Dialogic

Dialogic® Brooktrout® SR140 Fax Software with ShoreTel Release 12.1 Gateway

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 **ShoreTel Release 12.1 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 **ShoreTel Gateway**.

The sample configuration shown and/or referred in the subsequent sections was used for lab validation testing by Dialogic. Therefore, it is quite possible that the sample configuration will not match an exact configuration or 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.

2.   Configuration Details

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

2.1   ShoreTel Gateway

Vendor	*ShoreTel*
Model	*ShoreGear 220T1A Switch*
Software Version	*Release 12.1 build 17.22.5240.0*
IP Device	*Dialogic® Brooktrout® SR140 Fax Software*
Protocol to SR140 Fax Software	*SIP*
PSTN Device	*Dialogic® Brooktrout® TR1034*
Protocol to PSTN Device	*T1*
Additional Notes	*The maximum T.38 protocol supported by the ShoreTel Gateway is V.29 (9,600 bits/sec). V.17 (14,400 bits/sec) is not supported.*

2.2   Dialogic® Brooktrout® SR140 Fax Software

Vendor	*Dialogic*
Model	*Dialogic® Brooktrout® SR140 Fax Software*
Software Version	*Tested with SDK 6.4.3*
Protocol to Gateway or Call Manager	*SIP*
callctrl.cfg file	*All defaults except:* • *SIP session refresh was set to 1800* • *Image and control redundancies were set to 0*

2.3   Dialogic® Brooktrout® TR1034 Fax Server

Vendor	*Dialogic*
Model	*Dialogic® Brooktrout® TR1034+E24H-T1-1N*
Software Version	*Tested with SDK 6.4.3*
Protocol to Gateway or Call Manager	*T1 ISDN*
callctrl.cfg file	*All defaults*

2.4   Network System Configuration

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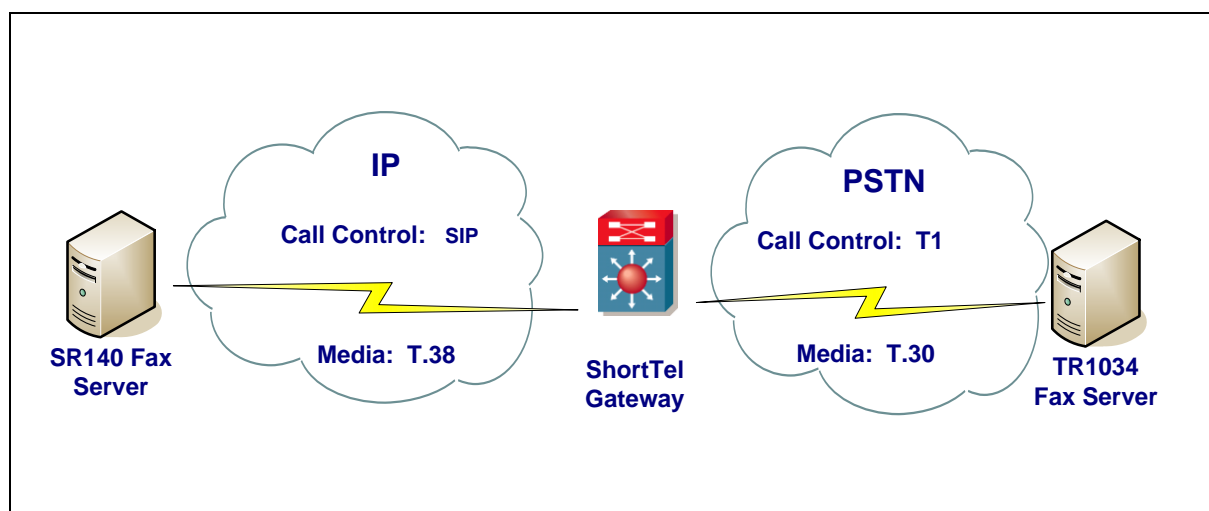

Diagram Notes:
  • SR140 Fax Server = Fax Server including Dialogic® Brooktrout® SR140 Fax Software and
    third party fax application.

2.5 Network Addresses

The following table lists the IP addresses and their descriptions used in subsequent sections.

Device #	Device Make, Model, and Description	Device IP Address
1	ShoreTel GW	10.242.202.19
2	SR140 Fax Server	10.242.202.14

3. Prerequisites

- Testing was preformed with Dialogic Brooktrout SR140 running SDK 6.4.3; however, no changes for ShoreTel Interop have been applied since SDK 6.2.3.
- ShoreTel Controlled Release for Release 12.1 build 17.22.5240.0 or later.

4. Summary of Limitations

- Enabling redundancy for T.38 causes data errors when using the ShoreTel Gateway. For interoperability, the SR140 requires redundancy for both image and control to be set to 0. In the SR140 callctrl.cfg file, set t38_UDPTL_redundancy_depth_control=0 and t38_UDPTL_redundancy_depth_image=0
- The ShoreTel Gateway sends a SIP session refresh if it is enabled on the ShoreTel Gateway even if the SR140 is configured not to use SIP session refresh. This will cause the SR140 to drop the call if a SIP refresh is received. For interoperability, the SR140 SIP session refresh must be set to 1800. To do this set sip_session_timer_session_expires=1800 in the SR140 callctrl.cfg file.
- The maximum T.38 protocol supported by the ShoreTel Gateway is V.29 (9,600 bits/sec). V.17 (14,400 bits/sec) is not supported.

5.   ShoreTel Gateway Setup Notes

Configuring the ShoreTel equipment was performed using the ShoreTel ShoreWare Director. This web interface allows the user to administrate the ShoreTel equipment using a web browser.

Using the web browser, the host name for the SR140 was added as a SIP Server. The protocol for the SR140 SIP Server must be set to UDP via the Protocol pull-down.

The following screenshot may be used as a reference and includes the settings used in the sample test configuration for the PRI Trunk Group between the ShoreTel Gateway and the TR1034 Fax Server.
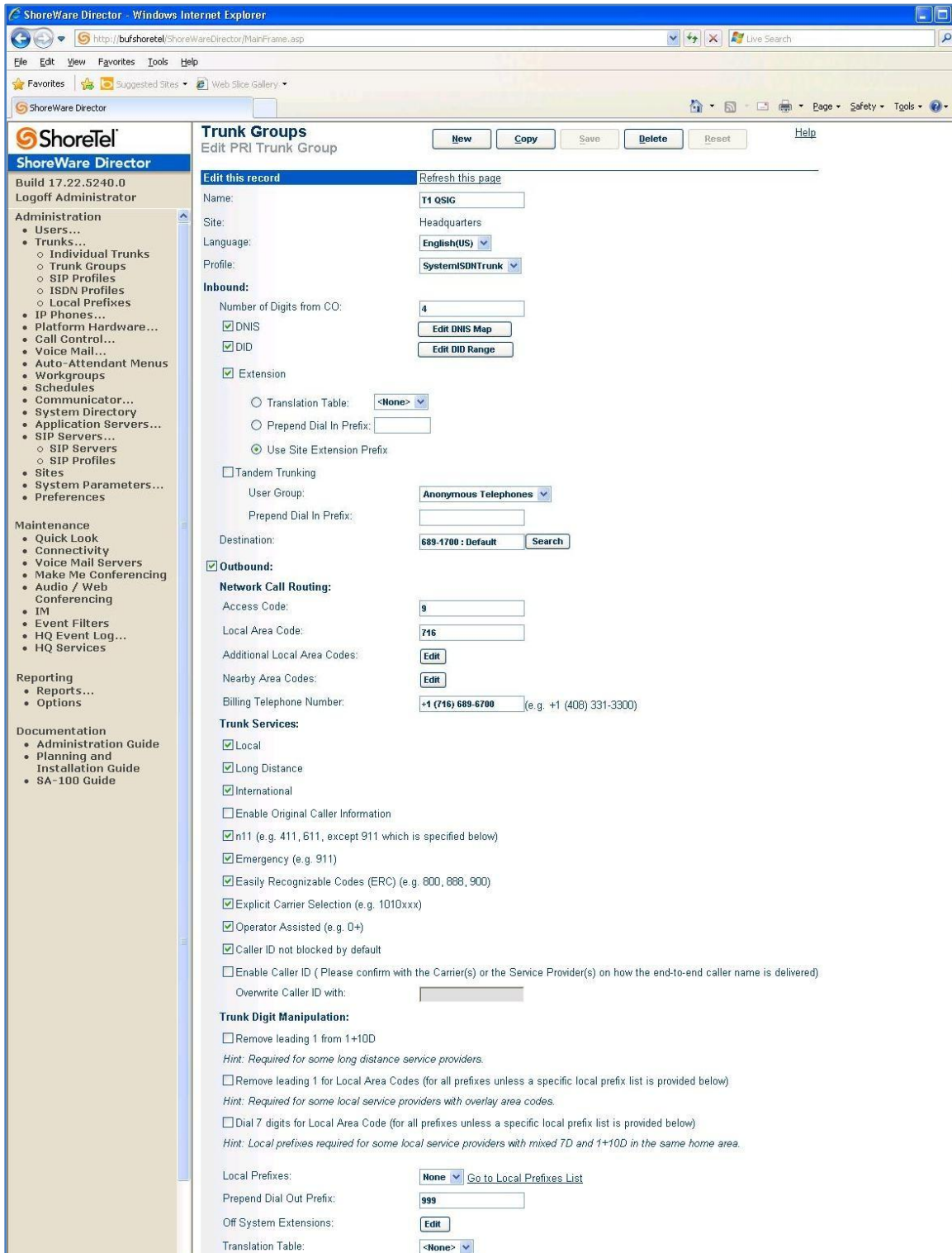
To the configure ShoreTel to route calls from the SR140 Fax Server to the TR1034 Fax Server via the T1 trunk, an "Off System Extension Range" was created to direct calls to the T1 trunk that match the range provided.
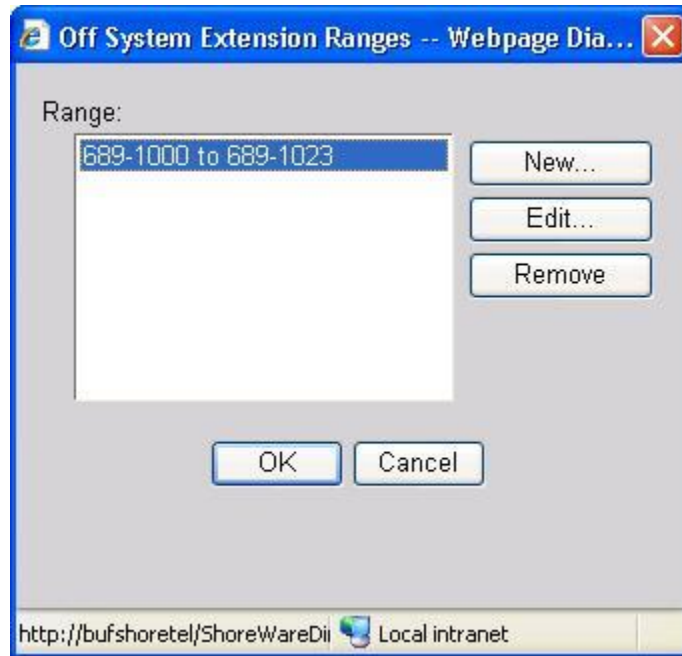
To the configure ShoreTel to route calls from the TR1034 Fax Server to the SR140 Fax Server, a DNIS Digit Map was created to direct calls from the SIP Trunk that match the 'Dialed Number' to the SR140 location.

6.   Dialogic® Brooktrout® SR140 Fax Software Setup Notes

The Installation and Configuration Guides used to set up the SR140 is available from the site below:

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

The SR140 callctrl.cfg file used in the sample test configuration is shown below for reference. The changes from the default settings are highlighted in yellow.

```
 l3l4_trace=verbose
 l4l3_trace=verbose
 api_trace=verbose
 internal_trace=verbose
 host_module_trace=verbose
 ip_stack_trace=warning
# Most of the time a path should be used for this file name.
 trace_file=test_0004_ecc.log
 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_passthrough_timeout_inbound=1000
 media_passthrough_timeout_outbound=4000
 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=0
 t38_UDPTL_redundancy_depth_image=0
[host_module.1/rtp]
 rtp_frame_duration=20
 rtp_jitter_buffer_depth=100
 rtp_codec=pcmu pcma
 rtp_silence_control=inband
 t38_offer_as_ced=true
 rtp_type_of_service=0
 rtp_voice_frame_replacement=0
[host_module.1/parameters]
 sip_max_sessions=256
 sip_default_gateway=
 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_registration_interval_delta=5
    sip_Max-Forwards=70
    sip_From=Anonymous <sip:no_from_info@anonymous.invalid>
    sip_Contact=10.242.202.14:5060
    sip_ContactV6=
    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=1800
    sip_session_timer_minse=-1
    sip_session_timer_refresh_method=0
    sip_ip_preference=ipv4_only
    sip_ip_interface=
    sip_ip_interfaceV6=
    sip_ip_interface_port=5060
    sip_ip_interface_portV6=5060
    sip_redirect_as_calling_party=0
    sip_T1_timeout=500
    sip_max_invite_retransmissions=7
    sip_redirect_as_called_party=0
    sip_user_agent=Brktsip/6.4.3B7 (Dialogic)
    sip_RFC3325_Identity=0
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\interop kit SDK643 v1.4\fdtool-6.4.3\bin\bostvb.dll
  channels=120
[module.41/ethernet.1]
  ip_preference=ipv4_only
  ip_interface={7D57B541-A7F4-4674-9B2B-29AAE2E3A9A2}:0
  ip_interfaceV6={7D57B541-A7F4-4674-9B2B-29AAE2E3A9A2}:0
  ip_address=0.0.0.0
  ip_addressV6=
  media_port_min=56000
  media_port_max=56999
[module.41/host_cc.1]
  host_module=1
  number_of_channels=120
```

7.   Dialogic® Brooktrout® TR1034 Setup Notes

For the sample test configuration, the TR1034 was configured using the default values, consult the *Dialogic® Brooktrout® Fax Products Installation and Configuration Guide* for details.

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

8.   Frequently Asked Questions

- "*I'm configured as near as possible to this the sample configuration described in this document, but calls are still not successful; what is my next step?*"
    - ➔ Provide this document to your gateway support.
    - ➔ Ensure T.38 is enabled on the gateway.
    - ➔ Confirm that basic network access is possible by pinging the gateway.

- "*How do I obtain Wireshark traces?*"
    - ➔ The traces can be viewed using the Wireshark network analyzer program, which can be freely downloaded from *http://www.wireshark.org*.
    - ➔ To view the call flow in Wireshark, open the desired network trace file and select "Statistics->VoIP Calls" from the drop down menu. Then highlight the call and click on the "Graph" button.