





# Allo PRI Gateway and Elastix Server

## Setup Guide



http://www.elastix.org

### 1.0 Setup Diagram

Figure 1-1 is a setup diagram for a single Allo PRI Gateway configuration. We're going to configure a SIP Trunk for communication between a local Phone and the PSTN E1.



#### 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	2.4

### 3.0 Test Setup Equipment

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

Equipment	Model	Version
IP (SIP) Phone	N/A	N/A
Allo Gateway	PRI	2.0.4
Switch	N/A	N/A

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### 4.0 Setup Procedure

#### To set up the Elastix Server for the Allo PRI Gateway

- 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.

← → C 🔒 🙀 🖓 ://192.168.5.111		公 🔧
	Password:	
	Elastix is licensed under GPL by PaloSanto Solutions, 2006 - 2012.	

#### 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

TREEDOM TO COMUNICATE	System Agenda	Email Fax	PB	IM	Reports 🗸		
Dashboard Network	Users S	hutdown   Hardware De	etector Updates	Backu	p/Restore Preferences		
Dashboard 🕨	Dashboard					ि भा भ	r 2
Dashboard Applet Admin	System Resources		3	Proces	sses Status		5
History					Telephony Service	RUNNING	-
Jashboard					Instant Messaging Service	NOT RUNNING	-
anguage	1.4%	13.1%	0.0%		Fax Service	RUNNING	-
Themes	CPU	RAM	SWAP		Email Service	RUNNING	-
BX Configuration					Database Service	RUNNING	-
lardware Detector	CPU Info: Uptime:	Intel(R) Atom(TM) 18 days, 19 hour(s	CPU D525 @ 1.80GHz ), 23 minute(s)		Web Server	RUNNING	-
	Memory usage:	RAM: 2,009.84 Mb	SWAP: 4,094.68 Mb	3	Elastix Call Center Service	NOT INSTALLED	~
	Hard Drives		5	Perfor	mance Graphic		5
		📕 0% Used 🔳 100% /	Available		Simultaneous calls, memor	y and CPU	
		Hard Disk Capacity: 4 Mount Point: / Manufacturer: ST9500	47.11GB 9423AS	3.		1.010 1.005 250 1.000 200	
	Logs: 93M	Local Back	ups: 102M	0.		0.990 J 150	
	Emails: 8.0K	Configurat	ion: 76M		000 1121 1121 1121 1121 1121 1121 1121	11	
	Voicemails: 104K	Recording	s: 8.0K		Sim. calls — CPU usage (%)		

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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: (AlloGateway in this example)

**Outgoing Settings** 

- Trunk Name: (80004 in this example)
- Peer Details:
  - host=dynamic
  - o username=80004
  - secret=jx8FkOU13sv6
  - qualify=yes
  - o type=peer
  - o insecure=very



Add SIP Trunk		
General Settings		
Trunk Name:	AlloGateway	
Outbound Caller ID:		

Trunk Name:	80004
PEER Details:	
host=dynamic username=80004 secret=jx8Fk0U13sv6 type=peer guality=yes	

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- 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 in the "Apply Configuration Changes Here" link



	Aelastiv		1911×1
		System Agenda Email Fax PBX IM Reports 🗸	
P	BX Configuration Operator Pane	Voicemail Monitoring Batch Configurations Conference Tools Flash Operator Panel	VoIP Provider
	PBX Configuration		☑ ⊪ ★ ?
ľ		Apply Configuration Changes Here	
ľ	Basic	Add a Trupk	Add Trunk
	Extensions		AlloGateway (sip)
	Feature Codes	O Add SIP Trunk	Anooucenay (sip)
	General Settings		
	Outbound Routes	Add DAHDI Trunk	
	Irunks	Add Zap Trunk (DAHDI compatibility mode)	
	Inbound Call Control		
	Thound Routes	O Add IAX2 Trunk	
	Zap Channel DIDS	Add ENUM Trunk	
	Announcements		
	Biacklist	Add DUNDI Trunk	
	Callerid Lookup Sources	Add Custom Trupk	
	Day/Night Control	V Add Custom Trunk	

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

Route Settings

• **Route Name:** ("Outbound Route Allo" in this example)

Dial patterns

• **Prefix:** ("8" in this example) | **Match pattern:** ("." in this example) *Trunk Sequence for Matched Routes* 

• **0:** ("AlloGateway" in this example)

Add Route		
Route Settings		
Route Name:	Outbound_Route_Allo	
Route CID:		Override Extension
Dial Patterns that w	II use this Route	
(prepend) + 8	Π.	/ CallerId ] 🔒
+ Add More Dial Patt	ern Fields	
Dial patterns wizar	ds: (pick one)	•
Trunk Sequence for	Matched Routes	
0	3	
1	1	
2	-	
2	<u> </u>	

Figure 4-6. Add Route

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10. Click on "Submit" at the end of the page and Apply changes. Once we have configured the main parameters for SIP communication to Allo Gateway in Elastix, 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)



<b>O</b> elastix*	System Agenda Email Fax PBX IM Reports 🗸	6 Q i # 1
PBX Configuration Operator Pa	el Voicemail Monitoring Endpoint Configurator Conference Batch of Extensions Tools	Flash Operator Panel 🛛 VoIf < 🕨 📐
PBX Configuration		𝔅 ⊫ ★ ?
Extensions Feature Codes	Add an Extension	Add Extension
General Settings Outbound Boutes	Please select your Device below then click Submit	
Trunks	Device	
Inbound Routes	Device Generic SIP Device	
Zap Channel DIDs Announcements Blacklist	Submit	

- 11. Fill in the following information on the Add SIP Extension page:
  - User Extension (302 in this example)
  - **Display Name** ("IPPhone" in this example)
  - **secret** ("h7Dka3Rf9si0t" in this example)

#### Figure 4-8. Add SIP Extension

	Add SIP Exte	nsion
	Add Extension	
	User Extension	302
	Display Name	IPPhone
D	evice Options	
т	his device uses sip te	chnology.
s	ecret	h7Dka3Rf9si0t
d	tmfmode	rfc2033

12. Click on "Submit" at the end of the page and Apply changes. To register the Allo PRI Gateway with Elastix, you will need to enter the information from the trunk created on the Elastix Server into the gateway by logging into the Allo PRI Gateway's WebUI.

Go to the gateway's WebUI by pointing your browser to the Allo PRI Gateway's IP address (Figure 4-9).

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#### Figure 4-9. Allo PRI Gateway's Login Page



For the initial configuration, refer to the Allo PRI Gateway User Manual found at: <u>http://www.allo.com/documents/pri-voip-gateway/pri-gw-user-manual.pdf</u>

#### **Factory default settings**

WAN IP Address	DHCP
LAN IP Address	192.168.113.2
Web Access Administrator Username	admin
Web Access Administrator Password	admin

13. When the WebUI is loaded, go to the menu "SETUP => SIP Trunks". See figure 4-10.

#### **Figure 4-10. Sip Trunks**

PRI Gateway					Firmw Thu 12 Se	
🐔 🖹 SETUP 🔷 ADVA	NCED 🛠 TOOLS	III STATUS	R SAVE ALL		# Welcome Administrato	r 🔒 Logoul
SIP Trunks						(
SIP Trunks						(
SIP Trunks	Existing VoIP ad	ccounts				
Actions Add a SIP trunk	Existing VoIP a	ccounts	ername 🖨	Registration A	_	
Actions Add a SIP trunk Add a SIP trunk group	Existing VolP ad Account Name	ccounts	ername 🗢	Registration \$		

- 14. Click on the link "Add a SIP trunk" and enter the required information to register with Elastix Server (Figure 4-11):
  - Account Name: (80004 in this example)
  - Username: (80004 in this example)
  - Registration Mode: From Gateway
  - **Proxy Address:** (Elastix's IP Address, in this example 192.168.1.75)
  - Authentication: Tick
  - Auth Username: (80004 in this example)
  - **Password:** (jx8FkOU13sv6 in this example)
  - **Register:** Tick
  - Registrar Address: (Elastix's IP Address, in this example 192.168.1.75)

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Edit SIP Account: 8000	4	
Account Name: *	80004	2
Account Name.	80004	1
Username: *	80004	?
Registration Mode:	From Gateway - ?	
Proxy Address:*	192.168.1.75	: 5060 ?
Outbound Proxy Address:		?
Authentication	2	
Auth Username:*	80004	?
Password:*	•••••	?
Register	2	
Registrar Address:*	192.168.1.75	?
Bridge PIN:	? Show PIN	
SIP Trunk Group:	DefSIPTrunk -?	
	CANCEL	

15. Click on CREATE button. Now we have to create a PRI trunk that is going to use one of the PRI ports in the gateway. From the main screen, go to the menu "SETUP => ISDN PRI Trunks" (Figure 4-12).

Figure 4-12. PRI Trunk

PRI Gateway						Firmwan Thu 12 Sep :	e Version 2.0.4 2013 01:26:00
🔥 🖹 SETUP 🕸 ADVANCED	* TOOLS	III STATUS	R SAVE ALL		👬 Welcome 🖌	dministrator	🔒 Logout
ISDN PRI Trunks							0
Actions							
Actions	Existing PRI Tr	unks					
Create PRI Trunk	Span Name 🔺	Trunk N	ame 🜩	Outbound Caller Id 🗢			
	PRI1	PRITRU	JNK		🥖 EDIT	O DELETE	
Actions Create PRI Trunk	Existing PRI Tri Span Name A PRI1	unks Trunk N PRITRL	ame 🗢	Outbound Caller Id 🕈	P EDIT	C DELETE	

- 16. Click on the link "Create PRI Trunk" and enter the following information (see Figure 4-13)
  - Span Name: PRI1 (We are going to use the first PRI port)
  - Trunk Name: PRITRUNK

Figure 4-13. PRI Trunk

Create PRI Trunk	Х
Span Name PRI1 V Port: 1	
Trunk Name:* PRITRUNK ?	
Bridge PIN: ? Show PIN	
OutBound CallerID: ?	
CREATE CANCEL	

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17. Click on CREATE button. Now we need to create call routes in the gateway to give the calls a correct destination. To create an outbound and incoming route, go to the menu "SETUP => Call Routing Rules" (See figure 4-14).

PRI Gateway						Firmware Thu 12 Sep 2	Version 2. 013 01:50
A SETUP & ADVANO	CED X TOOLS	III STATUS 🔒	SAVE ALL		🛔 Welcome Ad	ministrator	🔒 Logou
Call Routing Rules							(
Actions	Name 🔺	Description \$	Incoming \$	Pattern 🖨			
Add Call Routing Rule	IncomingPRI		PRITRUNK	.x	/ EDIT	O DELETE	
			80004	×	/ EDIT	O DELETE	
	OutboundPRI		00004				

#### Figure 4-14. Call Routing Rules

18. Click on the link "Add Call Routing Rule" and create two routes. (See Figure 4-15)

Outbound Route

- Name: OutboundPRI
- Incoming Type: SIP Trunk
- Incoming From: 80004
- Pattern: .X
- Outbound Call Route: PRITRUNK

#### Incoming Route

- Name: IncomingPRI
- Incoming Type: PRI Trunk
- Incoming From: PRITRUNK
- Pattern: .X
- Outbound Call Route: 80004

• Name:	OutboundPRI ?	Name:	IncomingPRI ?
Description:	?	Description:	?
Incoming Type:	SIP Trunk	Incoming Type:	PRI Trunk
Incoming From:	80004 -	Incoming From:	PRITRUNK
Pattern:	.x ?	Pattern:	<b>.x</b> ?
Trim Digits:	?	Trim Digits:	?
Prepend Digits:	?	Prepend Digits:	?
Outbound Call Route	0	Outbound Call Route	(B)
PRI Trunks 🗸	?	SIP Trunks 🗸	2
Available Trunks	Trunks Sequence	Available Trunks	Trunks Sequence

#### Figure 4-15. Call Routing Rules

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19. Once you have entered the required information, click on CREATE button. Now, we are going to configure the signaling and switch type of the PRI port. Go to "Advanced => ISDN PRI Settings" (See Figure 4-16).

<sup>ALLO.COM'S</sup> PRI Ga	teway							irmware Version 2.0 7 Sep 2013 01:52:
<b>M</b> E	SETUP 💠	ADVANCED	K TOOLS III STAT		ALL	🗼 Wek	come Administ	rator 🔒 Logout
ISDN P	RI SETT	INGS						(
PRI SETTI PRI Spar	NGS n Type : E1	? Save						Advanced
Span 🔺	Port Id 💠	Framing/ Coding <b>\$</b>	Channels (Used/Total) ♦	Signaling \$	Switch Type 🗢	Sync Clock 🗢	Alarm ¢	
PRI1	1	ccs,hdb3,crc4	30/31(E1)	PRI-CPE	EuroISDN	Primary	RED	/ EDIT
PRI2	2	ccs,hdb3	30/31(E1)	PRI-CPE	EuroISDN	Master	RED	🤌 EDIT
			ŀ	(≪ 1/1 ≫)	10 🖕			

#### Figure 4-16. ISDN PRI Settings

- 20. Click on the button EDIT from the Span you are going to use for the PSTN. In this case we have chosen PRI1. Configure the required parameters according to your ISDN provider. In this case we've configured the PRI1 port to receive the clock signal from the ISDN provider (See Figure 4-17).
  - Span Name: PRI1
  - Framing/Coding: CCS/HDB3/CRC4
  - Signaling: PRI-CPE
  - Switch Type: EuroISDN
  - Sync/Clock Source: Primary

#### Figure 4-17. Edit PRI1

Edit Pri PRI1	X
Span Name	PRI1 ?
Span Type:	E1
Framing/Coding	CCS/HDB3/CRC4 - ?
Channel type	31(E1)
Signalling	PRI-CPE
Switch Type	EuroISDN • ?
Sync/Clock Source	Primary · ?
Line Build Out	0 db (CSU)/0-133 feet (DSX-1) -?
Channels	0
Use	30 -
From	1-15,17-31
Reserved	:: 16
	SAVE CANCEL

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21. When finished click on the button SAVE. Now, to apply all the changes you have to click on the orange button SAVE ALL as shown in Figure 4-18. The Allo gateway will reboot automatically.

ALLO.COM'S PRI Go	iteway						Fi Tue 17	rmware Version 2.0.4 ' Sep 2013 02:07:23
<b>^</b>	SETUP 💠	ADVANCED	TOOLS I STA		ALL	🛔 Wek	come Administr	ator 🔒 Logout
ISDN P	RI SETT	INGS						C
PRI SETTI PRI Spar	NGS n Type: E1 •	Save						Advanced
Span 🔺	Port Id 🗢	Framing/ Coding \$	Channels (Used/Total) ≑	Signaling \$	Switch Type 🗢	Sync Clock 🗢	Alarm 🗢	
PRI1	1	ccs,hdb3,crc4	30/31(E1)	PRI-CPE	EuroISDN	Secondary	RED	/ EDIT
PRI2	2	ccs,hdb3	30/31(E1)	PRI-CPE	EuroISDN	Master	RED	🥖 EDIT
				€ ес 1/1 э> э	10 💂			

#### Figure 4-18. Save All

22. When it boots up, connect the PRI cable to the configured port in the gateway, and go to the home page of the Allo PRI Gateway's WebUI. Check that the SIP trunk is registered with Elastix and the PRI port is Active (see Figure 4-19).

🙆 🗉 SETUP 🔹 ADVANCED 🗶 TOOLS	III STATUS	ALL 👘 Welcome Administrator   & Logout
Dashboard		4 Refresh
Gateway Status		System Status
SIP Status	100%	Uptime 4 days, 3:57 Network Information LAN IP: 192.168.113.1 WAN IP: 192.169.20.26
Registered: 1 Unreachable/Unknown: 0	Total: 1	Internal Memory Usage 6% Total: 204 MB
PRI Span Status		Used: 13 MB Free: 191 MB
Span 1: 🗹 Active		CPU Usage 1%
Call Statistics Total Active Calls: 0		Load Average
		2.00 2.00 2.00

Figure 4-19. Save All

- 23. Configure the IP (SIP) Phone with the correct parameters.
- 24. To test the Allo PRI Gateway, pick up the previously configured IP (SIP) Phone and call to the PSTN by using the prefix configured in the Outbound Routes in Elastix (8-number). The call must be established. On the other hand, when you receive a

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call the caller should hear the IVR configured in the Inbound Route in Elastix server. This step completes the procedure.