

## XO SIP Service

OpenText Fax server (RightFax) with Dialogic Brooktrout SR140



## REVISION HISTORY

Revision Number	Date	Authors	Changes
1.0	06/03/2010	Himanshu Kapadia	Initial Draft

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## ***1. Introduction***

This document contains the test results of the SIP Trunking used to certify OpenText Fax server (RightFax) with Dialogic SR140. This test verified the basic interoperability, features of the appliance, and the integration of the architecture framework. This certification test plan is to be executed in XO's Plano Certification Laboratory (Plano Lab) which is equipped with different test equipments and is capable to simulate XO's VoIP network environment.

## 2. Executive Summary

This report provides the test results found to date for the OpenText Fax server (RightFax) SIP Trunking evaluation. The following is a summary addressing the issues found while performing the test.

- If customer is adding this RightFax to their SIP services, it is recommended that a separate SIP trunk be provisioned for faxing. If customer insists on one circuit, XO will provisionprovisioning will have to manually provision two trunks (assign sessions to fax portion of the service)
- RightFax doesn't support DTMF with RFC 2833. By default XO codec packages for SIP Trunk (1 and 2) has DTMF with RFC 2833 enable. This causes call to fail.

**Workaround:** Both XO packages need to be changed when used with OpenText Fax server (RightFax). DTMF with RFC 2833 needs to be disabled on XO SONUS.

- OpenText Fax server (RightFax) supports fax modes 'T.38 only' and 'G.711 Pass through only'. Testing was done with both modes.

**With 'T.38 only' mode requires a few changes on XO network for it to work properly. Contact XO Activation support for help.**

**With 'G.711 only' mode no changes are required related to FAX on XO packet service profile.**

- XO and RightFax server doesn't allow the ability to set Fax speed more than 14400 bps with 'Maximum T.38 version' set as '0'.
- DSCP values for SIP signaling and RTP packets couldn't be set from OpenText Fax server (RightFax). There are options to set these values but it didn't work.

### ***3. Software and Hardware Equipment Requirements for Testing***

1. Cisco 2400 used as a router  
Cisco IOS Software, 2400 Software (C2430-IS-M), Experimental Version  
12.4(20060718:201451) [acphan-V124\_4\_T2\_1 104]  
System image file is "flash:c2430-is-mz.xo"

2. OpenText Fax server (RightFax)

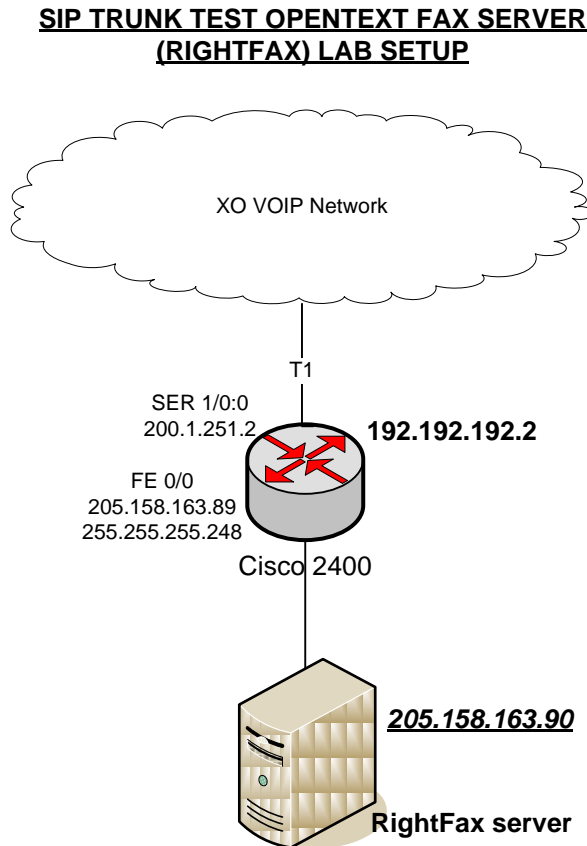
Version: 9.4.1.4070 (*9.4 FPI SR4*)

**Dialogic SR140:** Brooktrout SDK version – 6.3.4B11.51

*OpenText fax server software was installed on Windows server 2008 R2 Standard (64 bit)*

## 4. Test Configurations

The following diagram is the configuration used during lab testing.



Notes:

- Above lab setup only shows main lab network elements.

## 5. OPENTEXT FAX SERVER (RIGHTFAX) with Dialogic SR140 SIP Trunking

### 5.1. Test Results

- *Right Fax server configured with Fax as ‘T.38 only’*

1	Fax Tests	One page faxes were used for these tests and the fax copies received were legible.	Package 1	Package 2
1.1	Inbound fax - G711	Verify a fax call is established from PSTN to extension.	NA	NA
1.2	Outbound fax - G711	Verify a fax call is established from extension to PSTN	NA	NA
1.3	Inbound fax T.38 (G3 – G3)	Fax server speed = G3 and PSTN side fax = G3.	P (9600 bps)	P (9600 bps)
1.4	Outbound fax -T.38 (G3 – G3)	Fax server speed = G3 and PSTN side fax = G3.	P (9600 bps)	P (9600 bps)
1.5	Inbound fax T.38 (G3 - SG3)	Fax server speed = G3 and PSTN side fax = SG3.	P (14400 bps)	P (14400 bps)
1.6	Outbound fax -T.38 (G3 - SG3)	Fax server speed = G3 and PSTN side fax = SG3.	P (14400 bps)	P (14400 bps)
1.7	Inbound fax T.38 (SG3 - G3)	Fax server speed = SG3 and PSTN side fax = G3.	NS*	NS*
1.8	Outbound fax -T.38 (SG3 - G3)	Fax server speed= SG3 and PSTN side fax = G3.	NS*	NS*
1.9	Inbound fax T.38 (SG3 - SG3)	Fax server speed = SG3 and PSTN side fax = G3.	NS*	NS*
2.0	Outbound fax -T.38 (SG3 - SG3)	Fax server speed= SG3 and PSTN side fax = G3.	NS*	NS*

\*NS: Not supported. Please check test summary for more details.

- *Right Fax server configured with Fax as ‘G.711 pass though only’*

2	Fax Tests	One page faxes were used for these tests and the fax copies received were legible.	Package 1	Package 2
2.1	Inbound fax - G711	Verify a fax call is established from PSTN to extension.	P	P
2.2	Outbound fax - G711	Verify a fax call is established from extension to PSTN	P	P

## 6. Test Bed Configuration Files

### 6.1 Cisco 2400 Configuration

Building configuration...

Current configuration : 2023 bytes

```
!  
version 12.4  
service timestamps debug datetime msec  
service timestamps log datetime msec  
no service password-encryption  
!  
hostname SipTrunkIAD2  
!  
boot-start-marker  
boot-end-marker  
!  
card type t1 1  
enable password cisco  
!  
no aaa new-model  
!  
resource policy  
!  
network-clock-participate T1 1/0  
network-clock-participate T1 1/1  
network-clock-select 1 T1 1/0  
network-clock-select 2 T1 1/1  
ip subnet-zero  
!  
!  
no ip domain lookup  
!  
!  
!  
voice-card 0  
!  
!  
!  
!  
!  
!  
!  
!  
!
```

```

!
!
!
controller T1 1/0
 framing esf
 linecode b8zs
 channel-group 0 timeslots 1-24
 description T1 interface to the network terminating on ERX s4/0:2/1/5/4/1
!
controller T1 1/1
 framing esf
 linecode b8zs
!
!
!
!
interface FastEthernet0/0
 ip address 201.1.251.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 202.1.251.1 255.255.255.0
 duplex full
 speed 100
!
interface Serial1/0:0
 description PPP Link to the network terminating on ERX-VT1 #6
 ip address 200.1.251.2 255.255.255.252
 no ip redirects
 ip virtual-reassembly
 encapsulation ppp
 load-interval 30
 tx-ring-limit 1
 tx-queue-limit 1
 no cdp enable
 max-reserved-bandwidth 100
!
 ip http server
!
 ip classless
 ip route 0.0.0.0 0.0.0.0 200.1.251.1
!
!
!
!
!
control-plane

```

```
!  
!  
!  
voice-port 2/0  
!  
voice-port 2/1  
!  
voice-port 2/2  
!  
voice-port 2/3  
!  
voice-port 2/4  
!  
voice-port 2/5  
!  
voice-port 2/6  
!  
voice-port 2/7  
!  
voice-port 2/8  
!  
voice-port 2/9  
!  
voice-port 2/10  
!  
voice-port 2/11  
!  
voice-port 2/12  
!  
voice-port 2/13  
!  
voice-port 2/14  
!  
voice-port 2/15  
!  
voice-port 2/16  
!  
voice-port 2/17  
!  
voice-port 2/18  
!  
voice-port 2/19  
!  
voice-port 2/20  
!  
voice-port 2/21  
!  
voice-port 2/22
```

```
!  
voice-port 2/23  
!  
!  
!  
!  
banner login ^CC ^C  
banner motd ^C ** Welcome to the SipTrnkIAD2 ** ^C  
!  
line con 0  
  exec-timeout 0 0  
  transport preferred telnet  
line aux 0  
  transport preferred telnet  
line vty 0 4  
  exec-timeout 0 0  
  password cisco  
  login  
  terminal-type mon  
  transport preferred telnet  
line vty 5 15  
  exec-timeout 0 0  
  password cisco  
  login  
  transport preferred telnet  
!  
end
```

## 7. OpenText Fax Server (RightFax) basic Configuration

### RightFax configuration:

The screenshot displays the 'RightFax Enterprise Fax Manager' application window. The left sidebar shows a tree view of configuration categories including Fax Servers, Users, Groups, Signatures, Forms, Printers, Billing Codes, Library Documents, SMS/Pager Services, Alerts & Monitors, Queues, Dialing Plan, Dialing Rules, and Destination Tables. The main window is titled 'RightFax DocTransport Module' and shows a table of channels and a list of services.

**RightFax DocTransport Module**

Last Updated: 6/1/2011 3:21:12 PM

Channel	Operation	Routing Code	Phone Number	User ID	State	Remote ID	Rate
0 (B)	Rcv	0	Brooktrout: Check...		Brooktrout: Check...		N/A
1 (B)	Rcv	0	Brooktrout: Check...		Brooktrout: Check...		N/A
2 (B)	Rcv	0	Brooktrout: Check...		Brooktrout: Check...		N/A
3 (B)	Rcv	0	Brooktrout: Check...		Brooktrout: Check...		N/A

Value	Description	Service Name	Status	Running Time (ddd:hh:mm:ss)	Startup
0%	Fax Server Event Queues	RightFax DocTransport...	Running	0000:03:58:32	Automatic
8874	Fax Server Events Processed	RightFax Server ...	Running	0000:03:58:44	Automatic
5000000	Fax Availability Index	RightFax Databases...	Running	0000:03:58:45	Manual
0	SMS Availability Index	RightFax RPC Ser...	Running	0000:03:59:28	Automatic
90%	Available Disk Space for Fax	RightFax Queue ...	Running	N/A	Automatic
>32 GB	Available Space for Fax	RightFax Paging ...	Running	0000:03:59:31	Automatic
77	All-Time Send Attempts	RightFax WorkSe...	Running	0000:03:58:38	Manual
51	All-Time Pages Sent	RightFax WorkSe...	Running	0000:03:58:36	Manual
35	All-Time Faxes Received	RightFax WorkSe...	Running	0000:03:58:34	Manual
71	All-Time Pages Received	RightFax eTransp...	Running	N/A	Manual
5/19/2011	All-Time Counter Started	RightFax Remotin...	Running	N/A	Automatic
0	Pages Sent Via Modem				

Brooktrout configuration:

The screenshot shows the 'DocTransport Configuration - LOCAL' dialog box. On the left is a tree view with the following structure:

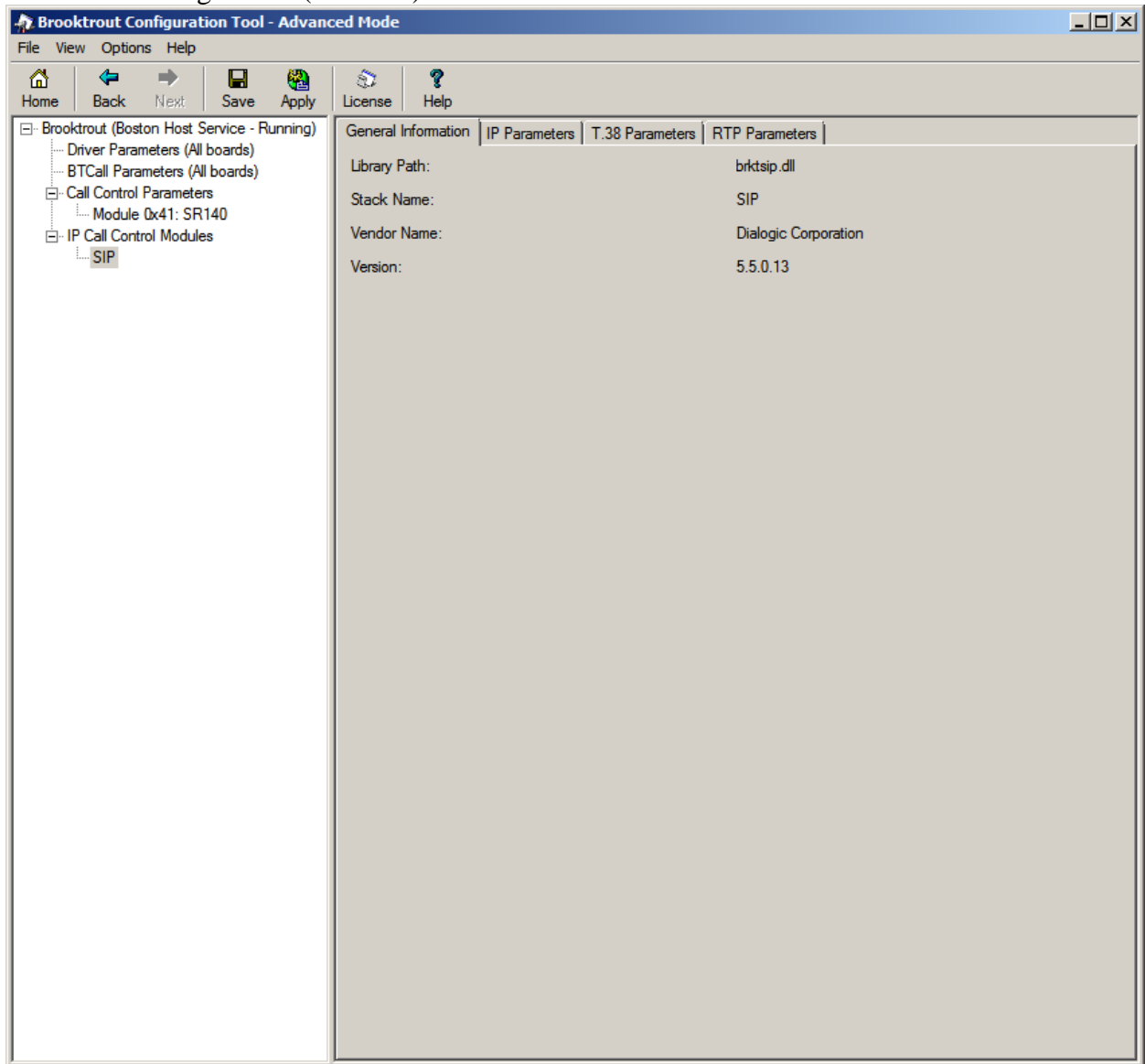
- Auto Billing Code Settings
- Global DocTransport Settings
- Legacy
- Brooktrout
  - Global Transport Settings
  - Advanced Settings
    - SR140
      - Channel #0
      - Channel #1
      - Channel #2
      - Channel #3

The main configuration area includes the following fields and options:

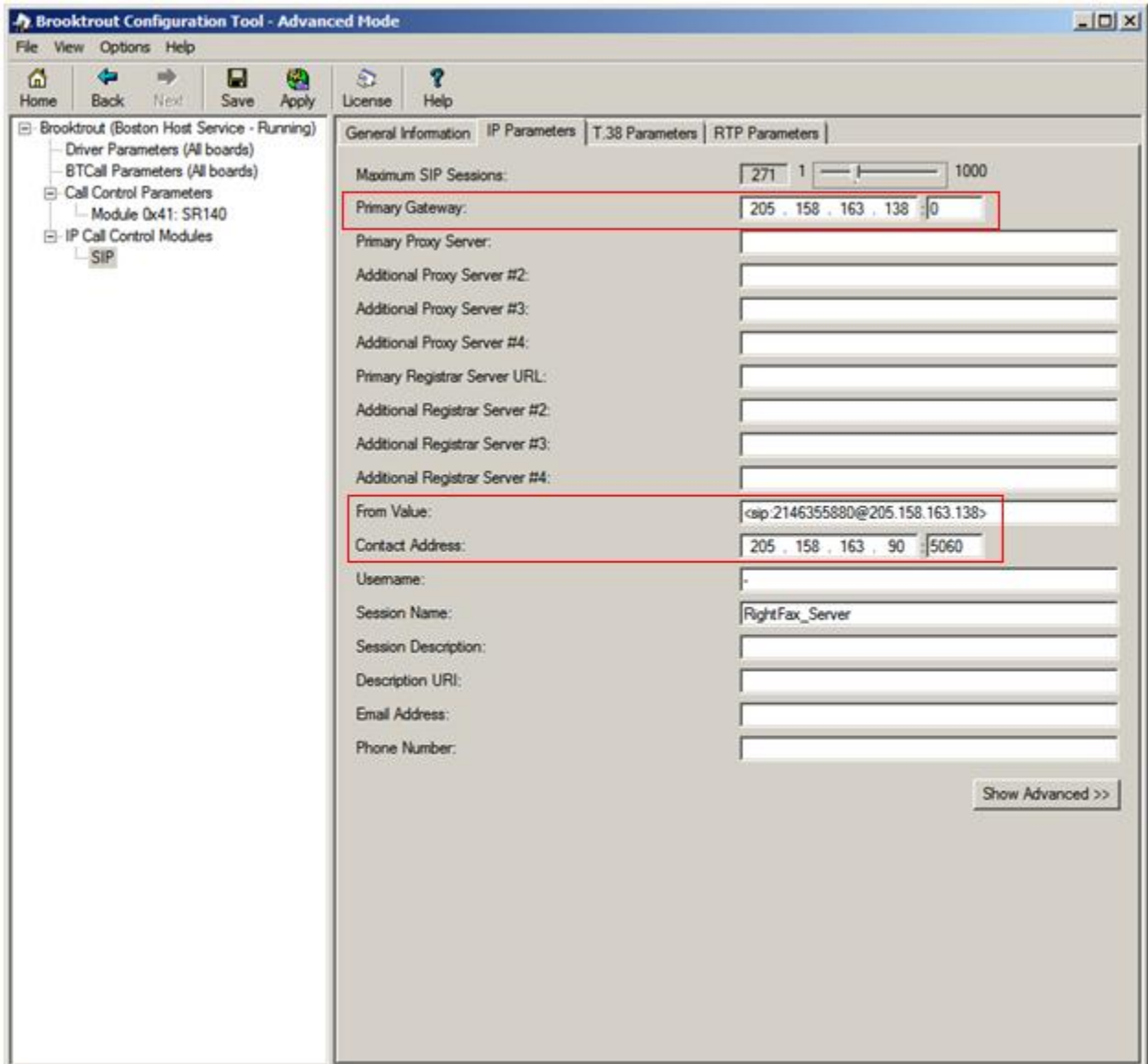
- Board module number:** [Dropdown]
- DID Settings:** Number of digits for routing: [4] [Dropdown]
- Number from the rotary switch on the board:** [Text]
- Set Fax ID for all channels: [RightFax] [Text]
- Set Capability for all channels: [Both] [Dropdown]
- Configure Brooktrout Board:** [Configure Brooktrout] [Button]
- Exchange 2010 UM Fax Routing:**
  - Route to SMTP Email Only
  - Route to RightFax User Only
  - Route to Both
- Number of SR140 channels:** [4] [Dropdown]
- SMTP Authentication to Exchange 2010 Unified Messaging Server:**
  - Exchange Server Name or IP: [UnifiedMessageExchangeServer] [Text]
  - Domain: [ExchangeServerDomain] [Text]
  - User Account: [ValidSntpAccount] [Text]
  - Password: [Masked] [Text]
- SQL Connection:** [Driver={SQL Server};Server=WIN-3FD1UD19H9E\SQLEXPRESS;Database=Right] [Text]

At the bottom of the dialog are the following buttons: [Delete Device], [Add Transport], [Select Service Account...], [OK], and [Cancel].

Brooktrout configuration (continue)



Brooktrout configuration (continue):



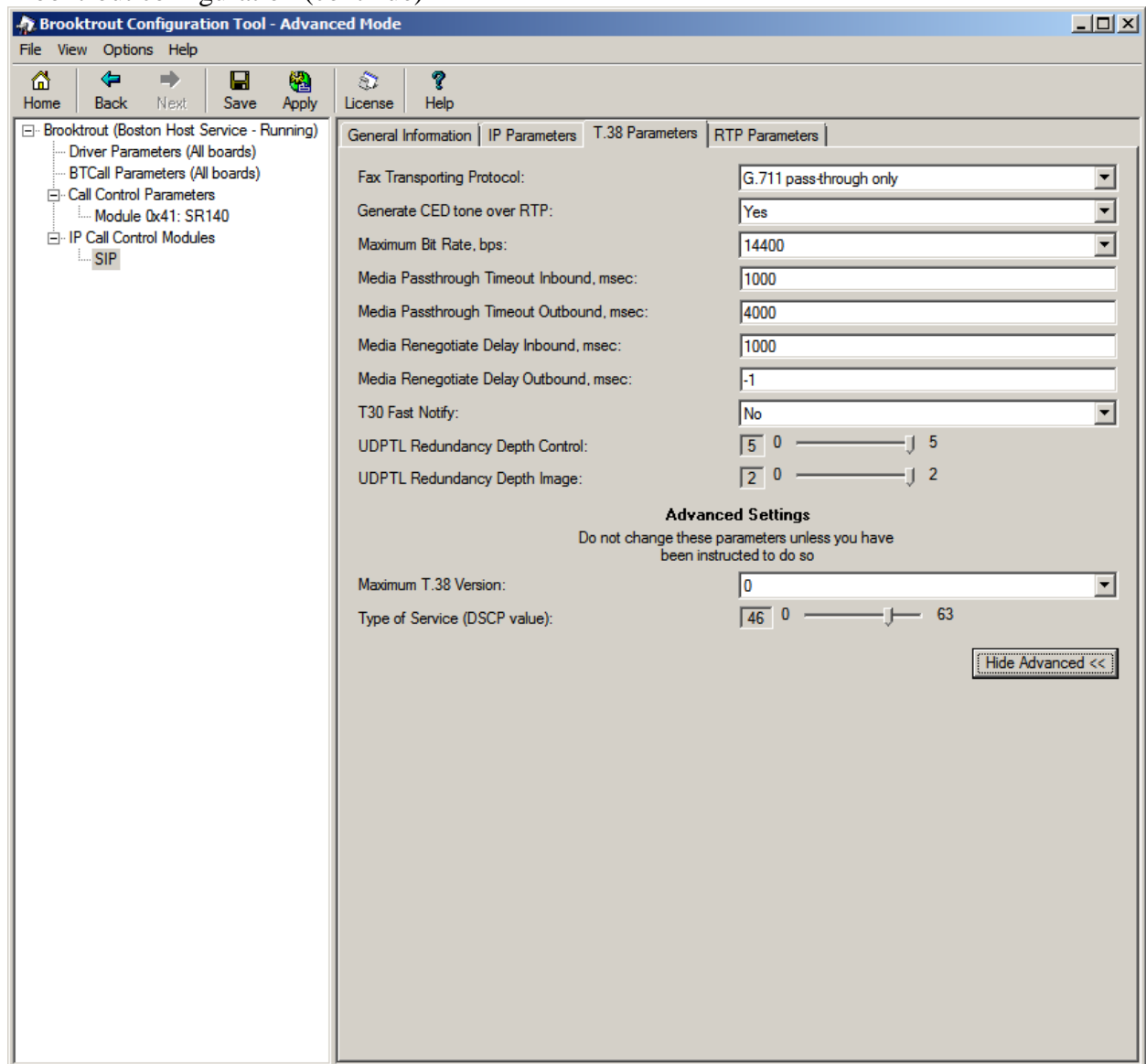
**Primary Gateway:** XO NBS IP

**From value:** < sip:XXXXXXXXXXXX@Y.Y.Y.Y >

Where XXXXXXXXXXXX is one of XO DID and Y.Y.Y.Y is XO NBS IP.

**Contact IP:** Fax server IP

### Brooktrout configuration (continue)



#### “Fax Transporting Protocol”

This is where Fax transport mode configured. It could be either ‘G.711 pass through only’ or ‘T.38 only’.

### Brooktrout configuration (continue)

The screenshot displays the 'Brooktrout Configuration Tool - Advanced Mode' interface. The left sidebar shows a tree view with the following structure:

- Brooktrout (Boston Host Service - Running)
  - Driver Parameters (All boards)
  - BTCall Parameters (All boards)
  - Call Control Parameters
    - Module 0x41: SR140
  - IP Call Control Modules
    - SIP

The main configuration area is titled 'RTP Parameters' and includes the following settings:

- RTP codec list: pcmu pcma
- Silence Control: inband

**Advanced Settings**  
Do not change these parameters unless you have been instructed to do so

- Frame Duration: 20
- Jitter Buffer Depth: 100 (range 0 to 200)
- T.38 offer as CED tone: Yes
- Type of Service (DSCP value): 46 (range 0 to 63)
- Voice Frame Replacement: Silence

A 'Hide Advanced <<' button is located at the bottom right of the configuration area.

RightFax FaxUtil:

This tool is being used to send out Fax and check status of inbound and outbound fax.

