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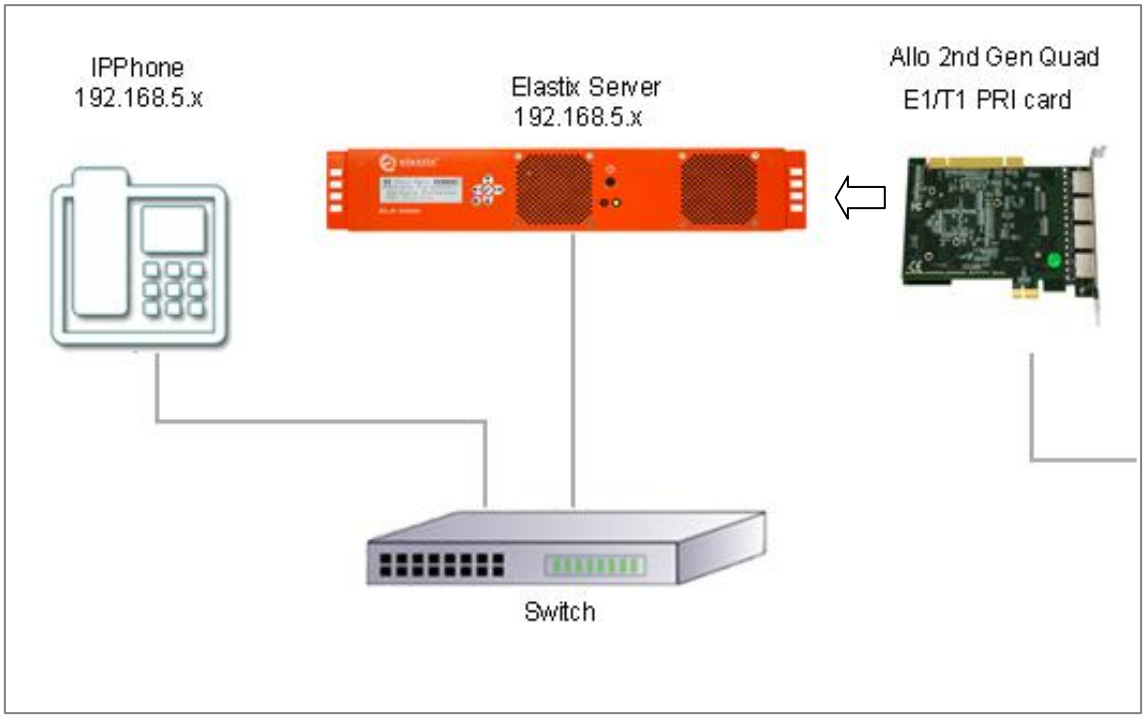
Allo 2nd Gen Quad E1/T1 PRI card and Elastix Server

Setup Guide

1.0 Setup Diagram

Figure 1-1 is a setup diagram for a single Allo 2nd Gen Quad E1/T1 PRI Interface Card configuration. In this guide we set the ports to use E1 transmission format moving the little switches that comes in the card.

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-5000
Software Type	Elastix
Software Version	2.4

3.0 Test Setup Equipment

Table 3-1. Test Setup Equipment

Equipment	Model	Version
IP (SIP) Phone	N/A	N/A
Allo	2nd Gen Quad E1/T1 PRI card	dahdi-2.6.1-4
Switch	N/A	N/A

4.0 Setup Procedure

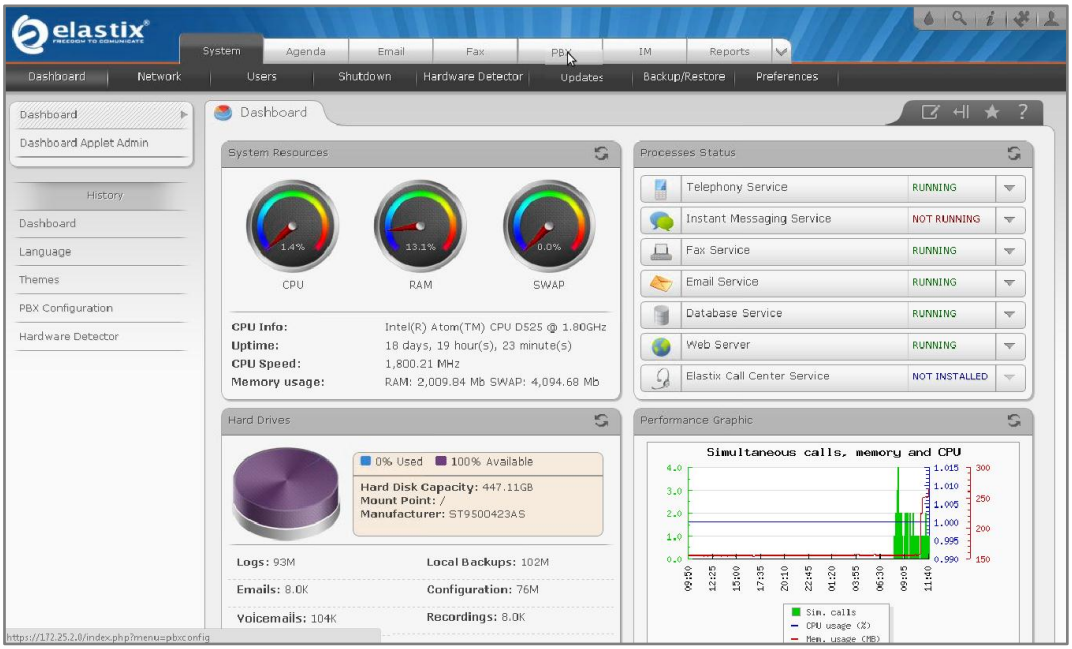
To set up the Elastix Server for the Allo 2nd Gen Quad E1/T1 PRI card Interface Card,

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 192.168.5.186
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

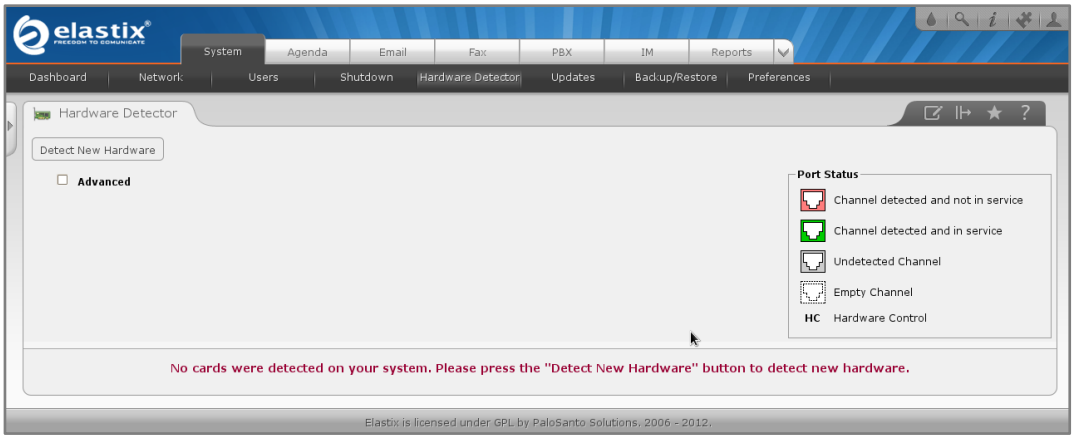
3. Press Enter or click on the Submit button to go to Elastix's Dashboard
4. Once inside, click on the System tab on the menu at the top of the screen

Figure 4-2. Dashboard



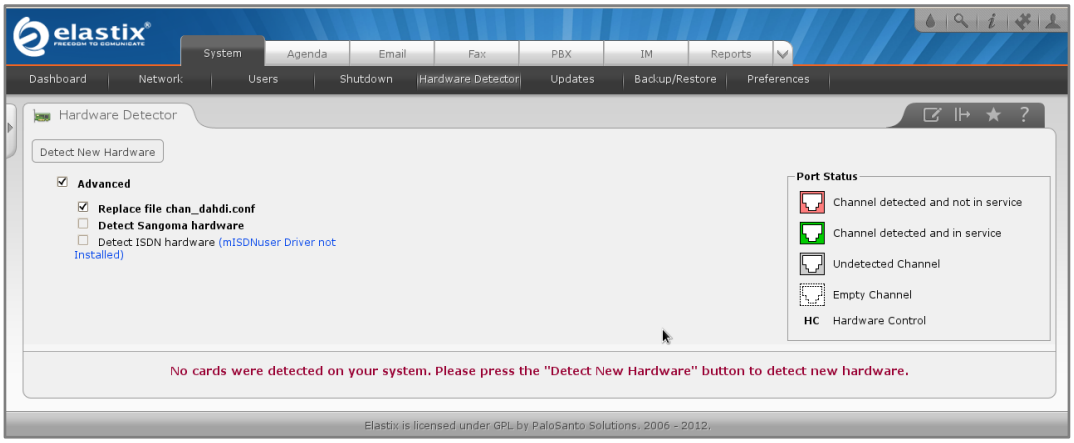
5. Now, click on "Hardware Detector" tab see Figure 4-3. This will take you to set some parameters for detecting new hardware in Elastix, see Figure 4-3.

Figure 4-3. Hardware Detector



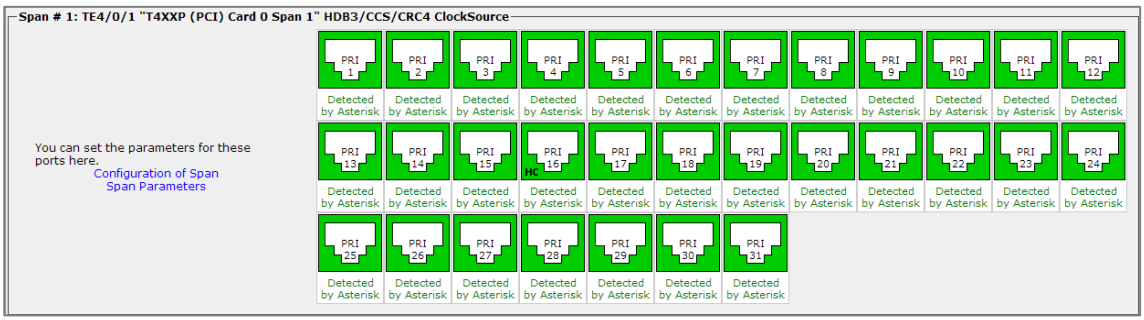
6. Click on "Advance" checkbox and select "Replace file chan_dahdi.conf" option. Now click on "Detect New Hardware" (Figure 4-4).

Figure 4-4. Hardware Detector



7. If the interface card is successfully detected you should see the 31 channels shown at the bottom of the page. They should say "Detected by Asterisk". (Figure 4-5).

Figure 4-5. Hardware Detection



8. You can configure ports for echo cancellation and timing/framing/coding clicking on "Configuration of Span" (Figure 4-6). and "Span Parameters" (Figure 4-7) links respectively located on the left side of the detected ports

Figure 4-6. Configuration of Span

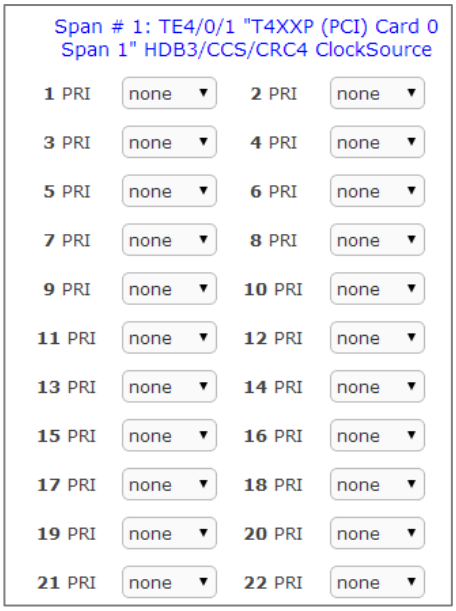
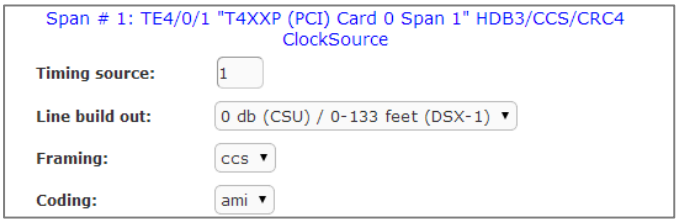


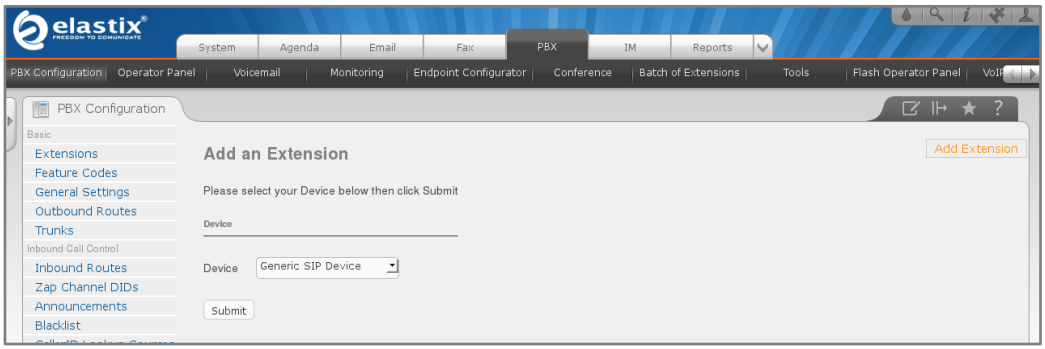
Figure 4-7. Span parameters



9. Change all this values according to your needs.

10. Once the card is detected, we'll create an incoming route for the calls coming from PSTN to our PRI port. We're going to use an IVR for incoming calls. Let's create a SIP extension that will be one of the IVR options. For this go to "PBX => PBX Configuration => Extension". Click on "Submit" having selected "Add SIP Device" option. (Figure 4-8)

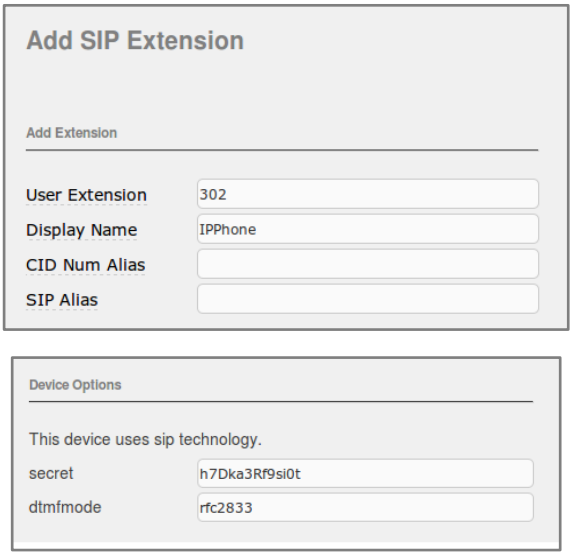
Figure 4-8. SIP Extension



11. Fill in the following information on the Add SIP Extension page (Figure 4-9):

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

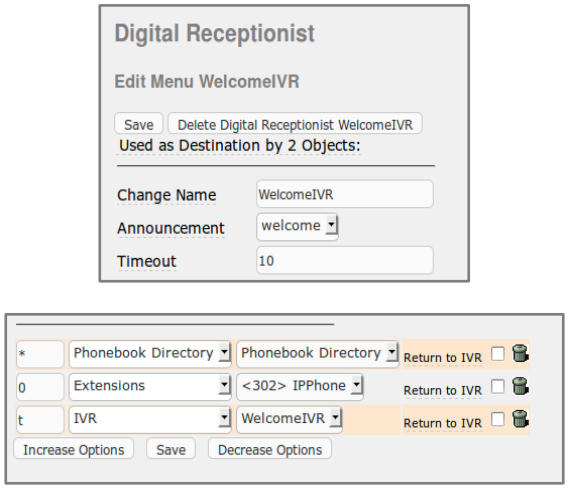
Figure 4-9. Add SIP Extension



12. Click on "Submit" button located at the end of the page and apply changes by clicking on the Apply Changes link that will appear on the top of the page. Now, go to "PBX => PBX Configuration => IVR". Click on "Add IVR" link (Figure 4.10). Set the following:

- **Name:** Name of IVR (WelcomeIVR in this example)
- **Announcement:** Record 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)

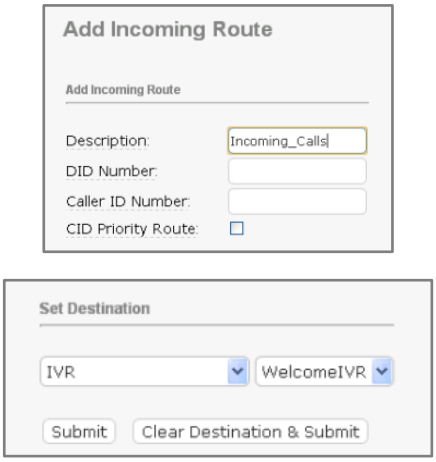
Figure 4-10. IVR



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 4.11). Set the following:

- **Description:** Name of inbound route ("Incoming_Calls" in this example)
- **Set destination:** Where the call will be routed. ("WelcomeIVR" in this example)

Figure 4-11. Incoming Route

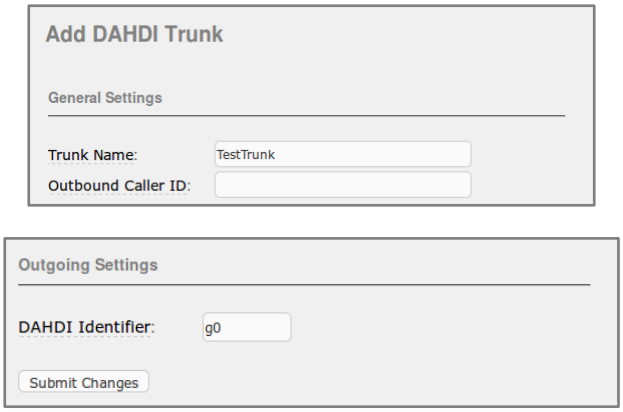


14. Click on "Submit" and apply changes. Now when we receive calls the "WelcomeIVR" IVR will play to the caller giving him choices to interact with Elastix Server.

15. We will also configure an Outbound Route for outgoing calls depending on a prefix. For this we have to configure a DAHDI Trunk first. Go to "PBX => PBX Configuration => Trunks". Click on "Add DAHDI Trunk", then "Submit" (Figure 4-12). Set the following:

- **Trunk Name:** A name for the DAHDI trunk ("TestTrunk" in this example)
- **DAHDI Identifier:** Specify the span to be used for the trunk. ("g0" is the default value. For more details about the choices you have, refer to **Appendix** in this guide).

Figure 4-12. Trunks



16. Click on "Submit Changes" and apply changes. Go to "PBX => PBX Configuration => Outbound Routes". Click on "Add Route" link (Figure 4-13). Set the following:

Route Settings

- **Route Name:** ("9_Outside_Test" in this example)

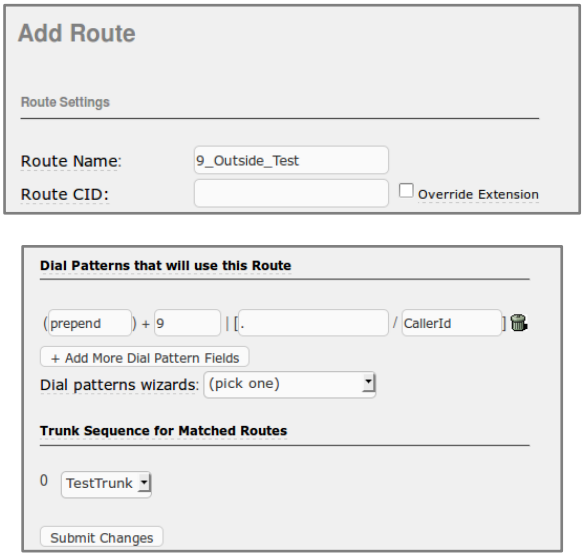
Dial patterns

- **Prefix:** ("9" in this example) | **Match pattern:** ("." in this example)

Trunk Sequence for Matched Routes

- **0:** The trunk that we just created ("TestTrunk" in this example)

Figure 4-13. Outbound Route



17. Click on "Submit Changes" and Apply configuration. If you want to make a call through our PRI port, we just have to dial the number with "9" as prefix.

18. Configure the other IP (SIP) Phone with the correct parameters (Check out figure 4.9). This step completes the procedure for making and receiving calls using an Allo 2nd Gen Quad E1/T1 PRI Interface Card.

Note: If you need to generate the clock signal from the card, edit the file **/etc/asterisk/dahdi_channels.conf** and replace the parameter **pri_cpe** to **pri_net** in the span you want to generate the clock. After that, restart amportal service. Make sure the other end is not generating clock signal as well, this may damage your card.

```
[root@ehcpelastix ~]# vim /etc/asterisk/dahdi-channels.conf
```

```
group=0,11
context=from-pstn
switchtype = euroisdn
signalling = pri_net
channel => 1-15,17-31
context = default
group = 63
```

```
[root@ehcpelastix ~]# amportal restart
```

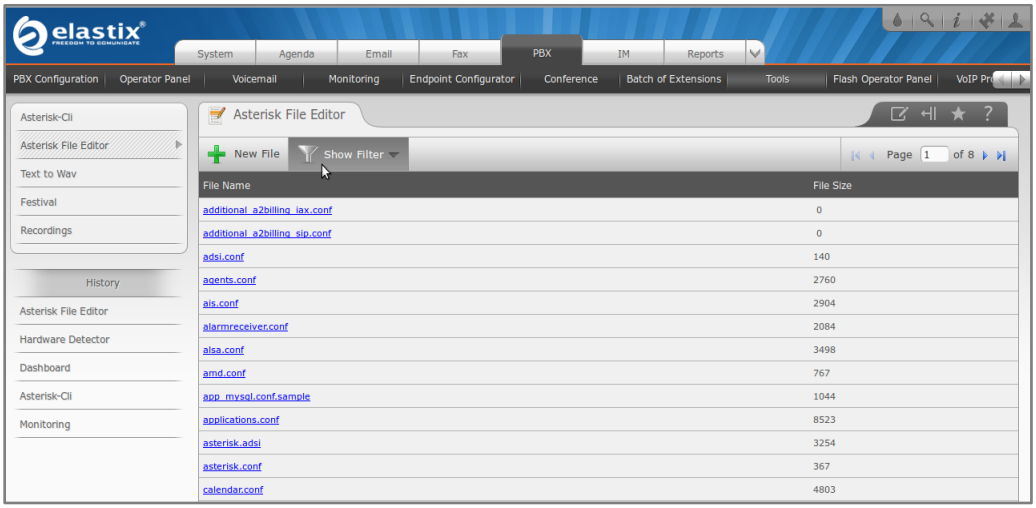
APPENDIX

DAHDI Identifier

When you create a DAHDI Trunk you need to specify the span that will be used for the trunk. The default value is "g0" (group 0). This value means that DAHDI will choose the available span in the order that shows the hardware detector section of Elastix Web Interface. If you want to use a particular span for your convenience, just follow these steps:

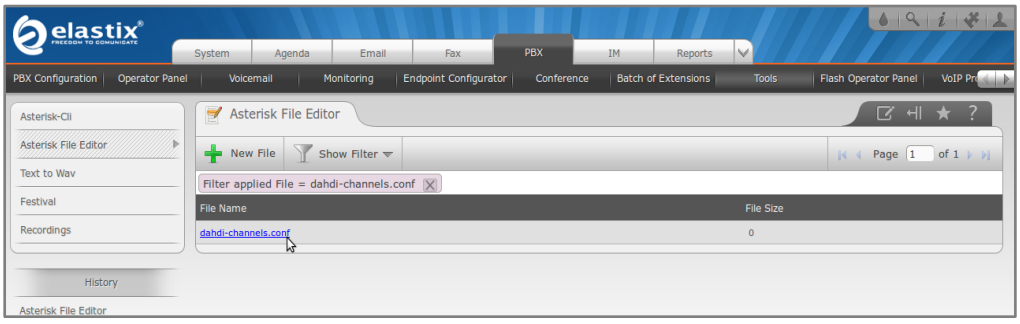
1. In the Elastix Server WebUI go to "PBX => Tools". Select "Asterisk File Editor" option located on the left side. Click on "Show Filter" (Figure A-1).

Figure A-1. Asterisk File Editor



2. In the filter field write "dahdi-channels.conf" without quotes and press ENTER (Figure A-2).

Figure A-2. Filter



3. Click on "dahdi_channels.conf" file. Check the "group" parameter, the first one. In this example we have group 0 and 11 for Span 1. If you want the DAHDI Trunk to use specifically Span 1, you have to set "g11" or "g0" in this example. Make sure the other ports don't use the same group.

Figure A-3. "dahdi-channels.conf"