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Dialogic® Brooktrout® SR140 Fax Software with Mitel 3300 MXe Controller

Installation and Configuration Integration Note

IMPORTANT NOTE

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1. Scope

This document is intended as a general guide for configuring a basic installation of the Mitel 3300 MXe Gateway for use with Dialogic® Brooktrout® SR140 Fax over IP (FoIP) software platform. The interoperability includes SIP call control and T.38/T.30 media.

This document is not intended to be comprehensive and thus does not replace the manufacturer's detailed configuration documentation. Users of this document should already have a general knowledge of how to install and configure the Mitel 3300 MXe Controller.

The sample configuration shown and/or referred in the subsequent sections was used for lab validation testing by Dialogic. Therefore, it is possible and even likely that the example configuration will not match the exact configuration and versions that would be present in a deployed environment. However, the sample configuration does provide a possible starting point to work with the equipment vendor for configuring your device. Please consult the appropriate manufacturer's documentation for details on setting up your specific end user configuration.

For ease of reference, the Dialogic® Brooktrout® SR140 Fax Software and Dialogic® Brooktrout® TR1034 Fax Boards will sometimes be denoted herein, respectively, as SR140 and TR1034. All references to the SDK herein refer to the Dialogic® Brooktrout® Fax Products SDK. The Mitel 3300 MXe will be denoted herein as Mitel 3300 or 3300 MXe, or some other form thereof.

2. Configuration Details

The following systems were used for the sample configuration described in the document.

2.1 Mitel 3300 MXe Controller Gateway

Vendor	***Mitel***
Model	***3300 MXe***
Software Version	***9.0.3.15***
PSTN Device	***Dialogic® Brooktrout® TR1034 Fax Board***
Protocol from Gateway to PSTN	***T1 PRI ISDN***
IP Device	***Dialogic® Brooktrout® SR140***
Additional Notes	***Same firmware is used on 3300 CXi, CX, and MXe devices. Softswitch (call manager) option also available for overall network solution.*** ***T.38 licenses must be loaded.*** ***DSP module must be present.***

2.2 Dialogic® Brooktrout® SR140 Fax Software

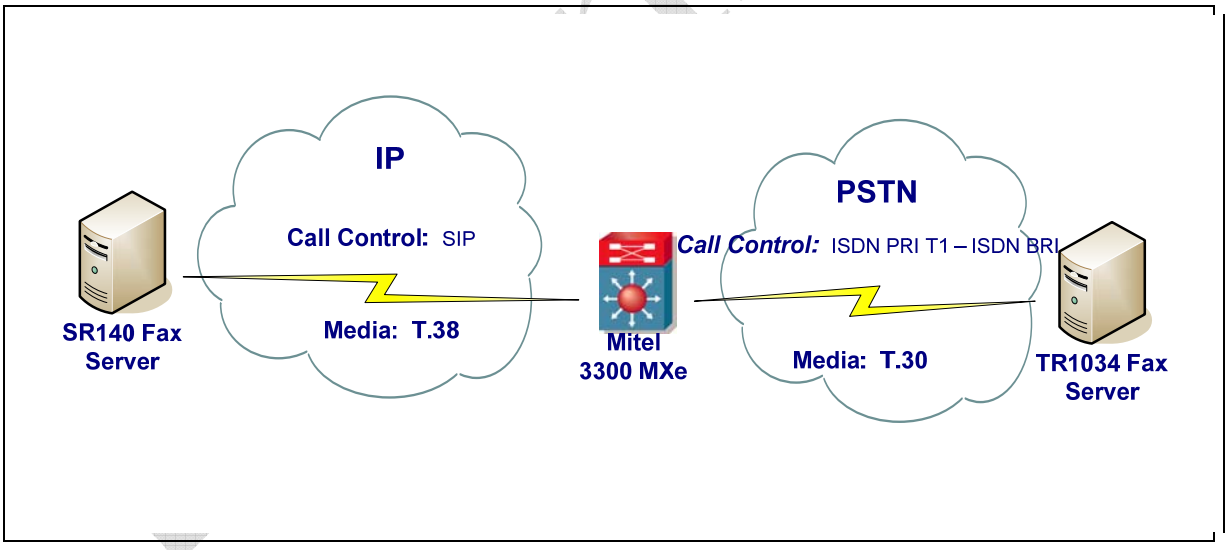
Vendor	***Dialogic***
Model	***Dialogic® Brooktrout® SR140 Fax Software***
Software Version	***Dialogic® Brooktrout® SDK 6.1.1***
Protocol to Gateway	***SIP***
callctrl.cfg file	***Default values***

2.3 Dialogic® Brooktrout® TR1034 Fax Board

Vendor	***Dialogic***
PSTN Device	***Dialogic® Brooktrout® TR1034 BRI Fax Board***
Software Version	***Dialogic® Brooktrout® SDK 6.1.1***
Protocol to PSTN Device	***BRI ISDN***
callctrl.cfg file	***Default values with European Community as country code.***

2.4 Network System Configuration

The diagram below details the sample configuration used in connection with this document.



Notes:

- SR140 Fax Server = Fax Server including Dialogic® Brooktrout® SR140 Fax Software and 3rd party fax application.
- TR1034 Fax Server = Fax Server including Dialogic® Brooktrout® TR1034 Fax Board and 3rd party fax application.

3. Prerequisites

T.38 over SIP Trunk is used to interconnect.

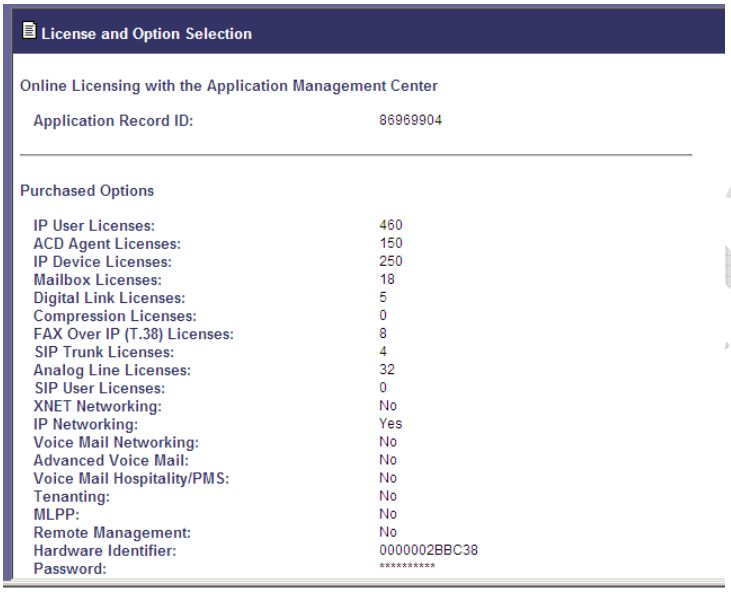
For T.38, the DSP II card must be present and the T.38 licenses must be loaded on the Mitel 3300 MXe Gateway.

T.38 licenses are referred to as “FAX over IP (T.38) Licenses”. If the number of T.38 licenses programmed exceeds the available DSP resources, a DSP alarm is raised and a maintenance log is generated.

SIP trunking licenses are referred to as “SIP Trunk Licenses” for the 3300 ICP.

Reboot the system to enable the licenses.

The number of T.38 and SIP trunking licenses can be verified in the “License and Option Selection” screenshot.



4. Summary of Limitations

The Mitel 3300 MXe DSP module used in testing only supported v.17 14400 bps fax transfer on T.38 and supported up to 16 fax channels.

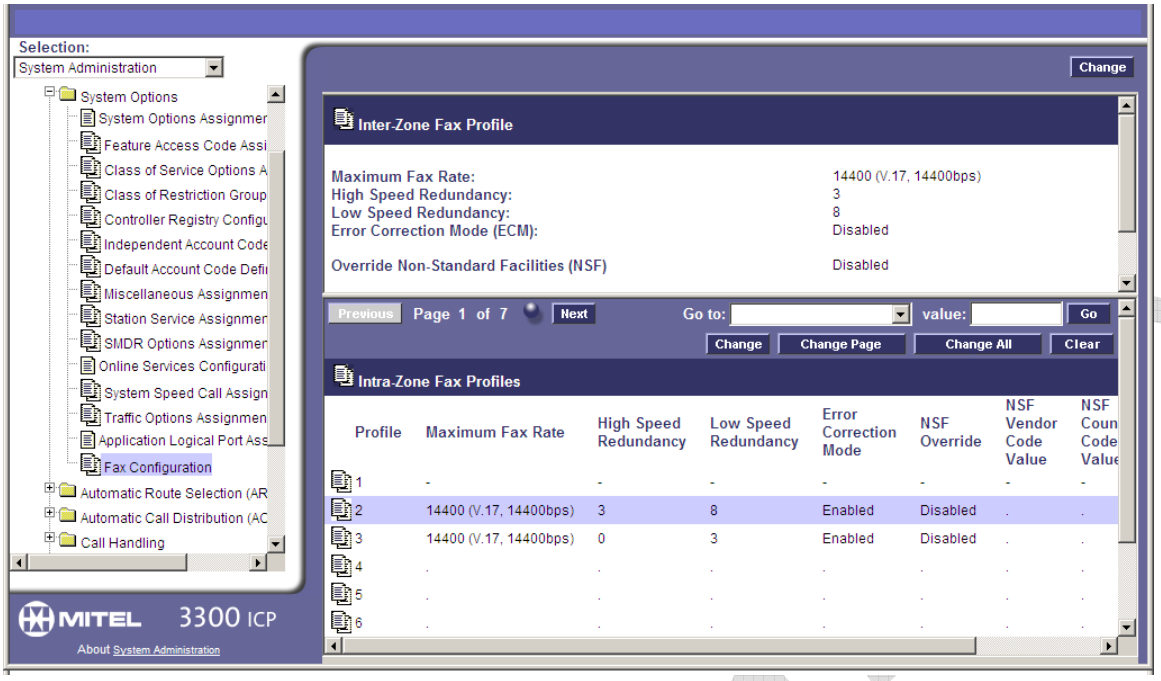
In Mitel’s documentation, Mitel recommends disabling ECM. This is likely the default configuration for a given deployment.

5. Mitel 3300 MXe Gateway Fax Configuration

SIP trunking was used for the interconnection. See IP Endpoint Configuration section for details.

5.1 Fax Configuration

This Fax Configuration form allows you to define the settings for FAX communication over the IP network.

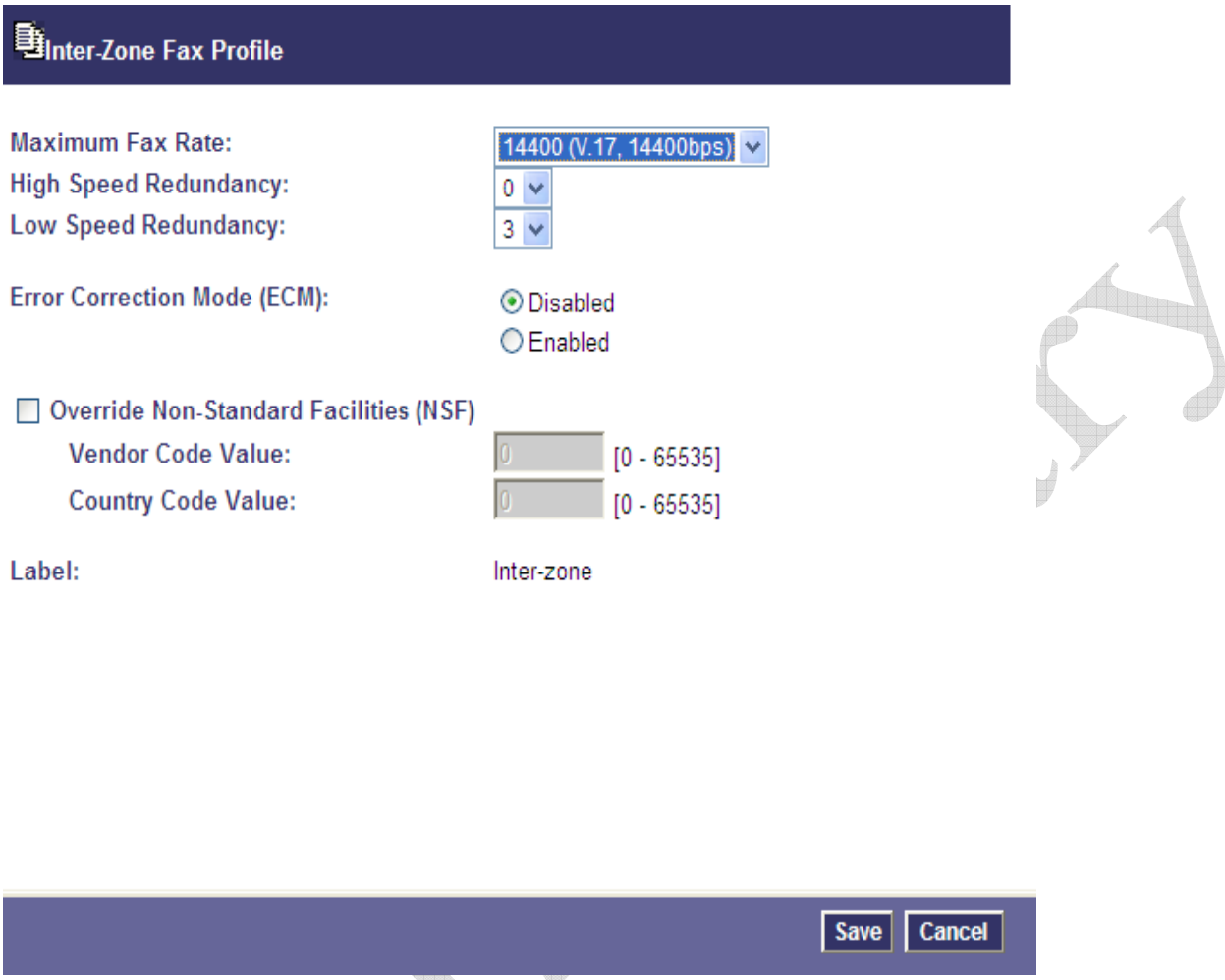


· Inter-zone FAX profile: defines the FAX settings between different zones in the network. There is only one Inter-zone FAX profile; it applies to all inter-zone FAX communication. It defaults to V.29, 7200bps. It defines the settings for FAX Relay (T.38) FAX communication. The SR140 Fax Server uses inter-zone FAX profile.

· Intra-zone FAX profile: define the FAX settings within each zone in the network.
- Profile 1 defines the settings for G.711 pass through communication.
- Profile 2 to 64 define the settings for FAX Relay (T.38) FAX communication.
- All zones default to G.711 pass through communication (Profile 1).

Two new Profiles were created for T.38 fax, Inter-Zone and Intra-Zone.

For the Inter-Zone Fax Profile, select 14,400 (v.17, 14400bps) maximum Fax Rate and disable Error Correction Mode (ECM). Save profile.



Inter-Zone Fax Profile

Maximum Fax Rate:	14400 (V.17, 14400bps)
High Speed Redundancy:	0
Low Speed Redundancy:	3
Error Correction Mode (ECM):	Disabled
Override Non-Standard Facilities (NSF)	Disabled
Label:	Inter-zone

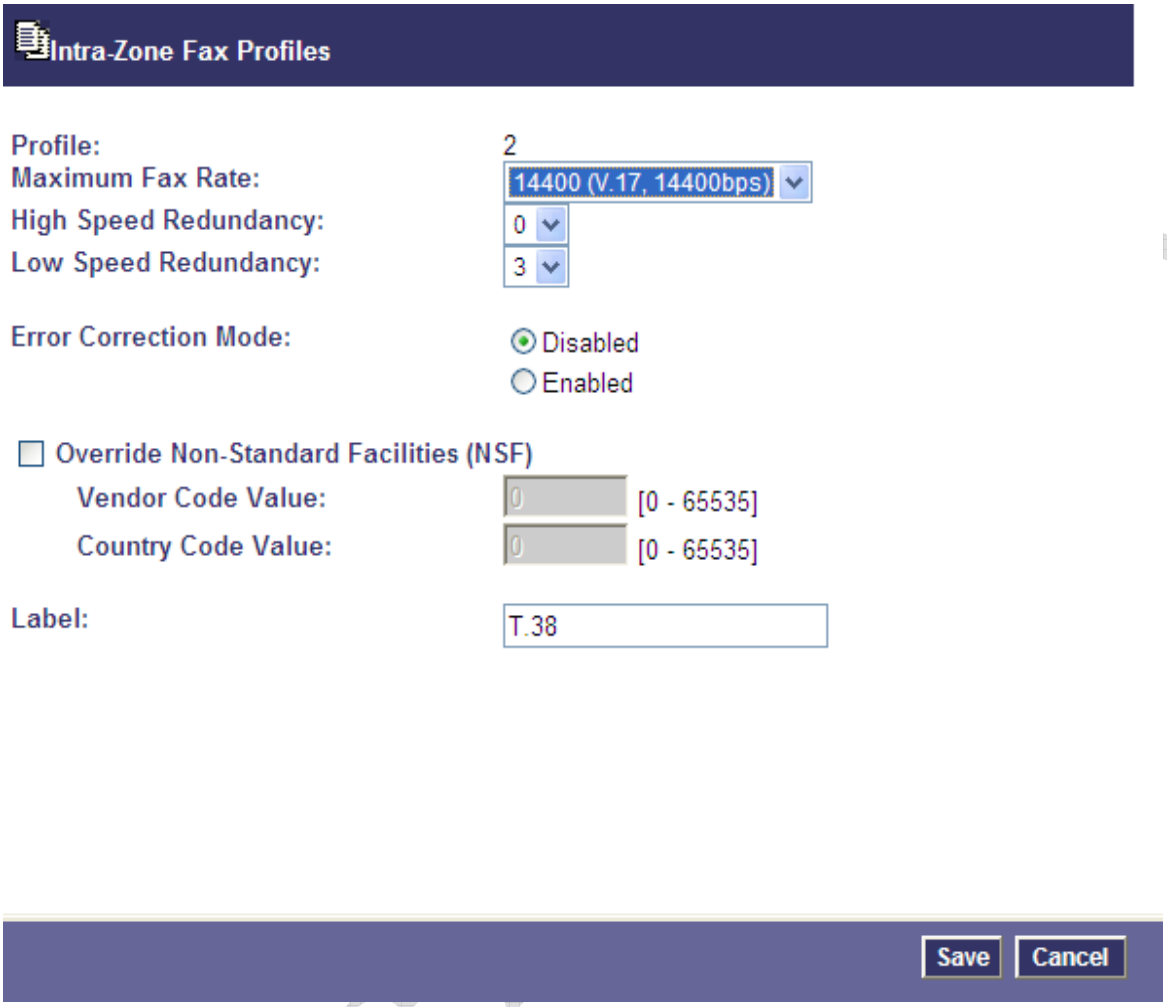
Previous Page 1 of 7 Next Go to: value: Go

Change Change Page Change All Clear

Intra-Zone Fax Profiles

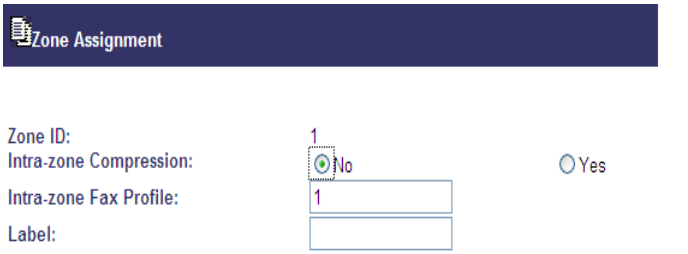
Profile	Maximum Fax Rate	High Speed Redundancy	Low Speed Redundancy	Error Correction Mode	NSF Override	NSF Vendor Code Value	NSF Country Code Value	Label
1	-	-	-	-	-	-	-	G.711
2	14400 (V.17, 14400bps)	0	3	Disabled	Disabled	.	.	T.38
3	.	.	.	.	.	.	.	
4	.	.	.	.	.	.	.	
5	.	.	.	.	.	.	.	
6	.	.	.	.	.	.	.	
7	.	.	.	.	.	.	.	
8	.	.	.	.	.	.	.	
9	.	.	.	.	.	.	.	
10	.	.	.	.	.	.	.	

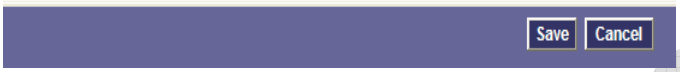
For the Intra-Zone Fax Profile, select 14,400 (v.17, 14400bps) maximum Fax Rate and disable Error Correction Mode (ECM). Note: ECM off is Mitel's default. Save profile.

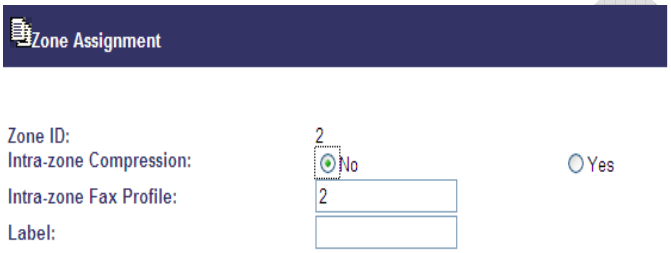


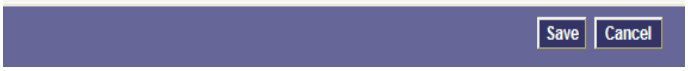
5.2 Zone Assignment

By default, all zones are set to Intra-zone FAX Profile 1. Based on your network diagram, assign the Intra-zone FAX Profiles to the Zone IDs of the zones.









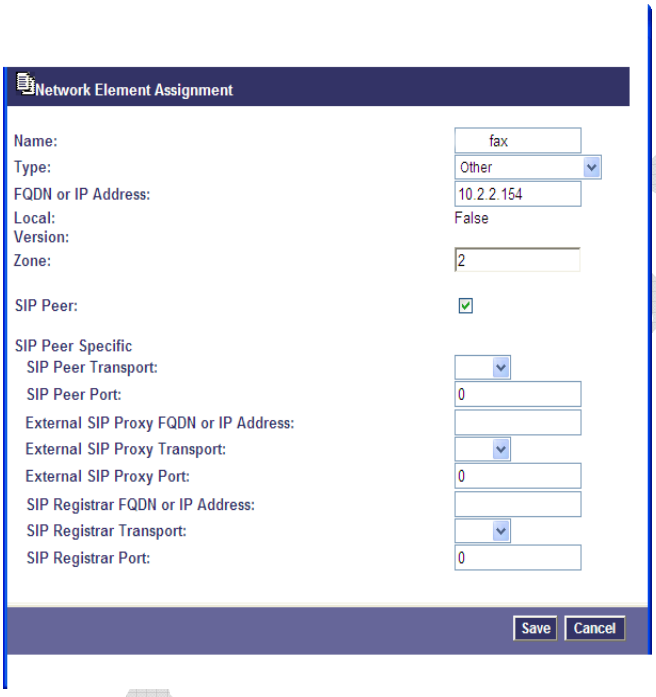
6. Deployment Details

6.1 Network Addresses

Device #	Device Description	Device IP Address
1	Mitel 3300 MXe	10.1.0.2
2	Dialogic® Brooktrout® SR140 Fax Software	10.1.0.9

7. IP Endpoint Configuration

The screenshot below shows the Network Element Assignment for the Mitel 3300.

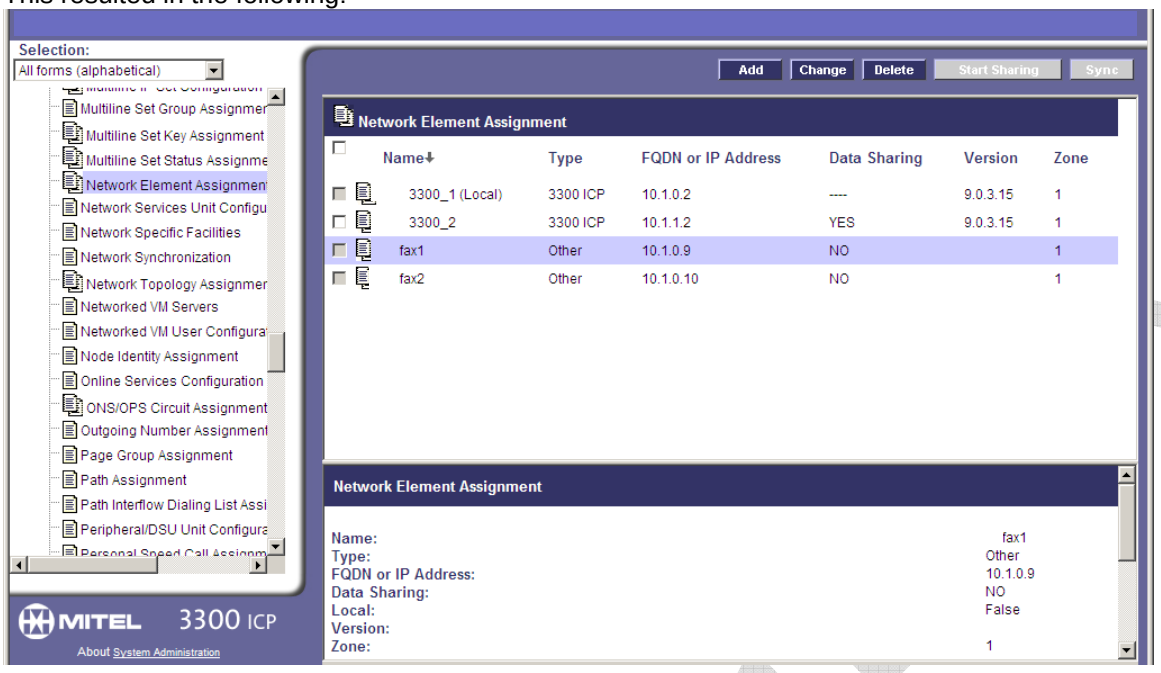


For the test configuration with the Dialogic® Brooktrout® SR140 Fax Server endpoint, the following values were used:

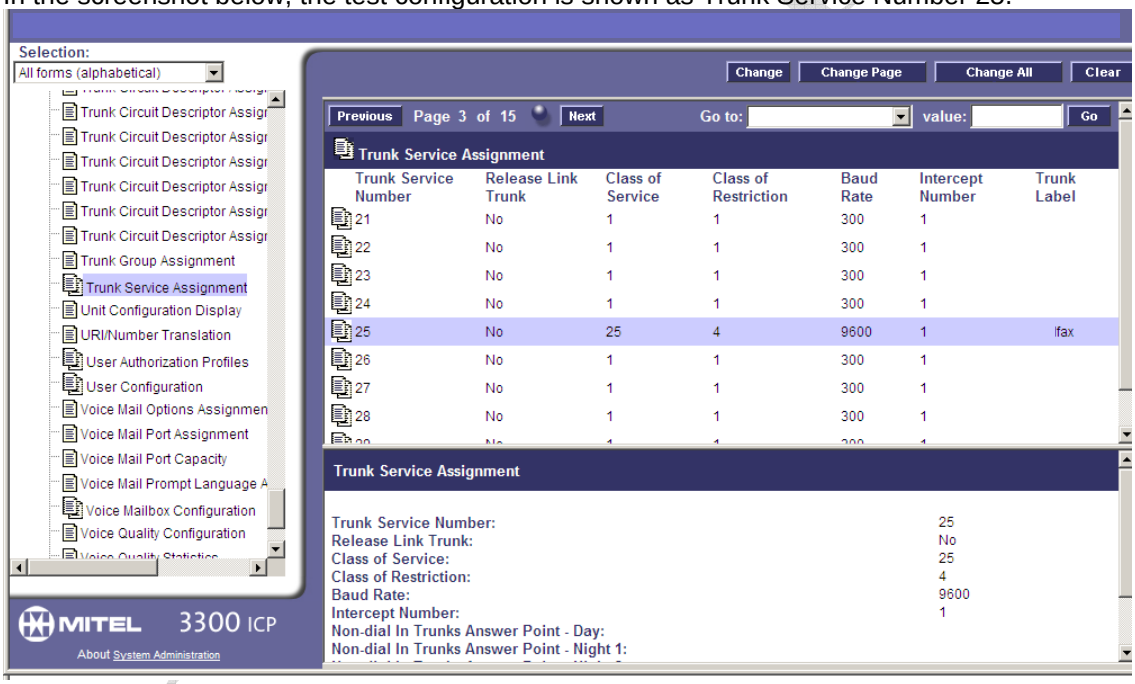
- Element Name: “fax”
- Type: Other
- IP address: 10.1.0.9
- SIP Peer: checked
- SIP Transport: UDP
- SIP Port: 5060

Configuration was saved.

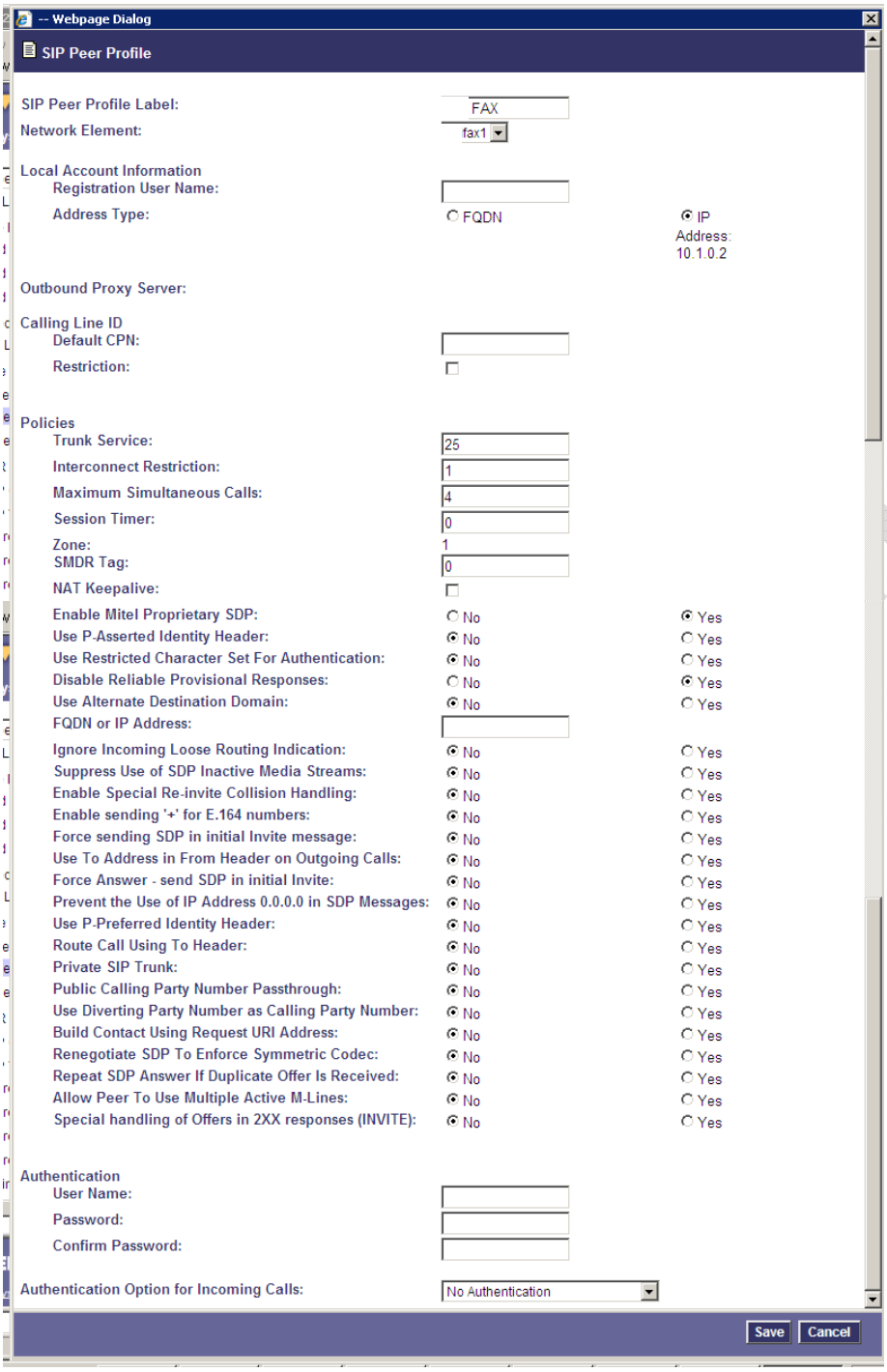
This resulted in the following:



In the screenshot below, the test configuration is shown as Trunk Service Number 25.



This full SIP Peer Profile is shown below.



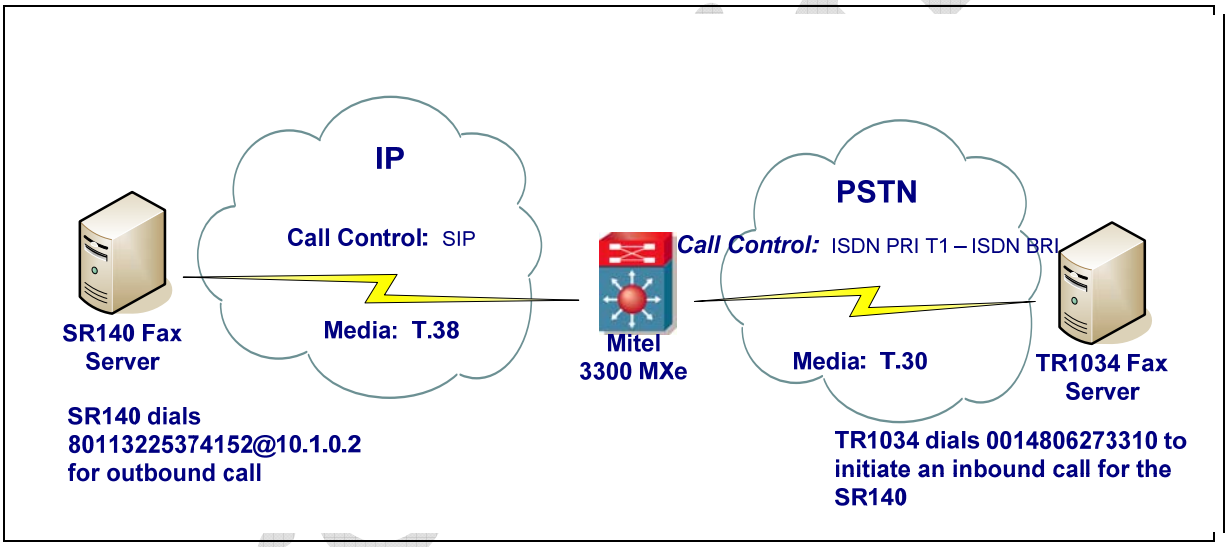
For the test configuration, the SIP Peer profile was configured with the following options:

- Network Element: the selected SIP Peer Profile was associated with the previously created “fax” Network Element.
- Address Type: used the IP addresses in SIP messages
- Outbound Proxy Server: selected the Network Element previously configured for the Outbound Proxy Server
- Calling Line ID: the default CPN was applied to all calls
- Trunk Service Assignment: entered the trunk service assignment previously configured, #25
- SMDR: If Call Detail Records are required for SIP Trunking, the SMDR Tag should be configured (by default there is no SMDR and this field is left blank)
- The remaining SIP Peer Profile policy options are similar to the screen capture above.

8. Dialing Plan Overview

The following, as seen on the SIP Peer profile, provides an overview of the dialing plan used for this document.

4 last digits place a call on SIP peer (Dialogic® Brooktrout® SR140 Fax Software)
8 + phonenumber places a call on T1 ISDN to the external PSTN network



9. Call Routing Configuration

All standard PBX configuration steps with nothing specific for SIP/T.38 trunk towards the Dialogic® Brooktrout® SR140 Fax Software were used.

10. Dialogic® Brooktrout® SR140 Fax Software Setup Notes

The Installation and Configuration Guides for SDK 5.2.x, SDK 6.0.x and SDK 6.1.x are available from the site:

http://www.dialogic.com/manuals/brooktrout/default.htm

For the sample test configuration, the SR140 was configured using the default values from SDK 6.1.1 and is shown below for reference.

```
  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
  host_module_trace=none
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
  trace_file=
  max_trace_files=1
  max_trace_file_size=10
[host_module.1]
  module_library=brktsip.dll
  enabled=true
[host_module.1/t38parameters]
  t38_fax_rate_management=transferredTCF
  fax_transport_protocol=t38_only
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  t38_fax_version=0
  media_renegotiate_delay_inbound=1000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_type_of_service=0
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.1/rtp]
  rtp_frame_duration=20
  rtp_jitter_buffer_depth=100
  rtp_codec=pcmu pcma
  rtp_silence_control=inband
  rtp_type_of_service=0
  rtp_voice_frame_replacement=0
[host_module.1/parameters]
  sip_max_sessions=256
  sip_default_gateway=0.0.0.0:0
  sip_proxy_server1=
  sip_proxy_server2=
  sip_proxy_server3=
  sip_proxy_server4=
  sip_registration_server1=
  sip_registration_server1_aor=
  sip_registration_server1_username=
  sip_registration_server1_password=
```

```
  sip_registration_server1_expires=3600
  sip_registration_server2=
  sip_registration_server2_aor=
  sip_registration_server2_username=
  sip_registration_server2_password=
  sip_registration_server2_expires=3600
  sip_registration_server3=
  sip_registration_server3_aor=
  sip_registration_server3_username=
  sip_registration_server3_password=
  sip_registration_server3_expires=3600
  sip_registration_server4=
  sip_registration_server4_aor=
  sip_registration_server4_username=
  sip_registration_server4_password=
  sip_registration_server4_expires=3600
  sip_registration_interval=60
  sip_Max-Forwards=70
  sip_From=Anonymous <sip:no_from_info@anonymous.invalid>
  sip_Contact=0.0.0.0:0
  sip_username=-
  sip_session_name=no_session_name
  sip_session_description=
  sip_description_URI=
  sip_email=
  sip_phone=
  sip_Route=
  sip_session_timer_session_expires=0
  sip_session_timer_minse=-1
  sip_session_timer_refresh_method=0
  sip_ip_interface=
  sip_ip_interface_port=5060
  sip_redirect_as_calling_party=0
  sip_redirect_as_called_party=0
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\fdtool-6.1.1\bin\bostvb.dll
  channels=6
[module.41/ethernet.1]
  ip_interface={567CDC61-517C-4CD5-8F10-3DF5CB9CCDEC}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=1
  number_of_channels=6
```

No sip_default_gateway was filled in since the IP address of the gateway was specified in the dial string in the application. The following dial string was used for the outbound calls: 80113225374152@10.1.0.2. However, when the application does not allow specifying the gateway's IP address, make sure to fill in the IP address in the sip_default_gateway field. In our test scenario, this would be: sip_default_gateway=10.1.0.2:5060