Avaya Solution & Interoperability Test Lab

Application Notes for Configuring a SIP Trunk between Avaya IP Office Release 4.0 and Avaya SIP Enablement Services – Issue 1.0

Abstract

These Application Notes describe how to configure a SIP trunk between Avaya IP Office Release 4.0 and Avaya SIP Enablement Services to communicate with Avaya Communication Manager. The SIP trunk was established on an Avaya IP Office 406V2 but is also applicable to other Avaya IP Office platforms.

1. Introduction

These Application Notes describe how to configure a SIP trunk between Avaya IP Office Release 4.0 and Avaya SIP Enablement Services to communicate with Avaya Communication Manager. The SIP trunk was established on an Avaya IP Office 406V2 but is also applicable to other Avaya IP Office platforms.

The network configuration diagram shown in **Figure 1** was used for these Application Notes. The Headquarters consists of an Avaya S8710 Media Server with an Avaya G650 Media Gateway and Avaya SIP Enablement Services (SES). The Avaya IP Office 406V2 is located in Retail Store 1.

In addition to verifying successful inter-site bi-directional calls, the following Avaya IP Office features were tested using the SIP trunk:

- DTMF (Dual Tone Multi-Frequency)
- Hold/Unhold
- Transfer
- Conference
- Call Park
- Forwarding
- Twinning

The administration of the network infrastructure shown in **Figure 1** is not the focus of these Application Notes and will not be covered.

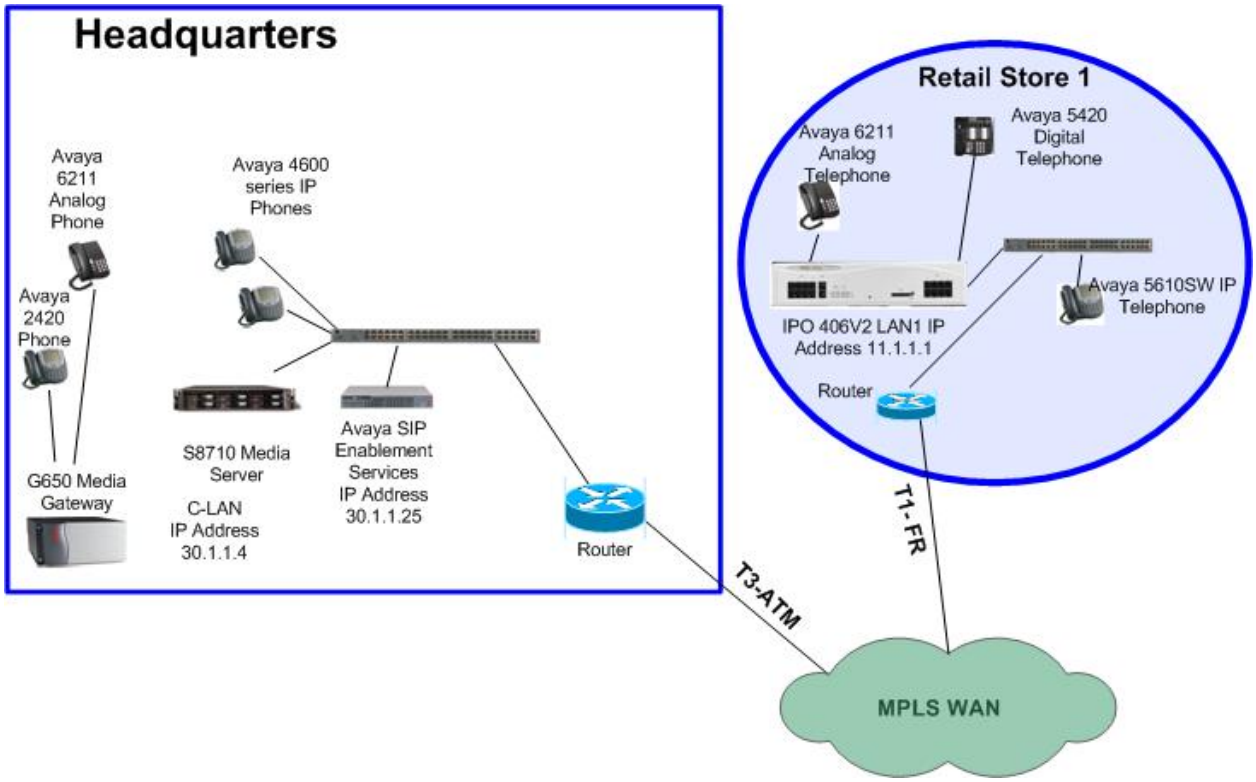


Figure 1: Avaya Communication Manager networked to Avaya IP Office

2. Equipment and Software Validated

Equipment	Software
Avaya S8300 Media Server	Avaya Communication Manager R4.0 (R014x.00.0.730.5)
Avaya G650 Media Gateway IPSI (TN2312BP) C-LAN(TN799DP) MEDPRO(TN2602AP)	 HW12 FW036 HW01 FW022 HW20 FW030
Avaya IP 406V2	4.0.4
Avaya SIP Enablement Services (SES)	3.1.2 (SES 3.1.2.0-306.2)
Avaya 5610SW IP Telephone (H.323 firmware)	2.3
Avaya 4621SW IP Telephone (H.323 firmware)	2.7
Avaya 4622SW IP Telephone (H.323 firmware)	2.7
Avaya 4610SW IP Telephone (SIP firmware)	2.2.2
Avaya 5420 Digital Telephone	N/A
Avaya 6211 Analog Telephone	N/A
Avaya 2420 Digital Telephone	N/A

3. Configure Avaya Communication Manager

The screens in this section are accessed using Avaya Communication Manager System Access Terminal (SAT). Log in with the appropriate credentials.

1. *Verify license options*. Use the **display system-parameters customer-options** command to verify that sufficient SIP trunk capacity exists. On Page 2, verify that the number of SIP trunks supported by the system is sufficient. On Page 4 verify that **Enhanced EC500** and **ISDN PRI** are both set to **y**. On Page 5, verify that **Private Networking** is set to **y**.

   The license file installed on the system controls the maximum permitted. If a required feature is not enabled or there is insufficient capacity, contact an authorized Avaya sales representative to make the appropriate changes.

```
display system-parameters customer-options              Page   2 of  11
                                OPTIONAL FEATURES
IP PORT CAPACITIES                                            USED
                     Maximum Administered H.323 Trunks: 200   83
          Maximum Concurrently Registered IP Stations: 50    36
            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: 0     0
                 Maximum Video Capable H.323 Stations: 0     0
                  Maximum Video Capable IP Softphones: 0     0
                      Maximum Administered SIP Trunks: 256   96
   Maximum Number of DS1 Boards with Echo Cancellation: 0     0
                            Maximum TN2501 VAL Boards: 10    1
                     Maximum Media Gateway VAL Sources: 10    0
          Maximum TN2602 Boards with 80 VoIP Channels: 128   1
         Maximum TN2602 Boards with 320 VoIP Channels: 128   0
   Maximum Number of Expanded Meet-me Conference Ports: 50    0
      (NOTE: You must logoff & login to effect the permission changes.)
```

```
display system-parameters customer-options              Page   4 of  11
                                OPTIONAL FEATURES
  Emergency Access to Attendant? y          IP Stations? y
           Enable 'dadmin' Login? y
           Enhanced Conferencing? y                 ISDN Feature Plus? y
                 Enhanced EC500? y   ISDN Network Call Redirection? y
    Enterprise Survivable Server? n                 ISDN-BRI Trunks? y
       Enterprise Wide Licensing? n                       ISDN-PRI? y
              ESS Administration? y     Local Survivable Processor? n
          Extended Cvg/Fwd Admin? n           Malicious Call Trace? n
      External Device Alarm Admin? n         Media Encryption Over IP? y
Five Port Networks Max Per MCC? n   Mode Code for Centralized Voice Mail? n
                Flexible Billing? n
   Forced Entry of Account Codes? n         Multifrequency Signaling? y
      Global Call Classification? n    Multimedia Call Handling (Basic)? n
             Hospitality (Basic)? y  Multimedia Call Handling (Enhanced)? n
 Hospitality (G3V3 Enhancements)? y
                      IP Trunks? y
          IP Attendant Consoles? y
        (NOTE: You must logoff & login to effect the permission changes.)
```

```
display system-parameters customer-options              Page   5 of  11
                                OPTIONAL FEATURES
                 Multinational Locations? y     Station and Trunk MSP? n
 Multiple Level Precedence & Preemption? n  Station as Virtual Extension? n
                     Multiple Locations? y
                                            System Management Data Transfer? n
          Personal Station Access (PSA)? y              Tenant Partitioning? n
                       Posted Messages? n       Terminal Trans. Init. (TTI)? y
                       PNC Duplication? n               Time of Day Routing? n
                  Port Network Support? y             Uniform Dialing Plan? y
                                             Usage Allocation Enhancements? y
               Processor and System MSP? n       TN2501 VAL Maximum Capacity? y
                     Private Networking? y
                     Processor Ethernet? y               Wideband Switching? n
                                                                 Wireless? n
                           Remote Office? n
          Restrict Call Forward Off Net? y
                  Secondary Data Module? y
```

2. *Add the IP Address information for Avaya SES*. Use the **change node-names ip** command to assign the node name and IP address for the Avaya SES. Enter a unique name in the **Name** field and enter the Avaya SES IP Address in the **IP Address** field.

```
change node-names ip                                    Page   1 of   2
                                  IP NODE NAMES
    Name                 IP Address
C-LAN                  30.1.1.4
G700-HQ1               40.1.1.1
HQ-VAL                 30.1.1.31
MediaResource          30.1.1.32
Medpro                 30.1.1.5
RS1-IPO                11.1.1.1
RS2-G350               22.1.1.22
RS3-S8500              30.1.1.30
RS4-IPSO               44.1.1.1
abacus                 30.1.1.182
default                0.0.0.0
exchange-mas           30.1.1.19
hq-ses                 30.1.1.25
procr                  30.1.1.1
( 14 of 14   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
```

3. *Create the codec set that will be used for calls between Avaya Communication Manager and Avaya IP Office*. Use the **change ip-codec-set n** command, where **n** is an available number, to enter the supported audio codecs for calls routed to and from Avaya IP Office. Use the **G.711MU** option for the Audio Codec field. Set the other fields as shown below.

```
change ip-codec-set 1                                   Page   1 of   2
                         IP Codec Set
   Codec Set: 1
   Audio        Silence      Frames   Packet
   Codec        Suppression  Per Pkt  Size(ms)
 1: G.711MU           n         2        20
 2:
 3:
 4:
 5:
 6:
 7:
    Media Encryption
 1: none
 2:
 3:
```

4. *Configure the VoIP parameters.* Use the **change ip-network-region n** command, where **n** is the number of the region to be changed, to define the connectivity settings for all VoIP resources and IP endpoints within the region.

   Enter a descriptive name in the **Name** field. Set the **Intra-region IP-IP Direct Audio** and **Inter-region IP-IP Direct Audio** fields to **yes** and the **IP Audio Hairpinning** field to **y** to enable IP shuffling. Set the **Codec Set** field to the one created in **Step 3**. The **Authoritative Domain** field is configured to match the SIP Domain name configured on Avaya SES (See **Appendix A**). The default values for the other fields may be used.

```
change ip-network-region 1                               Page   1 of  19
                             IP NETWORK REGION
  Region: 1
Location: 1       Authoritative Domain: retail.com
    Name: Retail HQ
MEDIA PARAMETERS                 Intra-region IP-IP Direct Audio: yes
      Codec Set: 1               Inter-region IP-IP Direct Audio: yes
   UDP Port Min: 5000                        IP Audio Hairpinning? y
   UDP Port Max: 5999
DIFFSERV/TOS PARAMETERS                  RTCP Reporting Enabled? y
 Call Control PHB Value: 46       RTCP MONITOR SERVER PARAMETERS
        Audio PHB Value: 46        Use Default Server Parameters? y
        Video PHB Value: 26
802.1P/Q PARAMETERS
 Call Control 802.1p Priority: 6
        Audio 802.1p Priority: 6
        Video 802.1p Priority: 5       AUDIO RESOURCE RESERVATION
PARAMETERS
H.323 IP ENDPOINTS                                       RSVP Enabled? n
  H.323 Link Bounce Recovery? y
 Idle Traffic Interval (sec): 20
   Keep-Alive Interval (sec): 5
            Keep-Alive Count: 5
```

5. *Set up a signaling group for calls between Avaya Communication Manager and Avaya SES.* Use the **add signaling group n** command, where **n** is the number of an unused signaling group. Set the **Group Type** field to **sip**. The **Transport Method** field will default to ***tls*** (Transport Layer Security). TLS is the only link protocol that is supported for communication between Avaya SES and Avaya Communication Manager. Specify the C-LAN (node name **C-LAN**) and the Avaya SES (node name **hq-ses**) as the two ends of the signaling group in the **Near-end Node Name** and the **Far-end Node Name** fields, respectively. These field values are from the **IP Node Names** form shown in **Step 2**. Check that the **Near-end Listen Port** and **Far-end Listen Port** are both **5061** (used for tls). In the **Far-end Network Region** field, enter the IP network region value assigned in the **IP Network Region** form in **Step 3**. Set the **Direct IP-IP Audio Connections** and **IP Audio Hairpining** field to **y**. The default values for the other fields may be used.

```
add signaling-group 5                                    Page   1 of   1
                                SIGNALING GROUP

 Group Number: 5                Group Type: sip
                              Transport Method: tls



  Near-end Node Name: C-LAN                  Far-end Node Name: hq-ses
 Near-end Listen Port: 5061                Far-end Listen Port: 5061
                                         Far-end Network Region: 1
       Far-end Domain: retail.com

                                    Bypass If IP Threshold Exceeded? y
 DTMF over IP: rtp-payload               Direct IP-IP Audio Connections? y
                                          IP Audio Hairpinning? y
 Enable Layer 3 Test? n
 Session Establishment Timer(min): 120
```

6. *Set up a trunk group for calls between Avaya Communication Manager and Avaya IP Office.* Use the **add trunk-group n** command, where **n** is the number of an unused trunk group. Set the **Group Type** field to **sip**. Enter a descriptive **Group Name**. Specify an available trunk access code (**TAC**) that is consistent with the existing dial plan . Select the **Service Type** to be **tie**. Set the signaling group associated with this trunk group in the **Signaling Group** field. Specify the **Number of Members** supported by this SIP trunk group. The default values for the other fields may be used.

```
add trunk-group 5                                        Page   1 of  21
                                TRUNK GROUP

Group Number: 5                Group Type: sip              CDR Reports: y
Group Name: To-SES-Main           COR: 1        TN: 1         TAC: 105
   Direction: two-way         Outgoing Display? y
 Dial Access? n                                    Night Service:
Queue Length: 0
Service Type: tie                     Auth Code? n
                                                    Signaling Group: 5
                                                   Number of Members: 48
```

7. Proceed to Page 3 of the TRUNK GROUP Form. Set the **Numbering Format** to **public**. The default values for the other fields may be used.

```
add trunk-group 5                                          Page   3 of  21
      TRUNK FEATURES
          ACA Assignment? n              Measured: none
                                                    Maintenance Tests? y



                     Numbering Format: public
                                      Prepend '+' to Calling Number? n


                                      Replace Unavailable Numbers? n
```

8. *Create a dial plan entry for Avaya IP Office extension numbers.* Use the **change dialplan analysis** command, to add a dialplan entry for the Avaya IP Office extension numbers (in this example, the extension numbers are five digits beginning with "5"). In the **Dialed String** field, add a unique set of digits that can be used for the Avaya IP Office extension numbers. In the **Total Length** field, put in the total number of dialed digits. Use **ext** in the **Call Type** field.

```
change dialplan analysis                                   Page   1 of  12
                           DIAL PLAN ANALYSIS TABLE
                                                Percent Full:    2
  Dialed   Total  Call    Dialed   Total  Call     Dialed   Total  Call
  String   Length Type    String   Length Type     String   Length Type
    45         4   ext       5         5  ext
```

9. *Create a uniform dialplan entry for Avaya IP Office extension numbers*. Use the **change uniform-dialplan n** command, where **n** is the **Dialed String** added in **Step 8**, for the Avaya IP Office extension numbers. In the **Matching Pattern** field, use the **Dialed String** value from **Step 8**. In the **Len** field, put in the total number of dialed digits. Enter 0 for **De**l and use **aar** in the **Net** field. Use default values for all other fields.

```
change uniform-dialplan 5                                    Page   1 of   2
                      UNIFORM DIAL PLAN TABLE
                                Percent Full: 0

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

10. *Create an Automatic Alternate Route entry for Avaya IP Office extension numbers*. Use the **change aar analysis** command, to add an entry for the Avaya IP Office extension numbers. In the **Dialed String** field enter the same value that was entered in the **Dialed String** field in **Step 8**. In the **Total Length** field, put in the total number of dialed digits for both **Min** and **Max**, make sure to include any prefixes. Use **aar** in the **Call Type** field. Set the **Route Pattern** to the one that will be created in **Step 11**. The default values for the other fields may be used.

```
change aar analysis 50                                    Page   1 of   2
                           AAR DIGIT ANALYSIS TABLE
                                                            Percent
Full:    2
  Dialed      Total      Route      Call    Node  ANI
  String      Min  Max   Pattern    Type    Num   Reqd
    5          5    5     55         aar           n
```

11. *Create a route pattern that will route calls to Avaya IP Office over the SIP trunk*. Use the **add route-pattern *n*** command, where **n** is the route pattern specified in **Step 10**. Enter a descriptive name for the **Pattern Name** field. Set the **Grp No** field to the trunk group number created in **Step 6**. Set the Facility Restriction Level (**FRL**) field to a level that allows access to this trunk for all users that require it. The value of **0** is the least restrictive level. Use default values for all other fields.

```
add route-pattern 55                                     Page   1 of   3
                   Pattern    Number:    55       Pattern    Name:    RS1-IPO
SCCAN? n     Secure SIP? n
    Grp FRL NPA Pfx Hop Toll No.  Inserted            DCS/ IXC
    No          Mrk Lmt List Del                       QSIG
                             Dgts                      Intw
 1: 5   0                                              n   user
 2:                                                    n   user
 3:                                                    n   user
 4:                                                    n   user
 5:                                                    n   user
 6:                                                    n   user
BCC VALUE  TSC CA-TSC    ITC BCIE Service/Feature PARM  No. Numbering LAR
    0 1 2 M 4 W     Request                    Dgts Format
                                               Subaddress
 1: y y y y y n  n           rest                       none
 2: y y y y y n  n           rest                       none
 3: y y y y y n  n           rest                       none
 4: y y y y y n  n           rest                       none
 5: y y y y y n  n           rest                       none
 6: y y y y y n  n           rest                       none
```

12. *Create a default SIP route pattern*. Use the **change locations** command. The **Name** field can be changed to any descriptive name. Enter the route pattern number from the previous step in the **Proxy Sel. Rte. Pat.** field. The default values may be retained for all other fields.

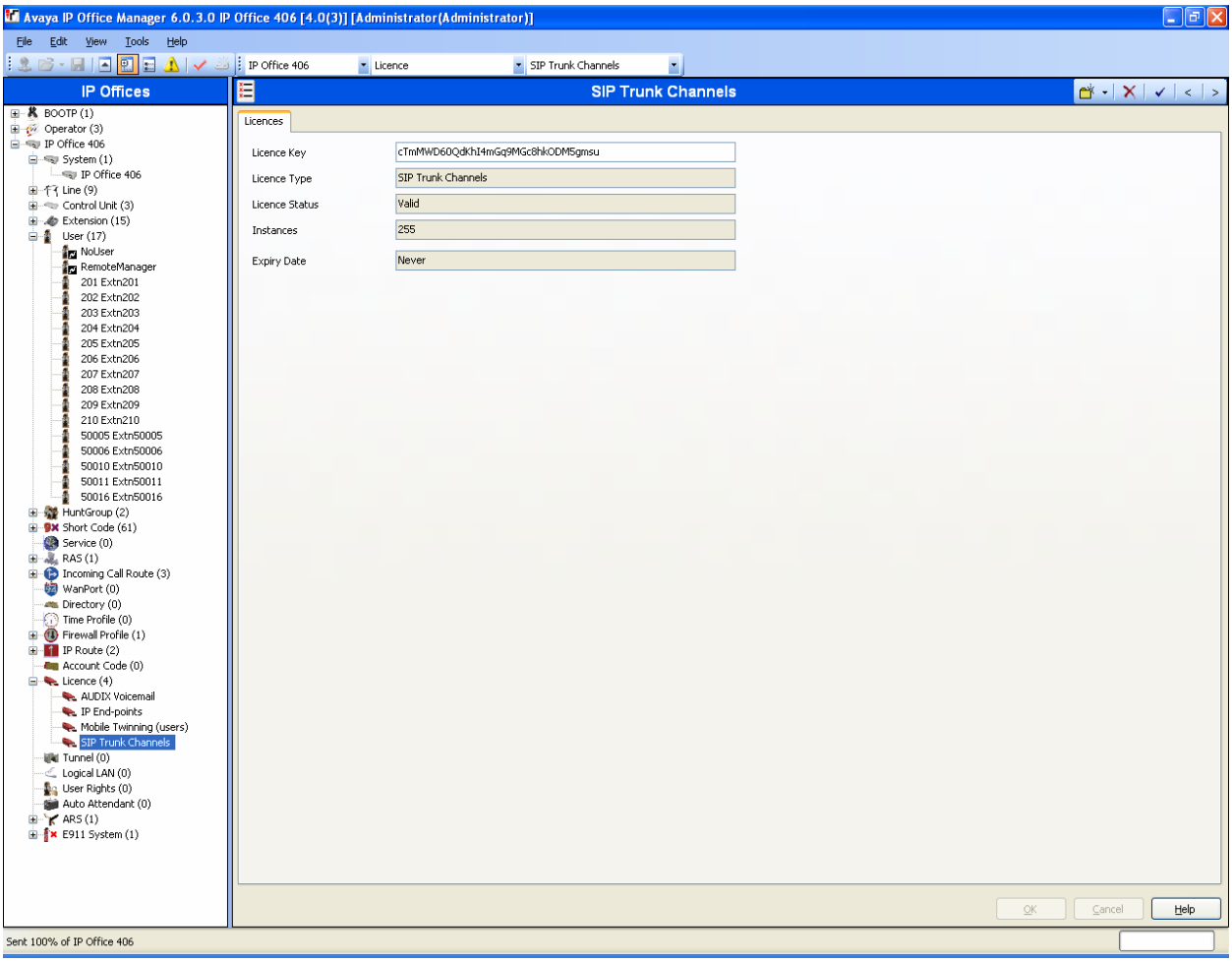
```
change locations                                          Page   1 of  16
                                   LOCATIONS
                ARS Prefix 1 Required For 10-Digit NANP Calls? y
 Loc  Name  Timezone Rule  NPA  ARS  Atd Loc  Disp   Prefix   Proxy Sel
 No          Offset             FAC  FAC Parm Parm              Rte Pat
 1: Ret-HQ  + 00:00   0                    1    1               55
 2:                        :
 3:
 4:                        :
 5:                        :
 6:                        :
 7:                        :
 8:                        :
 9:                        :
10:                        :
11:                        :
12:                        :
13:                        :
14:                        :
```

4. Configure the Avaya IP Office

IP Office is configured via the IP Office Manager program. Log into the IP Office Manager PC and select **Start → Programs → IP Office → Manager** to launch the Manager application. Log into the Manager application using the appropriate credentials.

1. *Verify that there is a SIP Trunk Channels License.* Double-click on **Licence** in the left panel. Check that there is a **SIP Trunk Channels** entry.

   If a required feature is not enabled or there is insufficient capacity, contact an authorized Avaya sales representative to make the appropriate changes.



2. *Create the IP line for Avaya SES.* Select **Line** in the left panel. Right-click and select **New → SIP Line**.

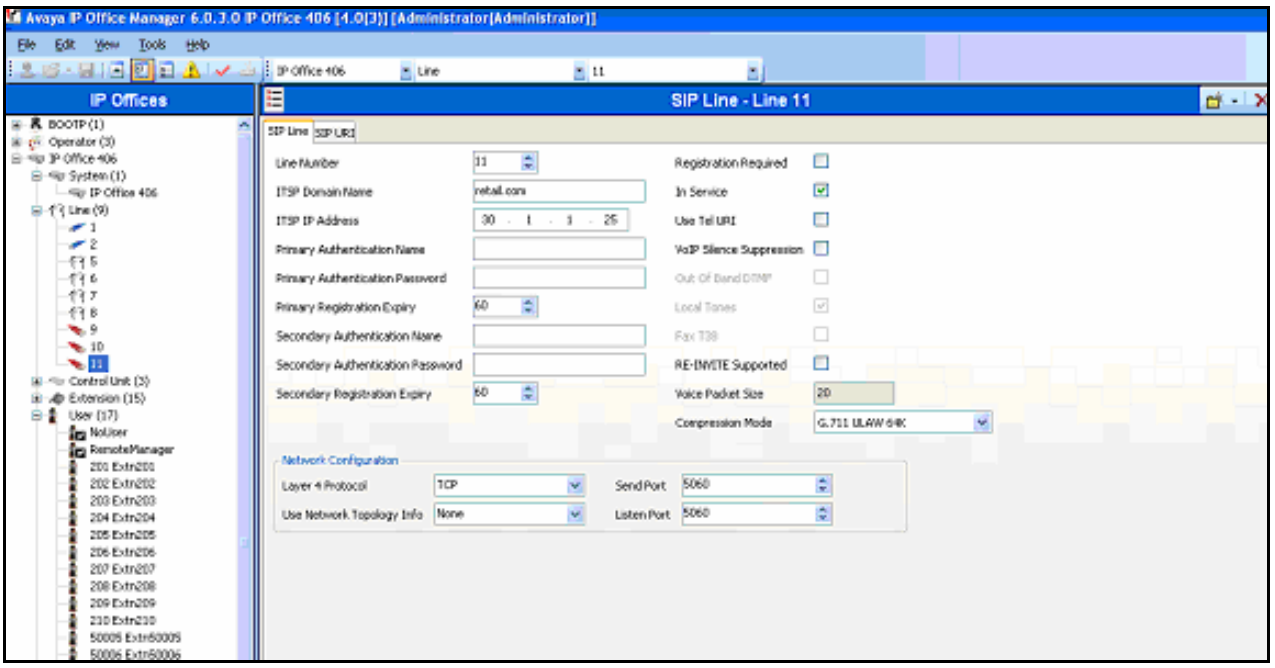
   Enter the SIP Domain name of Avaya SES (see **Appendix A**) in the **ITSP Domain Name** field. Enter the Avaya SES Server IP Address in the **ITSP IP Address** field. In the **Network Configuration** section, select the following:

   - For **Layer 4 Protocol**, use TCP,
   - For **Send Port**, use **5060,**
   - For **Listen Port** use **5060** and
   - For **Line Network Topology Info** use **None.**

   The above values must match what is administered on Avaya SES. See **Step 3** in **Section 5.**

   Select the appropriate **Compression Mode** to **G711 ULAW 64K**. This must match what was configured for the Codec Set configured in **Step 3** of **Section 3.**

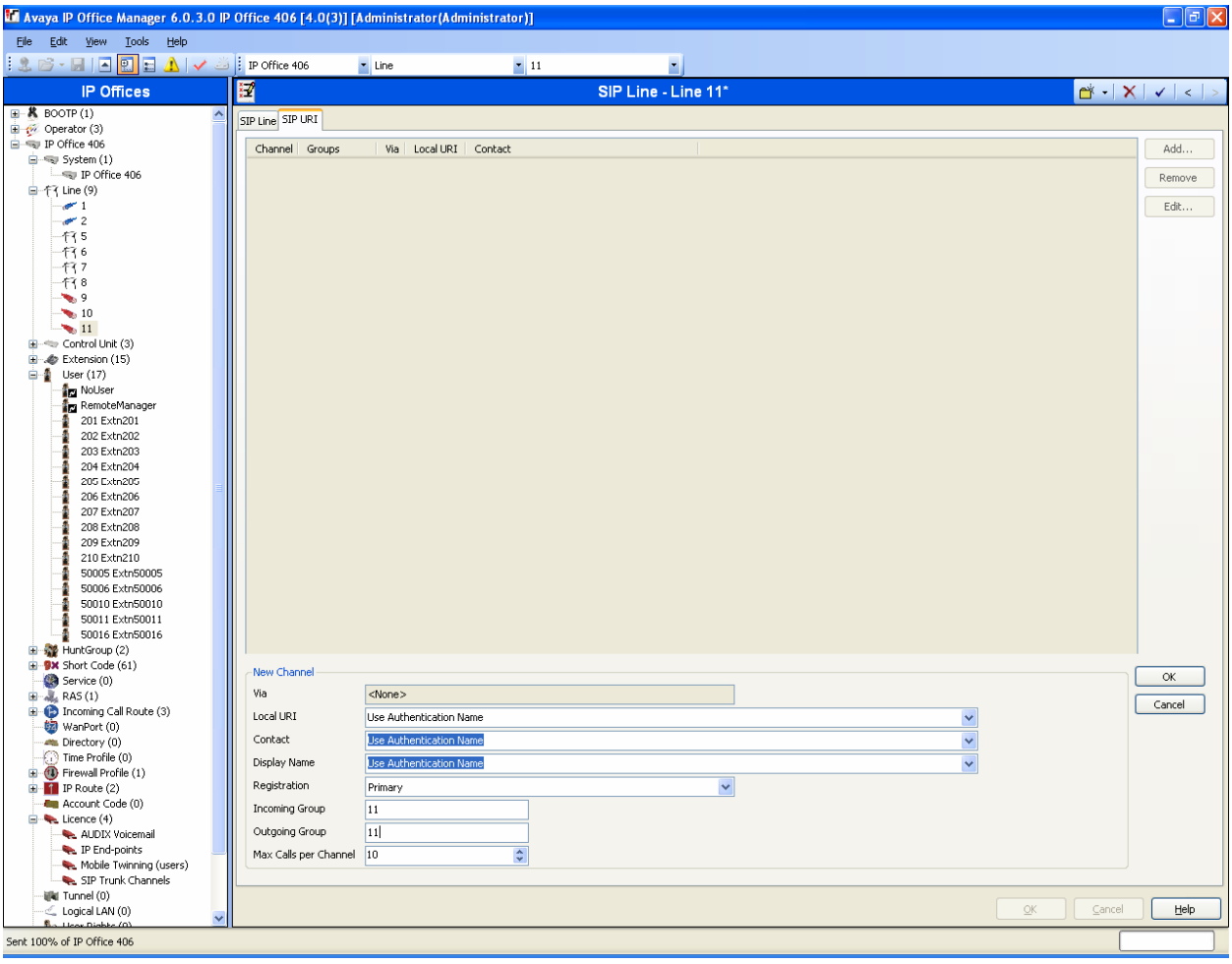
   Use defaults for other fields.



3. *Configure URI parameters for the line*. Select the **SIP URI** Tab. Press the **Add** button.

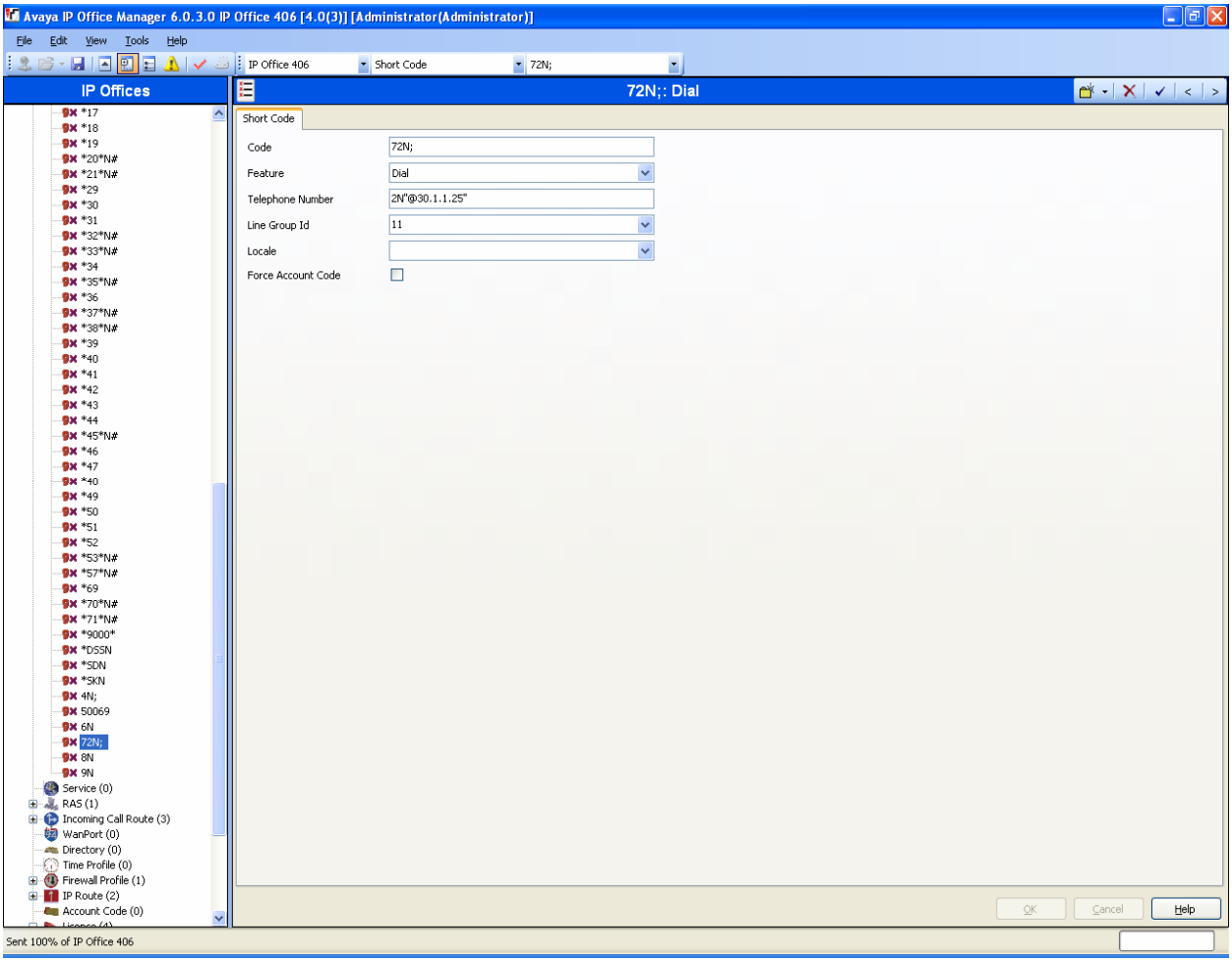
   Enter a unique number for the **Incoming Group** and **Outgoing Group** fields. Select **Use Authentication Name** for the **Contact**, **Local URI** and **Display Name** fields. Use defaults for all other field. Press the **OK** button.

   Note: This step cover users only. Additional entries need to be added for each Hunt Group. For these entries, use the **Hunt Group Name** (from the Hunt Group Form) for the **Contact**, **Local URI** and **Display Name** fields. All other values are the same as previously described in this step.



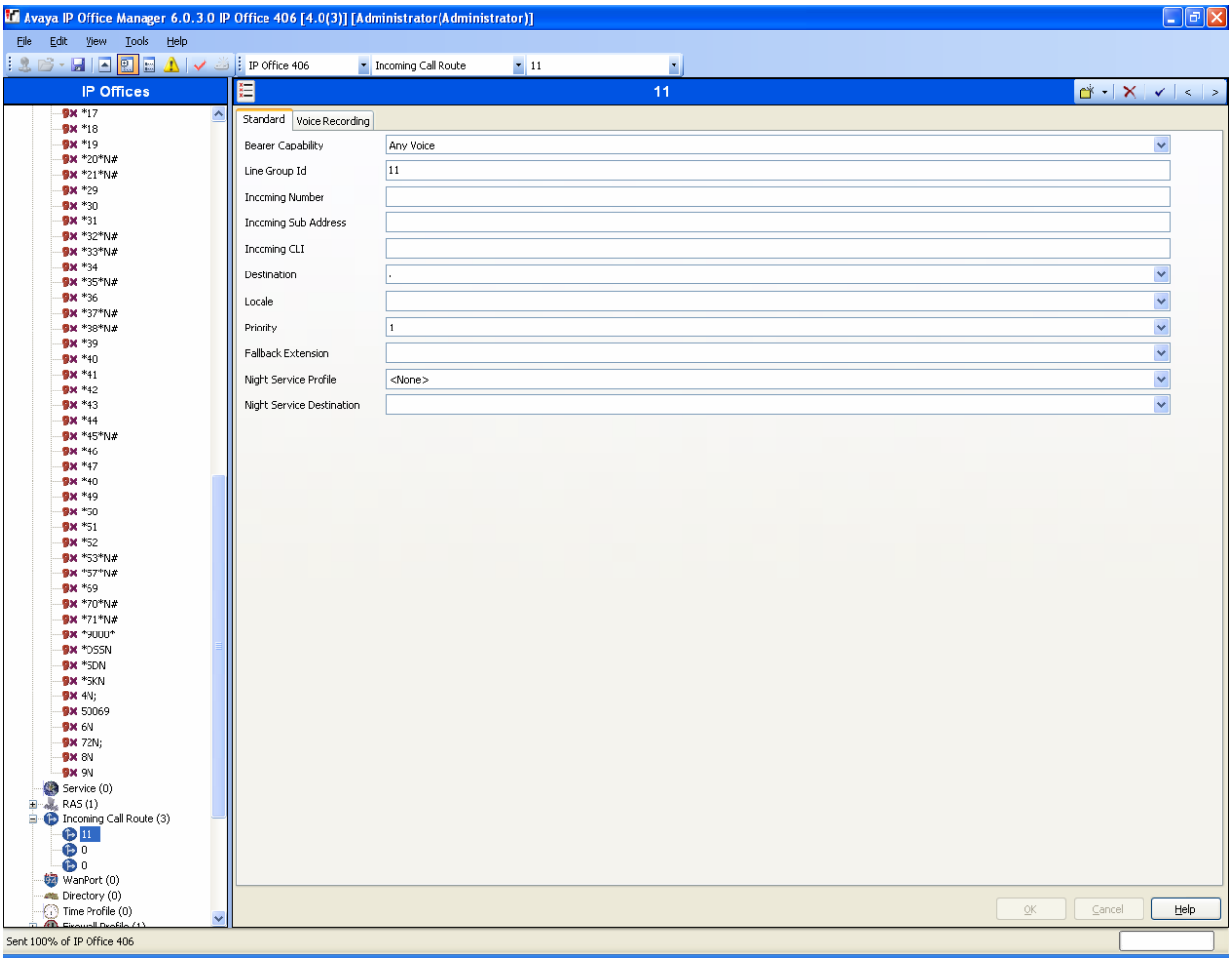
4. *Create a short code to route calls to Avaya Communication Manager*. Select **Short Code** in the left panel. Right-click and select **New**.

   Enter a unique code that ends with "**;**" for the **Short Code** field. Select **Dial** for the **Feature**. Enter the **Outgoing Group ID** created in **Step 2** for the **Line Group ID**. Enter the dialed number followed by **"@<ip address of SES server>"** for the **Telephone Number** field. This corresponds to the extension numbers that are administered on Avaya Communication Manager (in this case extension numbers are in the 20000 range). Use default values for all other fields. Press the **OK** button.



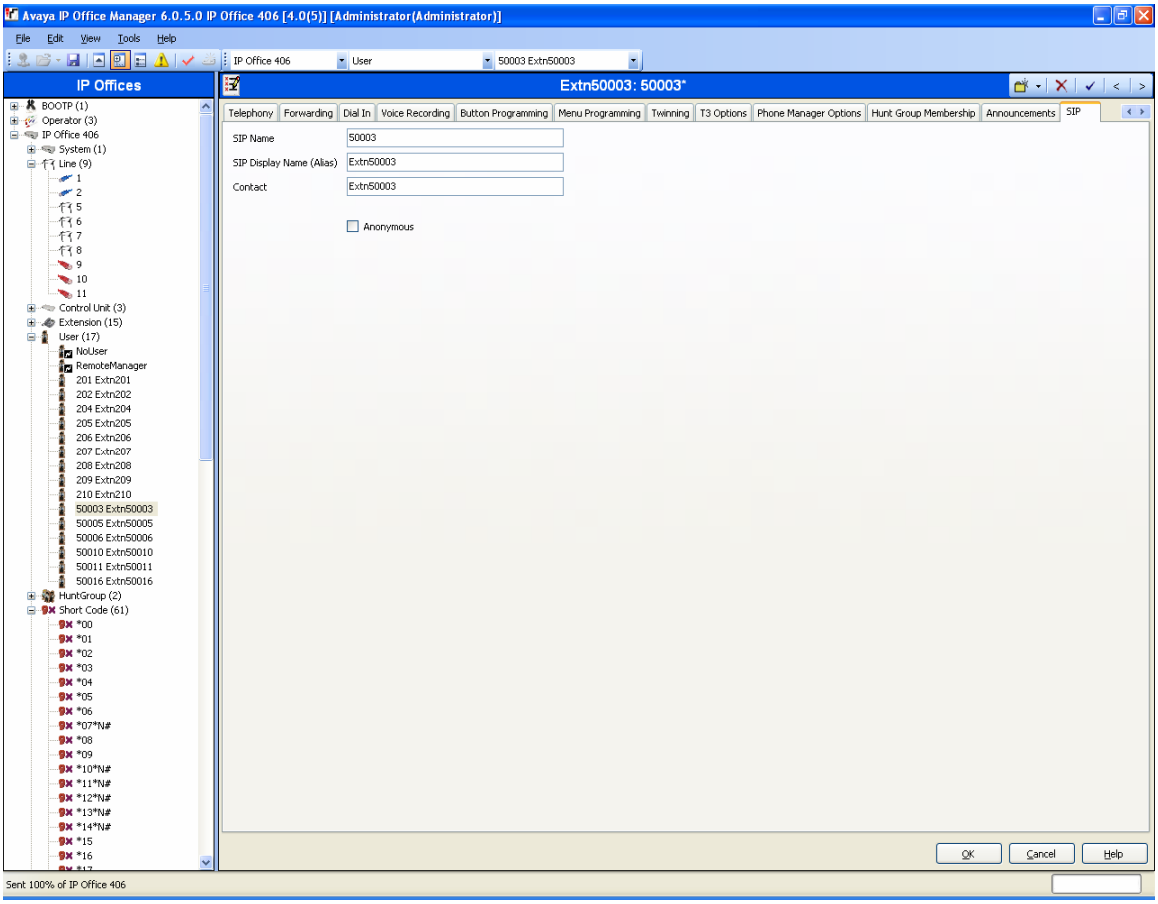
5. *Create an Incoming Call Route for the SIP calls.* Select **Incoming Call Route** in the left panel. Right-click and select **New**.

   Enter the Incoming Group created for the URI in **Step 3** in **the Line Group ID** field. Enter "**.**" in the **Destination** field. Use default values for all other fields. Press the **OK** button.



6. *Configure Users' SIP names*. Select **User** in the left panel. Double-click on an entry in the right panel. Select the **SIP** tab.

   Modify the **SIP Name** field to contain the user's extension number (this corresponds to the **Extension Number** from the **User** tab of the **User** form). The other fields can be left as defaults. Press the **OK** button.



7. Repeat Step 6 for all users on the system.

5. Configure Avaya SES

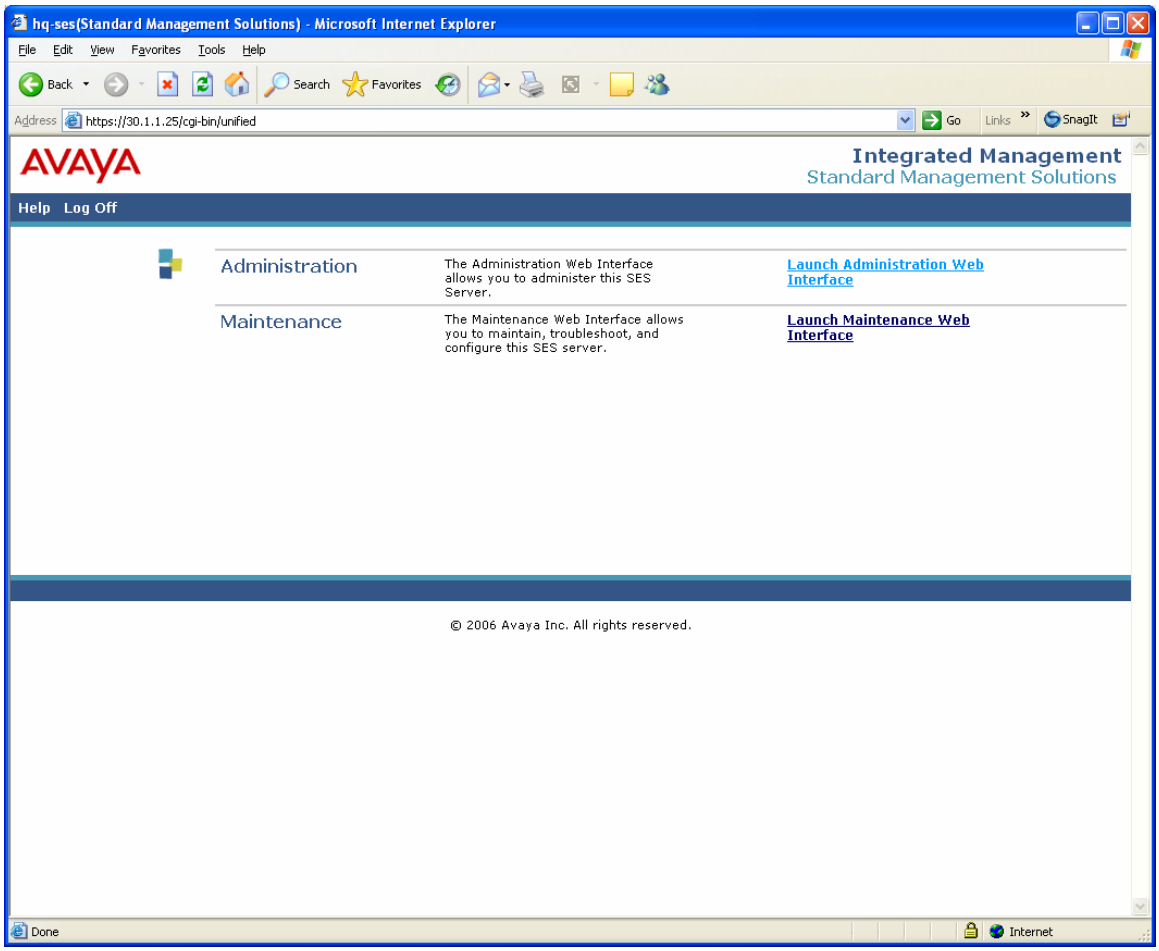
This section covers the configuration of Avaya SES. Avaya SES is configured via an Internet browser using the administration web interface. It is assumed that Avaya SES software and the license file have already been installed on the server. During the software installation, the installation script is run from the Linux shell of the server to specify the IP network properties of the server along with other parameters.

Avaya IP Office is configured as a trusted host on Avaya SES.

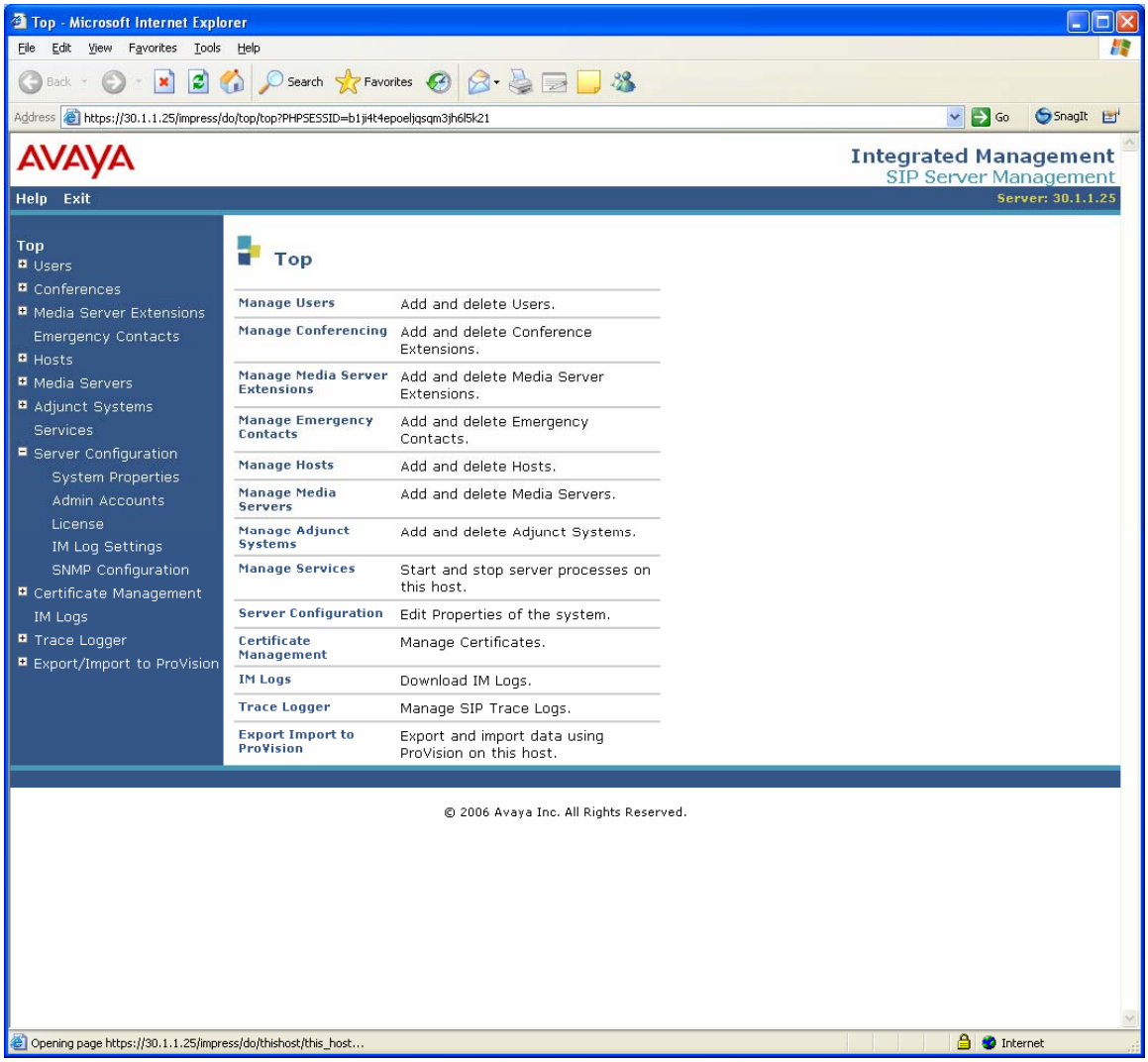
Access the Avaya SES administration web interface by entering http://<*ip-addr*>/admin as the URL in an Internet browser, where <*ip-addr*> is the IP address of the Avaya SES server.

Log in with the appropriate credentials and then select the **Launch Administration Web Interface** link from the main page as shown below.

This section does not cover the configuration of the Host parameters or configuring Avaya Communication Manager as a Media Server. See **Appendix A** for the Host configuration.

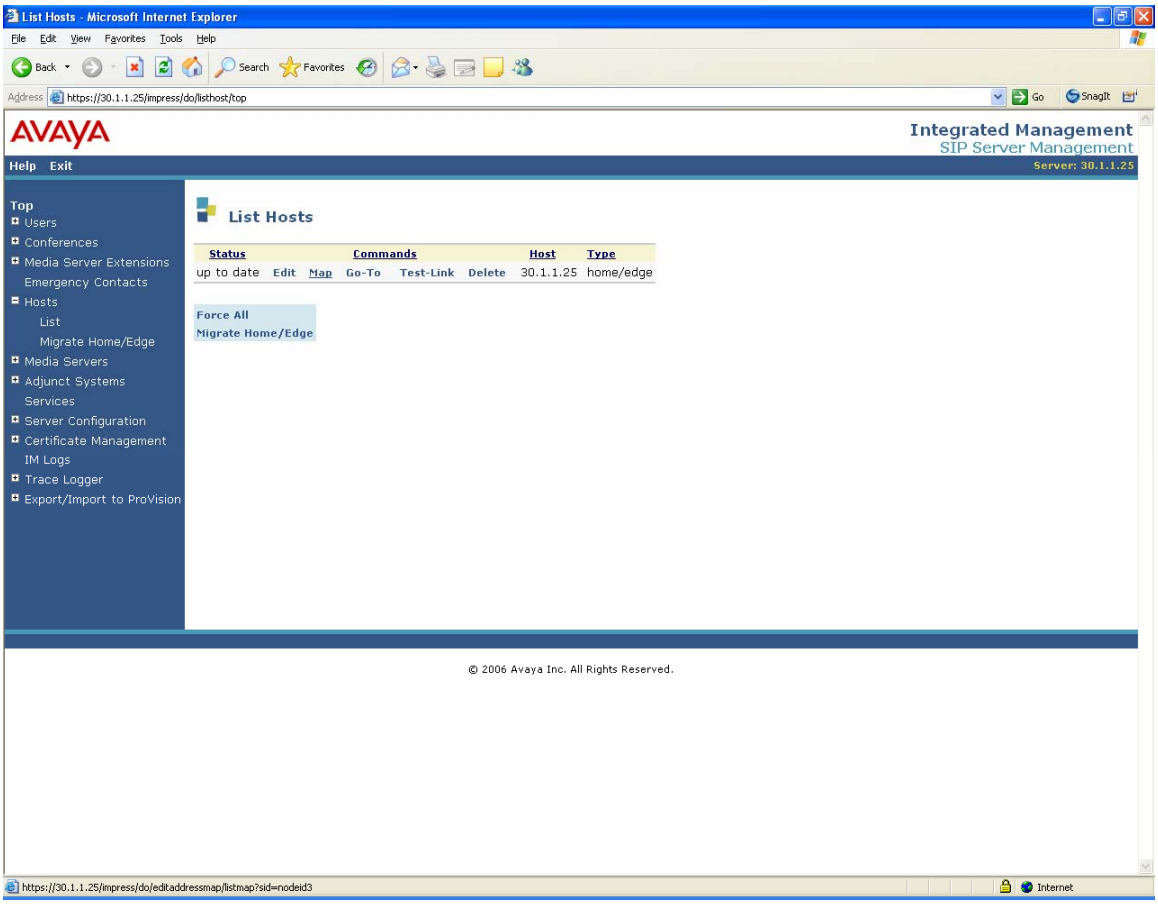


The Avaya SES Administration Home Page will be displayed as shown below.

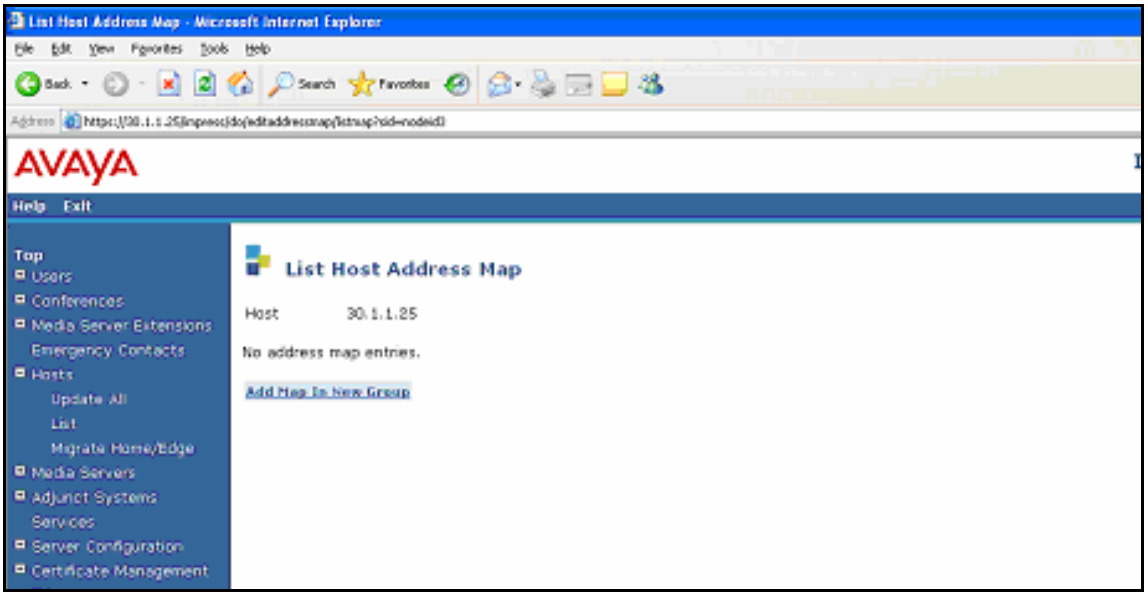


1. *Configure Avaya IP Office as a host on Avaya SES*. Expand the **Hosts** link in the left pane of the administration web interface and select **List**. This will display the **List Hosts** page as shown below.

   On the **List Host** page, select the **Map** link for Avaya SES to display the **List Host Address Map** page.

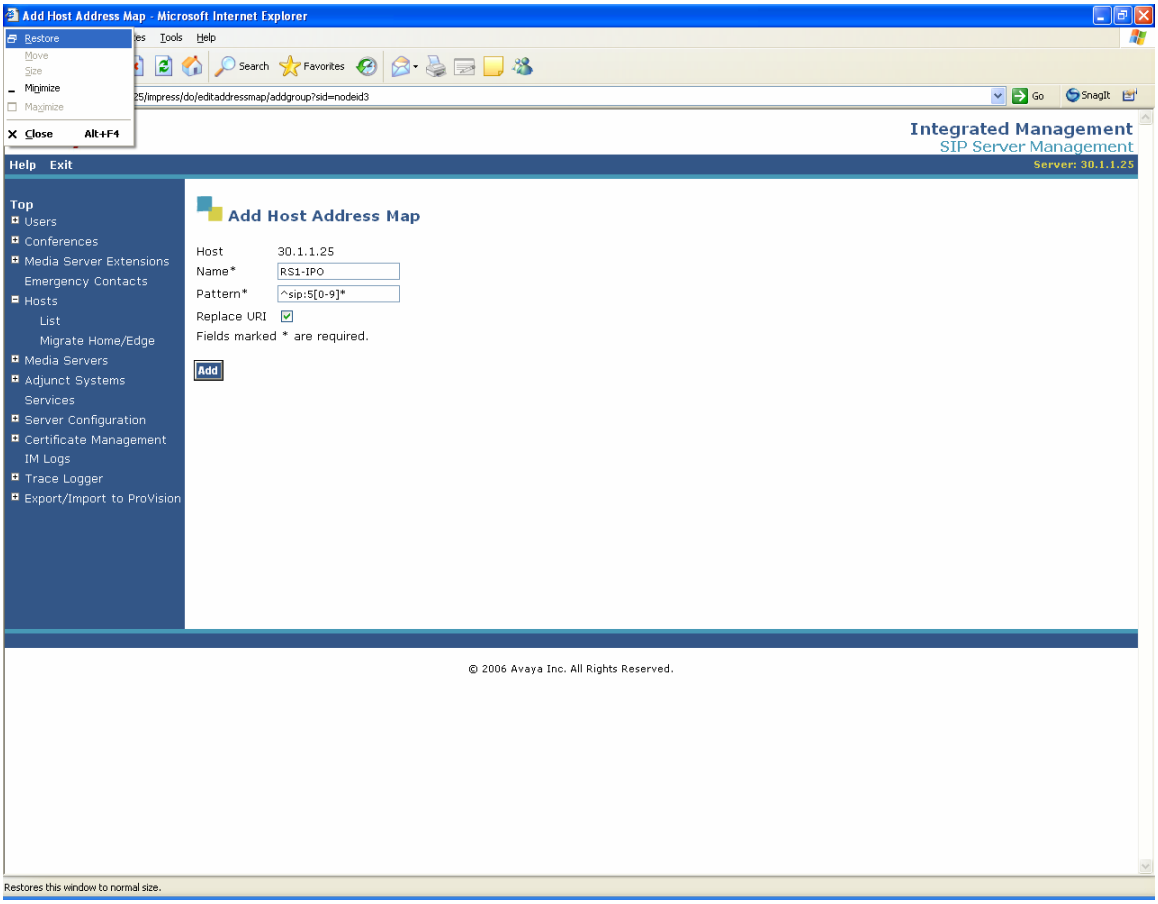


Click the **Add Map in New Group** link.

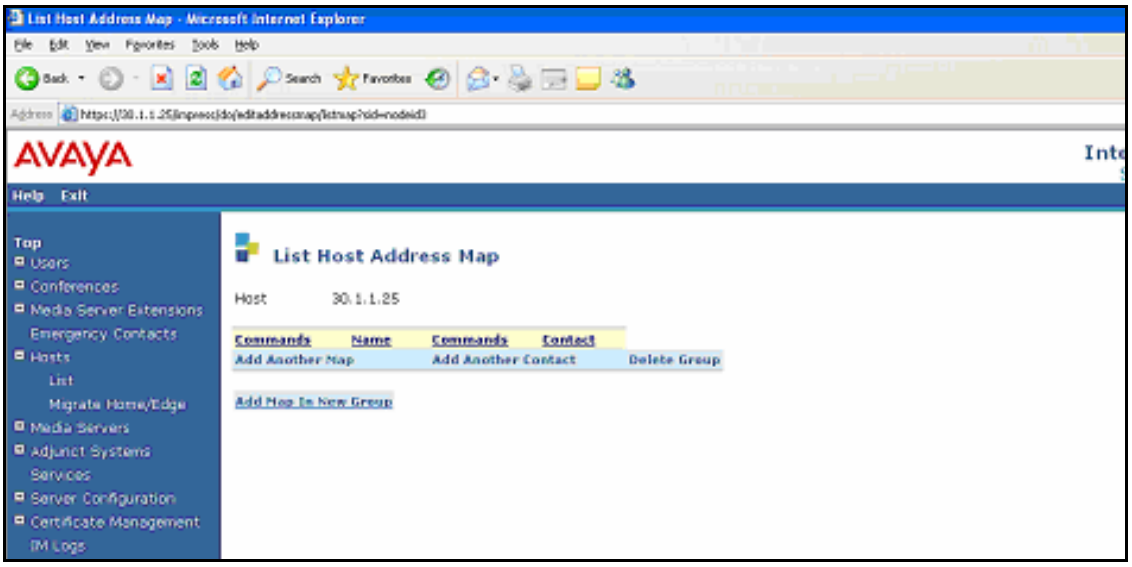


2. *Add a Host Address Map entry for calls to Avaya IP Office.* Enter a descriptive name in the **Name** field. In the **Pattern** field, enter the regular expression to pattern match for extensions on Avaya IP Office, in this case the extensions begin with "5". Leave the **Replace URI** checkbox selected. Click the **Add** button once the form is completed.

   [Not Shown] On the confirmation screen, click **Continue**.



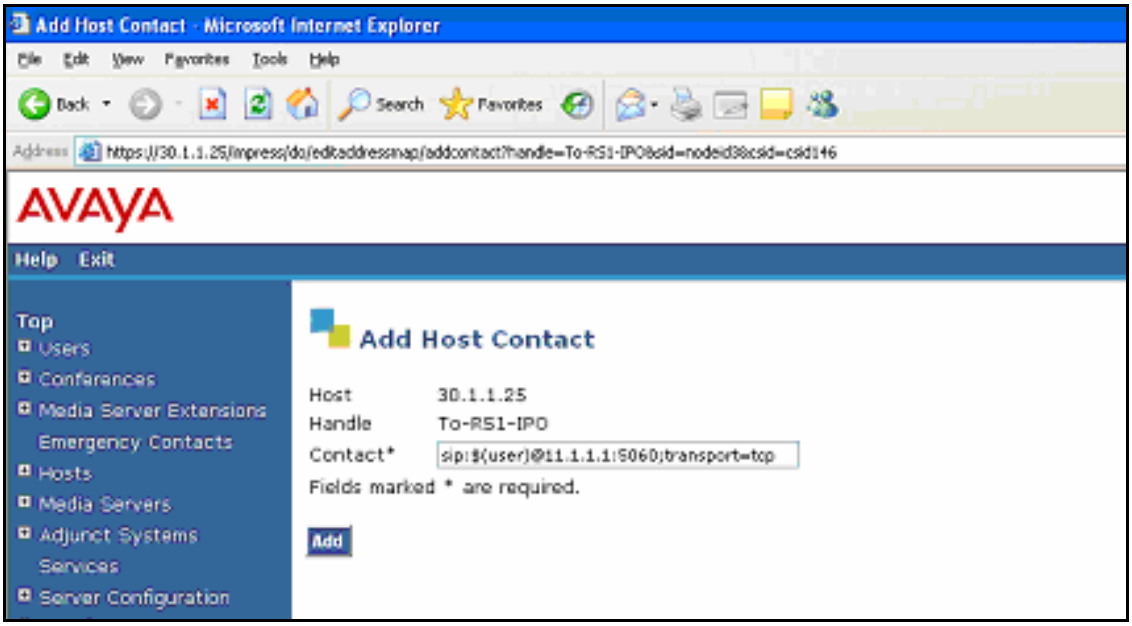
3. *Add a Contact entry for calls to Avaya IP Office.* Click the **Add Another Contact** link.



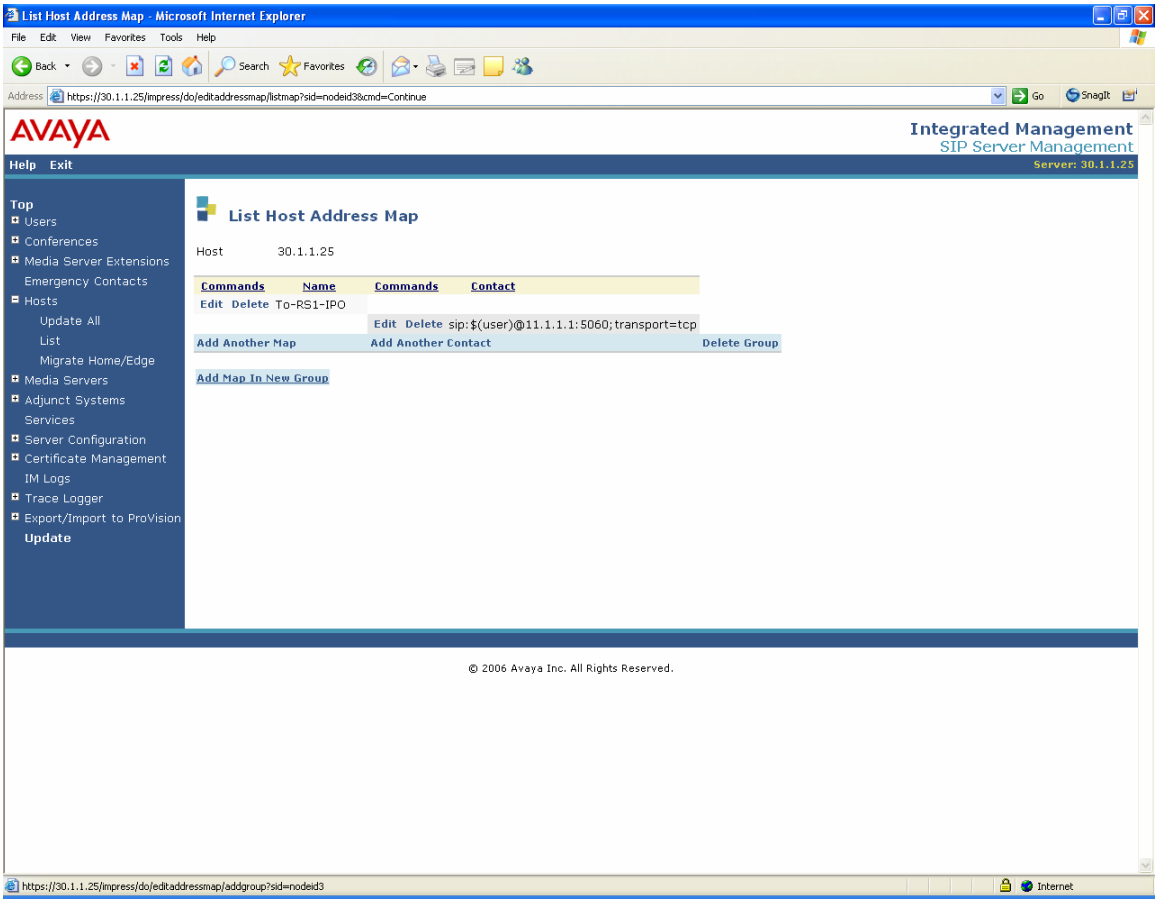
Enter a descriptive name in the **Name** field. In the **Contact** field add **sip:$(user)@11.1.1.1:5060;transport=tcp**. The IP Address is the Avaya IP Office LAN1 IP Address. The transport field must be either "tcp" or "udp" and must match the transport protocol administered on the Avaya SES entry for Avaya IP Office. See **Step 2** in **Section 4**.

Note: Avaya IP Office only supports the "tcp" or "udp" transport method. Ensure that one of those is selected and that the port number is 5060.

[Not Shown] On the confirmation screen, click **Continue**.

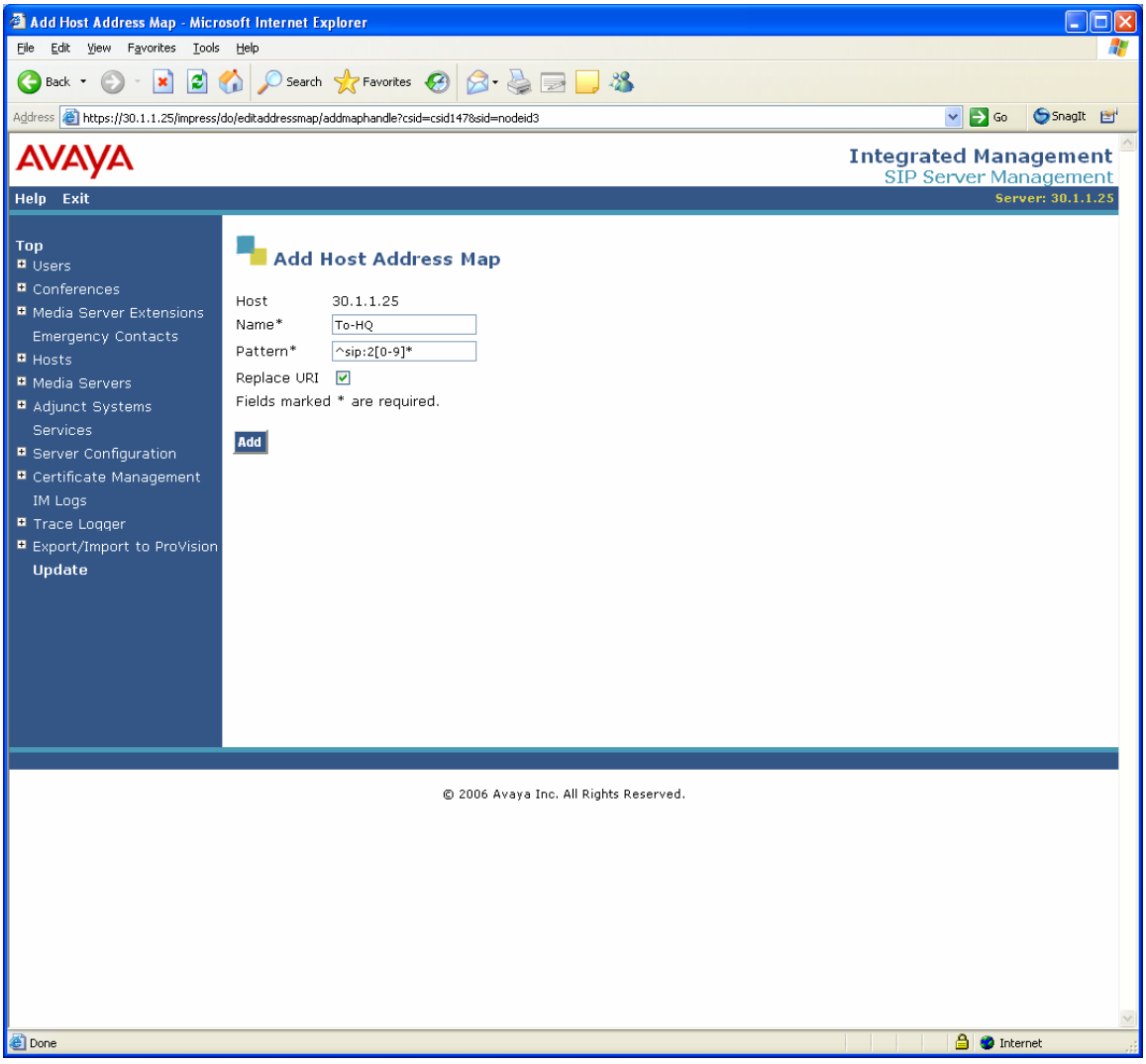


4. *Add a Host Map entry for Avaya Communication Manager*. Select the **Add Map in New Group** Link.



Enter a descriptive name in the **Name** field. In the **Pattern** field, enter the regular expression to pattern match for extensions on Avaya Communication Manager, in this case the extensions begin with "2". Leave the **Replace URI** checkbox selected. Click the **Add** button once the form is completed.

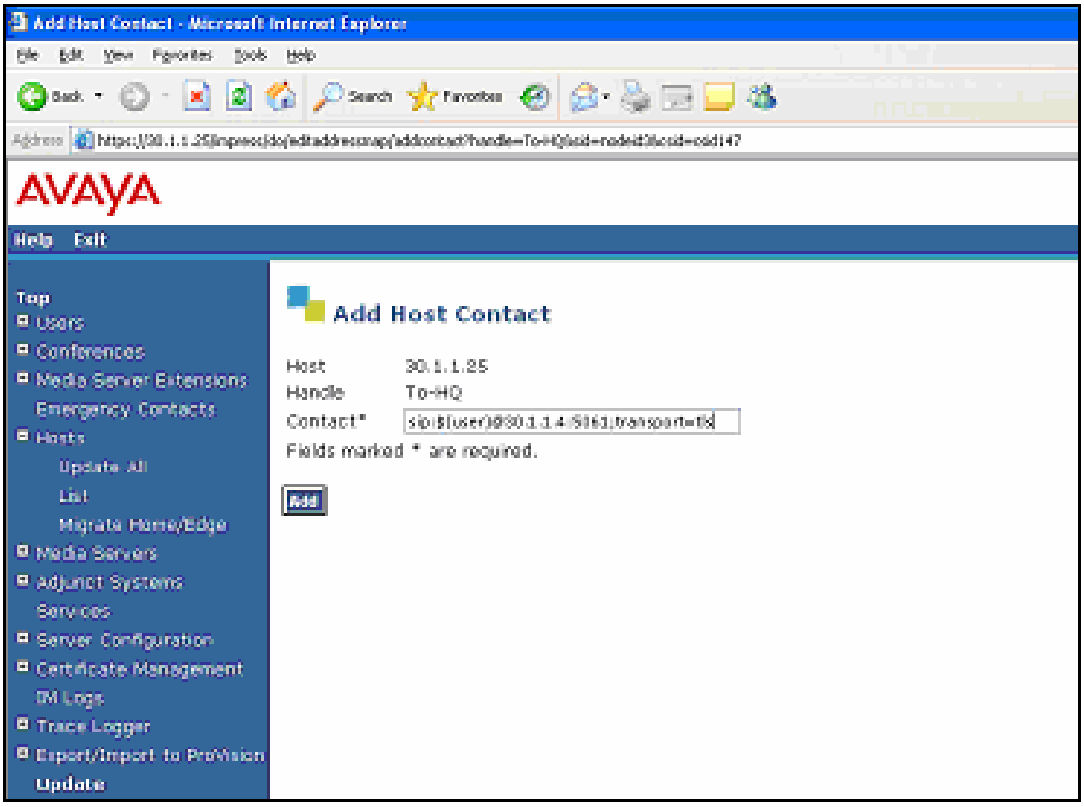
[Not Shown] On the confirmation screen, click **Continue**.



5. *Add a Contact for Avaya Communication Manager*. On the screen shown is **Step 4**, click the **Add Another Contact** link for the Avaya Communication Manager Host.

   In the **Contact** field add **sip:$(user)@30.1.1.4:5061;transport=tls**. This sets up a link to Avaya Communication Manager with the "tls" protocol. The contact specifies the IP address of the C-LAN on Avaya Communication Manager. The transport must be "tls".

   [Not Shown] On the confirmation screen, click **Continue**.



6. *Add Avaya IP Office as a Trusted Host*. As a trusted host, Avaya SES will not issue SIP authentication challenges for incoming requests from the designated IP address. This step can be done with the Web Interface still running.

   Telnet to Avaya SES and log in using the administrative login and password. Enter the following command at the Linux shell prompt **trustedhost –a 11.1.1.1 –n 30.1.1.25 –c IP Office.**

7. *Update Avaya SES*. From the Web Browser interface, select the **Update** button in the left panel. This will apply the changes made through both administrative interfaces (Web Browser and Command Line).

6. Verification and Troubleshooting

- Place a call from an extension on the Avaya IP Office to an extension on Avaya Communication Manger. Answer the call and verify talkpath.
- Repeat previous case in the opposite direction.
- Verify that calls can be transferred from an extension on Avaya IP Office to an extension on Avaya Communication Manager.
- Verify that calls can be transferred from an extension on Avaya Communication Manager to an extension on Avaya IP Office.
- Verify that extensions on Avaya IP Office can conference in extensions on Avaya Communication Manager.
- Verify that extensions on Avaya Communication Manager can conference in extensions on Avaya IP Office.
- Verify that a call can be forwarded from Avaya IP Office to an extension on Avaya Communication Manager.
- Verify that a call from Avaya Communication Manager can be answered and parked and retrieved from Avaya IP Office.

6.1. Avaya Communication Manager Troubleshooting

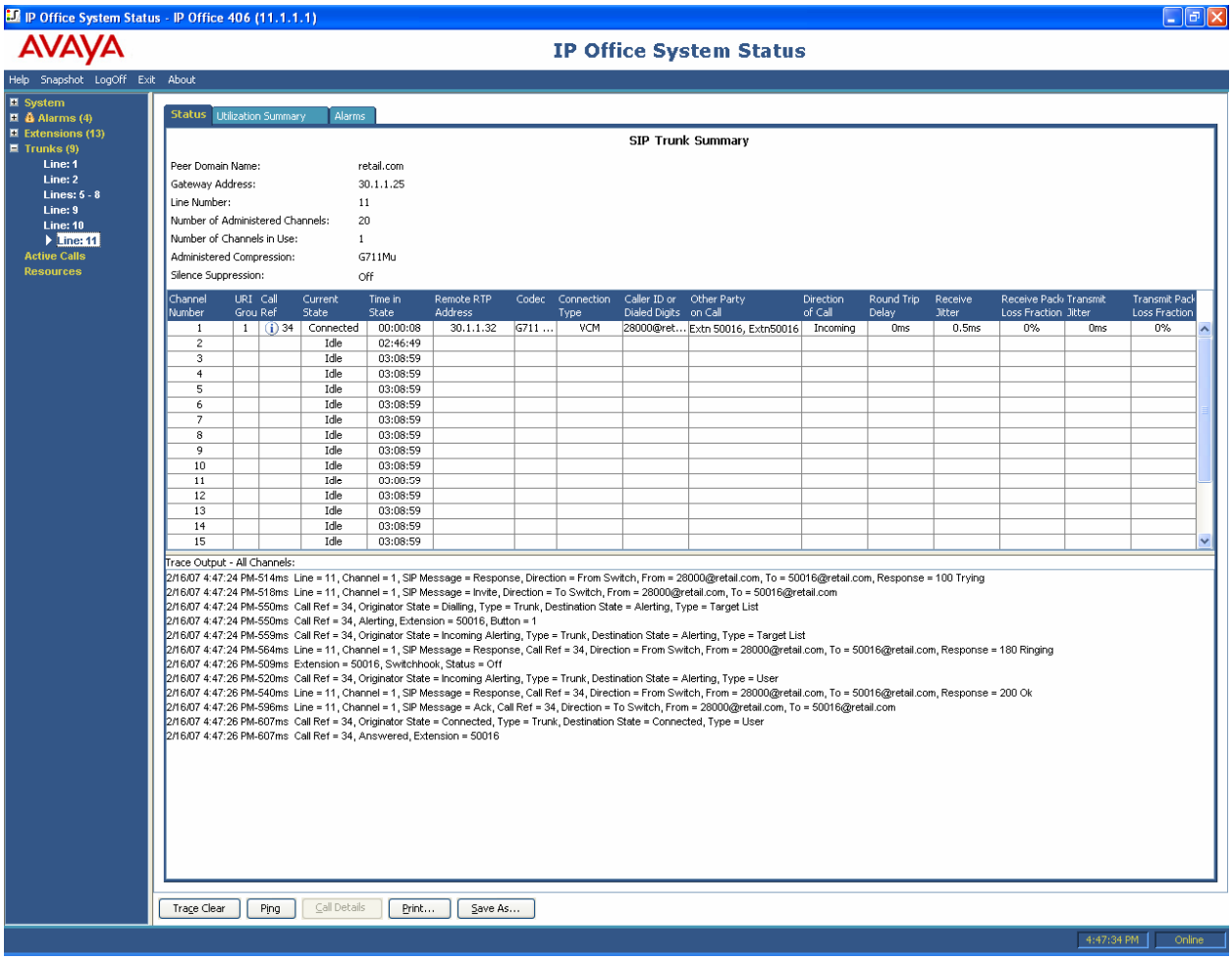
Using the SAT, enter the **list trace tac n**, where n is the TAC used for the Trunk Group created in **Step 6** of **Section 3**. This will show call information. Below is an example of a call from Avaya Communication Manager to Avaya IP Office.

```
list trace tac 105                                                    Page
1
                              LIST TRACE
time           data
16:42:26     dial 50016 route:UDP|AAR
16:42:26     term trunk-group 5    cid 0x39
16:42:26     dial 50016 route:UDP|AAR
16:42:26     route-pattern  55 preference 1  cid 0x39
16:42:26     seize trunk-group 5 member 4  cid 0x39
16:42:26     Calling Number & Name 28000 EXT 28000
16:42:26     Proceed trunk-group 5 member 4  cid 0x39
16:42:26     Alert trunk-group 5 member 4  cid 0x39
16:42:27     active trunk-group 5 member 4  cid 0x39
16:42:27     G711MU ss:off ps:20 rn:1/1 11.1.1.1:49154 30.1.1.5:5448
16:42:27     xoip: fax:Relay modem:off tty:US 30.1.1.5:5448 uid:0x5007a
             VOIP data from: 30.1.1.5:5448
16:42:38     Jitter:0 0 0 0 0 0 0 0 0 0: Buff:8 WC:5 Avg:0
16:42:38     Pkloss:0 0 0 0 0 0 0 0 0 0: Oofo:0 WC:0 Avg:0
```

6.2. Avaya IP Office Troubleshooting

IP Office can be debugged with the System Status Application. Log into the IP Office Administration PC and select **Start → Programs → IP Office → System Status** to launch the application. Log into the application using the appropriate credentials.

In the left panel, double-click on the **Trunks** entry and select the SIP trunk created in **Step 2** of **Section 4**. Press the **Trace All** button. The messages on the line are displayed.



6.2.1. Calls not alerting on Avaya IP Office

If calls can be successfully placed from Avaya IP Office, but calls to Avaya IP Office are not alerting, verify that the **SIP Name** has been configured for the user being called. See **Step 6** in **Section 4** for details.

6.3. Avaya SES

Ensure that Avaya IP Office is configured as a trusted host. Telnet to Avaya SES and log in using the administrative login and password. Enter the following command at the Linux shell prompt **trustedhost –L.** The following will be displayed.

```
Third party trusted hosts.
       Trusted Host       |       CCS Host Name       |         Comment
--------------------------+---------------------------+-------------------------
11.1.1.1                  | 30.1.1.25                 |    IP Office
```

7. Conclusion

These Application Notes describe how to configure a SIP trunk for calls between Avaya IP Office and Avaya Communication Manager. Interoperability testing included verification of successful bi-directional calls among several types of endpoints with various features including transfer, conference and out-of-band DTMF verification.

8. Additional References

1. Feature Description and Implementation for Avaya Communication Manager, Issue 4.0, Feb 2006, Document Number 555-245-205 can be found at: http://support.avaya.com

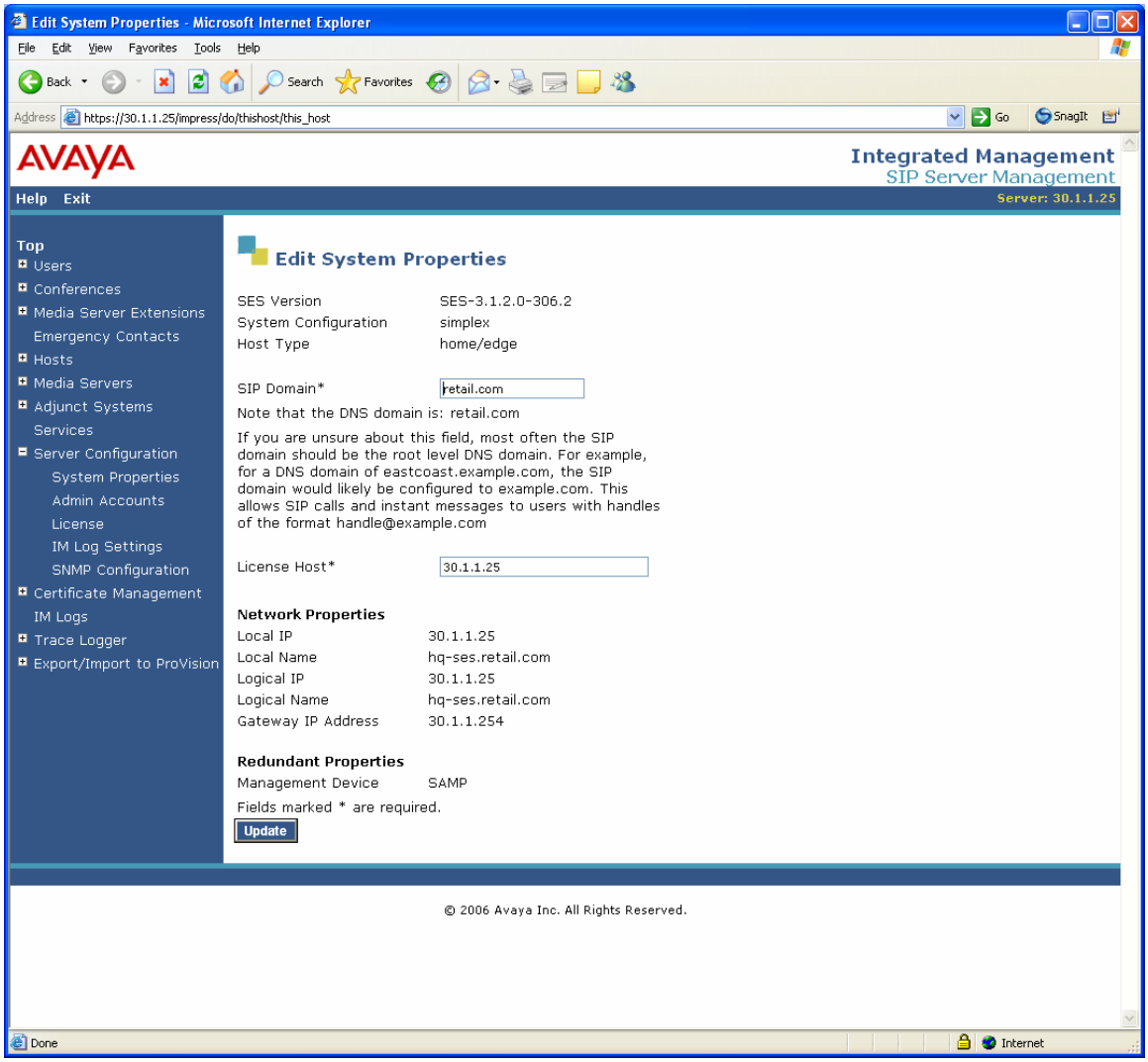
2. Administrator Guide for Avaya Communication Manager, Issue 2.1, May 2006, Document Number 03-300509,can be found at: http://support.avaya.com

3. IP Office documentation can be found at: http://marketingtools.avaya.com/knowledgebase/

4. Installing and Administering SIP Enablement Services R3.1, Issue 1.5, February 2006, Document Number 03-600768,can be found at: http://support.avaya.com

APPENDIX A: Avaya SES Host Configuration

The following screen shows the Avaya SES Host Configuration settings used for this test.



Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya Solution & Interoperability Test Lab at interoplabnotes@list.avaya.com