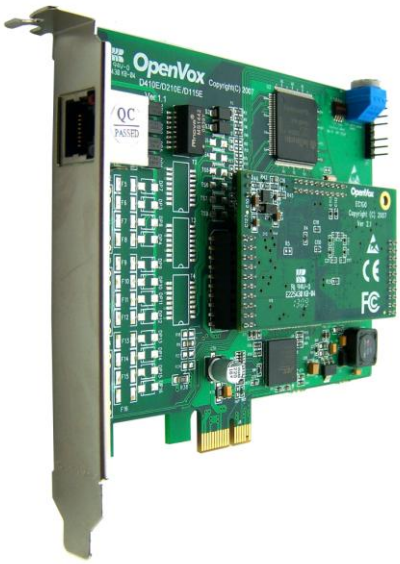
OpenVox Communication Co ltd

OpenVox DE115P/DE115E User Manual



OpenVox Communication Co ltd

OpenVox-Best Cost Effective Asterisk Cards

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Thank You for Choosing OpenVox Products!

Table of contents

Chapter 1 Overview

1. What is DE115P/DE115E?

The DE115P/DE115E is a bundling of our D115P/D115E product and our new EC100-32 Octasic DSP-based echo cancellation module. The EC100 provides a certified carrier-grade algorithm that has been labeled a benchmark for echo cancellation for OpenVox.

With the improved I/O speed, the card reduces CPU usage and increased card density per server. DE115P/DE115E is fully compatible with Asterisk applications. The open source driver supports an API interface for custom application development.

DE115P/DE115E supports industry standard telephony and data protocols, including Primary Rate ISDN (both N. American and Standard Euro) protocol families for voice, PPP, Cisco, HDLC, and Frame Relay data modes. Both line-side and trunk-side interfaces are supported.

About OpenVox EC100-32 Module

The OpenVox EC100-32 enables users to eliminate echo tails up to 128ms or 1024 taps across all 32 channels in E1 mode or 24 channels in T1/J1 modes. Further, this module takes advantage of the Octasic Voice Quality Enhancement to provide superior sound quality on all calls.

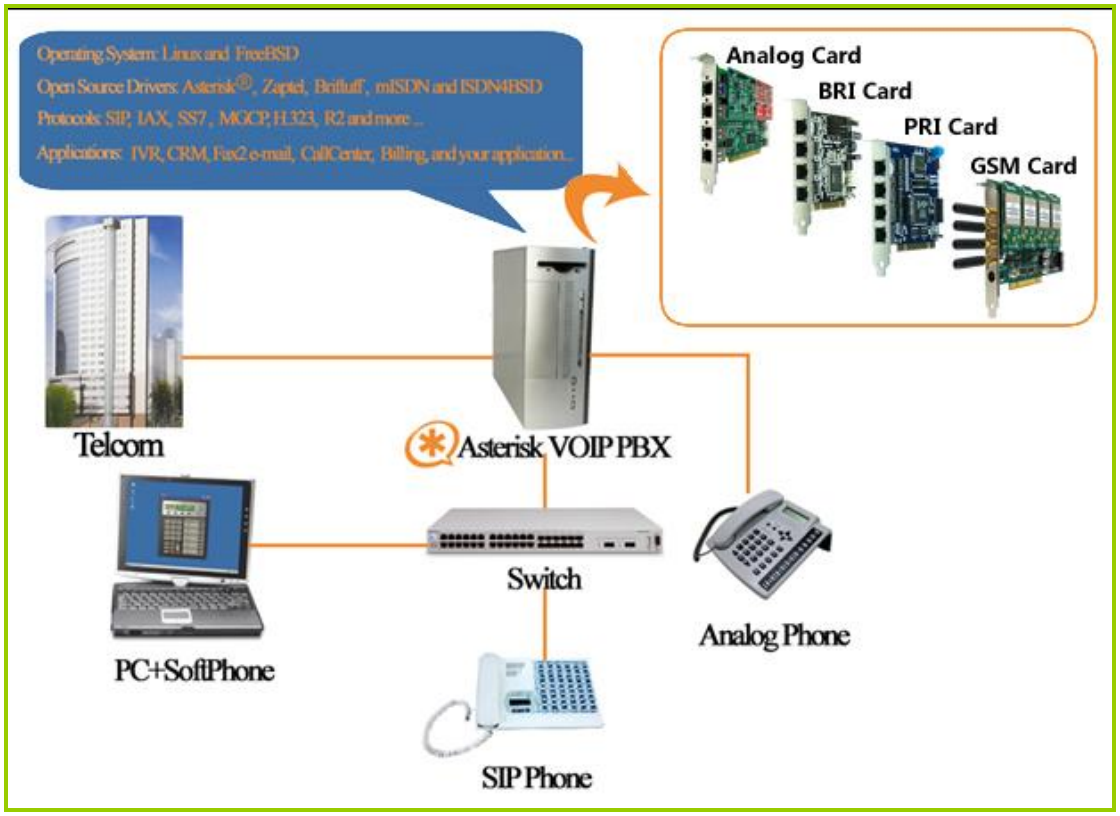
Benefits:
World recognized & deployed best voice quality

Features:
128ms tail/channel (on all channel densities)
Octasic Music Protection
Adaptive Noise Reduction
Automatic Level Control (G.169)
Field upgradeable algorithm
V.25 / V.8 answer tone (w/ and w/o phase reversal)
DTMF as per Q.24

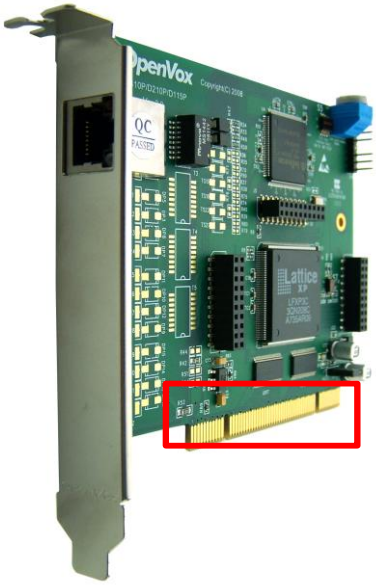
RoHS compliant
Certificates: CE and FCC
Five Year Warranty!

2. What is Asterisk?

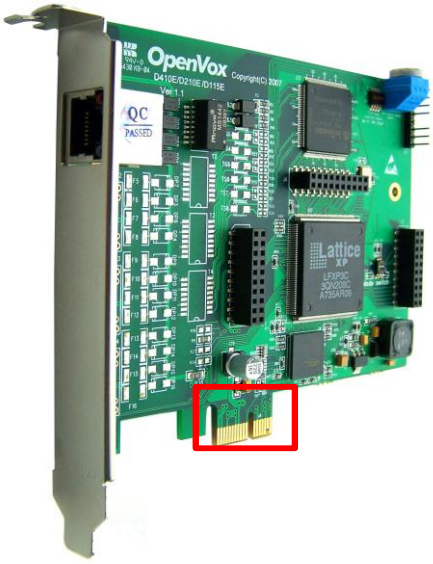
Asterisk is a complete PBX in software. It runs on Linux, BSD, Windows(enulated) and provides all of the features you could expect from a PBX and more. Asterisk does voice over IP in four protocols, and can interoperate with almost all standards-based telephony equipment using relatively inexpensive hardware.



Chapter 2 Hardware Introduction



D115P

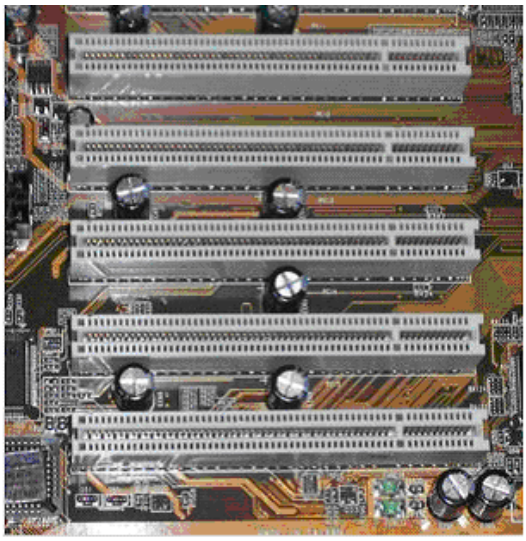


D115E

The only difference between DE115P and DE115E is the bus type.
DE115P is a PCI card while
DE115E is a PCI Express card.
Also showed as the above red mark circle.

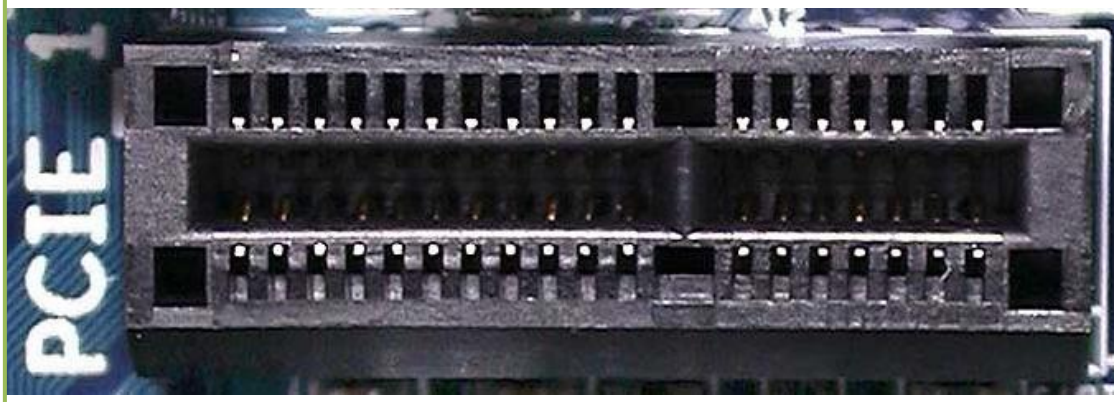
Attention：if you found J914（input）and J915（output）interfaces on the card, it means the card supports clock line, for the detail information, please refer to the following link：
http://bbs.openvox.cn/viewthread.php?tid=874&extra=page%3D1

Introduction of the slot



These white slots are PCI slot and DE115P can be installed in such slots.

The 32 bit PCI slots in a Motherboard

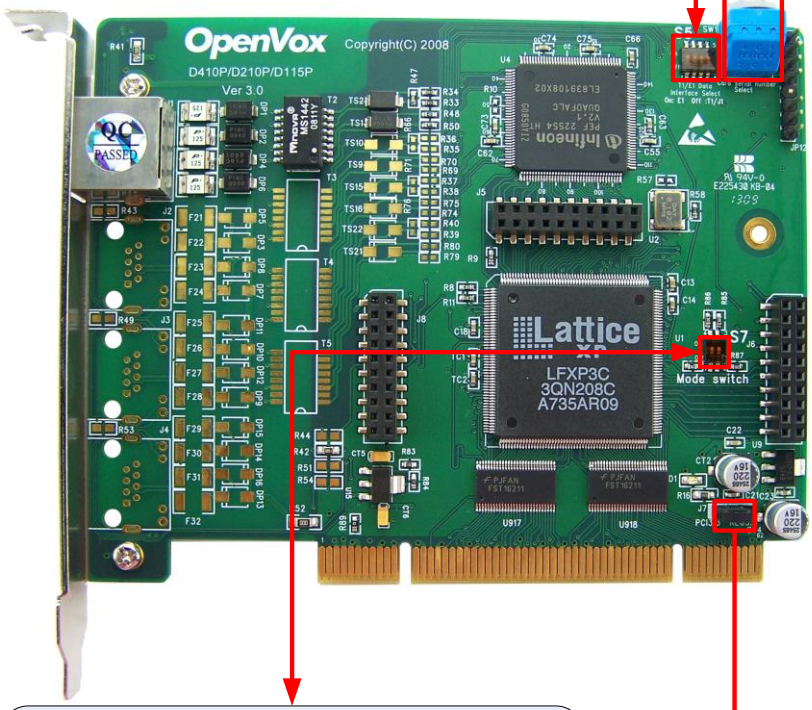


The above slot is a PCI express one and DE115E can be installed in it.

Switch settings

SW1: Card Serial Number Selection
If there is only one card in PCI slot, SW1 must be set to 0.
If there are more than one cards in PCI slot, please refer the installation guideline.

S5: Span Type Setting
Each dip switch controls one span configuration for E1 or T1/J1.
Setting DIP1 to ON means SPAN1 will be E1.
Setting DIP1 to OFF means SPAN1 will be T1.
The example sets all 4 SPANs to E1.



S7: Mode Switch
DIP1:
ON: The normal driver mode of OpenVox - opvxd115 is in use.
OFF:The test mode of OpenVox - use in test

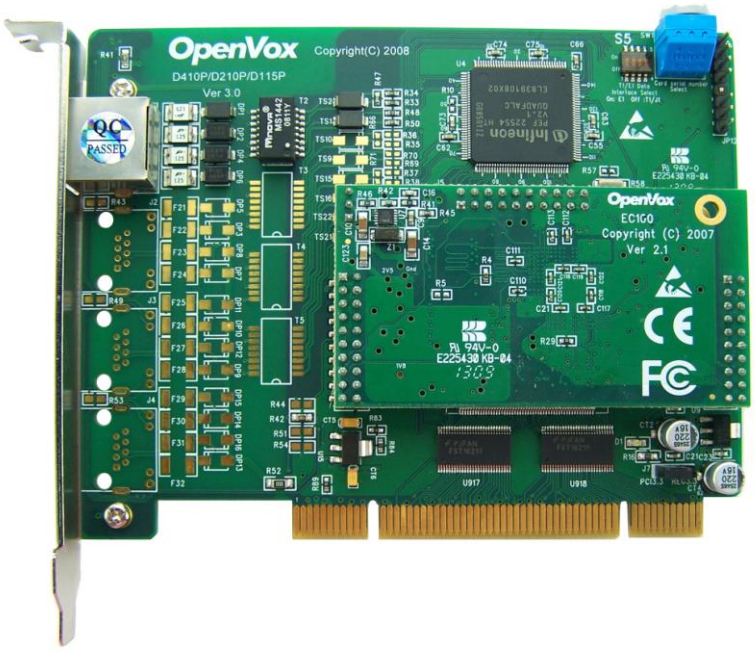
DIP2:
ON: Force PCI Burst On, this model will omit noburst parameter in opvxd115, always keep use PCI Burst model.
OFF: PCI Burst controlled by driver. Burst controlled by noburst parameter in opvxd115 (default is off).

Default: Set DIP1 and DIP2 ON.

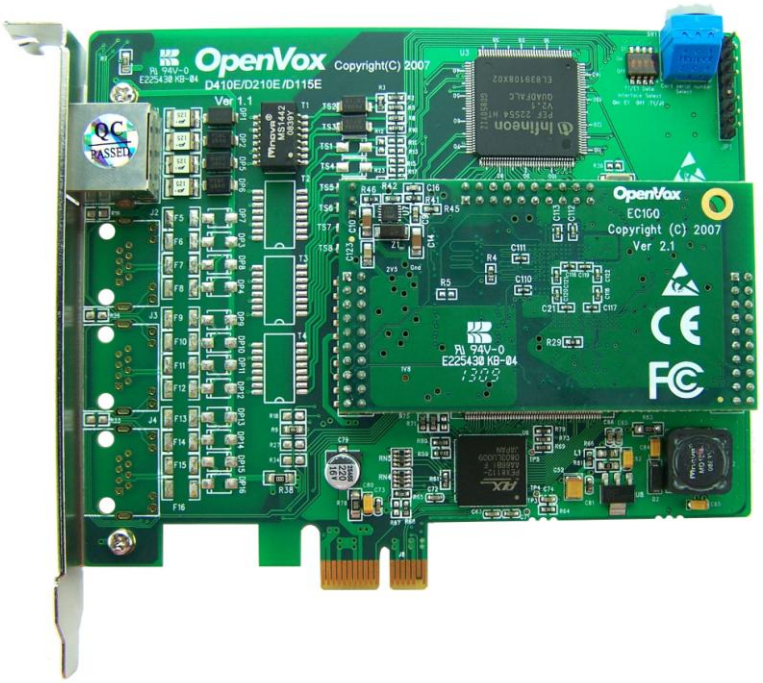
The example is a default configuration.

J7: PCI Power Supply
Shorten the Jumper between 2 and 3 will use 5v power supply of PCI
Shorten the Jumper 1 and 2 will use 3.3v power supply of PCI

DE115P/DE115E

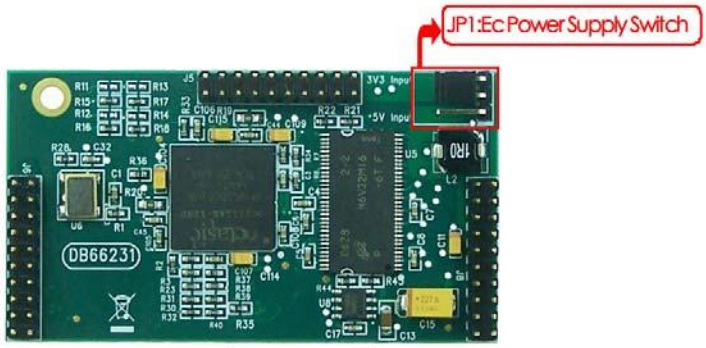


DE115P

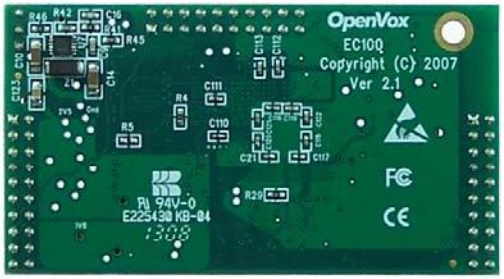


DE115E

EC100-32



EC100 (Bottom View)

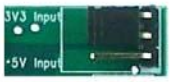


EC100 (Top View)

Notice:

JP1: Ec Power Supply Switch

3.3V Power Supply (default)



5V Power Supply

Chapter 3 Installation and Configuration

Installation and configuration environments for reference

CentOS 5.0
Libpri-1.4.7
zaptel-1.4.12.1
asterisk-1.4.21.1
OpenVox DE115P

I. Install the operating system CentOS 5.0

II. Install the DE115P card

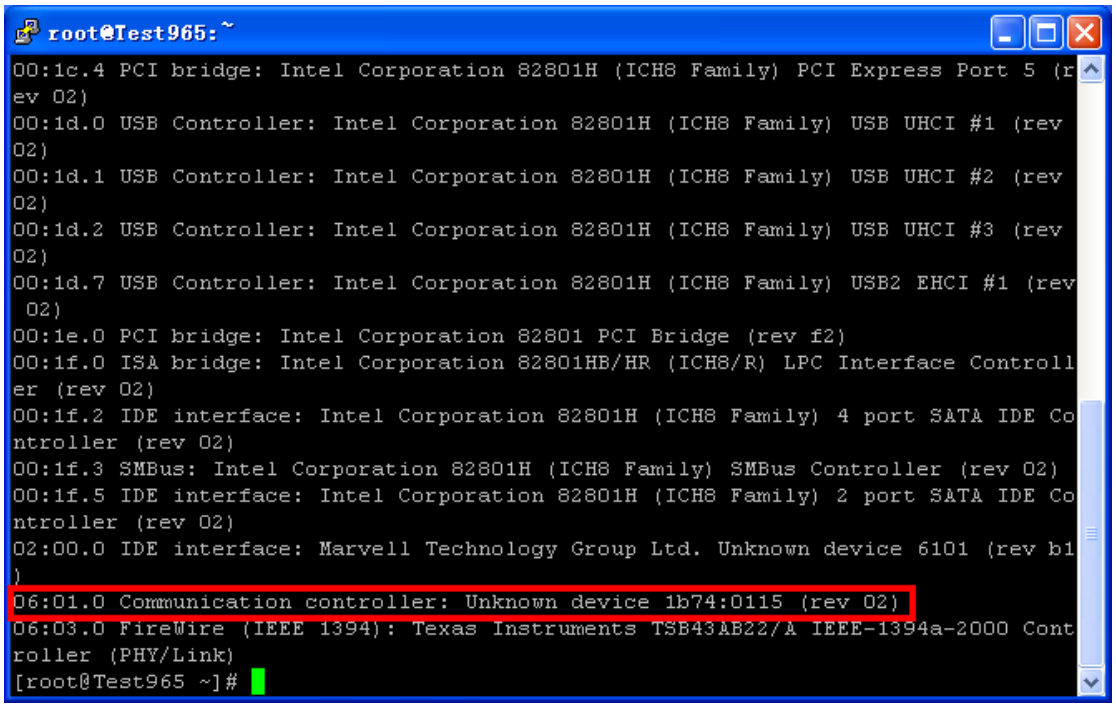
Insert the DE115P into the PCI slot, and fix it with screw in order to avoid the mall-connection.

Make sure the setting for the switch of the DE115P is correct according to the picture about the switch setting in Chapter 2.

III. Start the CentOS 5.0

IV. Check the system identification of the DE115P

 # lspci



As the picture shows, system has identified a DE115P card.

V. Check the necessary software packages for Asterisk installation, as the picture shows：

There are eleven necessary software packages for Asterisk installation, using the following command respectively:

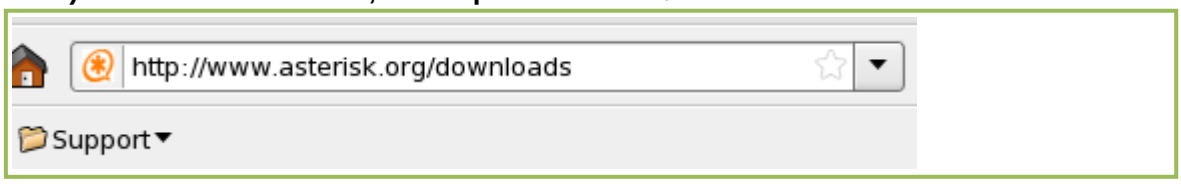
 # yum install bison
 # yum install bison-devel
 # yum install ncurses
 # yum install ncurses-devel
 # yum install zlib
 # yum install zlib-devel
 # yum install openssl
 # yum install openssl-devel
 # yum install gnutls-devel
 # yum install gcc
 # yum install gcc-c++

VI. Download Zaptel and Asterisk

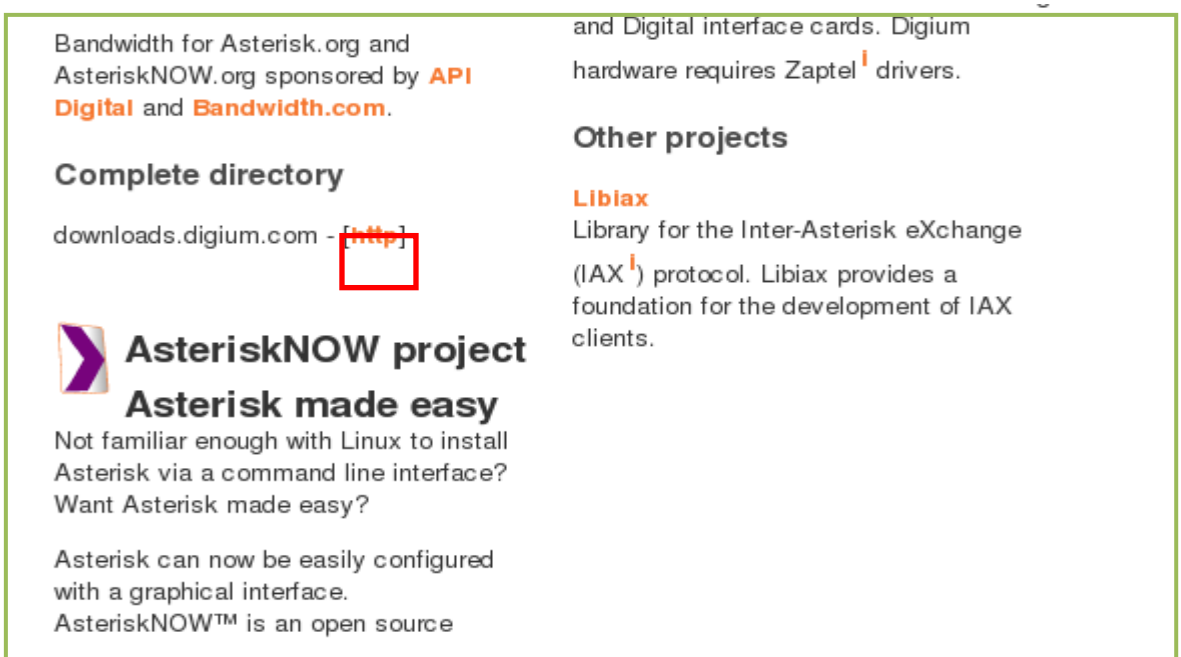
Download method 1:

Access www.asterisk.org with firefox, download zaptel and asterisk, 1.4 edition recommended.

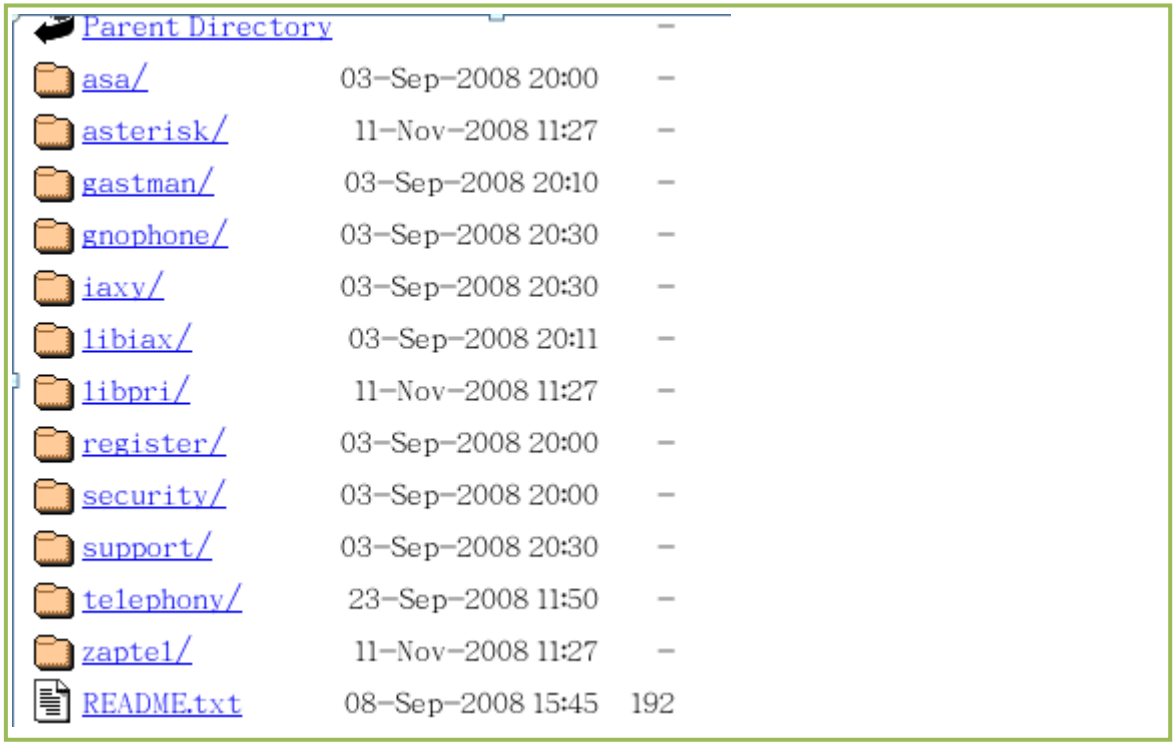
1) Access the website, as the picture shows：



2) Find the sign[http] of downloads in the webpage, marked with red pane in the picture：



3) **Click it, find the folders of libpri,zaptel and asterisk, download the corresponding edition package and save it to the /usr/src/, as in the following picture:**



4) **Downloaded packages, as picture shows:**

Download method 2:

 # cd /usr/src

 # wget http://downloads.asterisk.org/pub/telephony/libpri/releases/libpri-1.4.7.tar.gz

 # wget http://downloads.asterisk.org/pub/telephony/zaptel/releases/zaptel-1.4.12.1.tar.gz

 # wget http://downloads.asterisk.org/pub/telephony/asterisk/releases/asterisk-1.4.12.1.tar.gz

VII. Installing libpri

a) **Unzip it**

 # cd /usr/src

 # tar –xzvf libpri-1.4.7.tar.gz

b) **Compiling installation**

 # cd libpri-1.4.7

 # make

 # make install

VIII. Installing zaptel

Install method 1:

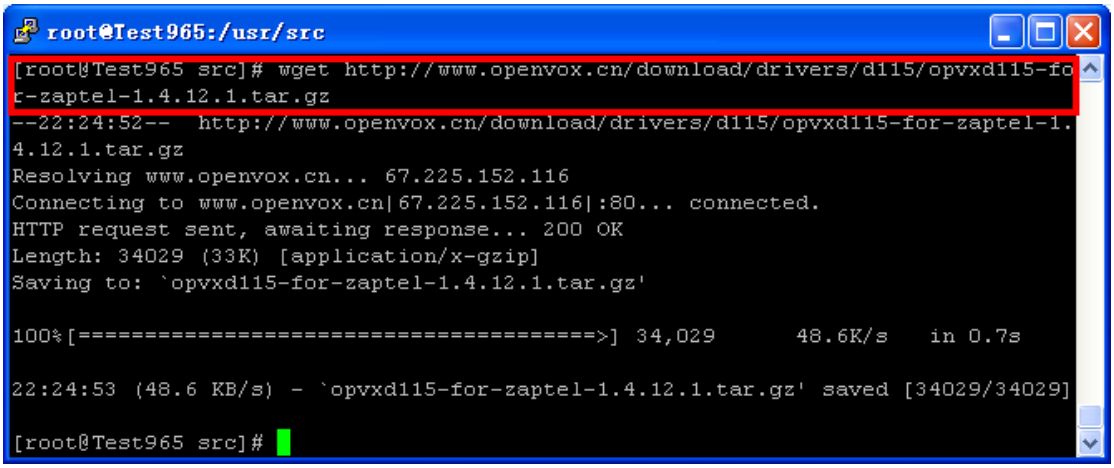
1. **Unzip it**

 # cd /usr/src

 # tar –xzvf zaptel-1.4.12.1.tar.gz

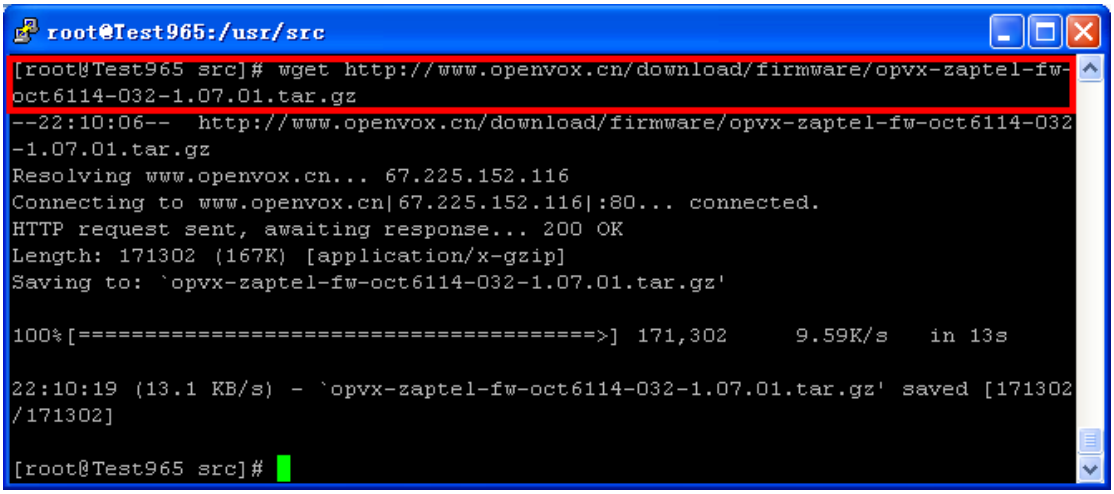
2. **Download the driving systme of DE115P/DE115E**

 # wget
http://www.openvox.cn/download/drivers/d115/opvxd115-for-zaptel-1.4.12.1.tar.gz



3. **Downloading firmware to support the echo-cancellation modules:**

 # wget
http://www.openvox.cn/download/firmware/opvx-zaptel-fw-oct6114-032-1.07.01.tar.gz



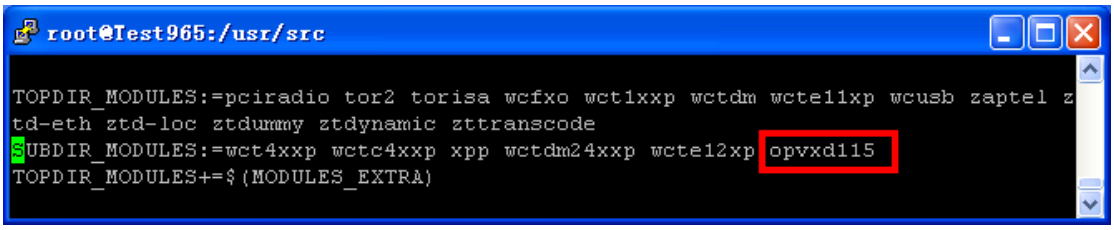
4. **Adding the DE115P/DE115E operating system and firmware to zaptel:**

 # tar –xzvf opvxd115-for-zaptel-1.4.12.1.tar.gz
 # mv opvxd115 /usr/src/zaptel-1.4.12.1/kernel
 # tar –xzvf opvx-zaptel-fw-oct6114-032-1.07.01.tar.gz
 # cp zaptel-fw-oct6114-032.bin /usr/lib/hotplug/firmware
 # mv zaptel-fw-oct6114-032.bin /lib/firmware/

5. **Modify Makefile files**

 # vi /usr/src/zaptel-1.4.12.1/Makefile

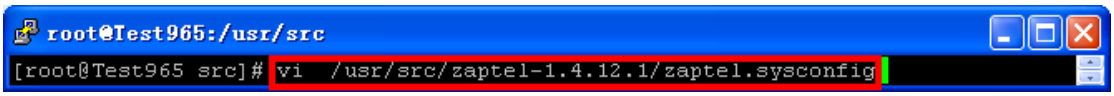
Find the sentence begins with SUBDIR_MODULES，type opvxd115, as in the picture:



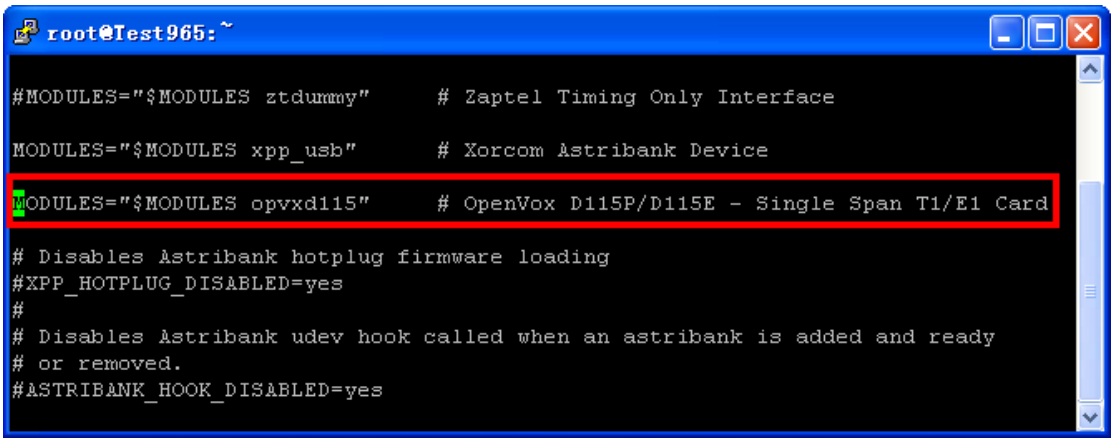
Exit after saved

6. **Modify zaptel.sysconfig files**

 # vi /usr/src/zaptel-1.4.12.1/zaptel.sysconfig

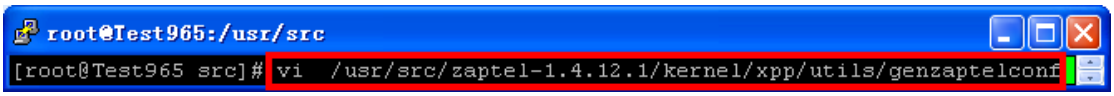


Add MODULES="$MODULES opvxd115"，showed as follows：

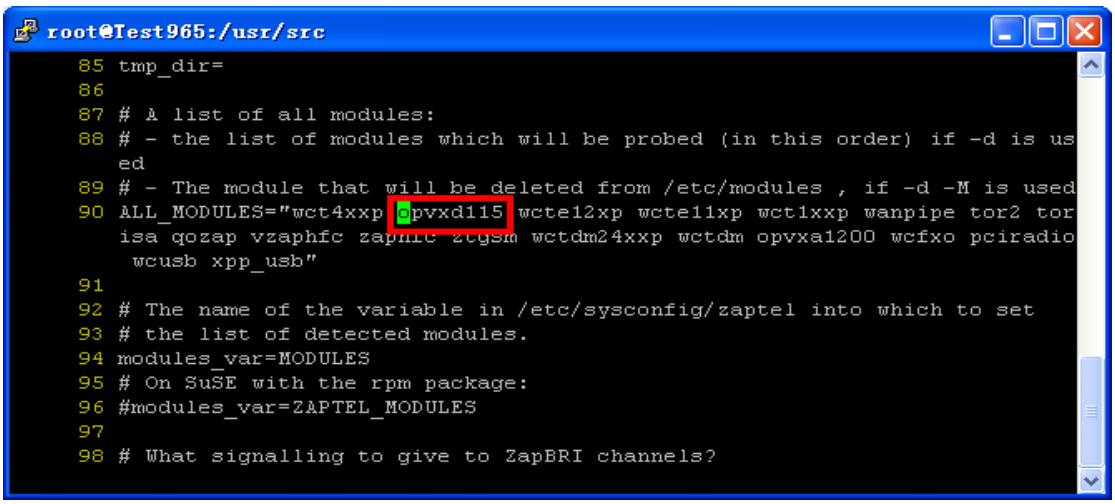


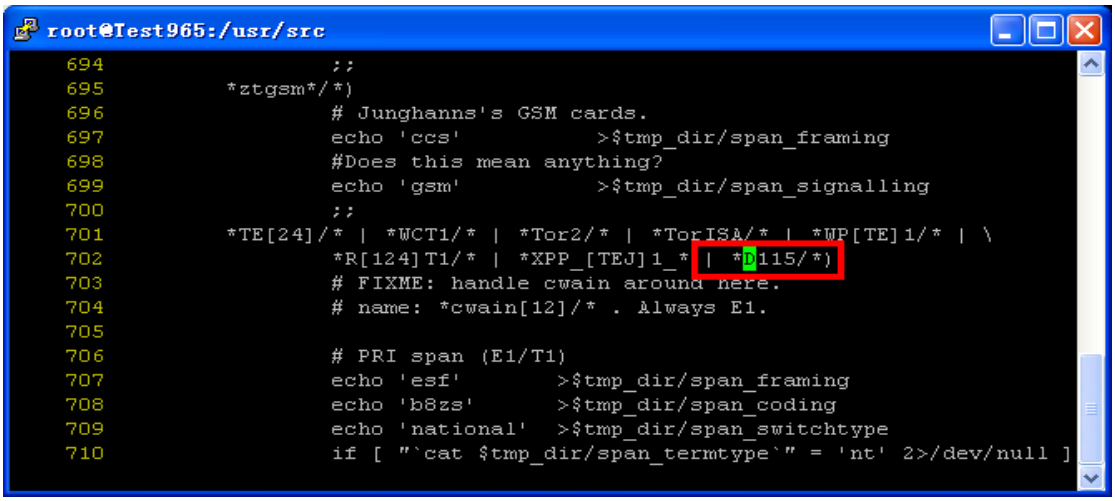
7. Modify genzaptelconf files

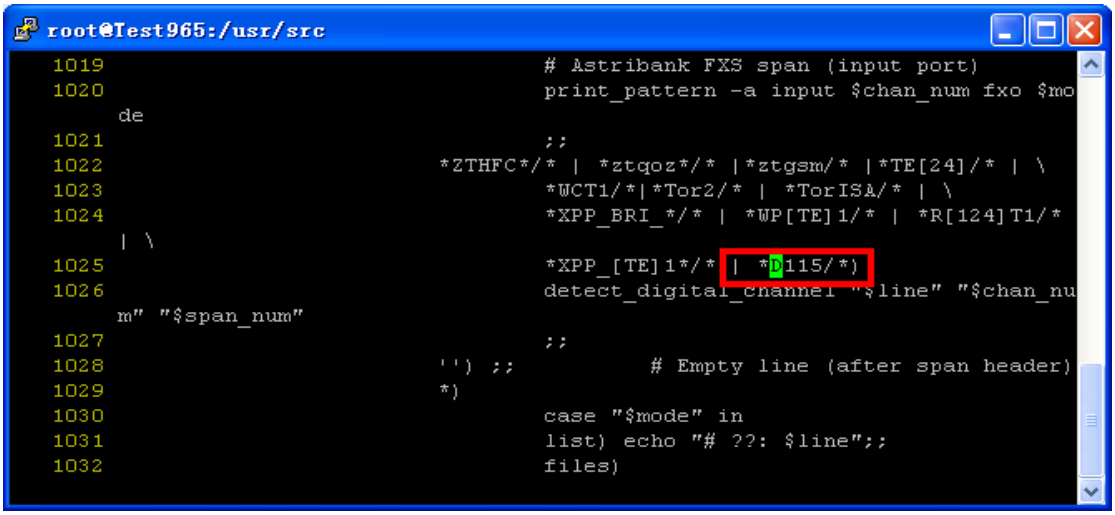
 # vi /usr/src/zaptel-1.4.12.1/kernel/xpp/utils/genzaptelconf



Add the operating support for the opvxd115 in the genzaptelconf，as in the following picture：



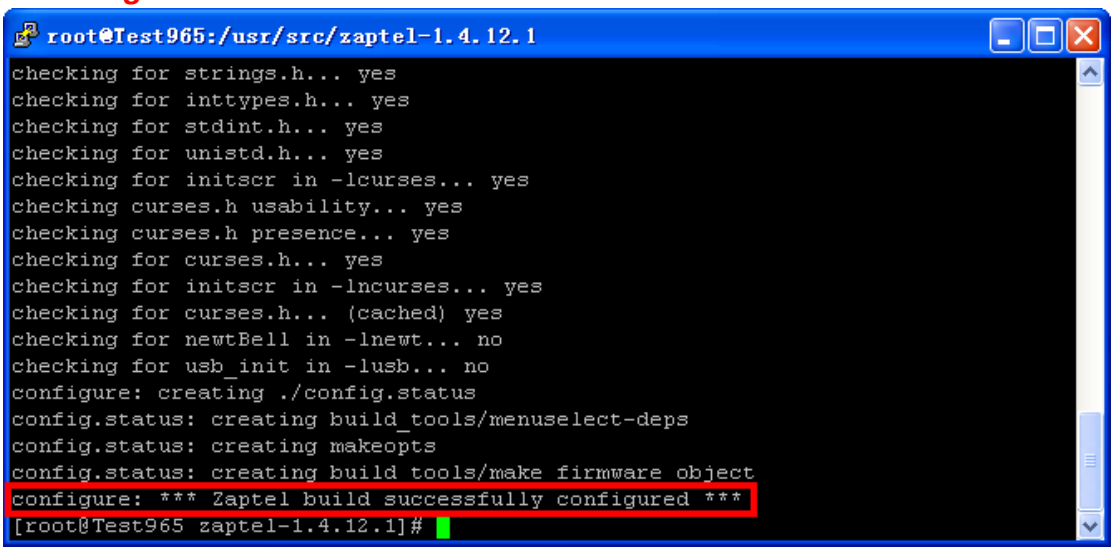




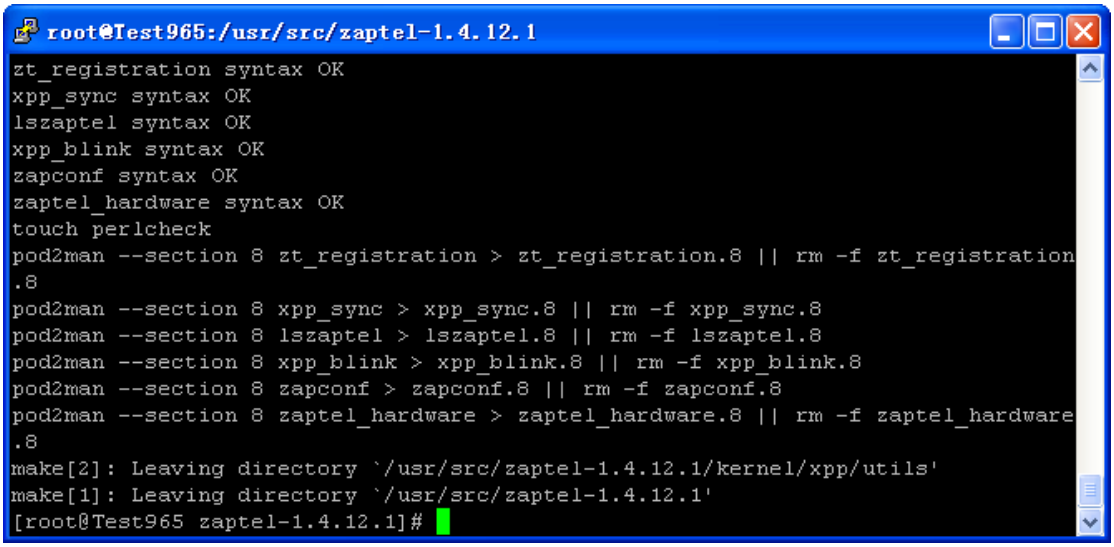
8. Installing zaptel

 # cd /usr/src/zaptel-1.4.12.1

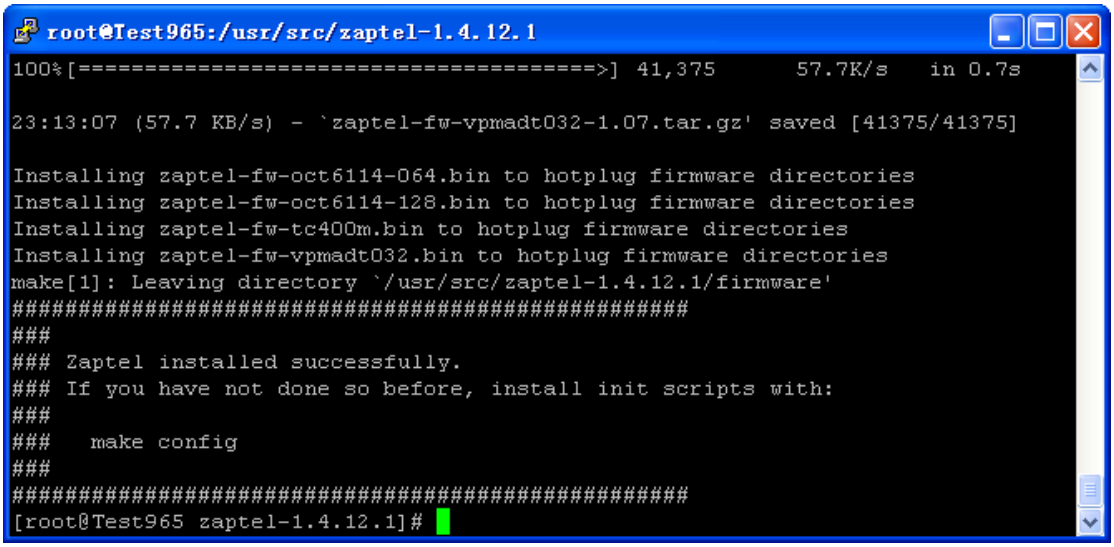
 # ./configure



 # make



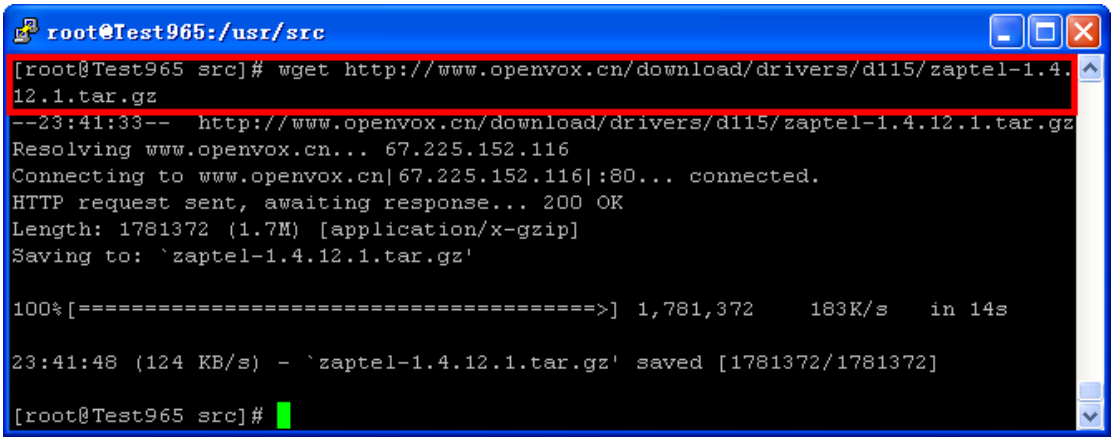
 # make install



Installing method 2：

1) Downloading the zaptel with opvxd115 driver

 # wget http://www.openvox.cn/download/drivers/d115/zaptel-1.4.12.1.tar.gz



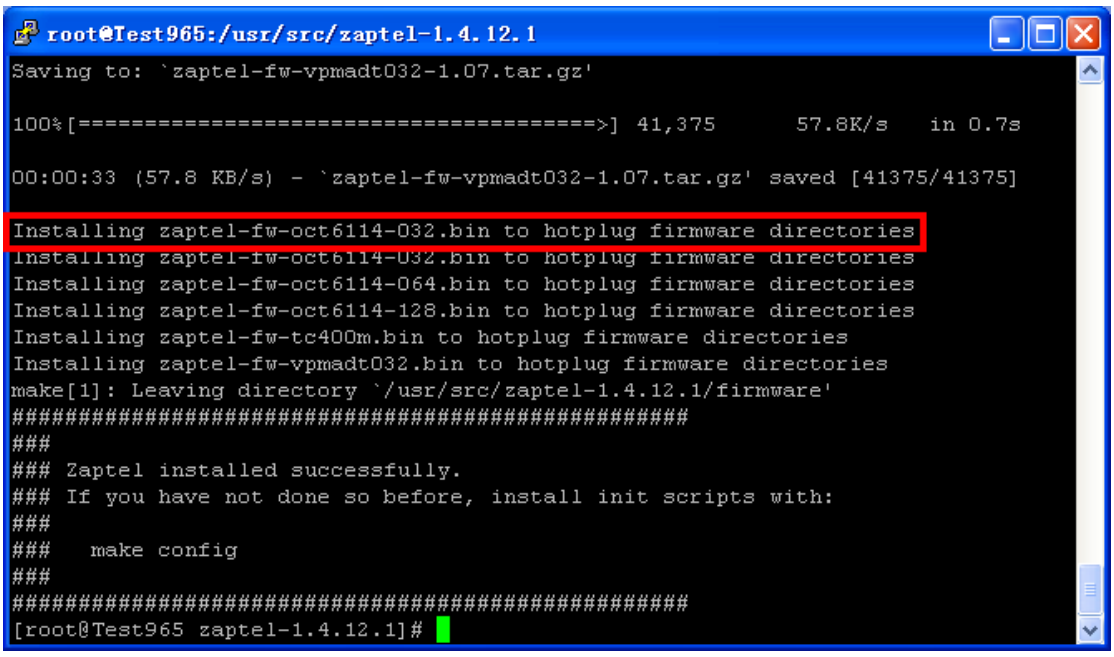
2) Unzip it

 # tar –xzvf zaptel-1.4.12.1.tar.gz

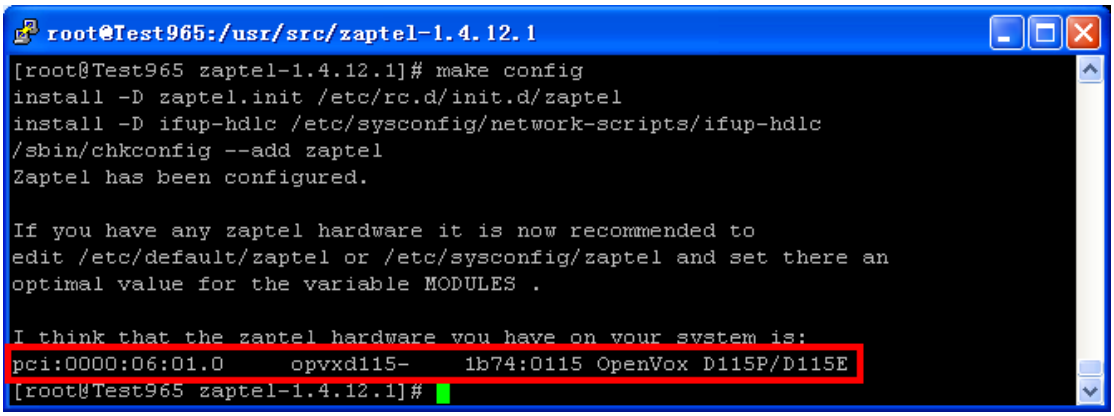
3) Compiling installation

 # cd zaptel-1.4.12.1
 # ./configure
 # make
 # make install

In the process of make install, firmware zaptel-fw-oct6114-032.bin will be downloaded automatically from the internet



 # make config



IX. Downloading asterisk

a) Unzip

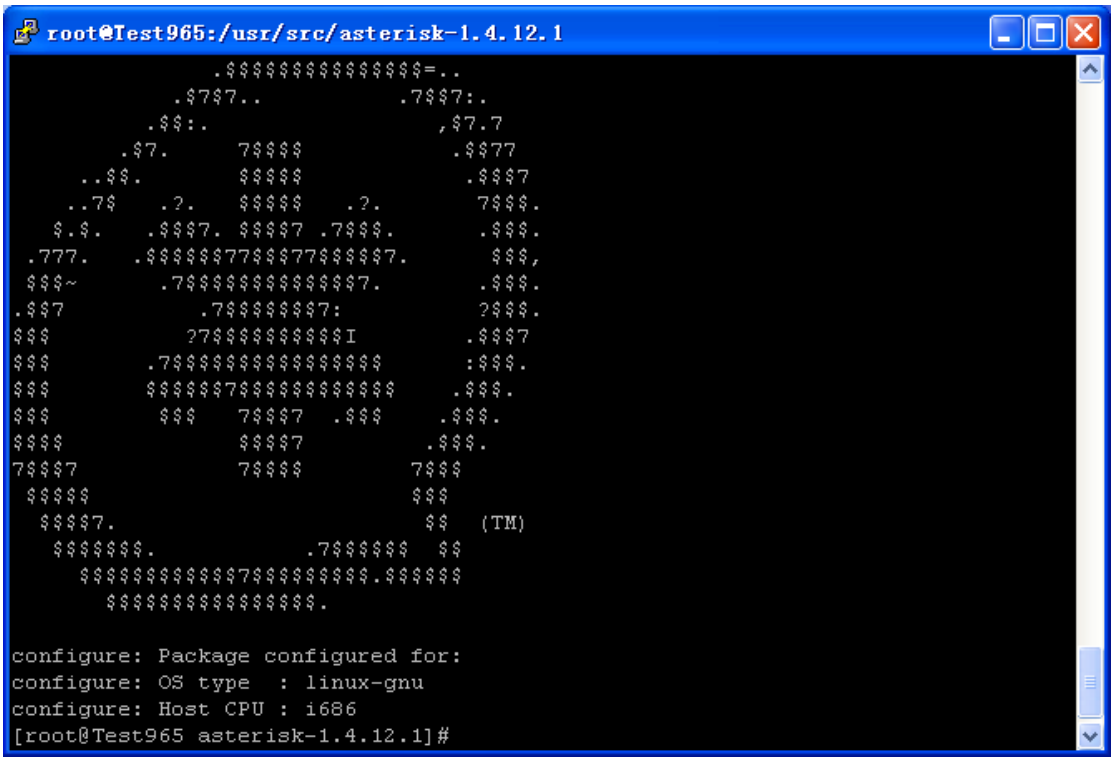
 # cd /usr/src

 # tar –xzvf asterisk-1.4.12.1.tar.gz

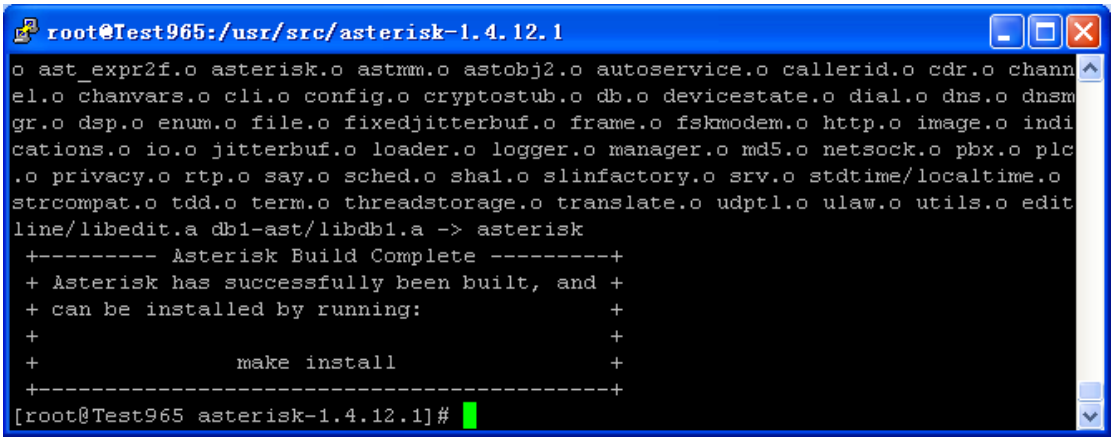
b) Compiling installation

 # cd asterisk-1.4.12.1

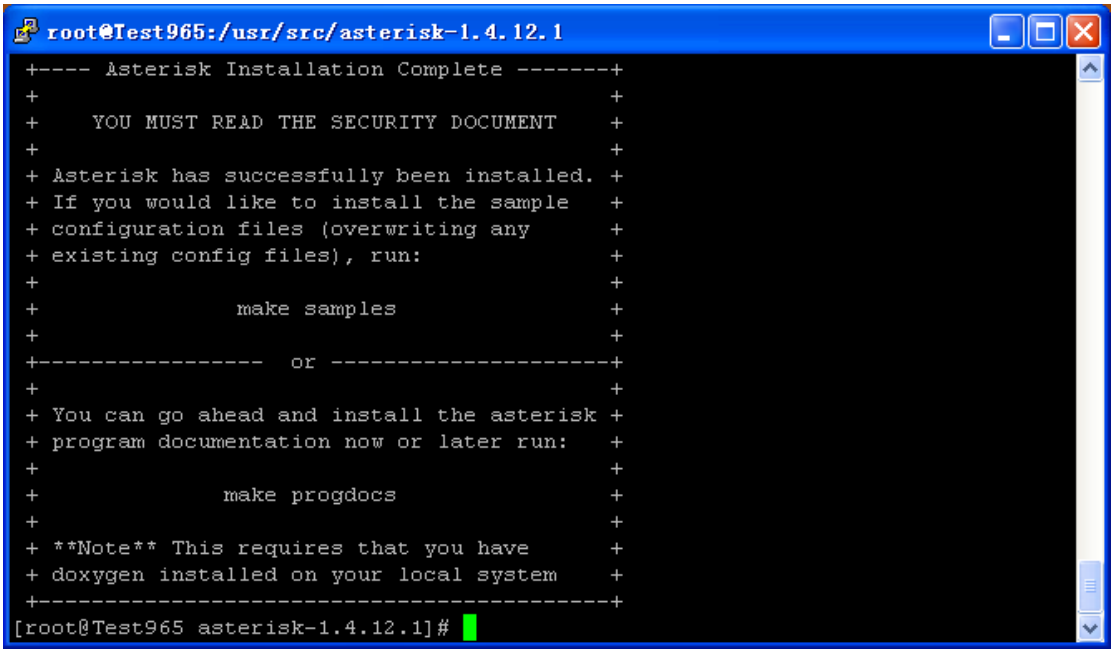
 # ./configure



 # make



 # make install



 # make samples

X. Auto-configure configuration files

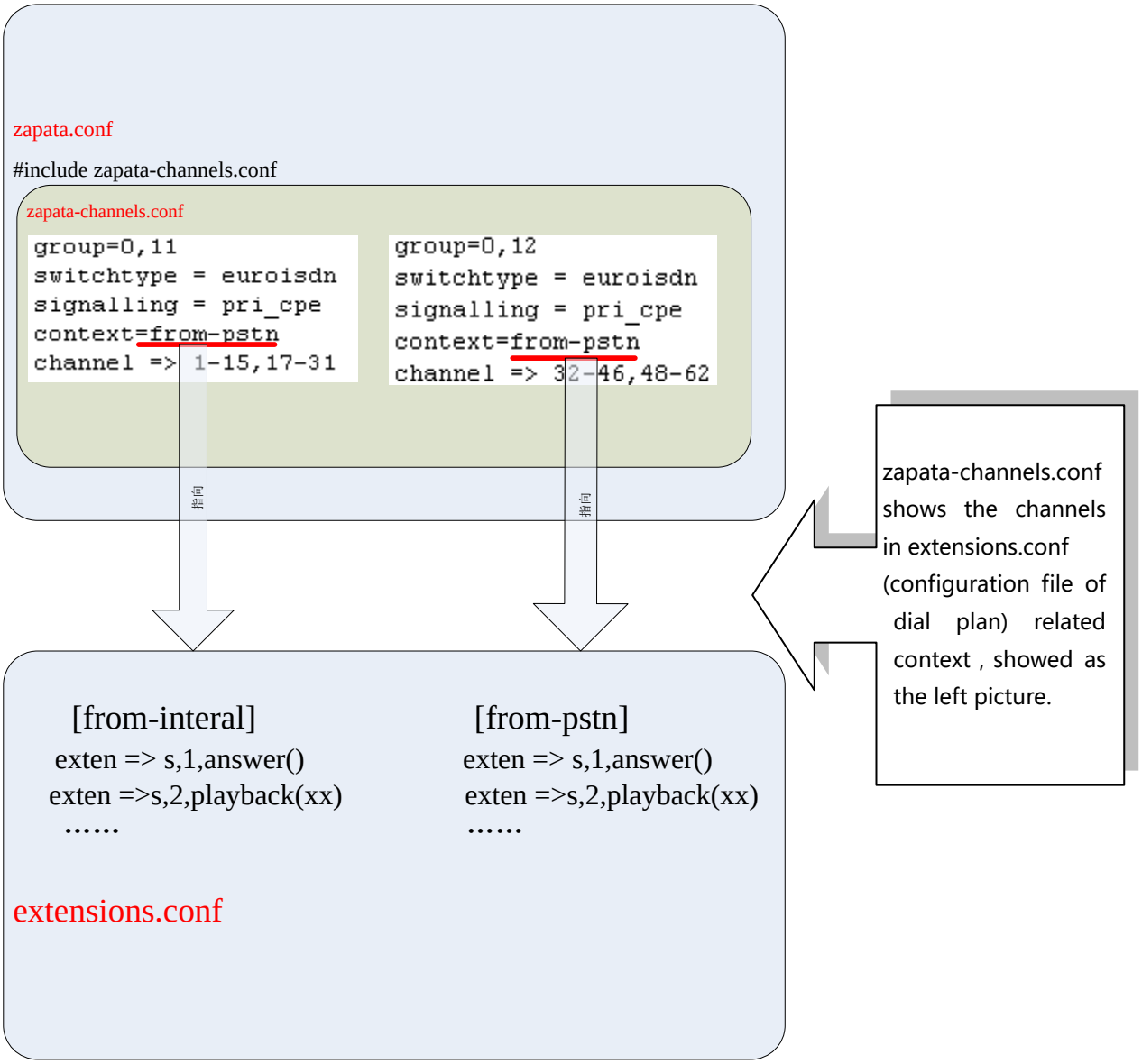
 # cd /usr/src/zaptel-1.4.12.1/kernel/xpp/utils

 # ./genzaptelconf -sdvM

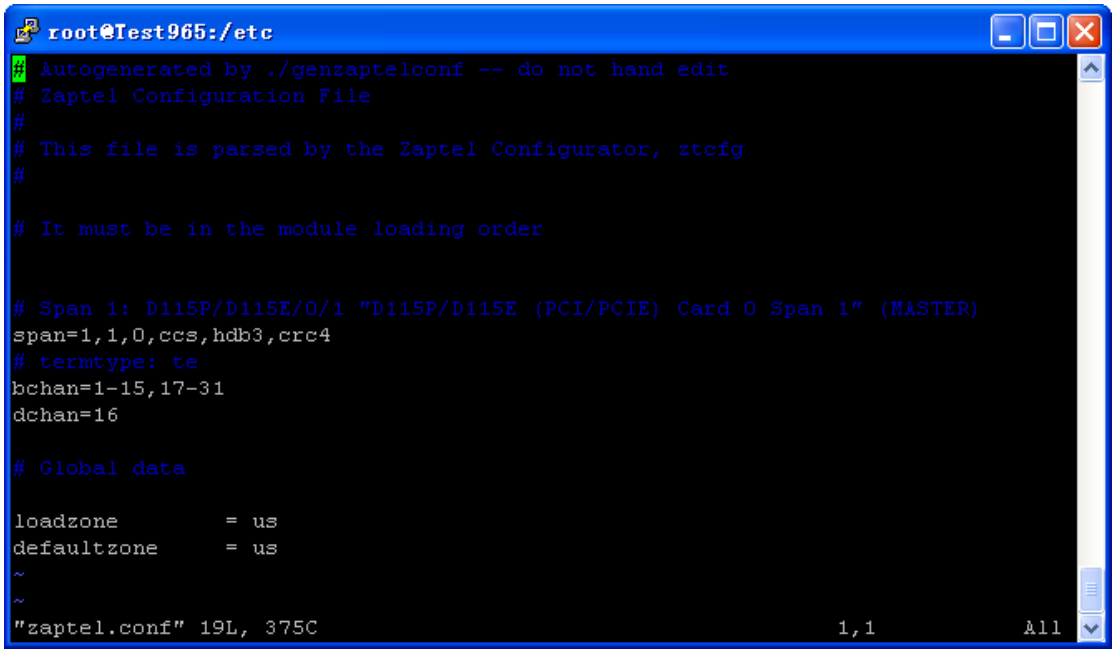
(If there are any errors after running the command, please check the detailed information. The system will offer command for solution, users can solve the problem according to the command, and then run /genzaptelconf -sdvM, if there is no error, users can go to the next step.)

This command will generate /etc/zaptel.conf and /etc/asterisk/Zapata-channels.conf files, the following are two generated files:

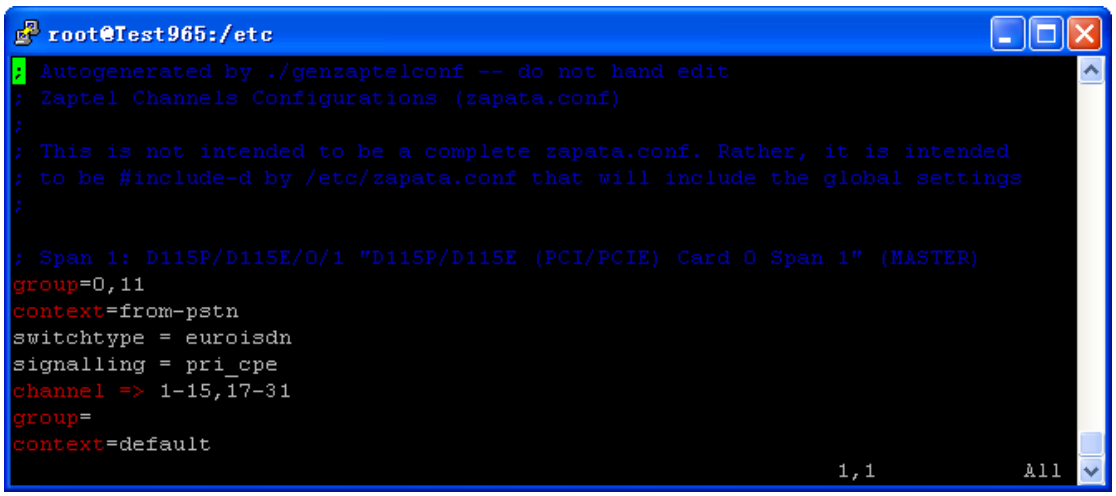
zapata.conf , zapata-channels.conf, extensions.conf
picture about their relationship：



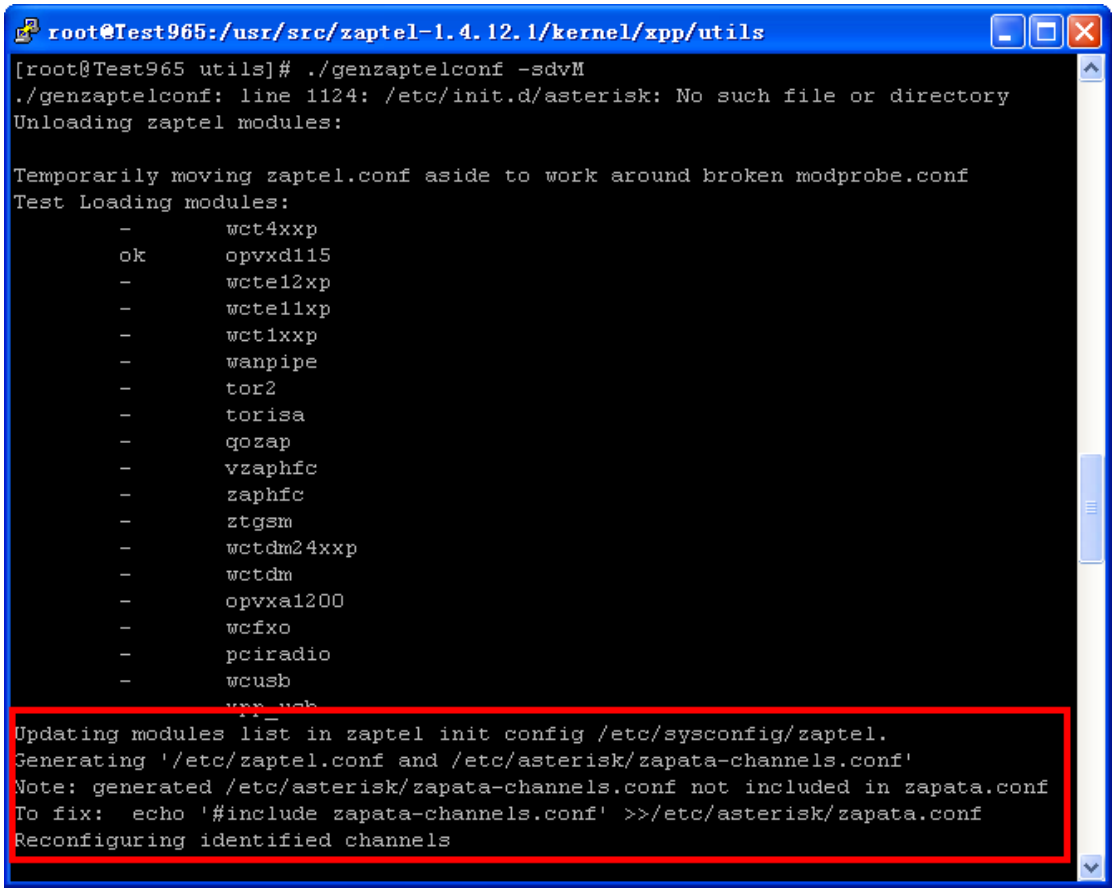
zaptel.conf files are as follows：



/etc/asterisk/zapata-channels.conf files are as follows:



Check whether the configuration of the auto-generated files is the same as the DE115P, if not, modify it.

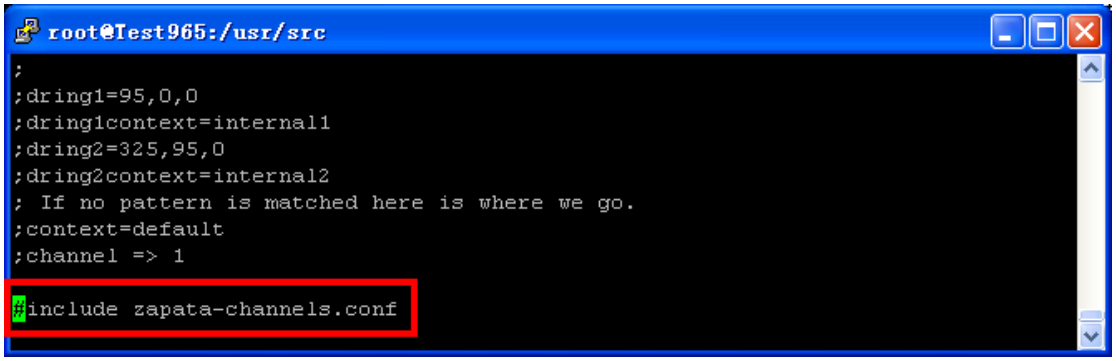


The picture above shows the output of the command***./genzaptelconf -sdvM***，from which we can find (the software in this user manual may cause a problem, while the other edition may not), /etc/asterisk/zapata-channels.conf was not included in /etc/asterisk/zapata.conf，the solution for the problem is：

Add a command *#include zapata-channels.conf* at the end of Zapata.conf files,

As the following picture shows：

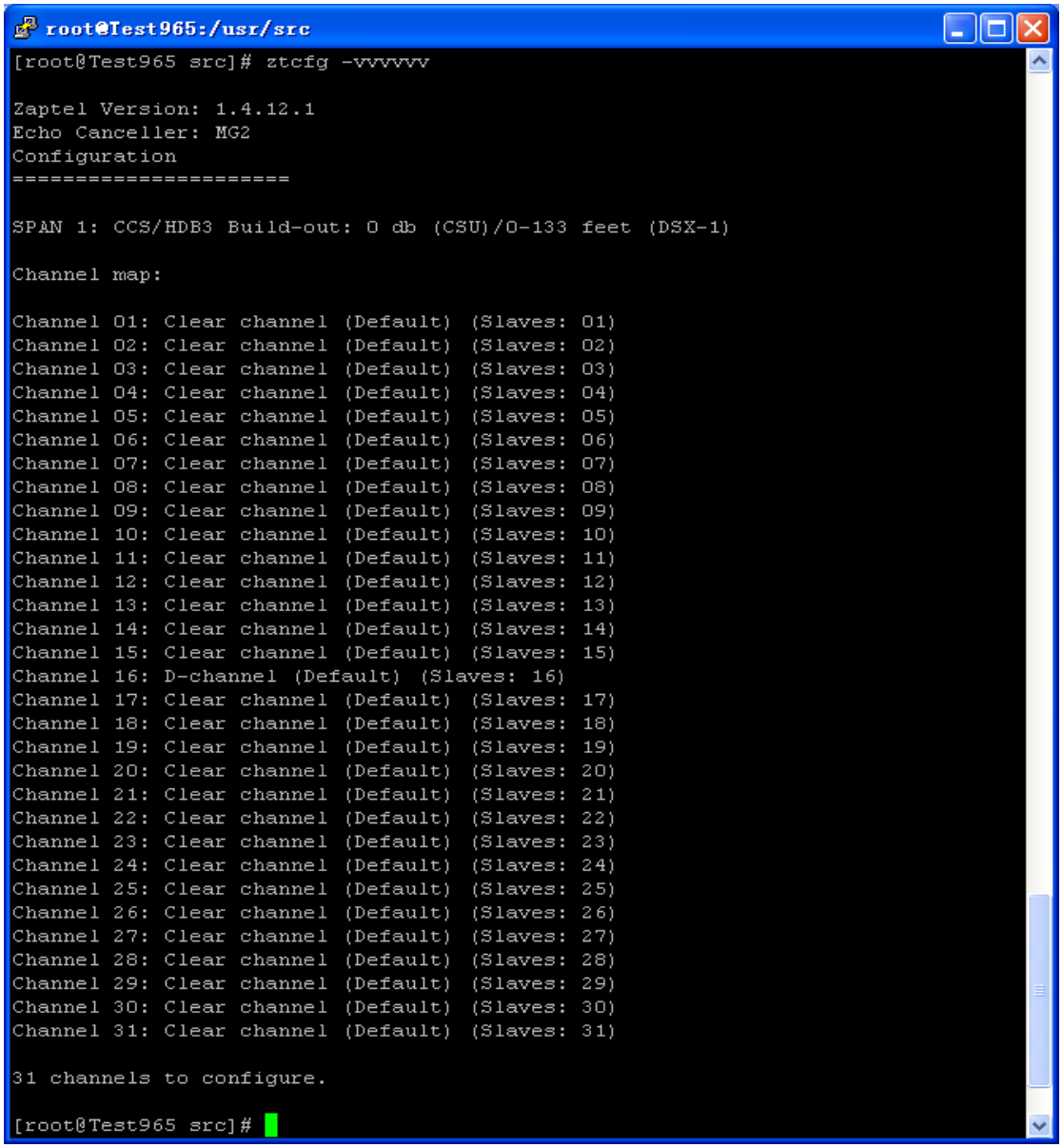
 # vi /etc/asterisk/zapata.conf



XI. Loading start-up driver

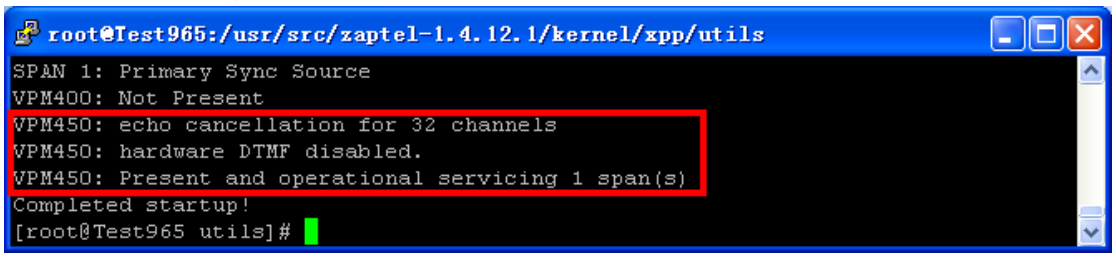
If the zaptel.conf file has been changed, you must reload the driver for DE115P/DE115E.

 # modprobe –r opvxd115
 # modprobe opvxd115
 # ztcfg -vvvvvv



The output above shows all the DE115P channels are identified, the driver is installed successfully.

 # dmesg



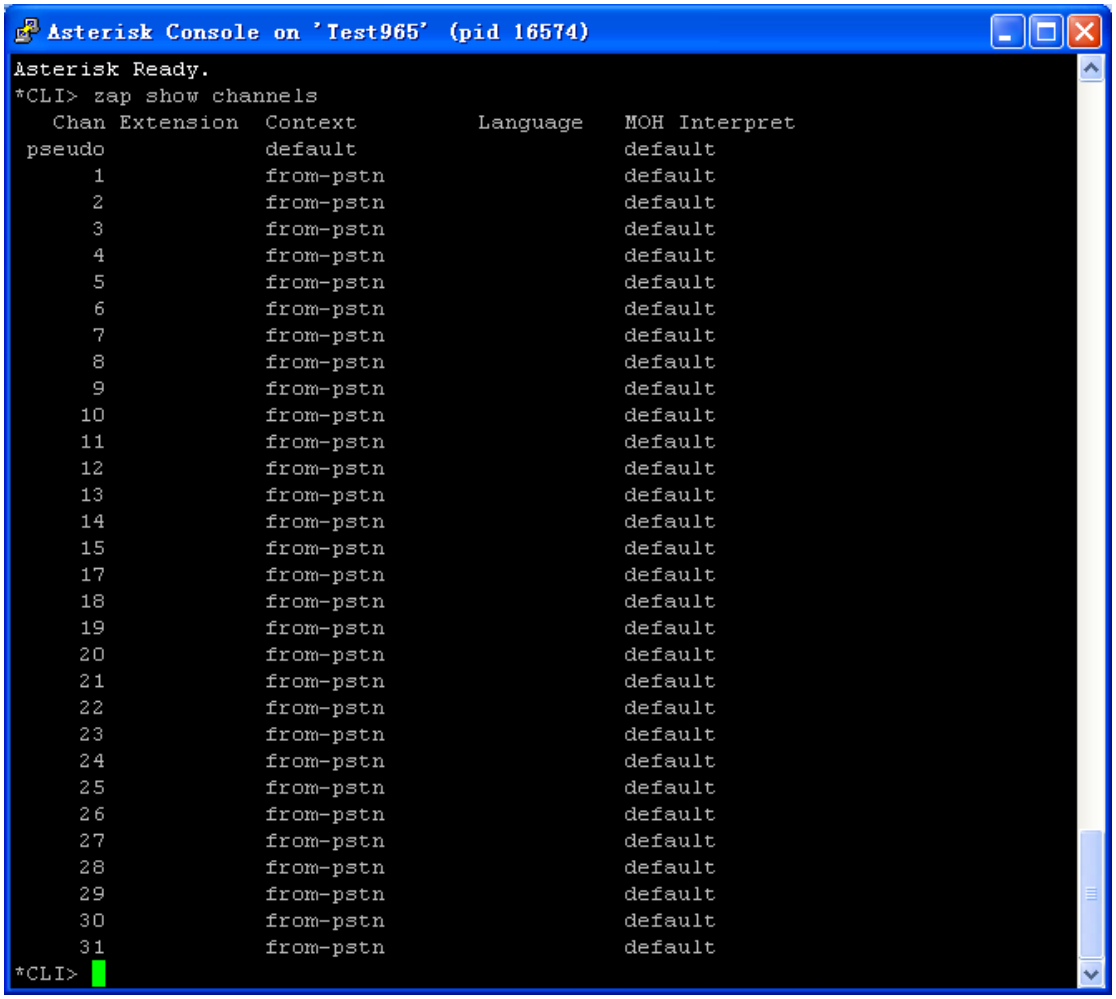
The above output shows the EC100-32 is successfully loaded in the system.

XII. Starting asterisk

 # asterisk -vvvvvvvvgc

(If the asterisk has already started, you can input ***asterisk -r***)

Check the status of the channels



Chapter 4 Reference

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