



Vcomm Solution & Interoperability Testing

Application Notes for Configuring Ingate SIParator with an Avaya S8300 for SIP Trunking without SES – Issue 1.0

Abstract

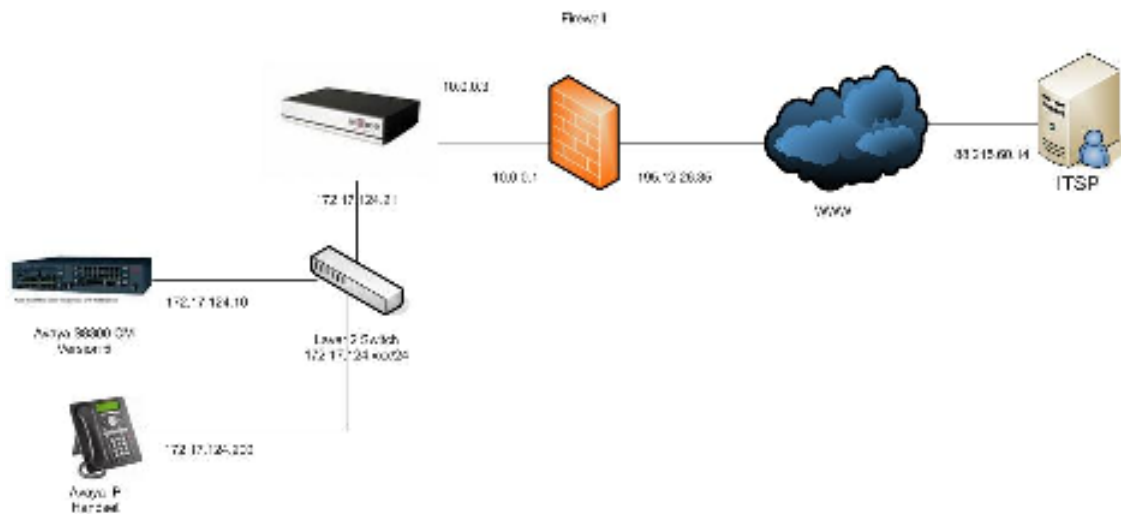
These application notes describe the configuration steps required for the Ingate SIParator version 4.6.2 SBC to successfully enable the Avaya S8300 Call Manager version 5.0 for SIP Trunking without the need for Avaya SIP Enablement Server (SES).

1. Introduction

With the introduction of software release 5.0 for the Avaya S8300 CM, it is now possible to talk directly over a sip trunk without the need for an SES server. This document will walk you through the set up of both Avaya CM and the Ingate SIParator.

The Ingate SIParator is a session border controller that handles the ingress and egress of SIP messaging between two networks (i.e LAN and WAN). It also has basic proxy and far end NAT traversal functionality that could be put to use in certain deployment situations, but are not covered by this document.

The SIParator was connected to the network in a DMZ –LAN scenario:



Please refer to the Ingate SIParator documentation for other deployment scenarios.

The IP addresses used in this test were:

Avaya S8300	172.17.124.10		
Ingate SIParator	LAN 172.17.124.21	DMZ 10.0.0.3	WAN 195.12.26.35
ITSP	88.215.60.14		

2. Equipment and Software Validated

The following equipment and software were used for the testing of this scenario:

Equipment	Software Version
Avaya S8300 Call Manager	5.0
Avaya IP Handset	
Ingate SIParator	4.6.2
Gamma SIP Trunk	IPDC V3

3. Configuring the Avaya S8300

For a detailed description of how to set up the Avaya S8300 please refer to the Avaya's own manual. This guide will show you the necessary changes to this default configuration needed to make this scenario work.

3.1 Avaya Network Settings

Access the Avaya S8300 network settings. Select Configure Server → Configure Interfaces.

Enter the IP address of the Avaya into *IP address server 1*.

Enter the IP address of the Ingate SIParator into *Gateway*.

Enter the subnet mask into *subnet mask*.

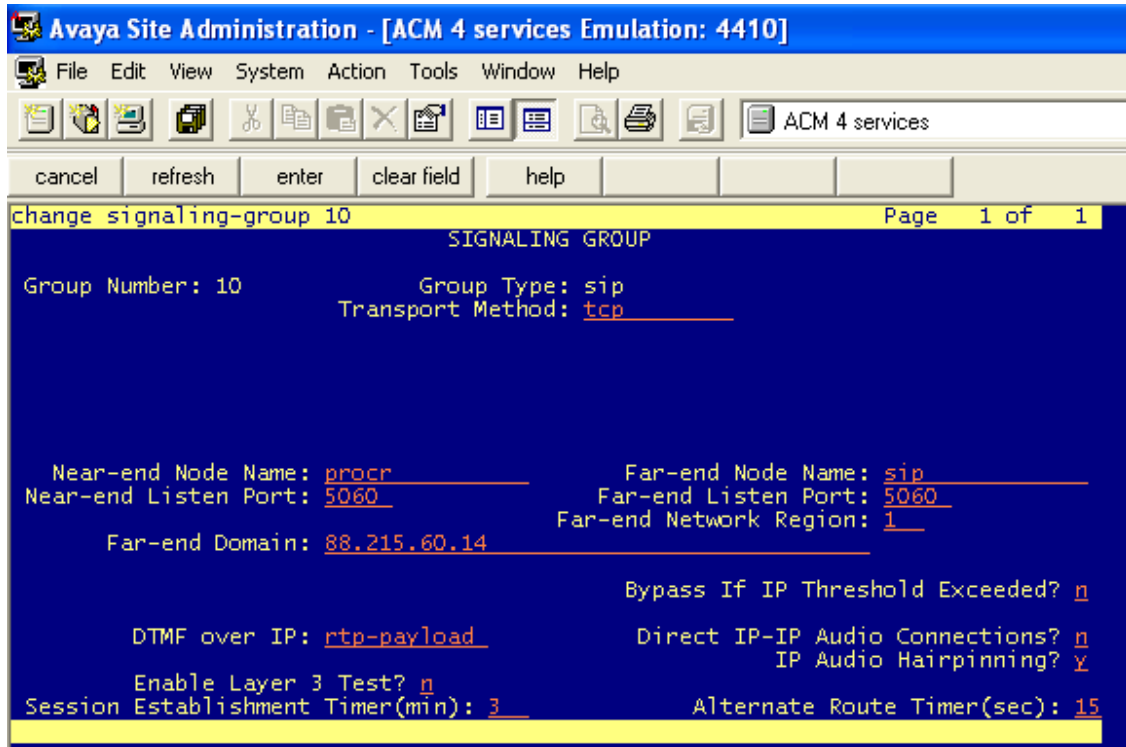
The screenshot shows a web browser window titled "Configure Individual IP Services - Microsoft Internet Explorer provided by Westcon Group". The address bar shows "https://192.11.13.6/cgi-bin/configSrv/w_indCon_start". The main content area is titled "Configure Server" and contains the following sections:

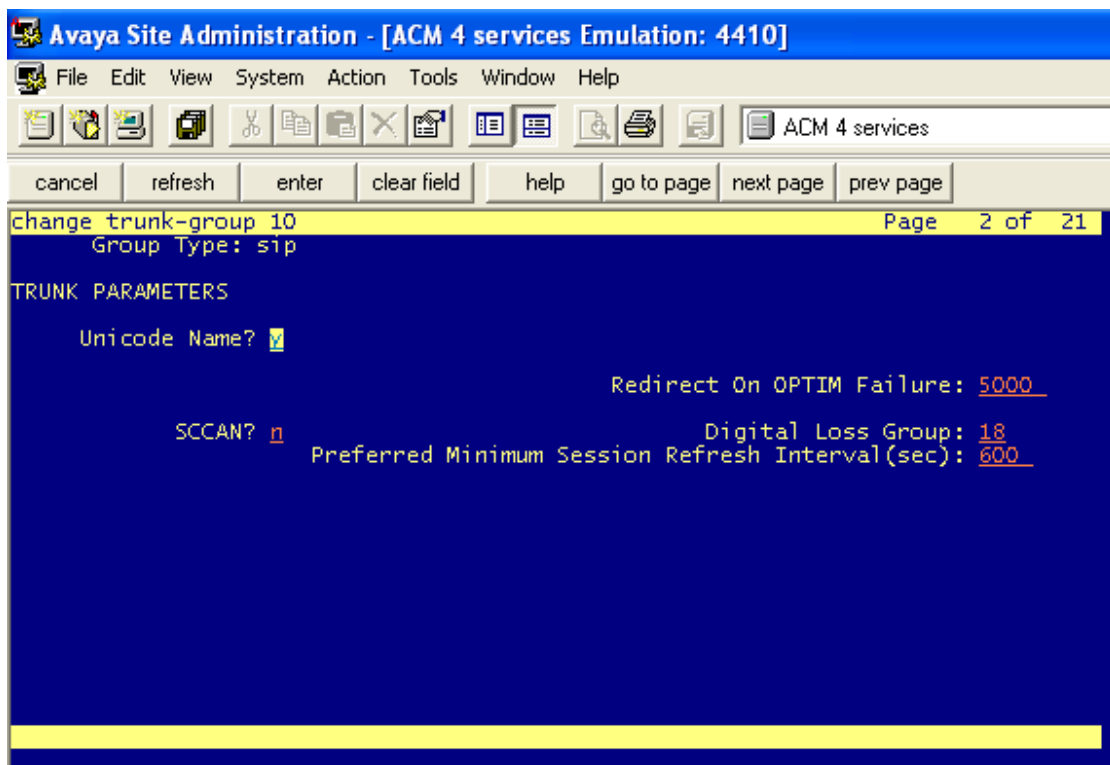
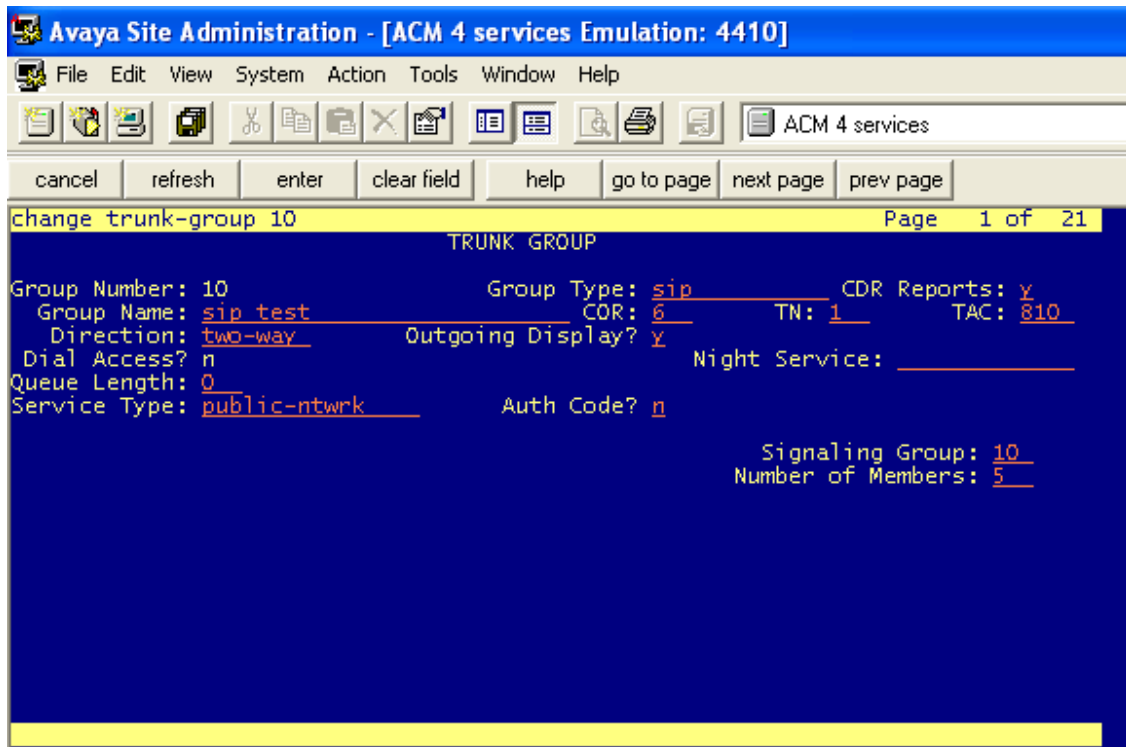
- Configure Interfaces**
 - Ethernet 0: Laptop**
 - IP address: 192.11.13.6
 - Subnet mask: 255.255.255.252
 - Ethernet 1: Control Network**
 - IP address server1 (server1):
 - Gateway:
 - Subnet mask:
 - Speed (Current speed : 100 Megabit full AUTO SENSE duplex)
- Integrated Messaging**
 - IP address server1 (server1):

Below the configuration fields, there is a note: "Click CHANGE to change values." and three buttons: "Change", "Close Window", and "Help".

3.2 Avaya Setup Screens

The following screens show the specific changes needed to the basic programming for SIP trunking to work.





3.3 Points to Note

1. The Ingate SIParator is used as the Gateway off of the host network
2. The Far-End-Domain is that off the ITSP not the Ingate
3. Direct IP-to-IP Audio is set to NO
4. Hairpinning is set to YES

4. Setting up the Ingate SIParator

4.1 Basic Configuration

Download and install the Ingate startup tool from www.ingate.com. Once installed run the program and connect to the Ingate.

Enter the network settings.

Ingate Startup Tool

Network Topology | IP-PBX | ITSP_1 | Upload Configuration

Product Type: **DMZ-LAN SIParator**

Inside (Interface Eth0)
IP address: 172 . 17 . 124 . 21
Netmask: 255 . 255 . 255 . 0

DMZ (Interface Eth1)
 Use DHCP to obtain IP
IP Address: 10 . 0 . 0 . 3
Netmask: 255 . 255 . 255 . 0
 Allow https access to web interface from Internet
Gateway: 10 . 0 . 0 . 1
Firewall extern IP: 195 . 12 . 26 . 35

DNS server
Primary: 208 . 67 . 222 . 222
Secondary: 208 . 67 . 220 . 220 (Optional)

Status
Ingate Startup Tool Version 2.4.0, connected to: Ingate SIParator 19, IG-092-738-4099-2

```
add-row sipswitch.request_from {id 5} domain="" client_netgroup="Avaya SES/CM" name="LOCAL_02030042231"
add-row sipswitch.forward_to {id 1} account="02030042231@gw1.man1.theiptele.com" domain="" name="02030042231"
add-row sipswitch.dial_plan {id 1} action=fwd comment="" enum_prefix="" enum_root=- forward_prefix="" forwa
add-row sipswitch.dial_plan {id 2} action=fwd comment="" enum_prefix="" enum_root=- forward_prefix="" forwa
add-row sipswitch.user_routing {id 1} comment="" action=forward forward_to="02030042231@172.17.124.10" t
add-row sipswitch.dial_plan {id 3} action=deny comment="" enum_prefix="" enum_root=- forward_prefix="" forw
---End of CLI file---
```

Configuration successfully uploaded.

Help

Select the Avaya SES/CM and enter it's IP Address

The screenshot shows the 'Ingate Startup Tool' window with the 'IP-PBX' tab selected. The configuration area is titled 'IP-PBX (should be located on the LAN)'. It contains the following fields and options:

- Type:** A dropdown menu set to 'Avaya SES/CM'.
- IP Address:** A text box containing '172 . 17 . 124 . 10'.
- Use domain name:** An unchecked checkbox.
- SIP Domain:** An empty text box.
- PBX registers at the Ingate:** An unchecked checkbox.

Below the configuration area is a 'Status' section with the following text:

Ingate Startup Tool Version 2.4.0, connected to: Ingate SIParator 19, IG-092-738-4099-2

```
add-row sipswitch.request_from {id 5} domain="" client_netgroup="Avaya SES/CM" name="LOCAL_02030042231"  
add-row sipswitch.forward_to {id 1} account="02030042231@gw1.man1.theiptele.com" domain="" name="02030042231"  
add-row sipswitch.dial_plan {id 1} action=fwd comment="" enum_prefix="" enum_root=- forward_prefix="" forward_to="02030042231@172.17.124.10"  
add-row sipswitch.dial_plan {id 2} action=fwd comment="" enum_prefix="" enum_root=- forward_prefix="" forward_to="02030042231@172.17.124.10"  
add-row sipswitch.user_routing {id 1} comment="" action=forward forward_to="02030042231@172.17.124.10" use_enum_prefix=""  
---End of CLI file---
```

Configuration successfully uploaded.

A 'Help' button is located at the bottom right of the window.

Written by Andy Glover ©2009 Vcomm Uk Ltd
Testing conducted by Andy Glover (Vcomm) and Dean Jones (Westcon)

Select an ITSP, entering the details provided by them for the SIP Trunk.

The screenshot shows the 'Ingate Startup Tool' window with the 'ITSP_1' tab selected. The configuration is as follows:

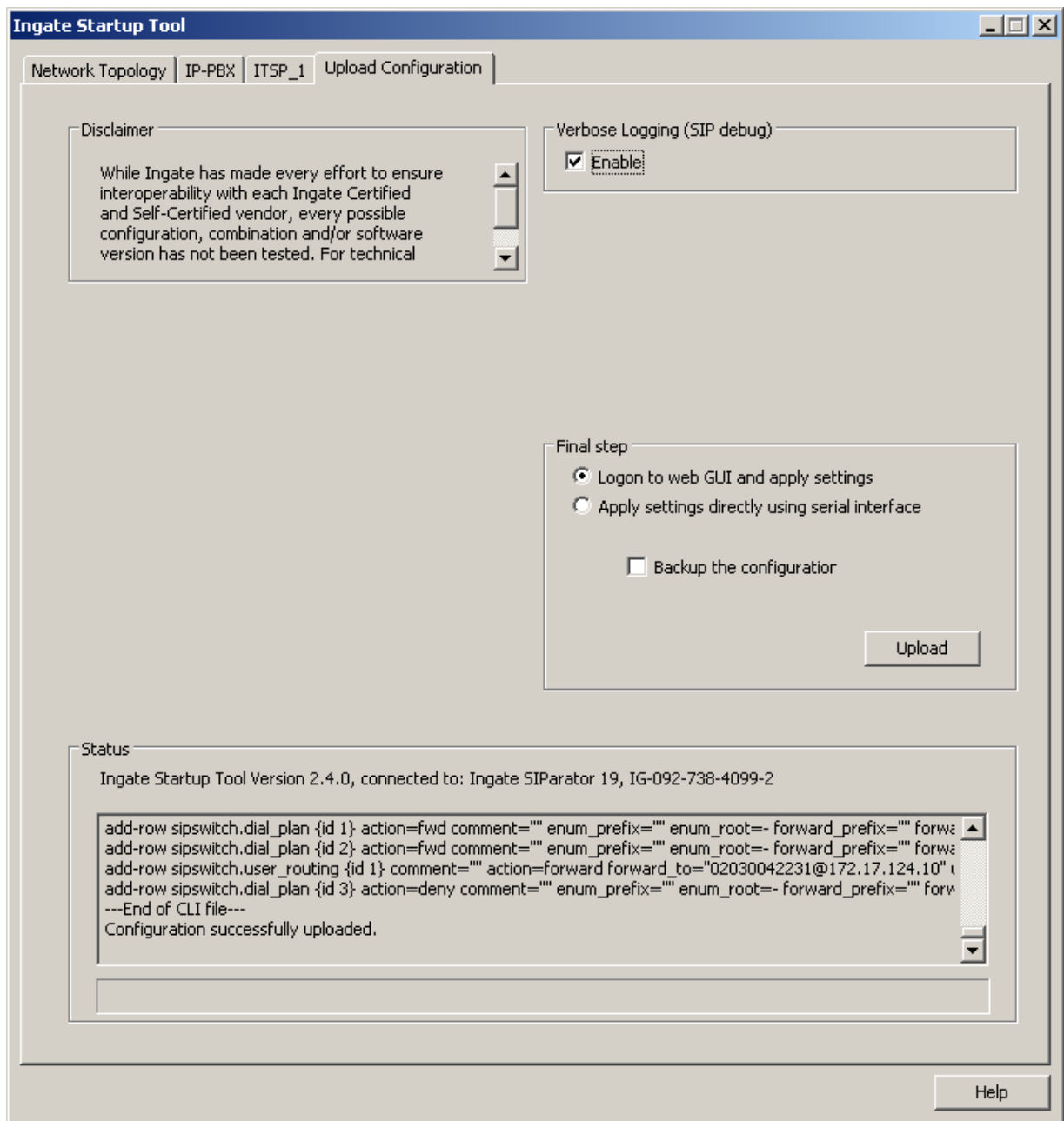
- Name:** Generic ITSP
- DID (start of range) (user name):** 0001146950084
- DID range size:** 1
- Provider address:** IP Address: 0 . 0 . 0 . 0. Use domain name
- Account information:**
 - Use account
 - Authentication name:** 0001146950084
 - Increment authentication name for ranges
 - Domain:** gw1.man1.theiptele.c
 - Password:** [masked]
 - Use user account on incoming call
- Advanced:**
 - Prefix to match and remove from inbound calls:** [empty]
 - Prefix to add to outbound calls:** [empty]
 - Forward 3xx messages:** Enable
- PBX local numbers (advanced):**
 - Local number (start of range, use same as DID if local numbers are not used):** 020300422
 - Password (only used if PBX registers at the Ingate):** [empty]
 - PBX registers at the Ingate
- Status:** Ingate Startup Tool Version 2.4.0, connected to: Ingate SIParator 19, IG-092-738-4099-2

```
add-row sipswitch.request_from {id 5} domain="" client_netgroup="Avaya SE5/CM" name="LOCAL_02030042231"
add-row sipswitch.forward_to {id 1} account="02030042231@gw1.man1.theiptele.com" domain="" name="020300
add-row sipswitch.dial_plan {id 1} action=fwd comment="" enum_prefix="" enum_root=- forward_prefix="" forwar
add-row sipswitch.dial_plan {id 2} action=fwd comment="" enum_prefix="" enum_root=- forward_prefix="" forwar
add-row sipswitch.user_routing {id 1} comment="" action=forward forward_to="02030042231@172.17.124.10" us
add-row sipswitch.dial_plan {id 3} action=deny comment="" enum_prefix="" enum_root=- forward_prefix="" forwar
---End of CLI file---
```

Configuration successfully uploaded.

Help

Apply the configuration. This will then take you to the web interface of the Ingate.



Firstly log in to the web interface, then go to Administration → Apply Settings → Save Configuration.

Go to Sip Traffic → Dial Plan. Change the transport type under Matching From Header to 'Any'

Add an entry in Matching Request-URI for Inbound calls to suit the inbound number range.

Add an entry into Dial Plan for Inbound calls (see screen shot).

inGate SIParator Configured by Ingate Startup Tool Version 2.4.0 [Log Out](#)

Administration Basic Configuration Network SIP Services **SIP Traffic** Failover Virtual Private Networks Quality of Service Logging and Tools About

A new Ingate SIParator version exists. Get the upgrade [here](#).

SIP Methods Filtering User Database Authentication and Accounting **Dial Plan** Routing Time Classes SIP Status

Use Dial Plan [\(Help\)](#) **Emergency Number** [\(Help\)](#)

On Off Fallback

911

Matching From Header [\(Help\)](#)

Name	Use This Or This	Transport	Network	Delete
	Username	Domain	Reg Expr			
Avaya SES/CM	*	*		Any	Avaya SES/CM	<input type="checkbox"/>
Generic ITSP	*	*		Any	ITSP_IP	<input type="checkbox"/>
LAN	*	*		Any	LAN	<input type="checkbox"/>
LOCAL_020300	02030042231	*		Any	Avaya SES/CM	<input type="checkbox"/>
WAN	*	*		Any	WAN	<input type="checkbox"/>

Add new rows rows.

Matching Request-URI [\(Help\)](#)

Name	Use This Or This	Delete
	Prefix	Head	Tail	Min. Tail	Domain	Reg Expr	
Inbound			any character		*		<input type="checkbox"/>
Outbound			any character		*		<input type="checkbox"/>

Add new rows rows.

Done

Forward To [\(Help\)](#)

Name	Subno.	Use This Or This			... Or This	Delete
		Account	Replacement URI	Port	Transport	Reg Expr	
+ 02030042231	1	0001146950084@gw1.man1.theiptele.com			-		<input type="checkbox"/>
+ Avaya	1	-	172.17.124.10	5060	TCP		<input type="checkbox"/>

Add new rows groups with rows per group.**Dial Plan** [\(Help\)](#)

No.	From Header	Request-URI	Action	Forward To	Add Prefix		ENUM Root	Time Class	Comment	Delete
					Forward	ENUM				
1	LAN	Outbound	Forward	02030042231			-	-		<input type="checkbox"/>
2	WAN	Inbound	Forward	Avaya			-	-		<input type="checkbox"/>

Add new rows rows.**Methods in Dial Plan** [\(Help\)](#)

The ACK, PRACK, CANCEL, BYE, NOTIFY, UPDATE and INFO methods cannot be handled by the Dial Plan.

Method	Delete
INVITE	<input type="checkbox"/>
OPTIONS	<input type="checkbox"/>
SUBSCRIBE	<input type="checkbox"/>
MESSAGE	<input type="checkbox"/>
REFER	<input type="checkbox"/>

REGISTER in Dial Plan [\(Help\)](#)

- Keep To headers for REGISTER requests passed through the Dial Plan
- Rewrite To headers for REGISTER requests passed through the Dial Plan

Add new rows rows.**ENUM Root** [\(Help\)](#)

Name	Subno.	ENUM Root	Delete
+ e164.arpa	1	e164.arpa	<input type="checkbox"/>
+ e164.org	1	e164.org	<input type="checkbox"/>

Under Sip Traffic → Routing, change the SIP Routing order as shown.

inGate SIParator Configured by Ingate Startup Tool Version 2.4.0 [Log Out](#)



A new Ingate SIParator version exists. Get the upgrade [here](#).

- Changes have been made to the preliminary configuration, but have not been applied.

SIP Methods | Filtering | User Database | Authentication and Accounting | Dial Plan | **Routing** | Time Classes | SIP Status

DNS Override For SIP Requests [\(Help\)](#)

Domain	Relay To						Delete
	DNS Name or IP Address	IP Address	Port	Transport	Priority	Weight	
Add new rows <input type="text" value="1"/> groups with <input type="text" value="1"/> rows per group.							

SIP Routing Order [\(Help\)](#)

No.	Routing Function
<input type="text" value="1"/>	Dial Plan
<input type="text" value="2"/>	DNS Override
<input type="text" value="3"/>	Local Registrar

Class 3xx Message Processing [\(Help\)](#)

- Forward all
- Follow redirects

Static Registrations [\(Help\)](#)

Requests To User	Also Forward To			Delete
	User	sip/sips	Transport	
Add new rows <input type="text" value="1"/> groups with <input type="text" value="1"/> rows per group.				

Local REFER Handling [\(Help\)](#)

- Always handle REFER locally
- For clients not supporting REFER
- For clients not supporting replaces

Done

Next, under Basic Configuration select Reply to ping to all IP addresses.

inGate SIParator Configured by Ingate Startup Tool Version 2.4.0 Log Out

Administration **Basic Configuration** Network SIP Services SIP Traffic Failover Virtual Private Networks Quality of Service Logging and Tools About

A new Ingate SIParator version exists. Get the upgrade [here](#).

- ◆ Changes have been made to the preliminary configuration, but have not been applied.

Basic Configuration Access Control RADIUS SNMP Dynamic DNS Update Certificates Advanced SIParator Type

General

Name of this SIParator:

Configured by:

Default domain:

Version of Ingate SIParator

Check for new versions of Ingate SIParator: Yes No

Date of last successful version check: **2009-02-10 18:54:03**

Software version in use: **4.6.2**

IP Policy

Discard IP packets

Reject IP packets

Policy For Ping to Your Ingate SIParator

Never reply to ping

Only reply to ping to the same interface

Reply to ping to all IP addresses

DNS Servers [\(Help\)](#)

No.	DNS Name or IP Address	IP Address	Delete
1	208.67.222.222	208.67.222.222	<input type="checkbox"/>
2	208.67.220.220	208.67.220.220	<input type="checkbox"/>

Add new rows rows.

Now go to Administration → Apply Settings → Save Configuration. You should now be able to successfully make inbound and outbound calls.

5. Interoperability Testing

Features tested using this configuration were:

- Inbound calls
- Outbound calls
- Call hold
- Call transfer
- Conference

Further features of the Avaya were not tested but should work. For further assistance in this please contact Vcomm UK Ltd or your Ingate partner.

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