



## Avaya Solution & Interoperability Test Lab

# **Configuring Connectivity between Avaya Communication Manager, Avaya Meeting Exchange Express Edition and the Cantata Technology IMG 1010 Media Gateway Utilizing SIP and IP to IP Audio Transcoding - Issue 1.0**

## **Abstract**

These Application Notes present the procedures for configuring connectivity between Avaya Communication Manager, Avaya Meeting Exchange Express Edition (Avaya Meeting Exchange), and the Cantata Technology IMG 1010 Media Gateway (IMG). The IMG provided IP to IP audio transcoding via SIP signaling between Avaya Communication Manager and Avaya Meeting Exchange. This configuration enables telephones registered to either Avaya Communication Manager, or Avaya SIP Enablement Services access to a rich set of audio conferencing options provided by Avaya Meeting Exchange via the IMG.

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

## 1. Introduction

These Application Notes present the procedures for configuring connectivity between Avaya Communication Manager, Avaya Meeting Exchange Express Edition (Avaya Meeting Exchange), and the Cantata Technology IMG 1010 Media Gateway (IMG). The IMG provided IP to IP audio transcoding via SIP signaling between Avaya Communication Manager and Avaya Meeting Exchange. This configuration enables telephones registered to either Avaya Communication Manager, or Avaya SIP Enablement Services access to a rich set of audio conferencing options provided by Avaya Meeting Exchange via the IMG.

**Figure 1** illustrates the sample configuration utilized for this compliance tested solution. Avaya Communication Manager, and the Avaya G650 Media Gateway provided endpoint aggregation and media gateway functionality. For example, any telephone or trunk type associated with Avaya Communication Manager can interoperate with Avaya Meeting Exchange via the IMG. For this sample configuration, SIP, H.323, Digital, and Analog telephones were utilized.

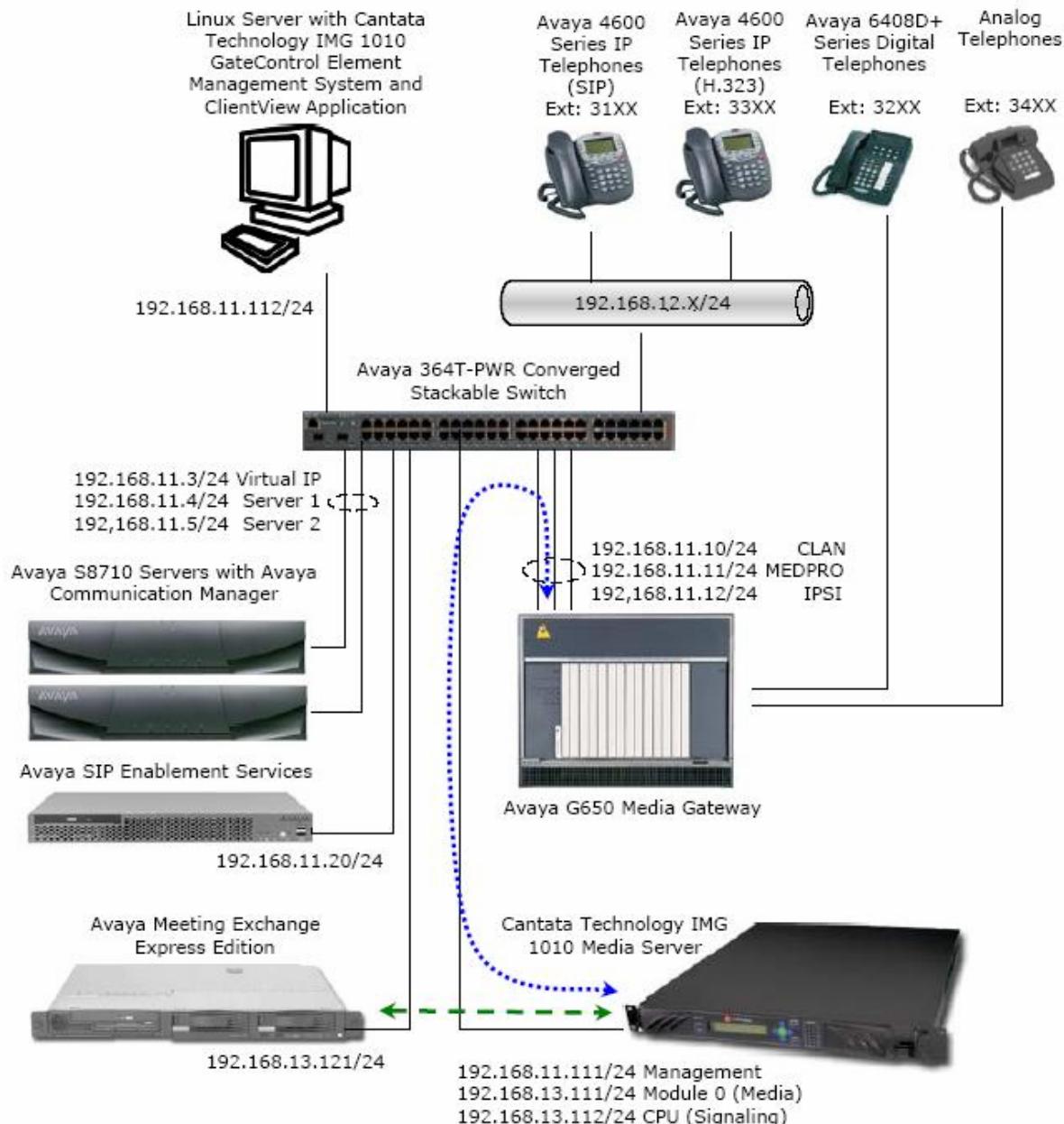
Avaya Meeting Exchange is a SIP based voice conferencing solution that runs on an S6100 server and provides mid-market enterprise customers with an IP based audio conferencing system. For this sample configuration, Avaya Meeting Exchange was provisioned to accept calls from Avaya Communication Manager via either direct or basic call flows. A direct call flow allows access to conferences provisioned on Avaya Meeting Exchange without entering a passcode. Conversely, to enter a conference via a basic call flow requires a passcode. Avaya Meeting Exchange was also administered for outbound calling, which enabled call origination from Avaya Meeting Exchange to participants registered to either Avaya Communication Manager, or Avaya SIP Enablement Services.

The IMG provides network connectivity for voice services, enabling the delivery of VoIP services via SIP into ISDN-PRI, CAS and SS7 networks, as well as IP to IP transcoding for network peering applications. For this sample configuration, the IMG provided IP to IP audio transcoding via SIP signaling between Avaya Communication Manager and Avaya Meeting Exchange.

The end-to-end signaling and media connectivity is as follows:

- Signaling (SIP) and media (RTP, utilizing G.711MU) connectivity between Avaya Meeting Exchange and the IMG is depicted by the green dashed line.
- Signaling (SIP) and media (RTP, utilizing G.729A) connectivity between Avaya Communication Manager and the IMG is depicted by the blue dotted line.

To account for the SIP telephones in this sample configuration, Avaya SIP Enablement Services was utilized as a SIP registration server only.



**Figure 1: Sample Configuration**

## 2. Equipment and Software Validated

The following equipment and software versions were used for this sample configuration:

Equipment	Software Version
Avaya S8710 Servers	Avaya Communication Manager 4.0 (R014x.00.1.731.2)
Avaya G650 Media Gateway <ul style="list-style-type: none"><li>• Avaya TN2312BP (IPSI)</li><li>• Avaya TN799DP (C-LAN)</li><li>• Avaya TN2302AP (MEDPRO)</li></ul>	HW12 FW040 HW01 FW024 HW20 FW117
Avaya Meeting Exchange Express Edition	S6100-2.5.60.0
Avaya SIP Enablement Services	SES04.0-04.0.033.6
Avaya C364T-PWR Converged Stackable Switch	4.5.14
Avaya 4600 Series IP Telephones	2.8 (H.323)
Avaya 4600 Series IP Telephones	2.2.2 (SIP)
Avaya 6408D+ Digital Telephones	--
Analog Telephones	--
Cantata Technology IMG 1010 Media Gateway	10.3.3
Cantata Technology IMG 1010 GateControl Element Management System	10.3.3.174
Cantata Technology ClientView	10.3.3.174

**Table 1: Equipment and Software Versions**

## 3. Avaya Communication Manager Configuration

This section displays the configuration for enabling Avaya Communication Manager to interoperate with Avaya Meeting Exchange via the IMG.

Avaya Communication Manager was administered from the System Access Terminal (SAT). In these Application Notes the SAT screens are shown with a gray shaded background. In some instances, the information from the original screen has been edited or annotated for brevity or clarity in presentation. For example, entries and/or fields in the SAT screens that were either modified or were required for these Application Notes are displayed with boldface type. Refer to [3] and [4] for additional information regarding the configuration displayed in this section.

### 3.1. Verify Licensing

The following steps verify licensing on Avaya Communication Manager that is required to support the configuration displayed in these Application Notes. If a required feature is not enabled or there is insufficient capacity, contact an authorized Avaya account representative to make the appropriate changes.

Step	Description
3.1.1	<p>Issue the command “<b>display system-parameters customer-options</b>”, and proceed to Page 2. Verify that the <b>Maximum Administered SIP Trunks</b> supported by Avaya Communication Manager is sufficient.</p> <p><i>Note: Each call between two SIP endpoints (whether internal or external) requires two SIP trunks for the duration of the call. For this sample configuration, the IMG is treated as an external SIP endpoint. Thus, a call from a SIP station registered to Avaya SIP Enablement Services to the IMG will use two SIP trunks. A call between a non-SIP station and the IMG will use only one SIP trunk.</i></p> <pre>display system-parameters customer-options           OPTIONAL FEATURES           IP PORT CAPACITIES           Maximum Administered H.323 Trunks: 800      USED           Maximum Concurrently Registered IP Stations: 100      0           Maximum Administered Remote Office Trunks: 0      0           Maximum Concurrently Registered Remote Office Stations: 0      0           Maximum Concurrently Registered IP eCons: 0      0           Max Concur Registered Unauthenticated H.323 Stations: 100      0           Maximum Video Capable H.323 Stations: 100      0           Maximum Video Capable IP Softphones: 100      0           Maximum Administered SIP Trunks: 800      0           Maximum Number of DS1 Boards with Echo Cancellation: 0      0           Maximum TN2501 VAL Boards: 10      0           Maximum Media Gateway VAL Sources: 0      0           Maximum TN2602 Boards with 80 VoIP Channels: 128      0           Maximum TN2602 Boards with 320 VoIP Channels: 128      0           Maximum Number of Expanded Meet-me Conference Ports: 0      0           (NOTE: You must logoff &amp; login to effect the permission changes.)</pre>

<b>Step</b>	<b>Description</b>																																
<b>3.1.2</b>	<p>Proceed to page 3, and verify that the <b>ARS/AAR Dialing without FAC</b> field is enabled.</p> <p><i>Note: The ARS/AAR Dialing without FAC feature allows direct access to Automatic Alternate Routing (AAR) and Automatic Route Selection (ARS) from the dial plan analysis table.</i></p> <pre>display system-parameters customer-options</pre> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">OPTIONAL FEATURES</td> <td style="width: 40%;">Page 3 of 11</td> </tr> <tr> <td>Abbreviated Dialing Enhanced List? n</td> <td>Audible Message Waiting? y</td> </tr> <tr> <td>Access Security Gateway (ASG)? n</td> <td>Authorization Codes? n</td> </tr> <tr> <td>Analog Trunk Incoming Call ID? n</td> <td>Backup Cluster Automatic Takeover? n</td> </tr> <tr> <td>A/D Grp/Sys List Dialing Start at 01? n</td> <td>CAS Branch? n</td> </tr> <tr> <td>Answer Supervision by Call Classifier? n</td> <td>CAS Main? n</td> </tr> <tr> <td>ARS? y</td> <td>Change COR by FAC? n</td> </tr> <tr> <td>ARS/AAR Partitioning? y</td> <td>Computer Telephony Adjunct Links? y</td> </tr> <tr> <td><b>ARS/AAR Dialing without FAC? y</b></td> <td>Cvg Of Calls Redirected Off-net? n</td> </tr> <tr> <td>ASAI Link Core Capabilities? n</td> <td>DCS (Basic)? n</td> </tr> <tr> <td>ASAI Link Plus Capabilities? n</td> <td>DCS Call Coverage? n</td> </tr> <tr> <td>Async. Transfer Mode (ATM) PNC? n</td> <td>DCS with Rerouting? n</td> </tr> <tr> <td>Async. Transfer Mode (ATM) Trunking? n</td> <td>Digital Loss Plan Modification? n</td> </tr> <tr> <td>ATM WAN Spare Processor? n</td> <td>DS1 MSP? n</td> </tr> <tr> <td>ATMS? n</td> <td>DS1 Echo Cancellation? n</td> </tr> <tr> <td>Attendant Vectoring? y</td> <td></td> </tr> </table> <p>(NOTE: You must logoff &amp; login to effect the permission changes.)</p>	OPTIONAL FEATURES	Page 3 of 11	Abbreviated Dialing Enhanced List? n	Audible Message Waiting? y	Access Security Gateway (ASG)? n	Authorization Codes? n	Analog Trunk Incoming Call ID? n	Backup Cluster Automatic Takeover? n	A/D Grp/Sys List Dialing Start at 01? n	CAS Branch? n	Answer Supervision by Call Classifier? n	CAS Main? n	ARS? y	Change COR by FAC? n	ARS/AAR Partitioning? y	Computer Telephony Adjunct Links? y	<b>ARS/AAR Dialing without FAC? y</b>	Cvg Of Calls Redirected Off-net? n	ASAI Link Core Capabilities? n	DCS (Basic)? n	ASAI Link Plus Capabilities? n	DCS Call Coverage? n	Async. Transfer Mode (ATM) PNC? n	DCS with Rerouting? n	Async. Transfer Mode (ATM) Trunking? n	Digital Loss Plan Modification? n	ATM WAN Spare Processor? n	DS1 MSP? n	ATMS? n	DS1 Echo Cancellation? n	Attendant Vectoring? y	
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## 3.2. Configure Connectivity

This section describes the steps for configuring SIP trunking between Avaya Communication Manager and the IMG.

Step	Description
3.2.1	<p>Issue the command “<b>change ip-codec-set &lt;n&gt;</b>”, where <b>n</b> is the number of an available codec set. Add entries for audio codecs that are supported on the IMG. For this sample configuration, entries to support G.729 were added as displayed.</p> <p><i>Note: The entry corresponding to G.729B is necessary to enable SIP connectivity with the IMG. For this sample configuration, the IMG was configured to require annexb support. Adding an entry for G.729B in the codec set will affirm annexb support in SIP INVITE messages from Avaya Communication Manager.</i></p> <pre>change ip-codec-set 7           IP Codec Set           Codec Set: 7           Audio      Silence   Frames   Packet           Codec      Suppression Per Pkt  Size(ms)           1: G.729A        n        2       20           2: G.729B        n        2       20           3:           4:           5:           6:           7:</pre>

Step	Description
3.2.2	<p>Issue the command “<b>change ip-network-region &lt;n&gt;</b>”, where <b>n</b> is the number of an available IP network region, and administer settings as displayed.</p> <ul style="list-style-type: none"> <li>• Enter the number of the IP codec set provisioned in <b>Step 3.2.1</b> in the <b>Codec Set</b> field.</li> <li>• Use default settings for remaining fields.</li> </ul> <pre data-bbox="279 460 1405 1009">change ip-network-region 22 IP NETWORK REGION Region: 22 Location: Authoritative Domain: Name: MEDIA PARAMETERS   Codec Set: 7           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      RTCP Reporting Enabled? y   Audio PHB Value: 46            RTCP MONITOR SERVER PARAMETERS   Video PHB Value: 26          Use Default Server Parameters? y 802.1P/Q PARAMETERS   Call Control 802.1p Priority: 6   Audio 802.1p Priority: 6   Video 802.1p Priority: 5 H.323 IP ENDPOINTS   H.323 Link Bounce Recovery? y   Idle Traffic Interval (sec): 20   Keep-Alive Interval (sec): 5   Keep-Alive Count: 5 AUDIO RESOURCE RESERVATION PARAMETERS   RSVP Enabled? n</pre>

Step	Description
3.2.3	<p>Proceed to Page 3, and enable inter-region connectivity between IP network regions 22 and 1 by entering the IP codec set provisioned in <b>Step 3.2.1</b> in the <b>codec set</b> field as displayed. For this sample configuration; the C-LAN, and all IP stations registered to either Avaya Communication Manager or Avaya SIP Enablement Services are in IP network region 1 and the IMG is in IP network region 22.</p>
	<pre>change ip-network-region 22   Page 3 of 19  Inter Network Region Connection Management  src dst codec direct    WAN-BW-limits   Video          Dyn rgn rgn  set    WAN  Units   Total Norm Prio Shr Intervening-regions CAC IGAR 22  1    7      y    NoLimit           n  22  2 22  3 22  4 22  5 22  6 22  7 22  8 22  9 22 10 22 11 22 12 22 13 22 14 22 15</pre>
3.2.4	<p>Issue the command “<b>change node-names ip</b>”, and administer settings as displayed.</p> <ul style="list-style-type: none"> <li>Add an entry to the table corresponding to the IP address of the CPU on the IMG by assigning a descriptive name and associated IP address to the <b>Name</b> and <b>IP Address</b> fields respectively.</li> </ul>
	<pre>change node-names ip   Page 1 of 2  IP NODE NAMES  Name             IP Address CLAN-1A02       192.168.11.10 <b>IMG1010</b>        <b>192.168.13.112</b> MEDPRO-1A03     192.168.11.11 SES              192.168.11.20 default          0.0.0.0 proc             192.168.11.4  ( 10 of 10  administered node-names were displayed ) Use 'list node-names' command to see all the administered node-names Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name</pre>

Step	Description
3.2.5	<p>Issue the command “<b>add signaling-group &lt;n&gt;</b>”, where <b>n</b> is the number of an unallocated signaling group, and administer settings as displayed:</p> <ul style="list-style-type: none"> <li>• Enter the node name for the Control LAN (CLAN) in the <b>Near-end Node Name</b> field.</li> <li>• Enter the node name provisioned for the IMG in <b>Step 3.2.4</b> in the <b>Far-end Node Name</b> field.</li> <li>• Enter the number of the network region provisioned in <b>Step 3.2.2</b> in the <b>Far-end Network Region</b> field.</li> <li>• Configure additional fields with boldface type as displayed, and use default settings for remaining fields.</li> </ul>

```
add signaling-group 22
```

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#### SIGNALING GROUP

Group Number: 22

**Group Type: sip**

**Transport Method: tcp**

**Near-end Node Name: CLAN-1A02**  
Near-end Listen Port: 5060

**Far-end Node Name: IMG1010**  
Far-end Listen Port: 5060  
**Far-end Network Region: 22**

Far-end Domain:

Bypass If IP Threshold Exceeded? n

DTMF over IP: rtp-payload

Direct IP-IP Audio Connections? y  
IP Audio Hairpinning? n

Enable Layer 3 Test? n  
Session Establishment Timer(min): 3

Step	Description
3.2.6	<p>Issue the command “<b>add trunk-group &lt;n&gt;</b>”, where <b>n</b> is the number of an unallocated trunk group, and administer settings as displayed.</p> <ul style="list-style-type: none"> <li>• Enter a descriptive name for the trunk group in the <b>Name</b> field.</li> <li>• Set the <b>Group Type</b> field to <b>SIP</b>.</li> <li>• Enter a number in the <b>TAC</b> (Trunk Access Code) field that is consistent with the configuration for the dial plan.</li> <li>• Enter the number of the signaling group provisioned in <b>Step 3.2.5</b> in the <b>Signaling Group</b> field.</li> <li>• Enter a value to define the capacity of this trunk group in the <b>Number of Members</b> field. As mentioned in <b>Step 3.1.1</b>, each call between two SIP endpoints (whether internal or external) requires two SIP trunks for the duration of the call. For this sample configuration, the IMG is treated as an external SIP endpoint. Thus, a call from a SIP station registered to Avaya SIP Enablement Services to the IMG will use two SIP trunks. A call between a non-SIP station and the IMG will use only one SIP trunk.</li> <li>• Configure additional fields with boldface type as displayed, and use default settings for remaining fields.</li> </ul>

```
add trunk-group 22
```

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```
TRUNK GROUP
```

```

Group Number: 22
Group Name: To IMG1010
Direction: two-way
Dial Access? n
Queue Length: 0
Service Type: tie

Group Type: sip
COR: 1
Outgoing Display? n
Auth Code? n

CDR Reports: y
TN: 1
TAC: 122
Night Service:

Signaling Group: 22
Number of Members: 25

```

### 3.3. Configure Call Routing

This section describes the steps for configuring call routing from Avaya Communication Manager to Avaya Meeting Exchange via the IMG. For this sample configuration, ARS/AAR dialing without FAC is utilized to route calls to Avaya Meeting Exchange. Note that other forms of call routing may be utilized.

Step	Description																																																																																																																					
3.3.1	<p>Issue the command “<b>change dialplan analysis</b>”, and administer settings to route any numbers beginning with a <b>4</b> and totaling <b>3</b> digits in length via AAR as displayed.</p> <p>change dialplan analysis</p> <p style="text-align: right;">Page 1 of 12</p> <table><caption>DIAL PLAN ANALYSIS TABLE</caption><thead><tr><th>Dialed String</th><th>Total Length</th><th>Call Type</th><th>Dialed String</th><th>Total Length</th><th>Call Type</th><th>Dialed String</th><th>Total Length</th><th>Call Type</th></tr></thead><tbody><tr><td>0</td><td>1</td><td>fac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>3</td><td>dac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>3</td><td>aar</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>5</td><td>ext</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><b>4</b></td><td><b>3</b></td><td><b>aar</b></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>3</td><td>aar</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>6</td><td>3</td><td>aar</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td>5</td><td>ext</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td>2</td><td>fac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td>2</td><td>dac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>*</td><td>1</td><td>fac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>#</td><td>3</td><td>fac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	0	1	fac							1	3	dac							2	3	aar							3	5	ext							<b>4</b>	<b>3</b>	<b>aar</b>							5	3	aar							6	3	aar							7	5	ext							8	2	fac							9	2	dac							*	1	fac							#	3	fac						
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Step	Description
<b>3.3.2</b>	<p>Issue the command “<b>change route-pattern &lt;n&gt;</b>”, where <b>n</b> is the number of an unallocated route pattern. Administer settings to utilize the trunk group provisioned in <b>Step 3.2.6</b> to route calls from Avaya Communication Manager to the IMG.</p> <ul style="list-style-type: none"> <li>Enter the number of the trunk group provisioned in <b>Step 3.2.6</b> in the <b>Grp No</b> field.</li> <li>To disable restrictions for call routing via this route pattern, set the Facility Restriction Level (<b>FRL</b>) field to the lowest setting.</li> <li>Configure additional fields with boldface type as displayed, and use default settings for remaining fields.</li> </ul> <pre>change route-pattern 22 Page 1 of 3  Pattern Number: 22  <b>Pattern Name: SIP Rt To IMG</b> SCCAN? n  Secure SIP? n <b>Grp FRL NPA Pfx Hop Toll No. Inserted</b>          DCS/ IXC <b>No</b>          Mrk Lmt List Del Digits           QSIG                          Dgts             Intw 1: 22    0          0          n   user 2: 3: 4: 5: 6:  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</pre>

<b>Step</b>	<b>Description</b>
<b>3.3.3</b>	<p>Issue the command “<b>change aar analysis x</b>”, and add an entry in the table to utilize the route pattern provisioned in <b>Step 3.3.2</b>.</p> <ul style="list-style-type: none"> <li>Enter a number in the <b>Dialed String</b> field that will be utilized by Avaya Meeting Exchange to map to a direct call flow.</li> <li>Enter the number of the route pattern provisioned in <b>Step 3.3.2</b> in the <b>Route Pattern</b> field.</li> <li>Configure additional fields with boldface type as displayed, and use default settings for remaining fields.</li> </ul> <pre>change aar analysis 4 AAR DIGIT ANALYSIS TABLE Percent Full: 1 Dialed      Total      Route      Call      Node      ANI String      Min   Max   Pattern   Type     Num      Reqd 401          3     3    22       aar      n 444          3     3    22       aar      n</pre>

## 4. Avaya Meeting Exchange Configuration

This section displays the configuration for enabling Avaya Meeting Exchange to interoperate with Avaya Communication Manager via the IMG. Avaya Meeting Exchange is administered and maintained using a standard web browser over a secure connection by entering **https://<IP address of Avaya Meeting Exchange>/mx** into the web browser’s Uniform Resource Locator (URL) bar.

## 4.1. Configure Connectivity

This section describes the steps for configuring SIP/TCP connectivity between Avaya Meeting Exchange and the IMG.

Step	Description
4.1.1	<p>Administer settings that enable SIP connectivity between Avaya Meeting Exchange and other SIP User Agents as follows:</p> <ul style="list-style-type: none"><li>From the web interface toolbar, click <b>Configuration</b>.</li><li>Click <b>SIP Agent</b> under <b>Bridge Configuration</b>.</li><li>Enter a SIP URI for Avaya Meeting Exchange that conforms to SIP standards in the <b>SIP Address</b> field. This field is used to populate the From Header Field in SIP INVITE messages from Avaya Meeting Exchange. To enable SIP/TCP connectivity on port 5060, this entry must contain <b>5060</b> and <b>transport=tcp</b>. The user field, <b>S6100</b>, must conform to SIP standards, and is selected to uniquely identify this server. For example, <b>S6100</b> will be inserted in the From Header Field of SIP INVITE messages from Avaya Meeting Exchange and will display on a participant's endpoint when Dial-Out procedures from Avaya Meeting Exchange are invoked. This allows end-user's to identify a call from Avaya Meeting Exchange.</li><li>Enter the SIP URI, as configured for the <b>SIP Address</b> field, in angled brackets in the <b>Contact</b> field. This field is used to populate the Contact Header Field in SIP INVITE messages from Avaya Meeting Exchange, and provides SIP User Agents, for these Application Notes the IMG, a means for acknowledging SIP messages from Avaya Meeting Exchange.</li><li>Use default settings for remaining fields.</li><li>Click the <b>Submit</b> button to add the configuration to the database.</li></ul>

The screenshot shows the Avaya Meeting Exchange Express Edition web interface. The title bar reads "AVAYA Meeting Exchange Express Edition Install Engineer". The top navigation bar includes "Help", "Log Out", "Installation", "Configuration" (which is highlighted in yellow), and "Provisioning". On the right, there is a "Reset Server" button. The left sidebar contains a navigation menu with items like "System Configuration", "Global Settings", "Conference Defaults", "Directories", "Blast Dial Controls", "Playback Controls", "Adhoc Controls", "Scheduled Jobs", "Recurrent Booking", "Bridge Configuration" (which is highlighted in blue), "Media Server", "SIP Agent" (which is highlighted in red), "System Maps", "URI to Service Map", and "TelNum to URI Map". The main content area is titled "SIP Agent". It contains several configuration fields:

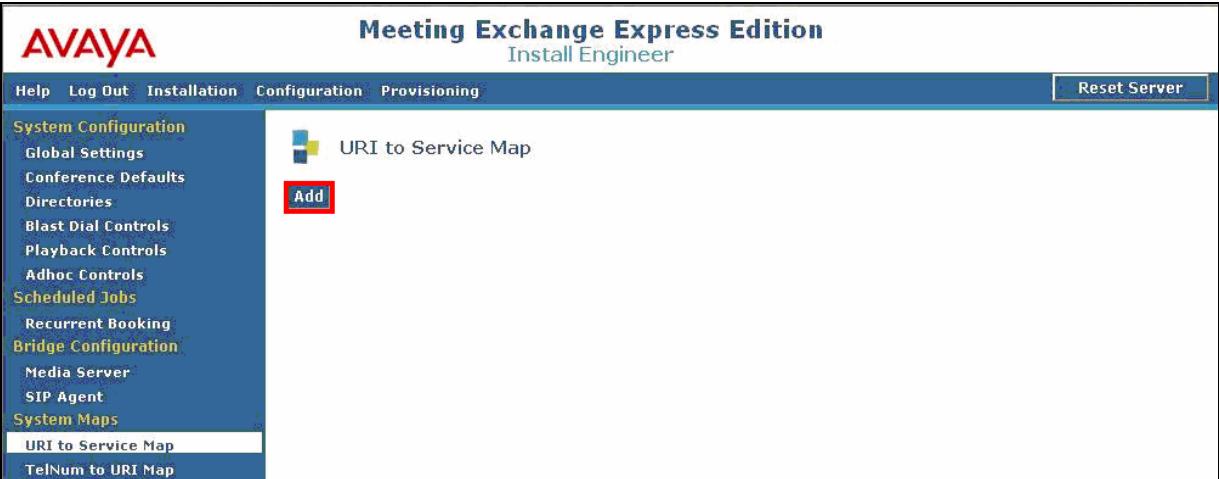
- "SIP Address": A text input field containing "sip:S6100@192.168.13.121:5060;transport=tcp". This field is highlighted with a red box.
- "Differentiated Service TOS Value": A dropdown menu set to "4".
- "Ethernet VLAN Value": A dropdown menu set to "10".
- "Contact": A text input field containing "<sip:S6100@192.168.13.121:5060;transport=tcp>". This field is highlighted with a red box.
- "SIPPING Notification Interval": A dropdown menu set to "1".

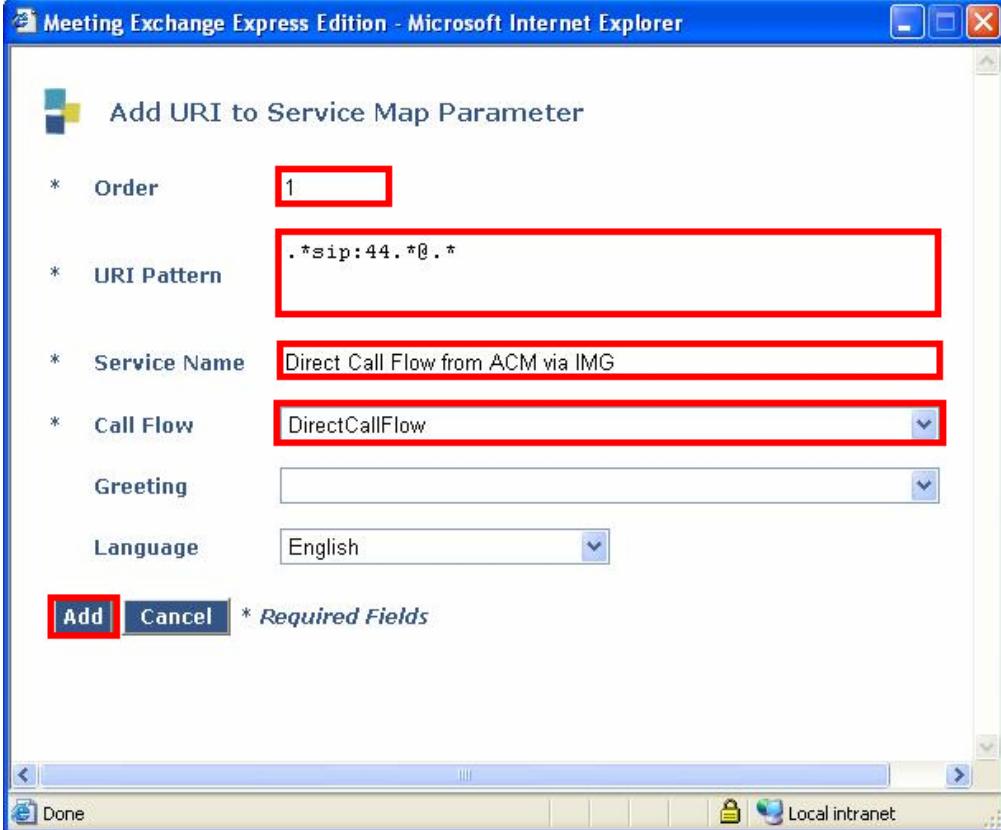
A "Submit" button is at the bottom, with a note "\* Required Fields" next to it.

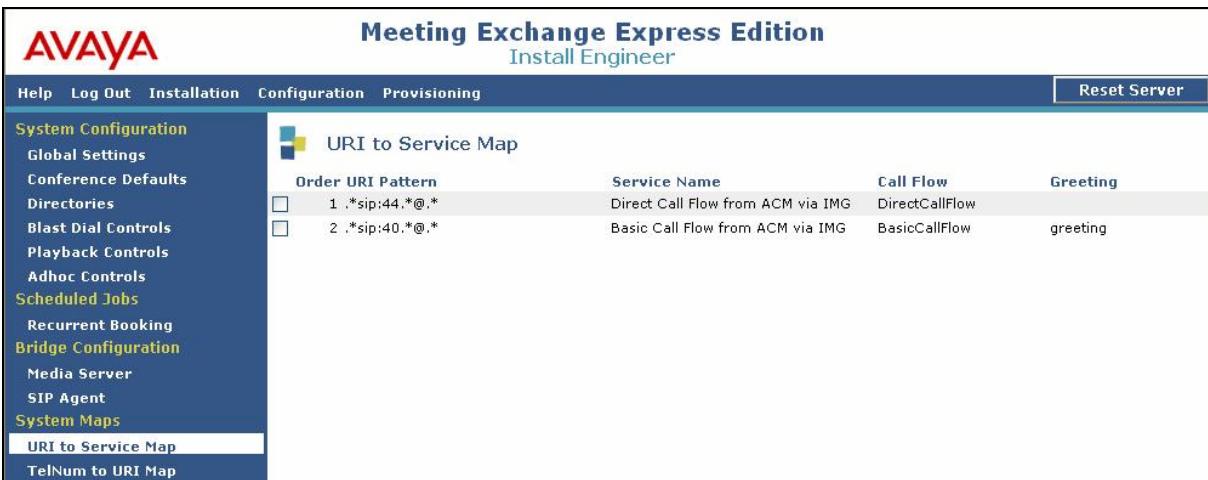
## 4.2. Configure Call Routing

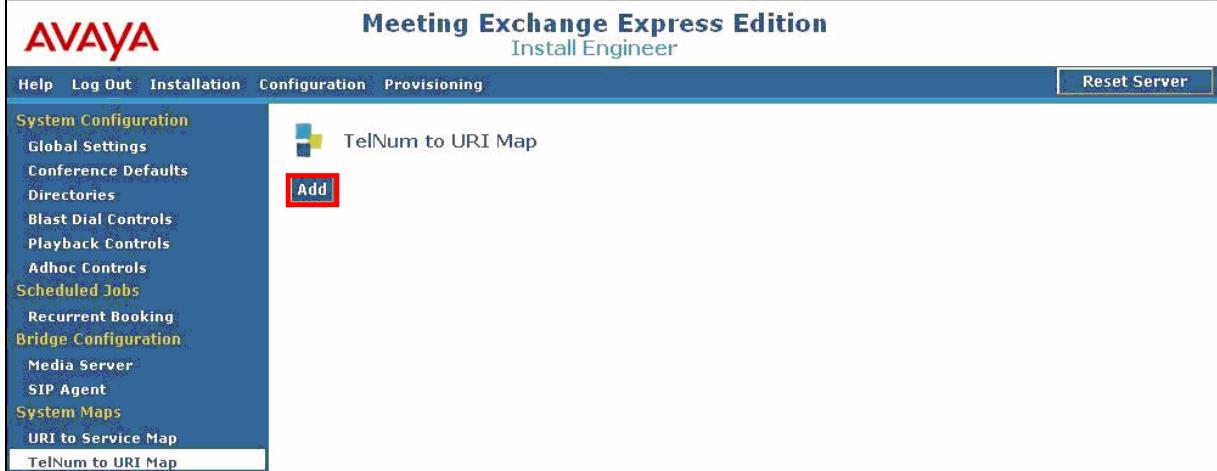
This section describes the steps for configuring call routing for Avaya Meeting Exchange. On Avaya Meeting Exchange, call routing is defined by service maps as follows:

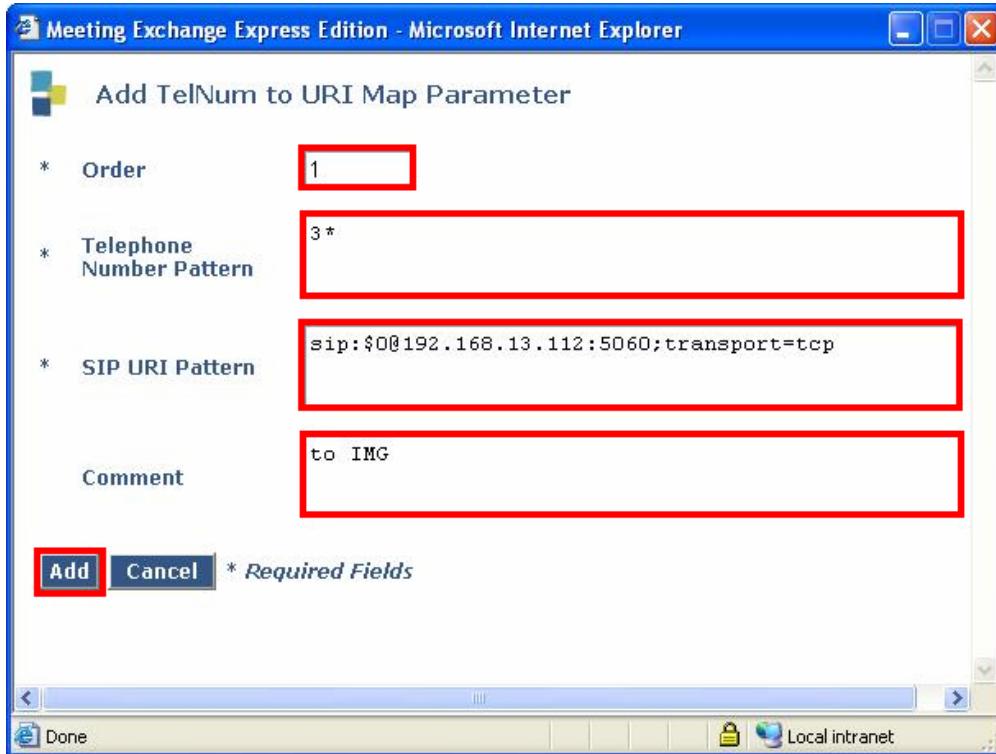
- For inbound calls to Avaya Meeting Exchange, service maps for URI to telephone number translations are utilized. These translations associate calls to Avaya Meeting Exchange with corresponding call flows, thus allowing for specific treatment for a participant based on incoming calls based on a SIP Uniform Resource Identifier (URI).
- For outbound calls from Avaya Meeting Exchange, service maps for telephone number to URI translations are utilized. These translations associate a telephone number pattern with a corresponding SIP URI of a SIP User Agent (UA), thus allowing call origination from Avaya Meeting Exchange to the SIP UA.

Step	Description
4.2.1	To associate incoming calls to Avaya Meeting Exchange with a call flow, add a URI to service map entry as follows: <ul style="list-style-type: none"><li>• Click <b>URI to Service Map</b> under <b>System Maps</b>.</li><li>• Click the <b>Add</b> button.</li></ul> 

Step	Description
4.2.2	<p>From the <b>Add URI to Service Map Parameter</b> screen, administer settings to enable a direct call flow for calls from Avaya Communication Manager via the IMG as follows:</p> <ul style="list-style-type: none"> <li>Leave the <b>Order</b> field at the default value. Avaya Meeting Exchange parses URI to service map entries for pattern matches in descending order, terminating the search once a pattern is matched. For this sample configuration, order is irrelevant as the patterns for call flows are mutually exclusive.</li> <li>Enter a rule in the <b>URI Pattern</b> field to match the pattern of incoming Request URIs in SIP INVITE messages from Avaya Communication Manager via the IMG. Metacharacters such as . (matches any one character) or * (matches zero or more of the preceding character) may be utilized. For example, assume the IMG sends the following URI: <i>sip:444@192.168.13.121:5060;transport=tcp</i>. The entry in the <b>URI Pattern</b> field, <i>.*sip:44.*@.*</i>, would match <i>sip:44</i>, then zero or more characters, followed by @, then zero or more characters.</li> <li>To allow access to conferences as moderator, without entering a passcode, select <b>DirectCallFlow</b> from the drop down menu for the <b>Call Flow</b> field.</li> <li>Enter a descriptive name for this map in the <b>Service Name</b> field.</li> <li>Click the <b>Add</b> button to add the map to the database.</li> </ul> 

Step	Description															
<b>4.2.3</b>	<p>To associate incoming calls to Avaya Meeting Exchange with a basic call flow, repeat <b>Step 4.2.1</b> to add a URI to service map entry for a basic call flow with the following parameters:</p> <ul style="list-style-type: none"> <li>Leave the <b>Order</b> field at the default value.</li> <li>Enter <b>.*sip:40.*@.*</b> in the <b>URI Pattern</b> field to match the pattern of incoming Request URIs in SIP INVITE messages from Avaya Communication Manager via the IMG.</li> <li>To access a conference with an associated passcode, select <b>BasicCallFlow</b> from the drop down menu for the <b>Call Flow</b> field.</li> <li>Enter a descriptive name for this map in the <b>Service Name</b> field.</li> <li>The resulting URI to service map list is displayed below.</li> </ul> <p><i>Note: The provisioning for the <b>URI Pattern</b> fields for the direct and basic call flows are mutually exclusive while utilizing wild cards to maximizing the breadth of the pattern match. For example, the <b>URI Pattern</b> field for the basic call flow is <b>.*sip:40.*@.*</b>. This aligns with the provisioning for call routing on Avaya Communication Manager in <b>Section 3.3</b>, and allows 40x, where x can be any digit, to match this direct call flow.</i></p>  <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; padding: 5px;">Order</th> <th style="text-align: center; padding: 5px;">URI Pattern</th> <th style="text-align: center; padding: 5px;">Service Name</th> <th style="text-align: center; padding: 5px;">Call Flow</th> <th style="text-align: center; padding: 5px;">Greeting</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td><td style="text-align: center; padding: 5px;">1 *sip:44.*@.*</td><td style="text-align: center; padding: 5px;">Direct Call Flow from ACM via IMG</td><td style="text-align: center; padding: 5px;">DirectCallFlow</td><td style="text-align: center; padding: 5px;"></td></tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td><td style="text-align: center; padding: 5px;">2 *sip:40.*@.*</td><td style="text-align: center; padding: 5px;">Basic Call Flow from ACM via IMG</td><td style="text-align: center; padding: 5px;">BasicCallFlow</td><td style="text-align: center; padding: 5px;">greeting</td></tr> </tbody> </table>	Order	URI Pattern	Service Name	Call Flow	Greeting	<input type="checkbox"/>	1 *sip:44.*@.*	Direct Call Flow from ACM via IMG	DirectCallFlow		<input type="checkbox"/>	2 *sip:40.*@.*	Basic Call Flow from ACM via IMG	BasicCallFlow	greeting
Order	URI Pattern	Service Name	Call Flow	Greeting												
<input type="checkbox"/>	1 *sip:44.*@.*	Direct Call Flow from ACM via IMG	DirectCallFlow													
<input type="checkbox"/>	2 *sip:40.*@.*	Basic Call Flow from ACM via IMG	BasicCallFlow	greeting												

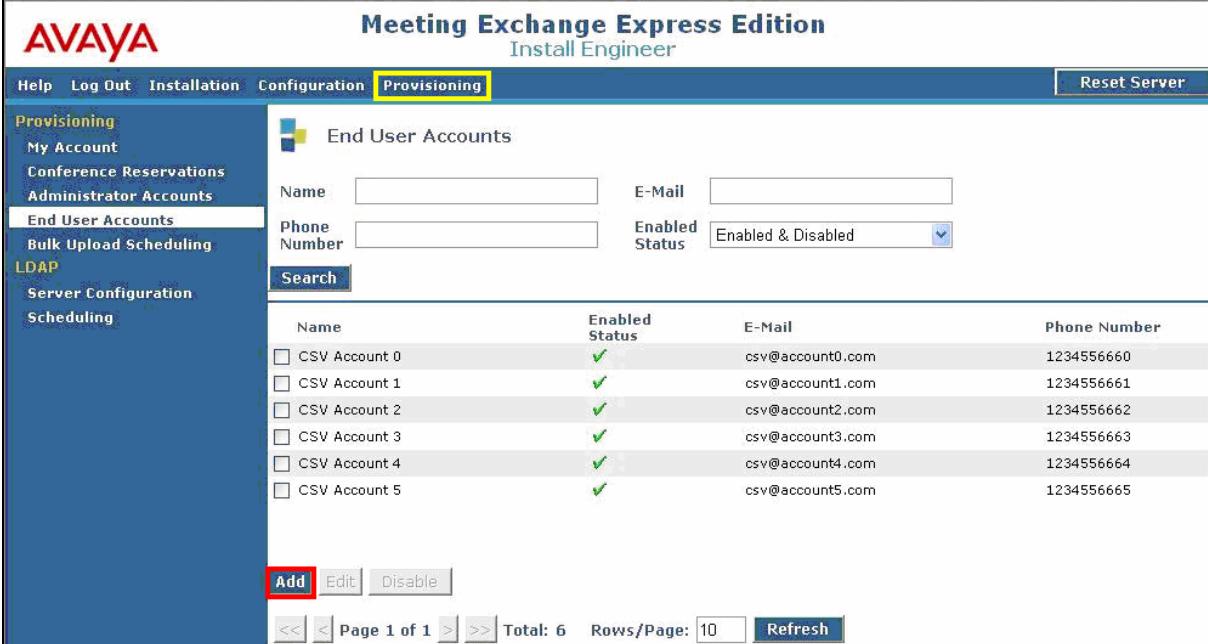
Step	Description
4.2.4	<p>To enable routing of outbound calls from Avaya Meeting Exchange, add a TelNum to URI map entry as follows:</p> <ul style="list-style-type: none"> <li>Click <b>TelNum to URI Map</b> under <b>System Maps</b>.</li> <li>Click the <b>Add</b> button.</li> </ul> 

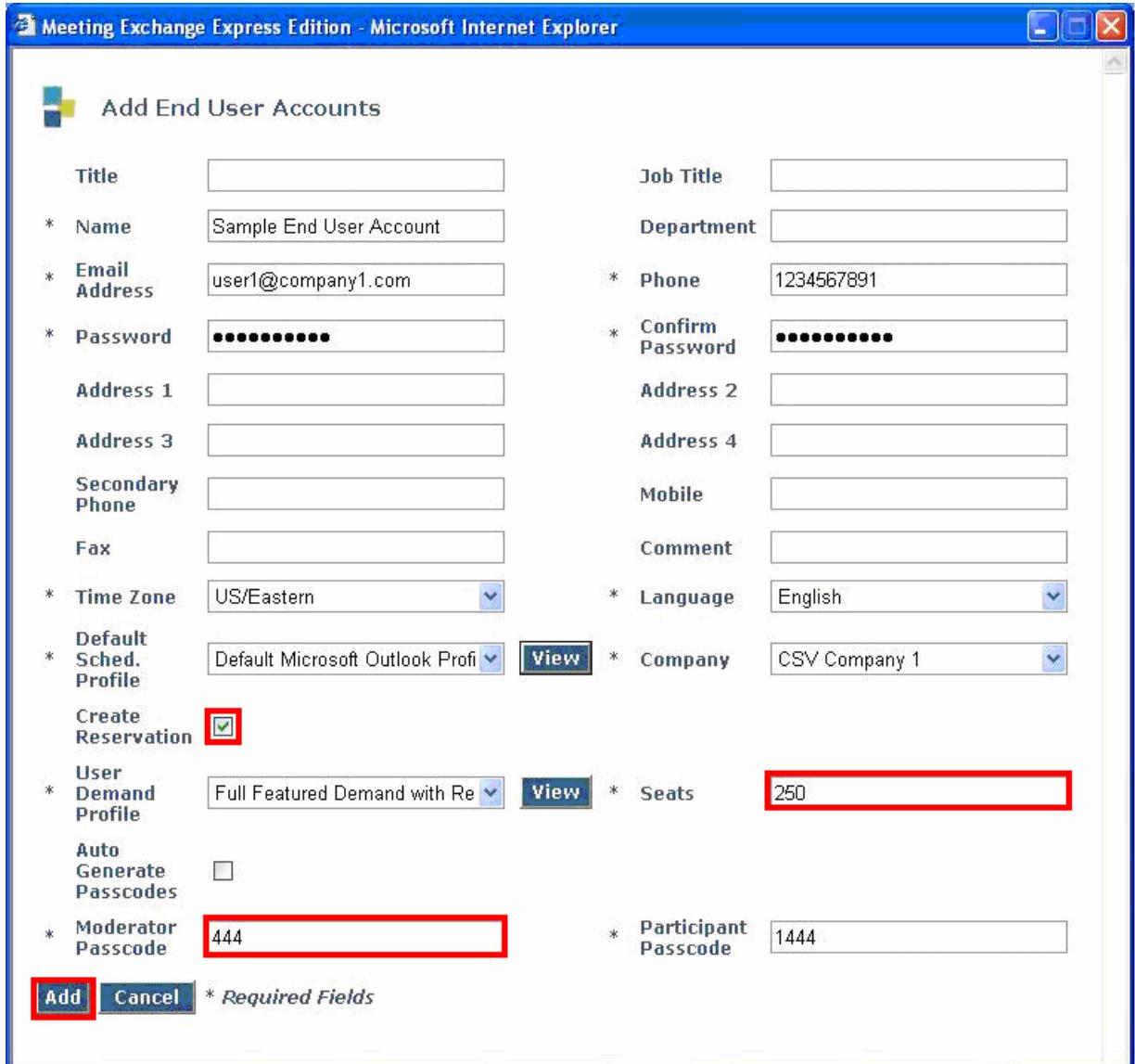
Step	Description
4.2.5	<p>From the <b>Add TelNum to URI Map Parameter</b> screen, administer settings to enable outbound calling to Avaya Communication Manager via the IMG as follows:</p> <ul style="list-style-type: none"> <li>Leave the <b>Order</b> field at the default value. Avaya Meeting Exchange parses TelNum to URI map entries for pattern matches in descending order, terminating the search once a pattern is matched. For this sample configuration, order is irrelevant as there is only one entry in the database.</li> <li>Enter a rule in the <b>Telephone Number Pattern</b> field that matches the administration on for telephone extensions on Avaya Communication Manager. Metacharacters such as * (refers to a character string) or ? (refers to a single character) may be utilized.</li> <li>To enable outbound calling from Avaya Meeting Exchange, enter a rule in the <b>SIP URI Pattern</b> field that conforms to SIP standards. To enable SIP/TCP connectivity for outbound calls to Avaya Communication Manager via the IMG, the rule must contain <b>5060</b> and <b>transport=tcp</b>. The metacharacter, <b>\$0</b> is replaced by the entire <b>Telephone Number Pattern</b> at the location of <b>\$0</b> in the <b>SIP URI Pattern</b>. For example, if <b>31002</b> is the dialed string, Avaya Meeting Exchange will send a SIP INVITE message with a SIP URI and To Header Field formatted as follows:  <i>sip:31002@192.168.13.112:5060;transport=tcp</i>.</li> <li>Click the <b>Add</b> button to add the map to the database.</li> </ul> 

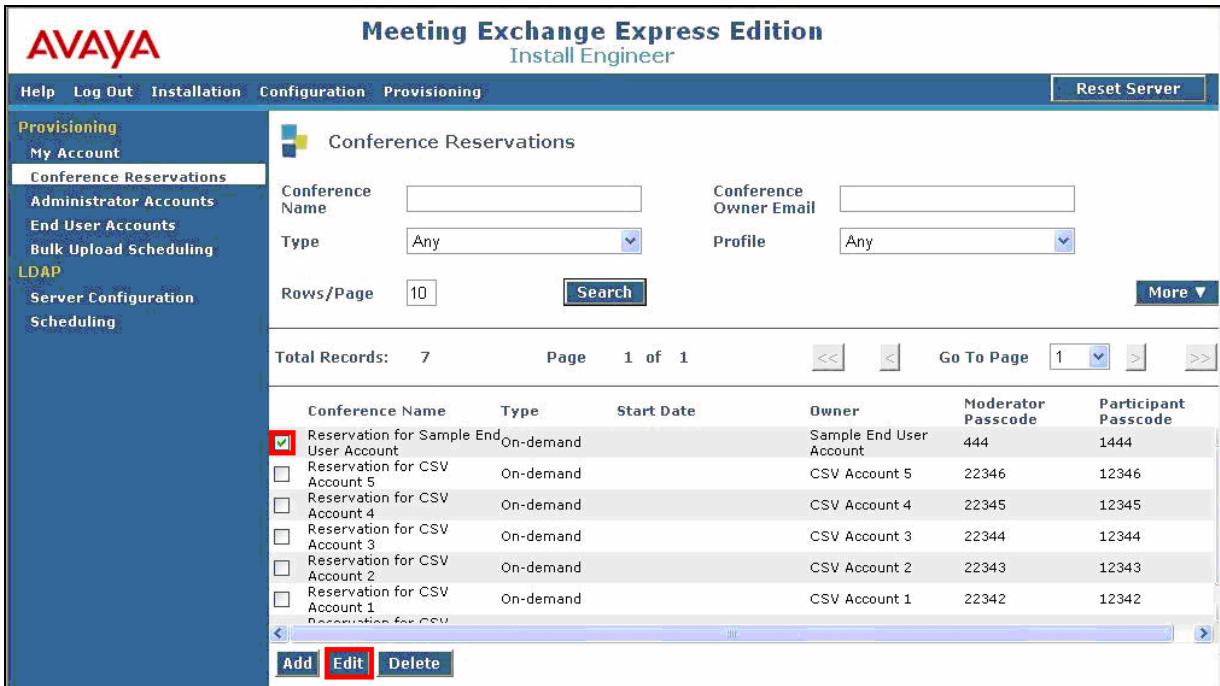
Step	Description
4.2.6	<p>Apply the configuration by clicking the <b>Reset Server</b> button located on the right hand side of the web interface toolbar. Confirm this action by clicking <b>Yes</b> in the pop up window.</p> 

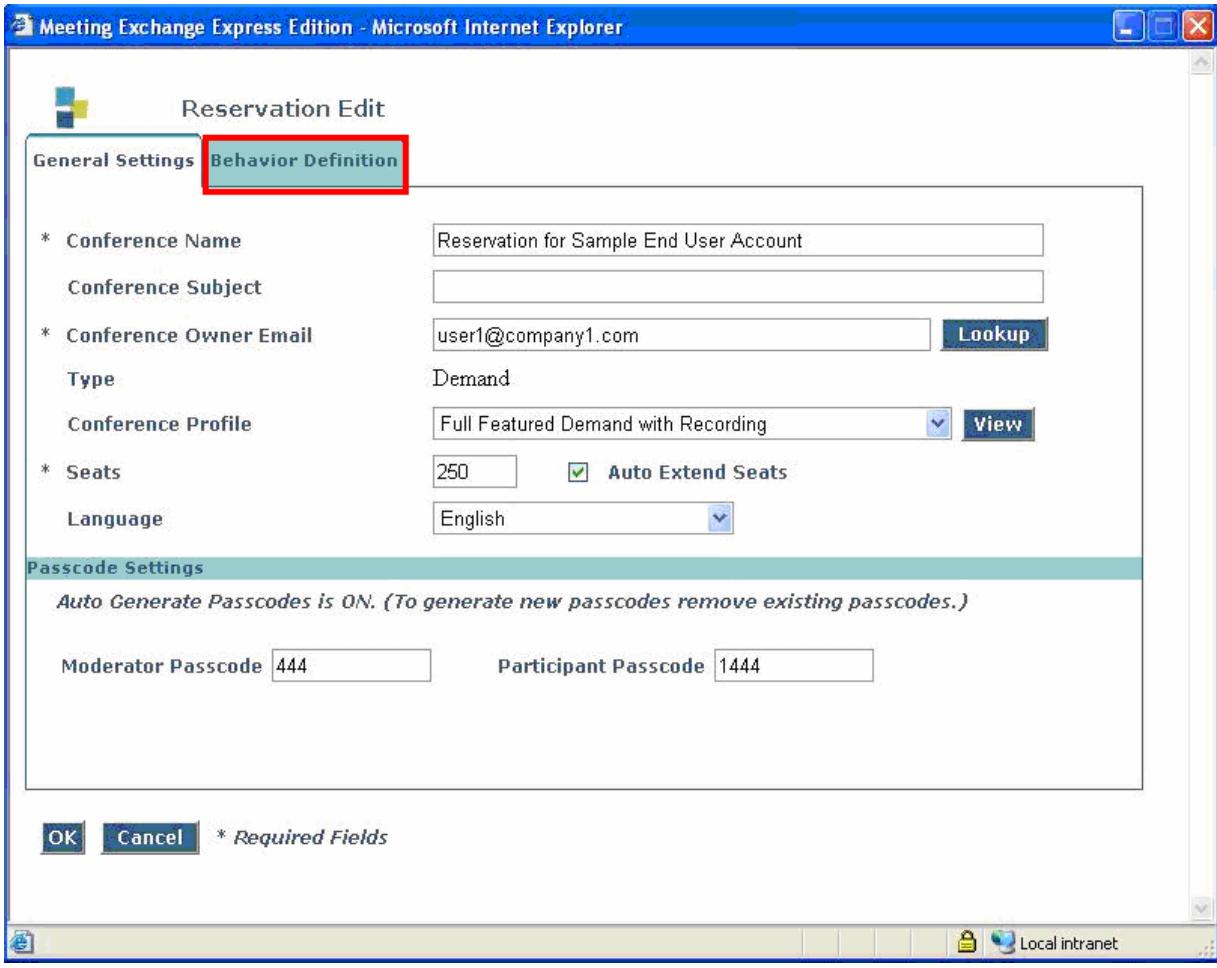
## 4.3. Provision Accounts

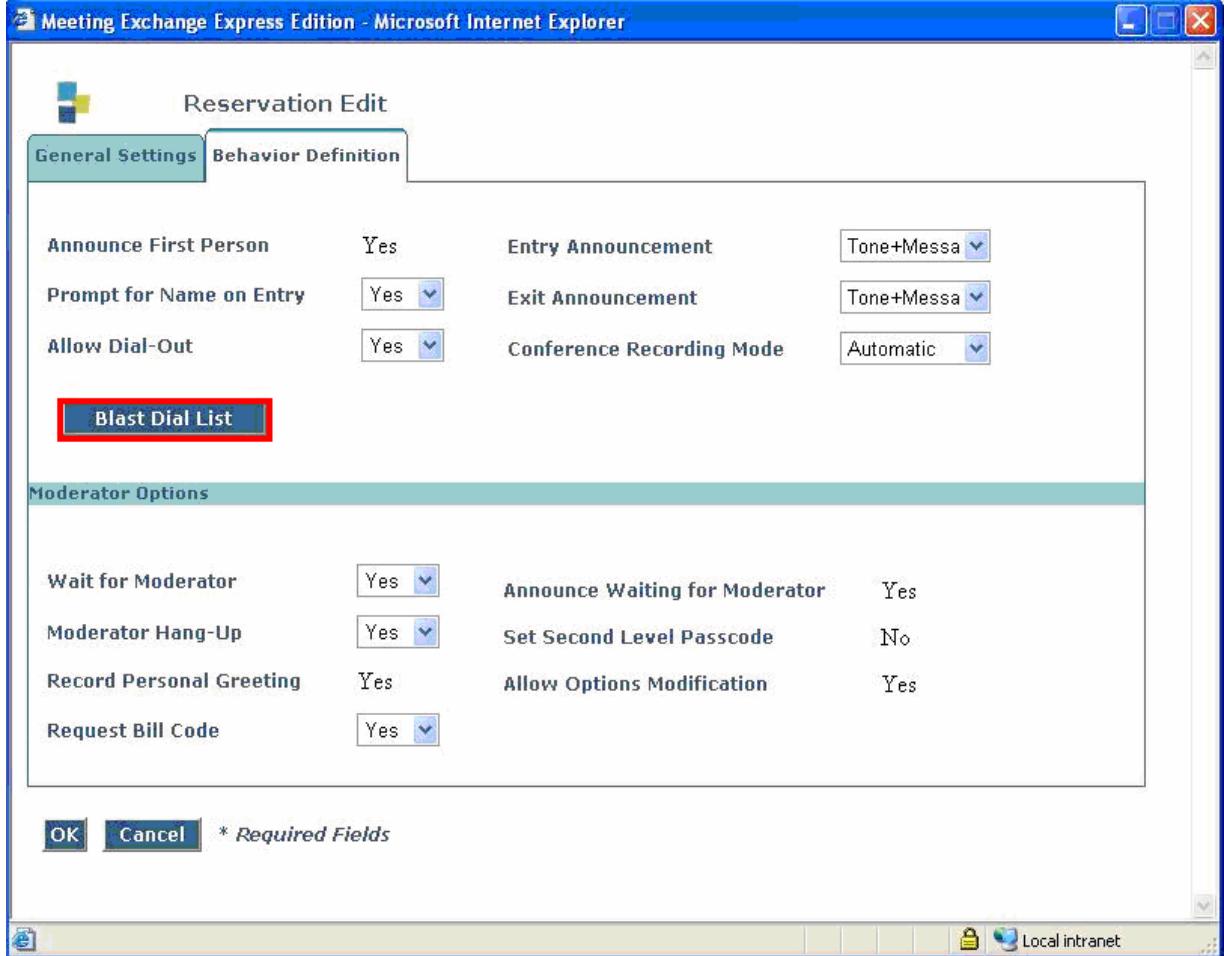
The following steps present an example of provisioning an end user account and associated conference reservation on Avaya Meeting Exchange.

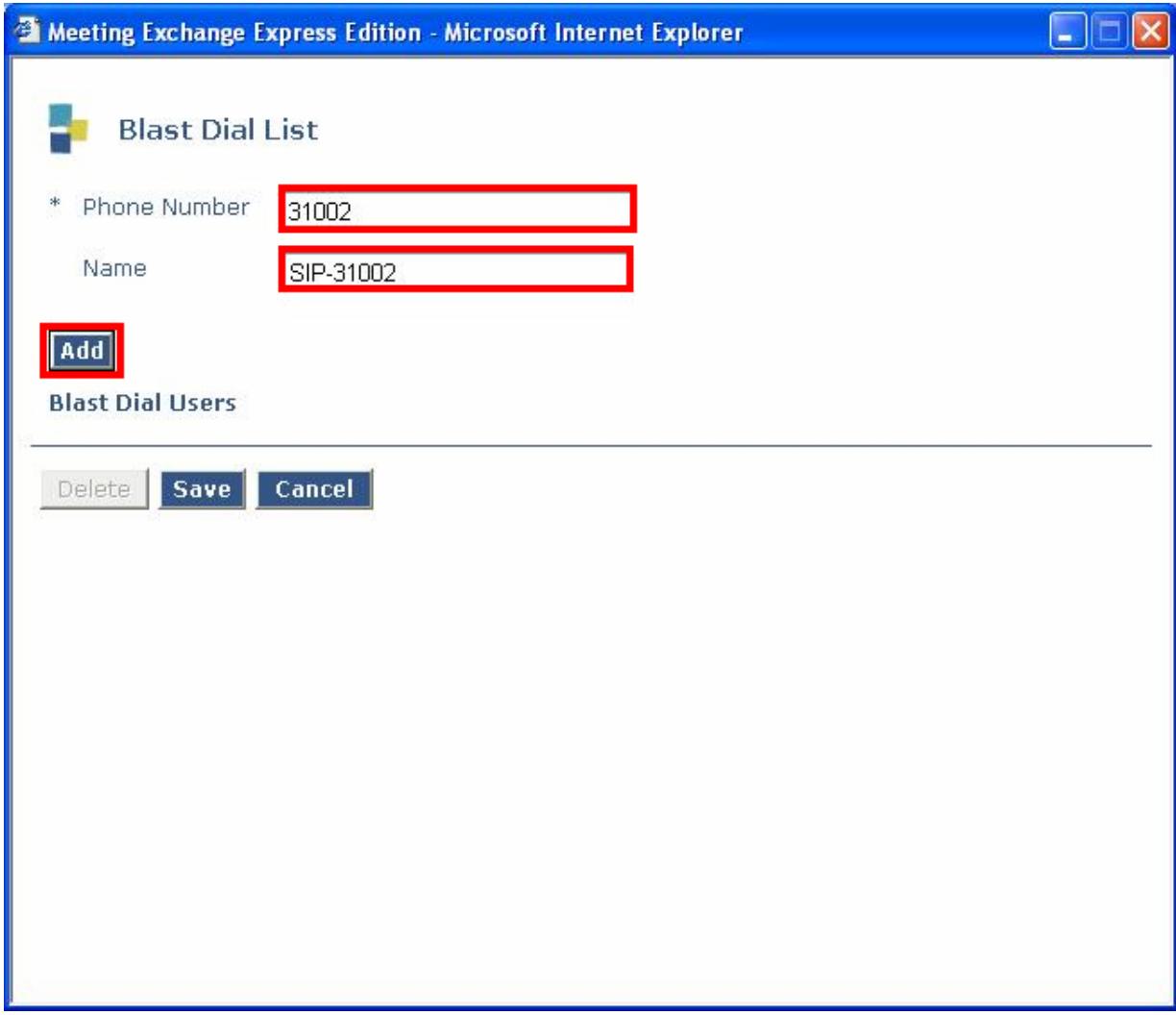
Step	Description																												
4.3.1	To provide end users access to the conferencing features available on Avaya Meeting Exchange, add an end user account as follows: <ul style="list-style-type: none"><li>From the web interface toolbar, click <b>Provisioning</b>.</li><li>Click <b>End User Accounts</b> under <b>Provisioning</b>.</li><li>Click the <b>Add</b> button.</li></ul> <p><i>Note: Avaya Meeting Exchange comes with pre-provisioned accounts as displayed.</i></p>  <table border="1"><thead><tr><th>Name</th><th>E-Mail</th><th>Enabled Status</th><th>Phone Number</th></tr></thead><tbody><tr><td>CSV Account 0</td><td>csv@account0.com</td><td>Enabled</td><td>1234556660</td></tr><tr><td>CSV Account 1</td><td>csv@account1.com</td><td>Enabled</td><td>1234556661</td></tr><tr><td>CSV Account 2</td><td>csv@account2.com</td><td>Enabled</td><td>1234556662</td></tr><tr><td>CSV Account 3</td><td>csv@account3.com</td><td>Enabled</td><td>1234556663</td></tr><tr><td>CSV Account 4</td><td>csv@account4.com</td><td>Enabled</td><td>1234556664</td></tr><tr><td>CSV Account 5</td><td>csv@account5.com</td><td>Enabled</td><td>1234556665</td></tr></tbody></table>	Name	E-Mail	Enabled Status	Phone Number	CSV Account 0	csv@account0.com	Enabled	1234556660	CSV Account 1	csv@account1.com	Enabled	1234556661	CSV Account 2	csv@account2.com	Enabled	1234556662	CSV Account 3	csv@account3.com	Enabled	1234556663	CSV Account 4	csv@account4.com	Enabled	1234556664	CSV Account 5	csv@account5.com	Enabled	1234556665
Name	E-Mail	Enabled Status	Phone Number																										
CSV Account 0	csv@account0.com	Enabled	1234556660																										
CSV Account 1	csv@account1.com	Enabled	1234556661																										
CSV Account 2	csv@account2.com	Enabled	1234556662																										
CSV Account 3	csv@account3.com	Enabled	1234556663																										
CSV Account 4	csv@account4.com	Enabled	1234556664																										
CSV Account 5	csv@account5.com	Enabled	1234556665																										

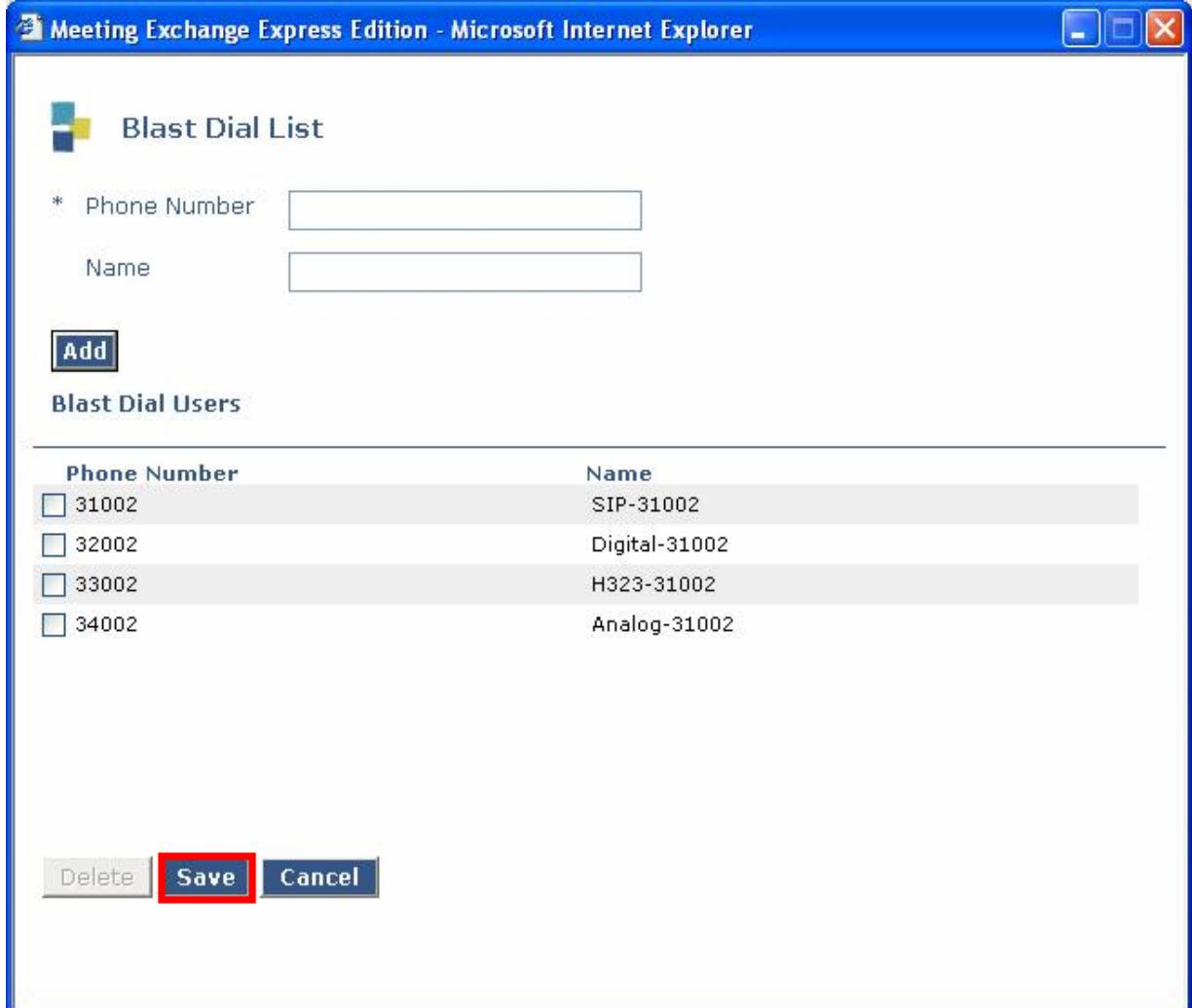
Step	Description
4.3.2	<p>From the <b>Add End User Accounts</b> screen, provision an end user account as follows:</p> <ul style="list-style-type: none"> <li>Check <b>Create Reservation</b> to generate a reservation for a conference that is associated with this end user account.</li> <li>Enter the number of ports assigned to this conference in the <b>Seats</b> field.</li> <li>Enter a number in the <b>Moderator Passcode</b> field that corresponds to the direct call flow provisioned in <b>Step 4.2.2</b>.</li> <li>Refer to [1] for definitions regarding the remaining required fields on this screen.</li> <li>Click the <b>Add</b> button to add the account to the database.</li> </ul> 

<b>Step</b>	<b>Description</b>																																										
<b>4.3.3</b>	<p>Modify the conference reservation corresponding to the end user account provisioned in <b>Step 4.3.2</b> as follows:</p> <ul style="list-style-type: none"> <li>Click <b>Conference Reservations</b> under <b>Provisioning</b>.</li> <li>Check the conference reservation corresponding to the end user account provisioned in <b>Step 4.3.2</b>.</li> <li>Click the <b>Edit</b> button.</li> </ul>  <table border="1"> <thead> <tr> <th>Conference Name</th> <th>Type</th> <th>Start Date</th> <th>Owner</th> <th>Moderator Passcode</th> <th>Participant Passcode</th> </tr> </thead> <tbody> <tr> <td>Reservation for Sample End User Account</td> <td>On-demand</td> <td></td> <td>Sample End User Account</td> <td>444</td> <td>1444</td> </tr> <tr> <td>Reservation for CSV Account 5</td> <td>On-demand</td> <td></td> <td>CSV Account 5</td> <td>22346</td> <td>12346</td> </tr> <tr> <td>Reservation for CSV Account 4</td> <td>On-demand</td> <td></td> <td>CSV Account 4</td> <td>22345</td> <td>12345</td> </tr> <tr> <td>Reservation for CSV Account 3</td> <td>On-demand</td> <td></td> <td>CSV Account 3</td> <td>22344</td> <td>12344</td> </tr> <tr> <td>Reservation for CSV Account 2</td> <td>On-demand</td> <td></td> <td>CSV Account 2</td> <td>22343</td> <td>12343</td> </tr> <tr> <td>Reservation for CSV Account 1</td> <td>On-demand</td> <td></td> <td>CSV Account 1</td> <td>22342</td> <td>12342</td> </tr> </tbody> </table>	Conference Name	Type	Start Date	Owner	Moderator Passcode	Participant Passcode	Reservation for Sample End User Account	On-demand		Sample End User Account	444	1444	Reservation for CSV Account 5	On-demand		CSV Account 5	22346	12346	Reservation for CSV Account 4	On-demand		CSV Account 4	22345	12345	Reservation for CSV Account 3	On-demand		CSV Account 3	22344	12344	Reservation for CSV Account 2	On-demand		CSV Account 2	22343	12343	Reservation for CSV Account 1	On-demand		CSV Account 1	22342	12342
Conference Name	Type	Start Date	Owner	Moderator Passcode	Participant Passcode																																						
Reservation for Sample End User Account	On-demand		Sample End User Account	444	1444																																						
Reservation for CSV Account 5	On-demand		CSV Account 5	22346	12346																																						
Reservation for CSV Account 4	On-demand		CSV Account 4	22345	12345																																						
Reservation for CSV Account 3	On-demand		CSV Account 3	22344	12344																																						
Reservation for CSV Account 2	On-demand		CSV Account 2	22343	12343																																						
Reservation for CSV Account 1	On-demand		CSV Account 1	22342	12342																																						

Step	Description
4.3.4	<p>The configuration displayed in the <b>General Settings</b> tab for this conference reservation is correlated with the configuration administered for the end user account provisioned in <b>Step 4.3.2</b>. Any updates made in this screen will be reflected in the corresponding end user account and vice-versa. To modify parameters associated with this conference reservation, click the <b>Behavior Definition</b> tab.</p> 

Step	Description
4.3.5	<p>The configuration displayed in the <b>Behavior Definition</b> tab may be modified to suit the requirements for this conference. For this sample configuration, a blast dial list was provisioned. To configure a blast dial list, click the <b>Blast Dial List</b> button.</p> 

Step	Description
4.3.6	<p>From the <b>Blast Dial List</b> screen, add entries to the blast dial list as follows:</p> <ul style="list-style-type: none"> <li>Enter a number in the <b>Phone Number</b> field that is associated with the following: <ul style="list-style-type: none"> <li>The telephone number pattern provisioned for the TelNum to URI map in <b>Step 4.2.5</b>.</li> <li>Telephones registered to either Avaya Communication Manager, or Avaya SIP Enablement Services.</li> </ul> </li> <li>Enter a descriptive name for this phone number in the <b>Name</b> field.</li> <li>Click the <b>Add</b> button to add entries to this blast dial list.</li> <li>The resultant provisioning is shown below.</li> </ul> 

Step	Description										
4.3.7	<p>Repeat <b>Step 4.3.6</b> to add additional phone numbers to the blast dial list. The resultant blast dial list is displayed below.</p> <ul style="list-style-type: none"> <li>Click the <b>Save</b> button to save and associate the blast dial list with this conference.</li> <li>Click the <b>OK</b> button  (displayed in the lower left hand corner of the <b>Behavior Definition</b> tab in <b>Step 4.3.5</b>) to save the modifications to this conference in the database.</li> </ul>  <p>The screenshot shows the 'Blast Dial List' configuration page. At the top, there are fields for 'Phone Number' and 'Name'. Below these are 'Add' and 'Blast Dial Users' buttons. A table lists users with columns for 'Phone Number' and 'Name'. The 'Save' button at the bottom is highlighted with a red box.</p> <table border="1"> <thead> <tr> <th data-bbox="355 1015 540 1043">Phone Number</th> <th data-bbox="894 1015 964 1043">Name</th> </tr> </thead> <tbody> <tr> <td data-bbox="355 1058 437 1085"><input type="checkbox"/> 31002</td> <td data-bbox="894 1058 1013 1085">SIP-31002</td> </tr> <tr> <td data-bbox="355 1100 437 1127"><input type="checkbox"/> 32002</td> <td data-bbox="894 1100 1046 1127">Digital-31002</td> </tr> <tr> <td data-bbox="355 1142 437 1170"><input type="checkbox"/> 33002</td> <td data-bbox="894 1142 1029 1170">H323-31002</td> </tr> <tr> <td data-bbox="355 1184 437 1212"><input type="checkbox"/> 34002</td> <td data-bbox="894 1184 1046 1212">Analog-31002</td> </tr> </tbody> </table>	Phone Number	Name	<input type="checkbox"/> 31002	SIP-31002	<input type="checkbox"/> 32002	Digital-31002	<input type="checkbox"/> 33002	H323-31002	<input type="checkbox"/> 34002	Analog-31002
Phone Number	Name										
<input type="checkbox"/> 31002	SIP-31002										
<input type="checkbox"/> 32002	Digital-31002										
<input type="checkbox"/> 33002	H323-31002										
<input type="checkbox"/> 34002	Analog-31002										

## **5. Cantata Technology IMG 1010 Configuration**

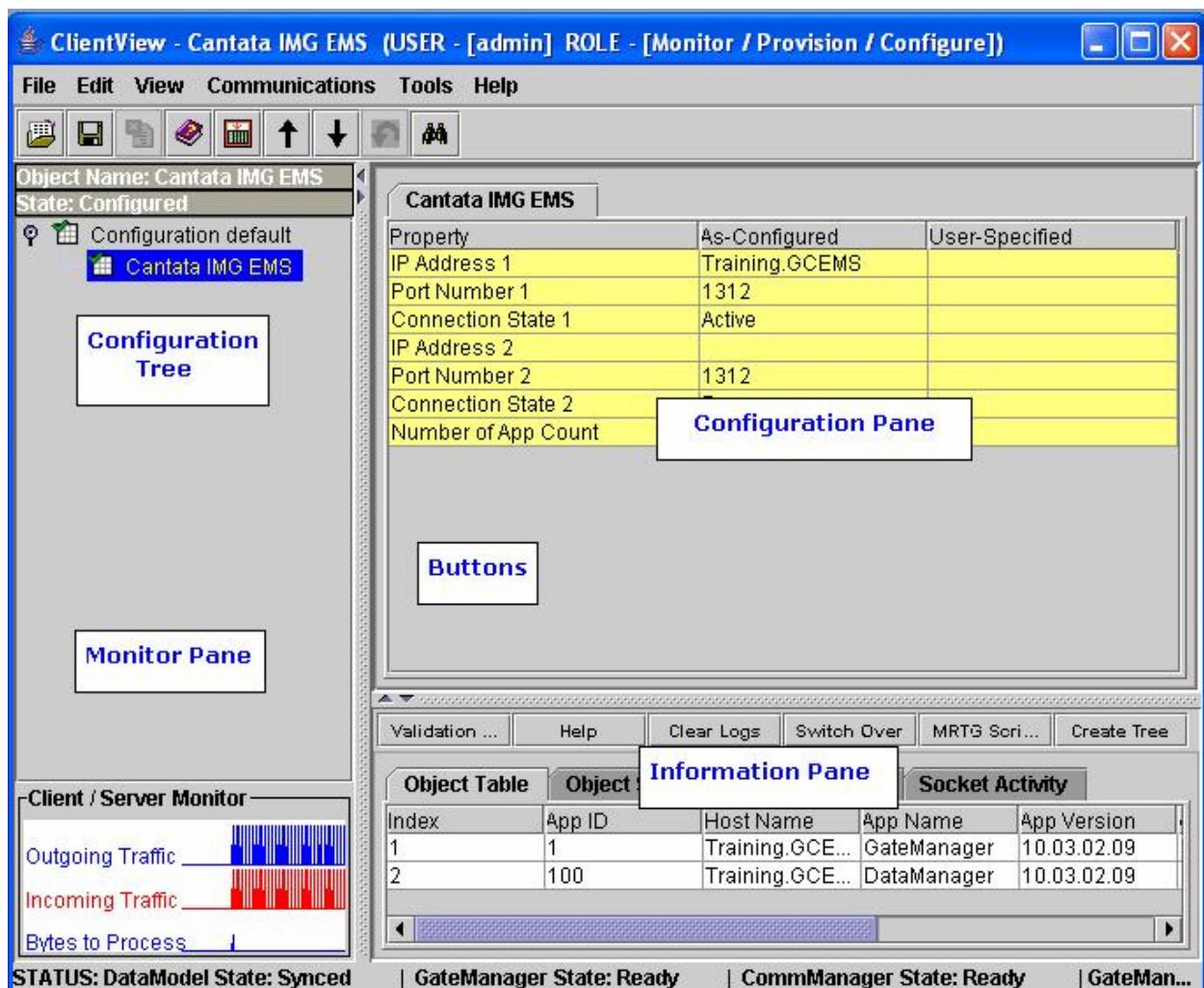
This section displays the configuration for enabling the IMG to interoperate with Avaya Communication Manager as well as Avaya Meeting Exchange.

The IMG was administered from the Cantata Technology ClientView (ClientView) application running which was co-resident with the Cantata Technology GateControl Element Management System (GCEMS) running on a Linux server. Refer to the Cantata website for on-line documentation regarding the IMG, GCEMS and the ClientView application.

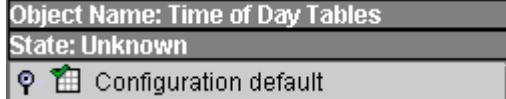
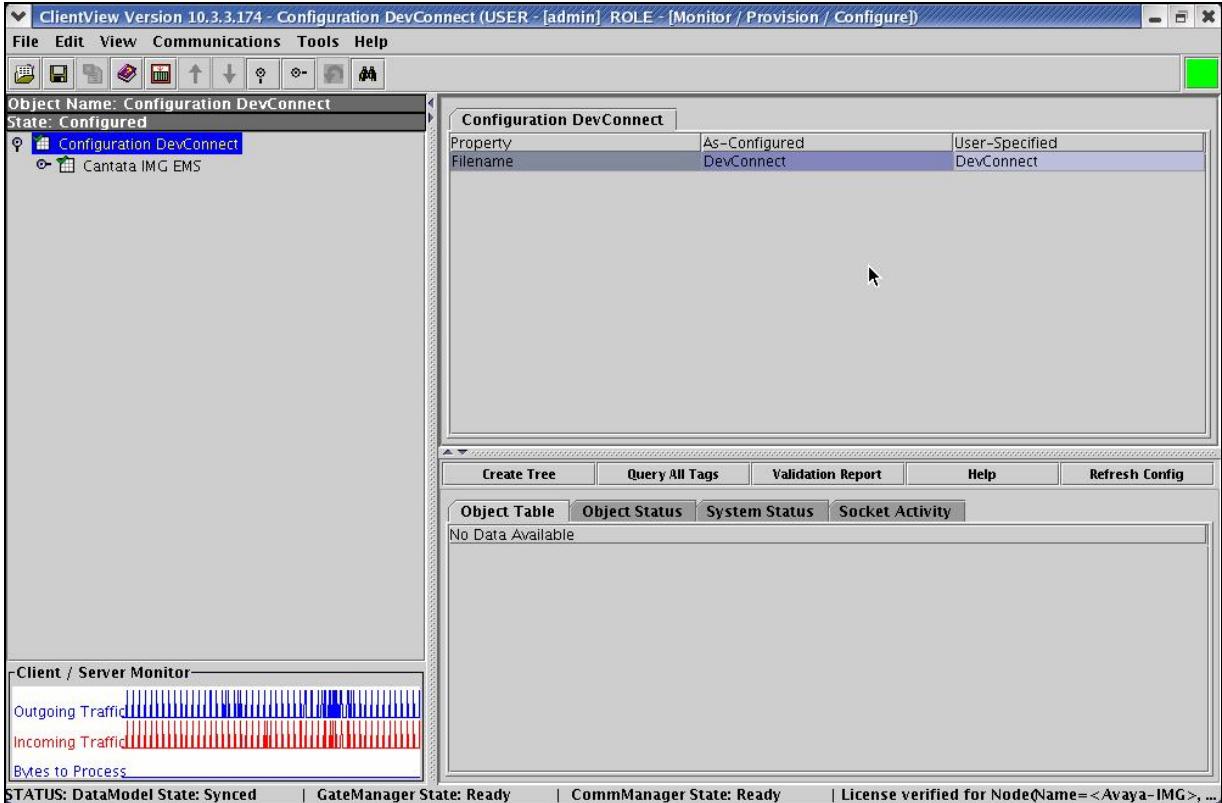
Note that this section displays the provisioning that was utilized for this sample configuration, and does not show exhaustive procedures for administering an initial configuration. For example, the screens for adding “new” elements to this sample configuration are not shown. However, the sequence of these procedures is relevant, as the configuration was administered in the order presented. Refer to the on-line help available on the Cantata website regarding procedures/commands to administer an initial configuration.

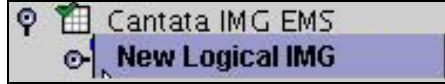
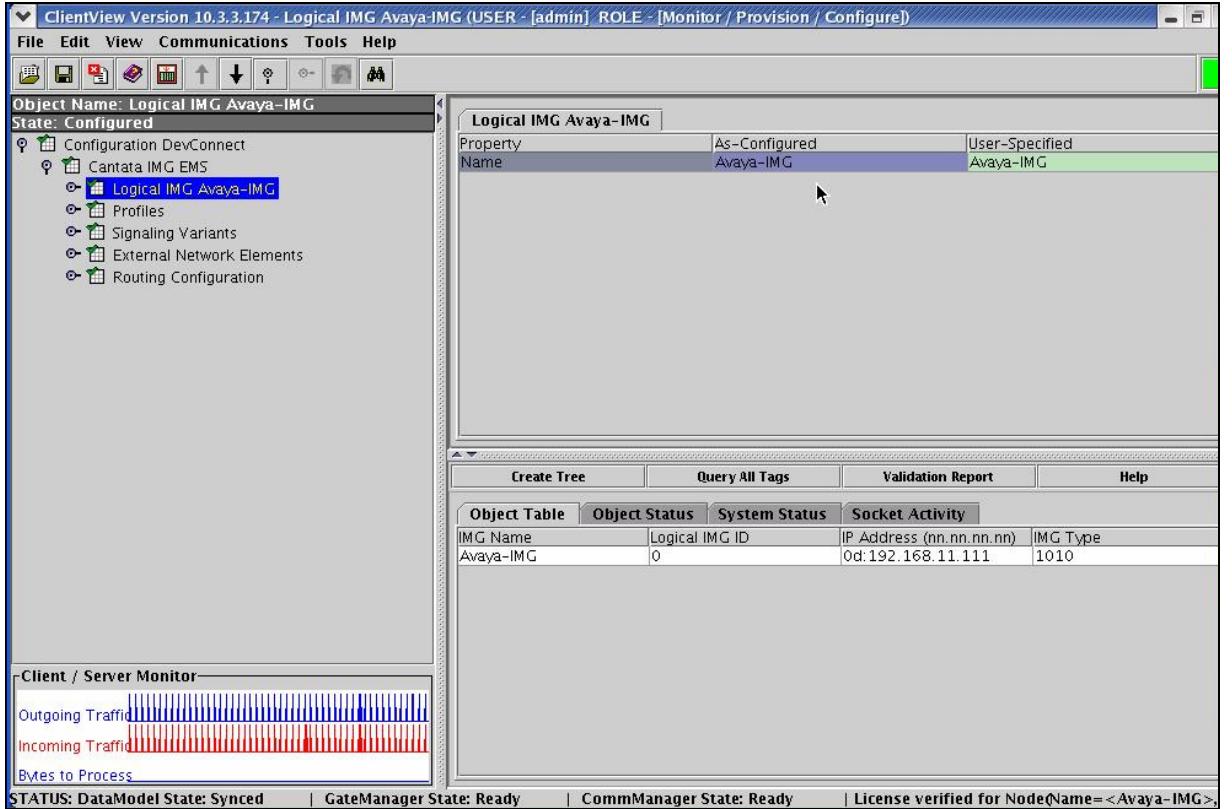
**Figure 2** illustrates the main window of the ClientView application that was utilized to provision the IMG. The following panes appear in the main window:

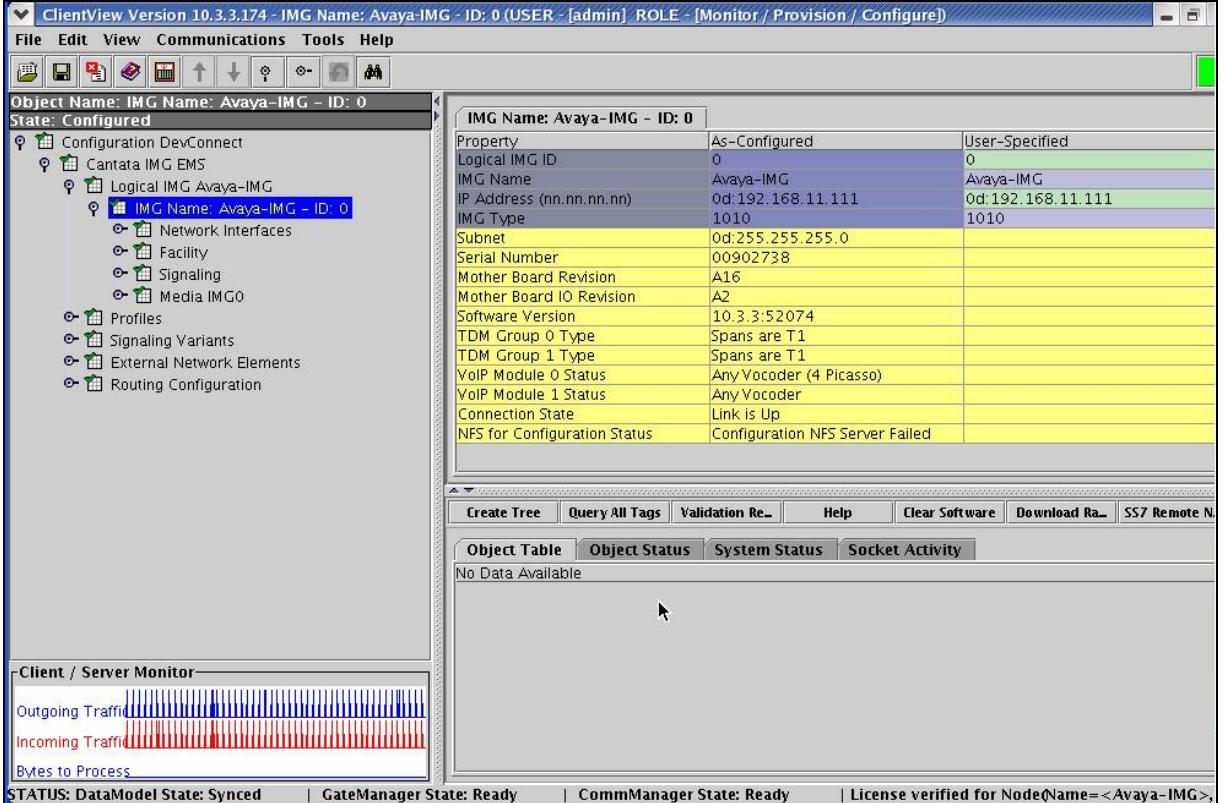
- The **Configuration Tree**, which is located in the top-left portion of the main window. This pane contains all of the items that can be configured. Right-click an item to access additional configuration items. Creating an entry in the Configuration Tree opens the corresponding Configuration Pane.
- The **Configuration Pane**, which is located in the top-right portion of the main window. This pane shows the properties of the selected object. This pane is used to view and edit the configuration.
  - The column titled **As-Configured**, shows the current configuration for parameters, as defined by the **Property** column. Enter or edit values in the **User-Specified** column.

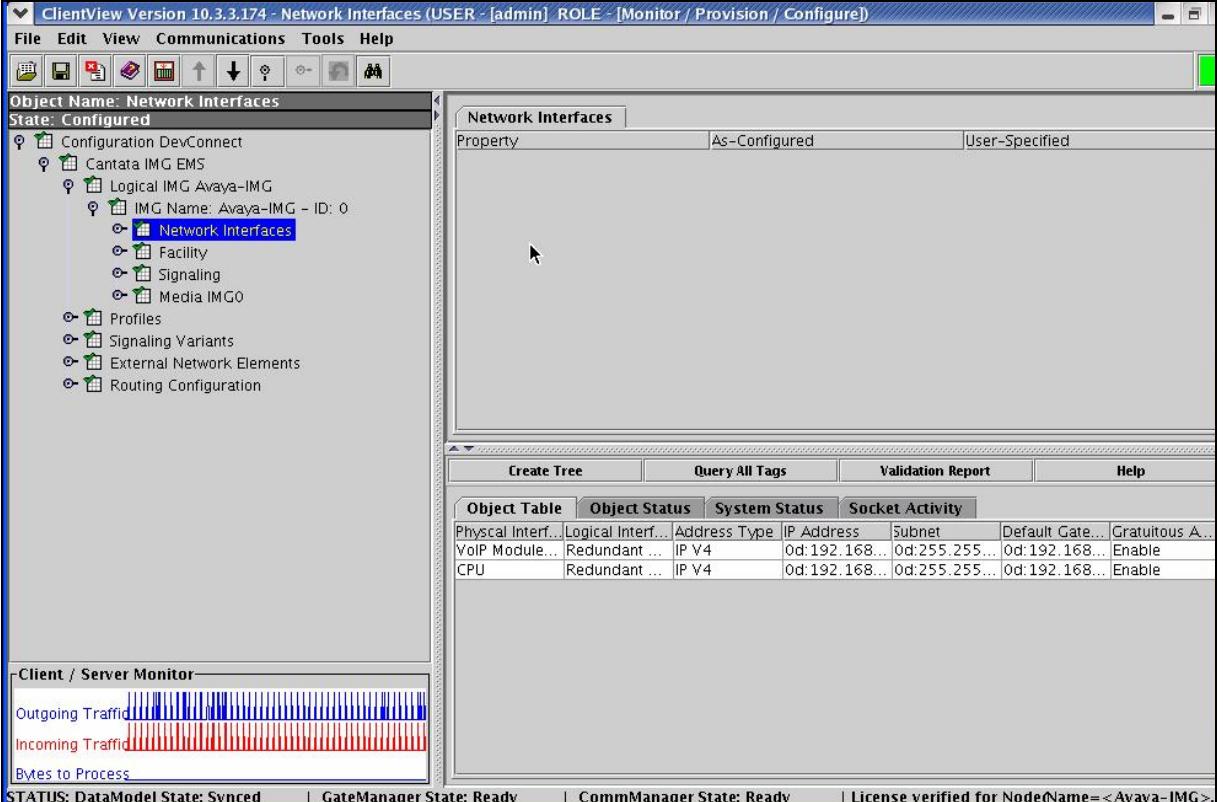


**Figure 2: Cantata Technology ClientView Main Window**

Step	Description
5.1.1	<p>A default configuration file named “default” is created when ClientView connects to GCEMS. To save the configuration file with a new name:</p> <ul style="list-style-type: none"> <li>Right-click <b>Configuration default</b> in the Configuration Tree, and select <b>Modify</b>.</li> </ul>  <ul style="list-style-type: none"> <li>Enter a descriptive name in the <b>Filename</b> field in the Configuration Pane.</li> <li>To save the changes, right-click <b>Configuration DevConnect</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> 

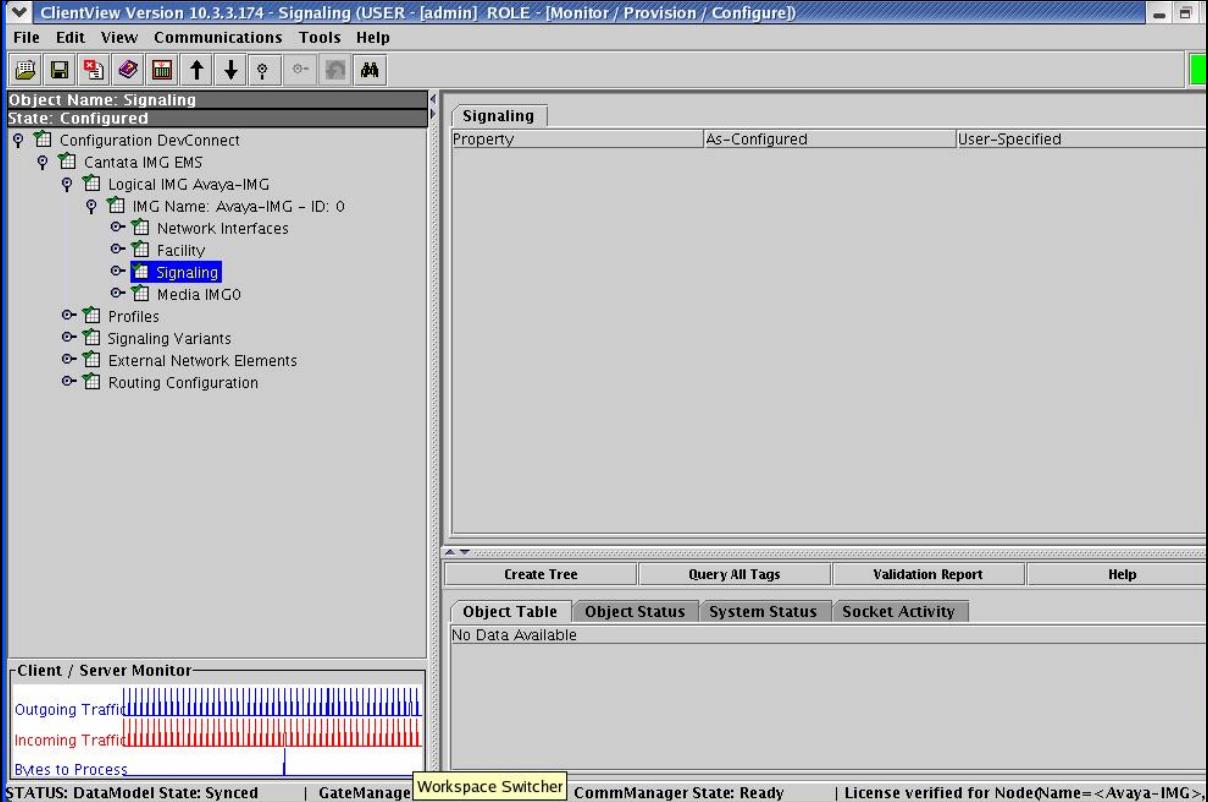
Step	Description																		
<b>5.1.2</b>	<p>Create a logical IMG as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Cantata IMG EMS</b> in the Configuration Tree, and select <b>New Logical IMG</b>.</li> </ul>  <ul style="list-style-type: none"> <li>Enter a descriptive name for the logical IMG in the <b>Name</b> field in the Configuration Pane.</li> <li>To save the changes, right-click <b>Logical IMG Avaya-IMG</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <table border="1" data-bbox="747 840 1530 903"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>Name</td> <td>Avaya-IMG</td> <td>Avaya-IMG</td> </tr> </tbody> </table> <table border="1" data-bbox="747 1189 1530 1453"> <thead> <tr> <th colspan="4">Object Table</th> </tr> <tr> <th>Object Name</th> <th>Logical IMG ID</th> <th>IP Address (nn.nn.nn.nn)</th> <th>IMG Type</th> </tr> </thead> <tbody> <tr> <td>Avaya-IMG</td> <td>0</td> <td>0d:192.168.11.111</td> <td>1010</td> </tr> </tbody> </table>	Property	As-Configured	User-Specified	Name	Avaya-IMG	Avaya-IMG	Object Table				Object Name	Logical IMG ID	IP Address (nn.nn.nn.nn)	IMG Type	Avaya-IMG	0	0d:192.168.11.111	1010
Property	As-Configured	User-Specified																	
Name	Avaya-IMG	Avaya-IMG																	
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Avaya-IMG	0	0d:192.168.11.111	1010																

<b>Step</b>	<b>Description</b>
<b>5.1.3</b>	<p>Create a physical IMG as follows:</p> <ul style="list-style-type: none"> <li>Right-click the logical IMG in the Configuration Tree, and select <b>New Physical IMG</b>.</li> <li>Enter a descriptive name for the physical IMG in the <b>IMG Name</b> field in the Configuration Pane.</li> <li>Enter the IP address of the physical IMG in the <b>IP Address</b> field. This is the same IP address assigned to the CTRL 0 port on the back of the IMG.</li> <li>Use default settings for remaining fields.</li> <li>To save the changes, right-click <b>IMG Name: Avaya-IMG - ID:0</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> 

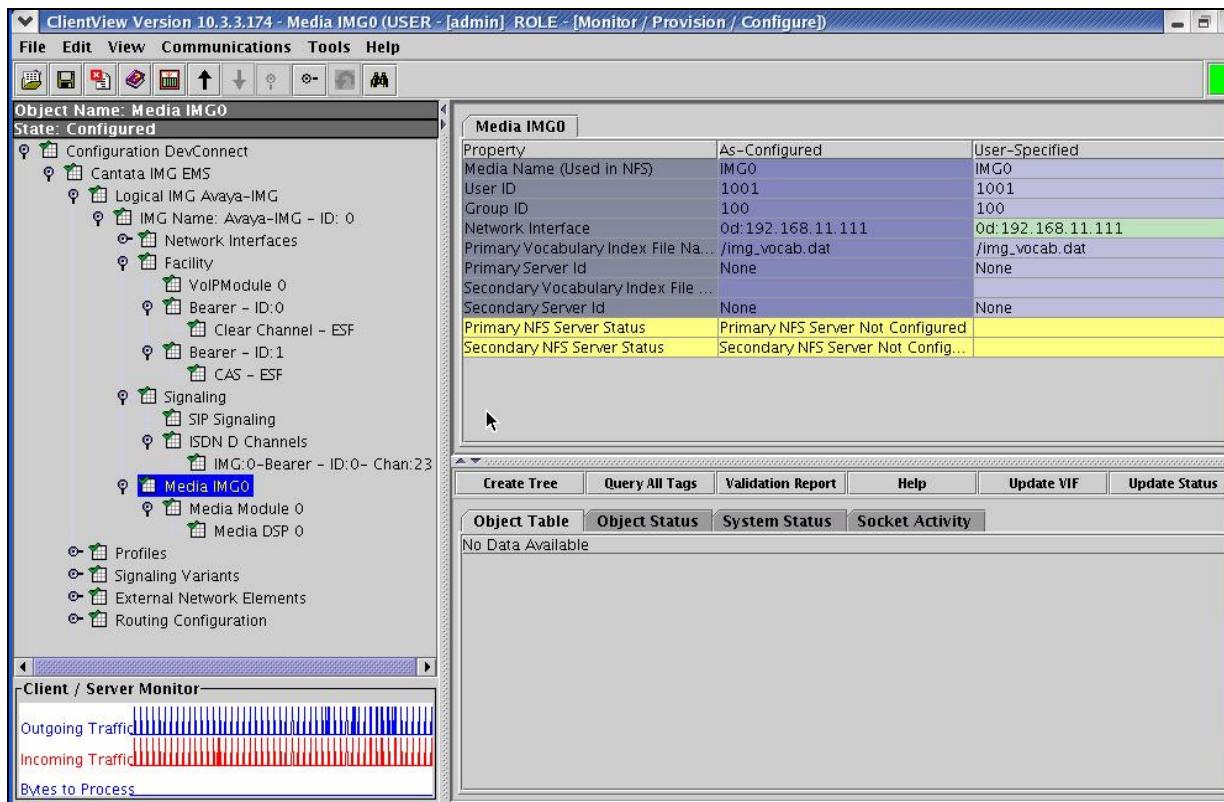
Step	Description																					
5.1.4	<p>Create an object for Network Interfaces as follows:</p> <ul style="list-style-type: none"> <li>Right-click the physical IMG in the Configuration Tree, and select <b>New Network Interfaces</b>.</li> <li>To save the changes, right-click <b>Network Interfaces</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <table border="1" data-bbox="742 982 1525 1087"> <thead> <tr> <th>Physical Interf...</th> <th>Logical Interf...</th> <th>Address Type</th> <th>IP Address</th> <th>Subnet</th> <th>Default Gate...</th> <th>Gratuitous A...</th> </tr> </thead> <tbody> <tr> <td>VoIP Module...</td> <td>Redundant ...</td> <td>IP V4</td> <td>0d:192.168...</td> <td>0d:255.255...</td> <td>0d:192.168...</td> <td>Enable</td> </tr> <tr> <td>CPU</td> <td>Redundant ...</td> <td>IP V4</td> <td>0d:192.168...</td> <td>0d:255.255...</td> <td>0d:192.168...</td> <td>Enable</td> </tr> </tbody> </table>	Physical Interf...	Logical Interf...	Address Type	IP Address	Subnet	Default Gate...	Gratuitous A...	VoIP Module...	Redundant ...	IP V4	0d:192.168...	0d:255.255...	0d:192.168...	Enable	CPU	Redundant ...	IP V4	0d:192.168...	0d:255.255...	0d:192.168...	Enable
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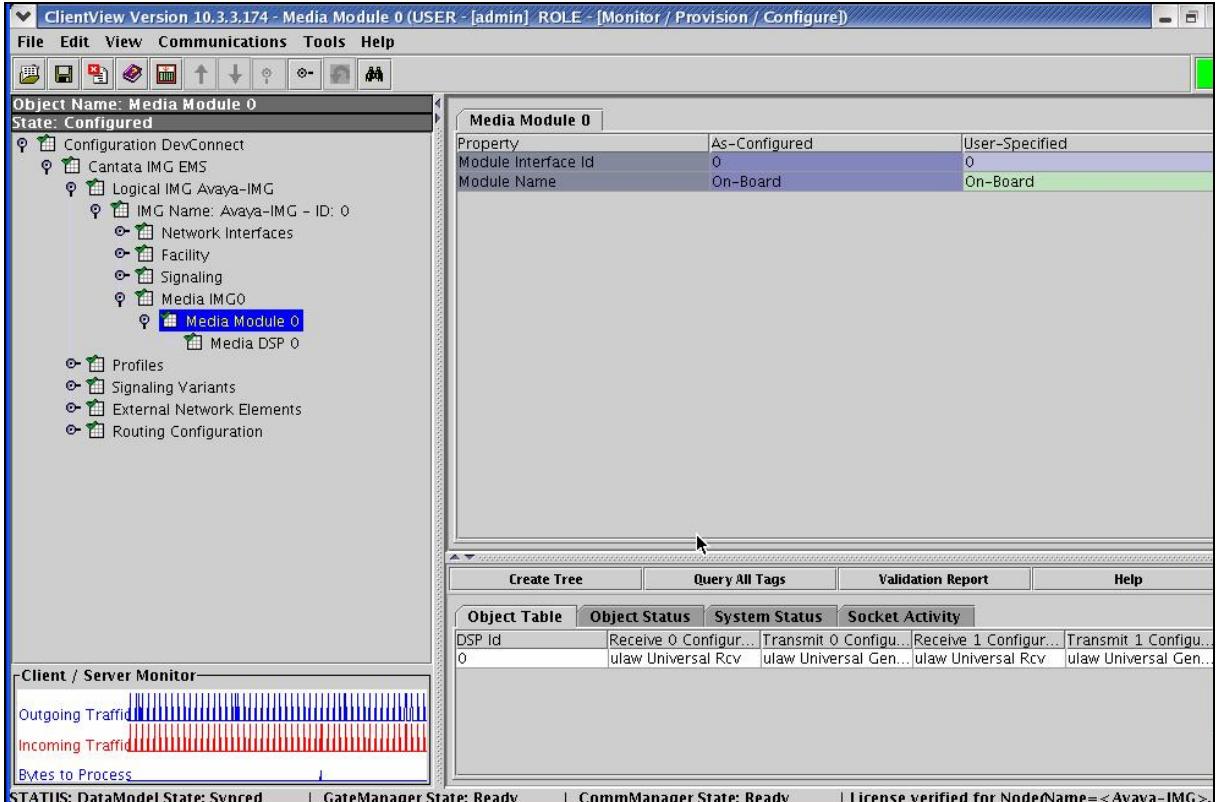
Step	Description																																													
<b>5.1.5</b>	<p>Create a Network Interface corresponding to VoIP Module 0: Port 0 as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Network Interfaces</b> in the Configuration Tree, and select <b>New Network Interface</b>.</li> <li>Select <b>VoIP Module 0: Port 0</b> from the drop down list for the <b>Physical Interface</b> field in the Configuration Pane.</li> <li>Administer settings for module's IP network configuration in the <b>IP Address</b>, <b>Subnet</b> and <b>Default Gateway</b> fields respectively.</li> <li>Use default settings for remaining fields.</li> <li>To save the changes, right-click <b>VoIP Module 0: Port 0</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>Physical Interface</td> <td>VoIP Module 0: Port 0</td> <td>VoIP Module 0: Port 0</td> </tr> <tr> <td>Logical Interface</td> <td>Redundant Data</td> <td>Redundant Data</td> </tr> <tr> <td>Address Type</td> <td>IP V4</td> <td>IP V4</td> </tr> <tr> <td>IP Address</td> <td>0d:192.168.13.111</td> <td>0d:192.168.13.111</td> </tr> <tr> <td>Subnet</td> <td>0d:255.255.255.0</td> <td>0d:255.255.255.0</td> </tr> <tr> <td>Default Gateway</td> <td>0d:192.168.13.1</td> <td>0d:192.168.13.1</td> </tr> <tr> <td>Gratuitous ARP and ARP Respons...</td> <td>Enable</td> <td>Enable</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Physical Interf...</th> <th>Logical Interf...</th> <th>Address Type</th> <th>IP Address</th> <th>Subnet</th> <th>Default Gate...</th> <th>Gratuitous A...</th> </tr> </thead> <tbody> <tr> <td>VoIP Module...</td> <td>Redundant ...</td> <td>IP V4</td> <td>0d:192.168...</td> <td>0d:255.255...</td> <td>0d:192.168...</td> <td>Enable</td> </tr> <tr> <td>CPU</td> <td>Redundant ...</td> <td>IP V4</td> <td>0d:192.168...</td> <td>0d:255.255...</td> <td>0d:192.168...</td> <td>Enable</td> </tr> </tbody> </table>	Property	As-Configured	User-Specified	Physical Interface	VoIP Module 0: Port 0	VoIP Module 0: Port 0	Logical Interface	Redundant Data	Redundant Data	Address Type	IP V4	IP V4	IP Address	0d:192.168.13.111	0d:192.168.13.111	Subnet	0d:255.255.255.0	0d:255.255.255.0	Default Gateway	0d:192.168.13.1	0d:192.168.13.1	Gratuitous ARP and ARP Respons...	Enable	Enable	Physical Interf...	Logical Interf...	Address Type	IP Address	Subnet	Default Gate...	Gratuitous A...	VoIP Module...	Redundant ...	IP V4	0d:192.168...	0d:255.255...	0d:192.168...	Enable	CPU	Redundant ...	IP V4	0d:192.168...	0d:255.255...	0d:192.168...	Enable
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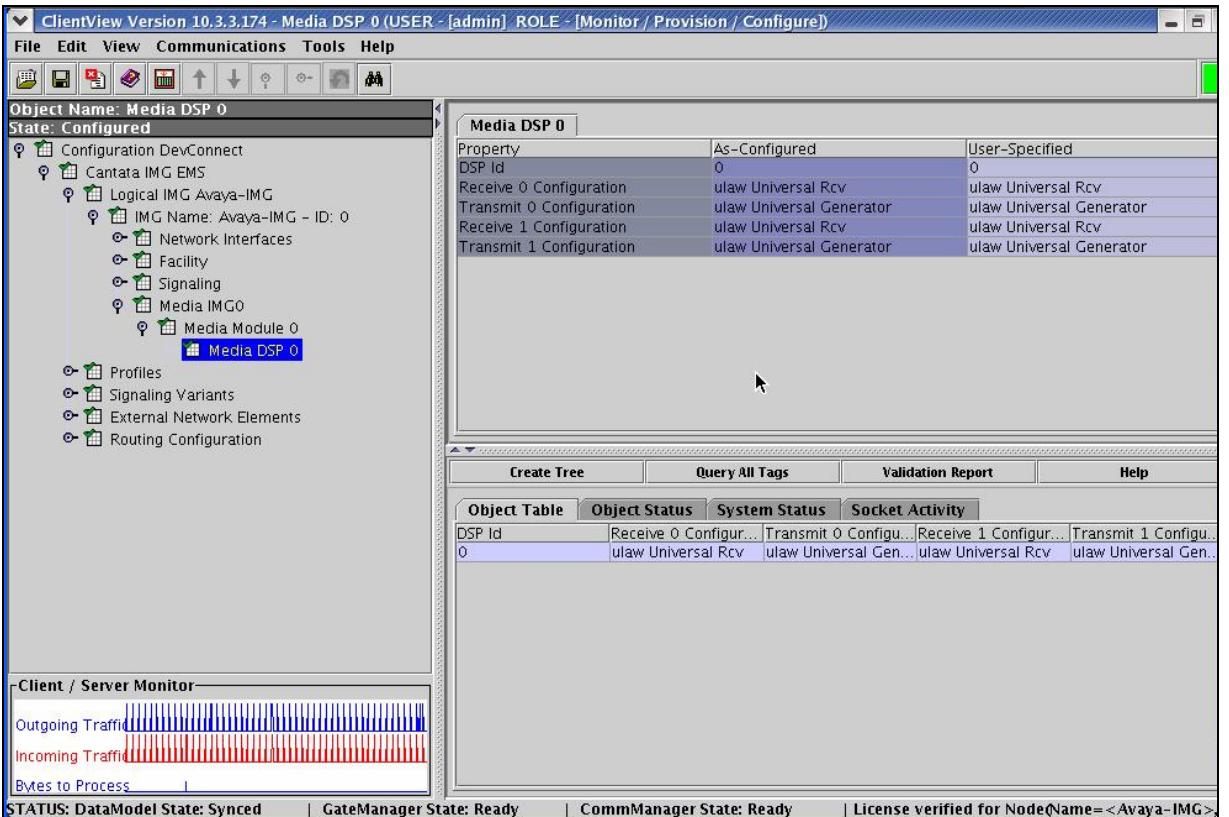
Step	Description																																													
<b>5.1.6</b>	<p>Create a Network Interface corresponding to the CPU as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Network Interfaces</b> in the Configuration Tree, and select <b>New Network Interface</b>.</li> <li>Select <b>CPU</b> from the drop down list for the <b>Physical Interface</b> field in the Configuration Pane.</li> <li>Administer settings for module's IP network configuration in the <b>IP Address</b>, <b>Subnet</b> and <b>Default Gateway</b> fields respectively.</li> <li>Use default settings for remaining fields.</li> <li>To save the changes, right-click <b>CPU</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>Physical Interface</td> <td>CPU</td> <td>CPU</td> </tr> <tr> <td>Logical Interface</td> <td>Redundant Data</td> <td>Redundant Data</td> </tr> <tr> <td>Address Type</td> <td>IP V4</td> <td>IP V4</td> </tr> <tr> <td>IP Address</td> <td>0d:192.168.13.112</td> <td>0d:192.168.13.112</td> </tr> <tr> <td>Subnet</td> <td>0d:255.255.255.0</td> <td>0d:255.255.255.0</td> </tr> <tr> <td>Default Gateway</td> <td>0d:192.168.13.1</td> <td>0d:192.168.13.1</td> </tr> <tr> <td>Gratuitous ARP and ARP Respons...</td> <td>Enable</td> <td>Enable</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Physical Interf...</th> <th>Logical Interf...</th> <th>Address Type</th> <th>IP Address</th> <th>Subnet</th> <th>Default Gate...</th> <th>Gratuitous A...</th> </tr> </thead> <tbody> <tr> <td>VoIP Module...</td> <td>Redundant ...</td> <td>IP V4</td> <td>0d:192.168...</td> <td>0d:255.255...</td> <td>0d:192.168...</td> <td>Enable</td> </tr> <tr> <td>CPU</td> <td>Redundant ...</td> <td>IP V4</td> <td>0d:192.168...</td> <td>0d:255.255...</td> <td>0d:192.168...</td> <td>Enable</td> </tr> </tbody> </table>	Property	As-Configured	User-Specified	Physical Interface	CPU	CPU	Logical Interface	Redundant Data	Redundant Data	Address Type	IP V4	IP V4	IP Address	0d:192.168.13.112	0d:192.168.13.112	Subnet	0d:255.255.255.0	0d:255.255.255.0	Default Gateway	0d:192.168.13.1	0d:192.168.13.1	Gratuitous ARP and ARP Respons...	Enable	Enable	Physical Interf...	Logical Interf...	Address Type	IP Address	Subnet	Default Gate...	Gratuitous A...	VoIP Module...	Redundant ...	IP V4	0d:192.168...	0d:255.255...	0d:192.168...	Enable	CPU	Redundant ...	IP V4	0d:192.168...	0d:255.255...	0d:192.168...	Enable
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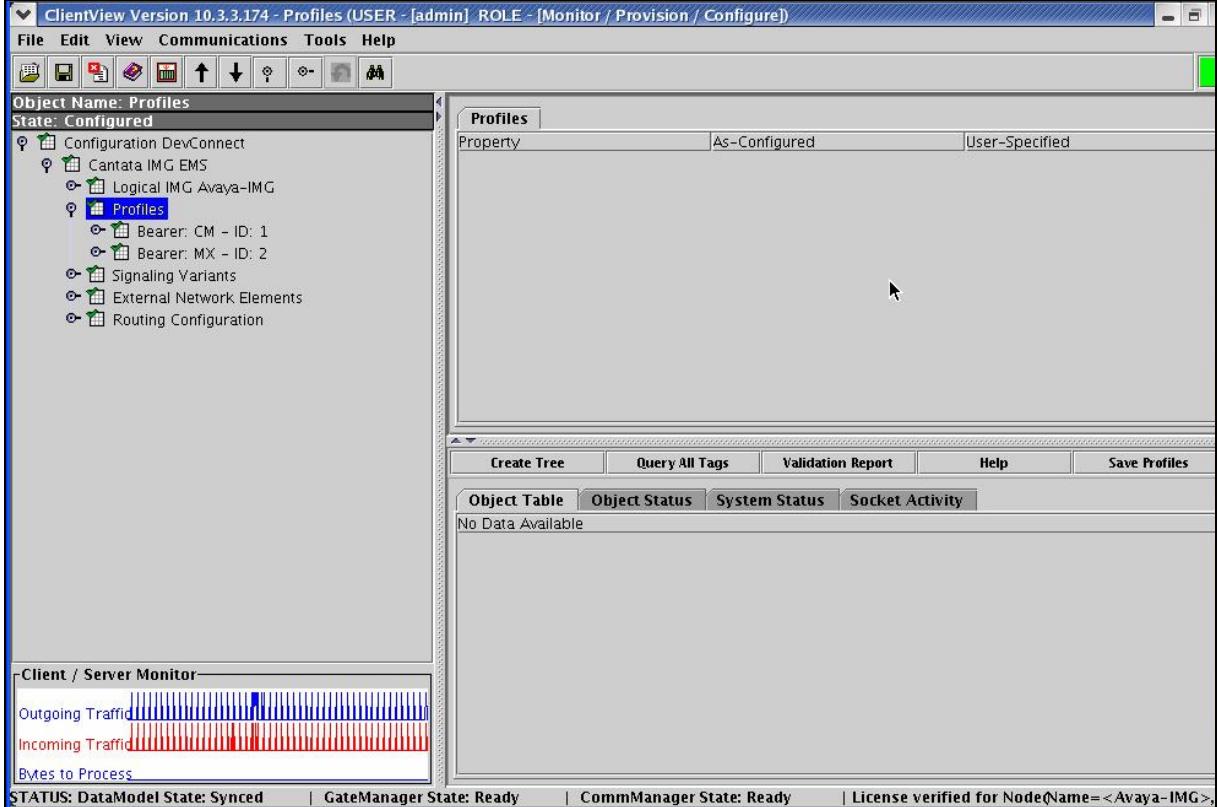
Step	Description
5.1.7	<p>Create an object for Signaling as follows:</p> <ul style="list-style-type: none"> <li>Right-click the physical IMG in the Configuration Tree, and select <b>New Signaling</b>.</li> <li>To save the changes, right-click <b>Signaling</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <p>The screenshot shows the ClientView interface. The title bar reads "ClientView Version 10.3.3.174 - Signaling (USER - [admin] ROLE - [Monitor / Provision / Configure])". The menu bar includes File, Edit, View, Communications, Tools, and Help. The toolbar has icons for file operations like Open, Save, Print, and zoom. The left pane displays the "Object Name: Signaling" and "State: Configured" status. Below this is the "Configuration DevConnect" tree view, which includes "Cantata IMG EMS", "Logical IMG Avaya-IMG" (with "IMG Name: Avaya-IMG - ID: 0" expanded), "Network Interfaces", "Facility", "Signaling" (selected), and "Media IMGO", along with "Profiles", "Signaling Variants", "External Network Elements", and "Routing Configuration". The right pane shows the "Signaling" properties with tabs for "Property", "As-Configured", and "User-Specified". At the bottom, there's a "Client / Server Monitor" section with "Outgoing Traffic" and "Incoming Traffic" graphs, and a status bar with "STATUS: DataModel State: Synced", "GateManager", "Workspace Switcher", "CommManager State: Ready", and "License verified for NodeName=&lt;Avaya-IMG&gt;".</p>

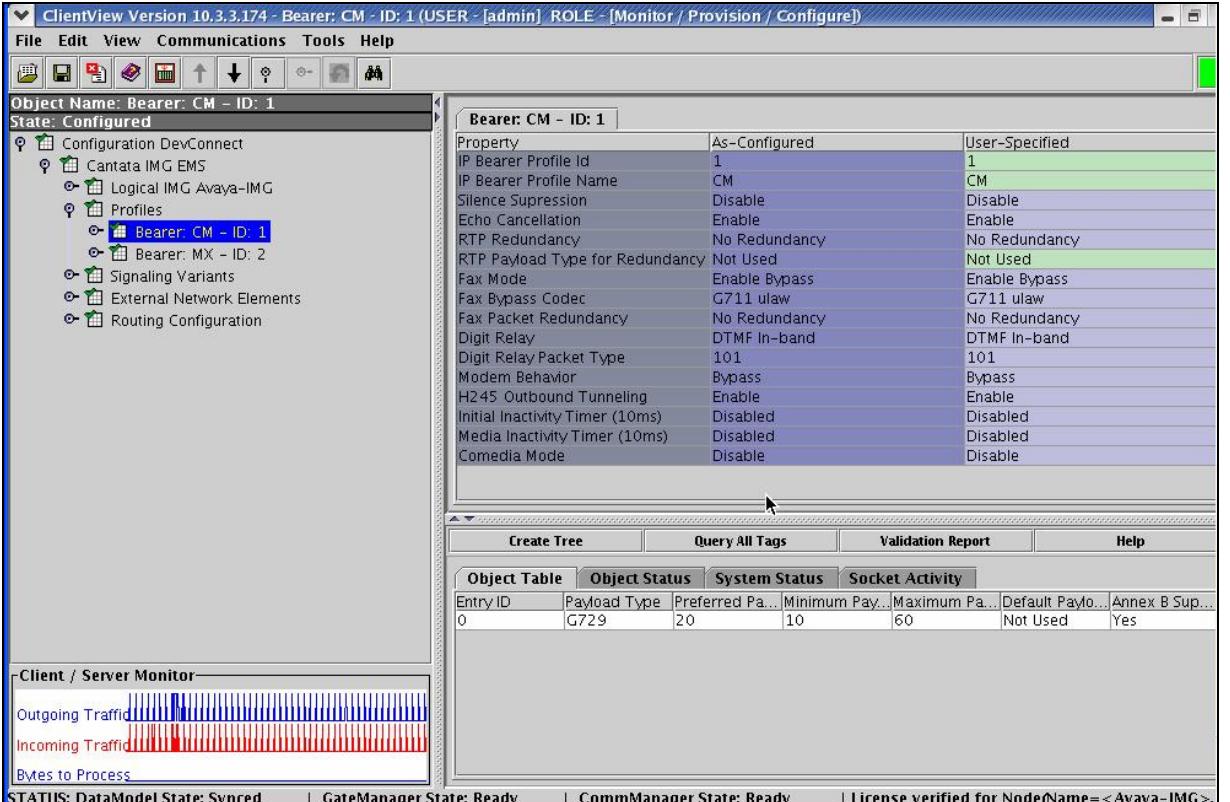
Step	Description																																							
5.1.8	<p>Configure SIP Signaling as follows</p> <ul style="list-style-type: none"> <li>Right-click <b>Signaling</b> in the Configuration Tree, and select <b>New SIP</b>.</li> <li>Administer settings for the module's network connectivity in the <b>SIP Signaling IP Address</b> and <b>Default Transport Type</b> fields in the Configuration Pane that correspond to the configuration on Avaya Meeting Exchange (see <b>Step 4.1.1</b>, and <b>Step 4.2.5</b>).</li> <li>Use default settings for remaining fields.</li> <li>To save the changes, right-click <b>SIP Signaling</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> <table border="1"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>SIP Signaling IP Address</td> <td>0d:192.168.13.112</td> <td>0d:192.168.13.112</td> </tr> <tr> <td>Local SIP Port</td> <td>5060</td> <td>5060</td> </tr> <tr> <td>SIP Compact Header</td> <td>Disable</td> <td>Disable</td> </tr> <tr> <td>Default Transport Type</td> <td>TCP</td> <td>TCP</td> </tr> <tr> <td>Default SIP UserName (AOR)</td> <td>CANTATA-IMG0</td> <td>CANTATA-IMG0</td> </tr> <tr> <td>Default SIP Authentication UserNa...</td> <td></td> <td></td> </tr> <tr> <td>Default SIP Authentication Passwo...</td> <td></td> <td></td> </tr> <tr> <td>Enable SIP-T</td> <td>No</td> <td>No</td> </tr> <tr> <td>SIP-T Behavior</td> <td>Not Used</td> <td>Not Used</td> </tr> <tr> <td>Privacy Support</td> <td>Off</td> <td>Off</td> </tr> <tr> <td>Remote IMG's SIP Profile</td> <td>Default Profile</td> <td>Default Profile</td> </tr> <tr> <td>Fully Qualified Domain Name (FQ...</td> <td></td> <td></td> </tr> </tbody> </table>	Property	As-Configured	User-Specified	SIP Signaling IP Address	0d:192.168.13.112	0d:192.168.13.112	Local SIP Port	5060	5060	SIP Compact Header	Disable	Disable	Default Transport Type	TCP	TCP	Default SIP UserName (AOR)	CANTATA-IMG0	CANTATA-IMG0	Default SIP Authentication UserNa...			Default SIP Authentication Passwo...			Enable SIP-T	No	No	SIP-T Behavior	Not Used	Not Used	Privacy Support	Off	Off	Remote IMG's SIP Profile	Default Profile	Default Profile	Fully Qualified Domain Name (FQ...		
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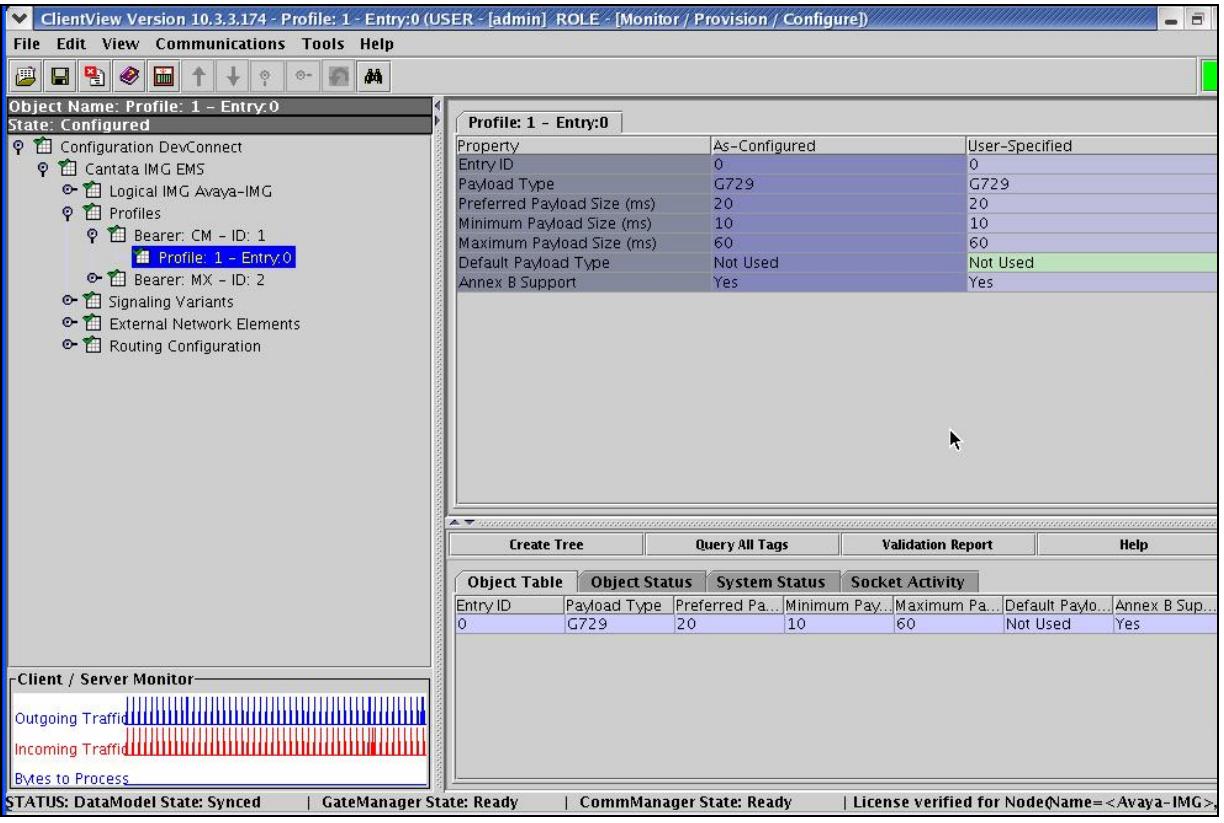
Step	Description																																	
5.1.9	<p>Configure settings for Media as follows:</p> <ul style="list-style-type: none"> <li>Right-click the physical IMG in the Configuration Tree, and select <b>New Media</b>.</li> <li>Select the Network File Server (NFS) from the drop down list for the <b>Media Name</b> field in the Configuration Pane.</li> <li>Enter the User ID of the NFS for UNIX permissions in the <b>User ID</b> field.</li> <li>Enter the Group ID of the NFS for UNIX permissions in the <b>Group ID</b> field.</li> <li>Use default settings for remaining fields.</li> </ul> <p><i>Note: The <b>Network Interface</b> field is automatically populated with the IP address provisioned for the management interface for the IMG.</i></p> <ul style="list-style-type: none"> <li>To save the changes, right-click <b>Media IMG0</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <table border="1" data-bbox="734 823 1387 1077"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>Media Name (Used in NFS)</td> <td>IMG0</td> <td>IMG0</td> </tr> <tr> <td>User ID</td> <td>1001</td> <td>1001</td> </tr> <tr> <td>Group ID</td> <td>100</td> <td>100</td> </tr> <tr> <td>Network Interface</td> <td>0d:192.168.11.111</td> <td>0d:192.168.11.111</td> </tr> <tr> <td>Primary Vocabulary Index File Na...</td> <td>/img_vocab.dat</td> <td>/img_vocab.dat</td> </tr> <tr> <td>Primary Server Id</td> <td>None</td> <td>None</td> </tr> <tr> <td>Secondary Vocabulary Index File ...</td> <td></td> <td></td> </tr> <tr> <td>Secondary Server Id</td> <td>None</td> <td>None</td> </tr> <tr> <td>Primary NFS Server Status</td> <td>Primary NFS Server Not Configured</td> <td></td> </tr> <tr> <td>Secondary NFS Server Status</td> <td>Secondary NFS Server Not Config...</td> <td></td> </tr> </tbody> </table>	Property	As-Configured	User-Specified	Media Name (Used in NFS)	IMG0	IMG0	User ID	1001	1001	Group ID	100	100	Network Interface	0d:192.168.11.111	0d:192.168.11.111	Primary Vocabulary Index File Na...	/img_vocab.dat	/img_vocab.dat	Primary Server Id	None	None	Secondary Vocabulary Index File ...			Secondary Server Id	None	None	Primary NFS Server Status	Primary NFS Server Not Configured		Secondary NFS Server Status	Secondary NFS Server Not Config...	
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Step	Description									
5.1.10	<p>Create an object for a Media Module as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Media IMGO</b> in the Configuration Tree, and select <b>New Media Module</b>.</li> <li>Use default settings for all fields.</li> <li>To save the changes, right-click <b>Media Module 0</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <p><b>Media Module 0 Properties:</b></p> <table border="1"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>Module Interface Id</td> <td>0</td> <td>0</td> </tr> <tr> <td>Module Name</td> <td>On-Board</td> <td>On-Board</td> </tr> </tbody> </table> <p><b>Client / Server Monitor - Traffic:</b></p> <ul style="list-style-type: none"> <li>Outgoing Traffic: Blue bars</li> <li>Incoming Traffic: Red bars</li> <li>Bytes to Process: 1</li> </ul> <p><b>Status Bar:</b></p> <p>STATUS: DataModel State: Synced   GateManager State: Ready   CommManager State: Ready   License verified for NodeName=&lt;Avaya-IMG&gt;,</p>	Property	As-Configured	User-Specified	Module Interface Id	0	0	Module Name	On-Board	On-Board
Property	As-Configured	User-Specified								
Module Interface Id	0	0								
Module Name	On-Board	On-Board								

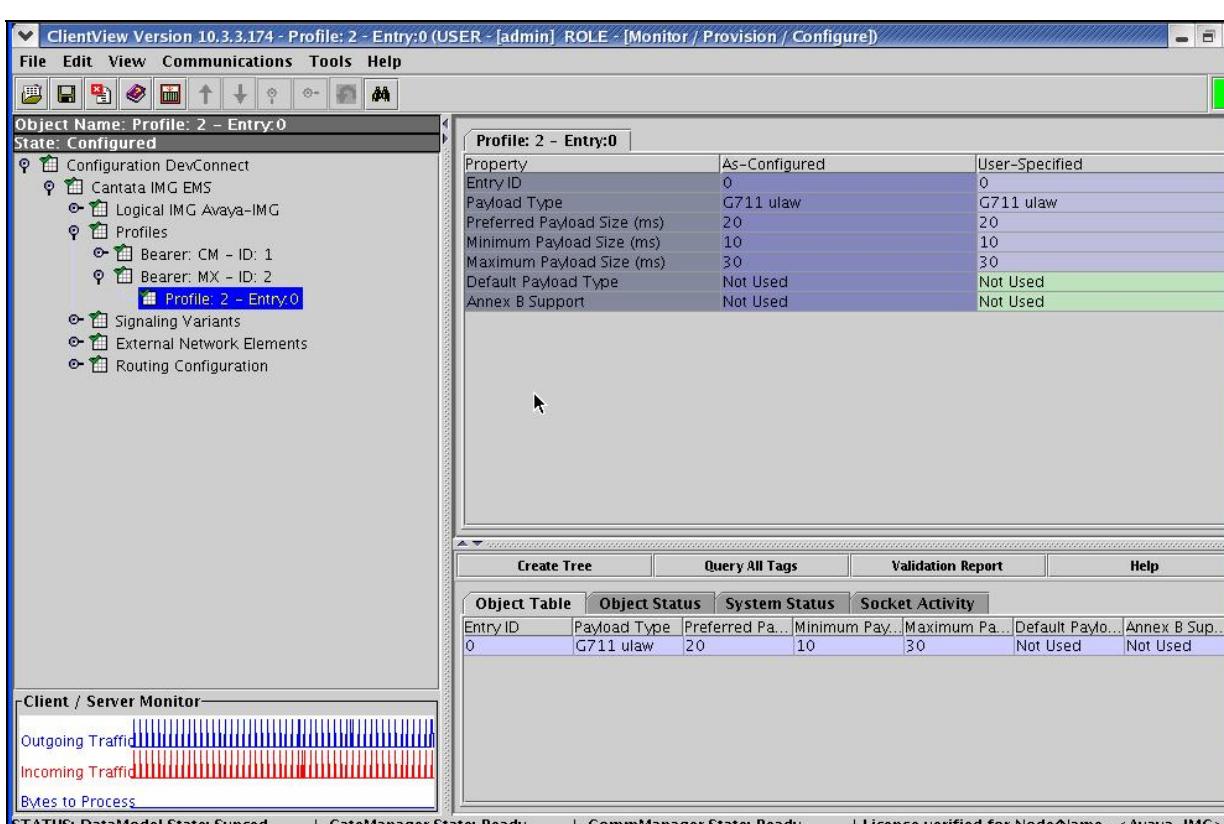
Step	Description																												
5.1.11	<p>Configure the Media Module DSP as follows:</p> <ul style="list-style-type: none"> <li>Right-click the Media Module created in <b>Step 5.1.10</b> in the Configuration Tree, and select <b>New Media DSP</b>.</li> <li>Use default settings for all fields.</li> <li>To save the changes, right-click <b>Media DSP 0</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <table border="1" data-bbox="752 650 1454 783"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>DSP Id</td> <td>0</td> <td>0</td> </tr> <tr> <td>Receive 0 Configuration</td> <td>ulaw Universal Rcv</td> <td>ulaw Universal Rcv</td> </tr> <tr> <td>Transmit 0 Configuration</td> <td>ulaw Universal Generator</td> <td>ulaw Universal Generator</td> </tr> <tr> <td>Receive 1 Configuration</td> <td>ulaw Universal Rcv</td> <td>ulaw Universal Rcv</td> </tr> <tr> <td>Transmit 1 Configuration</td> <td>ulaw Universal Generator</td> <td>ulaw Universal Generator</td> </tr> </tbody> </table> <table border="1" data-bbox="752 994 1529 1079"> <thead> <tr> <th>DSP Id</th> <th>Receive 0 Configur...</th> <th>Transmit 0 Configu...</th> <th>Receive 1 Configur...</th> <th>Transmit 1 Configu...</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>ulaw Universal Rcv</td> <td>ulaw Universal Gen...</td> <td>ulaw Universal Rcv</td> <td>ulaw Universal Gen...</td> </tr> </tbody> </table>	Property	As-Configured	User-Specified	DSP Id	0	0	Receive 0 Configuration	ulaw Universal Rcv	ulaw Universal Rcv	Transmit 0 Configuration	ulaw Universal Generator	ulaw Universal Generator	Receive 1 Configuration	ulaw Universal Rcv	ulaw Universal Rcv	Transmit 1 Configuration	ulaw Universal Generator	ulaw Universal Generator	DSP Id	Receive 0 Configur...	Transmit 0 Configu...	Receive 1 Configur...	Transmit 1 Configu...	0	ulaw Universal Rcv	ulaw Universal Gen...	ulaw Universal Rcv	ulaw Universal Gen...
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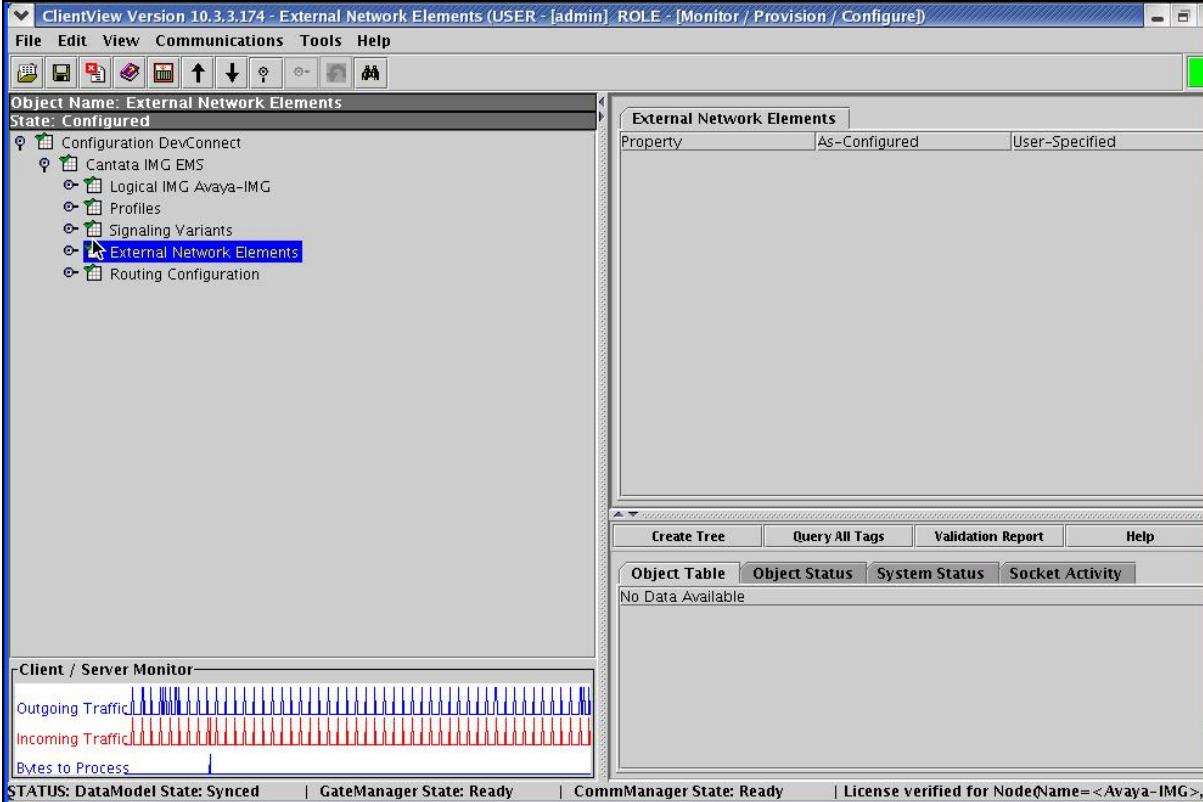
Step	Description
5.1.12	<p>Create an object for Profiles as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Cantata IMG EMS</b> in the Configuration Tree, and select <b>New Profiles</b>.</li> <li>To save the changes, right-click <b>Profiles</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> 

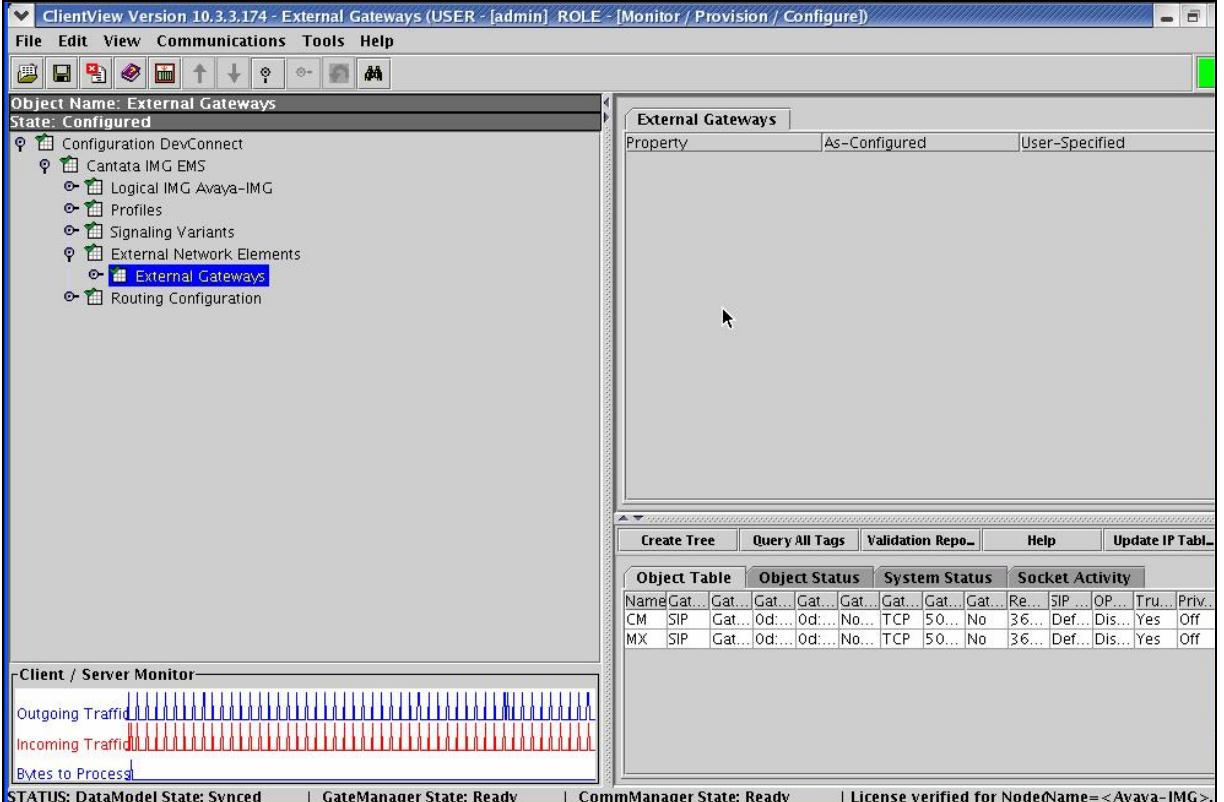
Step	Description																																																			
5.1.13	<p>Configure an IP Bearer Profile corresponding to Avaya Communication Manager as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Profiles</b> in the Configuration Tree, and select <b>New IP Bearer Profile</b>.</li> <li>Enter a descriptive name for the IP Bearer Profile in the <b>IP Bearer Profile Name</b> field in the Configuration Pane.</li> <li>Use default settings for remaining fields.</li> <li>To save the changes, right-click <b>Bearer: CM - ID:1</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <p>The screenshot shows the ClientView interface with the following details:</p> <ul style="list-style-type: none"> <li><b>Object Name:</b> Bearer: CM - ID: 1</li> <li><b>State:</b> Configured</li> <li><b>Configuration Tree:</b> <ul style="list-style-type: none"> <li>Configuration DevConnect</li> <li>Cantata IMG EMS</li> <li>Logical IMG Avaya-IMG</li> <li>Profiles           <ul style="list-style-type: none"> <li><b>Bearer: CM - ID: 1</b> (selected)</li> <li>Bearer: MX - ID: 2</li> </ul> </li> <li>Signaling Variants</li> <li>External Network Elements</li> <li>Routing Configuration</li> </ul> </li> <li><b>Bearer: CM - ID: 1</b> (Properties pane):       <table border="1"> <thead> <tr> <th>Property</th> <th>Value</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>IP Bearer Profile Id</td> <td>1</td> <td>User-Specified</td> </tr> <tr> <td>IP Bearer Profile Name</td> <td>CM</td> <td></td> </tr> <tr> <td>Silence Suppression</td> <td>Disable</td> <td>Disable</td> </tr> <tr> <td>Echo Cancellation</td> <td>Enable</td> <td>Enable</td> </tr> <tr> <td>RTP Redundancy</td> <td>No Redundancy</td> <td>No Redundancy</td> </tr> <tr> <td>RTP Payload Type for Redundancy</td> <td>Not Used</td> <td>Not Used</td> </tr> <tr> <td>Fax Mode</td> <td>Enable Bypass</td> <td>Enable Bypass</td> </tr> <tr> <td>Fax Bypass Codec</td> <td>G711 ulaw</td> <td>G711 ulaw</td> </tr> <tr> <td>Fax Packet Redundancy</td> <td>No Redundancy</td> <td>No Redundancy</td> </tr> <tr> <td>Digit Relay</td> <td>DTMF In-band</td> <td>DTMF In-band</td> </tr> <tr> <td>Digit Relay Packet Type</td> <td>101</td> <td>101</td> </tr> <tr> <td>Modem Behavior</td> <td>Bypass</td> <td>Bypass</td> </tr> <tr> <td>H245 Outbound Tunneling</td> <td>Enable</td> <td>Enable</td> </tr> <tr> <td>Initial Inactivity Timer (10ms)</td> <td>Disabled</td> <td>Disabled</td> </tr> <tr> <td>Media Inactivity Timer (10ms)</td> <td>Disabled</td> <td>Disabled</td> </tr> <tr> <td>Comedia Mode</td> <td>Disable</td> <td>Disable</td> </tr> </tbody> </table> </li> <li><b>Client / Server Monitor:</b> <ul style="list-style-type: none"> <li>Outgoing Traffic (blue bars)</li> <li>Incoming Traffic (red bars)</li> <li>Bytes to Process</li> </ul> </li> <li><b>Status:</b> DataModel State: Synced   GateManager State: Ready   CommManager State: Ready   License verified for NodeName=&lt;Avaya-IMG&gt;</li> </ul>	Property	Value	Notes	IP Bearer Profile Id	1	User-Specified	IP Bearer Profile Name	CM		Silence Suppression	Disable	Disable	Echo Cancellation	Enable	Enable	RTP Redundancy	No Redundancy	No Redundancy	RTP Payload Type for Redundancy	Not Used	Not Used	Fax Mode	Enable Bypass	Enable Bypass	Fax Bypass Codec	G711 ulaw	G711 ulaw	Fax Packet Redundancy	No Redundancy	No Redundancy	Digit Relay	DTMF In-band	DTMF In-band	Digit Relay Packet Type	101	101	Modem Behavior	Bypass	Bypass	H245 Outbound Tunneling	Enable	Enable	Initial Inactivity Timer (10ms)	Disabled	Disabled	Media Inactivity Timer (10ms)	Disabled	Disabled	Comedia Mode	Disable	Disable
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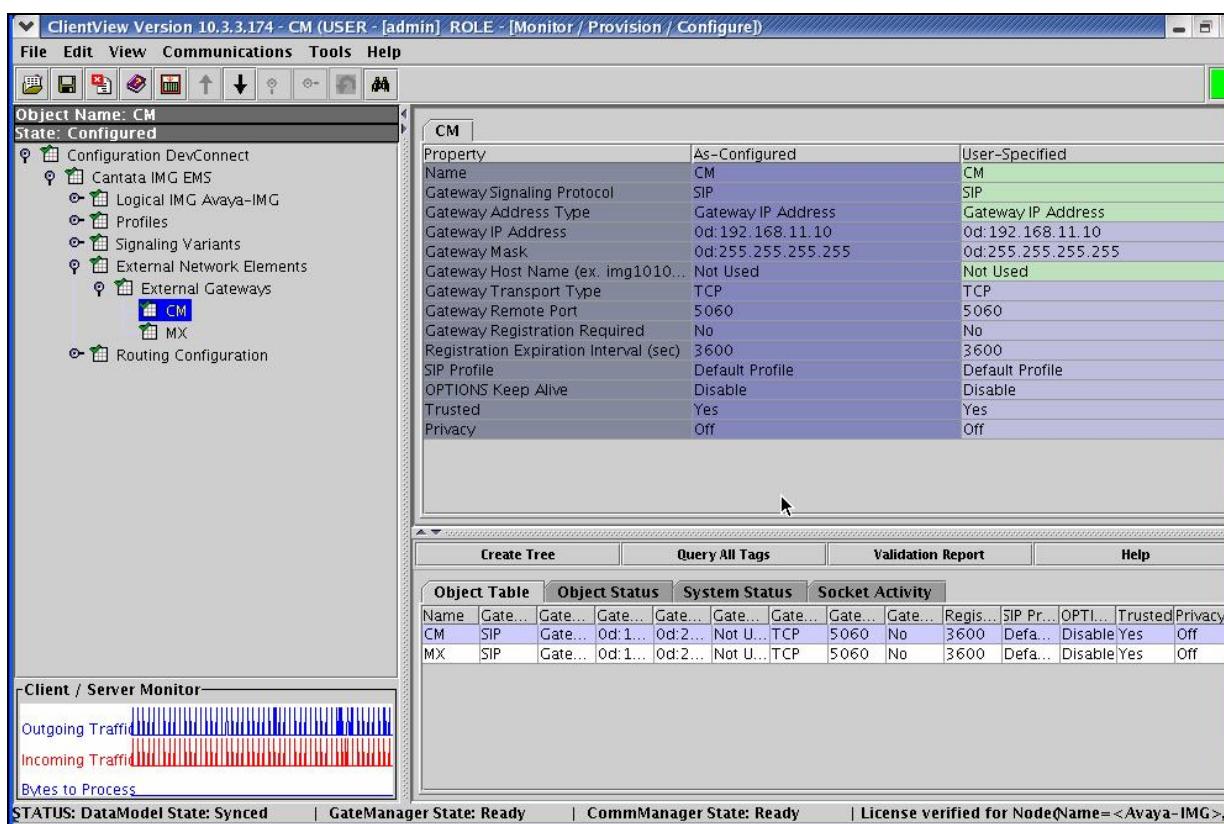
Step	Description																								
5.1.14	<p>Assign a codec to the IP Bearer Profile corresponding to Avaya Communication Manager as follows:</p> <ul style="list-style-type: none"> <li>Right-click the IP Bearer Profile created in <b>Step 5.1.13</b> in the Configuration Tree, and select <b>New Supported Vocoders</b>.</li> <li>Select a codec from the drop down list for the <b>Payload Type</b> field that is supported on Avaya Communication Manager (see <b>Step 3.2.1</b>) in the Configuration Pane.</li> <li>Use default settings for remaining fields.</li> <li>To save the changes, right-click <b>Profile: 1 - Entry:0</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <p>The screenshot shows the ClientView interface with the following details:</p> <ul style="list-style-type: none"> <li><b>Object Name:</b> Profile: 1 - Entry:0</li> <li><b>State:</b> Configured</li> <li><b>Configuration Tree:</b> <ul style="list-style-type: none"> <li>Configuration DevConnect</li> <li>Cantata IMG EMS           <ul style="list-style-type: none"> <li>Logical IMG Avaya-IMG</li> <li>Profiles               <ul style="list-style-type: none"> <li>Bearer: CM - ID: 1                   <ul style="list-style-type: none"> <li>Profile: 1 - Entry:0 (selected)</li> <li>Bearer: MX - ID: 2</li> </ul> </li> <li>Signaling Variants</li> <li>External Network Elements</li> <li>Routing Configuration</li> </ul> </li> </ul> </li> </ul> </li> <li><b>Profile: 1 - Entry:0 Properties:</b> <table border="1"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>Entry ID</td> <td>0</td> <td>0</td> </tr> <tr> <td>Payload Type</td> <td>G729</td> <td>G729</td> </tr> <tr> <td>Preferred Payload Size (ms)</td> <td>20</td> <td>20</td> </tr> <tr> <td>Minimum Payload Size (ms)</td> <td>10</td> <td>10</td> </tr> <tr> <td>Maximum Payload Size (ms)</td> <td>60</td> <td>60</td> </tr> <tr> <td>Default Payload Type</td> <td>Not Used</td> <td>Not Used</td> </tr> <tr> <td>Annex B Support</td> <td>Yes</td> <td>Yes</td> </tr> </tbody> </table> </li> <li><b>Client / Server Monitor:</b> <ul style="list-style-type: none"> <li>Outgoing Traffic</li> <li>Incoming Traffic</li> <li>Bytes to Process</li> </ul> </li> <li><b>Status Bar:</b> STATUS: DataModel State: Synced   GateManager State: Ready   CommManager State: Ready   License verified for NodeName=&lt;Avaya-IMG&gt;</li> </ul>	Property	As-Configured	User-Specified	Entry ID	0	0	Payload Type	G729	G729	Preferred Payload Size (ms)	20	20	Minimum Payload Size (ms)	10	10	Maximum Payload Size (ms)	60	60	Default Payload Type	Not Used	Not Used	Annex B Support	Yes	Yes
Property	As-Configured	User-Specified																							
Entry ID	0	0																							
Payload Type	G729	G729																							
Preferred Payload Size (ms)	20	20																							
Minimum Payload Size (ms)	10	10																							
Maximum Payload Size (ms)	60	60																							
Default Payload Type	Not Used	Not Used																							
Annex B Support	Yes	Yes																							

Step	Description
5.1.15	<p>Configure an IP Bearer Profile corresponding to Avaya Meeting Exchange as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Profiles</b> in the Configuration Tree, and select <b>New IP Bearer Profile</b>.</li> <li>Enter a descriptive name for the IP Bearer Profile in the <b>IP Bearer Profile Name</b> field in the Configuration Pane.</li> <li>Use default settings for remaining fields.</li> <li>To save the changes, right-click <b>Bearer: MX - ID:2</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>

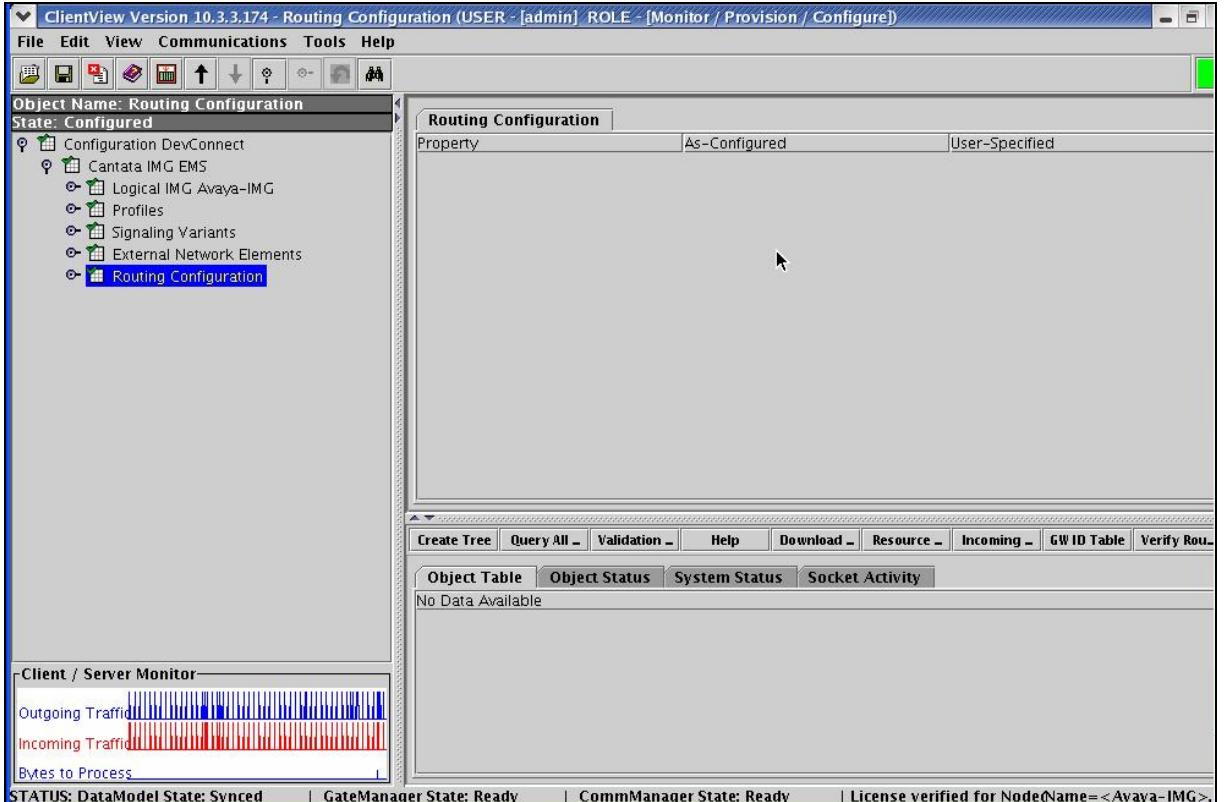
<b>Step</b>	<b>Description</b>																								
<b>5.1.16</b>	<p>Assign a codec to the IP Bearer Profile corresponding to Avaya Meeting Exchange as follows:</p> <ul style="list-style-type: none"> <li>Right-click the IP Bearer Profile created in <b>Step 5.1.15</b> in the Configuration Tree, and select <b>New Supported Vcoders</b>.</li> <li>Select a codec from the drop down list for the <b>Payload Type</b> field that is supported on Avaya Meeting Exchange in the Configuration Pane.</li> <li>Use default settings for remaining fields.</li> <li>To save the changes, right-click <b>Profile: 2 - Entry:0</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <p>The screenshot shows the ClientView interface with the title bar "ClientView Version 10.3.3.174 - Profile: 2 - Entry:0 (USER - [admin] ROLE - [Monitor / Provision / Configure])". The menu bar includes File, Edit, View, Communications, Tools, and Help. The left pane displays the "Object Name: Profile: 2 - Entry:0" tree structure under "State: Configured", with "Profile: 2 - Entry:0" selected. The right pane shows the "Profile: 2 - Entry:0" configuration table with the following data:</p> <table border="1"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>Entry ID</td> <td>0</td> <td>0</td> </tr> <tr> <td>Payload Type</td> <td>G711 ulaw</td> <td>G711 ulaw</td> </tr> <tr> <td>Preferred Payload Size (ms)</td> <td>20</td> <td>20</td> </tr> <tr> <td>Minimum Payload Size (ms)</td> <td>10</td> <td>10</td> </tr> <tr> <td>Maximum Payload Size (ms)</td> <td>30</td> <td>30</td> </tr> <tr> <td>Default Payload Type</td> <td>Not Used</td> <td>Not Used</td> </tr> <tr> <td>Annex B Support</td> <td>Not Used</td> <td>Not Used</td> </tr> </tbody> </table> <p>At the bottom, there is a "Client / Server Monitor" section showing Outgoing Traffic, Incoming Traffic, and Bytes to Process, and a status bar with "STATUS: DataModel State: Synced   GateManager State: Ready   CommManager State: Ready   License verified for NodeName=&lt;Avaya-IMG&gt;".</p>	Property	As-Configured	User-Specified	Entry ID	0	0	Payload Type	G711 ulaw	G711 ulaw	Preferred Payload Size (ms)	20	20	Minimum Payload Size (ms)	10	10	Maximum Payload Size (ms)	30	30	Default Payload Type	Not Used	Not Used	Annex B Support	Not Used	Not Used
Property	As-Configured	User-Specified																							
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Payload Type	G711 ulaw	G711 ulaw																							
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Maximum Payload Size (ms)	30	30																							
Default Payload Type	Not Used	Not Used																							
Annex B Support	Not Used	Not Used																							

Step	Description
5.1.17	<p>Create an object for External Network Elements as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Cantata IMG EMS</b> in the Configuration Tree, and select <b>New External Network Elements</b>.</li> <li>To save the changes, right-click <b>External Network Elements</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> 

Step	Description
5.1.18	<p>Create an object for External Gateways as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>External Network Elements</b> in the Configuration Tree, and select <b>New External Gateways</b>.</li> <li>To save the changes, right-click <b>External Gateways</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> 

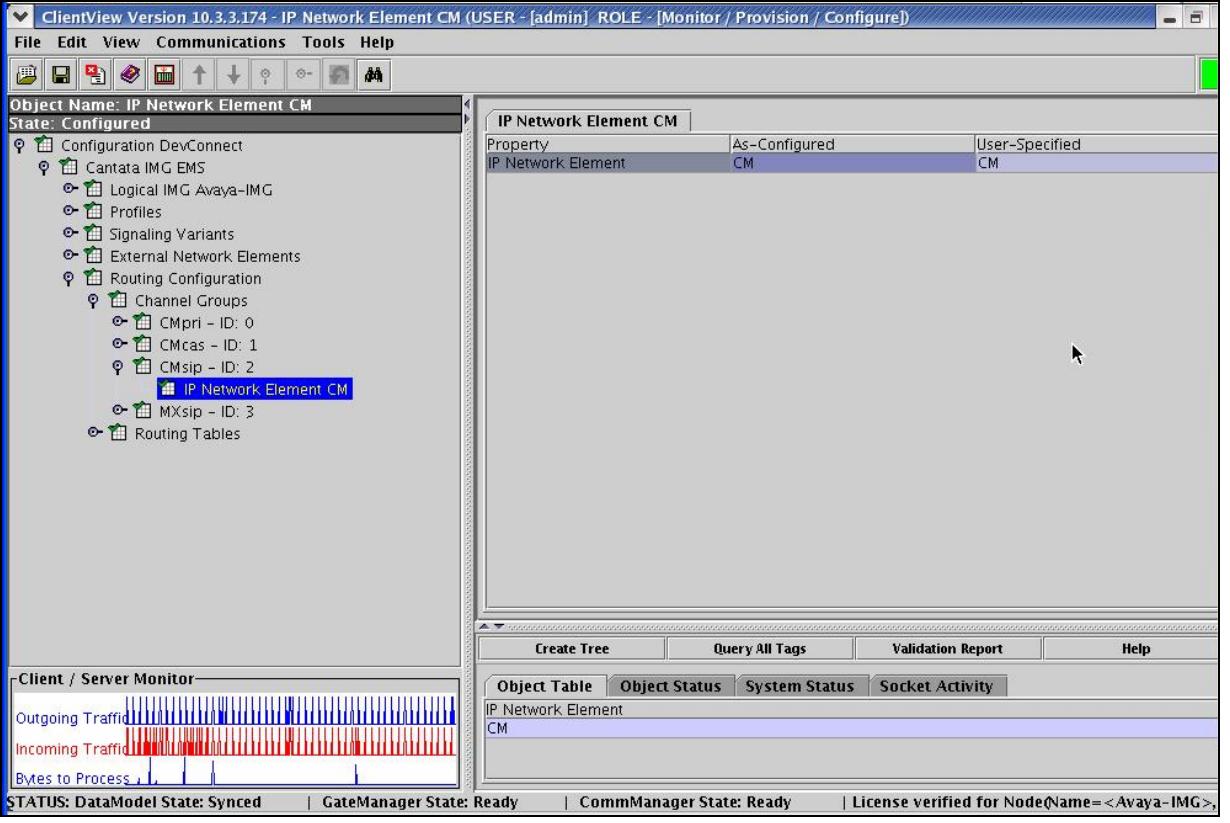
Step	Description																																													
5.1.19	<p>Configure an External Gateway corresponding to Avaya Communication Manager as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>External Gateways</b> in the Configuration Tree, and select <b>New External Gateway</b>.</li> <li>Enter a descriptive name for the IP Bearer Profile in the <b>Name</b> field in the Configuration Pane.</li> <li>Select <b>SIP</b> from the drop down list for the <b>Gateway Signaling Protocol</b> field.</li> <li>Enter the IP address of the CLAN for Avaya Communication Manager in the <b>Gateway IP Address</b> field.</li> <li>Use default settings for remaining fields.</li> </ul> <p><i>Note: The settings for the <b>Gateway Transport Type</b>, and <b>Gateway Remote Port</b> fields are compatible with the configuration on Avaya Communication Manager (see Step 3.2.5).</i></p> <ul style="list-style-type: none"> <li>To save the changes, right-click <b>CM</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <p>The screenshot shows the ClientView interface for Avaya Communication Manager. The left pane displays the Configuration Tree with nodes like Configuration DevConnect, Cantata IMG EMS, Logical IMG Avaya-IMG, Profiles, Signaling Variants, External Network Elements, External Gateways (with CM and MX selected), and Routing Configuration. The right pane shows the 'CM' configuration details in a table:</p> <table border="1"> <thead> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>Name</td> <td>CM</td> <td>CM</td> </tr> <tr> <td>Gateway Signaling Protocol</td> <td>SIP</td> <td>SIP</td> </tr> <tr> <td>Gateway Address Type</td> <td>Gateway IP Address</td> <td>Gateway IP Address</td> </tr> <tr> <td>Gateway IP Address</td> <td>0d:192.168.11.10</td> <td>0d:192.168.11.10</td> </tr> <tr> <td>Gateway Mask</td> <td>0d:255.255.255.255</td> <td>0d:255.255.255.255</td> </tr> <tr> <td>Gateway Host Name (ex. img1010...)</td> <td>Not Used</td> <td>Not Used</td> </tr> <tr> <td>Gateway Transport Type</td> <td>TCP</td> <td>TCP</td> </tr> <tr> <td>Gateway Remote Port</td> <td>5060</td> <td>5060</td> </tr> <tr> <td>Gateway Registration Required</td> <td>No</td> <td>No</td> </tr> <tr> <td>Registration Expiration Interval (sec)</td> <td>3600</td> <td>3600</td> </tr> <tr> <td>SIP Profile</td> <td>Default Profile</td> <td>Default Profile</td> </tr> <tr> <td>OPTIONS Keep Alive</td> <td>Disable</td> <td>Disable</td> </tr> <tr> <td>Trusted</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>Privacy</td> <td>Off</td> <td>Off</td> </tr> </tbody> </table> <p>Below the configuration pane is a 'Client / Server Monitor' section showing Outgoing Traffic, Incoming Traffic, and Bytes to Process. At the bottom, status bars indicate: STATUS: DataModel State: Synced, GateManager State: Ready, CommManager State: Ready, and License verified for NodeName=&lt;Avaya-IMG&gt;.</p>	Property	As-Configured	User-Specified	Name	CM	CM	Gateway Signaling Protocol	SIP	SIP	Gateway Address Type	Gateway IP Address	Gateway IP Address	Gateway IP Address	0d:192.168.11.10	0d:192.168.11.10	Gateway Mask	0d:255.255.255.255	0d:255.255.255.255	Gateway Host Name (ex. img1010...)	Not Used	Not Used	Gateway Transport Type	TCP	TCP	Gateway Remote Port	5060	5060	Gateway Registration Required	No	No	Registration Expiration Interval (sec)	3600	3600	SIP Profile	Default Profile	Default Profile	OPTIONS Keep Alive	Disable	Disable	Trusted	Yes	Yes	Privacy	Off	Off
Property	As-Configured	User-Specified																																												
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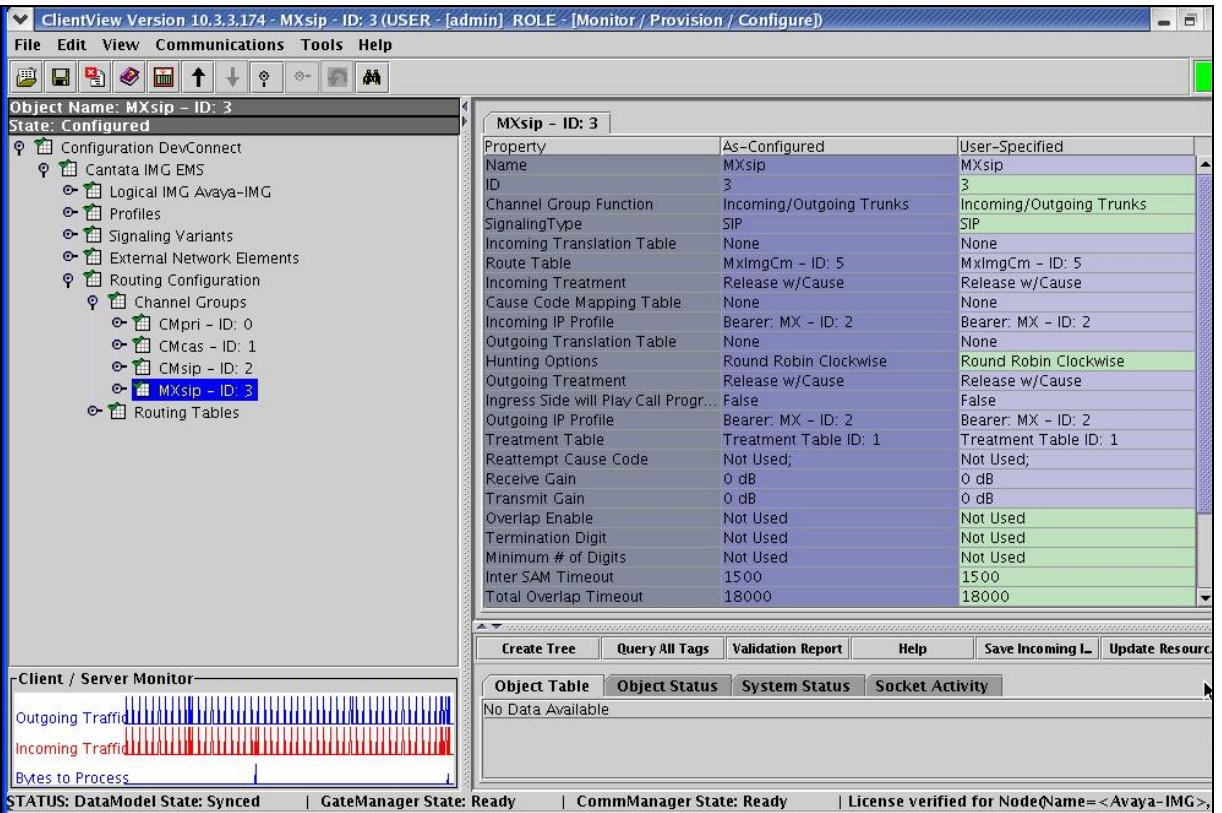
Step	Description																																																						
5.1.20	<p>Configure an External Gateway corresponding to Avaya Meeting Exchange as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>External Gateways</b> in the Configuration Tree, and select <b>New External Gateway</b>.</li> <li>Enter a descriptive name for the IP Bearer Profile in the <b>Name</b> field in the Configuration Pane.</li> <li>Select <b>SIP</b> from the drop down list for the <b>Gateway Signaling Protocol</b> field.</li> <li>Enter the IP address of Avaya Meeting Exchange in the <b>Gateway IP Address</b> field.</li> <li>Use default settings for remaining fields.</li> </ul> <p><i>Note: The settings for the <b>Gateway Transport Type</b>, and <b>Gateway Remote Port</b> fields are compatible with the configuration on Avaya Meeting Exchange (see Step 4.1.1, and Step 4.2.5).</i></p> <ul style="list-style-type: none"> <li>To save the changes, right-click <b>MX</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> <table border="1"> <thead> <tr> <th colspan="12">Object Table</th> </tr> <tr> <th>Name</th> <th>Gate...</th> <th>Gate...</th> <th>Gate...</th> <th>Gate...</th> <th>Gate...</th> <th>Gate...</th> <th>Gate...</th> <th>Gate...</th> <th>Regis...</th> <th>SIP Pr...</th> <th>OPTI...</th> <th>Trusted</th> <th>Privacy</th> </tr> </thead> <tbody> <tr> <td>CM</td> <td>SIP</td> <td>Gate...</td> <td>0d:1...</td> <td>0d:2...</td> <td>Not U...</td> <td>TCP</td> <td>5060</td> <td>No</td> <td>3600</td> <td>Defa...</td> <td>Disable</td> <td>Yes</td> <td>Off</td> </tr> <tr> <td>MX</td> <td>SIP</td> <td>Gate...</td> <td>0d:1...</td> <td>0d:2...</td> <td>Not U...</td> <td>TCP</td> <td>5060</td> <td>No</td> <td>3600</td> <td>Defa...</td> <td>Disable</td> <td>Yes</td> <td>Off</td> </tr> </tbody> </table>	Object Table												Name	Gate...	Regis...	SIP Pr...	OPTI...	Trusted	Privacy	CM	SIP	Gate...	0d:1...	0d:2...	Not U...	TCP	5060	No	3600	Defa...	Disable	Yes	Off	MX	SIP	Gate...	0d:1...	0d:2...	Not U...	TCP	5060	No	3600	Defa...	Disable	Yes	Off							
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Name	Gate...	Gate...	Gate...	Gate...	Gate...	Gate...	Gate...	Gate...	Regis...	SIP Pr...	OPTI...	Trusted	Privacy																																										
CM	SIP	Gate...	0d:1...	0d:2...	Not U...	TCP	5060	No	3600	Defa...	Disable	Yes	Off																																										
MX	SIP	Gate...	0d:1...	0d:2...	Not U...	TCP	5060	No	3600	Defa...	Disable	Yes	Off																																										

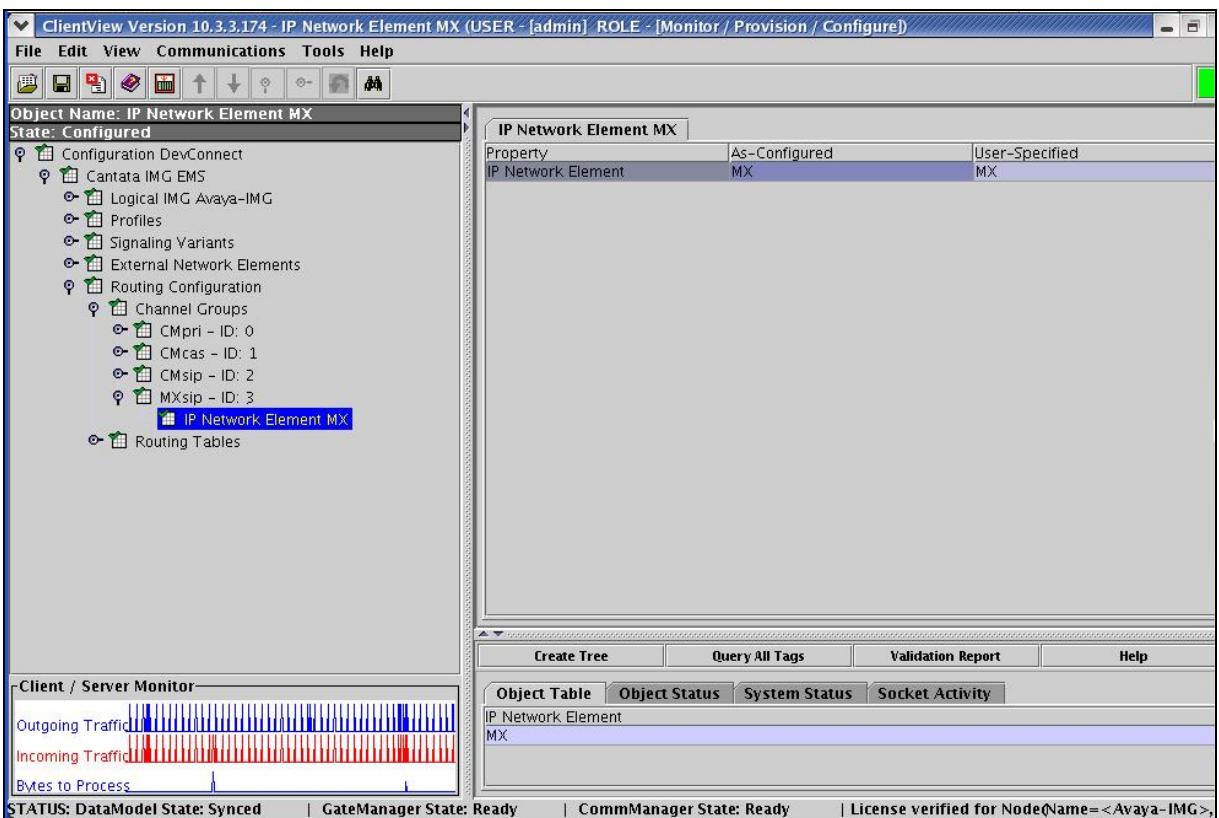
Step	Description
5.1.21	<p>Create an object for Routing Configuration as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Cantata IMG EMS</b> in the Configuration Tree, and select <b>New Routing Configuration</b>.</li> <li>To save the changes, right-click <b>Routing Configuration</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> 

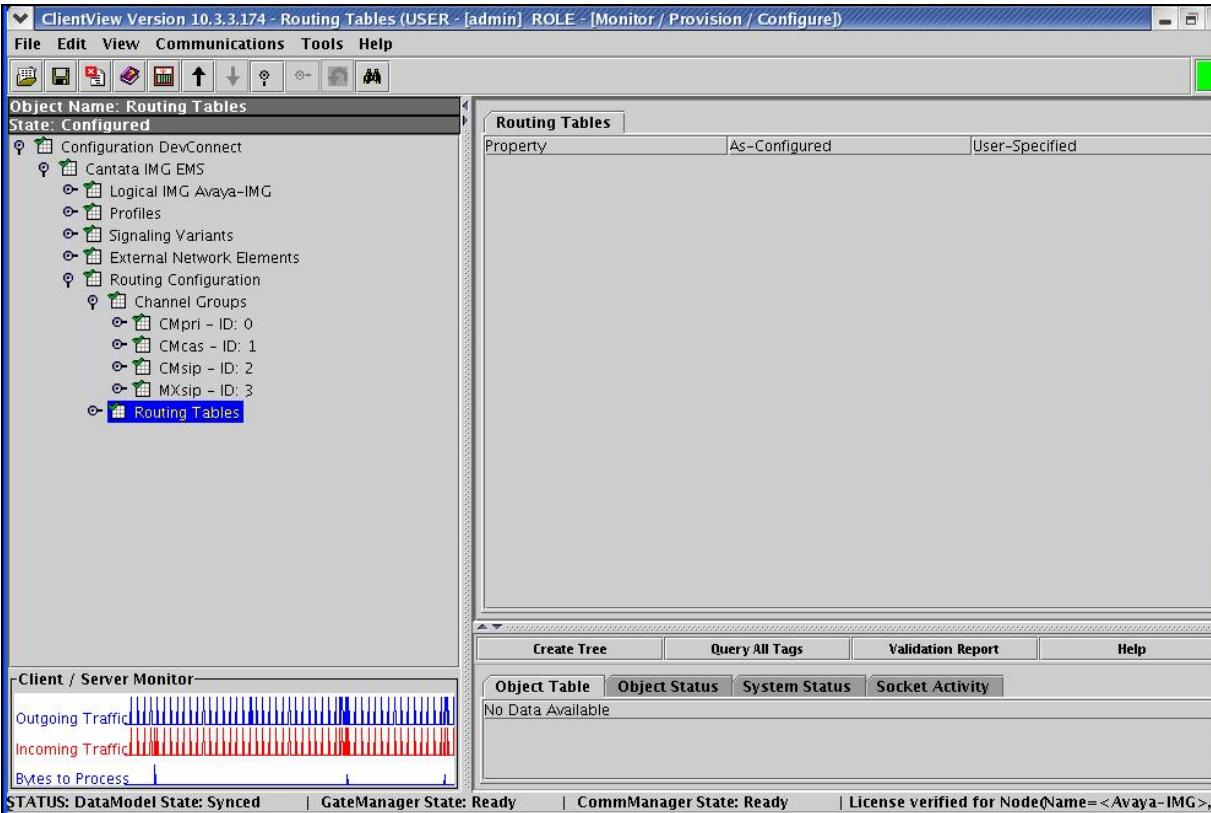
Step	Description
5.1.22	<p>Create an object for Channel Groups as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Routing Configuration</b> in the Configuration Tree, and select <b>New Channel Groups</b>.</li> <li>To save the changes, right-click <b>Channel Groups</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>

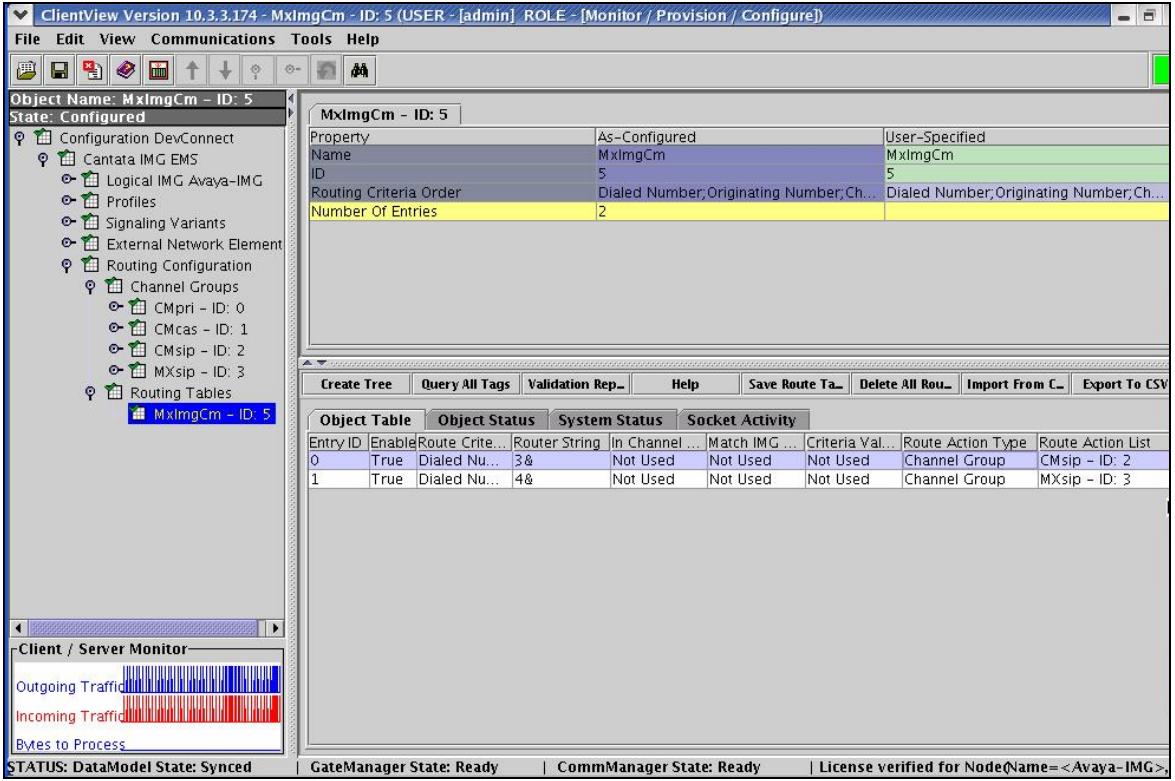
Step	Description																																																																											
5.1.23	<p>Configure a Channel Group corresponding to Avaya Communication Manager as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Channel Groups</b> in the Configuration Tree, and select <b>New Channel Group</b>.</li> <li>Enter a descriptive name for the Channel Group in the <b>Name</b> field in the Configuration Pane.</li> <li>Select <b>SIP</b> from the drop down list for the <b>Signaling Type</b> field.</li> <li>Use default settings for remaining fields.</li> </ul> <p><i>Note: The administration for the <b>Route Table</b> field is displayed in this screen capture, although the <b>Route Table</b> has not been created. When providing the IMG with an initial configuration, create a <b>Channel Group</b> first, then create a <b>Route Table</b>, then edit the <b>Channel Group</b> to include the <b>Route Table</b>.</i></p> <ul style="list-style-type: none"> <li>To save the changes, right-click <b>CMSip - ID: 2</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> <table border="1"> <thead> <tr> <th colspan="3">CMSip - ID: 2</th> </tr> <tr> <th>Property</th> <th>As-Configured</th> <th>User-Specified</th> </tr> </thead> <tbody> <tr> <td>Name</td> <td>CMSip</td> <td>CMSip</td> </tr> <tr> <td>ID</td> <td>2</td> <td>2</td> </tr> <tr> <td>Channel Group Function</td> <td>Incoming/Outgoing Trunks</td> <td>Incoming/Outgoing Trunks</td> </tr> <tr> <td>SignalingType</td> <td>SIP</td> <td>SIP</td> </tr> <tr> <td>Incoming Translation Table</td> <td>None</td> <td>None</td> </tr> <tr> <td>Route Table</td> <td>MxImgCm - ID: 5</td> <td>MxImgCm - ID: 5</td> </tr> <tr> <td>Incoming Treatment</td> <td>Release w/Cause</td> <td>Release w/Cause</td> </tr> <tr> <td>Cause Code Mapping Table</td> <td>None</td> <td>None</td> </tr> <tr> <td>Incoming IP Profile</td> <td>Bearer: CM - ID: 1</td> <td>Bearer: CM - ID: 1</td> </tr> <tr> <td>Outgoing Translation Table</td> <td>None</td> <td>None</td> </tr> <tr> <td>Hunting Options</td> <td>Round Robin Clockwise</td> <td>Round Robin Clockwise</td> </tr> <tr> <td>Outgoing Treatment</td> <td>Release w/Cause</td> <td>Release w/Cause</td> </tr> <tr> <td>Ingress Side will Play Call Progr...</td> <td>False</td> <td>False</td> </tr> <tr> <td>Outgoing IP Profile</td> <td>Bearer: CM - ID: 1</td> <td>Bearer: CM - ID: 1</td> </tr> <tr> <td>Treatment Table</td> <td>Treatment Table ID: 1</td> <td>Treatment Table ID: 1</td> </tr> <tr> <td>Reattempt Cause Code</td> <td>Not Used;</td> <td>Not Used;</td> </tr> <tr> <td>Receive Gain</td> <td>0 dB</td> <td>0 dB</td> </tr> <tr> <td>Transmit Gain</td> <td>0 dB</td> <td>0 dB</td> </tr> <tr> <td>Overlap Enable</td> <td>Not Used</td> <td>Not Used</td> </tr> <tr> <td>Termination Digit</td> <td>Not Used</td> <td>Not Used</td> </tr> <tr> <td>Minimum # of Digits</td> <td>Not Used</td> <td>Not Used</td> </tr> <tr> <td>Inter SAM Timeout</td> <td>1500</td> <td>1500</td> </tr> <tr> <td>Total Overlap Timeout</td> <td>18000</td> <td>18000</td> </tr> </tbody> </table>	CMSip - ID: 2			Property	As-Configured	User-Specified	Name	CMSip	CMSip	ID	2	2	Channel Group Function	Incoming/Outgoing Trunks	Incoming/Outgoing Trunks	SignalingType	SIP	SIP	Incoming Translation Table	None	None	Route Table	MxImgCm - ID: 5	MxImgCm - ID: 5	Incoming Treatment	Release w/Cause	Release w/Cause	Cause Code Mapping Table	None	None	Incoming IP Profile	Bearer: CM - ID: 1	Bearer: CM - ID: 1	Outgoing Translation Table	None	None	Hunting Options	Round Robin Clockwise	Round Robin Clockwise	Outgoing Treatment	Release w/Cause	Release w/Cause	Ingress Side will Play Call Progr...	False	False	Outgoing IP Profile	Bearer: CM - ID: 1	Bearer: CM - ID: 1	Treatment Table	Treatment Table ID: 1	Treatment Table ID: 1	Reattempt Cause Code	Not Used;	Not Used;	Receive Gain	0 dB	0 dB	Transmit Gain	0 dB	0 dB	Overlap Enable	Not Used	Not Used	Termination Digit	Not Used	Not Used	Minimum # of Digits	Not Used	Not Used	Inter SAM Timeout	1500	1500	Total Overlap Timeout	18000	18000
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Step	Description								
5.1.24	<p>Assign an IP Network Element to the Channel Group corresponding to Avaya Communication Manager as follows:</p> <ul style="list-style-type: none"> <li>Right-click the Channel Group created in <b>Step 5.1.23</b> in the Configuration Tree, and select <b>New IP Network Element</b>.</li> <li>Select the External Gateway provisioned in <b>Step 5.1.19</b> from the drop down list for the <b>IP Network Element</b> field.</li> <li>To save the changes, right-click <b>IP Network Element CM</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul>  <table border="1" data-bbox="780 734 1530 798"> <thead> <tr> <th data-bbox="780 734 992 756">IP Network Element CM</th> <th data-bbox="992 734 1155 756">Property</th> <th data-bbox="1155 734 1318 756">As-Configured</th> <th data-bbox="1318 734 1530 756">User-Specified</th> </tr> </thead> <tbody> <tr> <td data-bbox="780 756 992 798">IP Network Element</td> <td data-bbox="992 756 1155 798">CM</td> <td data-bbox="1155 756 1318 798">CM</td> <td data-bbox="1318 756 1530 798"></td> </tr> </tbody> </table>	IP Network Element CM	Property	As-Configured	User-Specified	IP Network Element	CM	CM	
IP Network Element CM	Property	As-Configured	User-Specified						
IP Network Element	CM	CM							

Step	Description
5.1.25	<p>Configure a Channel Group corresponding to Avaya Meeting Exchange as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Channel Groups</b> in the Configuration Tree, and select <b>New Channel Group</b>.</li> <li>Enter a descriptive name for the Channel Group in the <b>Name</b> field in the Configuration Pane.</li> <li>Select <b>SIP</b> from the drop down list for the <b>Signaling Type</b> field.</li> <li>Use default settings for remaining fields.</li> </ul> <p><i>Note: The administration for the <b>Route Table</b> field is displayed in this screen capture, although the <b>Route Table</b> has not been created. When providing the IMG with an initial configuration, create a <b>Channel Group</b> first, then create a <b>Route Table</b>, then edit the <b>Channel Group</b> to include the <b>Route Table</b>.</i></p> <ul style="list-style-type: none"> <li>To save the changes, right-click <b>MXsip - ID: 3</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> 

Step	Description
5.1.26	<p>Assign an IP Network Element to the Channel Group corresponding to Avaya Meeting Exchange as follows:</p> <ul style="list-style-type: none"> <li>Right-click the Channel Group created in <b>Step 5.1.25</b> in the Configuration Tree, and select <b>New IP Network Element</b>.</li> <li>Select the External Gateway provisioned in <b>Step 5.1.20</b> from the drop down list for the <b>IP Network Element</b> field.</li> <li>To save the changes, right-click <b>IP Network Element MX</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> 

Step	Description
5.1.27	<p>Create an object for Routing Tables as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Routing Configuration</b> in the Configuration Tree, and select <b>New Routing Tables</b>.</li> <li>To save the changes, right-click <b>Routing Tables</b>, and select <b>Commit</b>.</li> <li>The resultant provisioning is shown below.</li> </ul> 
5.1.28	<p>Configure a Route Table as follows:</p> <ul style="list-style-type: none"> <li>Right-click <b>Routing Tables</b> in the Configuration Tree, and select <b>New Route Table</b>.</li> <li>Enter a descriptive name for the Route Table in the <b>Name</b> field in the Configuration Pane.</li> <li>Use default settings for remaining fields.</li> <li>To save the changes, right-click the entry, and select <b>Commit</b>. See <b>Step 5.1.29</b> for resultant provisioning.</li> </ul>

Step	Description																															
5.1.29	<p>Add route entries to the Route Table provisioned in <b>Step 5.1.28</b> as follows:</p> <ul style="list-style-type: none"> <li>To add a route entry corresponding to Avaya Communication Manager, right-click the Route Table in the Configuration Tree and select <b>Add Route Entry</b>.           <ul style="list-style-type: none"> <li>Enter a pattern to match extensions on Avaya Communication Manager, where &amp; is a wildcard, in the <b>Router String</b> field in the <b>New Entry</b> dialog box.</li> <li>Select the Channel Group provisioned in <b>Step 5.1.23</b> from the drop down list for the <b>Outgoing Channel Group</b> field.</li> </ul> <p><i>Note: This is displayed below under the <b>Route Action List</b> column.</i></p> <ul style="list-style-type: none"> <li>Click <b>OK</b> in the <b>New Entry</b> dialog box.</li> </ul> </li> <li>To add a route entry corresponding to Avaya Meeting Exchange, right-click the Route Table in the Configuration Tree and select <b>Add Route Entry</b>.           <ul style="list-style-type: none"> <li>Enter a pattern to match the provisioning for call flows on Avaya Meeting Exchange, where &amp; is a wildcard, in the <b>Router String</b> field in the <b>New Entry</b> dialog box.</li> <li>Select the Channel Group provisioned in <b>Step 5.1.25</b> from the drop down list for the <b>Outgoing Channel Group</b> field.</li> </ul> <p><i>Note: This is displayed below under the <b>Route Action List</b> column.</i></p> <ul style="list-style-type: none"> <li>Click <b>OK</b> in the <b>New Entry</b> dialog box.</li> </ul> </li> <li>The resultant provisioning is shown below.</li> </ul>  <table border="1" data-bbox="633 1410 1498 1495"> <thead> <tr> <th>Object Table</th> <th>Object Status</th> <th>System Status</th> <th>Socket Activity</th> </tr> </thead> <tbody> <tr> <td>Entry ID</td> <td>Enable</td> <td>Route Crite...</td> <td>Router String</td> <td>In Channel ...</td> <td>Match IMG ...</td> <td>Criteria Val...</td> <td>Route Action Type</td> <td>Route Action List</td> </tr> <tr> <td>0</td> <td>True</td> <td>Dialed Nu...</td> <td>3&amp;</td> <td>Not Used</td> <td>Not Used</td> <td>Not Used</td> <td>Channel Group</td> <td>CMSip - ID: 2</td> </tr> <tr> <td>1</td> <td>True</td> <td>Dialed Nu...</td> <td>4&amp;</td> <td>Not Used</td> <td>Not Used</td> <td>Not Used</td> <td>Channel Group</td> <td>MXsip - ID: 3</td> </tr> </tbody> </table>	Object Table	Object Status	System Status	Socket Activity	Entry ID	Enable	Route Crite...	Router String	In Channel ...	Match IMG ...	Criteria Val...	Route Action Type	Route Action List	0	True	Dialed Nu...	3&	Not Used	Not Used	Not Used	Channel Group	CMSip - ID: 2	1	True	Dialed Nu...	4&	Not Used	Not Used	Not Used	Channel Group	MXsip - ID: 3
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## 6. Interoperability Compliance Testing

### 6.1. General Test Approach

The general test approach was to place calls between Avaya Communication Manager and Avaya Meeting Exchange via the IMG utilizing the sample configuration displayed in **Figure 1**. The main objectives were to verify the following:

- Inbound calling from Avaya Communication Manager to scheduled and demand conferences provisioned on Avaya Meeting Exchange via the Cantata IMG 1010:
  - Direct call flow (without participant-access-code)
  - Basic call flow (with participant-access-code)
- Outbound calling from Avaya Meeting Exchange to stations registered to either Avaya Communication Manager, or Avaya SIP Enablement Services via the Cantata IMG 1010:
  - Blast dial to a pre-provisioned blast dial list
  - Originator dial-out
- Conference features for both moderator and participant accessed during a conference call via touchtone commands
- The following sub-set of the SIPPING-19 supplementary features for SIP endpoints:
  - Call hold
  - Attended/unattended call transfer
  - Call forward
  - Three-way conference
- The following transport methods for signaling between Avaya Meeting Exchange and the IMG:
  - TCP
  - UDP
- The following codecs:
  - G711MU
  - G.729 was tested utilizing the transcoding functionality provided by the IMG.
- Subjective voice quality for endpoints participating in a conference.
- DTMF transmission via RFC 2833.

### 6.2. Test Results

All test cases, as defined by the general test approach, passed.

## 7. Verification Steps

The following steps were used to verify the administrative steps presented in these Application Notes and are applicable for similar configurations in the field.

Step	Description																								
7.1.1	<p>Verify SIP connectivity between Avaya Communication Manager and the IMG by retrieving status regarding the trunk group provisioned in <b>Step 3.2.6</b>. From a SAT session:</p> <ul style="list-style-type: none"> <li>Issue the command “<b>status trunk &lt;n&gt;</b>”, where <b>n</b> is the number of the trunk group to verify.</li> <li>Verify that all members in the trunk group are <b>in-service/idle</b>.</li> </ul>																								
7.1.2	<p>Validate signaling and media connectivity for inbound calls to Avaya Meeting Exchange from Avaya Communication Manager via the IMG. This is accomplished by verifying that the trunk provisioned in <b>Step 3.2.6</b> is utilized when a call from a phone registered to either Avaya Communication Manager, or Avaya SIP Enablement Services dials in to a conference provisioned on Avaya Meeting Exchange. From a SAT session:</p> <ul style="list-style-type: none"> <li>Issue the command “<b>list trace tac &lt;n&gt;</b>”, where <b>n</b> is the TAC defined for the trunk group.</li> <li>From a station registered to either Avaya Communication Manager, or Avaya SIP Enablement Services, dial <b>444</b> to enter the conference provisioned in <b>Section 4.3</b> as moderator via the direct call flow provisioned in <b>Step 4.2.2</b>.</li> </ul> <p><i>Note: The trace below shows a station (33006) that dialed (444) and utilized the call routing provisioned in <b>Section 3.3</b> to route the call to Avaya Meeting Exchange. This trace also shows audio connectivity between Media Module 0 on the IMG (192.168.13.111) and the Media Processor (MEDPRO) on Avaya Communication Manager (192.168.11.11) utilizing G.729B.</i></p> <pre>list trace tac 122</pre> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">Page</td> <td style="text-align: center;">1</td> </tr> </table> <pre>LIST TRACE</pre> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">time</th> <th style="text-align: left;">data</th> </tr> </thead> <tbody> <tr> <td>11:11:25</td> <td><b>dial 444 route:AAR</b></td> </tr> <tr> <td>11:11:25</td> <td>term trunk-group 22 cid 0x295</td> </tr> <tr> <td>11:11:25</td> <td>dial 444 route:AAR</td> </tr> <tr> <td>11:11:25</td> <td><b>route-pattern 22 preference 1 cid 0x295</b></td> </tr> <tr> <td>11:11:25</td> <td><b>seize trunk-group 22 member 7 cid 0x295</b></td> </tr> <tr> <td>11:11:25</td> <td><b>Calling Number &amp; Name NO-CPNumber SIP 31002</b></td> </tr> <tr> <td>11:11:25</td> <td>Proceed trunk-group 22 member 7 cid 0x295</td> </tr> <tr> <td>11:11:26</td> <td><b>active trunk-group 22 member 7 cid 0x295</b></td> </tr> <tr> <td>11:11:26</td> <td><b>G729B ss:off ps:20 rn:22/1 192.168.13.111:8276 192.168.11.11:2152</b></td> </tr> <tr> <td>11:11:26</td> <td>xoip: fax:Relay modem:off tty:US 192.168.11.11:2152 uid:0x5011e</td> </tr> </tbody> </table>	Page	1	time	data	11:11:25	<b>dial 444 route:AAR</b>	11:11:25	term trunk-group 22 cid 0x295	11:11:25	dial 444 route:AAR	11:11:25	<b>route-pattern 22 preference 1 cid 0x295</b>	11:11:25	<b>seize trunk-group 22 member 7 cid 0x295</b>	11:11:25	<b>Calling Number &amp; Name NO-CPNumber SIP 31002</b>	11:11:25	Proceed trunk-group 22 member 7 cid 0x295	11:11:26	<b>active trunk-group 22 member 7 cid 0x295</b>	11:11:26	<b>G729B ss:off ps:20 rn:22/1 192.168.13.111:8276 192.168.11.11:2152</b>	11:11:26	xoip: fax:Relay modem:off tty:US 192.168.11.11:2152 uid:0x5011e
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Step	Description																						
7.1.3	<p>Validate signaling and media connectivity for outbound calls from Avaya Meeting Exchange to Avaya Communication Manager via the IMG. This is accomplished by verifying that the trunk provisioned in <b>Step 3.2.6</b> is utilized when a call is placed from a participant in conference on Avaya Meeting Exchange to a station registered to either Avaya Communication Manager, or Avaya SIP Enablement Services. From a SAT session:</p> <ul style="list-style-type: none"> <li>Issue the command “<b>list trace tac &lt;n&gt;</b>”, where <b>n</b> is the TAC defined for the trunk group.</li> <li>From a station in a conference on Avaya Meeting Exchange, enter the appropriate touchtone command to invoke a blast dial to the blast dial list provisioned in <b>Section 4.3</b>.</li> </ul> <p><i>Note: The trace below shows the call that originated from Avaya Meeting Exchange to a SIP station registered to Avaya SIP Enablement Services. The call utilized the trunk group between Avaya Communication Manager and the IMG. This trace also shows audio connectivity between Media Module 0 on the IMG (192.168.13.111) and the Media Processor (MEDPRO) on Avaya Communication Manager (192.168.11.11) utilizing G.729B.</i></p>																						
7.1.4	<pre>list trace tac 122</pre> <p style="text-align: right;">Page 1</p> <pre>LIST TRACE</pre> <table> <thead> <tr> <th data-bbox="290 1009 355 1036">time</th> <th data-bbox="518 1009 584 1036">data</th> </tr> </thead> <tbody> <tr> <td data-bbox="290 1068 409 1096">11:12:25</td> <td data-bbox="474 1068 1176 1096"><b>Calling party trunk-group 22 member 1</b> cid 0x296</td> </tr> <tr> <td data-bbox="290 1096 409 1123">11:12:25</td> <td data-bbox="474 1096 992 1123">Calling Number &amp; Name 444 NO-CPName</td> </tr> <tr> <td data-bbox="290 1123 409 1151">11:12:25</td> <td data-bbox="474 1123 1073 1151"><b>active trunk-group 22 member 1</b> cid 0x296</td> </tr> <tr> <td data-bbox="290 1151 409 1178">11:12:25</td> <td data-bbox="474 1151 1421 1178"><b>G729B ss:off ps:20 rn:22/1 192.168.13.111:8288 192.168.11.11:2160</b></td> </tr> <tr> <td data-bbox="290 1178 409 1205">11:12:25</td> <td data-bbox="474 1178 1388 1205">xoip: fax:Relay modem:off tty:US 192.168.11.11:2160 uid:0x50118</td> </tr> <tr> <td data-bbox="290 1205 409 1233">11:12:25</td> <td data-bbox="474 1205 633 1233"><b>dial 33006</b></td> </tr> <tr> <td data-bbox="290 1233 409 1260">11:12:25</td> <td data-bbox="474 1233 931 1260">ring station 33006 cid 0x296</td> </tr> <tr> <td data-bbox="290 1260 409 1288">11:12:25</td> <td data-bbox="474 1260 1421 1288">G711MU ss:off ps:20 rn:1/1 192.168.12.106:2222 192.168.11.11:2164</td> </tr> <tr> <td data-bbox="290 1288 409 1315">11:12:25</td> <td data-bbox="474 1288 1339 1315">xoip: fax:Relay modem:off tty:US 192.168.11.11:2164 uid:0x6</td> </tr> <tr> <td data-bbox="290 1315 409 1343">11:12:27</td> <td data-bbox="474 1315 964 1343"><b>active station 33006</b> cid 0x296</td> </tr> </tbody> </table>	time	data	11:12:25	<b>Calling party trunk-group 22 member 1</b> cid 0x296	11:12:25	Calling Number & Name 444 NO-CPName	11:12:25	<b>active trunk-group 22 member 1</b> cid 0x296	11:12:25	<b>G729B ss:off ps:20 rn:22/1 192.168.13.111:8288 192.168.11.11:2160</b>	11:12:25	xoip: fax:Relay modem:off tty:US 192.168.11.11:2160 uid:0x50118	11:12:25	<b>dial 33006</b>	11:12:25	ring station 33006 cid 0x296	11:12:25	G711MU ss:off ps:20 rn:1/1 192.168.12.106:2222 192.168.11.11:2164	11:12:25	xoip: fax:Relay modem:off tty:US 192.168.11.11:2164 uid:0x6	11:12:27	<b>active station 33006</b> cid 0x296
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## **8. Conclusion**

These Application Notes presented a compliance-tested solution comprised of Avaya Communication Manager, Avaya Meeting Exchange Express Edition, and the Cantata Technology IMG 1010 Media Gateway. This solution enables connectivity between Avaya Communication Manager and Avaya Meeting Exchange Express Edition via the Cantata Technology IMG 1010 Media Gateway utilizing standards based IP to IP audio transcoding via SIP signaling.

## **9. Additional References**

Avaya references are available at <http://support.avaya.com>.

- [1] *Avaya Meeting Exchange Express Edition Release 1.5 Administration and Maintenance Guide*, Issue 1, Doc ID: 04-601909, March 2007.
- [2] *Avaya Meeting Exchange Express Edition Release 1.5 Installation and Configuration Guide*, Issue 1, Doc ID: 04-601898, March 2007.
- [3] *Administrator Guide for Avaya Communication Manager*, Issue 3.1, Doc ID: 03-300509, February 2007.
- [4] *Administration for Network Connectivity for Avaya Communication Manager*, Issue 12, Doc ID: 555-233-504, February 2007.

Cantata references are available at: <http://www.cantata.com/>.

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