Synway AST Series

Elastix 2.0.3 Installation Manual

Synway Information Engineering Co., Ltd

www.synway.net

Contents

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Preface

When you use the Synway AST series boards to set up an Elastix system, this file provides the help for software installation and configuration.

Chapter 1 tells what to prepare before installing Elastix.

Chapter 2 introduces how to install the Elastix 2.0.3 system.

Chapter 3 unfolds how to compile and install the Dahdi and SynAST drivers.

Chapter 4 shows how to configure and use the Elastix system.

Appendix A gives the contact way of technical support and sales department in Synway.

Although Synway has scrupulously checked through this manual, but cannot guarantee the absence of errors and omissions. We sincerely apologize for any consequent inconvenience brought to you and will be very grateful if you kindly give your advice regarding amendments to this book.

Chapter 1 Preparation

1.1 Hardware

First you shall prepare the following items: A PC with an empty HD (what we use herein is SAMSUNG, ATA/133 HDD 80GB), a Synway TEJ200P/PCI board and a Synway FXM3201P board with a trunk module (CH1 and CH2) and a station module (CH3 and CH4).

You can install the Synway AST series boards either before or after the installation of the Elastix system. Here we install the AST boards first and then install the Elastix system.

All hardware manuals for the AST series boards can be downloaded from the following page.

http://www.synway.net/Support/Resources.aspx

1.2 Software

Make sure you have these software: Elastix 2.0.3, dahdi-linux-complete-2.3.0.1+2.3.0 and SynAst-1.7.0.0.

Elastix 2.0.3, about 682MB in size, can be downloaded from:

http://downloads.sourceforge.net/project/elastix/Elastix%20PBX%20Appliance%20Software/2.0.3/Elastix-2.0.3-i386-bin-15Nov2010.iso

Then burn the downloaded driver into a CD.

dahdi-linux-complete-2.3.0.1+2.3.0, about 1.9MB in size, can be downloaded from:

http://downloads.asterisk.org/pub/telephony/dahdi-linux-complete/releases/dahdi-linux-complete-2.3.0.1+2.3.0.tar.gz

SynAst-1.7.0.0, about 16.5MB in size, can be downloaded from:

http://www.synway.net/Download/Driver/Asterisk/AST1700/SynAST-1.7.0.0_en.tar.gz

Chapter 2 Installation of Elastix 2.0.3 System

2.1 Brief Introduction to Elastix System

The Elastix system is an integrated system which includes the operating system CentOS and other software like Asterisk, Dahdi, FreePBX. All necessary software can be installed well at one time, not requiring independent operation for any one of them. Then Asterisk and relative services will be automatically started up upon installation.

For detailed information about Elastix, please go to the official website of Elastix:

http://www.elastix.org.

2.2 Installation of Elastix System

Step1: Set the guide mode

Set BIOS to boot from CD-ROM. Put the CD of Elastix system burned already into CD-ROM and start the PC.

Step2: Install Elastix

1. The system will go into the CD guide after the PC being started. Then the following interface will be shown on the screen. See Figure 1. Press Enter directly to go into the default installation mode.

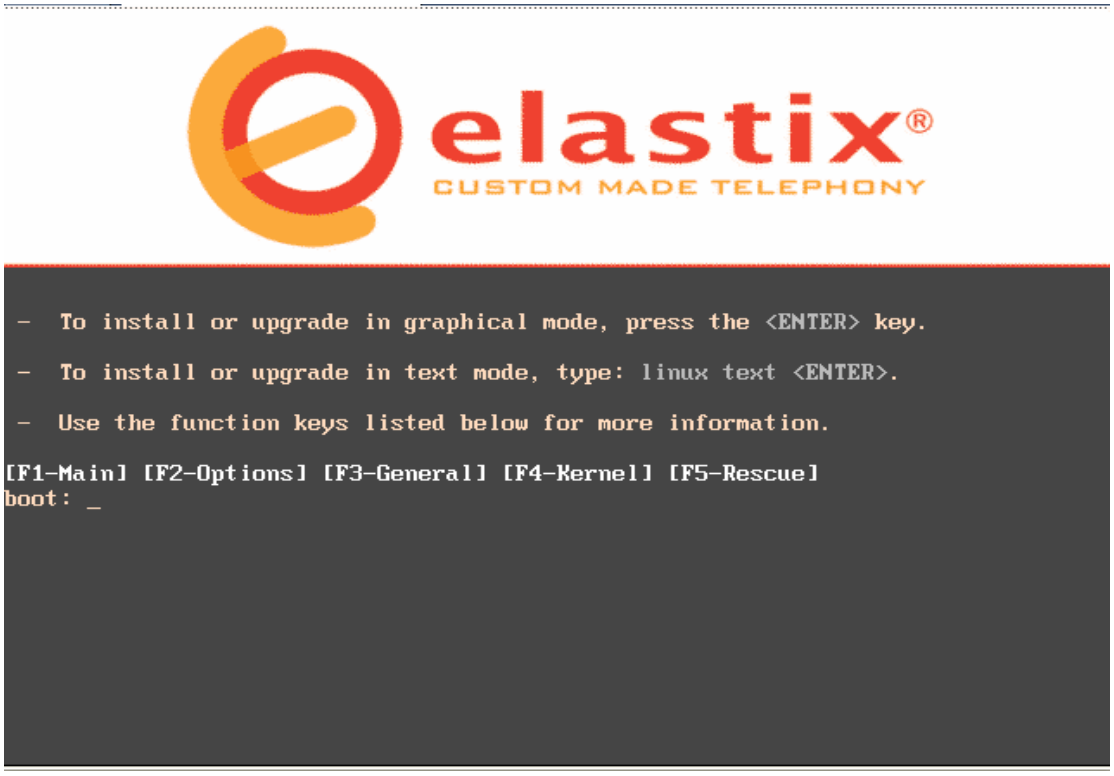

Figure 1

Note: When all the installations are booted from CD-ROM, there may pop up the prompt 'Error downloading kickstart file' on the screen. Now you should select OK, but not Cancel; otherwise it may result in abnormal running of the system due to uninstallation of some packages.

2. Next, choose the language for installation. Here select 'English' (Figure 2).

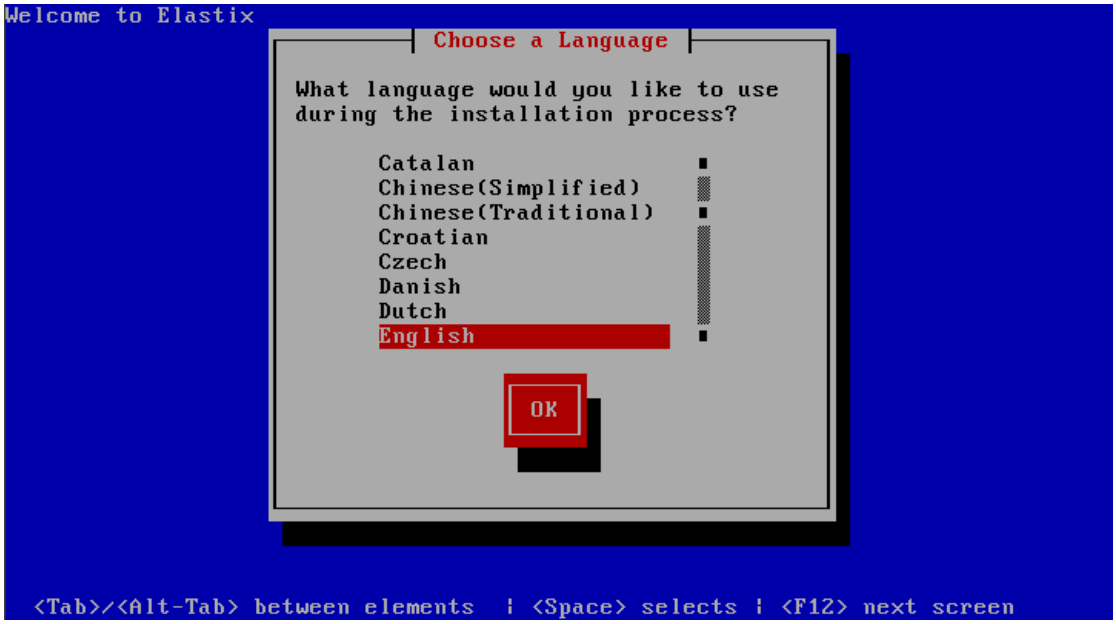

Figure 2

3. Next, choose a keyboard type according to your requirement. Usually we choose 'us' (Figure

3).

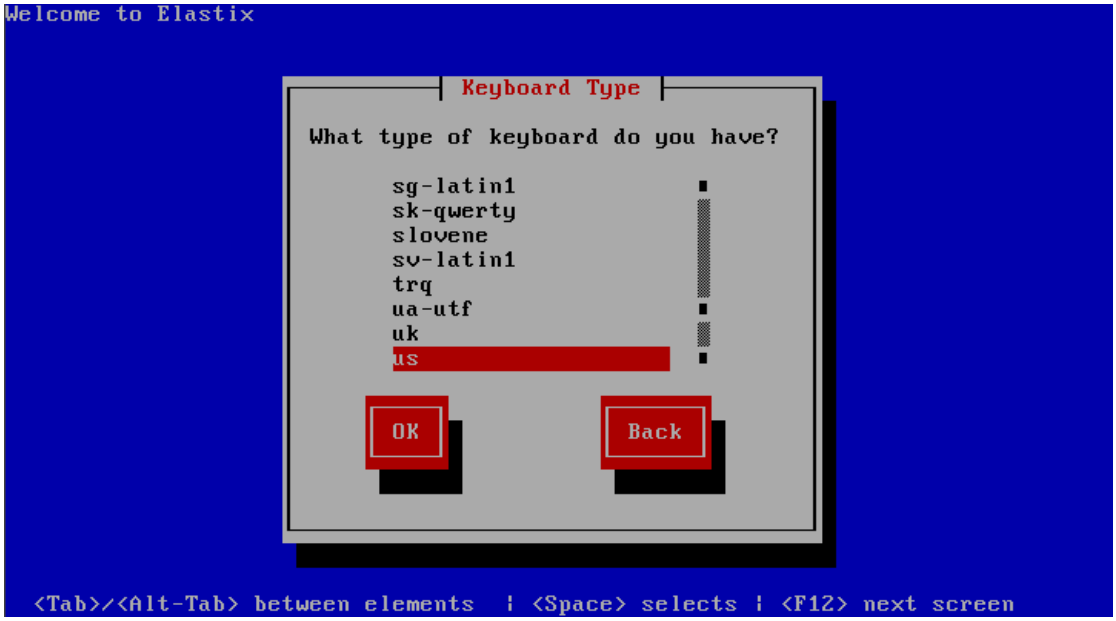

Figure 3

4. Next is the partitioning operation. You have four options to select. For a brand new HD, select the default setting ‘Use free space on selected drivers and create default layout’. For an HD with some data already, if you want to discard it, use the option ‘Remove all partitions on selected drivers and create default layout’; if you want to keep the old data, select the option ‘Create custom layout’ to do partitioning. What we use here is a new HD. Select the default setting and click on ‘OK’ (Figure 4).

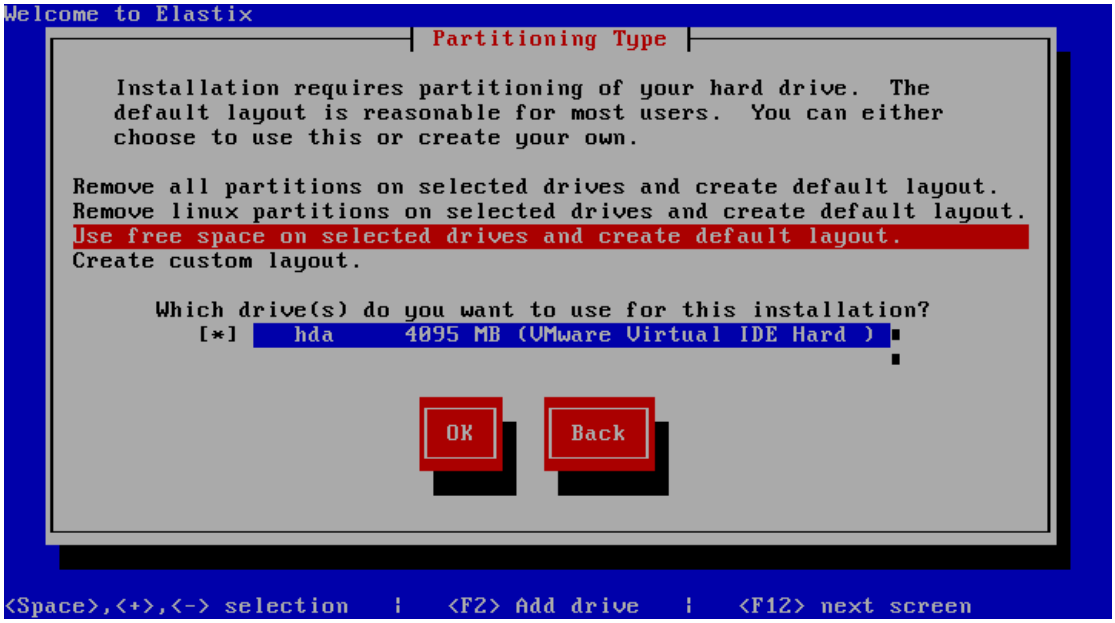

Figure 4

5. Next, the following prompt ‘Review and modify partitioning layout?’ pops up. Select ‘No’ here (Figure 5).

Figure 5

6. Next, the following prompt 'Would you like to configure the eth0 network interface in your system?' pops up. Select 'Yes' here (Figure 6).

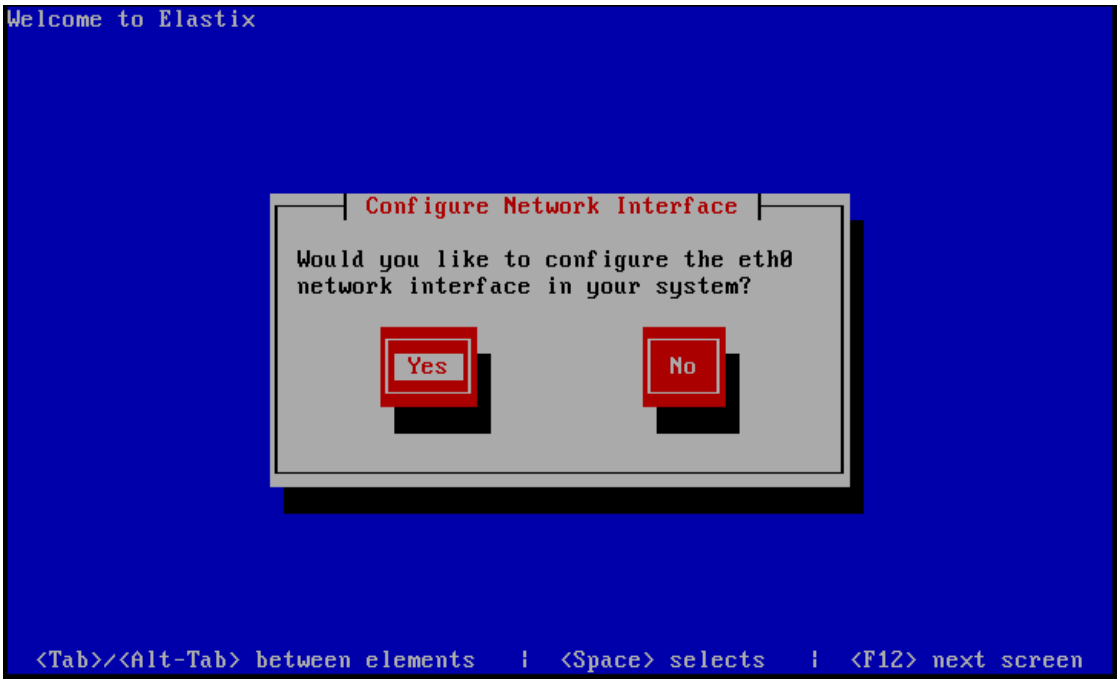

Figure 6

7. Next, choose to configure IPv4 or IPv6. Here we select 'Activate on boot' and 'Enable IPv4 support', and then click 'OK' (Figure 7).

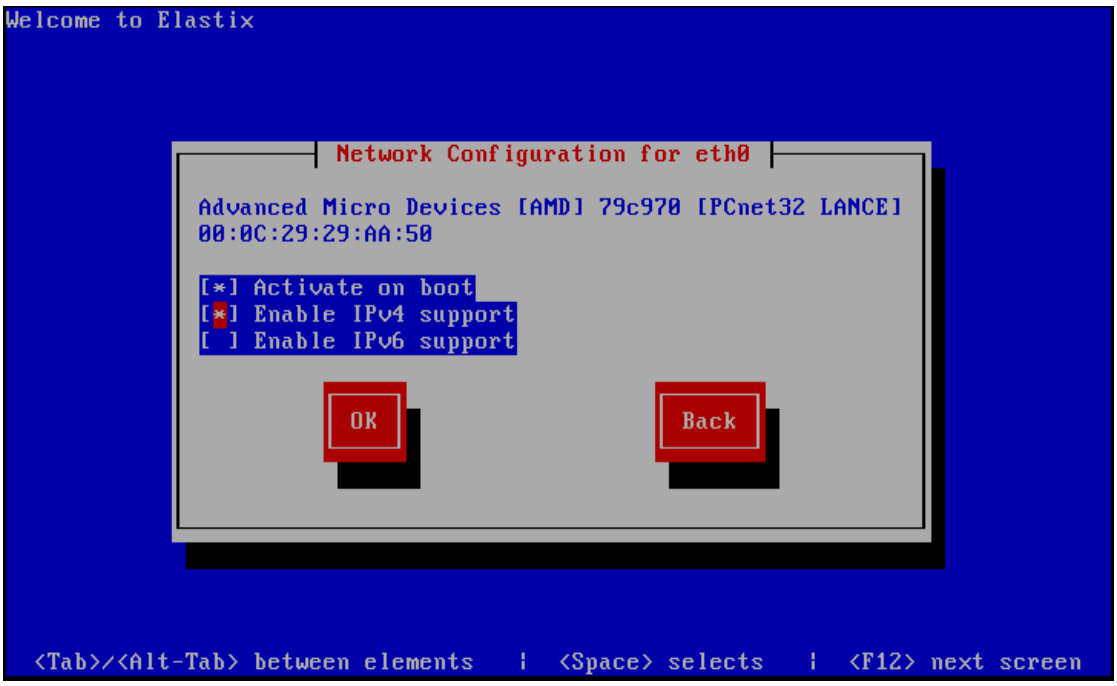

Figure 7

8. Next, choose to manually or dynamically configure IP address. Here we select 'Manual address configuration', enter the IP address and the subnet mask below, and then click 'OK' (Figure 8).

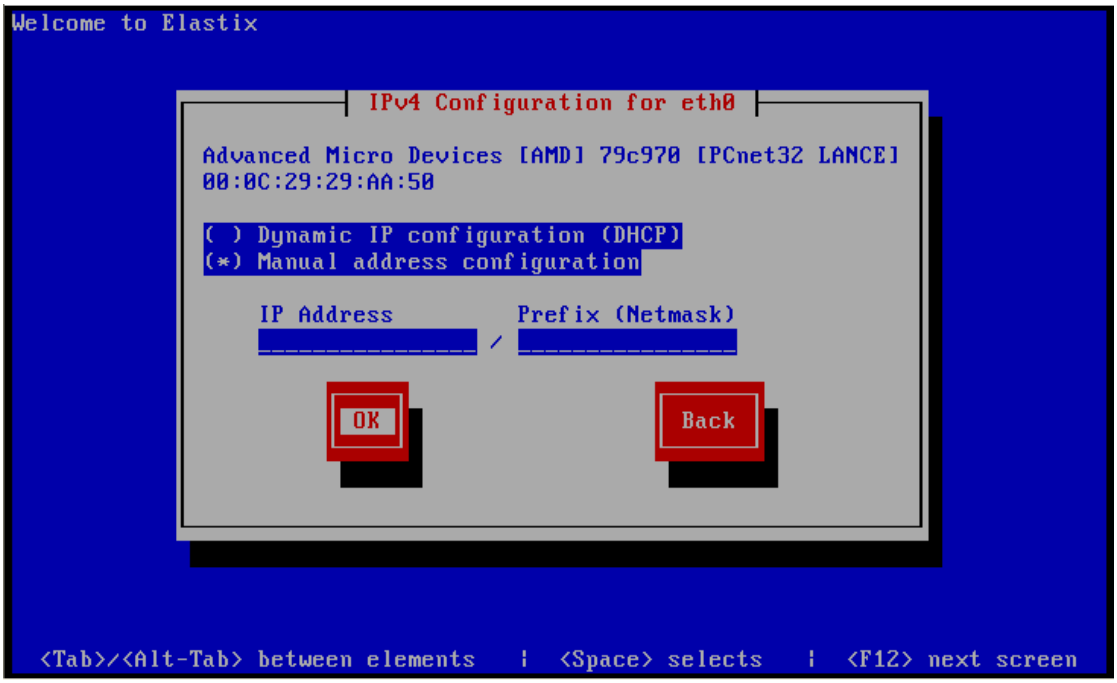

Figure 8

Note: During the following installation process, the system will automatically link to Internet to download some relative files. Therefore, if the network has not been well configured, all subsequent operations will fail. However, for some networks that have DHCP servers to automatically allocate IP and gateway addresses, such network

configuration is not required.

9. Next, enter the gateway address, the primary DNS address and the secondary DNS address, and then click 'OK' (Figure 9).

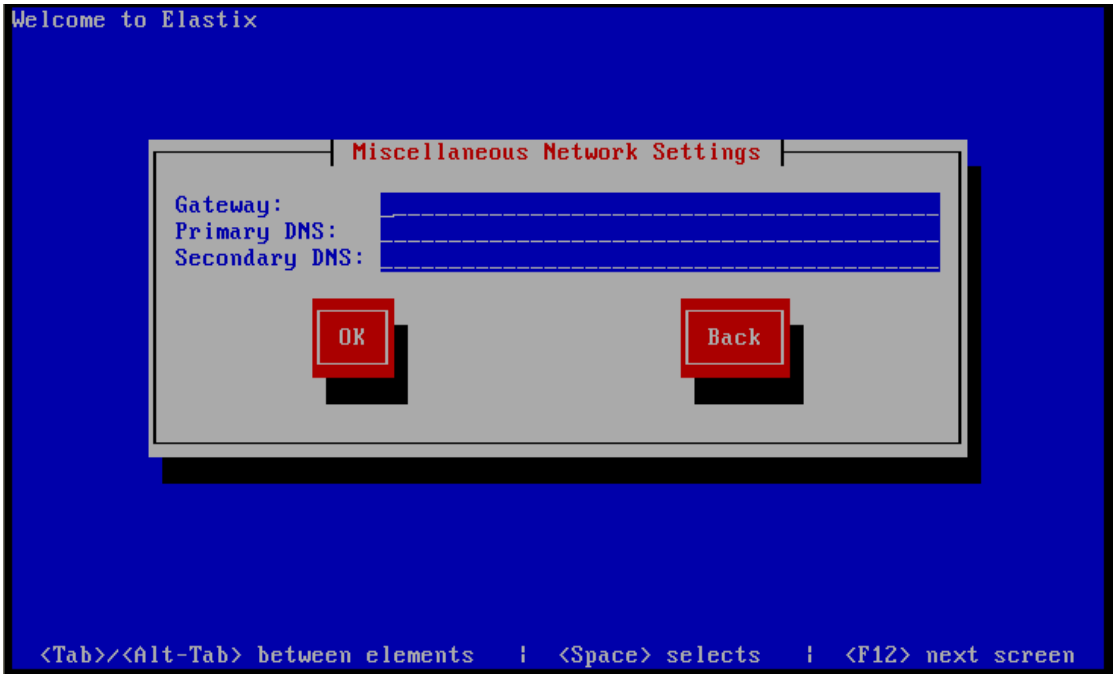

Figure 9

10. Next, determine how to get the hostname, assigned automatically via DHCP or entered manually. Here we select 'manually' and enter a hostname such as 'Synway' on the dotted line (Figure 10).

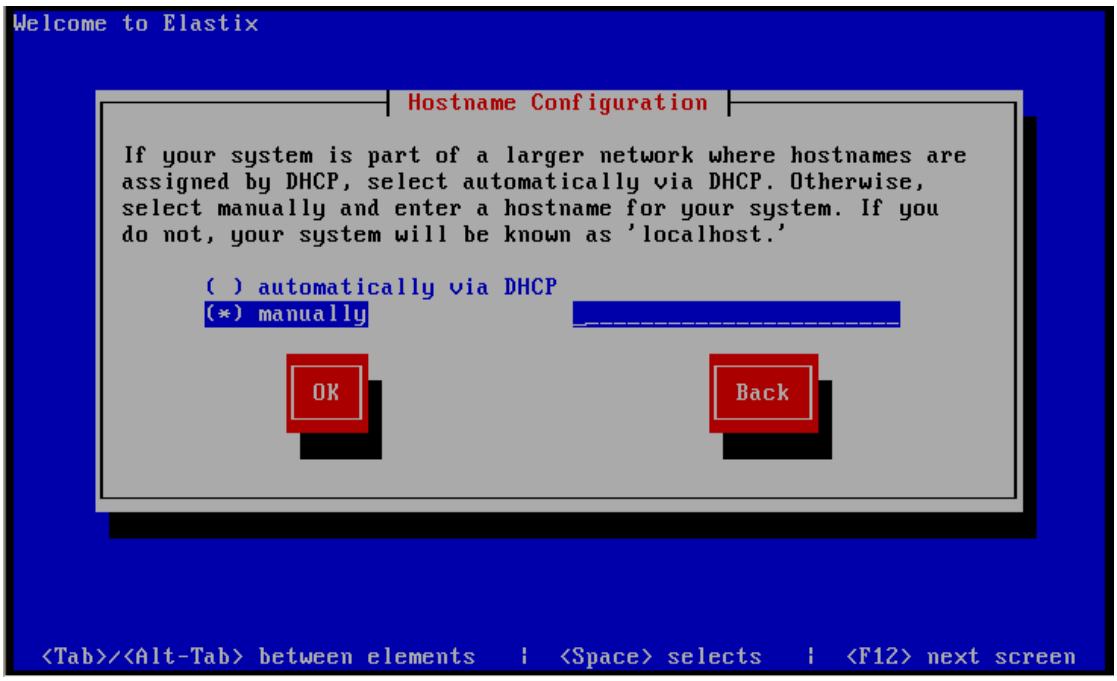

Figure 10

11. Next, select a time zone according to the real situation. Here we select 'America/New_York' (Figure 11).

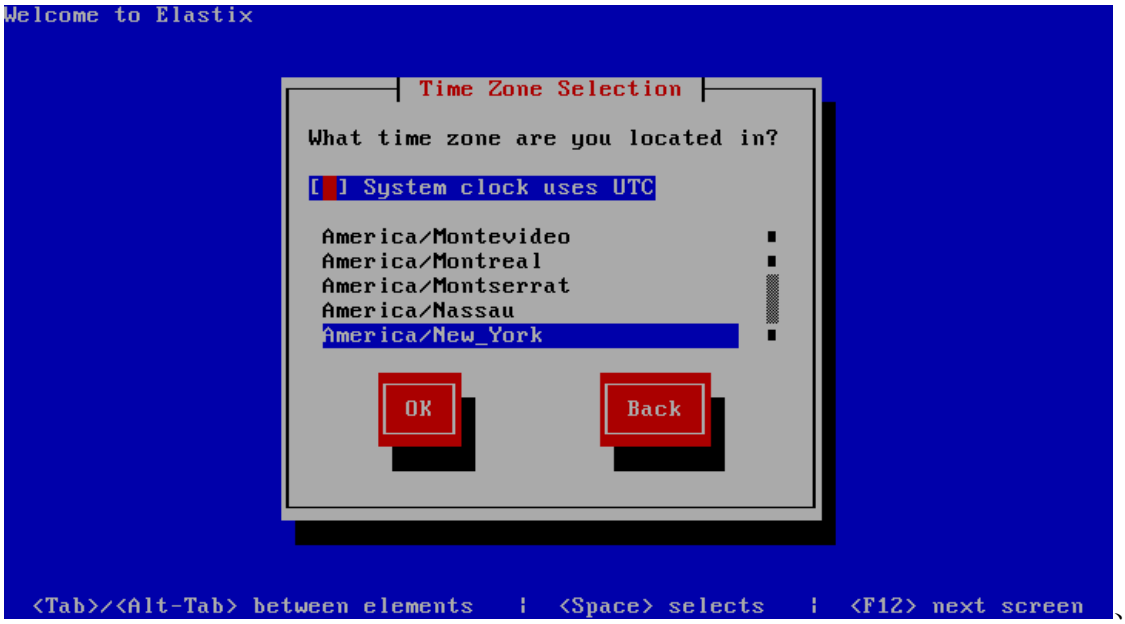

Figure 11

12. Next, enter the system administrator password (Figure 12).

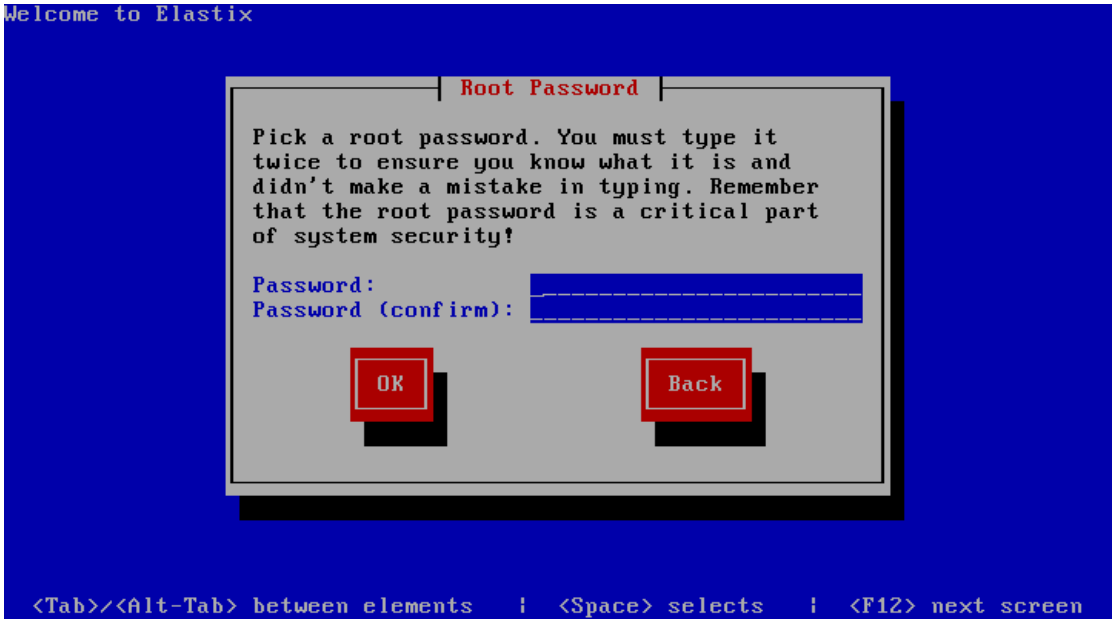

Figure 12

13. Next, the partitioning and formatting of the HD begins. After that, the system installation starts. Upon all files being installed successfully, the PC will be restarted automatically (Figure 13).

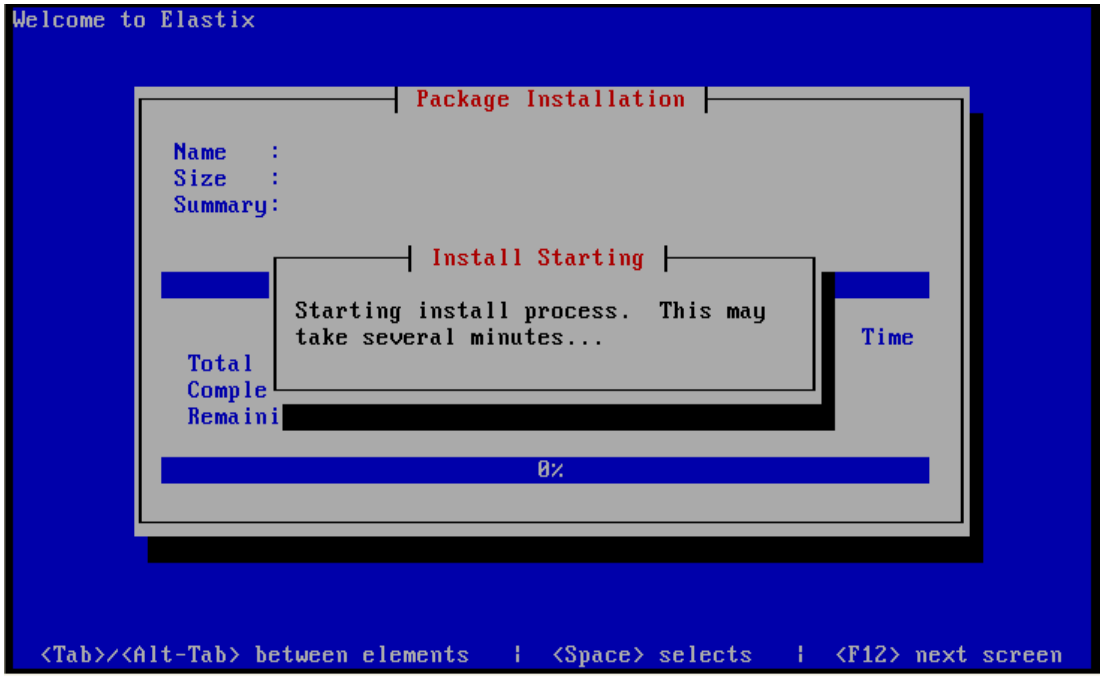

Figure 13

Note: You must take out the Elastix CD before the PC restart; or the system will go into the installation guide interface again.

14. After the PC restart, the system goes into the startup interface (Figure 14).

Figure 14

15. During the startup process, the following prompt will pop up to ask for a new MySQL root

password. Here we can set any password as we want (Figure 15).

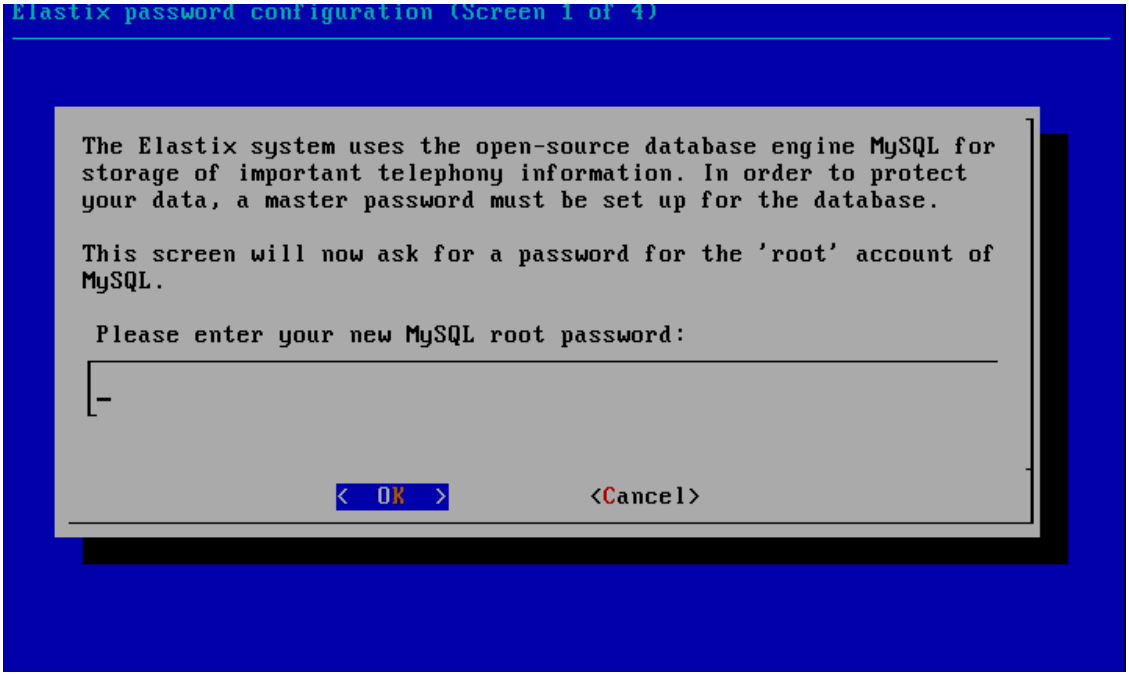

Figure 15

16. Also in the startup process, the following prompt will pop up to ask for a web login password. Here we can set any password as we want, such as 'admin' (Figure 16).

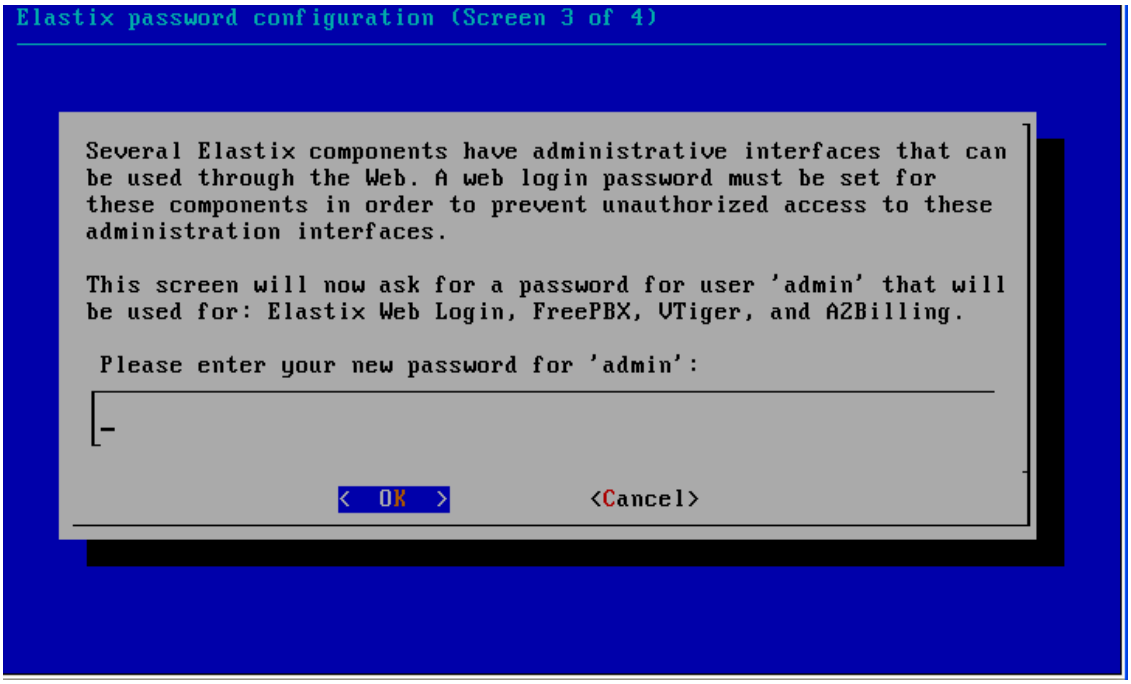

Figure 16

Step3: Log on the system

There pops up the login prompt after the system startup. Please use the root username to log in,

and the password is just the one set during the installation process.

Step4: When all the above steps are finished, the Elastix operating system has been installed successfully.

Chapter 3 Compilation and Installation of Dahdi and SynAST

To support the Synway AST series boards, you should install the SynAST driver based on the Elastix system. Here take the Synway TEJ200P and FXM3201P boards as an example. As recompilation is required for driver installation, you should first install the compiling environment.

3.1 Driver Installation

Step1: Stop relative services

 # amportal stop *# Stop Asterisk services*

Note: amportal commands include stop, start, restart and some other operations. See the command description for details.

Note: When the board driver is being installed, the Dahdi driver needs to be recompiled before the configuration of Asterisk system. Asterisk services will be automatically started once the Elastix system is successfully installed, and the driver installation will fail if it is performed while Asterisk services are running. In such situation, you should manually stop Asterisk services first.

Step2: Install the SynAST driver

Put the prepared files under the /opt directory. Enter this directory and decompress relative installation packages.

 # cd /opt
 # tar -zxvf SynAST-1.7.0.0_en.tar.gz
 # tar -zxvf dahdi-linux-complete-2.3.0.1+2.3.0.tar.gz

Enter SynAST-1.7.0.0_en to start auto installation:

 # cd SynAST-1.7.0.0_en
 # cd for_dahdi
 # Modify the Setup file, find the line 'echo > /etc/dahdi/modules' and change it to be:
if [! -f /etc/dahdi/modules]; then
echo > /etc/dahdi/modules
fi
 # ./Setup install

Prompts on Screen:

Install SynAST AST package now!

Would you like to install SynAST AST package now? (y/n) Enter 'y'.

Please enter working dahdi directory [q](exit install) : Enter the directory to dahdi. Here please enter: **/opt/dahdi-linux-complete-2.3.0.1+2.3.0**

Would you like to open hardware echocan on boards? (y/n) Enter 'y'.

If there are TEJ boards installed on your machine, the following prompts will pop up on the screen.

Select tej21 mode [t, e, j] : Select the TEJ board trunk working mode. Here select **e** which indicates working in E1 mode;

select [75, 120]ohm : Select the trunk impedance in E1 mode. Here input **120** which indicates working in Twisted Pair, 120Ω mode.

Select OK to start installing. During the installation, the system will link to the network to download some relative files. When finished, the prompt Install Driver Completed appears.

If you have multiple boards of a same model, follow the section Configure Boards Order in the file *SynAST_UserManual.pdf* to handle.

Now both Dahdi and SynAST drivers are already installed.

In the above step, these options 'Select tej21 mode [t, e, j]', 'select [75, 120]ohm' will appear only when the system is installed with TEJ series boards. In other words, they will not appear if the system is installed only with FXM series boards.

Note: The system will automatically compile and install the Dahdi driver while installing the SynAST driver. Therefore, it is not necessary to compile and install the Dahdi driver separately.

Step3: Configure board information

#>dahdi_genconf

Note: If there are TEJ series boards installed, you need to modify '/usr/lib/perl5/site_perl/5.8.8/Dahdi/Span.pm' – add a line 'TEJ', to the end of the variable @pri_strings.

Step4: Check if the driver module has been loaded

Input the command:

 # lsmod | grep fxm

If properly installed, the first several lines of FXM information will display on the screen. If they include the **fxm32** line, it means the **fxm32.ko** module has been well loaded.

To check TEJ boards, just replace 'FXM' in the above command with 'TEJ'.

Step5: Start Asterisk

 # amportal start *# Start Asterisk Services*

Now the SynAST driver installation is finished. All the operations performed under the character interface are completed. Next, you are required to use the client (another PC) to log in the WEB interface to do configurations.

Chapter 4 Configuration and Management of Elastix

In the address bar of the browser, enter the IP address of the Elastix system to go into the initial interface of Elastix (see Figure 17). Enter the administrator username **admin** and the password **admin** (refer to the password shown in Figure 16) to reach the configuration and management interface.

Figure 17

On the upward side of the main interface of Elastix is the menu bar (Figure 18).

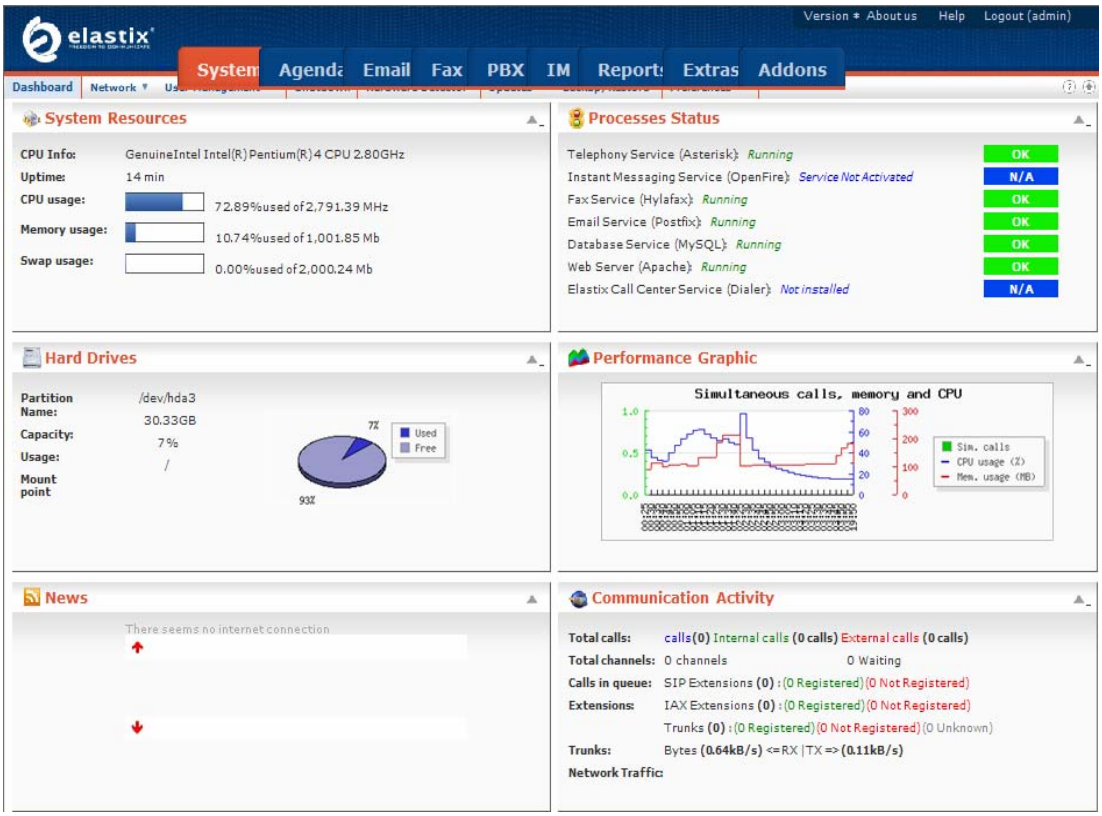

Figure 18

First of all, click on ‘Hardware Detector’ in SYSTEM menu to detect the installed hardware. In the displayed page (Figure 19), select ‘Advanced’ and tick the option ‘Replace File chan_dahdi.conf’. Then click the button ‘Detect New Hardware’.

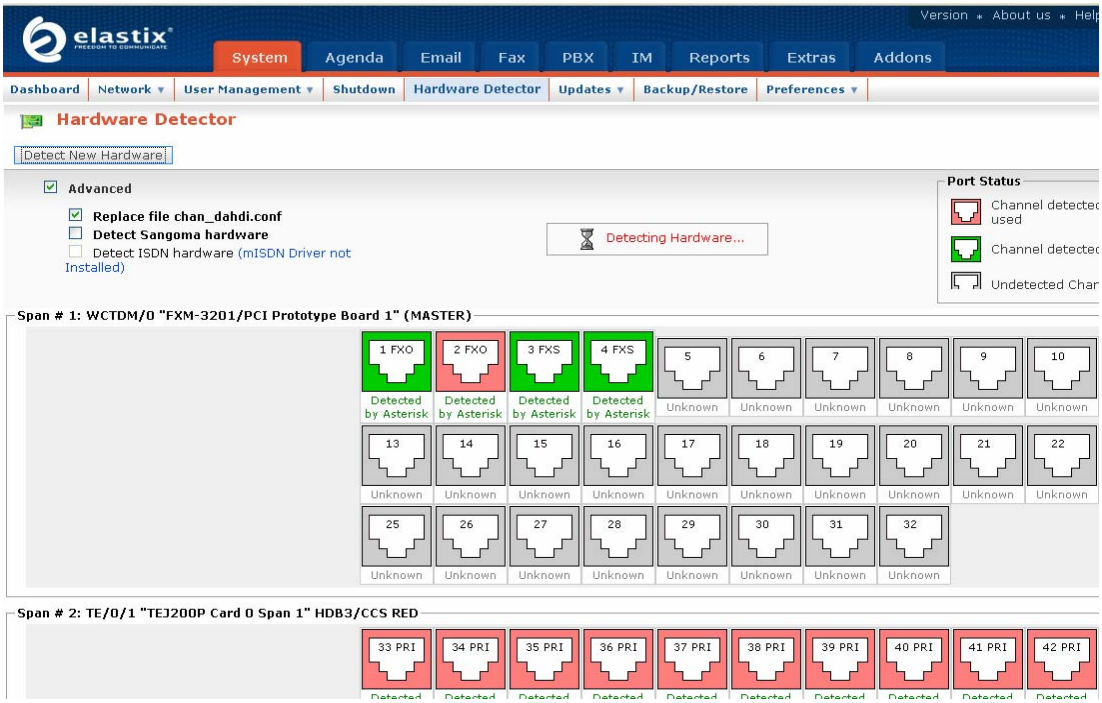

Figure 19

Then you can configure the PBX according to Elastix explanation.

Here we use an actual example to explain how to configure.

Take the FXM3201P board as an example. Install an FXM3201P motherboard with an FXO module and an FXS module. Channel 1 and Channel 2 on the board are FXO (trunk) while Channel 3 and Channel 4 are FXS (station). You can see from the above figure that the corresponding trunks in the Elastix system are zap channel 1 and channel 2, the corresponding stations are zap channel 3 and channel 4. If there are multiple boards in the system, the channels are arranged by board number.

Now we demonstrate such functions as making a call from extension to extension, a call from extension to trunk, and a call from trunk to extension.

First, click on ‘PBX' in the menu bar to go by default into the Extensions setting, or click on the menu ‘PBX Configuration’ and then click the item ‘Extensions’ in the left navigation bar (Figure 20).

Figure 20

Step1: Configure extensions

In this situation, there are two station channels on the FXM board respectively corresponding to zap channel 3 and zap channel 4. We need to add two Extensions whose numbers are supposed to be 2001 and 2002.

To add the information about the first extension 2001, choose Generic ZAP Device in the pull-down box for Device and press the Submit button to submit (see Figure 20). Then fill in some relative information on the page shown afterwards. Fill in 2001 for both options ‘User Extension’ and ‘Display Name’. Find the sentence ‘This device use technology. (Via DAHDI compatibility mode)’ (see Figure 21) and fill in 3 for the following option ‘channel’. This indicates Extension 2001

uses zap channel 3. Press Submit and the configuration of Extension 2001 is finished. Meanwhile, the configuration file /etc/asterisk/ chan_dahdi_additional.conf is generated.

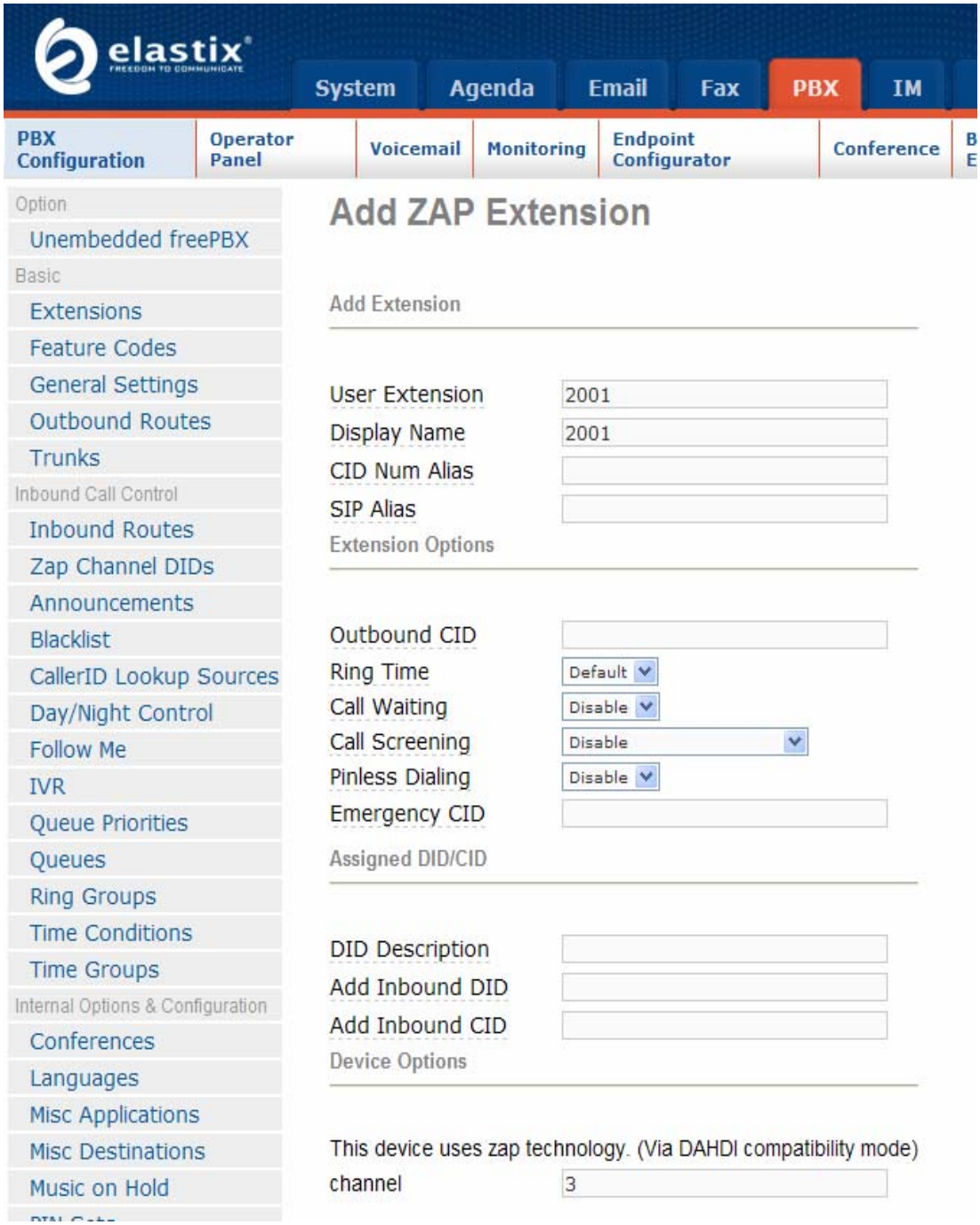

Figure 21

After that, return to the top ‘Add Extension’ to add Extension 2002. Configure it to use zap channel 4. Then both extensions are well configured.

When the modified configuration is submitted, there appears a prompt in red ‘Apply Configuration Changes Here’ on the top right corner of this page (see Figure 22). Click it to apply the modified configuration. Now we can make calls from extension to extension. Dial 2002 on the first extension to call the second extension.

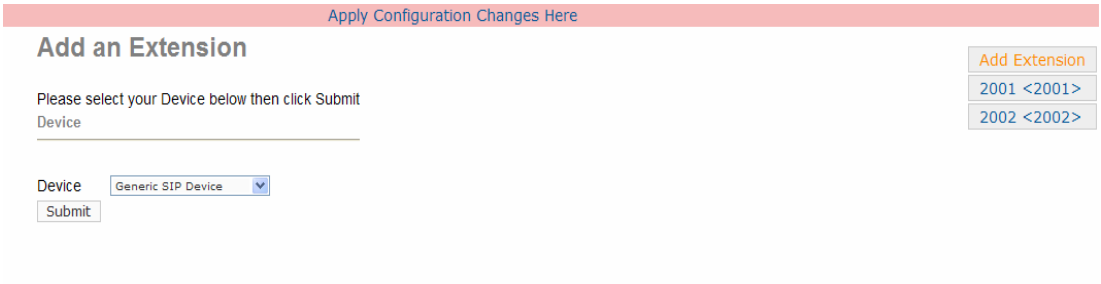

Figure 22

Step2: Configure trunks

Now there are two trunk channels on the FXM board respectively corresponding to zap channel 1 and zap channel 2.

Click the item Trunks in the left navigation bar. You can see from the right side of this page (see Figure 23) that the default setting has included a trunk. Click 'Trunk ZAP/g0' and you will see the default value of 'Zap Identifier (trunk name)' is g0. Modify it to 1 which indicates this trunk uses zap channel 1 and leave other parameters unchanged. Save the change and the configuration of the first trunk is finished (see Figure 24).

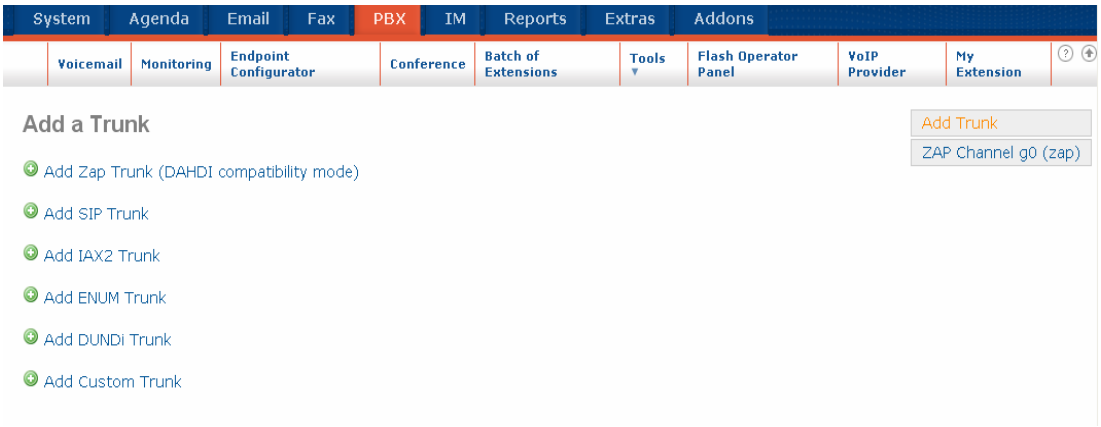

Figure 23

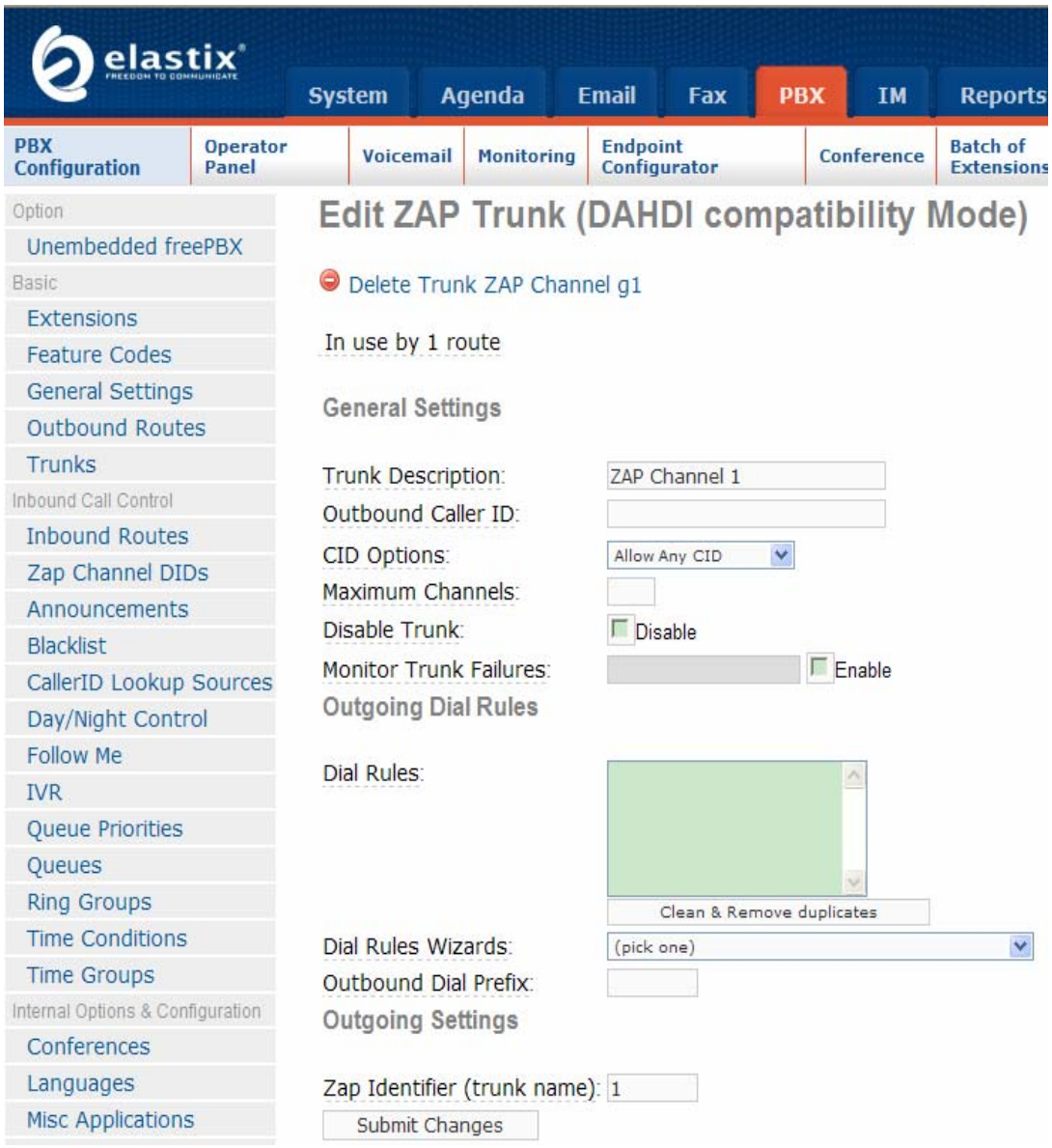

Figure 24

Then add the second trunk. Click ‘Add a Trunk’ on the right and press ‘Add Zap Trunk (DAHDI compatibility mode)’ (see Figure 23). Fill in 2 for ‘Zap Identifier (trunk name)’ which indicates this trunk uses zap channel 2. Click the Submit button to submit. Now both trunks are properly configured.

Next, we shall manage to perform the call from extension to trunk.

Step3: Configure the outbound route for calls from extension to trunk

Find the option Basic in the left navigation bar and click Outbound Routes. You can see from the right side of this page that the default setting has included a route with the name of 0 9_outside which indicates the rule to dial 9 before the phone number (see Figure 25). The outbound call is routed on ZAP/1. Actually, dial 9+phone number on the extension and the call will be routed out through zap channel 1. You can modify the configuration and apply it to make calls from extension to trunks.

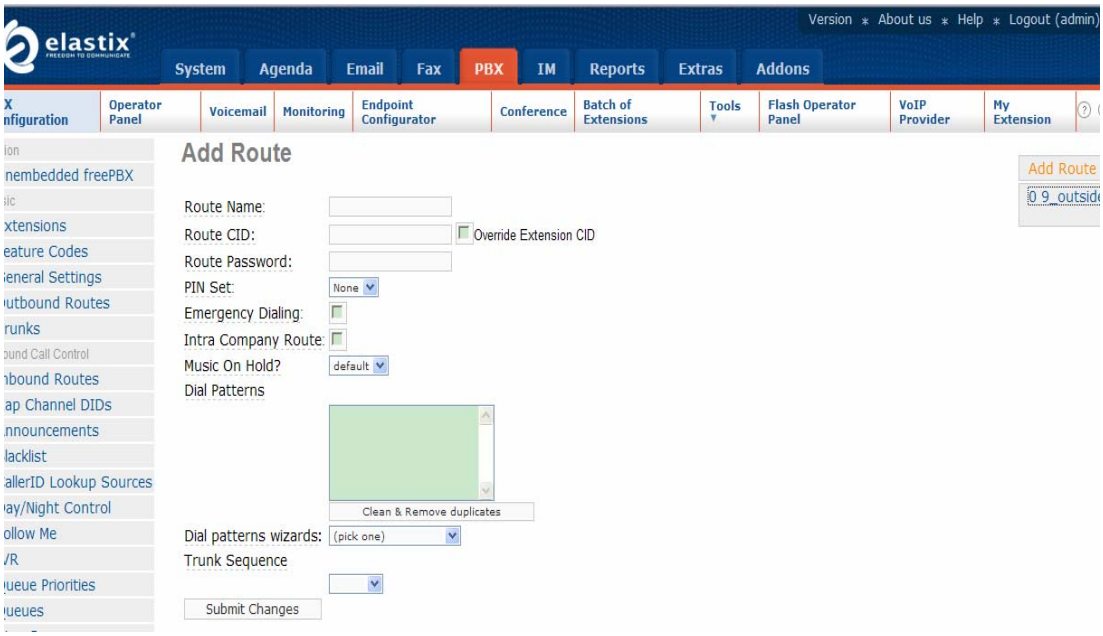

Figure 25

Step4: Make calls from trunk to extension

To make calls from trunk to extension, you need to configure 'Inbound Routes'. Find the option Inbound Call Control and select Inbound Routes. Go to the bottom of the displayed page to find Set Destination (see Figure 26). Select Extensions and designate some extension (see Figure 27). Thus, when a call comes in from a trunk, the specified extension rings directly. Just pick up the call and talk. Also you can set other inbound routes like IVR to complete corresponding flows. However, the IVR must be set beforehand.

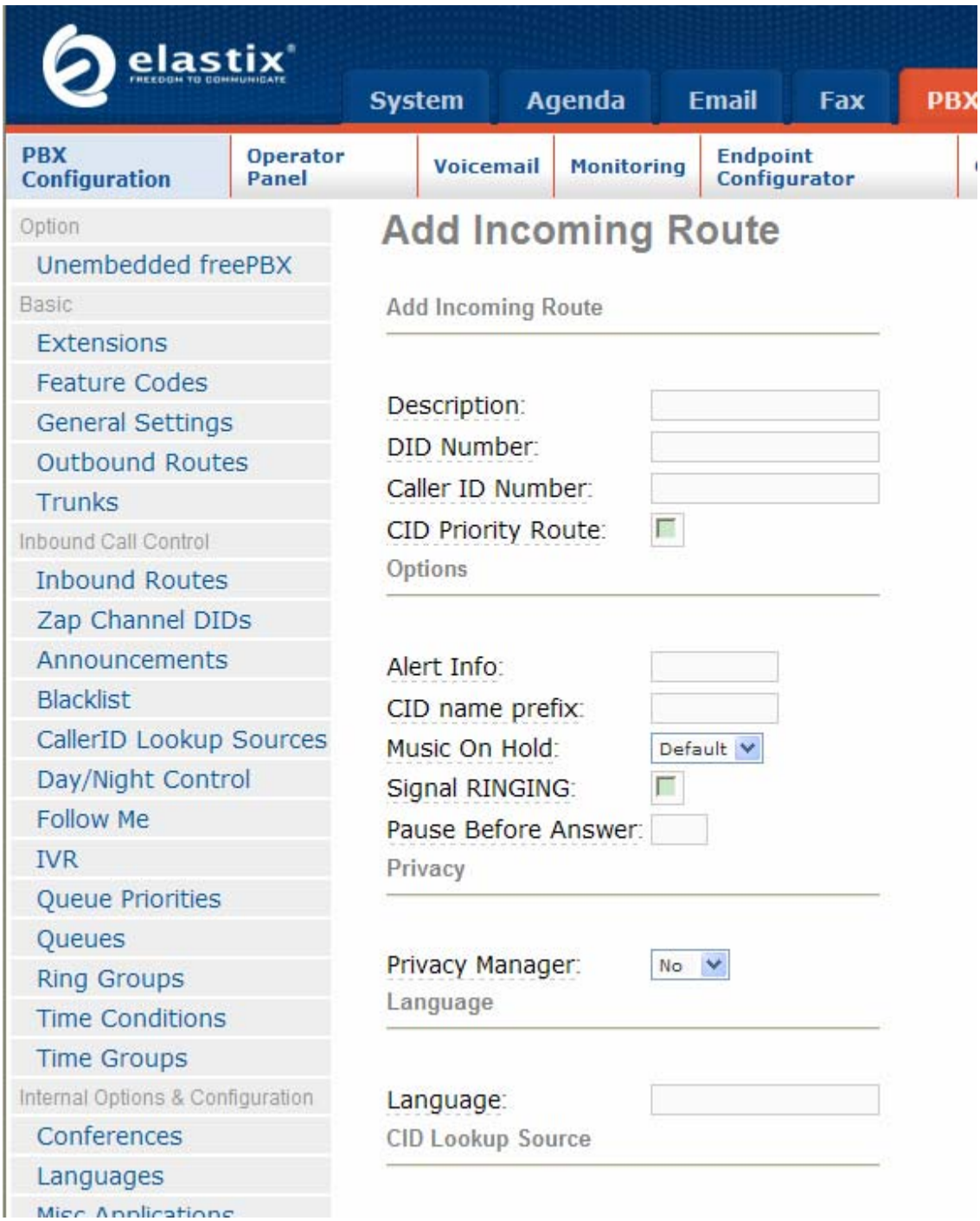
elastix
FREEDOM TO COMMUNICATE
System
Agenda
Email
Fax
PBX
PBX Configuration
Operator Panel
Voicemail
Monitoring
Endpoint Configurator
Option
Unembedded freePBX
Basic
Extensions
Feature Codes
General Settings
Outbound Routes
Trunks
Inbound Call Control
Inbound Routes
Zap Channel DIDs
Announcements
Blacklist
CallerID Lookup Sources
Day/Night Control
Follow Me
IVR
Queue Priorities
Queues
Ring Groups
Time Conditions
Time Groups
Internal Options & Configuration
Conferences
Languages
Add Incoming Route
Add Incoming Route
Description:
DID Number:
Caller ID Number:
CID Priority Route:
Options
Alert Info:
CID name prefix:
Music On Hold:
Default
Signal RINGING:
Pause Before Answer:
Privacy
Privacy Manager:
No
Language
Language:
CID Lookup Source

Figure 26

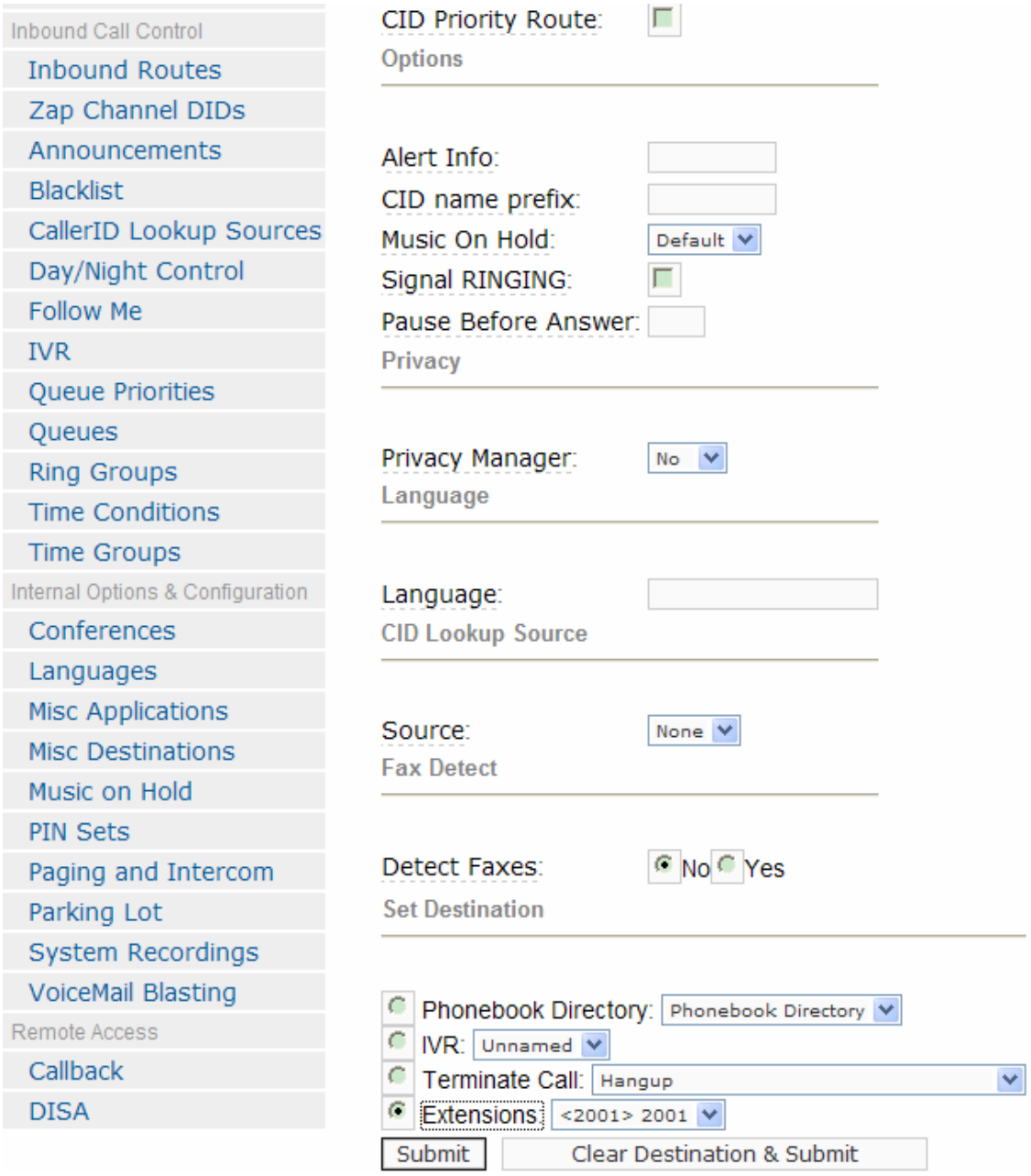

Figure 27

At last don't forget to click 'Apply Configuration Changes Here' to make modified configurations effective; otherwise, no modification works. Then you can perform call tests based on the above configurations.

Now you are allowed to use the Synway FXM3201P board in the Elastix system to make simple calls. To achieve other more complicated functions, go to http://www.elastix.org/ to refer to relative documents.

Appendix A Technical/Sales Support

Thank you for choosing Synway. Please contact us should you have any inquiry regarding our products. We shall do our best to help you. However, our technicians and salesmen are mainly responsible for maintaining our boards and providing relative technical support. If there are problems about Asterisk, please keep touch with Digium Inc. for help.

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