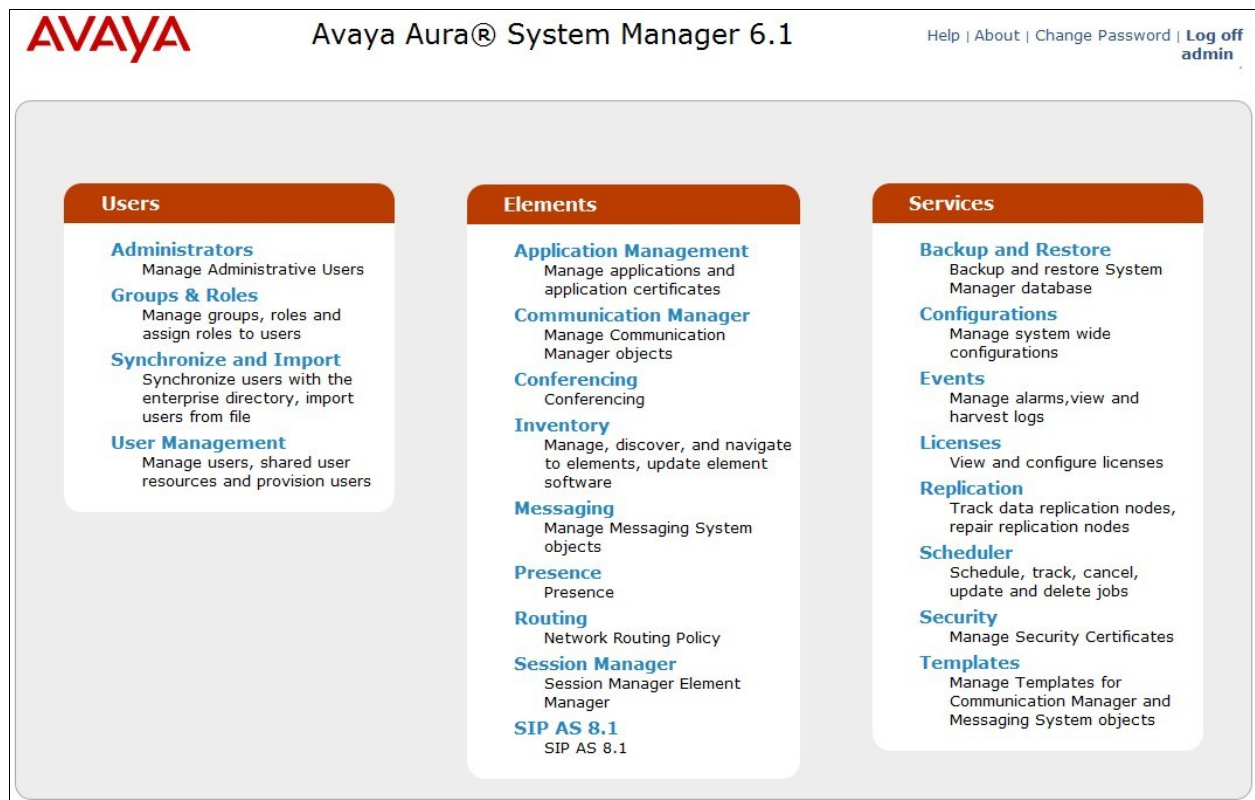
## 6. Configure Avaya Aura® Session Manager

This section illustrates relevant aspects of the Avaya Aura® Session Manager configuration used in the verification of these Application Notes. Session Manager is managed via Avaya Aura® System Manager. Using a web browser, access “https://<ip-addr of System Manager>/SMGR”. In the **Log On** screen, enter appropriate **User ID** and **Password** and press the **Log On** button.



The screenshot shows the Avaya Aura® System Manager 6.1 Log On screen. At the top, the Avaya logo and title "Avaya Aura® System Manager 6.1" are displayed. Below the title is a red navigation bar with "Home / Log On". The main area is titled "Log On". On the left, there is a disclaimer: "This system is restricted solely to authorized users for legitimate business purposes only. The actual or attempted unauthorized access, use, or modification of this system is strictly prohibited." followed by "Unauthorized users are subject to company disciplinary procedures and or criminal and civil penalties under state, federal, or other applicable domestic and foreign laws." and "The use of this system may be monitored and recorded for administrative and security". On the right, there are input fields for "User ID:" and "Password:", and "Log On" and "Clear" buttons at the bottom right.

Once logged in, a **Home Screen** is displayed.

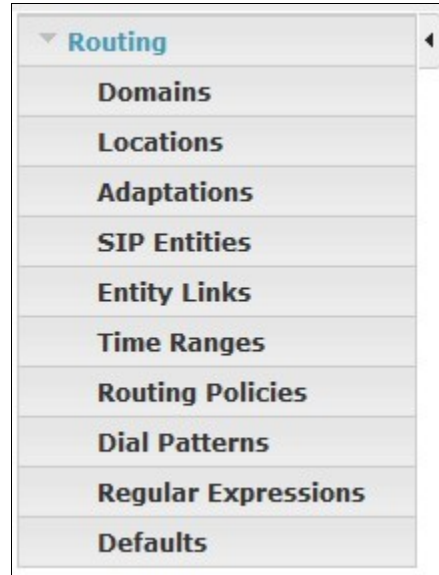


The screenshot shows the Avaya Aura® System Manager 6.1 Home Screen. At the top, the Avaya logo and title "Avaya Aura® System Manager 6.1" are displayed. On the right, there are links: "Help | About | Change Password | Log off admin". The main area is divided into three columns: "Users", "Elements", and "Services". Each column contains a list of management tasks with brief descriptions.

Users	Elements	Services
<b>Administrators</b> Manage Administrative Users	<b>Application Management</b> Manage applications and application certificates	<b>Backup and Restore</b> Backup and restore System Manager database
<b>Groups &amp; Roles</b> Manage groups, roles and assign roles to users	<b>Communication Manager</b> Manage Communication Manager objects	<b>Configurations</b> Manage system wide configurations
<b>Synchronize and Import</b> Synchronize users with the enterprise directory, import users from file	<b>Conferencing</b> Conferencing	<b>Events</b> Manage alarms, view and harvest logs
<b>User Management</b> Manage users, shared user resources and provision users	<b>Inventory</b> Manage, discover, and navigate to elements, update element software	<b>Licenses</b> View and configure licenses
	<b>Messaging</b> Manage Messaging System objects	<b>Replication</b> Track data replication nodes, repair replication nodes
	<b>Presence</b> Presence	<b>Scheduler</b> Schedule, track, cancel, update and delete jobs
	<b>Routing</b> Network Routing Policy	<b>Security</b> Manage Security Certificates
	<b>Session Manager</b> Session Manager Element Manager	<b>Templates</b> Manage Templates for Communication Manager and Messaging System objects
	<b>SIP AS 8.1</b> SIP AS 8.1	

### 6.1. Routing

When **Routing** is selected, the right side outlines a series of steps.



The sub-sections that follow are in the same order as the steps outlined under **Introduction to Network Routing** in the abridged screen shown below. In these Application Notes, all these steps are illustrated with the exception of Steps 3 and 9, since “Adaptations” and “Regular Expressions” were not used.

### **Introduction to Network Routing Policy**

Network Routing Policy consists of several routing applications like "Domains", "Locations", "SIP Entities", etc.

The recommended order to use the routing applications (that means the overall routing workflow) to configure your network configuration is as follows:

Step 1: Create "Domains" of type SIP (other routing applications are referring domains of type SIP).

Step 2: Create "Locations"

Step 3: Create "Adaptations"

Step 4: Create "SIP Entities"

- SIP Entities that are used as "Outbound Proxies" e.g. a certain "Gateway" or "SIP Trunk"
- Create all "other SIP Entities" (Session Manager, CM, SIP/PSTN Gateways, SIP Trunks)
- Assign the appropriate "Locations", "Adaptations" and "Outbound Proxies"

Step 5: Create the "Entity Links"

- Between Session Managers
- Between Session Managers and "other SIP Entities"

Step 6: Create "Time Ranges"

- Align with the tariff information received from the Service Providers

Step 7: Create "Routing Policies"

- Assign the appropriate "Routing Destination" and "Time Of Day"
- (Time Of Day = assign the appropriate "Time Range" and define the "Ranking")

Step 8: Create "Dial Patterns"

- Assign the appropriate "Locations" and "Routing Policies" to the "Dial Patterns"

Step 9: Create "Regular Expressions"

- Assign the appropriate "Routing Policies" to the "Regular Expressions"

Each "Routing Policy" defines the "Routing Destination" (which is a "SIP Entity") as well as the "Time of Day" and its associated "Ranking".

**IMPORTANT:** the appropriate dial patterns are defined and assigned afterwards with the help of the routing application "Dial patterns". That's why this overall routing workflow can be interpreted as

### 6.1.1. Domains

To view or change SIP domains, select **Routing > Domains**. Click on the checkbox next to the name of the SIP domain and **Edit** to edit an existing domain, or the **New** button to add a domain. Click the **Commit** button after changes are completed. The domain name to be configured should be the same as was configured for the Communication Manager network region in **Section 5.4**.

The following screen shows the list of configured SIP domains.

The screenshot shows the Avaya Aura System Manager 6.1 interface. The left sidebar contains a navigation menu with 'Routing' expanded, showing 'Domains' as the selected option. The main content area is titled 'Domain Management' and includes a breadcrumb trail: 'Home / Elements / Routing / Domains - Domain Management'. Below the title are buttons for 'Edit', 'New', 'Duplicate', 'Delete', and 'More Actions'. A table lists 1 item with columns for 'Name', 'Type', 'Default', and 'Notes'. The table contains one entry: 'avaya.com' with type 'sip' and 'Default' set to 'No'. A 'Filter: Enable' link is present. At the bottom, there is a 'Select : All, None' option.

Name	Type	Default	Notes
avaya.com	sip	No	

### 6.1.2. Locations

To view or change locations, select **Routing > Locations**. The following screen shows an abridged list of configured locations. Click on the checkbox corresponding to the name of a location and **Edit** to edit an existing location, or the **New** button to add a location. Click the **Commit** button after changes are completed. Assigning unique locations (based on IP Network Address) can allow Session Manager to perform location-based routing, bandwidth management, and call admission control.

The screenshot shows the Avaya Aura System Manager 6.1 interface. The left sidebar contains a navigation menu with 'Routing' expanded, showing 'Locations' as the selected option. The main content area is titled 'Location' and includes a breadcrumb trail: 'Home / Elements / Routing / Locations - Location'. Below the title are buttons for 'Edit', 'New', 'Duplicate', 'Delete', and 'More Actions'. A table lists 1 item with columns for 'Name' and 'Notes'. The table contains one entry: 'TestLocation'. A 'Filter: Enable' link is present. At the bottom, there is a 'Select : All, None' option.

Name	Notes
TestLocation	



### 6.1.3. SIP Entities

To view or change SIP elements, select **Routing > SIP Entities**. Click the checkbox corresponding to the name of an element and **Edit** to edit an existing element, or the **New** button to add an element. Assign values for this command as shown in the following table.

Parameter	Usage
Name	Enter an appropriate name to identify the SIP entity.
FQDN or IP Address	Enter the MESSAGEmanager IP Fax Server IP address.
Type	Select <b>SIP Trunk</b> from the drop-down menu.
Location	Select the location defined in <b>Section 6.1.2</b> from the drop-down menu.
Time Zone	Select the proper time zone from the drop-down menu.

Click the **Commit** button after changes are completed.

The screenshot displays the Avaya Aura System Manager 6.1 web interface. The top navigation bar includes the Avaya logo, the title "Avaya Aura® System Manager 6.1", and links for "Help", "About", "Change Password", and "Log off admin". A "Routing" tab is active, and a "Home" button is visible. The left sidebar shows a tree view with "Routing" expanded, containing sub-items like "Domains", "Locations", "Adaptations", "SIP Entities" (highlighted), "Entity Links", "Time Ranges", "Routing Policies", "Dial Patterns", "Regular Expressions", and "Defaults". The main content area shows the "SIP Entity Details" page with a breadcrumb "Home / Elements / Routing / SIP Entities - SIP Entity Details". The "General" tab is selected. The form contains the following fields: "Name" (MESSAGEmanager Fax Server), "FQDN or IP Address" (10.1.10.126), "Type" (SIP Trunk), "Notes" (empty), "Adaptation" (dropdown), "Location" (TestLocation), "Time Zone" (Asia/Singapore), "Override Port & Transport with DNS SRV" (checkbox), "SIP Timer B/F (in seconds)" (4), "Credential name" (empty), "Call Detail Recording" (none), "SIP Link Monitoring" (Use Session Manager Configuration), and "SIP Link Monitoring" (dropdown). "Commit" and "Cancel" buttons are at the top right.

### 6.1.4. Entity Links

To view or change Entity Links, select **Routing > Entity Links**. Click on the checkbox corresponding to the name of a link and **Edit** to edit an existing link, or the **New** button to add a link. Assign values for this command as shown in the following table.

Parameter	Usage
Name	Select the SIP entity for MESSAGEmanager IP Fax Server created in <b>Section 6.1.3</b> from the drop-down menu.
SIP Entity 1 / Protocol / Port	Select the SIP entity for Session Manager, with the appropriate protocol and port. For this testing, the Entity Link is configured for UDP with Port 5060.
SIP Entity 2 / Port	Select the SIP entity for the MESSAGEmanager IP Fax Server, with the appropriate port.
Trusted	Check this box.

Click the **Commit** button after changes are completed.

Avaya Aura® System Manager 6.1

Help | About | Change Password | Log off admin

Routing \* Home

Home / Elements / Routing / Entity Links - Entity Links

Entity Links

Commit Cancel

1 Item Refresh Filter: Enable

Name	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Trusted	Notes
*sm-to-MmanagerFax	*me-sm	UDP	*5060	*MESSAGEmanager Fax Server	*5060	<input checked="" type="checkbox"/>	

### 6.1.5. Time Ranges

To view or change Time Ranges, select **Routing > Time Ranges**. The Routing Policies shown subsequently will use the “24/7” range since time-based routing was not the focus of these Application Notes.

Avaya Aura® System Manager 6.1

Help | About | Change Password | Log off admin

Routing \* Home

Home / Elements / Routing / Time Ranges - Time Ranges

Time Ranges

Edit New Duplicate Delete More Actions

1 Item Refresh Filter: Enable

Name	Mo	Tu	We	Th	Fr	Sa	Su	Start Time	End Time	Notes
24/7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59	Time Range 24/7

### 6.1.6. Routing Policies

To view or change routing policies, select **Routing > Routing Policies**. Click on the checkbox corresponding to the name of a policy and **Edit** to edit an existing policy, or **New** to add a policy. Enter a descriptive name for the routing policy, and select the MESSAGEmanager IP Fax server as the route destination by clicking “Select”.

Click the **Commit** button after changes are completed.

The screenshot shows the 'Routing Policy Details' page in Avaya Aura System Manager 6.1. The left sidebar contains a navigation menu with options: Routing, Domains, Locations, Adaptations, SIP Entities, Entity Links, Time Ranges, Routing Policies (selected), Dial Patterns, Regular Expressions, and Defaults. The main content area is titled 'Routing Policy Details' and includes a 'Commit' button and a 'Cancel' button. The 'General' section has fields for 'Name' (To-Mmanager-Fax), 'Disabled' (checkbox), and 'Notes'. The 'SIP Entity as Destination' section has a 'Select' button. Below this is a table with columns: Name, FQDN or IP Address, Type, and Notes. The table contains one entry: 'MESSAGEmanager Fax Server' with FQDN '10.1.10.126' and Type 'SIP Trunk'. The 'Time of Day' section has buttons for 'Add', 'Remove', and 'View Gaps/Overlaps'. Below this is a table with columns: Ranking, Name, Mon, Tue, Wed, Thu, Fri, Sat, Sun, Start Time, End Time, and Notes. The table contains one entry: '24/7' with Start Time '00:00' and End Time '23:59'.

Name	FQDN or IP Address	Type	Notes
MESSAGEmanager Fax Server	10.1.10.126	SIP Trunk	

Ranking	Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes
0	24/7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59	Time Range 24/7

### 6.1.7. Dial Patterns

To view or change dial patterns, select **Routing > Dial Patterns**. Click on the checkbox corresponding to the name of a pattern and **Edit** to edit an existing pattern, or **New** to add a pattern.

The screenshot shows the 'Dial Patterns' page in Avaya Aura System Manager 6.1. The left sidebar contains a navigation menu with options: Routing, Domains, Locations, Adaptations, SIP Entities, Entity Links, Time Ranges, Routing Policies, Dial Patterns (selected), Regular Expressions, and Defaults. The main content area is titled 'Dial Patterns' and includes buttons for 'Edit', 'New', 'Duplicate', 'Delete', and 'More Actions'. Below this is a table with columns: Pattern, Min, Max, Emergency Call, SIP Domain, and Notes. The table contains five entries: '1' (Min 4, Max 4), '1' (Min 5, Max 5), '3' (Min 8, Max 8), '4' (Min 5, Max 5), and '4005' (Min 5, Max 5). The 'Emergency Call' column has checkboxes, and the 'SIP Domain' column has values like 'avaya.com'.

Pattern	Min	Max	Emergency Call	SIP Domain	Notes
1	4	4	<input type="checkbox"/>	avaya.com	SG Service Numbers
1	5	5	<input type="checkbox"/>	avaya.com	CM 1xxxx extensions
3	8	8	<input type="checkbox"/>	avaya.com	SG VoIP Numbers
4	5	5	<input type="checkbox"/>	avaya.com	CM 4xxxx Extensions
4005	5	5	<input type="checkbox"/>	avaya.com	To MESSAGEmanager Fax Server

Assign values for this command as shown in the following table.

Parameter	Usage
Pattern	Enter the leading digits assigned for MESSAGEmanager IP Fax, as described in <b>Section 5.7</b> . In this testing, enter “4005”.
Min	Enter the length of the MESSAGEmanager IP Fax extensions.
Max	Enter the length of the MESSAGEmanager IP Fax extensions.
SIP Domain	Select “avaya.com” from the drop-down menu.

Click the “Add” button, select the originating location of “All”, and the routing policy defined in **Section 6.1.6**, and click the **Commit** button.

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:

\* Min:

\* Max:

Emergency Call: ☐

SIP Domain:

Notes:

Originating Locations and Routing Policies

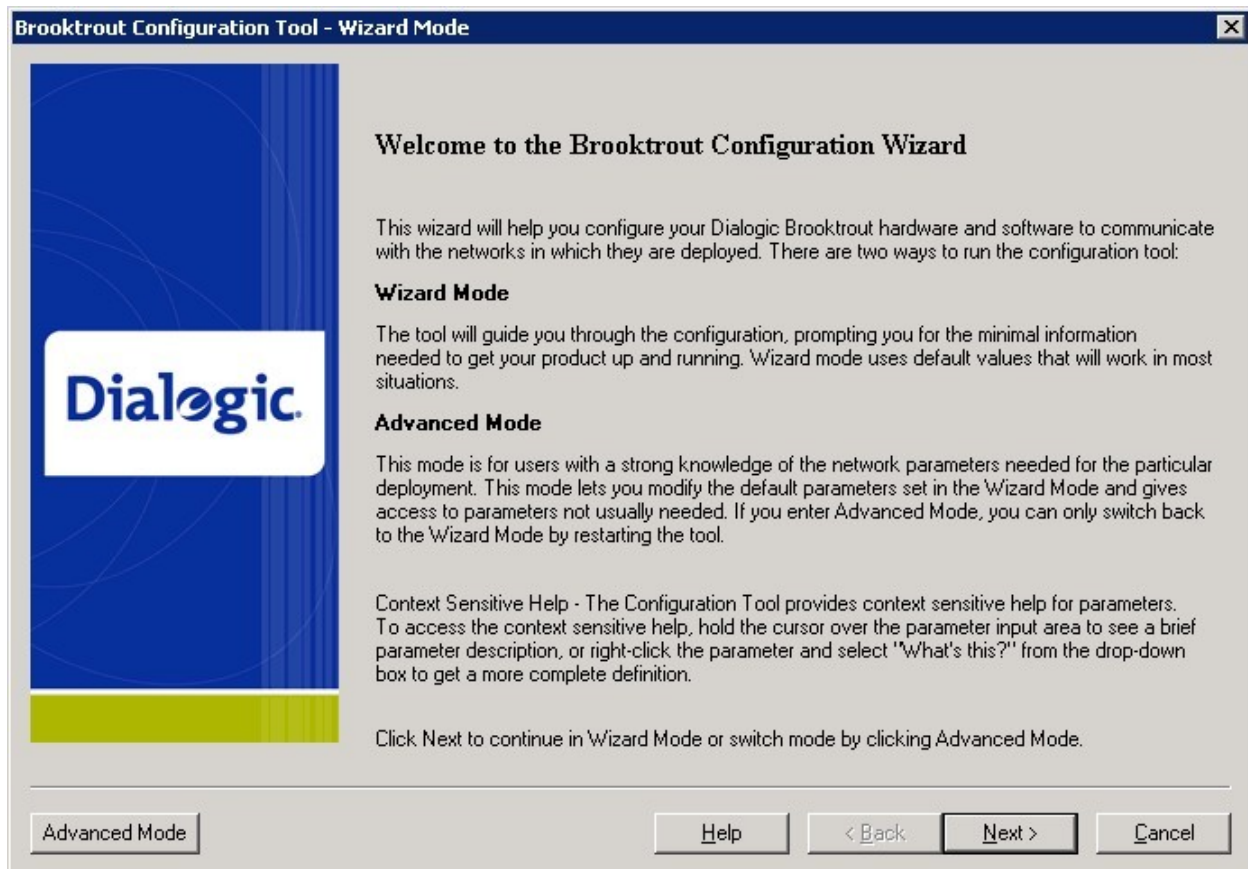
[Add](#) [Remove](#)

1 Item [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"/>	-ALL-	Any Locations	To-Mmanager-Fax	0	<input type="checkbox"/>	MESSAGEmanager Fax Server	

## 7. Configure MESSAGEmanager IP Fax

Only those configuration details concerning the interface to Avaya are shown within this section. Log in as Administrator from MESSAGEmanager IP Fax server, and click **Start > All Programs > Brooktrout > Brooktrout Configuration Tool**. The Brooktrout Configuration Wizard is as shown below. Click **Advanced Mode** to bypass the wizard.



In the Advanced Mode window, select **Brooktrout > IP Call Control Modules > SIP** from the left pane, and then select the **IP Parameters** tab from right pane. Assign values as shown in the following table.

Parameter	Usage
Primary Gateway	Enter the IP Address of the Session Manager SIP Entity, as shown in <b>Figure 1</b> . The port was left at “0” to accept the default port of 5060.
From Value	Enter a SIP address assigned to MESSAGEmanager IP Fax, in this case <b>40050@avaya.com</b> is used.

Brooktrout Configuration Tool - Advanced Mode

File View Options Help

Home Back Next Save Apply License Help

Brooktrout (Boston Host Service - Running)

- Driver Parameters (All boards)
- BTCall Parameters (All boards)
- Call Control Parameters
  - Module 0x41: SR140
  - IP Call Control Modules
    - SIP**

General Information IP Parameters T.38 Parameters RTP Parameters

Maximum SIP Sessions: 256 1 1000

Primary Gateway: 10 . 1 . 40 . 24 : 0

Primary Proxy Server:

Additional Proxy Server #2:

Additional Proxy Server #3:

Additional Proxy Server #4:

Primary Registrar Server URL:

Additional Registrar Server #2:

Additional Registrar Server #3:

Additional Registrar Server #4:

From Value: 40050@avaya.com

Contact Address: 0 . 0 . 0 . 0 : 0

Username:

Session Name: no\_session\_name

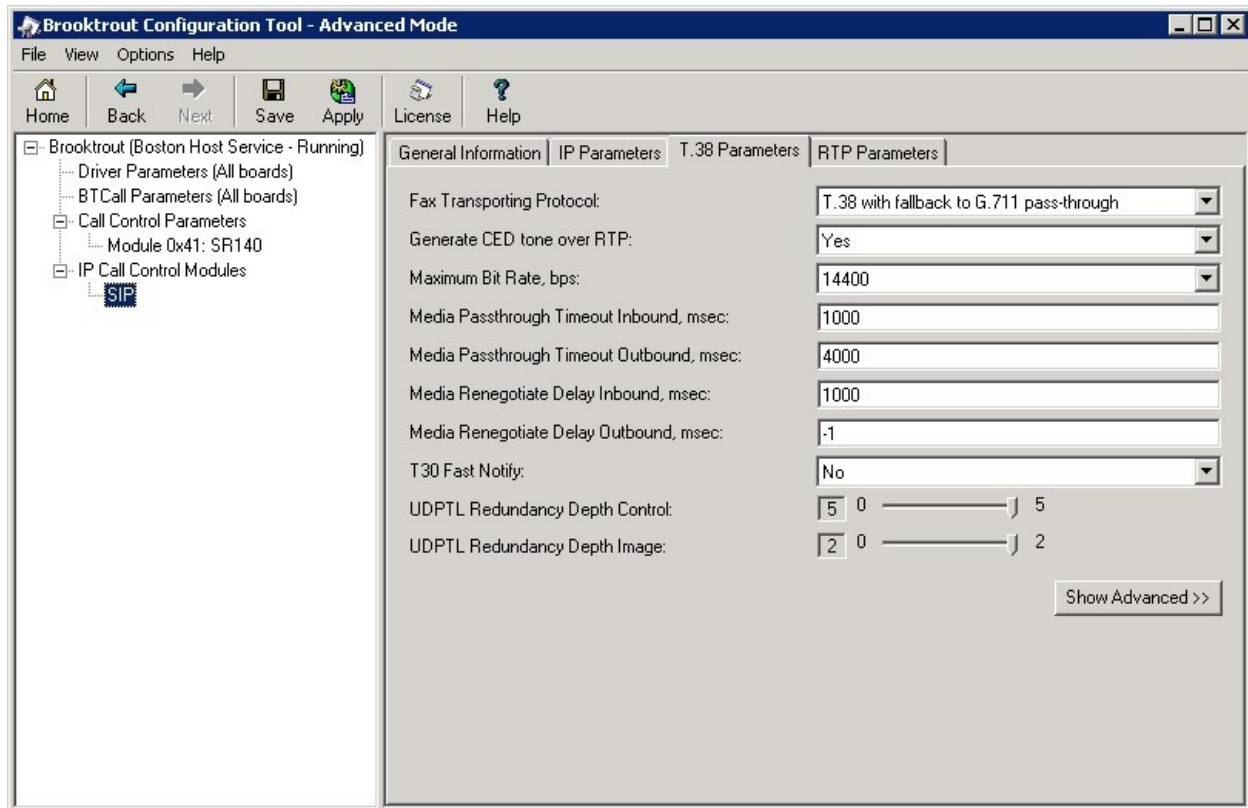
Session Description:

Description URI:



Select the **T.38 Parameters** tab from right pane. Assign values as shown in the following table.

Parameter	Usage
Fax Transporting Protocol	Select “T.38 only” or “T.38 with fallback to G.711 pass-through” from the drop-down menu.
Maximum Bit Rate, bps	Select “14400” from the drop-down menu.



Click **Save** and then **Apply**. The Brooktrout services will need to be restarted to effect the changes.

## 8. Verification Steps

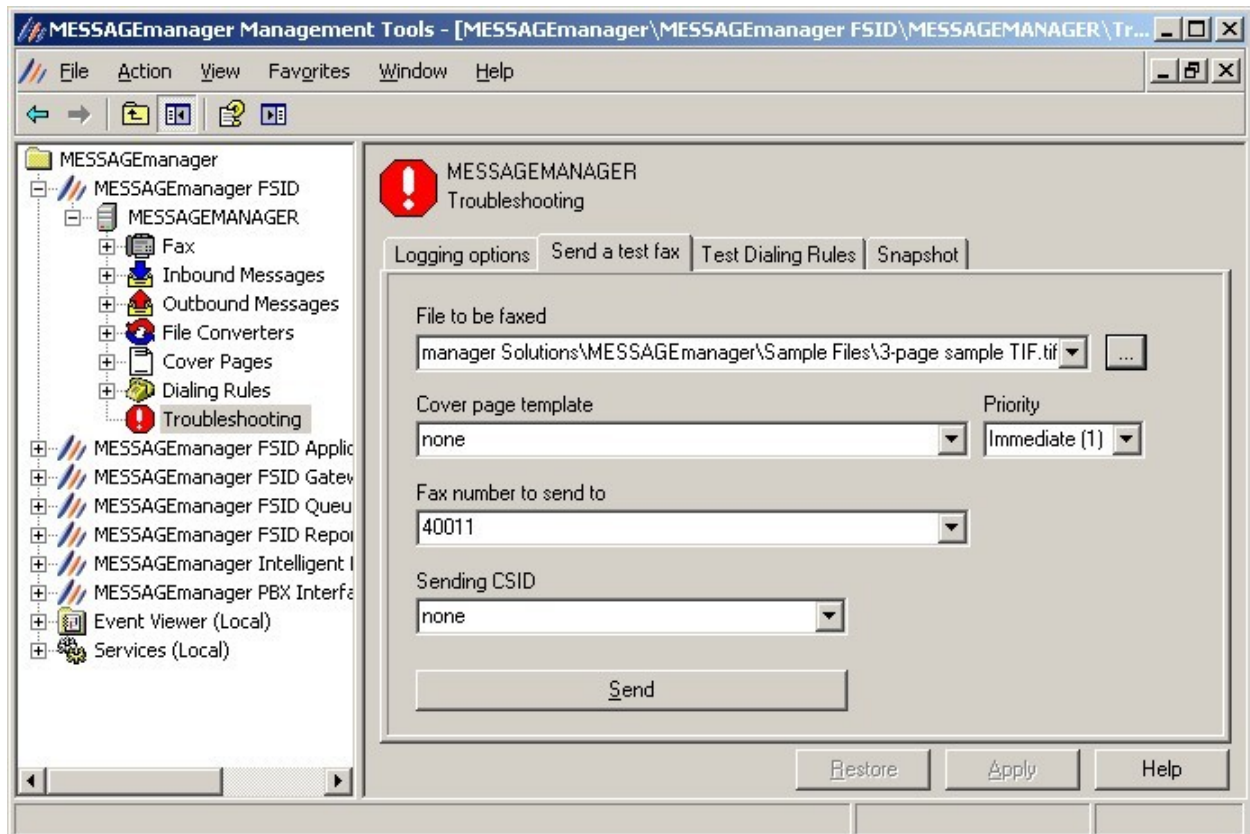
The correct installation and configuration of MESSAGEmanager IP Fax can be verified by performing the following steps shown below. Using the SAT terminal, enter the **status signaling-group n** command, where **n** is the number of the SIP signaling group which connects to Session Manager. Verify that the signaling group status is “in-service”.

```
status signaling-group 3
                        STATUS SIGNALING GROUP

    Group ID: 3
    Group Type: sip

    Group State: in-service
```

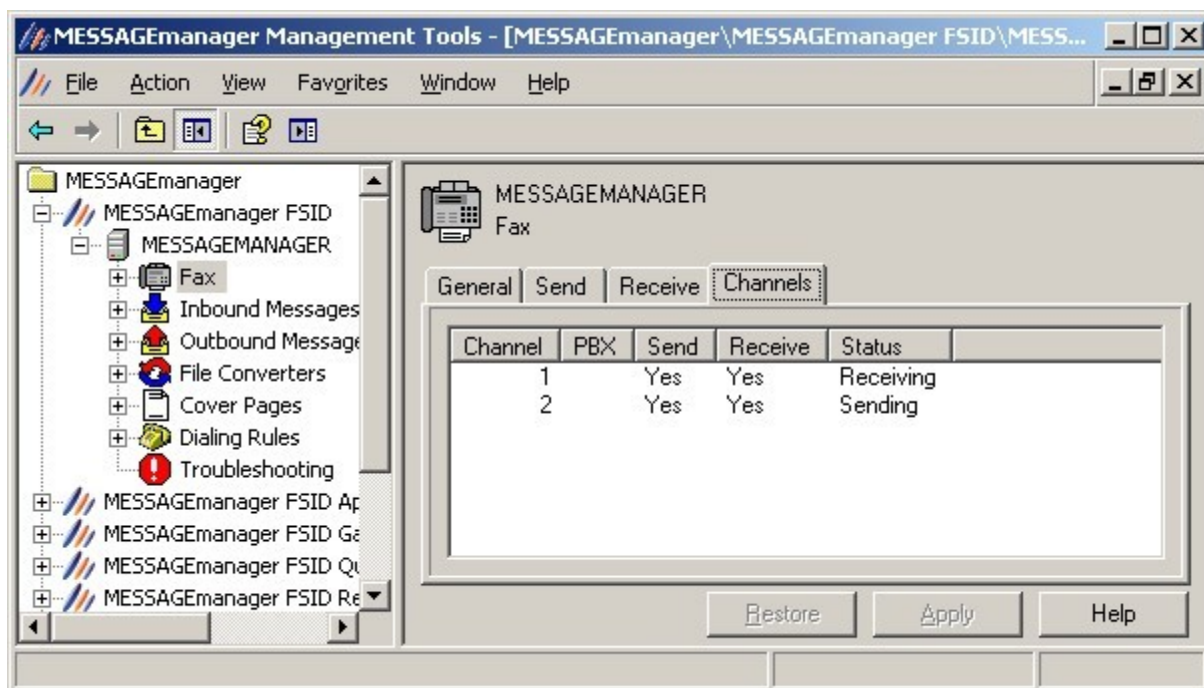
From the MESSAGEmanager IP Fax server, click **Start > All Programs > MESSAGEmanager > MESSAGEmanager Server**. From the MESSAGEmanager Management Tools window, expand **MESSAGEmanager > MESSAGEmanager FSID > MESSAGEMANAGER** (which is the computer name of the server) and select **Troubleshooting**. On the right pane, select the **Send a test fax** tab. Select a sample TIF file from the MESSAGEmanager installed directory, enter the fax number and click **Send**.



From a fax machine, send a fax to MESSAGEmanager IP Fax.



To view the status of the channels, click **Fax** from the left pane and select the **Channels** tab on the right pane as shown below. Verify that the faxes are sent and received correctly from MESSAGEmanager IP Fax.



## 9. Conclusion

These Application Notes describe the compliance testing MESSAGEmanager IP Fax Server Software 10.1 with Avaya Aura® Communication Manager 6.0.1 and Avaya Aura® Session Manager 6.1. The fax functionality of MESSAGEmanager IP Fax was tested. MESSAGEmanager IP Fax passed all of the tests performed.

## 10. References

This section references documentation relevant to these Applications. Avaya product documentation, including the following, is available at <http://support.avaya.com>.

Information regarding MESSAGEmanager IP Fax is available here:

[http://www.mmanager.com/products\\_fax.aspx](http://www.mmanager.com/products_fax.aspx).

- [1] *Installing and Configuring Avaya Aura® Communication Manager*, Doc ID 03-603558, Issue 1.3, Release 6.0.1, December 2010.
- [2] *Administering Avaya Aura® Communication Manager*, Doc ID 03-300509, Release 6.0, June 2010.
- [3] *Administering Avaya Aura® Session Manager*, Doc ID 03-603324, Release 6.1, November 2010.
- [4] *Installing and Configuring Avaya Aura® Session Manager*, Doc ID 03-603473 Release 6.1, April 2011.
- [5] *Maintaining and Troubleshooting Avaya Aura® Session Manager*, Doc ID 03-603325, Release 6.1, March 2011.

---

**©2011 Avaya Inc. All Rights Reserved.**

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at [devconnect@avaya.com](mailto:devconnect@avaya.com).