

# **Application Notes for the Interstar XMediusFAX Enterprise Edition Fax Server with Avaya Communication Manager – Issue 1.0**

## **Abstract**

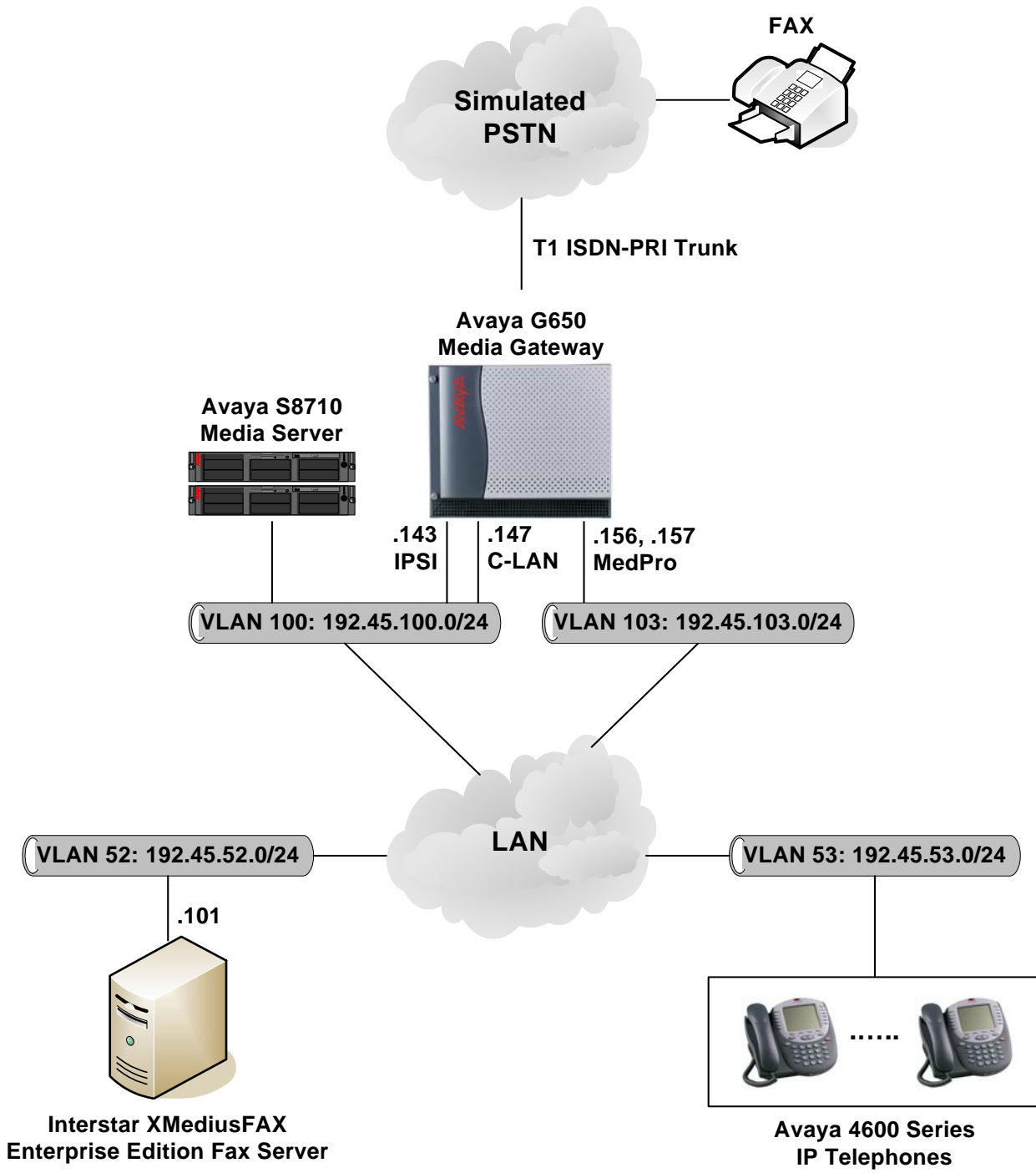
These Application Notes describe the procedures for configuring the Interstar XMediusFAX Enterprise Edition T.38 fax server to send/receive faxes to/from the PSTN through Avaya Communication Manager. XMediusFAX is a software application that runs on Microsoft Windows 2000 and 2003 platforms, and sends and receives faxes over the IP network. In the configuration described in these Application Notes, XMediusFAX communicates with Avaya Communication Manager via an H.323 IP trunk, and Avaya Communication Manager in turn is connected to the PSTN via an ISDN-PRI trunk. Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

# 1. Introduction

These Application Notes describe a compliance-tested configuration comprised of Avaya Communication Manager 3.1 and the Interstar XMediusFAX 4.2 Enterprise Edition fax server. XMediusFAX is a software application that runs on Microsoft Windows 2000 and 2003 platforms, and sends and receives faxes over the IP network.

XMediusFAX connects to Avaya Communication Manager over an H.323 IP trunk, and Avaya Communication Manager in turn connects to the PSTN. For outbound faxes to the PSTN, XMediusFAX sends fax calls over the H.323 IP trunk to Avaya Communication Manager, and Avaya Communication Manager routes the fax calls to one or more PSTN trunks. Similarly, for inbound faxes from the PSTN destined for XMediusFAX, Avaya Communication Manager routes the fax calls over the H.323 IP trunk to XMediusFAX.

**Figure 1** illustrates a sample configuration consisting of a pair of redundant Avaya S8710 Media Servers, an Avaya G650 Media Gateway, Avaya 4600 Series IP Telephones, an Interstar XMediusFAX Enterprise Edition fax server, and a fax machine in the simulated PSTN. Avaya Communication Manager runs on the active S8710 Media Server. The solution described herein is also extensible to other Avaya Media Servers and Media Gateways. Faxes are sent between the XMediusFAX fax server and the PSTN fax machine. The Avaya 4600 Series IP Telephones are not involved in the faxing operations, but are present to verify that VoIP telephone calls are not affected by the faxing operations and vice versa.



**Figure 1: Sample Configuration.**

## 2. Equipment and Software Validated

The following equipment and software/firmware were used for the sample configuration provided. In particular, note that the versions listed for the TN2302AP IP Media Processor board and the XMediusFAX Enterprise Edition Fax Server software are the minimum required versions for the compliance tested solution.

Equipment	Software/Firmware						
Avaya S8710 Media Server	Avaya Communication Manager 3.1 (R013x.01.0.628.6)						
Avaya G650 Media Gateway	-						
<table border="1" data-bbox="256 611 873 762"> <tr> <td data-bbox="256 611 873 646">TN2312BP IP Server Interface</td> <td data-bbox="873 611 1385 646">HW12 FW30</td> </tr> <tr> <td data-bbox="256 646 873 682">TN799DP C-LAN Interface</td> <td data-bbox="873 646 1385 682">HW1 FW17</td> </tr> <tr> <td data-bbox="256 682 873 762">TN2302AP IP Media Processor</td> <td data-bbox="873 682 1385 762">HW11 FW111 HW20 FW111</td> </tr> </table>	TN2312BP IP Server Interface	HW12 FW30	TN799DP C-LAN Interface	HW1 FW17	TN2302AP IP Media Processor	HW11 FW111 HW20 FW111	
TN2312BP IP Server Interface	HW12 FW30						
TN799DP C-LAN Interface	HW1 FW17						
TN2302AP IP Media Processor	HW11 FW111 HW20 FW111						
Avaya 4600 Series IP Telephones	2.3 (4602SW) 2.3 (4610SW) 2.3 (4620SW) 2.5 (4625SW)						
Interstar XMediusFAX Enterprise Edition Fax Server	4.2.0.103						
HP PSC 2410 Photosmart All-in-One (used as PSTN fax machine)	-						

### 3. Configure Avaya Communication Manager

This section describes the steps for configuring IP codec sets, IP networks regions, and the H.323 IP trunk between Avaya Communication Manager and the Interstar XMediusFAX Enterprise Edition fax server.

#### 3.1. IP Codec Sets and IP Network Regions

Step	Description																																				
1.	<p>Enter the <b>change ip-codec-set i</b> command, where i is a number between 1 and 7, inclusive. On Page 1 of the <b>ip-codec-set</b> form, enter “<b>G711MU</b>” for <b>Audio Codec</b>.</p> <pre>change ip-codec-set 7 <span style="float:right">Page 1 of 2</span></pre> <p style="text-align:center">IP Codec Set</p> <p>Codec Set: 7</p> <table border="0" style="width:100%"> <tr> <td style="width:15%"><b>Audio Codec</b></td> <td style="width:25%">Silence</td> <td style="width:15%">Frames</td> <td style="width:45%">Packet</td> </tr> <tr> <td></td> <td>Suppression</td> <td>Per Pkt</td> <td>Size(ms)</td> </tr> <tr> <td>1: <b>G.711MU</b></td> <td>n</td> <td>2</td> <td>20</td> </tr> <tr> <td>2:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>7:</td> <td></td> <td></td> <td></td> </tr> </table>	<b>Audio Codec</b>	Silence	Frames	Packet		Suppression	Per Pkt	Size(ms)	1: <b>G.711MU</b>	n	2	20	2:				3:				4:				5:				6:				7:			
<b>Audio Codec</b>	Silence	Frames	Packet																																		
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6:																																					
7:																																					
	<p>On Page 2 of the <b>ip-codec-set</b> form, set <b>FAX Mode</b> to “<b>t.38-standard</b>”.</p> <pre>change ip-codec-set 7 <span style="float:right">Page 2 of 2</span></pre> <p style="text-align:center">IP Codec Set</p> <p style="text-align:center">Allow Direct-IP Multimedia? n</p> <table border="0" style="width:100%"> <tr> <td style="width:35%"></td> <td style="width:35%"><b>Mode</b></td> <td style="width:30%">Redundancy</td> </tr> <tr> <td><b>FAX</b></td> <td><b>t.38-standard</b></td> <td>0</td> </tr> <tr> <td>Modem</td> <td>off</td> <td>0</td> </tr> <tr> <td>TDD/TTY</td> <td>US</td> <td>3</td> </tr> <tr> <td>Clear-channel</td> <td>n</td> <td>0</td> </tr> </table>		<b>Mode</b>	Redundancy	<b>FAX</b>	<b>t.38-standard</b>	0	Modem	off	0	TDD/TTY	US	3	Clear-channel	n	0																					
	<b>Mode</b>	Redundancy																																			
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Modem	off	0																																			
TDD/TTY	US	3																																			
Clear-channel	n	0																																			

Step	Description
2.	<p>Enter the <b>change ip-network-region j</b> command, where j is an unused IP network region number. On Page 1 of the <b>ip-network-region</b> form, set <b>Codec Set</b> to the number of the codec set configured in Step 1. In Section 3.2, the XMediusFAX fax server will be assigned to this IP network region (IP network region 7 in the example below).</p> <pre> change ip-network-region 7                                     Page 1 of 19                                      IP NETWORK REGION Region: 7 Location:                Authoritative Domain: Name: MEDIA PARAMETERS                               Intra-region IP-IP Direct Audio: yes   Codec Set: 7                               Inter-region IP-IP Direct Audio: yes   UDP Port Min: 2048                             IP Audio Hairpinning? y   UDP Port Max: 3028 DIFFSERV/TOS PARAMETERS                          RTCP Reporting Enabled? y   Call Control PHB Value: 46                    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: 6   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 </pre>

### 3.2. H.323 IP Trunk

The steps in this section create an H.323 IP trunk group that contains H.323 IP trunks to the XMediusFAX fax server. This section assumes that a C-LAN board and at least one MedPro board has been configured and is available for use by the H.323 IP trunk group. Refer to [1] and [2] for guidance on configuring C-LAN and MedPro boards.

Step	Description
1.	<p>Enter the <b>display system-parameters customer-options</b> command. On Page 4 of the <b>system-parameters customer-options</b> form, verify that <b>IP Trunks</b> is set to “y”. If not, contact an authorized Avaya account representative to obtain the license.</p> <pre> display system-parameters customer-options                               Page 4 of 10                                 OPTIONAL FEATURES  Emergency Access to Attendant? y                                     IP Stations? y   Enable 'dadmin' Login? y   Internet Protocol (IP) PNC? n   Enhanced Conferencing? y   ISDN Feature Plus? n     Enhanced EC500? y   ISDN Network Call Redirection? n   Enterprise Survivable Server? n                                     ISDN-BRI Trunks? n   Enterprise Wide Licensing? n                                       ISDN-PRI? y     ESS Administration? n   Local Survivable Processor? n   Extended Cvg/Fwd Admin? n   Malicious Call Trace? n   External Device Alarm Admin? n                                     Media Encryption Over IP? n   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? n   Multimedia Appl. Server Interface(MASI)? n     Hospitality (Basic)? y   Multimedia Call Handling (Basic)? n   Hospitality (G3V3 Enhancements)? n   Multimedia Call Handling (Enhanced)? n                                 <b>IP Trunks? y</b>  IP Attendant Consoles? y (NOTE: You must logoff &amp; login to effect the permission changes.) </pre>

Step	Description
2.	<p data-bbox="277 233 1511 338">On Page 2 of the <b>system-parameters customer-options</b> form, verify that <b>Maximum Administered H.323 Trunks</b> is greater than the number of <b>USED H.323</b> trunks. If not, contact an authorized Avaya account representative to obtain licenses for additional H.323 trunks.</p> <pre data-bbox="277 380 1511 1041"> display system-parameters customer-options                               Page 2 of 10                                 OPTIONAL FEATURES  IP PORT CAPACITIES  USED                                 <b>Maximum Administered H.323 Trunks: 100 54</b>                                 Maximum Concurrently Registered IP Stations: 1000 4                                 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: 0 0                                 Maximum Video Capable H.323 Stations: 0 0                                 Maximum Video Capable IP Softphones: 0 0                                 Maximum Administered SIP Trunks: 200 170  Maximum Number of DS1 Boards with Echo Cancellation: 0 0                                 Maximum TN2501 VAL Boards: 1 0                                 Maximum G250/G350/G700 VAL Sources: 0 0                                 Maximum TN2602 Boards with 80 VoIP Channels: 2 0                                 Maximum TN2602 Boards with 320 VoIP Channels: 2 1 Maximum Number of Expanded Meet-me Conference Ports: 0 0  (NOTE: You must logoff &amp; login to effect the permission changes.) </pre>
3.	<p data-bbox="277 1085 1511 1190">Enter the <b>change node-names ip</b> command. Specify a node name and IP address for the XMediusFAX fax server. Also note the node names and IP addresses of the C-LAN and MedPro boards.</p> <pre data-bbox="277 1232 1511 1474"> change node-names ip  Page 1 of 1                                 IP NODE NAMES                                 Name IP Address Name IP Address CLAN-1A06                      192.45 .100.147 . . . MEDPRO-1B03                     192.45 .103.156 . . . MEDPRO-1B13                     192.45 .103.157 . . . <b>XMediusFAX</b>                   <b>192.45 .52 .101</b> . . .                                 . . . </pre>

Step	Description
4.	<p>Enter the <b>add trunk-group m</b> command, where m is an unused trunk group number. On Page 1 of the <b>trunk-group</b> form, configure the following:</p> <ul style="list-style-type: none"> <li>• <b>Group Type</b> – set to “<b>isdn</b>”.</li> <li>• <b>Group Name</b> – enter a descriptive name.</li> <li>• <b>TAC</b> – enter a Trunk Access Code that is valid under the provisioned dial plan.</li> <li>• <b>Carrier Medium</b> – set to “<b>IP</b>”.</li> <li>• <b>Service Type</b> – set to “<b>tie</b>”.</li> </ul>
	<pre> add trunk-group 27                                     Page 1 of 20                                      TRUNK GROUP  Group Number: 27                                     Group Type: isdn                                     CDR Reports: y   Group Name: IP Trunk to XMediusFAX                 COR: 1                                     TN: 1                                     TAC: 127   Direction: two-way                                 Outgoing Display? n                             Carrier Medium: IP   Dial Access? n                                     Busy Threshold: 255                             Night Service:   Queue Length: 0   Service Type: tie                                   Auth Code? n                                     TestCall ITC: rest                                      Far End Test Line No:  TestCall BCC: 4 TRUNK PARAMETERS   Codeset to Send Display: 6                         Codeset to Send National IES: 6   Max Message Size to Send: 260                     Charge Advice: none   Supplementary Service Protocol: a                 Digit Handling (in/out): enbloc/enbloc    Trunk Hunt: cyclical                                       Digital Loss Group: 18 Incoming Calling Number - Delete:                   Insert:                                     Format:   Bit Rate: 1200                                     Synchronization: async                       Duplex: full Disconnect Supervision - In? y Out? n Answer Supervision Timeout: 0 </pre>

Step	Description
5.	<p>Enter the <b>add signaling-group n</b> command, where n is an unused signaling group number. On Page 1 of the <b>signaling-group</b> form, configure the following:</p> <ul style="list-style-type: none"> <li>• <b>Group Type</b> – set to “<b>h.323</b>”.</li> <li>• <b>Trunk Group for Channel Selection</b> – enter the number of the trunk group configured in Step 4.</li> <li>• <b>Near-end Node Name</b> – enter the node name of the C-LAN board from Step 3.</li> <li>• <b>Near-end Listen Port</b> – enter “<b>1720</b>”.</li> <li>• <b>Far-end Node Name</b> – enter the node name of the XMediusFAX fax server from Step 3.</li> <li>• <b>Far-end Listen Port</b> – specify the listen port on the XMediusFAX fax server. This value must match the Local Port H.323 field configured on the XMediusFAX fax server (see Section 4 Step 4).</li> <li>• <b>Far-end Network Region</b> – enter the network region configured in Section 3.1 Step 2.</li> <li>• <b>Calls Share IP Signaling Connection</b> – set to “<b>n</b>”.</li> </ul>
	<pre> add signaling-group 27                                     Page 1 of 5                                      SIGNALING GROUP  Group Number: 27          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: 27 Supplementary Service Protocol: a T303 Timer(sec): 10  Near-end Node Name: CLAN-1A06          Far-end Node Name: XMediusFAX Near-end Listen Port: 1720            Far-end Listen Port: 1720  Far-end Network Region: 7 LRQ Required? n                       Calls Share IP Signaling Connection? n RRQ Required? n  Bypass If IP Threshold Exceeded? n  H.235 Annex H Required? n DTMF over IP: out-of-band            Direct IP-IP Audio Connections? y  IP Audio Hairpinning? y  Interworking Message: PROGRESS  DCP/Analog Bearer Capability: 3.1kHz </pre>

Step	Description
6.	<p>Enter the <b>change trunk-group m</b> command, where m is the number of the trunk group configured in Step 4. On Page 3 of the <b>trunk-group</b> form, add one or more trunk members by entering:</p> <ul style="list-style-type: none"> <li>• “<b>IP</b>” for <b>Port</b>, and</li> <li>• the number of the signaling group configured in Step 5 for <b>Sig Grp</b>.</li> </ul> <p>Ensure that the number of trunk members matches the number of channels supported on the XMediusFAX side of the IP trunk. The number of channels supported in XMediusFAX is controlled via an XMediusFAX license file.</p> <pre> change trunk-group 27                                     Page 4 of 20                                      TRUNK GROUP                                      Administered Members (min/max): 0/0 GROUP MEMBER ASSIGNMENTS                               Total Administered Members: 0        Port      Code Sfx Name      Night      Sig Grp 1: IP 2: IP 3: IP 4: IP 5: IP 6: IP 7: IP 8: IP 9: IP 10: IP 11: 12: 13: 14: 15: </pre>
7.	<p>Enter the <b>list ip-interface all</b> command. Note the network regions of the C-LAN and MedPro boards. In the example below, the C-LAN and MedPro boards are all assigned to network region 1.</p> <pre> list ip-interface all                                     Page 1                                      IP INTERFACES ON Type Slot Code Sfx Node Name/ Subnet Mask Gateway Address Net Rgn VLAN                                      IP-Address ----- y C-LAN 01A06 TN799 D CLAN-1A06 255.255.255.0 192.45.100.1 1 n 192.45.100.147 y MEDPRO 01B03 TN2302 MEDPRO-1B03 255.255.255.0 192.45.103.1 1 n 192.45.103.156 y MEDPRO 01B13 TN2302 MEDPRO-1B13 255.255.255.0 192.45.103.1 1 n 192.45.103.157 </pre>

Step	Description
8.	Enter the <b>change ip-network-region j</b> command, where j is the number of the network region configured in Section 3.1 Step 2. On Page 3 of the <b>ip-network-region</b> form, find the row(s) where <b>dst rgn</b> is the network region(s) assigned to the C-LAN and MedPro boards, and in the <b>codec set</b> column, enter the number of the IP codec set configured in Section 3.1 Step 1. In the example below, all IP calls between network regions 7 (where XMediusFAX is assigned) and 1 (where the C-LAN and MedPro boards are assigned) will use the codecs defined in IP codec set 7.
	<pre> change ip-network-region 7 Page 3 of 19  Inter Network Region Connection Management  src  dst  codec  direct rgn  rgn   set    WAN   WAN-BW-limits  Intervening-regions  Dynamic CAC 7    1     7      y     :NoLimit 7    2 7    3 7    4 7    5 7    6 7    7     7 7    8 7    9 7   10 7   11 7   12 7   13 7   14 7   15 </pre>

### 3.3. Routing Fax Calls Between XMediusFAX and the PSTN

Call routing in Avaya Communication Manager is dependent on the provisioned dial plan and network configuration. This section presents one of several possible ways for routing fax calls on Avaya Communication Manager to and from XMediusFAX. Consult [1] and [2] for further guidance.

Avaya Communication Manager may route outbound fax calls from the XMediusFAX fax server to the PSTN in the same manner as outbound voice calls from internal telephones. For example, if internal telephones are required to dial 11 or 12 digits (a 1-digit ARS Feature Access Code plus either a 10-digit or 11-digit PSTN number) to reach the PSTN, then the XMediusFAX fax server should also send 11 or 12 digits over the H.323 IP trunk to Avaya Communication Manager.

The routing of inbound fax calls from the PSTN to the XMediusFAX fax server may vary with the PSTN trunk capability. If Avaya Communication Manager receives Called Party Number information from the PSTN trunk, then the Called Party Number of inbound fax calls can be

modified such that the call is routed according to the ARS Analysis Table. The ARS Analysis Table can then contain one or more entries matching the modified Called Party Number to one or more Route Patterns containing the H.323 IP trunks connected to the XMediusFAX fax server. As an example, assume that Avaya Communication Manager receives 5-digit Called Party Numbers from the T1 ISDN-PRI trunk on inbound calls and that inbound calls with Called Party Numbers “22744” and “22944” are intended for the XMediusFAX fax server. As shown in the **inc-call-handling-trmt trunk-group** form, for inbound calls on trunk group 6, 5-digit Called Party Numbers that match “22744” or “22944” are prepended with the digits “9732855” to form 11-digit numbers; all other 5-digit Called Party Numbers are not modified.

```
display inc-call-handling-trmt trunk-group 6
```

Service/ Feature	Called Len	Called Number	Del	Insert	Per Call CPN/BN	Night Serv
tie	5	22744		973285		
tie	5	22944		973285		

Assuming that “9” is the ARS Feature Access Code, the remaining 10 digits, “7328522744” or “7328522944”, are processed according to the ARS Digit Analysis Table. In the **ars analysis** form below, 10-digit numbers that match “7328522744” or “7328522944” are routed according to route pattern 27.

```
display ars analysis 7
```

Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Reqd
732	10	10	6	hnpa		n
7328522744	10	10	27	hnpa		n
7328522944	10	10	27	hnpa		n

The screenshot<sup>1</sup> below indicates that calls processed according to route pattern 27 are routed to trunk group 27. Note that trunk group 27 is the H.323 IP trunk group configured in Section 3.2 that contains H.323 IP trunks to the XMediusFAX fax server.

```
display route-pattern 27
```

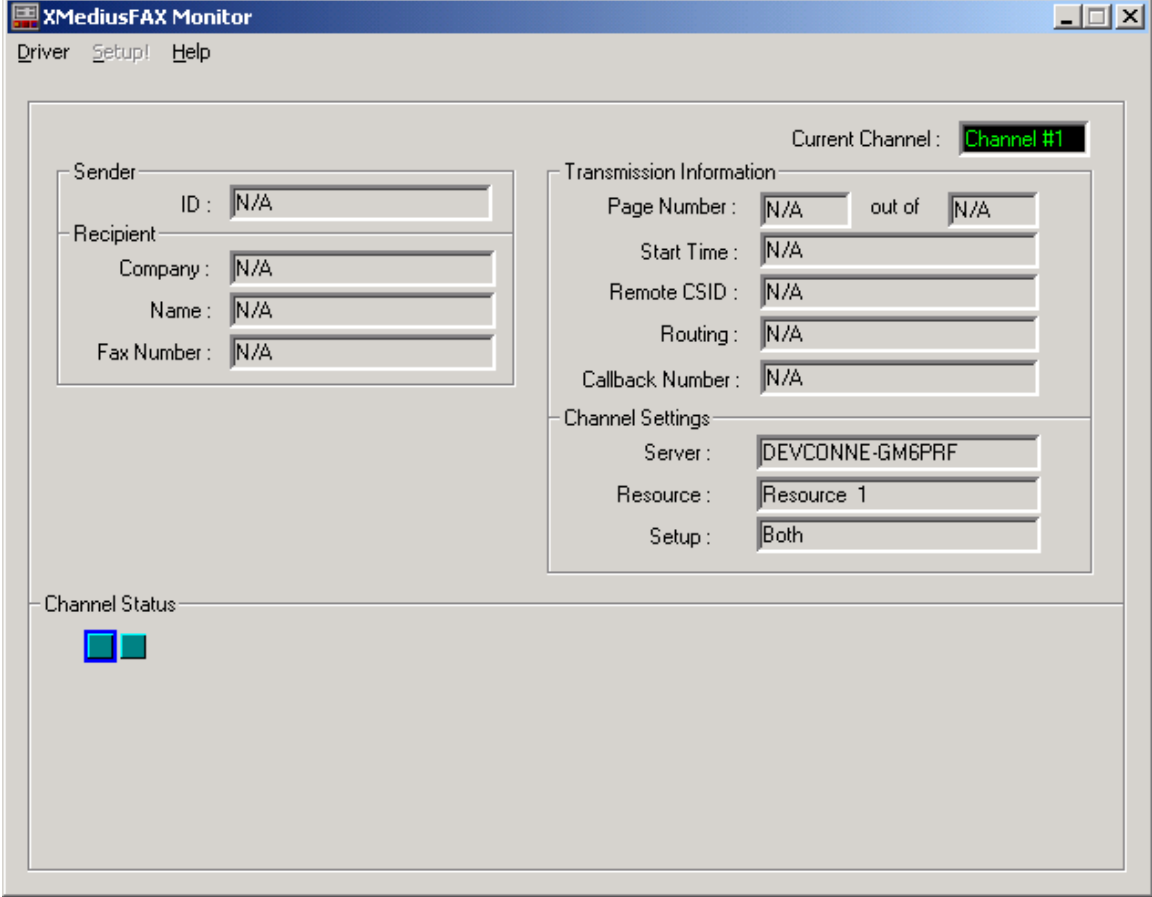
Grp No	FRL	NPA	Pfx Mrk	Hop Lmt	Toll List	No. Del	Inserted Digits	DCS/ QSIG	IXC Intw
1:	27	0						n	user
2:								n	user
3:								n	user
4:								n	user
5:								n	user
6:								n	user

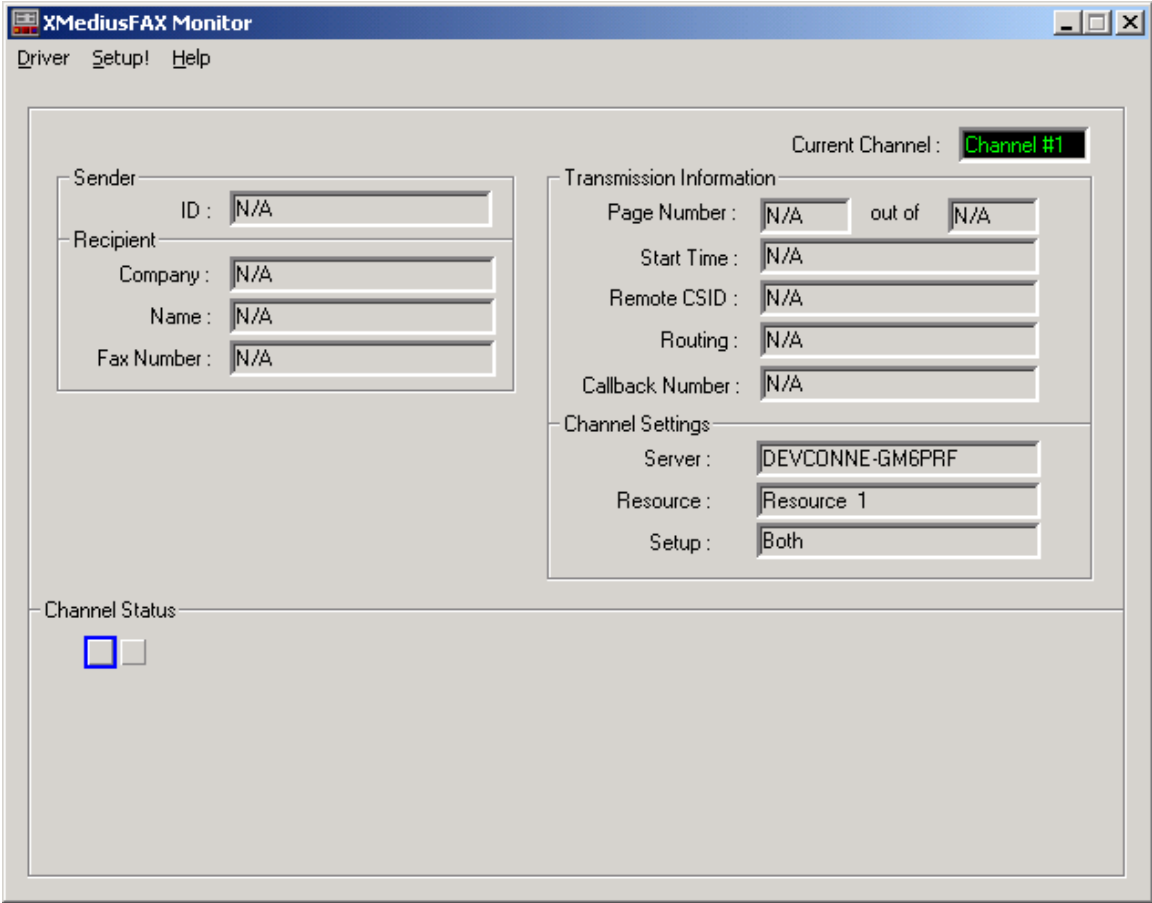
<sup>1</sup> Only the relevant parts of the **route-pattern** form are shown.

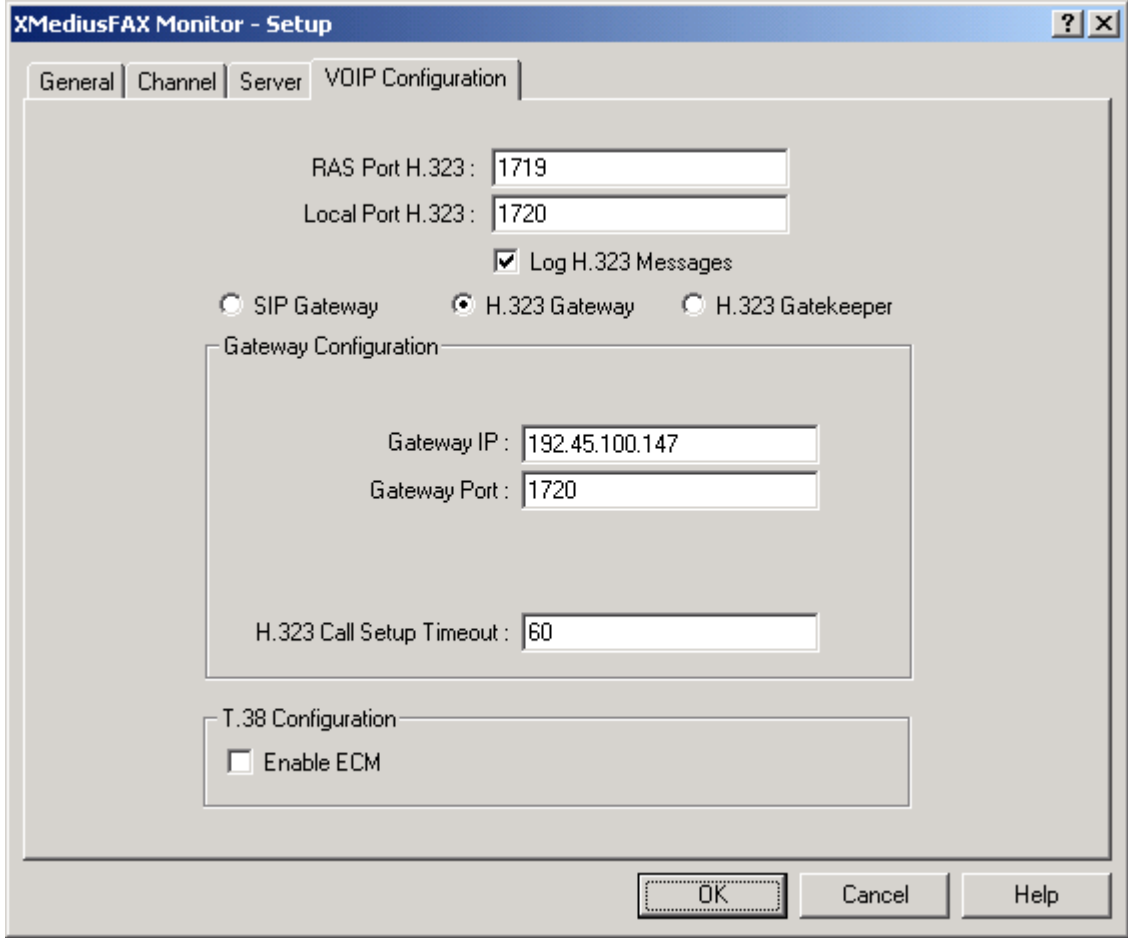
## 4. Configure Interstar XMediusFAX

This section describes the steps for configuring the XMediusFAX driver. For instructions on sending and receiving faxes, consult the XMediusFAX user documentation.

Although the screenshots depict the configuration with two channels, ten channels were actually used during testing. In addition, the configuration steps in this section are independent of the number of channels. Lastly, as mentioned previously, the number of channels supported in XMediusFAX is controlled via an XMediusFAX license file.

Step	Description
1.	On the XMediusFAX server, launch the XMediusFAX Monitor application by clicking <b>Start -&gt; Program -&gt; XMediusFAX -&gt; Monitor</b> .
2.	From the <b>Driver</b> menu, select “ <b>Stop</b> ”.  

Step	Description
3.	<p>Click on “Setup!”.</p>  <p>The screenshot shows the XMediusFAX Monitor application window. The title bar reads "XMediusFAX Monitor" and the menu bar includes "Driver", "Setup!", and "Help". The "Setup!" menu option is highlighted. The main window is divided into several sections:</p> <ul style="list-style-type: none"> <li><b>Sender:</b> ID: N/A</li> <li><b>Recipient:</b> Company: N/A, Name: N/A, Fax Number: N/A</li> <li><b>Transmission Information:</b> <ul style="list-style-type: none"> <li>Page Number: N/A out of N/A</li> <li>Start Time: N/A</li> <li>Remote CSID: N/A</li> <li>Routing: N/A</li> <li>Callback Number: N/A</li> </ul> </li> <li><b>Channel Settings:</b> <ul style="list-style-type: none"> <li>Server: DEVCONNE-GM6PRF</li> <li>Resource: Resource 1</li> <li>Setup: Both</li> </ul> </li> <li><b>Channel Status:</b> A checkbox is present and is currently unchecked.</li> </ul> <p>At the top right of the window, the "Current Channel" is displayed as "Channel #1".</p>

Step	Description
<p><b>4.</b></p>	<p>Click on the <b>VOIP Configuration</b> tab and configure the following:</p> <ul style="list-style-type: none"> <li>• <b>Local Port H.323</b> – the default is “1720”. This value must be entered in the Far-end Listen Port field in Avaya Communication Manager in Section 3.2 Step 5.</li> <li>• <b>H.323 Gateway</b> – select the radio button.</li> <li>• <b>Gateway IP</b> – set to the IP address of the C-LAN board from Section 3.2 Step 3.</li> <li>• <b>Gateway Port</b> – set to “1720”. This value must match the Near-end Listen Port configured on Avaya Communication Manager in Section 3.2 Step 5.</li> <li>• <b>Enable ECM</b> – uncheck the checkbox. Avaya Communication Manager does not currently support Error Correction Mode (ECM) for T.38.</li> </ul> <p>Click on “OK”.</p> 
<p><b>5.</b></p>	<p>From the <b>Driver</b> menu, select “<b>Start</b>”.</p>

## 5. Interoperability Compliance Testing

The interoperability compliance testing included feature, serviceability, and performance testing. The feature testing evaluated the ability of the Interstar XMediusFAX fax server to send/receive faxes through Avaya Communication Manager to/from the PSTN. The serviceability testing introduced failure scenarios to see if XMediusFAX can resume faxing operations after failure recovery. The performance testing stressed the XMediusFAX server by continuously sending/receiving faxes on XMediusFAX over an extended period of time.

### 5.1. General Test Approach

The general approach was to use XMediusFAX to send/receive faxes of varying page lengths, modes (G3 and G4), and resolutions to/from a PSTN fax machine. For performance testing, hundreds of 1-page and 3-page faxes were continuously sent to and from XMediusFAX. For serviceability testing, failures such as busy and no answer destinations, busy resources, non-fax destinations, IP signaling and trunk group busyouts, board resets, Avaya Communication Manager resets, and XMediusFAX server resets were applied.

### 5.2. Test Results

Faxes of varying page lengths, modes, and resolutions were successfully sent between XMediusFAX and a PSTN fax machine. For performance testing, XMediusFAX successfully sent and received all faxes. Lastly, XMediusFAX successfully resumed faxing operations after recovery from the failure scenarios described in Section 5.1.

## 6. Verification Steps

The following steps may be used to verify the configuration:

- From the XMediusFAX fax server, ping the appropriate Avaya G650 Media Gateway C-LAN and MedPro boards and verify connectivity.
- Verify that the H.323 IP and PSTN trunks are up (use the **status trunk** command on the SAT).
- Verify that faxes may be successfully completed between the XMediusFAX fax server and a PSTN fax machine.

## 7. Support

For technical support on Interstar products, contact Interstar at:

- Phone: 1-514-631-1668
- Email: [support@interstarinc.com](mailto:support@interstarinc.com)

## 8. Conclusion

These Application Notes describe the procedures for configuring the Interstar XMediusFAX 4.2 Enterprise Edition T.38 fax server to send/receive faxes to/from the PSTN through Avaya Communication Manager 3.1. XMediusFAX is a software application that runs on Microsoft Windows 2000 and 2003 platforms, and sends and receives faxes over the IP network. In the configuration described in these Application Notes, XMediusFAX is connected to Avaya Communication Manager via an H.323 IP trunk, and Avaya Communication Manager in turn is connected to the PSTN via an ISDN-PRI trunk.

## 9. Additional References

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

[1] *Administrator Guide for Avaya Communication Manager*, Issue 2, February 2006, Document Number 03-300509

[2] *Administration for Network Connectivity for Avaya Communication Manager*, Issue 11, February 2006, Document Number 555-233-504

Product documentation for Interstar products may be found at <http://www.downloadsxmedius.com/>.

[3] *InterstarXMediusFAX Administrator Guide*, Version Number 4.2A, May 2005.

[4] *InterstarXMediusFAX User Guide*, Version Number 4.2A, May 2005.

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