SIP Trunking with Elastix

Configuration Guide for Matrix SETU VFXTH
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Set Up Diagram:

Host Server Environment Details

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Server OS</strong></td>
</tr>
<tr>
<td>CentOS release 5.7 (Kernel 2.6.18-274.e15 on an i686)</td>
</tr>
<tr>
<td><strong>Software Type</strong></td>
</tr>
<tr>
<td>Elastix 2.4.0</td>
</tr>
<tr>
<td><strong>Software version</strong></td>
</tr>
<tr>
<td>Elastix (2.4.0)</td>
</tr>
<tr>
<td>Elastix-2.4.0-Stable-i386-bin-04Feb2013</td>
</tr>
</tbody>
</table>

Test Setup Equipment:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Model</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>SETU VFXTH</td>
<td>0808</td>
<td>V2R8</td>
</tr>
<tr>
<td>Analog Telephone</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
SIP user configuration in Elastix for SETU VFXTH

1. Open the Web GUI of Elastix server in web browser as shown below (IP of server will be same as IP of System on which Elastix is installed).
   http://192.168.51.6/admin/config.php (here, 192.168.51.6 IP is allocated for Elastix WEB GUI access)
   Default username: admin, Password: admin
2. On Successful login home Page opens
3. On the top of the screen, click on PBX menu. Click on Extensions.
4. To add an Extension select device as Generic SIP Device. Click on Submit.

- In User Extension field configure any desired Extension Number
- In Display Name field configure desired Name (VFTH Account in this example)
- In CID Num Alias field configure any desired Extension Number. This number can be same as that of User Extension.
- In SIP Alias field configure desired Number. This is used for supporting direct SIP calling.
- In Outbound CID field configure desired Number. This is used for enabling outbound caller ID feature on trunk.
- In secret configure the password for SIP extension.
- Click on **Submit** and **Apply Configuration Changes Here**.
- New configuration setting will be saved and Elastix will be reloaded.
SIP Trunk configuration in SETU VFXTH for Elastix:

1. Open the browser, Internet Explorer/Mozilla Firefox; on the standalone computer/LAN PC to which the Network Port of SETU VFXTH is connected.
2. Enter the current IP address of Network Port of your SETU VFXTH in the address bar of the browser.
3. If the IP Address of SETU VFXTH has not been changed, you may enter the default IP Address of the Network Port. (here, SETU VFXTH is accessed on 192.168.51.162 IP)
4. The login page opens.
5. In the Login Password box of the login page, enter the **System Engineer password** (Default: 1234), and then click the **Login** button.
6. On successful login, the home page opens

7. Under **Basic Settings** on the left navigation bar, click the **SIP Trunk** link. The SIP Trunk parameters page opens.
   - On the **SIP Trunk** page, choose any SIP Trunk number from 01 to 32 to register with Elastix, by clicking the **SIP trunk number** tab; for example, **SIP Trunk number 1**.
   - For the SIP Trunk number you select, make sure the **SIP Trunk Enable check box** is selected.
   - Assign a **Name** to the SIP trunk as identification; for example, VFXTH-proxy.
- Click **Registrar Settings** to expand. In **SIP Trunk Mode**, select **Proxy**.
- In **SIP ID** and **Authentication ID**, enter **Extension number** created in Elastix.
- In **Authentication Password**, enter the **secret field** Configured for Extension.
- In **Registrar Server Address: Port**; enter IP of System on which Elastix is installed. Keep the default server port value **5060**. (IP 192.168.51.6 is used in this example)
- Uncheck “**check SIP ID for incoming SIP Message**” flag.
- Click **Submit** to save.
Selecting Preferred Codecs

- Under Basic Settings on the left navigation bar, click the SIP Trunk link. The SIP Trunk parameters page opens.
- Click Vocoder Preference to expand.
- Set Vocoder preference. As 1st Preference and 2nd Preference, set either G.729 or G.711 μ-Law.

- From the Selected Codecs list box, move all other codecs—GSM FR, iLBC 30ms, iLBC 20 ms, G.711 (A-law)—one by one, to the Available Codecs box, by selecting the codec, and then clicking the BACK ARROW.
- Make sure only G.729 and G.711 (μ-Law) remain in the Selected Codecs list box. You may set one of these codecs as the First preference, by selecting it and using the UP ARROW.
- Click Submit to save.
Incoming Call Configuration in SETU VFXTTH

To route incoming calls on the **SIP trunk** to the respective **FXS port**, 

- Under **Basic Settings** on the left navigation bar, click the **SIP Trunk** link. The SIP Trunk parameters page opens.
- Click **Handling of Incoming Calls** to expand.
- In **Select Destination Port for routing calls**, Click on **Arrow Button**, 2\textsuperscript{nd} window will pop up

- Click on **Arrow Button** below **Edit**.
- Again 3rd window will pop up, select **routing group** as **FXS port 1 to 1**

- Click **Submit** and **Close** to close 3rd window.
- Close 2nd **windows** by clicking on **Close** button.
- Click on **Submit** in **main window** to save.
Outgoing Call Configuration in SETU VFXTH

- Under Basic Settings on the left navigation bar, click the **FXS Port** link. The FXS Port parameters page opens.
- On the **FXS Port** page, choose any FXS Port number from 01 to 08 by clicking the **FXS Port number** tab; for example, **FXS Port number 1**.
- Click **Handling of Outgoing Calls** to expand.

- In **Select Destination Port for routing calls**, select **Fixed** and Click on **Arrow Button**, 2nd window will pop up
Click on **Arrow Button** below **Edit**.

Again 3\(^{rd}\) window will pop up, select **routing group** as **Sip Trunk 1 to 1**

If you have registered two Sip trunk from Asterisk and if you doing Outgoing configuration for FXS 2, then select **Sip trunk 2 to 2**

Click **Submit** and **Close** to close 3\(^{rd}\) window

Close 2\(^{nd}\) windows by clicking on **Close** button

Click on **Submit** in **main window** to save
Fax Configuration in SETU VFXTH:

- Click **Advanced Settings** to expand.
- Default Fax protocol is **T.38**. You can configure **Pass-through** or **T.38 FAX** by selecting respective Radio Button.
Fax Configuration in Elastix:

- Default FAX protocol in Elastix is **Pass-through**.
- To configure **T.38** in Elastix configure as follow.
- Open the Web GUI of Elastix server
- On the top of the screen, click on **System** menu.
- On the left navigation bar, click the **Asterisk File Editor**

- Select **sip_general_custom.conf** file
• Edit `sip_general_custom.conf` file as shown below

```
allowguest=yes
133pt_uds=yes
```

• Save configuration and apply changes.
Viewing SIP Trunk Status

Once you have completed configuring the SIP Trunk, you may view its status.

To do this,

- Click the **Status** link on the left navigation bar.
- Under Status, click the **SIP Trunk** link.
- The **SIP Trunk Status** page opens
Outgoing call from Elastix to FXO of SETU VFXTH

- Open the Web GUI of Elastix server
- On the top of the screen, click on **System** menu.
- On the left navigation bar, click the **Asterisk File Editor**

- Select `extensions_customs.conf` file
• Edit `extension_custom.conf` file as shown below

(In above calling rule example, **7700** is extension registered in **SETU VFXTH**, **2xxx** is dialed number pattern need to be routed via **FXO** of **SETU VFXTH** and **192.168.51.162** is IP of **SETU VFXTH**)

• Save configuration and apply changes.
- Open the Web GUI of SETU VFXTH
- Under Basic Settings on the left navigation bar, click the SIP Trunk link. The SIP Trunk parameters page opens.
- Click on SIP Trunk 1
- Click Handling of Incoming Calls to expand.
- In Use called Party Number from Field configure To Field

- In Select Destination Port for routing calls, Click on Arrow Button, 2nd window will pop up
- Click on Arrow Button below Edit.
• Again 3rd window will pop up, select **routing group** as FXS port 1 to 1

• Click **Submit** and **Close** to close 3rd window
• Close 2nd windows by clicking on **Close** button
• Click on **Submit** in main window to save
Incoming call on FXO of SETU VFXTH via Elastix

- Under **Basic Settings** on the left navigation bar, click the **FXO Port** link. The **FXO Port** parameters page opens.

  ![FXO Port configuration page](image1)

- On the **FXO Port** page, choose any FXO Port number from 01 to 08 by clicking the **FXO Port number** tab; for example, **FXO Port number 1**.
- Click **Handling of Incoming Calls** to expand.
- In **Select Destination Port for routing calls**, select **Fixed** and Click on **Arrow Button**, 2\(^{nd}\) window will pop up.

  ![Destination Port/Group for FXO Port](image2)

- Select the appropriate **Routing Group** and **Fallback Routing Group** for the FXO Port.
Click on the **Arrow Button** below **Edit**.

Again 3rd window will pop up, select **routing group** as **Sip Trunk 1 to 1**.

Click **Submit** and **Close** to close the 3rd window.

Close 2nd windows by clicking on **Close** button.

Click on **Submit** in main window to save.

After applying above settings call on FXO1 will route to 3305 extension of Elastix via SIP trunk1 registered in SETU VFXTH.