

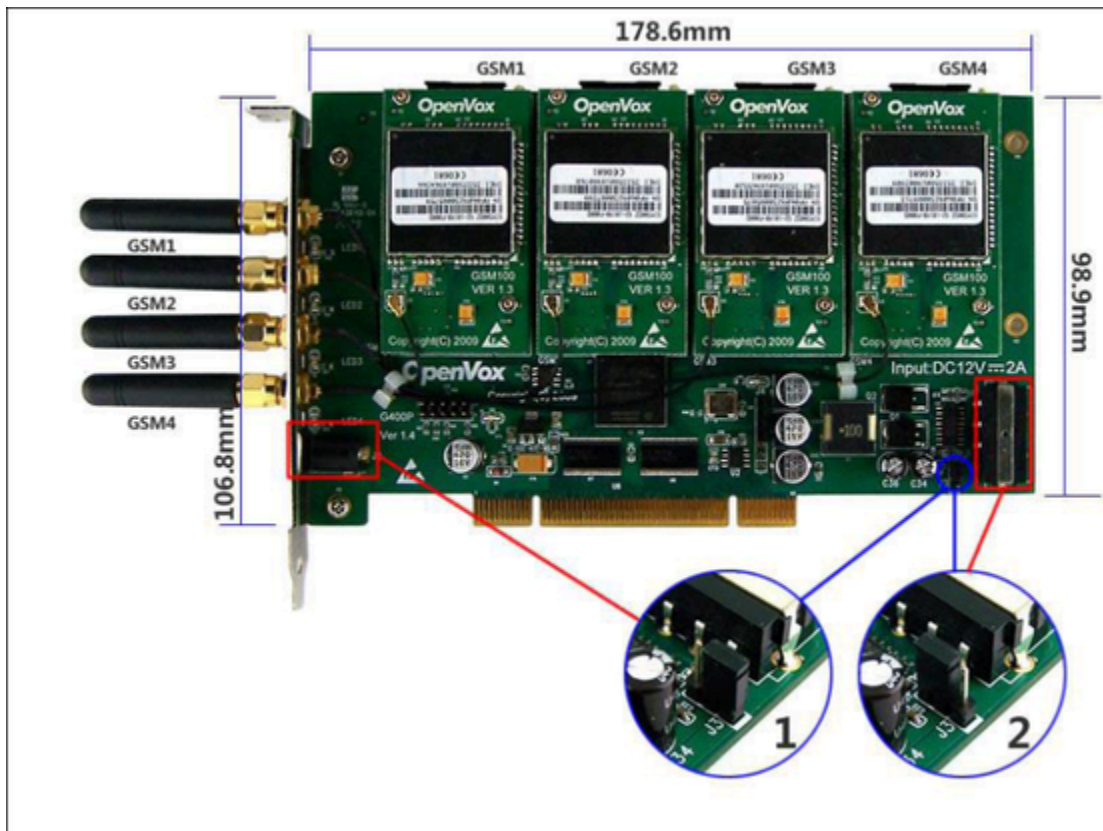
??????? G400P ?? Elastix ????

???????

- 1. Elastix 1.6-12, PIAF-GOLD
- 2. G400P (SIM card x2)
- 3. ??? PC: Intel(R) Celeron(TM) CPU 1000MHz/256MB
- 4. ????? 2G SIM card(**NOTES:**???? Vibo ? SIM card)

????

- ?? PCI Slot
- ?????????
- ?? 12V ?????????????????????????????????? PC ?????????????????????????  
**???? Jumper ?????????(1)????????????????? 2??????**



Tips:

```
???? lspci -vvvv????????????????????????????????????
```

```
00:09.0 Class ff00: Unknown device 1b74:0100 (rev 01)
Subsystem: Unknown device 1b74:0104
Control: I/O- Mem- BusMaster- SpecCycle- MemWINV- VGASnoop- ParErr- Stepping- SERR-
FastB2B-
```

Status: Cap- 66MHz- UDF- FastB2B- ParErr- DEVSEL=slow >TAbort- <TAbort- <MAbort- >SERR- <PERR-

Interrupt: pin A routed to IRQ 255

Region 0: Memory at f5000000 (32-bit, non-prefetchable) [disabled] [size=64K]

??/??????????

// ????????????

# rpm -q bison bison-devel ncurses ncurses-devel zlib zlib-devel openssl openssl-devel gnutls-devel gcc gcc-c++

bison-2.3-2.1

package bison-devel is not installed

ncurses-5.5-24.20060715

ncurses-devel-5.5-24.20060715

zlib-1.2.3-3

zlib-devel-1.2.3-3

openssl-0.9.8e-12.el5

openssl-devel-0.9.8e-12.el5

package gnutls-devel is not installed

gcc-4.1.2-44.el5

gcc-c++-4.1.2-44.el5

?? is not installed ???????????

// ?? yum ???????

# yum install bison-devel gnutls-devel

//

???????

?? G400P ?????????????????? opvx-bristuff-0.4.0-RC3h.tar.gz ??????????????????/?????? asterisk, asterisk-addons, zaptel, libpri????? Elastix ?? Elastix ??

NOTES:

????????????????????????

- zaptel-1.4.12.1

- libpri-1.4.3

- asterisk-1.4.26.2

- asterisk-addons-1.4.7

// ?? opvx-bristuff-0.4.0-RC3h.tar.gz

```
# wget http://downloads.openvox.cn/pub/drivers/bristuff/g400p/opvx-bristuff-0.4.0-RC3h.tar.gz
# tar xzf opvx-bristuff-0.4.0-RC3h.tar.gz
# cd opvx-bristuff-0.4.0-RC3h
```

// ???????

NOTES: ???

```
# amportal stop
# service dahdi stop ;?? PIAF???? zaptel?
# mv /usr/lib/asterisk /usr/lib/asterisk_orig
# ./install.sh
```

???????????????? "Press <Enter> to continue, or <CTRL> + <C> to abort."

?? Enter ??????????

????????? iLBC codec?????????

// ??????

```
# cd zaptel-1.4.12.1
# make config
# vi /etc/sysconfig/zaptel
```

?????????????????

```
MODULES="$MODULES opvxg4xx" # G400P GSM Card
MODULES="$MODULES ztdummy" # Zaptel Timing Only Interface
```

Notes:

? ??? cd asterisk; make sample????????? Elastix ??????

// ?? dahdi ?????????? PIAF?????????

```
# chkconfig dahdi off
```

?????????????

// ?????

```
?? /etc/zaptel.conf
```

```
loadzone=tw
defaultzone=tw
alaw=1,3,5,7
span=1,1,3,ccs,ami
span=2,2,3,ccs,ami
span=3,3,3,ccs,ami
span=4,4,3,ccs,ami
```

bchan=1,3,5,7  
dchan=2,4,6,8

?? /etc/asterisk/zapata.conf

```
[channels]
txgain=0.0
rxgain=0.0
signalling=gsm
context=from-gsm
echocancel=no
relaxdtmf=yes
; slot A
channel => 1
; slot B
channel => 3
; slot C
channel => 5
; slot D
channel => 7
```

?????

# chown asterisk:asterisk /etc/asterisk/zapata.conf

// ?????????????????????????????

// ?????????

# dmesg

```
....
Zapata Telephony Interface Registered on major 196
Zaptel Version: 1.4.12.1
Zaptel Echo Cancellor: MG2
PCI: Enabling device 0000:00:09.0 (0000 -> 0002)
ACPI: PCI Interrupt Link [LNKD] enabled at IRQ 11
ACPI: PCI Interrupt 0000:00:09.0[A] -> Link [LNKD] -> GSI 11 (level, low) -> IRQ 11
Found an OpenVox G400P: Version 0.8e79
opvxxg4xx: slot 0 is Installed
opvxxg4xx: slot 1 is Installed
opvxxg4xx: slot 2 is Empty
opvxxg4xx: slot 3 is Empty
opvxxg4xx: Powering up all spans...
```

# ztcfg -vvvvvv

```
Zaptel Version: 1.4.12.1
Echo Cancellor: MG2
```

Configuration

=====

SPAN 1: CCS/ AMI Build-out: 399-533 feet (DSX-1)  
 SPAN 2: CCS/ AMI Build-out: 399-533 feet (DSX-1)  
 SPAN 3: CCS/ AMI Build-out: 399-533 feet (DSX-1)  
 SPAN 4: CCS/ AMI Build-out: 399-533 feet (DSX-1)

Channel map:

Channel 01: Clear channel (A-law) (Slaves: 01)  
 Channel 02: D-channel (Default) (Slaves: 02)  
 Channel 03: Clear channel (A-law) (Slaves: 03)  
 Channel 04: D-channel (Default) (Slaves: 04)  
 Channel 05: Clear channel (A-law) (Slaves: 05)  
 Channel 06: D-channel (Default) (Slaves: 06)  
 Channel 07: Clear channel (A-law) (Slaves: 07)  
 Channel 08: D-channel (Default) (Slaves: 08)

8 channels to configure.

# cat /proc/interrupts

```

    CPU0
0: 92720937      XT-PIC timer
1:    2      XT-PIC i8042
2:    0      XT-PIC cascade
4:  5520      XT-PIC serial
7:    0      XT-PIC parport0
8: 94901916      XT-PIC rtc
9:    1      XT-PIC acpi
10: 92692060      XT-PIC opvxd4xx
11: 148485      XT-PIC uhci_hcd:usb1, uhci_hcd:usb2, CMI8738, eth0
12:    4      XT-PIC i8042
14: 107020      XT-PIC ide0
    
```

Notes:

? ?? IRQ ??? opvxd4xx ??????(?????)???? PCI?? IRQ????????? PCI Slot?

// ?? SIM ??????

# asterisk -rvvvvvvvvvvv

```

CLI> gsm debug channel 1
CLI> gsm show status 1
-- GSM Span 1 registered to network!
    
```

Tips:

? ??? Channel NO. ? 1,3,5,7?????? gsm debug channel x ?????? channel ?????????

No GSM running on channel 2

? SIM card ?? - Channel NO - Span NO. ???

SIM x1 - Channel 1 - Span 1

SIM x2 - Channel 3 - Span 2

SIM x3 - Channel 5 - Span 3

SIM x4 - Channel 7 - Span 4

? ? SIM card ???????????? GSM ??(??? 3G ???)?status ??????

GSM 1: < +CREG: 2 , 8 >

GSM 1: < +CREG: 0 , 8 >

**?? Elastix ?????**

???????????????????? Elastix ????????????????????? Elastix ????????????????????? Elastix ???

???????????????? UI ?? Inbound ? Outbound ????????????? FreePBX ???

?? G400P ??????? Elastix(????????????????)?? UI ??? Inbound/Outbound ????????????

???? A400P ????

**Outbound ??**

// Trunk

Elastix UI > PBX > PBX Configuration > Trunks > Add Custom Trunk

Custom Dial String = Zap/1/\$OUTNUM\$

// Route

Elastix UI > PBX Configuration > Outbound Routes > Add Route

Route Name = <whatever name>

Dial Patterns = 008|.

Trunk Sequence = Zap/1/\$OUTNUM\$

// ??????

008 + ?????

**Inbound ??**

?? /etc/asterisk/extensions\_custom.conf???????????

; This is for inbound calls with G400P GSM card

[from-gsm]

exten => \_X.,1,Set(DID=\${EXTEN})

exten => \_X.,n,Goto(s,1)

exten => s,1,Noop(Entering from-zaptel with DID == \${DID})

exten => s,n,Ringing()

exten => s,n,Set(DID=\${IF("\${DID}" = "")?s:\${DID}})

```

exten => s,n,Noop(DID is now ${DID})
exten => s,n,GotoIf(["${CHANNEL:0:3}"="Zap"]?zapok:notzap)
exten => s,n(notzap),Goto(from-pstn,${DID},1)
exten => s,n,Macro(Hangupcall,dummy)
exten => s,n(zapok),Noop(Is a Zaptel Channel)
exten => s,n,Set(CHAN=${CHANNEL:4})
exten => s,n,Set(CHAN=${CUT(CHAN,-,1)})
exten => s,n,Macro(from-zaptel-${CHAN},${DID},1)
exten => s,n,Noop(Returned from Macro from-zaptel-${CHAN})
exten => s,n,Goto(from-pstn,${DID},1)
exten => fax,1,Goto(ext-fax,in_fax,1)

```

???????????

#asterisk -rx "dialplan reload"

//?? DID ?? SIM card

Elastix UI > PBX > PBX Configuration > Unembedded freePBX > Zap Channel DIDs >

Channel = 1

Description = gsm1-did

DID = <??? SIM ??????>

// Inbound Route

Elastix UI > PBX > PBX Configuration > Inbound Routes

Description = gsm1

DID Number = <??? SIM ??????>

Set Destination =<whatever you wanted>

?????

// ??????

# modprobe opv4xx debug=8

# amportal stop

# amportal start

# dmesg

//???? firmware

?????????? firmware ???

???? firmware: <http://downloads.openvox.cn/pub/firm...0100612.tar.gz>

?? ?? firmware ???<http://downloads.openvox.cn/pub/driv...s-1.0.0.tar.gz>

# amportal stop

# modprobe -r opv4xx

# modprobe opv4xx burn=1

# tar opvx-epcs-1.0.0.tar.gz

# tar -xzf opvx-fw-g400p-20100612.tar.gz

# cp g400p.bin opvx-epcs-1.0.0

# cd opvx-epcs-1.0.0

# ./epcs  
?? g400p.bin

## FAQ

Q: ??? Asterisk ???

A: ????????????

Q: ?????ERROR[3130] codec\_dahdi.c: Failed to open /dev/zap/transcode: No such file or directory

A: ?? /etc/sysconfig/zaptel??????

MODULES="\$MODULES zttranscode" # Zaptel Transcoding

Q: ????? Asterisk?????????

A: ?????[OpenVox G400P User Manual for dahdi](#)