





Atcom AX400P and Elastix Server

Setup Guide



1.0 Setup Diagram

Figure 1-1 is a setup diagram for a single Atcom AX400P Interface Card configuration.

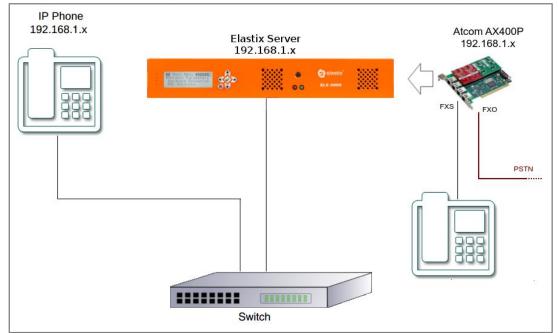


Figure 1-1. Setup Diagram

2.0 Host PC Environment

Table 2-1. Host Server	Environment Details
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	Description
Hardware Type	Elastix Appliance ELX-Series
Hardware Version	ELX-3000
Software Type	Elastix
Software Version	2.3

3.0 Test Setup Equipment

Equipment	Model	Version
IP (SIP) Phone	N/A	N/A
Atcom	AX400P	dahdi-2.4.1.2-10
Switch	N/A	N/A

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4.0 Setup Procedure

To set up the Elastix Server for the Atcom AX400P 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 192.168.1.75 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.



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

Bystem Resources Processes Status Proces	Dashboard Network	Users S	hutdown Hardware De	etector Updates	Backup	/Restore Preferences		
History Image Image <thimage< th=""> <t< th=""><th>Dashboard 🕨</th><th>🔵 Dashboard 🔪</th><th></th><th></th><th></th><th></th><th>ि भा 🖌</th><th>k ?</th></t<></thimage<>	Dashboard 🕨	🔵 Dashboard 🔪					ि भा 🖌	k ?
History Dashboard Language Themes PEX Configuration Hardware Detector CPU Infa: Intel(R) Atom(TM) CPU D525 @ 1.00GHz Uptime: 18 days, 19 hour(s), 23 minute(s) CPU Speed: 1,600.21 MHz Memory usage: RAM: 2,009.84 Mb SWAP: 4,094.68 Mb Hard Disk Capacity: 447,11GB Mount Point: / Manufacturer: ST9500423AS Lags: 93M Local Backups: 102M	Dashboard Applet Admin	System Resources		55	Proces	ses Status		62
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Hardware Detector Uptime: 18 days, 19 hour(s), 23 minute(s) CPU Sped: 1,800.21 MHz Memory usage: RAM: 2,009.84 Mb SWAP: 4,094.68 Mb Hard Drives Hard Drives Performance Graphic Simultaneous calls, memory and CPU Hard Disk Capacity: 447.11GB Mount Peint: / Maufacturer: ST9500423AS Logs: 95M Local Backups: 102M	PBX Configuration					Database Service	RUNNING	-
Memory usage: RAM: 2,009,84 Mb SWAP: 4,094.68 Mb Hard Drives Performance Graphic One Used 100% Available Hard Drives Simultaneous calls, memory and CPU Logs: 93M Local Backups: 102M	Hardware Detector					Web Server	RUNNING	-
Ogs Used 100% Available Hard Disk Capacity: 447.11G8 Mount Point: / Logs: 93M Local Backups: 102M				SWAP: 4,094.68 Mb	3	Elastix Call Center Service	NOT INSTALLED	-
0 % Used 100% Available Hard Disk Capacity: 447.1168 Mount Paint: / Logs: 93M Local Backups: 102M		Hard Drives		3	Perform	nance Graphic		5
Hard Disk Capacity: 447, 11GB Mount Point: / Manufacturer: ST9500423AS 3.0 1.000 200 Logs: 93M Local Backups: 102M 0.0 0.90 0.90 5.90			🔲 0% Used 🔳 100% A	Available				
Logs: 93M Local Backups: 102M 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			Mount Point: /		3./ 2./		1.010 1.005 1.000 200	
Emails: 8.0K Configuration: 76M 8 4 4 4 8 8 8 8 8 4		Logs: 93M	Local Back	ups: 102M	0.0		0,990 J 150	
		Emails: 8.0K	Configurat	ion: 76M		200 1172 1172 1172 1172 1172 1172 1172 1	11. 00	

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.

3 -

Figure 4-3.Hardware Detector

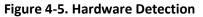
	System Agenda Email Fax PBX IM Reports V
Dashboard Network	Users Shutdown Hardware Detector Updates Backup/Restore Preferences
Hardware Detector	☑ ⊫ ★ ?
Advanced	Port Status Channel detected and not in service Channel detected and in service Undetected Channel Empty Channel HC Hardware Control Ards were detected on your system. Please press the "Detect New Hardware" button to detect new hardware.
	and a were detected on your system, Prease press die Detect new Hardware. Dutton to detect new hardware.
	Elastix is licensed under GPL by PaloSanto Solutions, 2006 - 2012.

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

elastix*	System Agend	la Email	Fax PBX	IM Rep	oorts 🗸	6 Q i # 1	
Dashboard Network	Users	Shutdown Han	dware Detector Updates	Backup/Restore	Preferences		
Installed)	hardware Ware (mISDNuser Driver i		Please press the "Detect	k New Hardware'' butt		channel detected and not in service channel detected and in service indetected Channel impty Channel lardware Control	
Elastix is licensed under GPL by PaloSanto Solutions, 2006 - 2012.							

7. If the interface card is successfully detected you should see FXO and FXS ports shown at the bottom of the page. It should say "Detected by Asterisk". The green color represents voltage presence in the port. Thus, FXS ports are shown in this color. (Figure 4-5).



Hardware Detector	☑ ⊪ ★ ?
Detect New Hardware	
Advanced	Port Status
	Channel detected and not in service
	Channel detected and in service
	Undetected Channel
	Empty Channel
	HC Hardware Control
Span # 1: WCTDM/4 "Wildcard TDM400P REV I Board 5"	
You can set the parameters for these ports here. Configuration of Span	PXS PXO
	by Asterisk by Asterisk by Asterisk by Asterisk

- 4



8. You can configure ports for echo cancellation. Click on "Configuration of Span" link located on the left side of the detected ports (Figure 4-6).

Figure 4-6. Configuration of Span



9. In Elastix the echo cancellation by default is OSLEC. You can change this value according to your needs.

10. Once the card is detected, we'll create an incoming route for the calls coming from PSTN to our FXO port. We're going to use an IVR for incoming calls. First 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

	System Agenda Email Fax PBX IM Reports V	1 9 i 7 1
PBX Configuration Operator Pan	el Voicemail Monitoring Endpoint Configurator Conference Batch of Extensions Tools	Flash Operator Panel 🛛 VoIf 🕢 📐
PBX Configuration		☑ ⊩ ★ ?
Basic		
Extensions	Add an Extension	Add Extension
Feature Codes		
General Settings	Please select your Device below then click Submit	
Outbound Routes		
Trunks	Device	
Inbound Call Control		
Inbound Routes	Device Generic SIP Device -	
Zap Channel DIDs		
Announcements	Submit	
Blacklist		
Collegio La classi Compara		

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)



Add SIP Extension						
Add Extension						
User Extension	302					
Display Name	IPPhone					
CID Num Alias						
SIP Alias						

5



Device Options		
This device uses	sip technology.	
secret	h7Dka3Rf9si0t	
dtmfmode	rfc2833	

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 we'll create an extension for analog phone connected to the FXS port of the card. Go back to the Add Extension page, choose the "Generic Dahdi Device" option and click on "Submit". (Figure 4.10)



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	System	Agenda	Email	Fax	PBX	IM	Reports	V
PBX Configuration Operator Par	nel Voic	email	Monitoring	Endpoint Configurator	Conference	Batch o	fExtensions	Tools
PBX Configuration								
Basic								
Extensions	Add a	n Extensi	on					
Feature Codes								
General Settings	Please se	lect your Devid	e below then c	lick Submit				
Outbound Routes	Device							
Trunks	Device							
Inbound Call Control								
Inbound Routes	Device	Generic DAF	DI Device					
Zap Channel DIDs								
Announcements	Submit							
Blacklist								

13. Fill in the following information (Figure 4-11):

Add Extension

- User Extension: (303 in this example)
- **Display Name:** ('AnalogPhone' in this example)

Device options

• **Channel:** See the channel's number of the FXS port, refer to figure 4-5 ('1' in this example)

Figure	4-11.	Dahdi	Extension
riguit	4-110	Danui	L'AUTSION

Add DAHDI E	Extension	
Add Extension		
User Extension	303	
Display Name	AnalogPhone	
CID Num Alias		

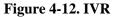
6



This device uses dah	di <mark>technology.</mark>	

14. Click on "Submit" button located at the end of the page and apply changes.. Now, go to "PBX => PBX Configuration => IVR". Click on "Add IVR" link (Figure 4.12). Set the following:

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



	11/2	
Edit Menu Welco	omeivH	
Save Delete Digi	ital Receptionist WelcomeIVR	
Used as Destinati	on by 2 Objects:	
Change Name	WelcomeIVR	
Announcement	welcome 🔄	
Timeout	10	
		Return to IVR
Phonebook Direct		
Phonebook Directo	Sory Phonebook Directory <302> IPPhone	Return to IVR

15. 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 4.13). Set the following:

• **Description:** Name of inbound route ("Incoming_Calls" in this example)

7

• Set destination: Where the call will be routed. ("WelcomeIVR" in this example)

Figure 4-13. Incoming Route

Add Incoming Route	
Description: DID Number: Caller ID Number: CID Priority Route:	Incoming_Calls
t Destination	VelcomeIVR

16. 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.

17. 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 4-14). Set the following:

- Trunk Name: A name for the DAHDI trunk ("TestTrunk" in this example)
- **DAHDI Identifier:** Specify the channel 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	4-14.	Trunks
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General Settings	
Trunk Name: Outbound Caller ID:	TestTrunk
utgoing Settings	

18. Click on "Submit Changes" and apply changes. Go to "PBX => PBX Configuration => Outbound Routes". Click on "Add Route" link (Figure 4-15). Set the following:

*Route Settings***Route Name:** ("9_Outside_Test" in this example)*Dial patterns*

- 8 -



- **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)

Route Settings			
Route Name:	9_Outside_Test		
Route CID:		Override	Extension
	y III use this Route	/ CallerId	
(prepend) +	9][.	/ CallerId	
(prepend) + + Add More Dial I	9][.	/ CallerId	

Figure 4-15. Outbound Route

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

20. 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 OpenVox AX400P Interface Card.

APPENDIX

DAHDI Identifier

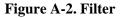
When you create a DAHDI Trunk you need to specify a group of channels or one single channel that will be used for the trunk. To check this information, follow these steps:

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).

	System Agenda Email Fax	PBX IM Reports	• Q 1 1 4 1
PBX Configuration Operator Panel	Voicemail Monitoring Endpoint Configurator	Conference Batch of Extensions Tools	Flash Operator Panel VoIP Pro
Asterisk-Cli	Zasterisk File Editor		☑ 네 ★ ?
Asterisk File Editor	🕂 New File 🍸 Show Filter 🗸		N 4 Page 1 of 8 🕨 🕅
Text to Wav	File Name		File Size
Festival	additional a2billing lax.conf		0
Recordings	additional a2billing sip.conf		0
	adsi.conf		140
History	agents.conf		2760
Asterisk File Editor	ais.conf		2904
Hardware Detector	alarmreceiver.conf		2084
	alsa.conf		3498
Dashboard	amd.conf		767
Asterisk-Cli	app_mysol.conf.sample		1044
Monitoring	applications.conf		8523
	asterisk.adsi		3254
	asterisk.conf		367
	calendar.conf		4803

Figure A-1. Asterisk File Editor

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

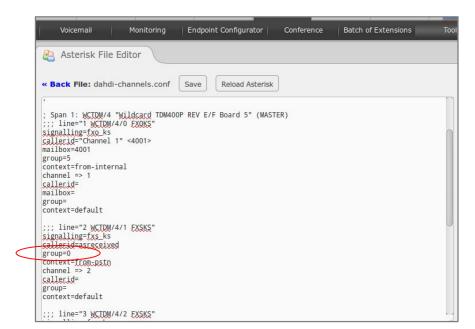


elastix [®]	System Agenda Email Fax PBX IM Reports V	
PBX Configuration Operator Panel	Voicemail Monitoring Endpoint Configurator Conference Batch of Extensions Tools	Flash Operator Panel VoIP Pro
Asterisk-Cli	Sterisk File Editor	डिं मा ★ ?
Asterisk File Editor	+ New File T Show Filter -	< < Page 1 of 1 ▶ ▶
Text to Wav	Filter applied File = dahdi-channels.conf	
Festival	File Name File Size	
Recordings	dahdi-channels.conf 0	
Recordings		

3. Click on "dahdi_channels.conf" file. Check the "group" parameter. In this example we have group 0 for all FXO ports. Also we can check the channels parameter for each port here. You can change the group value by your convenience and don't forget to save changes and reload asterisk service.

— **10** —

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



For example, if we want to use the channel 2 for outgoing calls, when we create the dahdi trunk the Dahdi Identifier field should be set to "g0" or "2". Make sure the other ports don't use the same group 0.