

Install OpenVox A1200P A800P with trixbox-2.4

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This paper is to provide an instruction to those who want to install A1200P/A800P with trixbox-2.4. Before installing A1200P/A800P, you should have the foundation of Asterisk, very basic command for Linux and trixbox. If you do not know about those stuffs, please take time to make a research on those stuffs. Here, I tested A1200P with trixbox-2.4. To install A1200P in trixbox-2.4, please go through with follow steps:

1. Check hardware

- **Make sure the A1200P can be found. Run the command: `lspci -vvvvvv`. It will shows the A1200P information like this:**

```
02:04.0 Communication controller: Tiger Jet Network Inc. Tiger3XX Modem/ISDN interface
Subsystem: Unknown device 9100:0003
Control: I/O+ Mem+ BusMaster+ SpecCycle- MemWINV- VGASnoop- ParErr- Stepping- SERR- FastB2B-
Status: Cap+ 66MHz- UDF- FastB2B- ParErr- DEVSEL=medium >TAbort- <TAbort- <MAbort- >SERR- <PERR-
Latency: 32 (250ns min, 32000ns max)
Interrupt: pin A routed to IRQ 153
Region 0: I/O ports at a000 [size=256]
Region 1: Memory at f7004000 (32-bit, non-prefetchable) [size=4K]
Capabilities: [40] Power Management version 2
Flags: PMEClk- DSI+ D1- D2+ AuxCurrent=55mA PME (D0+,D1-,D2+,D3hot+,D3cold+)
Status: D0 PME-Enable- DSel=0 DScale=0 PME-
```

- Plug in the power supply cable if you have **FXS** module on the board.

2. Check the versions of trixbox-2.4

- **The version I tested is trixbox-2.4.0.2.**
- **Pay attention with *yum update* command after installing A1200P drivers.**

Warning: in trixbox, if you run yum update for other purpose, you must take care of it. After updating, zaptel might be overwritten. A1200P driver will be lost.

3. Download and install the script from openvox.

- **Run command:** `cd /usr/src`
- **Check the zapel modules are in right directory.** In my test environment, zapel is under : `/lib/modules/2.6.18-53.1.4.el5/extra/`
- **Download install script from OpenVox website.** Run command: `wget http://www.openvox.com.cn/downloadsFile/install_a1200p_trixbox-2.4.sh`.
After downloading the script, please run: `chmod 777 install_a1200p_trixbox-2.4.sh`. please execute this command to install:
`./install_a1200p_trix-2.4.sh`.

4. Check the drivers and channels and make sure the drivers are loaded successfully. You can perform few steps to check the A1200P drivers:

- You can manually run: `modprobe zapel`, `modprobe opvxa1200` and `asterisk -vvvvc` to start asterisk.
- Run `ztcfg -vvv`, the system will see the modules are loaded successfully. The A1200P modules are shown like this:

```
[trixbox1.localdomain src]# ztcfg -vvvvvvv
Zaptel Version: 1.4.7-3259
Echo Cancellor: OSLEC
Configuration
=====

Channel map:

Channel 01: FXS Kewlstart (Default) (Slaves: 01)
Channel 02: FXS Kewlstart (Default) (Slaves: 02)
Channel 03: FXO Kewlstart (Default) (Slaves: 03)
Channel 04: FXO Kewlstart (Default) (Slaves: 04)

4 channels to configure.
```

- Run: *dmesg*, A1200P information will be shown. The information is shown as bellow:

```
Zapata Telephony interface Registered on major 196
Zaptel Version: 1.4.7-3259
Zaptap registered 'sample' char driver on major 33
OpenVox A1200P version: 1.2
OpenVox A1200P passed register test
Module 0: Installed -- AUTO FXO (FCC mode)
Module 1: Installed -- AUTO FXO (FCC mode)
Module 2: Installed -- AUTO FXS/DPO
Module 3: Installed -- AUTO FXS/DPO
Module 4: Not installed
Module 5: Not installed
Module 6: Not installed
Module 7: Not installed
Module 8: Not installed
Module 9: Not installed
Module 10: Not installed
Module 11: Not installed
Found a OpenVox A1200P: Version 1.2 (4 modules)
```

- Under asterisk console, you can see the zap channels if zap channels are loaded into asterisk.

```
[trixbox1.localdomain ~]# asterisk -r
Asterisk 1.4.17-1 RPM by vc-rpms@voipconsulting.nl, Copyright (C) 1999 - 2007 Digium, Inc. and others.
Created by Mark Spencer <markster@digium.com>
Asterisk comes with ABSOLUTELY NO WARRANTY; type 'core show warranty' for details.
This is free software, with components licensed under the GNU General Public
License version 2 and other licenses; you are welcome to redistribute it under
certain conditions. Type 'core show license' for details.
-----
Connected to Asterisk 1.4.17-1 RPM by vc-rpms@voipconsulting.nl currently running on trixbox1 (pid = 2512)
Verbosity is at least 3
trixbox1*CLI> zap show channels
  Chan Extension Context Language MOH Interpret
pseudo default en default
  1 from-pstn en default
  2 from-pstn en default
  3 from-internal en default
  4 from-internal en default
trixbox1*CLI>
```

the asterisk Asterisk-1.4.17-1 RPM

- You can access the GUI to know about zap channel status.

```
Zaptel Driver Info
  Chan Extension Context Language MOH Interpret
pseudo default en default
  1 from-pstn en default
  2 from-pstn en default
  3 from-internal en default
  4 from-internal en default

Conference Info
No active MeetMe conferences.
```

If you can reach this step successfully, be very sure the zaptel channels are loaded successfully into asterisk and you can make calls. If you have problems with loading drivers, please check the Troubleshoot to get help.

5. **Test the calls.** Here, I used channel 4, which is FXS module to call SIP 600. The result shows as follow:

```
== Manager 'admin' logged off from 127.0.0.1
-- AGI Script dialparties.agi completed, returning 0
-- Executing [s@macro-dial:10] Dial("Zap/4-1", "SIP/600|tr") in new stack
-- Called 600
-- SIP/600-09dd9540 is ringing
-- SIP/600-09dd9540 answered Zap/4-1
== Spawn extension (macro-dial, s, 10) exited non-zero on 'Zap/4-1' in macro 'dial'
== Spawn extension (macro-dial, s, 10) exited non-zero on 'Zap/4-1' in macro 'exten-vm'
== Spawn extension (macro-dial, s, 10) exited non-zero on 'Zap/4-1'
-- Executing [h@macro-dial:1] Macro("Zap/4-1", "hangupcall") in new stack
-- Executing [s@macro-hangupcall:1] ResetCDR("Zap/4-1", "w") in new stack
-- Executing [s@macro-hangupcall:2] NoCDR("Zap/4-1", "") in new stack
-- Executing [s@macro-hangupcall:3] GotoIf("Zap/4-1", "1?skiprg") in new stack
-- Goto (macro-hangupcall,s,6)
-- Executing [s@macro-hangupcall:6] GotoIf("Zap/4-1", "1?skipblkvm") in new stack
-- Goto (macro-hangupcall,s,9)
-- Executing [s@macro-hangupcall:9] GotoIf("Zap/4-1", "1?theend") in new stack
-- Goto (macro-hangupcall,s,11)
-- Executing [s@macro-hangupcall:11] Hangup("Zap/4-1", "") in new stack
== Spawn extension (macro-hangupcall, s, 11) exited non-zero on 'Zap/4-1' in macro 'hangupcall'
== Spawn extension (macro-hangupcall, s, 11) exited non-zero on 'Zap/4-1'
-- Hangup 'Zap/4-1'
```

6. **Access GUI.** You can access the GUI for more system information. Some captured GUI show here:

The screenshot displays the trixborg CE system status page. The browser address bar shows <http://192.168.2.137/maint/>. The page title is "trixborg^{CE} The Open Platform for Business Telephony". The navigation menu includes "System Status", "Packages", "Asterisk", "System", and "Settings".

Server Status (highlighted with a blue box):

Asterisk	Running
web server	Running
cron server	Running
SSH server	Running
Mysql	Running
HUD Server	N/A

Network Usage table:

Device	Received	Sent
lo	22.47 KB	22.47 KB
eth0	103.14 KB	180.21 KB
sit0	0.00 KB	0.00 KB

Memory Usage table:

Type	Percent Capacity	Free
Physical Memory	25%	762.41 MB
- Kernel + applications	8%	
- Buffers	1%	
- Cached	15%	
Disk Swap	0%	258.85 MB

Mounted Filesystems table:

Mount	Type	Partition	Percent Capacity	Free
/	ext3	/dev/hdc2	73% (12%)	346 MB
/boot	ext3	/dev/hdc1	11% (1%)	82 MB
/dev/shm	tmpfs	tmpfs	0% (1%)	505 MB
Totals :				934 MB

System Status Version: 2.0.0.1

v2.4.0 ©2007 Fonality All Rights Reserved.

The screenshot shows the FreePBX 2.3.1.0 interface. The navigation menu includes "Admin", "Reports", "Panel", "Recordings", and "Help". The "Reports" section is active, showing a search filter for call logs. The filter includes "Selection of the month" (January-2008) and "Selection of the day" (01 January-2008). The search criteria include DESTINATION, SOURCE, CHANNEL, and DURATION. The search results show 14 calls.

Call Logs table:

Calldate	Channel	Source	Clid	Dst	Disposition
2008-01-19 09:42:11	Zap/4-1...	6004	"Channel 4" <6004>	600	ANSWERED
2008-01-19 02:10:42	Zap/4-1...	6004	"Channel 4" <6004>	s	NO ANSWER
2008-01-19 00:49:14	SIP/600-09...	6004	6004	s	NO ANSWER
2008-01-19 00:49:08	Zap/4-1...	6004	"Channel 4" <6004>	600	ANSWERED
2008-01-19 00:47:12	Zap/4-1...	6004	"Channel 4" <6004>	s	NO ANSWER
2008-01-19 00:42:04	Zap/1-1...	612	"device" <612>	s	ANSWERED
2008-01-18 05:23:10	Zap/1-1...	612	"device" <612>	s	ANSWERED
2008-01-18 05:21:07	Zap/1-1...	612	"device" <612>	s	ANSWERED
2008-01-18 05:19:58	Zap/1-1...	612	"device" <612>	s	ANSWERED

Setup Tools

Admin

FreePBX System Status

Module Admin

Basic

Administrators

Extensions

Feature Codes

General Settings

Outbound Routes

Trunks

Inbound Call Control

Inbound Routes

Internal Options & Configuration

Music on Hold

System Recordings

FreePBX System Status

FreePBX Notices

- There are 3 modules available for online upgrades
- Default SQL Password Used
- Default Asterisk Manager Password Used
- No email address for online update checks
- 46 New modules are available

show all

FreePBX Statistics

Total active calls	0
Internal calls	0
External calls	0
Total active channels	0

FreePBX Connections

IP Phones Online	1
------------------	---

Uptime

System Uptime: 31 minutes
Asterisk Uptime: 30 minutes
Last Reload: 0 minutes

System Statistics

Processor

Load Average	0.06
CPU	0%

Memory

Mem	10%
Swap	0%

Disks

/	73%
/boot	10%
/dev/shm	0%

Networks

eth0 receive	0.22 KB/s
eth0 transmit	2.66 KB/s

Server Status

Asterisk	OK
Op Panel	OK
MySQL	OK
Web Server	OK
SSH Server	OK

SIP Registry

Name/username	Host	Dyn	Nat	ACL	Port	Status
601	(Unspecified)	D	N		0	UNKNOWN
600/600	192.168.2.155	D	N		61886	OK (101 ms)

2 sip peers [Monitored: 1 online, 1 offline Unmonitored: 0 online, 0 offline]

7. Troubleshooting.

Most of time, the command “*genzaptelconf -d*” can help you to generate *zaptel.conf* and *zapata.conf* successfully. But sometimes, you may have problems with no channels shown. If you can not load A1200P modules, please check the few things in your system:

- Check the *zaptel* under */etc/sysconfig*. There is one module added in *zaptel* file. If line: **MODULES="\$MODULES opvxa1200 ”** missed, please add it.

It shows as bellow:

```

#MODULES="$MODULES xpp_usb"      # Xorcom Astribank Device

# Disables Astribank hotplug firmware loading
#XPP_HOTPLUG_DISABLED=yes
#
# Disables Astribank udev hook called when an astribank is added and ready
# or removed.
#ASTRIBANK_HOOK_DISABLED=yes
#
# Extensions genzaptelconf are (base + channel_number)
# base is by default 6000:
#base_exten=6000
#
# There are a host of other variables you can set to affect
# genzaptelconf. See the beginning of the script.
MODULES="$MODULES opvxa1200"

```

- **Check the zaptel.conf under /etc directory.** the correct format of zaptel.conf for my case is like this:

```

# Autogenerated by ./genzaptelconf -- do not hand edit
# Zaptel Configuration File
#
# This file is parsed by the Zaptel Configurator, ztcfg
#
# It must be in the module loading order

# Span 1: OPVXA1200/0 "OpenVox A1200P Board 1"
fxsks=1
fxsks=2
fxoks=3
fxoks=4
# channel 5, WCTDM, no module.
# channel 6, WCTDM, no module.
# channel 7, WCTDM, no module.
# channel 8, WCTDM, no module.
# channel 9, WCTDM, no module.
# channel 10, WCTDM, no module.
# channel 11, WCTDM, no module.
# channel 12, WCTDM, no module.

# Global data

loadzone      = us
defaultzone   = us
~

```

- **Check the zapata.conf and zapata-channels.conf.** Sometimes, the zapata-channels.conf is missed or empty in the file, the asterisk console will

not show the channels. Please double check the zapata.conf and zapata-channels.conf under /etc/asterisk. You must make sure the format of all channels is correct. Here is an example for my case.

zapata.conf:

```
■
; Zapata telephony interface
;
; Configuration file
```

```
[trunkgroups]

[channels]

language=en
context=from-zaptel
signalling=fxs_ks
rxwink=300 ; Atlas seems to use long (250ms) winks
;
; Whether or not to do distinctive ring detection on FXO lines
;
; usedistinctiveringdetection=yes

usecallerid=yes
hidecallerid=no
callwaiting=yes
usecallingpres=yes
callwaitingcallerid=yes
threewaycalling=yes
transfer=yes
cancallforward=yes
callreturn=yes
echocancel=yes
echocancelwhenbridged=no
; echotraining=800
rxgain=0.0
txgain=0.0
group=0
callgroup=1
pickupgroup=1
immediate=no

; faxdetect=both
faxdetect=incoming
; faxdetect=outgoing
; faxdetect=no Make sure zapata-channels.conf is there

; Include genzaptelconf configs
#include zapata-channels.conf

group=1

; Include AMP configs
#include zapata_additional.conf
```

zapata-channels.conf:

```
; Span 1: OPVXA1200/0 "OpenVox A1200P Board 1"
;;; line="1 OPVXA1200/0/0"
signalling=fxs_ks
callerid=asreceived
group=0
context=from-pstn
channel => 1
context=default

;;; line="2 OPVXA1200/0/1"
signalling=fxs_ks
callerid=asreceived
group=0
context=from-pstn
channel => 2
context=default

;;; line="3 OPVXA1200/0/2"
signalling=fxo_ks
callerid="Channel 3" <6003>
mailbox=6003
group=5
context=from-internal
channel => 3
callerid=
mailbox=
group=
context=default

;;; line="4 OPVXA1200/0/3"
signalling=fxo_ks
callerid="Channel 4" <6004>
mailbox=6004
group=5
context=from-internal
channel => 4
callerid=
mailbox=
group=
context=default
```

8. References.

www.openvox.com

www.trixbox.org

www.voip-info.org

www.asterisk.org

Notes:

Test environments:

trixbox-2.4.0.2

Analog Card: OpenVox A1200P

This instruction is also workable for A800P.

If you have any problem with installing A1200P in trixbox, please report to www.openvox.com.cn or trixbox.org.