



# Sangoma Europa Vega 50 BRI and Elastix Server Setup Guide

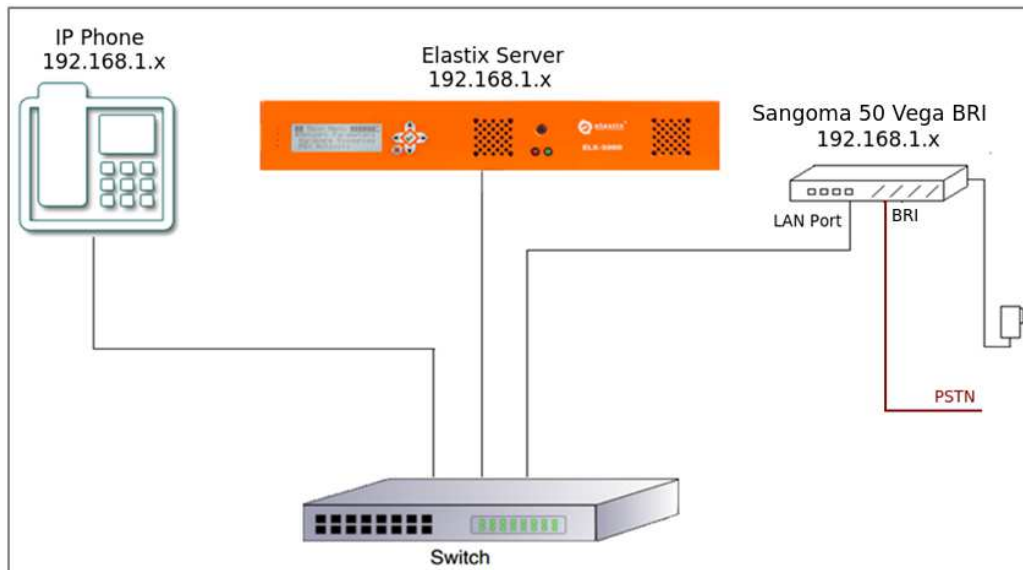




## 1.0 Setup Diagram

Figure 1-1 is a setup diagram for a single Vega 50 BRI gateway configuration. We're going to configure a SIP Trunk for communication between the IP Phone and PSTN.

**Figure 1-1. Setup Diagram**



## 2.0 Host PC Environment

**Table 2-1. Host Server Environment Details**

	Description
Hardware Type	Elastix Appliance ELX-Series
Hardware Version	ELX-3000
Software Type	Elastix
Software Version	2.3

## 3.0 Test Setup Equipment

**Table 3-1. Test Setup Equipment**

Equipment	Model	Version
IP (SIP) Phone	N/A	N/A
Sangoma	Vega 50	FW: R086S031
Switch	N/A	N/A

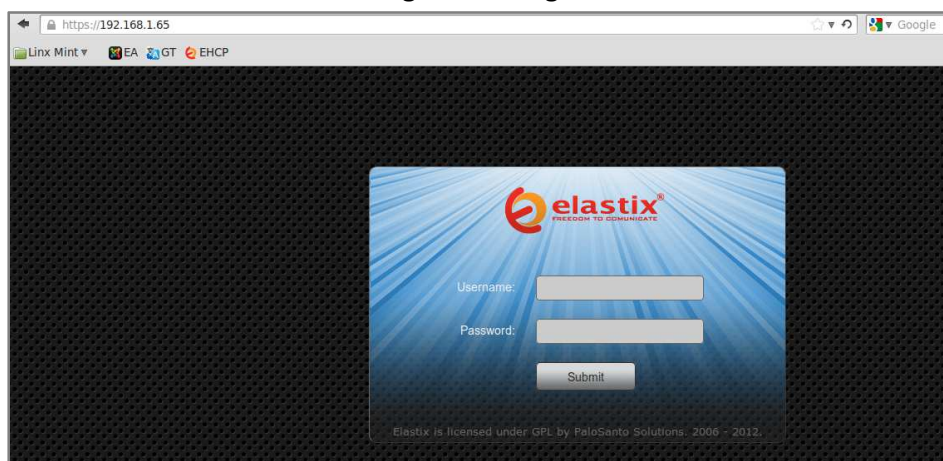


## 4.0 Setup Procedure

### To set up the Elastix Server for the Vega 50

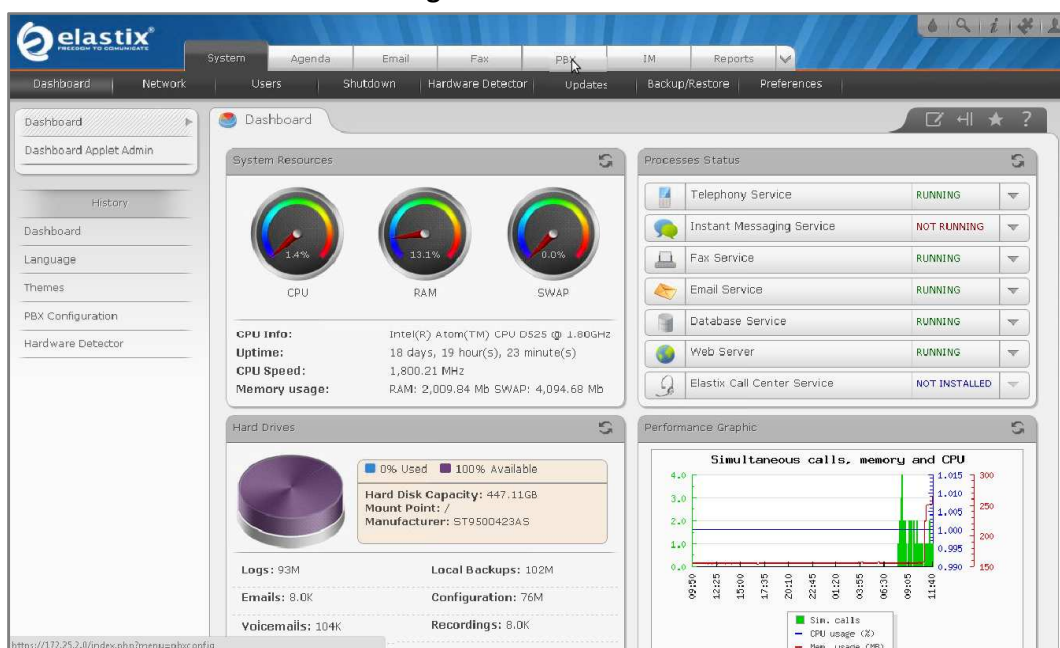
1. Go to the web address of the Elastix Server Login page. The web address is determined by the customer, for this guide we have used the IP address 192.168.1.65
2. On the Login page, type the username and password for an administrative user into the Username and Password fields, see Figure 4-1. The username and password are determined by the customer.

Figure 4-1. Login



3. Press Enter or click on the Submit button to go to Elastix's Dashboard
4. Once inside, click on the PBX tab on the menu at the top of the screen

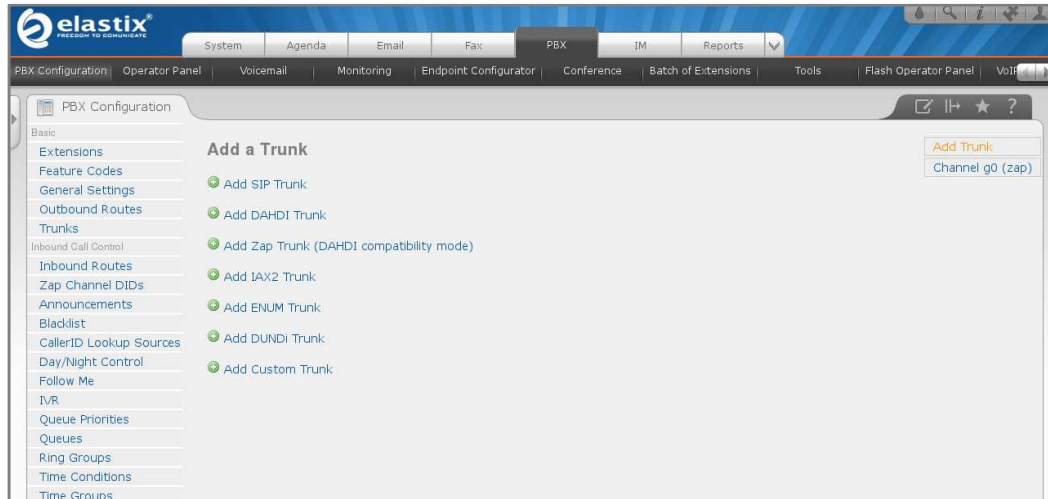
Figure 4-2. Dashboard





5. Go to “PBX Configuration => Trunks => Add SIP Trunk”, see Figure 4-3. This will take you to configure a SIP Trunk.

**Figure 4-3. Add a SIP Trunk**



6. On the “Add SIP Trunk” page (Figure 4-4), fill in the following information:

#### *General Settings*

- **Trunk Name:** (VegaTrunk in this example)

#### *Outgoing Settings*

- **Trunk Name:** (Vega50BRI in this example)
- **Peer Details:**
  - host=dynamic
  - username=(Vega50BRI in this example)
  - secret=( jx8FkOU13sv6 in this example)
  - qualify=yes
  - type=peer
  - insecure=very



**Figure 4-4. Add SIP Trunk**

7. Click on the ‘Submit’ button at the end of the page. The SIP Trunk will be created and you will see the page on Figure 4-5 displaying the “Apply Configuration Changes Here” pink ribbon on top of the screen.

8. Click on the “Apply Configuration Changes Here” link

**Figure 4-5. Apply Configuration Changes Here**

9. With this you have finished creating a SIP Trunk that will be used by the Vega 50 to register with the Elastix Server. Now, go to “PBX => PBX Configuration => Outbound Routes” to configure the outbound route to the Vega 50 Gateway. Fill in the following information: (Figure 4-6)

### *Route Settings*



- **Route Name:** (“8\_Vega” in this example)

*Dial patterns*

- **Prefix:** (“8” in this example) | **Match pattern:** (“.” in this example)

*Trunk Sequence for Matched Routes*

- **0:** (“VegaTrunk” in this example)

Figure 4-6. Add Route

The screenshot shows the 'Add Route' configuration page in the Elastix PBX Configuration interface. The left sidebar contains a navigation menu with categories like Basic, Inbound Call Control, Inbound Routes, Zap Channel DIDs, Announcements, Blacklist, CallerID Lookup Sources, Day/Night Control, Follow Me, IVR, Queue Priorities, Queues, Ring Groups, Time Conditions, Time Groups, Internal Options & Configuration, Conferences, Languages, Misc Applications, Misc Destinations, Music on Hold, PIN Sets, Paging and Intercom, Parking Lot, System Recordings, VoiceMail Blasting, Remote Access, and Callback. The main content area is titled 'Add Route' and contains the following sections:

- Route Settings:**
  - Route Name: 8\_Vega
  - Route CID: (empty)
  - Route Password: (empty)
  - Route Type: ☐ Emergency ☐ Intra-Company
  - Music On Hold?: default
  - Time Group: ---Permanent Route---
  - Route Position: Last after
- Additional Settings:**
  - PIN Set: None
- Dial Patterns that will use this Route:**
  - (prepend) + 8 | . / CallerId
  - + Add More Dial Pattern Fields
  - Dial patterns wizards: (pick one)
- Trunk Sequence for Matched Routes:**
  - 0 VegaTrunk
  - 1 (empty)

At the bottom right, there is a 'Submit Changes' button.

10. Click on “Submit” at the end of the page and Apply changes. Now, we’ll create an extension for an IP Phone. Go to “PBX => PBX Configuration => Extensions” and click on “Submit” having the “Generic SIP Device” option selected. (Figure 4-7)

Figure 4-7. Add SIP Extension

The screenshot shows the 'Add an Extension' configuration page in the Elastix PBX Configuration interface. The left sidebar is the same as in Figure 4-6. The main content area is titled 'Add an Extension' and contains the following sections:

- Please select your Device below then click Submit**
- Device:**
  - Device: Generic SIP Device
- Submit:**
  - Submit

At the top right, there is an 'Add Extension' button.

11. Fill in the following information on the Add SIP Extension page (Figure 4-8):



- **User Extension** (302 in this example)
- **Display Name** ('IPPhone' in this example)
- **secret** ('h7Dka3Rf9si0t' in this example)

Figure 4-8. Add SIP Extension

The screenshot shows the Elastix PBX Configuration web interface. The 'PBX' tab is selected in the top navigation bar. On the left, the 'PBX Configuration' menu is expanded, showing various settings categories. The main content area is titled 'Add SIP Extension' and contains the following fields:

- Add Extension:**
  - User Extension: 302
  - Display Name: IPPhone
  - CID Num Alias: (empty)
  - SIP Alias: (empty)
- Extension Options:**
  - Outbound CID: (empty)
  - Ring Time: Default
  - Call Waiting: Disable
  - Call Screening: Disable
  - Pinless Dialing: Disable
  - Emergency CID: (empty)
- Assigned DID/CID:**
  - DID Description: (empty)
  - Add Inbound DID: (empty)
  - Add Inbound CID: (empty)
- Device Options:**
  - This device uses sip technology.
  - secret: h7Dka3Rf9si0t
  - dtmfmode: rfc2833

12. Click on “Submit” at the end of the page and Apply changes. Create an IVR for the incoming calls to Elastix. To do this, go to “PBX => PBX Configuration => IVR”. Click on “Add IVR” link (Figure 4.9). Set the following:

- **Name:** Name of IVR (WelcomeIVR in this example)
- **Announcement:** Voice prompt which will be played for incoming calls.
- **Options:**
  - \* - Phone book.
  - 0 - 302 Extension
  - t - Repeat the options of IVR (Add this option by modifying the IVR after creation)





Figure 4-9. IVR

The screenshot shows the Elastix PBX Configuration interface. The left sidebar lists various configuration options, with 'IVR' selected. The main area is titled 'Digital Receptionist' and shows the 'Edit Menu WelcomeIVR' configuration. The 'WelcomeIVR' menu is being edited, and the 'Return to IVR' section is highlighted with a red circle. This section contains a table with two rows: one for 'Phonebook Directory' and one for 'WelcomeIVR'. The 'WelcomeIVR' row is highlighted in orange.

	Phonebook Directory	Phonebook Directory	Return to IVR
*	Phonebook Directory	Phonebook Directory	<input type="checkbox"/>
0	Extensions	<302> IPPhone	<input type="checkbox"/>
t	IVR	WelcomeIVR	<input checked="" type="checkbox"/>

13. Click on “Save” and Apply changes by clicking on the pink ribbon that appears at the top of the page. Now go to “PBX => PBX Configuration => Inbound Routes”. Click on “Add Incoming Route” link (Figure 4.10). Set the following:

- **Description:** Name of inbound route (“Incoming\_Calls” in this example)
- **Set destination:** Where the call will be routed. (“WelcomeIVR” IVR in this example)





**Figure 4-10. Incoming Route**

14. Click on “Submit” and apply changes. Now when we receive calls the “WelcomeIVR” IVR will play to the caller giving him choices to interact with Elastix Server.

15. To configure the gateway, you will need to enter the information from the trunk created on the Elastix Server into the Vega 50 and set other parameters by logging into the WebUI.

Go to the Vega 50’s WebUI by pointing your browser to the Vega’s IP address (Figure 4-11).

**Figure 4-11. Vega 50’s WebUI**

For the initial configuration, refer to the Vega 50 Admin Guide found at: <http://wiki.sangoma.com/Vega-50-Technical-Documentation>



## Factory default settings

<b>LAN1 IP Address</b>	DHCP
<b>LAN1 IP Address (If DHCP no available)</b>	169.254.xxx.yyy
<b>Web Access Administrator User</b>	admin
<b>Web Access Administrator Password</b>	admin

### Use Vega default IP address

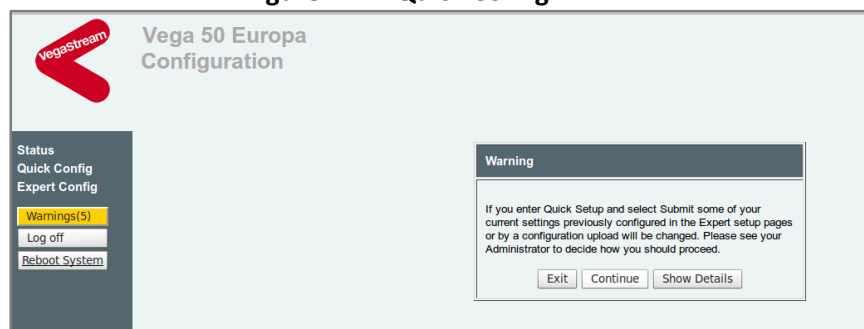
If the Vega is powered up and no DHCP server is available, then the Vega will set its IP address to 169.254.xxx.yyy where xxx and yyy are defined by the MAC address of the Vega LAN interface. xxx and yyy are both one to three digit decimal values.

The MAC address of the Vega LAN interface will be 00:50:58:WW:XX:YY (found on the rear of the Vega – for details see the 'Use IP ping and Arp cache' section above) where WW, XX and YY are each 2 hexadecimal digits.

- The xxx value in the IP address is the decimal value of the XX hex value from the MAC address, and
- The yyy value in the IP address is the decimal value of the YY hex value from the MAC address.

16. When the WebUI is loaded, go to “Quick Configuration” located on the left side of the page and click on “Continue” button (Figure 4-12).

**Figure 4-12. Quick Config**



17. Once there, go to “Basic Config” tab and set the following (Figure 4-13):

### General

- **Country:** US

### LAN – Physical

- **Duplex:** Full



Figure 4-13. Quick Config – Basic Config

**Vega 50 Europa Configuration**

Basic Config

General

Country: **US** Timezone Offset (HHMM): 0000 Emergency Numbers: 999,112,911,000

LAN

Interface

Obtain IP Settings automatically Using DHCP: ☒

IP Address: 192.168.5.191 Subnet Mask: 255.255.0.0 Gateway: 192.168.10.100 Preferred DNS Server: 0.0.0.0 Alternate DNS Server: 0.0.0.0 NTP Time Server: us.pool.ntp.org

Physical

Speed: Auto Duplex: **Full**

CoS

TOS/DiffServe: 0 802.1pQ: ☐ VLAN ID: 0 Priority: 0

Codecs

Priority: 1 2 3 4

18. Go to “VOIP” tab and set the following (Figure 4-14):

#### VoIP Routing Mode

- Send calls via a VoIP Service Provider/Proxy (Selected)

#### VoIP Device Configuration

- **Proxy Address:** Elastix Server’s IP Address (192.168.1.65 in this example)
- **Registrar Address:** Elastix Server’s IP Address
- **Registration Mode:** Gateway
- **Registration and Authentication ID:** (Vega50BRI in this example)
- **Authentication Password:** (jx8FkOU13sv6 in this example)

Figure 4-14. Quick Config – VOIP

**Vega 50 Europa Configuration**

VoIP

VoIP Routing Mode

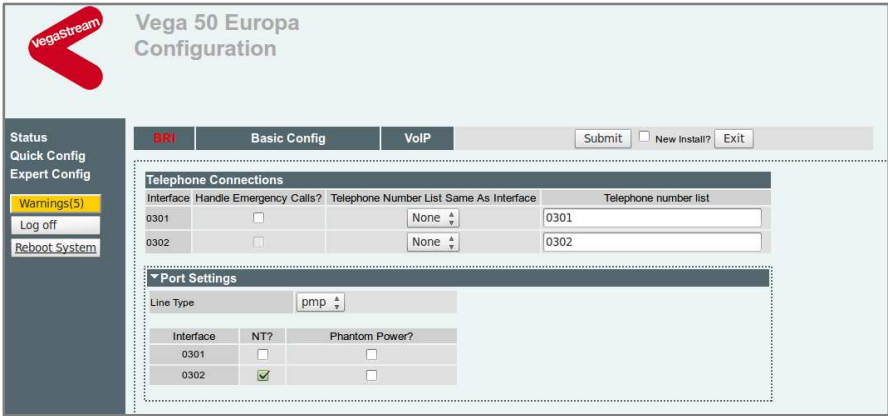
☒ Send calls via a VoIP Service Provider/Proxy  
☐ Send calls to specified VoIP devices

VoIP Device Configuration

Proxy domain name: default-reg-domain.com  
Proxy address: 192.168.1.65  
Registrar address: 192.168.1.65  
Outbound proxy address: 0.0.0.0  
Registration Mode: Gateway  
Registration and Authentication ID: Vega50BRI  
Authentication Password: jx8FkOU13sv6

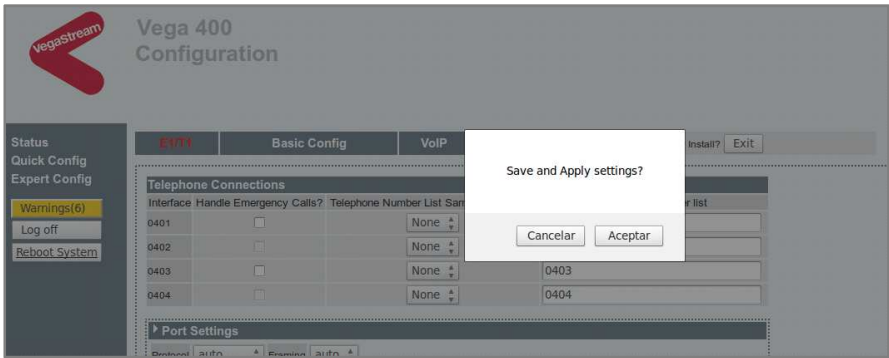
19. Go to “BRI” tab and click on Ports to see the options. Here you can select which ports will be set as TE or NT. Every single port has an ID, they are also shown here. (Figure 4-15).

Figure 4-15. Quick Config –BRI



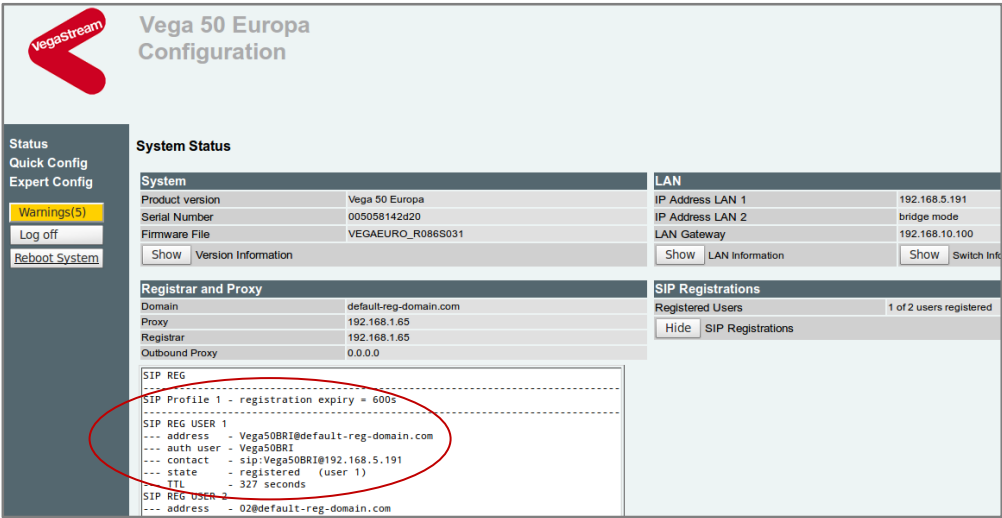
20. To apply the changes click on “Submit” button next to the tabs menu. (Figure 4-16):

Figure 4-16.Applying changes



21. Click on “Accept”. Now, go to “Status” located on the left side of the page to check whether the registration was successful (Figure 4-17).

Figure 4-17. Status



22. If the gateway is not registered check you have entered the right information. If it’s registered, go to “Expert Config” menu on the left side, and click on “SIP”. (Figure 4-18).



**Figure 4-18. Expert Config - SIP**

Vega 50 Europa Configuration

**SIP Configuration**

**General**

Local SIP Port: 5060

Accept Non-Proxy Invites: ☐

Submit

**SIP Profiles**

SIP Profile	Name	Interface ID	Other SIP Profile Parameters	Chg?
1	profile1	9901	===>	Modify

Add | Delete

**Media**

Capability Set: 2 - voice+ts8Udp

Submit

**Registration**

Show SIP Registration: Show Registration

Enable Registration: ☒

23. In the “SIP Profiles” section click on “Modify”, and set *From header user info* parameter to *Calling party* option (Figure 4-19).

**Figure 4-19. SIP**

Vega 50 Europa Configuration

**SIP > SIP Profile 1**

**SIP Profile 1 Configuration 1**

Name: profile1

Interface ID: 9901

Local Domain: default-reg-domain.com

Alternative Local Domain: alt-reg-domain.com

From Header 'userinfo': Calling Party

From Header 'host': Local Domain

To Header 'host': Local Domain

Redirection 'host': Local Domain

Transport: udp

Submit

24. Click on “Submit” button. Apply changes and save by clicking on the red buttons (Figure 4-20).

**Figure 4-20. SIP**

Vega 50 Europa Configuration

⚠ Unsaved & Unapplied Changes

**SIP > SIP Profile 1**

**SIP Profile 1 Configuration 1**

Name: profile1

Interface ID: 9901

Local Domain: default-reg-domain.com

Alternative Local Domain: alt-reg-domain.com

From Header 'userinfo': Calling Party

From Header 'host': Local Domain

To Header 'host': Local Domain

Redirection 'host': Local Domain

Transport: udp

Submit

**SIP Profile 1 Proxy Parameters 1**

Request URI Port: 5060

Apply Changes

Save

Warnings(7)

Log off

Reboot System



25. Once you have save the changes, go to “Dial Plan” located on the “Expert Config” section (Figure 4.21)

**Figure 4-21. Dial Plan**

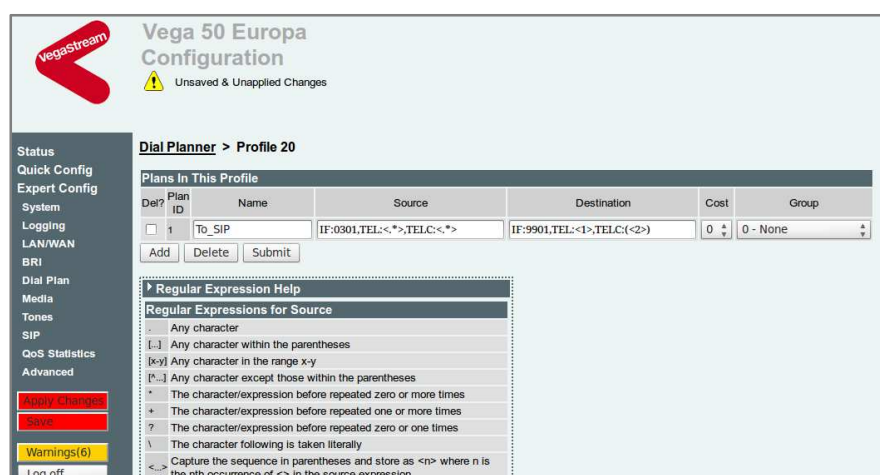


26. Click on “Modify” for “To\_SIP” profile. Make the following changes (Figure 4-22):

Source: IF:0301,TEL:<.\*>,TELC:<.\*>  
Destination: IF:9901,TEL:<1>,TELC:(<2>)

This means everything coming from the interface with ID 0301 (see figure 4-15) will be redirected to interface with ID 9901 (SIP Interface, see figure 4-19). TEL is the called number and TELC is the calling number. The characters “.\*” means that any number is accepted. In this example we are using only the Interface 1 in the Vega 50 BRI. You can add more routes as you need.

**Figure 4-22. To\_SIP Profile**



27. For more help using expressions you can take a look on the **Regular Expression Help** and **Token Help** section located below the plans. Once you have edited the plan, click on “Submit” button and then apply and save changes. Go back to “Dial Plan”, and

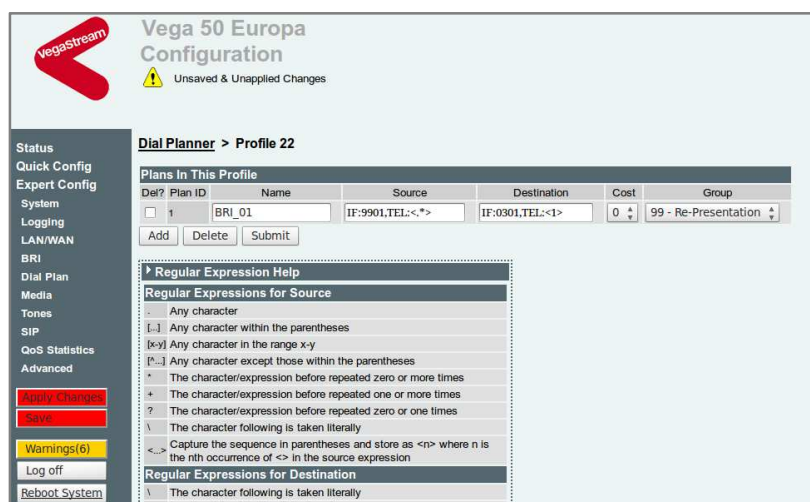


click on “Modify” button for “To\_BRI” profile. Once there, delete the last 3 entries, keep the first one and make the following changes (Figure 4-23):

Source: IF:9901,TEL:<.\*>  
Destination: IF:0301,TEL:<1>

This means everything coming from the interface with ID 9901 (SIP Interface, see figure 4-19) will be redirected to interface with ID 0301 (see figure 4-15). TEL is the called number. The characters “.\*” means that any dialed number is accepted. In this example we are using only the Interface 1 in the Vega 50 BRI. You can add more routes as you need.

**Figure 4-23. To\_BRI Profile**



28. Once you have edited the plan, click on “Submit” button and then apply and save changes.

29. We just need to set the line type for BRI ports. To set this, go to “Expert Config” and click on “BRI” option. There’s a parameter called **Line Type** that should be set as “pp” (Point-to-Point) (Figure 4.24).

**Figure 4-24. BRI**





Port	1	2
Enabled	on	on
Network Protocol	etsi	etsi
Framing	s_t	s_t
Line Encoding	azi	azi
NT	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Bus Master Priority	1	0
Restart Layer 2 After Disconnect	<input type="checkbox"/>	<input type="checkbox"/>
NT Phantom Power	<input type="checkbox"/>	<input type="checkbox"/>
Line Type	pp	pp
TEI	0	0
Groups	Modify Groups	Modify Groups

30. Configure the other IP (SIP) Phone with the correct parameters.

31. At this point, Sangoma Vega 50 BRI Gateway is ready for using. This step completes the procedure.