



Application Notes for MESSAGEmanager IP FAX with Avaya Communication Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for MESSAGEmanager IP FAX to send/receive faxes via Avaya Communication Manager. MESSAGEmanager IP Fax is a software based fax server that sends and receives fax calls over an IP network and runs on Microsoft Windows XP with SP2, Windows 2000 Server with SP4 and Windows 2003 Server with SP1 and later versions. In the configuration described in these Application Notes, MESSAGEmanager IP Fax uses the Dialogic (Brooktrout) SR140 T.38 IP Fax Driver to communicate with Avaya Communication Manager over an H.323 IP trunk. An ISDN-PRI E1 trunk is also used between two Avaya Communication Manager systems.

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 in Singapore with remote access provided for the member.

1. Introduction

These Application Notes describe the configuration steps required for MESSAGEmanager IP FAX to send/receive faxes via Avaya Communication Manager. In the configuration described in these Application Notes, MESSAGEmanager IP Fax uses the Dialogic (Brooktrout) SR140 T.38 IP Fax Driver to communicate with Avaya Communication Manager over an H.323 IP trunk. An ISDN-PRI E1 trunk is also used between two Avaya Communication Manager systems. Fax calls are sent between an analog fax machine and a MESSAGEmanager IP FAX Server. MESSAGEmanager IP Fax sends outbound fax calls over the H.323 IP trunk to Avaya Communication Manager. Avaya Communication Manager then routes the fax calls to either an analog fax machine or to the remote MESSAGEmanager IP FAX Server over an ISDN-PRI E1 trunk. Similarly, for inbound faxes destined for MESSAGEmanager IP FAX Server, Avaya Communication Manager routes the fax calls over the H.323 IP trunk to the MESSAGEmanager IP FAX Server.

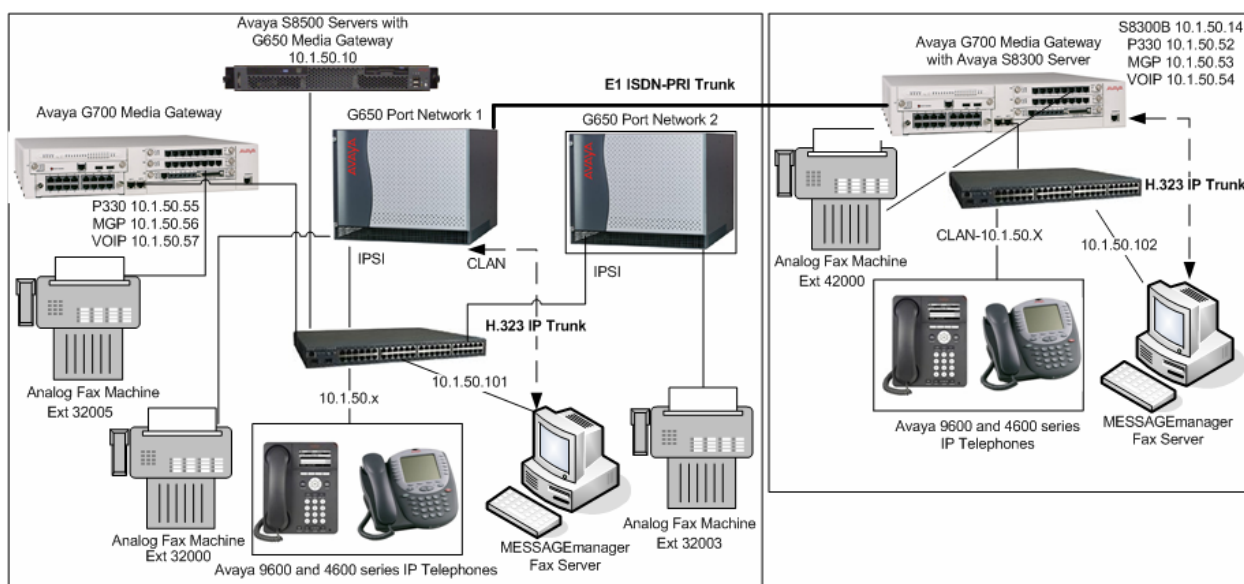


Figure 1: Compliance Test Configuration

Figure 1 displays the network configuration that was utilized for compliance testing. Faxes are sent between the MESSAGEmanager IP FAX Server and the analog fax machine. Also, faxes are sent between two MESSAGEmanager IP FAX Servers across the ISDN-PRI E1 trunk. Although the Avaya 9620 and 4620SW IP Telephones are not involved in the faxing operations, they are present in the configuration to verify VoIP telephone calls are not affected by the faxing operations and vice versa.

2. Equipment and Software Validated

The following equipment and software/firmware were used for the test configuration.

Equipment	Software/Firmware
Avaya S8500C Server	Avaya Communication Manager 5.0, Load 825.4 Service Pack 15348
Avaya G650 Media Gateway <ul style="list-style-type: none"> TN799DP C-LAN Circuit Pack TN2302AP Media Processor Circuit Pack TN793CP 24 Port Analog Board TN2464F DS1 Board 	- HW01 FW026 HW20 FW117 HW09 FW 10 HW05 FW18
Avaya G700 Media Gateway <ul style="list-style-type: none"> S8300B V5 MM711AP 8 Port Analog Module MM710AP DS1 Module MM714AP 8 Port Analog Module 	Avaya Communication Manager 5.0, Load 825.4 Service Pack 15348 Vintage 27.29.0, DSP Vintage 75 HW31 FW088 HW05 FW020 HW42 FW089
Avaya IP telephones: <ul style="list-style-type: none"> 9620 4610SW 	1.5 (H.323) 2.83 (H.323)
MESSAGEmanager IP FAX Server	R2 2007 SP2
Dialogic (Brooktrout) SR140 T.38 IP Fax Driver	¹ Version 5.1.3 FW 2.2 Build 42
Muratec T4800 (used as analog fax machine)	-
Brother MFC-5840CN (used as analog fax machine)	-

¹ Software Version 5.1.3 with FW 3.1.1 Build 84 fixes the TN2602 Medpro board Incoming Fax failure.

3. Configure Avaya Communication Manager

This section provides the procedure for configuring Avaya Communication Manager. These Application Notes cover the configuration of Avaya Communication Manager running on the S8500C Server with Avaya G650 Media Gateway; however similar steps can be taken to configure Avaya Communication Manager running on the Avaya S8300B Server with Avaya G700 Media Gateway. The Avaya System Access Terminal (SAT) was used to issue the commands to Avaya Communication Manager. This configuration covers the following areas:

- Verify Avaya Communication Manager software options.
- Verify network region for IP interfaces.
- Administer IP codec.
- Administer IP network region.
- Administer IP node name.
- Administer H.323 IP trunk.
- Administer signaling group.
- Administer H.323 IP trunk members.

These Application Notes cover the configuration of the H.323 IP trunk between Avaya Communication Manager and MESSAGEmanager IP FAX Server to send/receive fax over the IP network via Avaya Communication Manager. The detailed administration of the dial plan, IP stations, analog stations, ISDN-PRI E1 trunk, and aar/ars routing patterns are assumed to be in place.

3.1. Verify Avaya Communication Manager System Parameters

Use the “display system-parameters customer-options” command and navigate to **Page 2** to verify that **Maximum Administered H.323 Trunks** is greater than the number of **USED H.323 IP trunks**.

display system-parameters customer-options		Page 2 of 10
OPTIONAL FEATURES		
IP PORT CAPACITIES		USED
Maximum Administered H.323 Trunks:	500	2
Maximum Concurrently Registered IP Stations:	2400	0
Maximum Administered Remote Office Trunks:	0	0
Maximum Concurrently Registered Remote Office Stations:	0	0
Maximum Concurrently Registered IP eCons:	10	0
Max Concur Registered Unauthenticated H.323 Stations:	2400	0
Maximum Video Capable Stations:	100	0
Maximum Video Capable IP Softphones:	100	0
Maximum Administered SIP Trunks:	800	40
Maximum Administered Ad-hoc Video Conferencing Ports:	0	0
Maximum Number of DS1 Boards with Echo Cancellation:	10	0
Maximum TN2501 VAL Boards:	10	2
Maximum Media Gateway VAL Sources:	10	0
Maximum TN2602 Boards with 80 VoIP Channels:	128	0
Maximum TN2602 Boards with 320 VoIP Channels:	128	2
Maximum Number of Expanded Meet-me Conference Ports:	0	0
(NOTE: You must logoff & login to effect the permission changes.)		

Navigate to **Page 4**, and verify that the **IP Trunks** field is set to “y”. If not, contact an authorized Avaya account representative to obtain the appropriate license.

```
display system-parameters customer-options                               Page 4 of 10
                                OPTIONAL FEATURES

Emergency Access to Attendant? y                                     IP Stations? y
  Enable 'dadmin' Login? y
  Enhanced Conferencing? y                                           ISDN Feature Plus? n
    Enhanced EC500? y                                               ISDN/SIP Network Call Redirection? n
Enterprise Survivable Server? n                                       ISDN-BRI Trunks? y
  Enterprise Wide Licensing? n                                       ISDN-PRI? y
    ESS Administration? n                                           Local Survivable Processor? n
  Extended Cvg/Fwd Admin? y                                           Malicious Call Trace? y
  External Device Alarm Admin? n                                       Media Encryption Over IP? y
Five Port Networks Max Per MCC? n                                     Mode Code for Centralized Voice Mail? n
  Flexible Billing? n
Forced Entry of Account Codes? n                                       Multifrequency Signaling? y
  Global Call Classification? y                                       Multimedia Call Handling (Basic)? n
    Hospitality (Basic)? y                                           Multimedia Call Handling (Enhanced)? n
  Hospitality (G3V3 Enhancements)? y                                   Multimedia IP SIP Trunking? y
    IP Trunks? y

IP Attendant Consoles? y
(NOTE: You must logoff & login to effect the permission changes.)
```

Use the “display system-parameters special-applications” command and navigate to **Page 4** to verify that **H245 Support With Other Vendors (SA8507)** is turned on. MESSAGEmanager IP FAX Server will not be able to send an outbound fax if this is not enabled even though the trunk and signaling is setup properly.

```
display system-parameters special-applications                         Page 4 of 8
                                SPECIAL APPLICATIONS

(SA8481) - Replace Calling Party Number with ASAI ANI? n
(SA8500) - Expanded UII Display Information? n
(SA8506) - Altura Interoperability (FIPN)? n
(SA8507) - H245 Support With Other Vendors? y
(SA8508) - Multiple Emergency Access Codes? n
(SA8510) - NTT Mapping of ISDN Called-Party Subaddress IE? n
(SA8517) - Authorization Code By COR? n
(SA8518) - Automatic Callback with Called Party Queuing? n
(SA8520) - Hoteling Application for IP Terminals? n
(SA8558) - Increase Automatic MWI & VuStats (S8700 only)? n
(SA8567) - PHS X-Station Mobility over IP? n
(SA8569) - No Service Observing Tone Heard by Agent? n
(SA8573) - Call xfer via ASAI on CAS Main? n
(SA8582) - PSA Location and Display Enhancements? n
(SA8587) - Networked PSA via QSIG Diversion? n
(SA8589) - Background BSR Polling? n
(SA8608) - Increase Crisis Alert Buttons (S8700 only)? n
(SA8621) - SCH Feature Enhancements? n
```

3.2. Verify Network Region for IP Interfaces

Use the “list ip-interface all” command to verify IP network region for C-LAN and MedPro boards. In the example below, the C-LAN and MedPro boards highlighted in bold are used for

testing and assigned to network region 1. Note that the screen below shows that the TN2602 Medpro boards are turned off when testing is being done for TN2302 Medpro boards.

list ip-interface all								Page	1
IP INTERFACES									
ON	Type	Slot	Code	Sfx	Node Name/ IP-Address	Subnet Mask	Gateway Address	Net Rgn	VLAN
--	----	----	----	----	-----	-----	-----	----	----
y	C-LAN	01A02	TN799	D	clan2pub 10.1.50.22	255.255.252.0	10.1.50.1	1	n
y	C-LAN	01A03	TN799	D	clan1pte 10.1.50.21	255.255.252.0	10.1.50.1	1	n
n	MEDPRO	01A07	TN2302		medpro2pub 10.1.50.32	255.255.252.0	10.1.50.1	2	n
y	MEDPRO	01A08	TN2302		medpro1pte 10.1.50.31	255.255.252.0	10.1.50.1	1	n
y	VAL	01A11	TN2501		val1 10.1.50.41	255.255.252.0	10.1.50.1		n
n	MEDPRO	01A09	TN2602		xfirepte 10.1.50.33	255.255.252.0	10.1.50.1	1	n
y	PROCR				10.1.50.10	255.255.252.0	10.1.50.1	1	

press CANCEL to quit -- press NEXT PAGE to continue

list ip-interface all										Page	2
IP INTERFACES											
ON Type	Slot	Code Sfx	Node Name/ IP-Address	Subnet Mask	Gateway Address	Net Rgn	VLAN				
y C-LAN	02A02	TN799	D clan2a02 10.1.50.23	255.255.252.0	10.1.50.1	1	n				
n MEDPRO	02A13	TN2602	xfire2a13 10.1.50.34	255.255.252.0	10.1.50.1	1	n				
y MEDPRO	02A14	TN2302	medpro2a14 10.1.50.35	255.255.252.0	10.1.50.1	1	n				

3.3. Administer IP Codec

Use the “change ip-codec-set n” command, where “n” is the valid codec set number, “2”. Navigate to **Page 2**, and set the **Mode** for **FAX** to “t.38-standard”. Submit this change.

```

change ip-codec-set 2
                                     Page      2 of      2

                                IP Codec Set

                                Allow Direct-IP Multimedia? n


                                Mode                Redundancy
                                FAX                t.38-standard      0
                                Modem              off              0
                                TDD/TTY            off              3
                                Clear-channel       n               0

```


3.4. Administer IP Network Region

Use the “change ip-network-region n” command, where “n” is a valid network region number. On **Page 1**, set the **Codec Set** field to the IP codec set number administered in **Section 3.3**, “2”.

change ip-network-region 2		Page 1 of 19
IP NETWORK REGION		
Region: 1		
Location:	Authoritative Domain:	
Name:		
MEDIA PARAMETERS		Intra-region IP-IP Direct Audio: yes
Codec Set: 2	Inter-region IP-IP Direct Audio: yes	
UDP Port Min: 2048	IP Audio Hairpinning? y	
UDP Port Max: 3029		
DIFFSERV/TOS PARAMETERS		RTCP Reporting Enabled? y
Call Control PHB Value: 34	RTCP MONITOR SERVER PARAMETERS	
Audio PHB Value: 46	Use Default Server Parameters? y	
Video PHB Value: 26		
802.1P/Q PARAMETERS		
Call Control 802.1p Priority: 7		
Audio 802.1p Priority: 6		
Video 802.1p Priority: 5	AUDIO RESOURCE RESERVATION PARAMETERS	
H.323 IP ENDPOINTS		RSVP Enabled? n
H.323 Link Bounce Recovery? y		
Idle Traffic Interval (sec): 20		
Keep-Alive Interval (sec): 5		
Keep-Alive Count: 5		

Navigate to **Page 3**, find the row(s) where **dst rgn** is the network region(s) assigned to the C-LAN and MedPro boards. In the codec set column, enter the number of the IP codec set configured in **Section 3.3**. Submit these changes.

change ip-network-region 2		Page 3 of 19									
Inter Network Region Connection Management											
src rgn	dst rgn	codec set	direct	WAN-BW-limits	Video				Dyn		
rgn	rgn	set	WAN	Units	Total Norm	Prio	Shr	Intervening-regions	CAC	IGAR	
2	1	2	y	NoLimit						n	
2	2	2									
2	3										
2	4										

3.5. Administer IP Node Name

Use the “change node-names ip” command to add a node name entry for MESSAGEmanager IP FAX Server as shown below. Submit this change.

- **Name:** Enter a descriptive node name.
- **IP Address:** Enter the IP address of MESSAGEmanager IP FAX Server.

change node-names ip		Page 1 of 2
IP NODE NAMES		
Name	IP Address	
abacus-h323-trk	10.1.50.27	
clanlpte	10.1.50.21	
clan2a02	10.1.50.23	
clan2pub	10.1.50.22	
default	0.0.0.0	
medprolpte	10.1.50.31	
medpro2a14	10.1.50.35	
medpro2pub	10.1.50.32	
procr	10.1.50.10	
s8300procr	10.1.60.10	
sesedge	10.1.50.69	
seshome1	10.1.50.61	
seshome2	10.1.50.62	
seshome3	10.1.50.63	
seshome4	10.1.50.64	
sr140	10.1.50.101	

3.6. Administer H.323 IP Trunk

Trunk group 19 is created for the H.323 IP Trunk for connection to the MESSAGEmanager IP FAX Server. Below shows the administered forms with the entered values in the following fields other than the default.

- **Group Type:** Set to “isdn”.
- **Group Name:** Enter a descriptive name.
- **TAC:** Enter a Trunk Access Code that is valid under the provisioned dial plan.
- **Carrier Medium:** Set to “H.323”.
- **Service Type:** Set to “tie”.

display trunk-group 19		Page 1 of 21
TRUNK GROUP		
Group Number: 19	Group Type: isdn	CDR Reports: y
Group Name: Tie to SR140	COR: 995	TN: 1 TAC: #19
Direction: two-way	Outgoing Display? n	Carrier Medium: H.323
Dial Access? y	Busy Threshold: 255	Night Service:
Queue Length: 0		
Service Type: tie	Auth Code? n	
	Member Assignment Method: manual	

3.7. Administer Signaling Group

Signaling group 19 is shown below. The following values are entered other than the default.

- **Group Type:** Set to “h.323”.
- **Trunk Group for Channel Selection:** Enter the number of the trunk group administered in Section 3.6, “19”.
- **Near-end Node Name:** Enter the node name of the C-LAN board, “clan1pte”. In the case of S8300 Media Server, “procr” is used.
- **Far-end Node Name:** Enter the node name for the Dialogic (Brooktrout) SR140 administered in Section 3.5, “sr140”.
- **Far-end Listen Port:** Enter “1720”.
- **Far-end Network Region:** Enter the number of the IP network region administered in Section 3.4, “2”.
- **Direct IP-IP Audio Connections:** Enter “n”.

display signaling-group 19		Page 1 of 5	
SIGNALING GROUP			
Group Number: 19	Group Type: h.323		
	Remote Office? n	Max number of NCA TSC: 0	
	SBS? n	Max number of CA TSC: 0	
IP Video? n	Trunk Group for NCA TSC:		
Trunk Group for Channel Selection: 19			
TSC Supplementary Service Protocol: a			
T303 Timer(sec): 10			
Near-end Node Name: clan1pte		Far-end Node Name: sr140	
Near-end Listen Port: 1720		Far-end Listen Port: 1720	
		Far-end Network Region: 2	
LRQ Required? n	Calls Share IP Signaling Connection? n		
RRQ Required? n	H245 Control Addr On FACility? n		
Media Encryption? n	Bypass If IP Threshold Exceeded? n		
	H.235 Annex H Required? n		
DTMF over IP: out-of-band	Direct IP-IP Audio Connections? n		
Link Loss Delay Timer(sec): 90	IP Audio Hairpinning? n		
Enable Layer 3 Test? n	Interworking Message: PROGRESS		
	DCP/Analog Bearer Capability: 3.1kHz		

3.8. Administer H.323 IP Trunk Members

Below shows the 2 members of the trunk group administered for the trunk group created in **Section 3.6**. The **Sig Grp** number of the signaling group administered in **Section 3.7** is entered .

display trunk-group 19				Page	5 of	21
TRUNK GROUP						
				Administered Members (min/max):	1/2	
GROUP MEMBER ASSIGNMENTS				Total Administered Members:	2	
Port	Name	Night	Sig Grp			
1: T00026			19			
2: T00027			19			
3:						

Verify that the number of trunk members matches the number of channels supported on the MESSAGEmanager IP FAX Server. The number of channels supported in the T.38 IP Fax driver is controlled via Dialogic (Brooktrout) license file.

4. Administer MESSAGEmanager IP FAX SERVER

This section describes the steps for configuring the MESSAGEmanager IP FAX Server and Dialogic (Brooktrout) SR140 IP Fax Driver. This configuration covers the following areas:

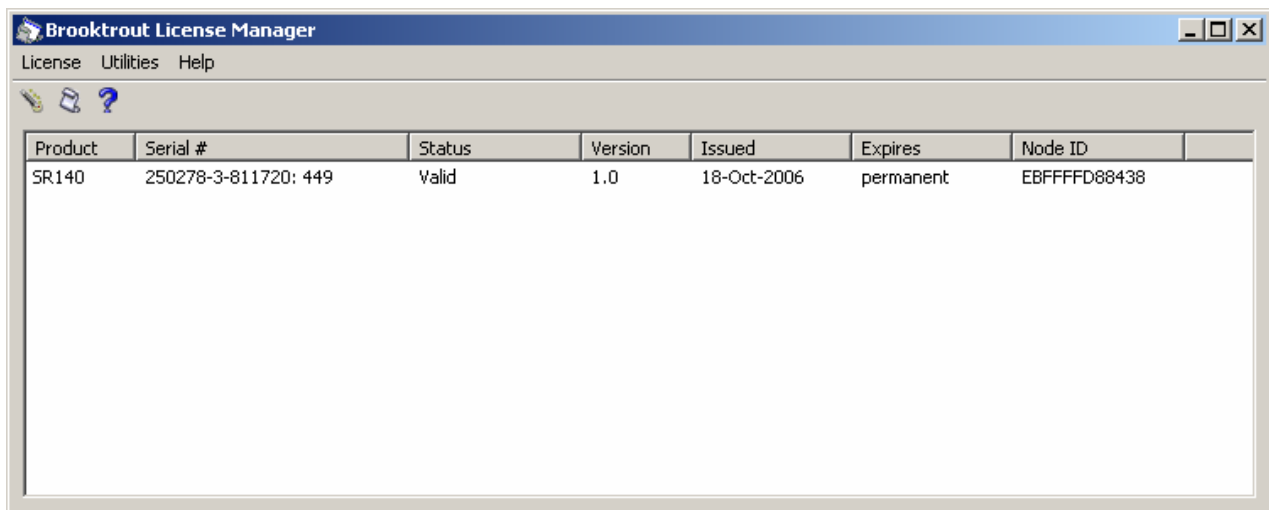
- Install and administer the SR140 T.38 IP Fax Driver.
- Install SQL EXPRESS database.
- Install MESSAGEmanager Server.

4.1 Install and Administer SR140 T.38 IP Fax Driver

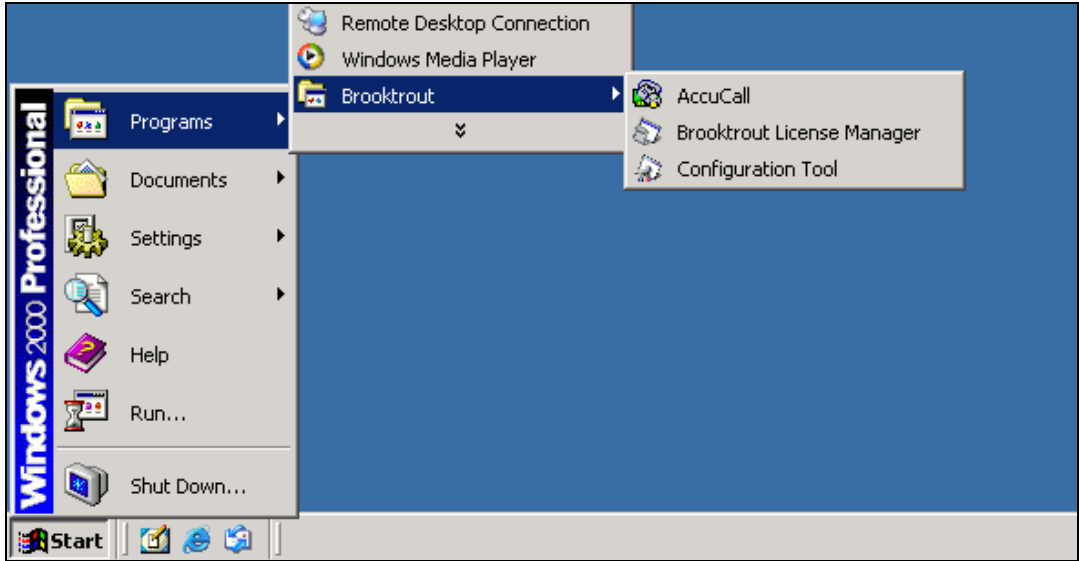
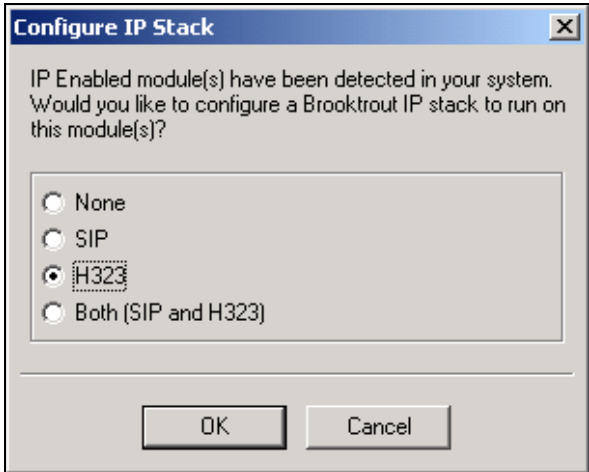
The SR140 T.38 IP Fax Driver can be obtained from the MESSAGEmanager DVD. Installation instructions can be found in the *MESSAGEmanager Installation Guide* available on the MESSAGEmanager website (see **Section 9**).

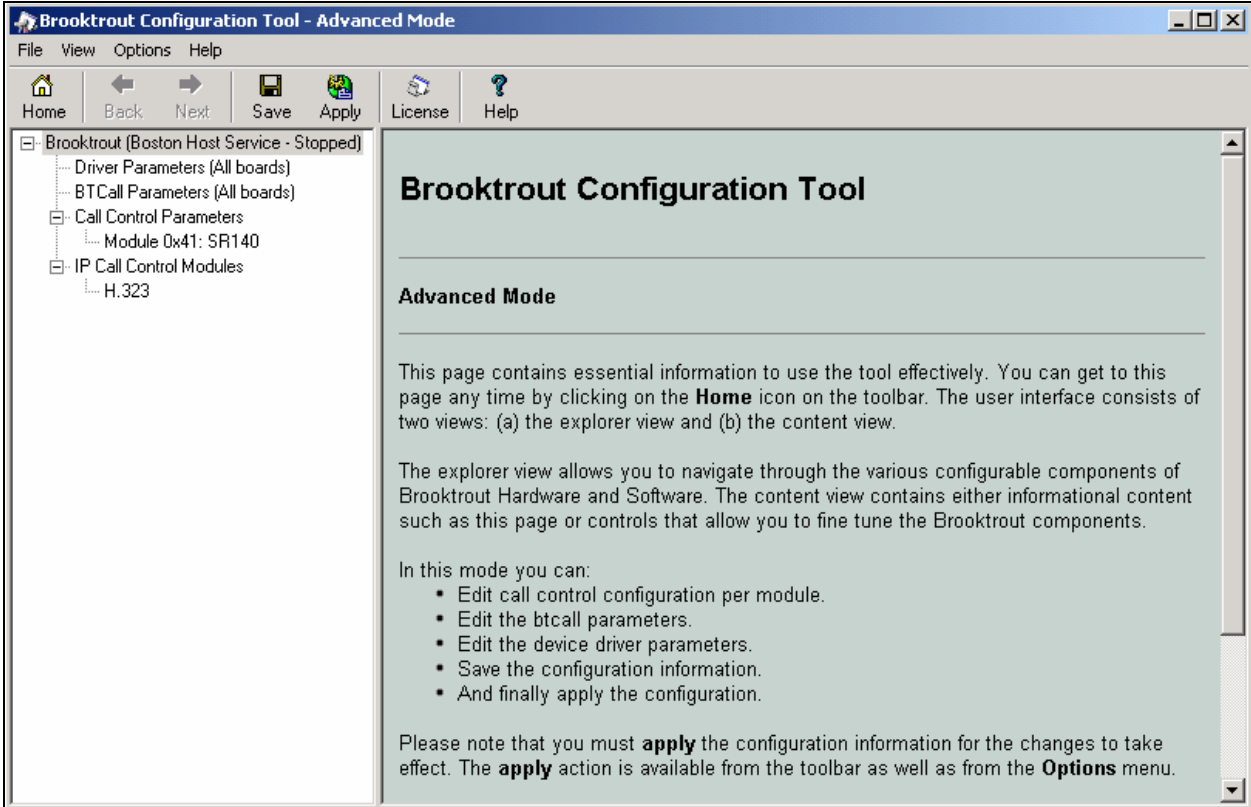
Dialogic provides a certificate which contains an SR140 license key. When the system is installed, this license key needs to be activated with Dialogic's database. Activation is either via a direct connection to the internet with port 8080, access to Dialogic's web site, email or with the assistance of MESSAGEmanager Technical Support.

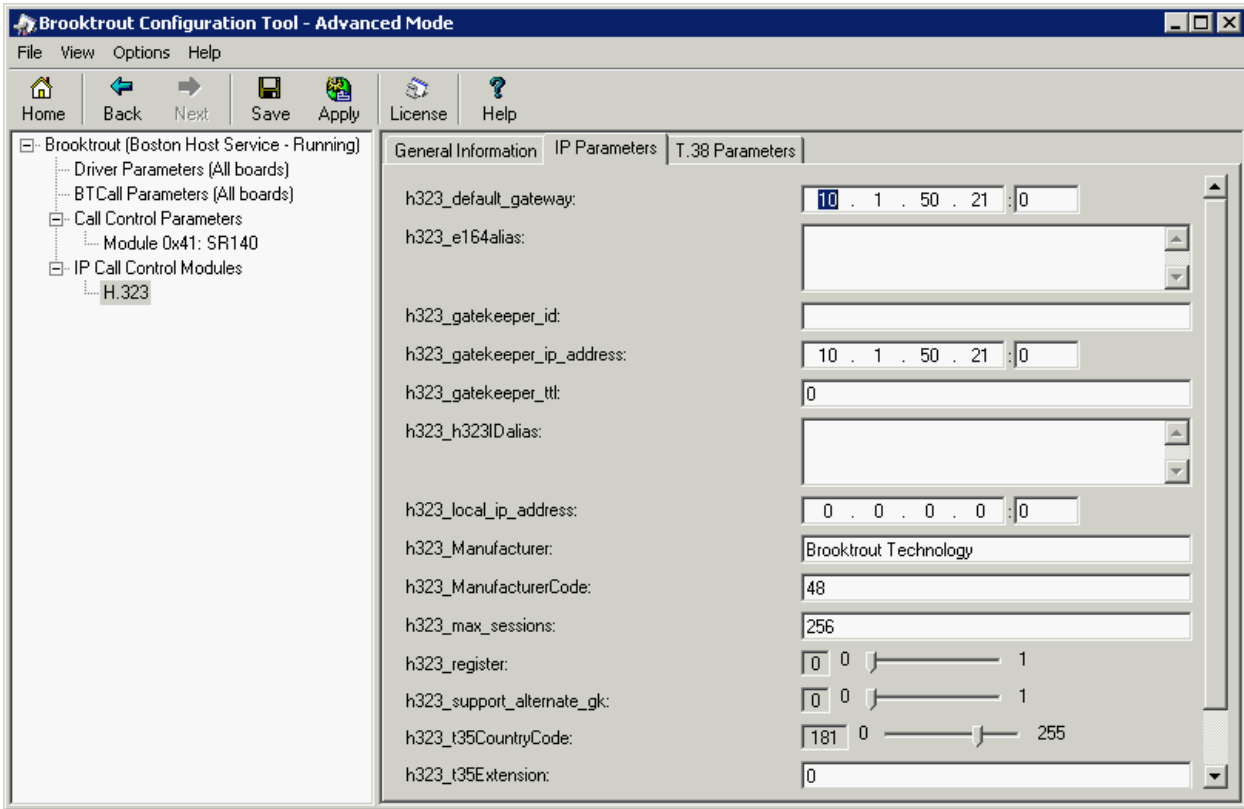
If the license is installed, navigate to **Start → Programs → Brooktrout → Brooktrout License Manager** and the following screen will show.



Having installed the software and license, the T.38 IP FAX driver can be configured.

Steps	Descriptions
1.	<p>On the MESSAGEmanager IP FAX Server, navigate to Start → Programs → Brooktrout and select Configuration Tool.</p>  <p>The screenshot shows the Windows 2000 Professional Start menu. The 'Programs' menu item is selected, and the 'Brooktrout' sub-menu is open. The 'Configuration Tool' option is visible at the bottom of the Brooktrout sub-menu.</p>
2.	<p>The Configure IP Stack window appears. Select the H323 radio button to enable the IP module for H323 call control. Click OK.</p>  <p>The screenshot shows the 'Configure IP Stack' dialog box. The text inside reads: 'IP Enabled module(s) have been detected in your system. Would you like to configure a Brooktrout IP stack to run on this module(s)?'. There are four radio buttons: 'None', 'SIP', 'H323', and 'Both (SIP and H323)'. The 'H323' radio button is selected. At the bottom are 'OK' and 'Cancel' buttons.</p>

Steps	Descriptions
3.	<p>The Brooktrout Configuration Tool – Advance Mode window appears.</p>  <p>Brooktrout Configuration Tool</p> <p>Advanced Mode</p> <p>This page contains essential information to use the tool effectively. You can get to this page any time by clicking on the Home icon on the toolbar. The user interface consists of two views: (a) the explorer view and (b) the content view.</p> <p>The explorer view allows you to navigate through the various configurable components of Brooktrout Hardware and Software. The content view contains either informational content such as this page or controls that allow you to fine tune the Brooktrout components.</p> <p>In this mode you can:</p> <ul style="list-style-type: none"> • Edit call control configuration per module. • Edit the btcall parameters. • Edit the device driver parameters. • Save the configuration information. • And finally apply the configuration. <p>Please note that you must apply the configuration information for the changes to take effect. The apply action is available from the toolbar as well as from the Options menu.</p>

Steps	Descriptions
4.	<p>From the menu tree in the left pane, navigate to Brooktrout → IP Call Control Modules → H.323, to set the H.323 parameters. The configuration used for the MESSAGEmanager IP FAX Server is shown below. In this case, the C-LAN IP address of the G650 Media Gateway in port network 1 is specified as the IP address for the h323_default_gateway and the h323_gatekeeper_ip_address. If the h323_default_gateway port is set to port “0”, the SR140 will listen on port 1720. Thus, “1720” must be entered in the Far-end Listen Port field in Avaya Communication Manager in Section 3.7. Similarly, if the h323_gatekeeper_ip_address port is set to port “0”, the SR140 uses port 1719 for call control.</p>  <p>The screenshot shows the Brooktrout Configuration Tool in Advanced Mode. The left pane displays a tree structure with 'Brooktrout (Boston Host Service - Running)' expanded, showing 'Driver Parameters (All boards)', 'BTCall Parameters (All boards)', 'Call Control Parameters', 'Module 0x41: SR140', 'IP Call Control Modules', and 'H.323'. The right pane shows the 'H.323' configuration tab with the following parameters:</p> <ul style="list-style-type: none"> h323_default_gateway: 10 . 1 . 50 . 21 : 0 h323_e164alias: [Empty field] h323_gatekeeper_id: [Empty field] h323_gatekeeper_ip_address: 10 . 1 . 50 . 21 : 0 h323_gatekeeper_ttl: 0 h323_h323IDalias: [Empty field] h323_local_ip_address: 0 . 0 . 0 . 0 : 0 h323_Manufacturer: Brooktrout Technology h323_ManufacturerCode: 48 h323_max_sessions: 256 h323_register: [Slider from 0 to 1, set to 0] h323_support_alternate_gk: [Slider from 0 to 1, set to 0] h323_t35CountryCode: 181 0 [Slider from 0 to 255] h323_t35Extension: 0

4.2 Install SQL Express

MESSAGEmanager requires a SQL database to store data.

FSIDArchive - Archived inbound and outbound fax, SMS and email messages. Details of the message transmission/reception are stored, along with an optional copy of the actual file sent/received.

MESSAGEmanager defaults to Microsoft SQL Express (with a 4 GB capacity). A full version of Microsoft SQL can be used – either on the same machine or remotely.

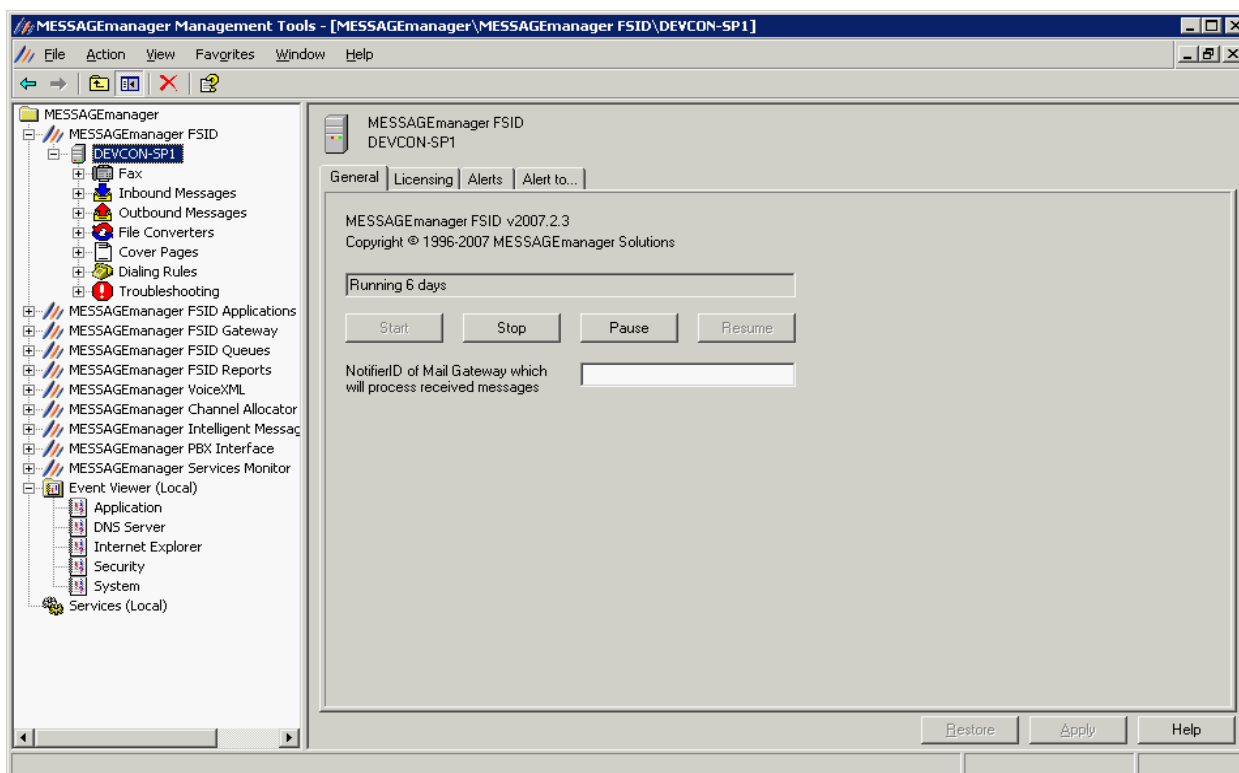
Before MESSAGEmanager can be installed, the database software must first be installed. An install kit for SQL Express is supplied and can be run from the MESSAGEmanager Auto Run screen. Installation instructions can be found in the *MESSAGEmanager Installation Guide* available on MESSAGEmanager website (see **Section 9**).

4.3 Install MESSAGEmanager

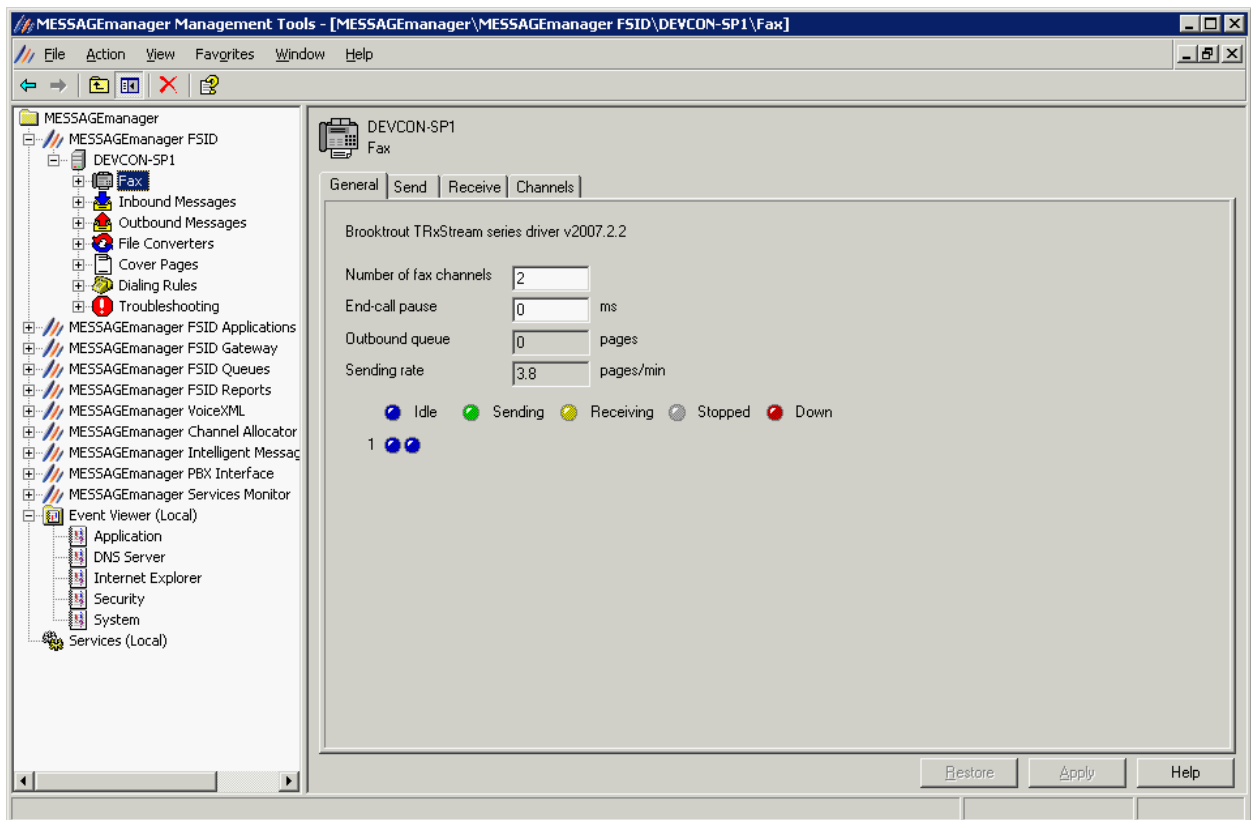
Once the SQL database has been installed and the appropriate account created, MESSAGEmanager can be installed. There are a number of components that can be installed as part of the MESSAGEmanager installation. Installation instructions can be found in the *MESSAGEmanager Installation Guide* available on the MESSAGEmanager website (see **Section 9**).

After installation, select MESSAGEmanager Management Tools from the desktop or from **All Programs Group → MESSAGEmanager → MESSAGEmanager Server** to launch MMC with the ManagementTools.msc document.

Start the MESSAGEmanager FSID service if it is not already started using the Services applet. Use the menu tree in the left pane to locate the server name under MESSAGEmanager FSID. Double-click the server name to display the server status. Click on the **Start** button to start the service.



The Fax component displays fax status information and configures fax send, fax receive and channel details (no. of channels and whether send and/or receive). Send options include send CSID, page headers, call batching and retry intervals. Receive options include routing configuration, print options and conversion to Searchable PDF.



5. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. Feature testing focused on verifying that MESSAGEmanager IP FAX Server can send/receive faxes through Avaya Communication Manager over an H.323 IP trunk. Performance testing focused on continuously sending/receiving faxes to and from MESSAGEmanager IP FAX Server. Serviceability testing focused on verifying that the MESSAGEmanager IP FAX Server can resume faxing after failure recovery.

5.1. General Test Approach

The general approach was to use the MESSAGEmanager IP FAX Server to send/receive faxes of varying page lengths, encodings, and resolutions to and from an analog fax machine and another MESSAGEmanager IP FAX Server. For performance testing, 100 2-page faxes were continuously sent to and from MESSAGEmanager. Serviceability testing included rainy day scenarios such as disconnecting the cabling to the fax server, making resources busy, sending to non-fax destinations, IP signaling and trunk group busyouts, board resets, Avaya Communication Manager resets, and MESSAGEmanager server resets. Inter-port network faxing was also tested with different Avaya Media Processors namely TN2302AP, TN2602AP and the motherboard VOIP engine of G700 Media Gateway.

5.2. Test Results

- All feature and serviceability test cases were completed successfully except for shuffling. This feature needs to be turned off as it is not supported by the Brooktrout T.38 IP Fax driver.
- Outbound T.38 Fax calls from the MESSAGEmanager server were initially found to drop due to a compatibility issue with the TN2602AP Media Processor board. This was resolved with a fix from Brooktrout on the new firmware 3.1.1 (See *Footnote* in **Page 3, Section 2**).

6. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Communication Manager and MESSAGEmanager Server.

6.1. Verify Avaya Communication Manager

Verify the status of the signaling group using the “status signaling-group n” command, where “n” is the **signaling-group** number administered in **Section 3.7**. Verify that the **Group State** is “in-service”.

```
status signaling-group 19
                        STATUS SIGNALING GROUP

      Group ID: 19                      Active NCA-TSC Count: 0
      Group Type: h.323                  Active CA-TSC Count: 0
      Signaling Type: facility associated signaling
      Group State: in-service
```

Verify the status of the H.323 IP trunk using the “status trunk-group n” command, where “n” is the **trunk-group** number administered in **Section 3.6**. Verify that the **Service State** is “in-service/idle”.

```
status trunk 19
                        TRUNK GROUP STATUS

Member   Port      Service State      Mtce Connected Ports
                        Busy
0019/001 T00026    in-service/idle    no
0019/002 T00027    in-service/idle    no
```

6.2. Verify MESSAGEmanager

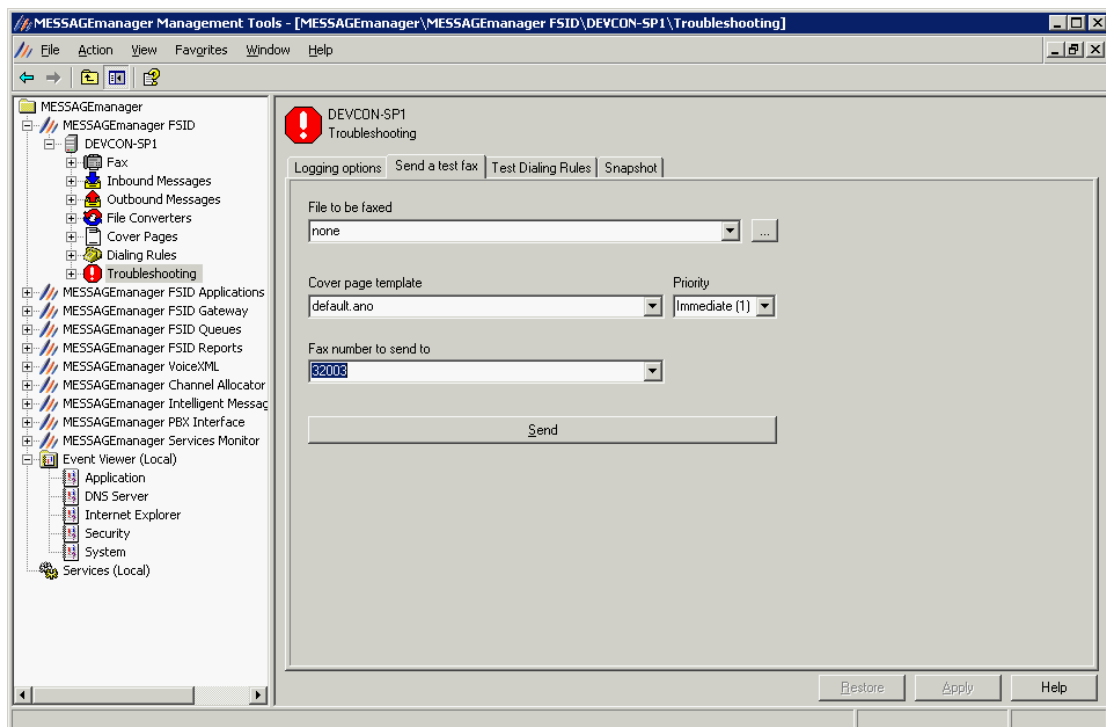
The following steps can be used to verify the configuration of MESSAGEmanager IP FAX Server.

- From the MESSAGEmanager Server, ping the appropriate Avaya G650 Media Gateway C-LAN and MedPro boards to verify connectivity.
- Verify that faxes may be successfully completed to and from the MESSAGEmanager Server by using MMC Management Tools to send a troubleshooting fax outbound and use a fax machine to send an inbound fax to MESSAGEmanager.

- To test that faxes can be sent and received, perform the following:

- Open MESSAGEmanager Management Tools.
- Select **MESSAGEmanager FSID**.
- Select **Server Name**.
- Select **Troubleshooting**.
- Select **Send a test fax** tab.
- Enter a file name to be faxed, if required. A selection of sample files is located in *MESSAGEmanager Solutions\MESSAGEmanager\Sample Files* directory.
- Select default.ano from the Cover page template drop down list.
- Enter a valid fax number.
- Click on **Send** to submit message.

- Assuming the fax is sent successfully; repeat the test in the opposite direction by sending a fax to MESSAGEmanager from an analog fax machine.



7. Support

Technical support on MESSAGEmanager can be obtained through the following:

- **Web:** <http://www.mmanager.com/support/helpdesk.htm>
- **Phone:** Main Location (Australia/New Zealand) – +61 2 8448 8870
United States – Freecall 1877 8841 664
United Kingdom - Freecall 0800 169 8226
- **Email:** helpdesk@mmanager.com

8. Conclusion

These Application Notes describe the procedures for configuring the MESSAGEmanager IP Fax with Dialogic (Brooktrout) SR140 T.38 IP Fax Driver to send/receive faxes through Avaya Communication Manager. MESSAGEmanager IP Fax is a software based fax server that sends and receives faxes over an IP network and runs on Microsoft Windows XP with SP2, Windows 2000 Server with SP4 and Windows 2003 Server with SP1 and later versions.

9. Reference

Product documentation for Avaya products may be found at <http://support.avaya.com>.

- *Administrator Guide for Avaya Communication Manager*, Issue 4.0, Release 5.0, Jan 2008, Document 03-300509
- *Administration for Network Connectivity for Avaya Communication Manager*, Issue 13, Jan 2008, Document 555-233-504

The following documents referenced below are found on MESSAGEmanager website.

<http://www.mmanager.com/>

- *MESSAGEmanager Prerequisites*
- *MESSAGEmanager FSID Administrator Guide*
- *MESSAGEmanager Installation Guide*

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