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Avaya Solution & Interoperability Test Lab

Application Notes for Configuring the Captaris RightFax Fax Server with Avaya Communication Manager via H.323 - Issue 1.0

Abstract

These Application Notes describe the procedures for configuring the Captaris RightFax fax server with Avaya Communication Manager via an H.323 trunk.

RightFax is a software based fax server that sends and receives fax calls over an IP network. In the tested configuration, Avaya Communication Manager directs fax calls to/from RightFax via an H.323 trunk established across the IP network. RightFax uses the Dialogic Brooktrout SR140 T.38 IP fax driver to provide its H.323 support.

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.

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Solution & Interoperability Test Lab Application Notes
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RightFax-CMh323

1. Introduction

These Application Notes describe the procedures for configuring the Captaris RightFax fax server with Avaya Communication Manager via an H.323 trunk.

RightFax is a software based fax server that sends and receives fax calls over an IP network. It runs on Microsoft Windows 2000 Server with SP4 or later and Windows 2003 Server with SP1 or later. In the tested configuration, Avaya Communication Manager directs fax calls to/from RightFax via an H.323 trunk established across the IP network. RightFax uses the Dialogic Brooktrout SR140 T.38 IP fax driver to provide its H.323 support.

1.1. Configuration

Figure 1 illustrates the configuration used in these Application Notes. In the sample configuration, two sites are connected via an H.323 trunk, as well as by an ISDN-PRI trunk. Faxes can be sent between the two sites using either of these two trunks.

Site 1 has an Avaya S8500 Server running Avaya Communication Manager with two Avaya G650 Media Gateways. Each media gateway is configured as a separate port network in separate IP network regions. RightFax at this site is running on a Windows 2003 Server and communicates to Avaya Communication Manager via an H.323 trunk whose signaling is terminated on a CLAN circuit pack in port network 2. The media resources required by the trunk are provided by the Media Processor (MedPro) circuit pack. Two versions of the MedPro circuit pack were tested in this configuration: TN2302 and TN2602. Endpoints at this site include Avaya 4600 Series IP Telephones (with H.323 firmware), Avaya 9600 Series IP Telephones (with H.323 firmware), and a fax machine.

Site 2 has an Avaya S8300 Server running Avaya Communication Manager in an Avaya G700 Media Gateway. RightFax at this site is running on a Windows 2003 Server and communicates to Avaya Communication Manager via an H.323 trunk. On the Avaya G700 Media Gateway, the signaling and media resources needed to support the H.323 trunk are integrated directly on the media gateway processor. Endpoints at this site include Avaya 4600 Series IP Telephones (with H.323 firmware), Avaya 9600 Series IP Telephones (with H.323 firmware), and a fax machine.

Although the IP telephones are not involved in the faxing operations, they are present in the configuration to verify VoIP telephone calls are not affected by the faxing operations and vice versa.

Outbound fax calls originating from RightFax are sent to Avaya Communication Manager via the H.323 trunk. Based on the dialed digits, Avaya Communication Manager will direct the call to the local fax machine, the ISDN-PRI trunk or H.323 trunk to reach the remote site. Inbound fax calls terminating to RightFax are first received by Avaya Communication Manager from the local fax machine or from across either trunk connected to the remote site. Avaya Communication Manager then directs the call over the H.323 trunk that connects to the local RightFax server.
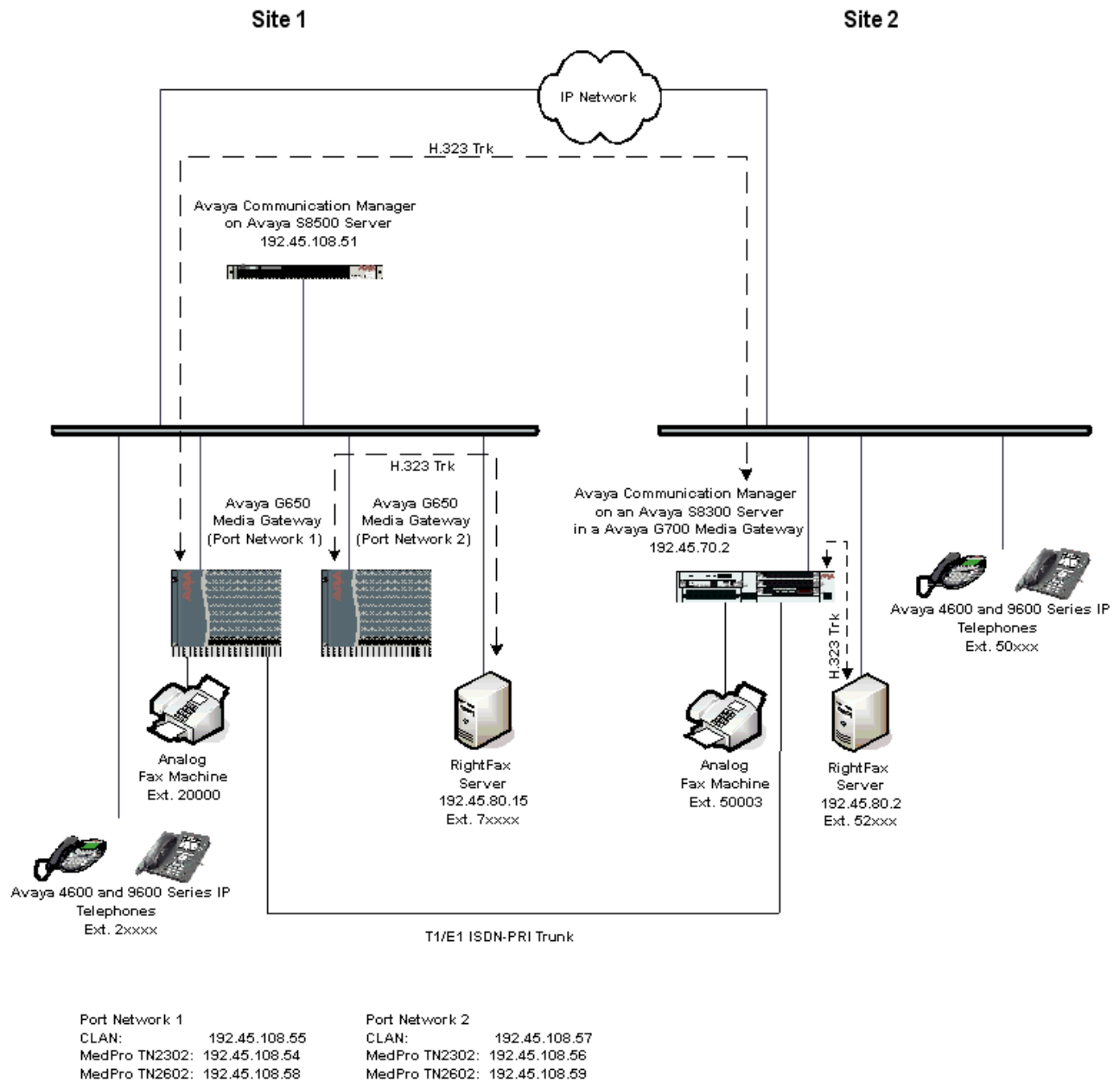
Figure 1: RightFax Test Configuration

2. Equipment and Software Validated

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

Equipment	Software/Firmware
Avaya S8500 Server (at site1)	Avaya Communication Manager 5.1 with Service Pack (01.0.414.3-15962)
Avaya G650 Media Gateway (at site 1) - 2 CLANs - 2 MedPros – TN2302 - 2 MedPros – TN2602	TN799DP - HW 01 FW 26 TN2302AP - HW 20 FW 118 TN2602AP - HW 02 FW 040
Avaya S8300 Server (at site 2)	Avaya Communication Manager 5.1 with Service Pack (01.0.414.3-15962)
Avaya G700 Media Gateway (at site 2)	28.17.0
Avaya 4600 Series IP Telephones (H.323)	2.8.3
Avaya 9600 Series IP Telephones (H.323) - Avaya one-X Deskphone Edition	1.5
Analog Telephones	-
Analog Fax Machines	-
Windows PCs	Windows XP Professional
Captaris RightFax	9.3 Feature Pack 2 Service Release 6 with patch 64978 (Patch 64978 updates the Brooktrout SR140)
Dialogic Brooktrout SR140 T.38 IP fax driver	Boston Bfv API v5.3.20 (Build 69) Boston Driver v5.3.00 (Build 3) Boston SDK v5.1.05 (Build 69) Boot ROM 3.1.1B86A372

3. Configure Avaya Communication Manager

This section describes the Avaya Communication Manager configuration necessary to interoperate with RightFax. It focuses on the configuration of the H.323 trunk between Avaya Communication Manager and RightFax. All other components are assumed to be in place and previously configured, including the H.323 and ISDN-PRI trunks that connect both sites.

The examples shown in this section refer to site 1. However, unless specified otherwise, these same steps also apply to site 2 using values appropriate for site 2 from **Figure 1**.

The configuration of Avaya Communication Manager was performed using the System Access Terminal (SAT). After the completion of the configuration, perform a **save translation** command to make the changes permanent.

Step	Description

1.	**IP Interfaces**
	Use the **list ip-interface all** command to identify which IP interfaces are located in which network region. The example below shows the IP interfaces used in the compliance test. All interfaces in cabinet 01 (port network 1) as indicated in the **Slot** field are in IP network region 1 as indicated in the **Net Rgn** field. Testing with the TN2302 and TN2602 circuit packs were done separately. When testing with the TN2302, the TN2602 was disabled (turned off) and vice versa as indicated in the **ON** field.
	
	<pre>list ip-interface all
	
	                        IP INTERFACES
	                                                         Net
	ON Type Slot Code Sfx Node Name/ Subnet Mask Rgn VLAN
	                        IP-Address
	-- ---- ---- ---- --- --------------- ---------------- --- ----
	y MEDPRO 01A02 TN2302 MEDPRO1A 255.255.255.0 192.45.108.1 1 n
	                        192.45.108.54
	y C-LAN 01A03 TN799 D CLAN1A 255.255.255.0 192.45.108.1 1 n
	                        192.45.108.55
	y MEDPRO 02A02 TN2302 MEDPRO2A 255.255.255.0 192.45.108.1 2 n
	                        192.45.108.56
	y C-LAN 02A03 TN799 D CLAN2A 255.255.255.0 192.45.108.1 2 n
	                        192.45.108.57
	n MEDPRO 01A04 TN2602 MEDPRO1A-2 255.255.255.0 192.45.108.1 1 n
	                        192.45.108.58
	n MEDPRO 02A04 TN2602 MEDPRO2A-2 255.255.255.0 192.45.108.1 2 n
	                        192.45.108.59</pre>

Step	Description

2.	**IP Network Region – Region 1**
	The configuration of the IP network regions (**Steps 2 – 5**) is assumed to already to be in place but is included here for clarity. At site 1, the Avaya S8500 Server, the Avaya G650 Media Gateway comprising port network 1 and all IP endpoints were located in IP network region 1 using the parameters described below. Use the **display ip-network-region** command to view these settings. The example below shows the values used for the compliance test.
	▪ A descriptive name was entered for the **Name** field.
	▪ **IP-IP Direct Audio** (shuffling) was enabled to allow audio traffic to be sent directly between IP endpoints without using media resources in the Avaya Media Gateway. This was done for both intra-region and inter-region IP-IP Direct Audio. This is the default setting. Shuffling can be further restricted at the trunk level on the **Signaling Group** form.
	▪ The **Codec Set** field was set to the IP codec set to be used for calls within this IP network region. In this case, IP codec set 1 was selected.
	▪ The default values were used for all other fields.
	
	At site 2, all IP components were located in IP network region 1 and IP network region was configured in the same manner as shown below.
	
	<pre>display ip-network-region 1 Page 1 of 19
	                          IP NETWORK REGION
	  Region: 1
	Location: Authoritative Domain:
	    Name: PN1
	MEDIA PARAMETERS Intra-region IP-IP Direct Audio: yes
	     Codec Set: 1 Inter-region IP-IP Direct Audio: yes
	  UDP Port Min: 2048 IP Audio Hairpinning? n
	  UDP Port Max: 3329
	DIFFSERV/TOS PARAMETERS RTCP Reporting Enabled? y
	 Call Control PHB Value: 46 RTCP MONITOR SERVER PARAMETERS
	        Audio PHB Value: 46 Use Default Server Parameters? y
	        Video PHB Value: 26
	802.1P/Q PARAMETERS
	 Call Control 802.1p Priority: 6
	        Audio 802.1p Priority: 6
	        Video 802.1p Priority: 5 AUDIO RESOURCE RESERVATION PARAMETERS
	H.323 IP ENDPOINTS RSVP Enabled? n
	  H.323 Link Bounce Recovery? y
	 Idle Traffic Interval (sec): 20
	   Keep-Alive Interval (sec): 5
	           Keep-Alive Count: 5</pre>

Step	Description

3.	**IP Network Region 1 – Continued**
	On **Page 3**, codec sets are defined for inter-region calls. In the case of the compliance test at site 1, calls from IP network region 1 (**src rgn 1**) to IP network region 2 (**dst rgn 2**) used codec set 1. The default values were used for all other fields. At site 2, only one IP network region exists so no inter-region settings were required.
	
	<pre>display ip-network-region 1 Page 3 of 19
	
	                  Inter Network Region Connection Management
	
	 src dst codec direct WAN-BW-limits Video Intervening Dyn
	 rgn rgn set WAN Units Total Norm Prio Shr Regions CAC IGAR AGL
	  1 1 1 all
	  1 2 1 y NoLimit n
	  1 3 3 y NoLimit n all</pre>

4.	**IP Network Region –Region 2**
	At site 1, IP network region 2 was created in a similar manner as IP network region 1 shown in **Step 4** but with a different name.
	
	<pre>change ip-network-region 2 Page 1 of 19
	                            IP NETWORK REGION
	  Region: 2
	Location: Authoritative Domain:
	    Name: PN2
	MEDIA PARAMETERS Intra-region IP-IP Direct Audio: yes
	     Codec Set: 1 Inter-region IP-IP Direct Audio: yes
	  UDP Port Min: 2048 IP Audio Hairpinning? n
	  UDP Port Max: 3329
	DIFFSERV/TOS PARAMETERS RTCP Reporting Enabled? y
	 Call Control PHB Value: 46 RTCP MONITOR SERVER PARAMETERS
	       Audio PHB Value: 46 Use Default Server Parameters? y
	       Video PHB Value: 26
	802.1P/Q PARAMETERS
	 Call Control 802.1p Priority: 6
	       Audio 802.1p Priority: 6
	       Video 802.1p Priority: 5 AUDIO RESOURCE RESERVATION PARAMETERS
	H.323 IP ENDPOINTS RSVP Enabled? n
	  H.323 Link Bounce Recovery? y
	 Idle Traffic Interval (sec): 20
	  Keep-Alive Interval (sec): 5
	          Keep-Alive Count: 5</pre>

5.	**IP network region –Port Network 2**
	The inter-region codec setting was created similarly to **Step 5**.
	
	<pre>display ip-network-region 2 Page 3 of 19
	
	                  Inter Network Region Connection Management
	
	 src dst codec direct WAN-BW-limits Video Intervening Dyn
	 rgn rgn set WAN Units Total Norm Prio Shr Regions CAC IGAR AGL
	  2 1 1 y NoLimit n all
	  2 2 1 all</pre>

Step	Description
| 6. | **IP Node Names**<br>Use the **change node-names** command to create a node name that maps to the RightFax server IP address. This node name is used in the configuration of the H.323 trunk signaling group. The example below shows the entry on Avaya Communication Manager at site 1.<br><br>```
change node-names ip                                    Page   1 of   2
                          IP NODE NAMES
    Name              IP Address
CLAN1A             192.45.108.55
CLAN2A             192.45.108.57
CMnorth            192.45.70.2
MEDPRO1A           192.45.108.54
MEDPRO1A-2         192.45.108.58
MEDPRO2A           192.45.108.56
MEDPRO2A-2         192.45.108.59
RightFax1          192.45.80.15
SES                192.45.108.50
default            0.0.0.0
procr              192.45.108.51
``` |
| 7. | **IP Network Map**<br>If the RightFax server is to be located in an IP network region other than the default region of 1, then the region is assigned using the **change ip-network-map** command. In the case of the compliance test, the RightFax server IP address at site 1 is assigned to IP network region 2 as shown in the example below. At site 2, the RightFax server is located in the default IP network region 1, so it does not require an IP address map entry.<br><br>```
change ip-network-map                                   Page   1 of  32
                      IP ADDRESS MAPPING

                                                   Emergency
                                       Subnet      Location
  From IP Address  (To IP Address   or Mask)  Region   VLAN  Extension
  192.45 .80 .15   192.45 .80 .15                2      n
    .   .   .        .   .   .                          n
``` |

Step	Description
8.	**Codecs** Use the **change ip-codec-set** command to verify that G.711MU or G.711A is contained in the codec list. The example below shows the values used in the compliance test. ``` display 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: ```
9.	**Fax** On **Page 2**, verify that the **FAX Mode** field is set to *t.38-standard*. This is necessary to support the RightFax server added to port network 2. The **Modem Mode** field should be set to *off*. ``` change ip-codec-set 1 Page 2 of 2 IP Codec Set Allow Direct-IP Multimedia? n Mode Redundancy FAX t.38-standard 0 Modem off 0 TDD/TTY US 3 Clear-channel n 0 ```

Step	Description
10.	**Signaling Group**

Use the **add signaling group** command to create a signaling group for use by the H.323 trunk to the RightFax server. For the compliance test at site 1, signaling group 3 was configured using the parameters highlighted below. Default values may be used for all other fields.

- Set the **Group Type** to *h.323*.
- The **Trunk Group for Channel Selection** is left blank until the trunk group is created. It will be updated later.
- Set the **Near-end Node Name** to the node name that maps to the IP address of the CLAN circuit pack used to connect to the RightFax server. Node names are defined using the **change node-names ip** command. For site 2, this node name would map to the IP address of the Avaya Media Server (*procr*).
- Set the **Far-end Node Name** to the node name that maps to the IP address of the RightFax server.
- Set the **Near-end Listen Port** and **Far-end Listen Port** to *1720.*
- Set the **Far-end Network Region** to the IP network region which contains *RightFax*.
- Set the **Direct IP-IP Audio Connections** field to *n*. This field must be set to *n* for interoperability with RightFax.
- The default values were used for all other fields.

```
add signaling-group 3                                          Page   1 of   5
                             SIGNALING GROUP

 Group Number: 3                    Group Type: h.323
                               Remote Office? n          Max number of NCA TSC: 0
                                         SBS? n           Max number of CA TSC: 0
           IP Video? n                               Trunk Group for NCA TSC:
       Trunk Group for Channel Selection:
       TSC Supplementary Service Protocol: a
                       T303 Timer(sec): 10


   Near-end Node Name: CLAN2A                  Far-end Node Name: RightFax1
  Near-end Listen Port: 1720                  Far-end Listen Port: 1720
                                            Far-end Network Region: 2
           LRQ Required? n               Calls Share IP Signaling Connection? n
           RRQ Required? n

                                              Bypass If IP Threshold Exceeded? n
                                                      H.235 Annex H Required? n
           DTMF over IP: out-of-band         Direct IP-IP Audio Connections? n
 Link Loss Delay Timer(sec): 90                         IP Audio Hairpinning? n
        Enable Layer 3 Test? n                     Interworking Message: PROGress
  H.323 Outgoing Direct Media? n         DCP/Analog Bearer Capability: 3.1kHz
```

Step	Description

11.	**Trunk Group**
	Use the **add trunk group** command to create a trunk group for the H.323 trunk to the RightFax server. For the compliance test at site 1, trunk group 3 was configured using the parameters highlighted below. Default values may be used for all other fields.
	
	On **Page 1**:
	▪ Set the **Group Type** field to *isdn*.
	▪ Enter a descriptive name for the **Group Name**.
	▪ Enter an available trunk access code (TAC) that is consistent with the existing dial plan in the **TAC** field.
	▪ Set the **Carrier Medium** to *H.323*.
	▪ Set the **Service Type** field to *tie*.
	▪ Set the **Member Assignment Method** to *auto*.
	▪ Set the **Signaling Group** to the signaling group shown in the previous step.
	▪ In **Number of Members** field, enter the number of trunks in the trunk group. This determines how many simultaneous calls can be supported by the configuration.
	▪ Default values may be used for all other fields.
	
	<pre>add trunk-group 3 Page 1 of 21
	                          TRUNK GROUP
	
	Group Number: 3 Group Type: isdn CDR Reports: y
	  Group Name: RightFax TG COR: 1 TN: 1 TAC: *003
	   Direction: two-way Outgoing Display? n Carrier Medium: H.323
	 Dial Access? n Busy Threshold: 255 Night Service:
	Queue Length: 0
	Service Type: tie Auth Code? n
	                                          Member Assignment Method: auto
	                                                   Signaling Group: 3
	                                                 Number of Members: 6</pre>

Step	Description

12.	**Trunk Group – continued**
	On **Page 3**:
	▪ Set the **Send Name** field and **Send Calling Number** field to *y*. The enables sending calling party name and number to the far end.
	▪ Set the **Numbering Format** field to *public*. This field specifies the format of the calling party number sent to the far-end.
	▪ Default values may be used for all other fields.
	
	<pre>add trunk-group 3 Page 3 of 21
	TRUNK FEATURES
	          ACA Assignment? n Measured: none
	                                   Internal Alert? n Maintenance Tests? y
	                                 Data Restriction? n NCA-TSC Trunk Member:
	                                     Send Name: y Send Calling Number: y
	             Used for DCS? n Send EMU Visitor CPN? n
	     Suppress # Outpulsing? n Format: public
	                                           UUI IE Treatment: service-provider
	
	                                              Replace Restricted Numbers? n
	                                             Replace Unavailable Numbers? n
	                                                 Send Connected Number: n
	                                                Hold/Unhold Notifications? n
	             Send UUI IE? y Modify Tandem Calling Number? n
	             Send UCID? n
	  Send Codeset 6/7 LAI IE? y</pre>

13.	**Signaling Group – Update**
	Use the **change signaling-group** command to update the **Trunk Group for Channel Selection** field with the trunk group created in **Steps 11 – 12**.
	
	<pre>change signaling-group 3 Page 1 of 5
	                          SIGNALING GROUP
	
	 Group Number: 3 Group Type: h.323
	                            Remote Office? n Max number of NCA TSC: 0
	                                     SBS? n Max number of CA TSC: 0
	            IP Video? n Trunk Group for NCA TSC:
	     Trunk Group for Channel Selection: 3
	    TSC Supplementary Service Protocol: a
	                   T303 Timer(sec): 10
	
	  Near-end Node Name: CLAN2A Far-end Node Name: RightFax1
	Near-end Listen Port: 1720 Far-end Listen Port: 1720
	                                    Far-end Network Region: 2
	        LRQ Required? n Calls Share IP Signaling Connection? n
	        RRQ Required? n
	
	                                    Bypass If IP Threshold Exceeded? n
	                                             H.235 Annex H Required? n
	        DTMF over IP: out-of-band Direct IP-IP Audio Connections? n
	 Link Loss Delay Timer(sec): 90 IP Audio Hairpinning? n
	      Enable Layer 3 Test? n Interworking Message: PROGress
	H.323 Outgoing Direct Media? n DCP/Analog Bearer Capability: 3.1kHz</pre>

Step	Description

14.	**Public Unknown Numbering**
	Public unknown numbering defines the calling party number to be sent to the far-end. Use the **change public-unknown-numbering** command to create an entry that will be used by the trunk group defined in **Step 4**. In the example shown below, all calls originating from a 5-digit extension beginning with 2 and routed across any trunk group (**Trk Grp** column is blank) will be sent as a 5-digit calling number.
	
	<pre>change public-unknown-numbering 0 Page 1 of 2
	                    NUMBERING - PUBLIC/UNKNOWN FORMAT
	                                         Total
	Ext Ext Trk CPN CPN
	Len Code Grp(s) Prefix Len
	                                              Total Administered: 1
	 5 2 5 Maximum Entries: 9999</pre>

15.	**Route Pattern**
	Use the **change route-pattern** command to create a route pattern that will route calls to the H.323 trunk that connects to RightFax.
	
	The example below shows the route pattern used for the compliance test at site 1. A descriptive name was entered for the **Pattern Name** field. The **Grp No** field was set to the trunk group created in **Steps 11 - 12**. The Facility Restriction Level (**FRL**) field was set to a level that allows access to this trunk for all users that require it. The value of *0* is the least restrictive level. The default values were used for all other fields.
	
	<pre>display route-pattern 3 Page 1 of 3
	                 Pattern Number: 3 Pattern Name: RightFax1
	                        SCCAN? n Secure SIP? n
	   Grp FRL NPA Pfx Hop Toll No. Inserted DCS/ IXC
	   No Mrk Lmt List Del Digits QSIG
	                          Dgts Intw
	 1: 3 0 n user
	 2: n user
	 3: n user
	 4: n user
	 5: n user
	 6: n user
	
	     BCC VALUE TSC CA-TSC ITC BCIE Service/Feature PARM No. Numbering LAR
	     0 1 2 M 4 W Request Dgts Format
	                                                           Subaddress
	 1: y y y y y n n rest none
	 2: y y y y y n n rest none
	 3: y y y y y n n rest none</pre>

Step	Description
16.	**Routing Calls to RightFax** Automatic Alternate Routing (AAR) was used to route calls to RightFax. Use the **change aar analysis** command to create an entry in the AAR Digit Analysis Table for this purpose. The example below shows entries previously created for site 1 using the **display aar analysis** command. The highlighted entry specifies that numbers that begin with 7 and are 5 digits long, use route pattern 3. Route pattern 3 routes calls to RightFax.

```
display aar analysis 0                                    Page  1 of  2
                        AAR DIGIT ANALYSIS TABLE
                          Location:  all       Percent Full:   1
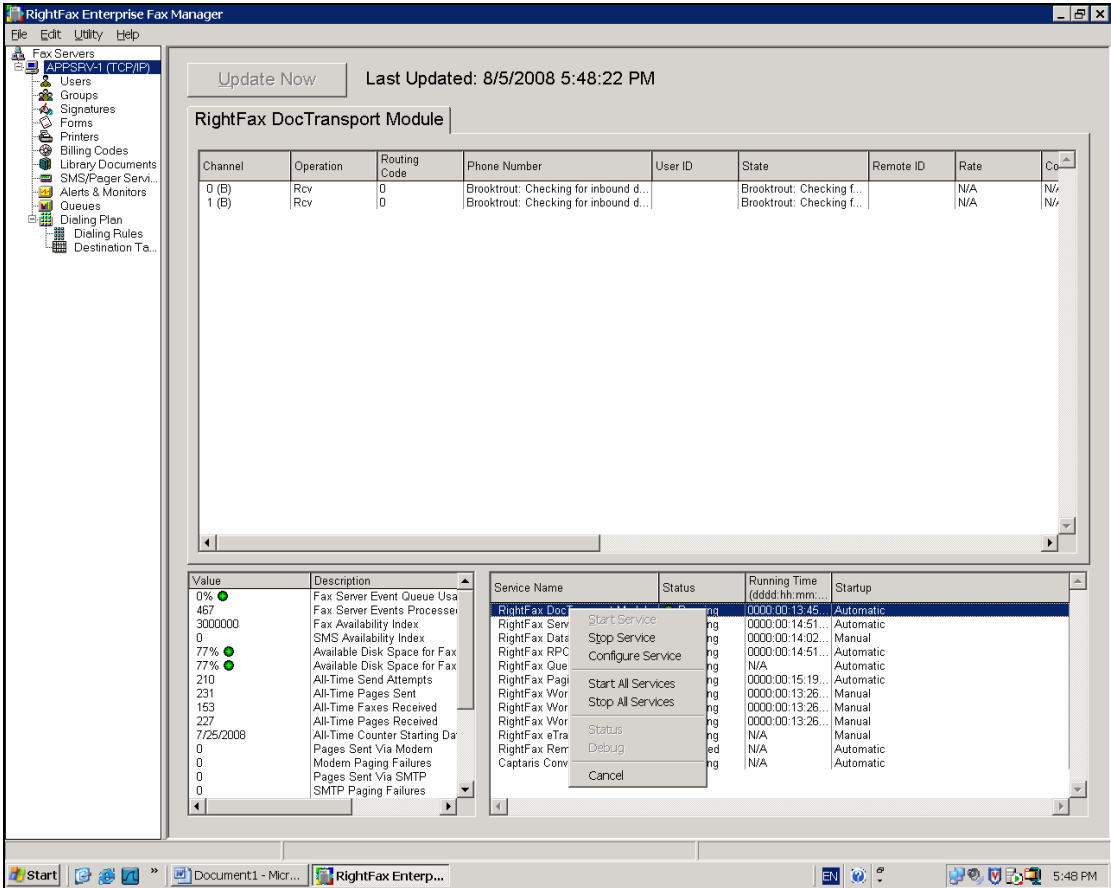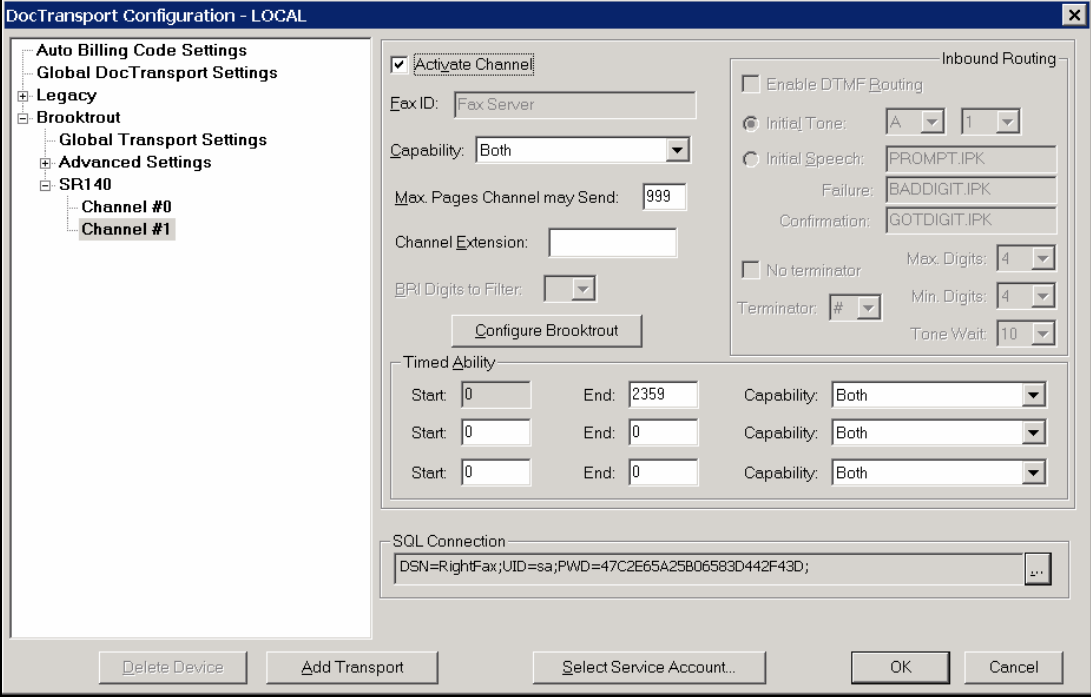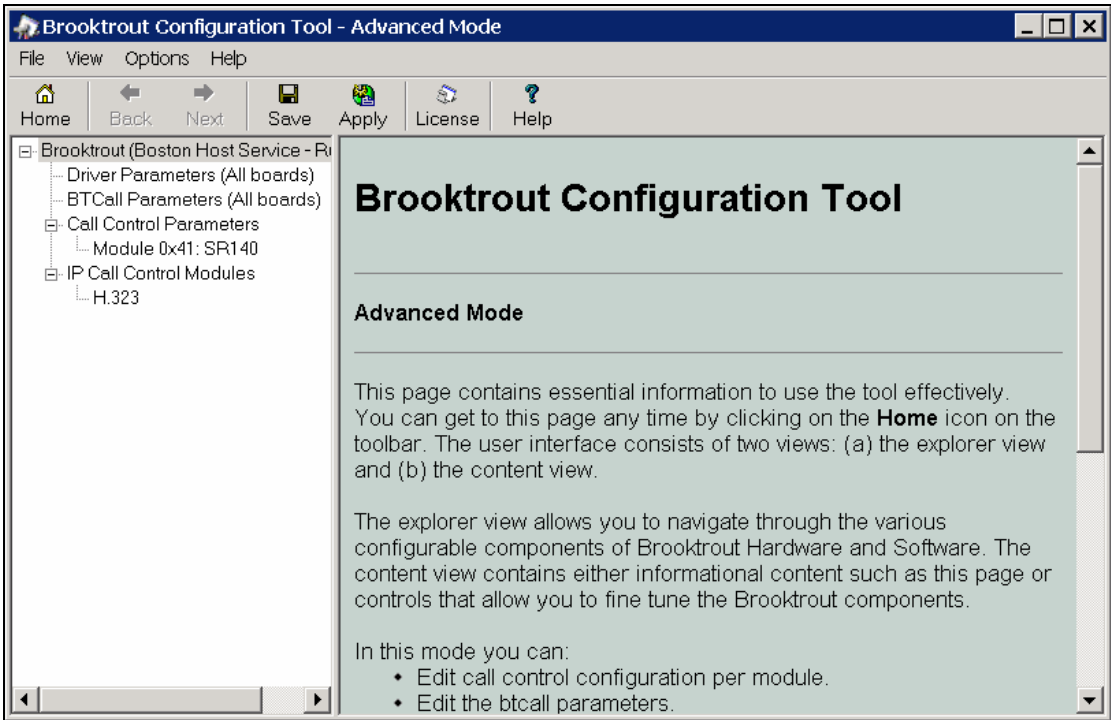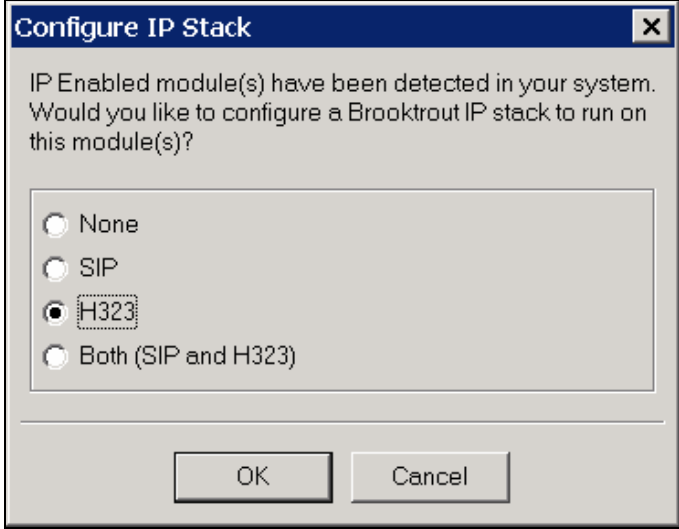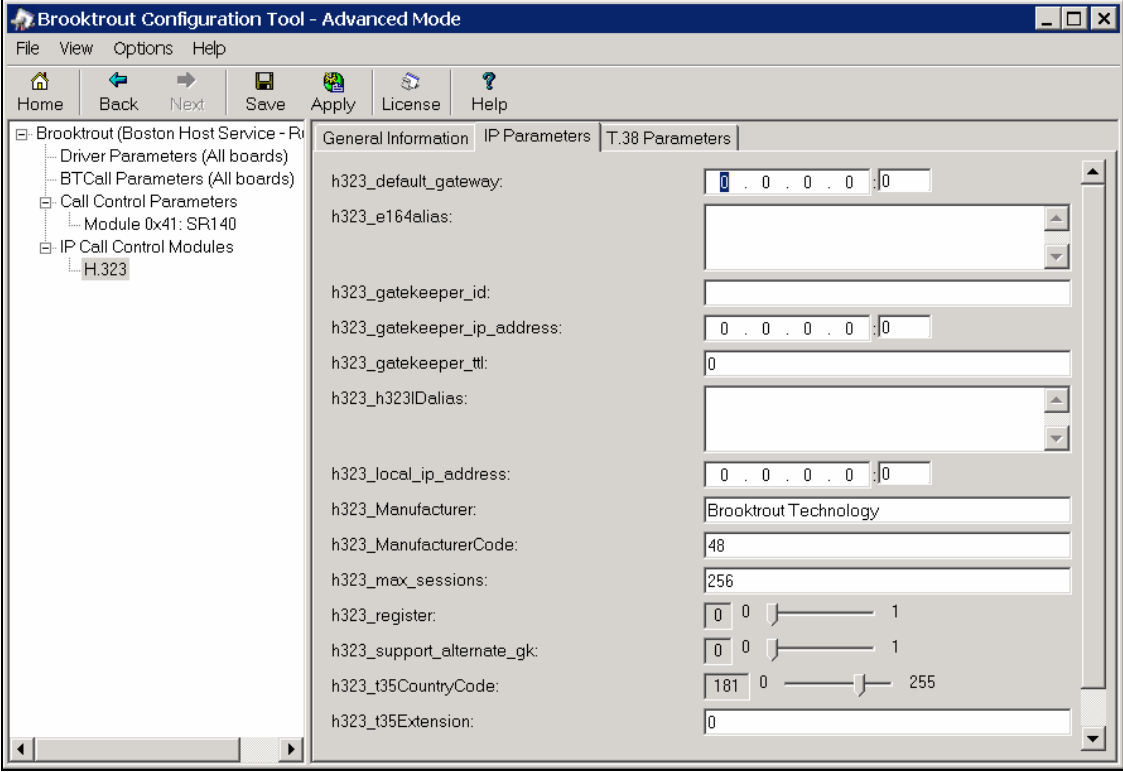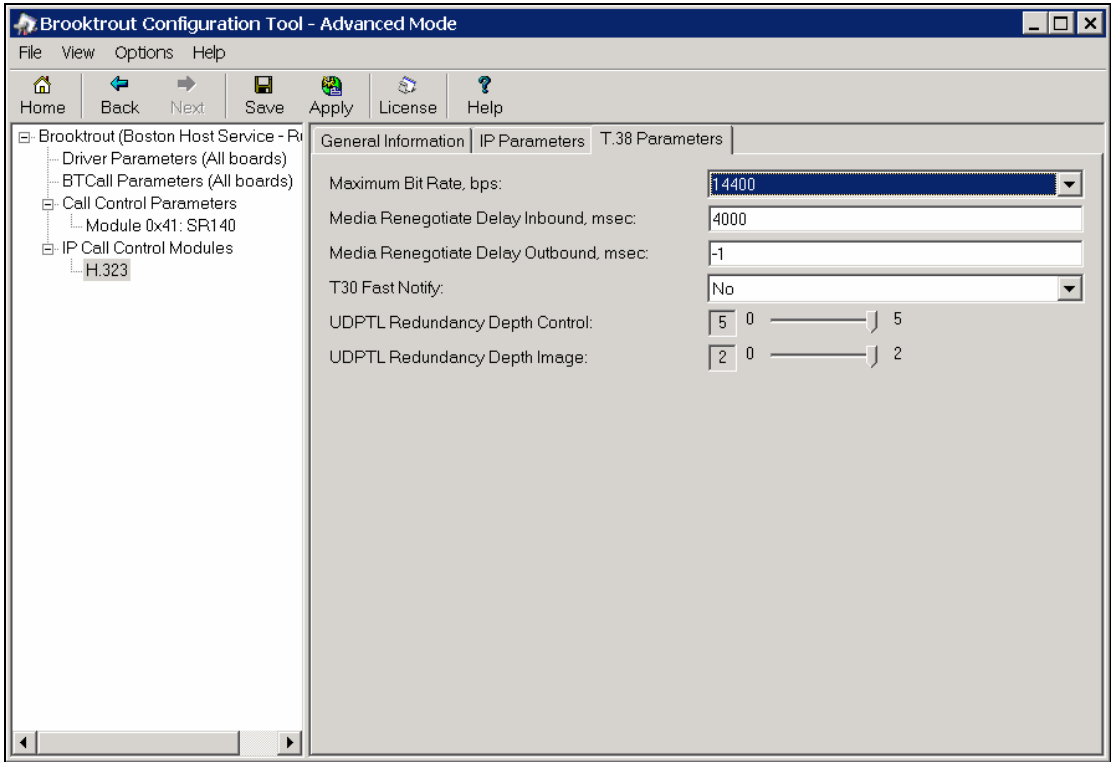
            Dialed          Total     Route    Call   Node  ANI
            String          Min  Max  Pattern  Type   Num   Reqd
        50                  5    5     4        aar          n
        52                  5    5     4        aar          n
        7                   5    5     3        aar          n
```

4. Configure Captaris RightFax

This section describes the configuration of RightFax. It assumes that the application and all required software components have been installed including database software and the Brooktrout SR140 T.38 IP fax driver. It also assumes all components have been properly licensed.

The examples shown in this section refer to site 1. However, unless specified otherwise, these same steps also apply to site 2 using values appropriate for site 2 from **Figure 1**.

Step	Description
1.	**Launch RightFax Enterprise Fax Manager** The RightFax configuration is performed using the RightFax Enterprise Fax Manager. Launch the RightFax Enterprise Fax Manager from the Windows Start menu. At the main window (not shown), highlight the host name of the fax server created during the installation process from the navigation menu that appears in the left pane of each window. The following window appears.

Step	Description
2.	**RightFax DocTransport Module** The Brooktrout SR140 was configured during installation. To view or modify the settings, the RightFax DocTransport Module must be stopped. Right-click this module in the lower right pane and select **Stop Service**. Once the status of the module indicates that the module has stopped, right-click the name of the module again and select **Configure Service**.

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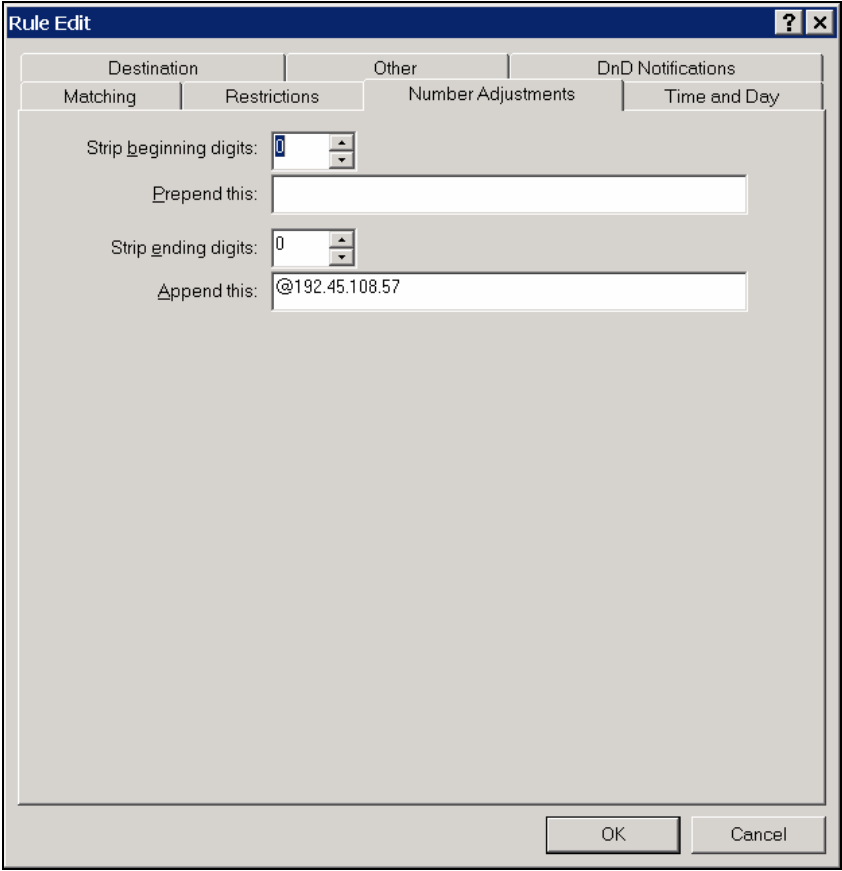
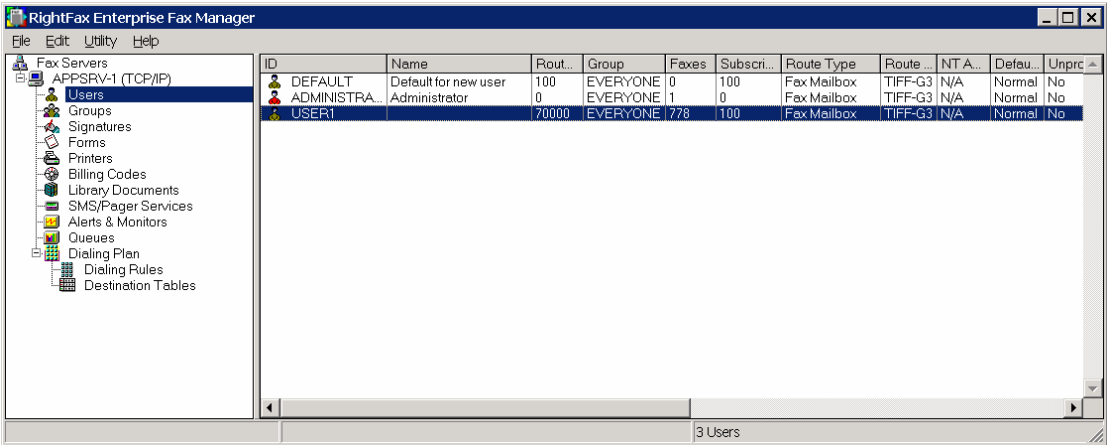| Step	Description
3.	**RightFax DocTransport Module - Continued** In the **DocTransport Configuration** window that appears, click the **Configure Brooktrout** button.

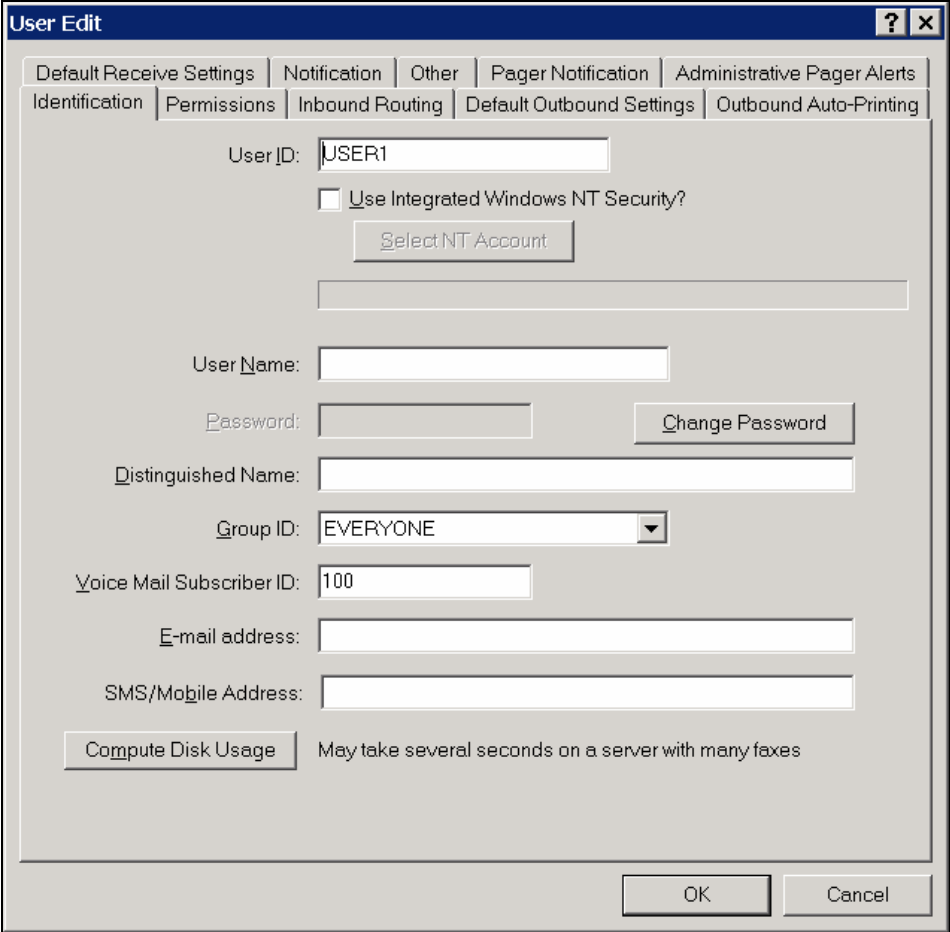| Step	Description
4.	**Brooktrout Configuration Tool** In the **Brooktrout Configuration Tool** window that appears, navigate to **Options→ Configure IP Stack** to view the IP stack settings.
5.	**Configure IP Stack** A **Configure IP Stack** pop-up window appears. Verify that the **H.323** option is selected. Click **OK** to continue.

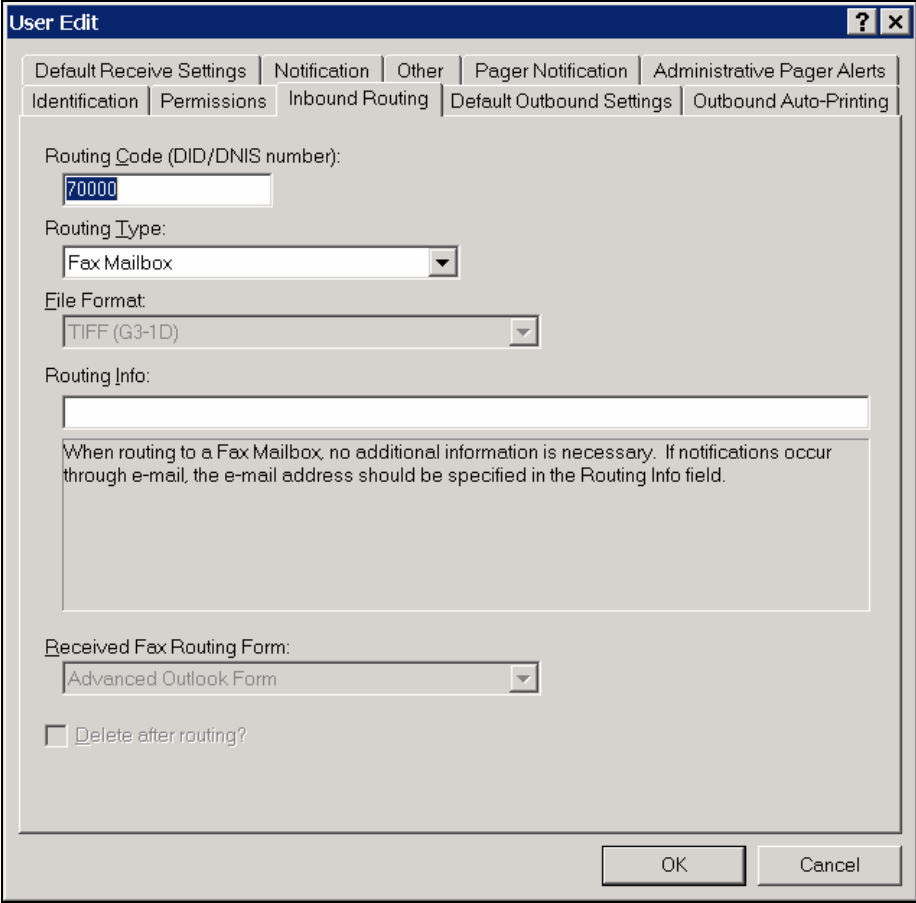| Step	Description
6.	**H.323 IP Parameters** From the **Brooktrout Configuration Tool** window, navigate to **Brooktrout→IP Call Control Modules→H.323.** On the **IP Parameters** tab, leave all the default values as shown below. This will allow the necessary parameters such as the H.323 default gateway and gatekeeper addresses to be passed to the Brooktrout SR140 from the RightFax application.

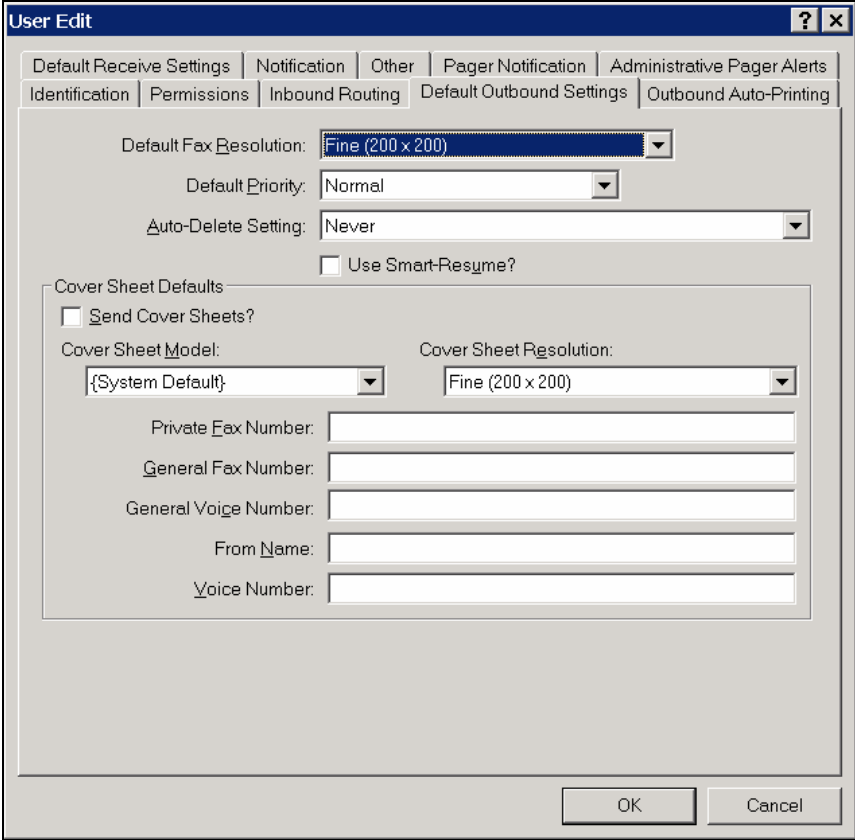| Step	Description
7.	**T.38 Parameters** On the **T.38 Parameters** tab, set the **Media Renegotiate Delay Outbound** field to *-1*. Click the **Apply** button followed by the **Save** button to save the settings. Navigate to **File→Exit** to exit the Brooktrout Configuration Tool. Lastly, click the **OK** button on the screen in **Step 3** to complete the configuration of the RightFax DocTransport Module.
8.	**Restart the RightFax DocTransport Module** After configuring the RightFax DocTransport Module, the module must be restarted. From the window in **Step 2**, right-click this module in the lower right pane and select **Start Service**.

Step	Description
9.	**Dialing Rules** Dialing Rules are used by RightFax to route calls. In the case of the compliance test, a dialing rule is created to route outbound fax calls to the Avaya Media Gateway. In the left navigation menu under the host name of the fax server, navigate to **Dialing Plan→Dialing Rules** to the view the existing rules. The example below shows the single rule created for the compliance test at site 1. The ***** in the **Pattern** field indicates that this rule applies to all dialed numbers. To view the details, double-click on the rule in the right pane.

Step	Description
10.	**Dialing Rules – Continued** The **Rule Edit** window will appear as shown below. Select the **Number Adjustments** tab. This tab shows the digit string manipulation that is done to each dialed number. In the example below, each number is appended with **@*192.45.108.57*** as indicated in the **Append this** field. This string contains the IP address of the CLAN in the Avaya Media Gateway that represents the far-end of the H.323 trunk. This addition to the dialed string routes the fax call to the Avaya Media Gateway.

Step	Description
11.	**Users** A user is created on RightFax for each incoming fax number. The user represents the fax recipient. If a fax is received by RightFax which has no corresponding user then the fax will be routed to the administrator. To view the list of users, navigate to **Users** in the left navigation menu under the host name of the fax server. The example below shows a list of three users, two of which are created by default. The third user, named *USER1*, was created at site 1 for the compliance test. To view the details of *USER1*, double-click on the user entry for *USER1* in the right pane.

Step	Description
12.	**Users – Identification** The **User Edit** window will appear as shown below. Select the **Identification** tab. The example below shows the settings used for the compliance test at site 1. The **User ID** field is set to a descriptive name. Default values were used for all other fields. **User Edit** Default Receive Settings / Notification / Other / Pager Notification / Administrative Pager Alerts Identification / Permissions / Inbound Routing / Default Outbound Settings / Outbound Auto-Printing User ID: USER1 ☐ Use Integrated Windows NT Security? Select NT Account User Name: Password: Change Password Distinguished Name: Group ID: EVERYONE Voice Mail Subscriber ID: 100 E-mail address: SMS/Mobile Address: Compute Disk Usage May take several seconds on a server with many faxes OK Cancel

Step	Description
13.	**User – Inbound Routing** On the **Inbound Routing** tab, the **Routing Code** field is set to the fax number of the recipient. In the case of the compliance test, this was extension *70000*. Default values may be used for all other fields.

Step	Description
13.	**User – Inbound Routing** On the **Inbound Routing** tab, the **Routing Code** field is set to the fax number of the recipient. In the case of the compliance test, this was extension *70000*. Default values may be used for all other fields.

User Edit

Default Receive Settings | Notification | Other | Pager Notification | Administrative Pager Alerts
Identification | Permissions | Inbound Routing | Default Outbound Settings | Outbound Auto-Printing

Routing Code (DID/DNIS number):
70000

Routing Type:
Fax Mailbox

File Format:
TIFF (G3-1D)

Routing Info:

When routing to a Fax Mailbox, no additional information is necessary. If notifications occur through e-mail, the e-mail address should be specified in the Routing Info field.

Received Fax Routing Form:
Advanced Outlook Form

☐ Delete after routing?

OK   Cancel

Step	Description
14.	**User – Default Outbound Settings** During the compliance test, it was observed that sending outbound faxes from RightFax across an H.323 trunk that connects two sites required the disabling of sending cover sheets. See **Section 5.2** for more information. If it is necessary, cover sheets can be disabled in the following manner. On the **User Edit** window, select the **Default Outbound Settings** tab and uncheck the box for **Send Cover Sheets**. Default values may be used for all other fields.

5. Interoperability Compliance Testing

This section describes the compliance testing used to verify the interoperability of Captaris RightFax with Avaya Communication Manager. This section covers the general test approach and the test results.

5.1. General Test Approach

The general test approach was to make intra-site and inter-site fax calls to and from RightFax. The inter-site calls were made using both an H.323 trunk and an ISDN-PRI trunk between sites. Faxes were sent with various page lengths, and resolutions. For performance testing, 100 2-page faxes were continuously sent between the two RightFax servers. Serviceability testing included verifying

proper operation/recovery from failed cables, unavailable resources, Avaya Communication Manager restarts and RightFax restarts. Fax calls were also tested with different Avaya Media Gateway media resources to process the fax data. This included the TN2302 MedPro circuit pack, the TN2602 MedPro circuit pack and the integrated VOIP engine of the Avaya G700 Media Gateway.

5.2. Test Results

RightFax successfully passed compliance testing. The following observations were made during the compliance test:

- Shuffling must be disabled on the H.323 trunk between RightFax and Avaya Communication Manager.
- When sending outbound faxes from RightFax across an H.323 trunk that connects two sites, the use of a RightFax generated cover page must be disabled. Otherwise, only the cover page will be transmitted. This is the result of an interoperability issue with the mechanism that RightFax uses to send the cover page. To send a cover page, RightFax sends two faxes in a single call with the two faxes separated within the call with the sending of an EOM message. This issue is unrelated to the H.323 trunk that connects the RightFax server to Avaya Communication Manager. Thus, cover pages can continue to be used when sending/receiving faxes within the same site or when sending/receiving faxes across an ISDN-PRI trunk to a remote site or the PSTN.
- Fax failures/retransmissions were observed when using the TN2602 in the Avaya Media Gateway and receiving faxes over an H.323 trunk from the remote site and terminating on the local RightFax server. This is due to having multiple media resources in the path of the fax transmission which add additional delay. The multiple resources are due to the fact that shuffling must be disabled on the H.323 trunk between Avaya Communication Manager and the RightFax server. Thus, it is not recommended that the TN2602 be used in this particular scenario.

6. Verification Steps

The following steps may be used to verify the configuration:

- From the Avaya Communication Manager SAT, use the **status signaling-group** command to verify that the H.323 signaling group configured in **Section 3**, **Step 10** is in-service.
- From the Avaya Communication Manager SAT, use the **status trunk-group** command to verify that the H.323 trunk group configured in **Section 3**, **Steps 11 - 12** is in-service.
- Verify that fax calls can be placed to/from RightFax.

7. Support

For technical support on RightFax, contact Captaris via the **Contact Us** link at www.captaris.com.

8. Conclusion

These Application Notes describe the procedures required to configure Captaris RightFax to interoperate with Avaya Communication Manager. RightFax successfully passed compliance testing with the observations documented in **Section 5.2**.

9. Additional References

[1] *Feature Description and Implementation For Avaya Communication Manager*, Doc # 555-245-205, Issue 6.0, January 2008.
[2] *Administrator Guide for Avaya Communication Manager*, Doc # 03-300509, Issue 4, January 2008.
[3] *RightFax Version 9.3 Feature Pack 2 Installation Guide*, v.1.2, May 13, 2008.
[4] *RightFax Version 9.3 Feature Pack 2 Administrator's Guide*, v.1.0, August 2, 2007.

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

Product documentation for the RightFax may be found at http://www.captaris.com.

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