

Choose one of below methods to install driver for TDM800

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Method 1: Patch TDM800 Driver for Asterisk

Before You Proceed:

1. Make sure you have already installed TDM800 card and plugged in power cable.
2. Make sure you have already installed the kernel source code and gcc compiler.
3. Take version zaptel-1.4.12 for example. If you are using other version such as zaptel-1.4.3, please replace the zaptel-1.4.12 with zaptel-1.4.3 in all places.

Begin to Install:

1. Choose a path to save the installation file, such as /usr/src
[root@localhost ~]# **cd /usr/src**
2. Download zaptel you want to use from asterisk website, such as zaptel-1.4.12
[root@localhost src]# **wget http://downloads.digium.com/pub/zaptel/releases/zaptel-1.4.12.tar.gz**
3. Download the driver patch for corresponding zaptel version. Here we take zaptel-1.4.12 for example, and download the corresponding patch.
[root@localhost src]# **wget http://www.yeostar.com/download/ystdm8xx-zaptel-1.4.12.patch.tar.gz**
4. Decompress the downloaded files
[root@localhost src]# **tar xzvf zaptel-1.4.12.tar.gz**
[root@localhost src]# **tar xzvf ystdm8xx-zaptel-1.4.12.tar.gz**
5. Install patch
[root@localhost src]# **patch -p0 < ystdm8xx-zaptel-1.4.12.patch**
You should see the following lines after entering the above command
patching file zaptel-1.4.12/Makefile
patching file zaptel-1.4.12/ystdm8xx.c
patching file zaptel-1.4.12/zaptel.sysconfig

Note 1: If it appear the lines be shown like follow:

-bash: patch: command not found

That is mainly the system doesn't have patch command, please follow below steps to install patch:

```
[root@localhost src]# yum install patch
```

Note 2: If it appears the lines be shown following rather than the above three

patching file zaptel-1.4.12/Makefile

Reversed (or previously applied) patch detected! Assume -R? [n]

It indicates that you had patched something before. If you want to keep the previous patch, please refer to <[Install TDM800 Driver Manually](#)>; or please delete the zaptel file and decompress and install patch again. Steps as show below:

```
[root@localhost src]# rm zaptel-1.4.12 -rf
```

```
[root@localhost src]# tar xzvf zaptel-1.4.12.tar.gz
```

```
[root@localhost src]# patch -p0 < ystdm8xx-zaptel-1.4.12.patch
```

```
[root@localhost src]# rm zaptel-1.4.12 -rf
```

```
[root@localhost src]# tar xzvf zaptel-1.4.12.tar.gz
[root@localhost src]# patch -p0 < ystdm8xx-zaptel-1.4.12.patch
```

6. Compile and Install

```
[root@localhost src]# cd zaptel-1.4.12
[root@localhost zaptel-1.4.12]# make clean
[root@localhost zaptel-1.4.12]# make
```

Note: Versions of zaptel 1.4 serial will come out the command as Figure 1.1 after entering 'make'

```
configure: *** Zaptel build successfully configured ***
****
**** The configure script was just executed, so 'make' needs to be
**** restarted.
****
make: *** [config.status] Error 1
[root@asterisk1 zaptel-1.4.6]#
```

<Figure 1.1>

You can **ignore** the error because it's just an error output of zaptel and has no influence to operation. Please continue to the next step:

```
[root@localhost zaptel-1.4.12]# make install
[root@localhost zaptel-1.4.12]# make config
```

7. Reboot to finish the installation of the card's driver

```
[root@localhost zaptel-1.4.12]# reboot
```

8. Read card information

```
[root@localhost ~]# genzaptelconf
```

9. Check the configuration of TDM800 card

```
[root@localhost utils]# vi /etc/zaptel.conf
```

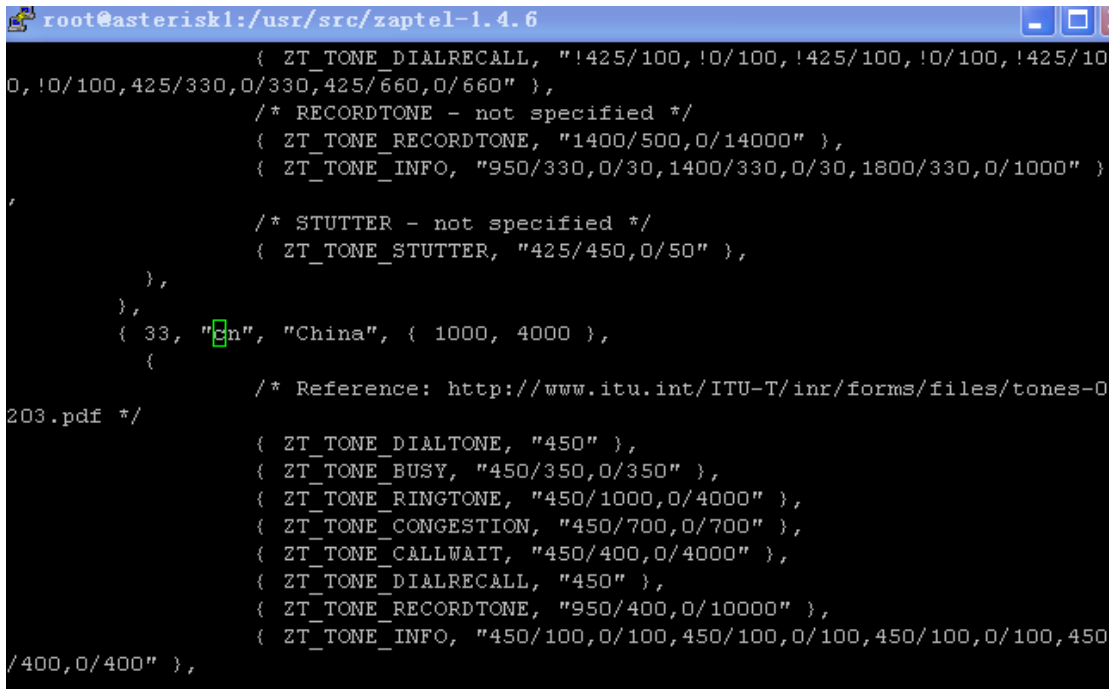
```
# Autogenerated by /usr/local/sbin/genzaptelconf -- do not hand edit
# Zaptel Configuration File
#
# This file is parsed by the Zaptel Configurator, ztcfg
#
# It must be in the module loading order
#
# Span 1: WCTDM/O "YSTDM8xx REV E Board 1"
fxsks=1
fxsks=2
fxsks=3
fxsks=4
fxsks=5
fxsks=6
fxsks=7
fxsks=8
# Global data
loadzone = us
defaultzone = us
```

<Figure 1.2>

10. Modify configuration of card

On /etc/zaptel.conf file, change the loadzone and defaultzone to the country where you are. You can find the abbreviation on zonedata.c of folder zaptel. If your country is unavailable, please use the default 'us'.

[root@localhost utils]# vi /usr/src/zaptel-1.4.12/zonedata.c



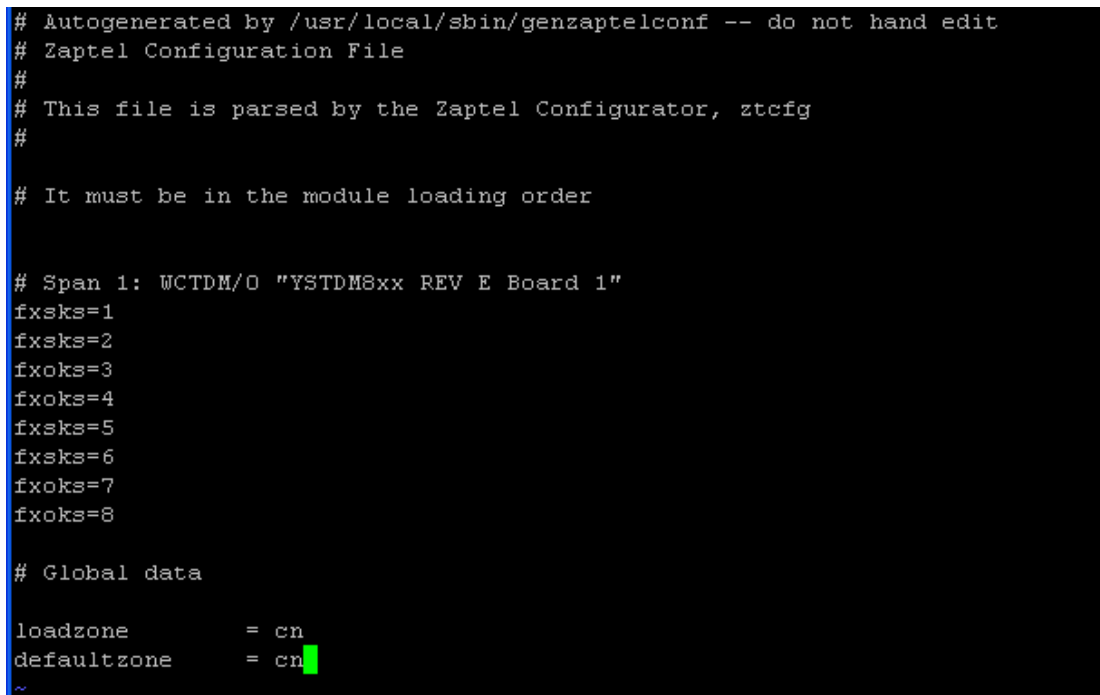
```

root@asterisk1:/usr/src/zaptel-1.4.6
( ZT_TONE_DIALRECALL, "!425/100,!0/100,!425/100,!0/100,!425/10
0,!0/100,425/330,0/330,425/660,0/660" ),
/* RECORDTONE - not specified */
( ZT_TONE_RECORDTONE, "1400/500,0/14000" ),
( ZT_TONE_INFO, "950/330,0/30,1400/330,0/30,1800/330,0/1000" )
',
/* STUTTER - not specified */
( ZT_TONE_STUTTER, "425/450,0/50" ),
),
),
( 33, "cn", "China", { 1000, 4000 },
(
/* Reference: http://www.itu.int/ITU-T/inr/forms/files/tones-0
203.pdf */
( ZT_TONE_DIALTONE, "450" ),
( ZT_TONE_BUSY, "450/350,0/350" ),
( ZT_TONE_RINGTONE, "450/1000,0/4000" ),
( ZT_TONE_CONGESTION, "450/700,0/700" ),
( ZT_TONE_CALLWAIT, "450/400,0/4000" ),
( ZT_TONE_DIALRECALL, "450" ),
( ZT_TONE_RECORDTONE, "950/400,0/10000" ),
( ZT_TONE_INFO, "450/100,0/100,450/100,0/100,450/100,0/100,450
/400,0/400" ),

```

<Figure 1.3>

[root@localhost utils]# vi /etc/zaptel.conf



```

# Autogenerated by /usr/local/sbin/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: WCTDM/0 "YSTDM8xx REV E Board 1"
fxsks=1
fxsks=2
fxoks=3
fxoks=4
fxsks=5
fxsks=6
fxoks=7
fxoks=8
# Global data
loadzone      = cn
defaultzone   = cn
~

```

<Figure 1.4>

Save and take it effect:

```
[root@localhost utils]# ztcfg -v
```

11. Patching is complete.

Method 2: Patch TDM800 Driver for Trixbox

Before You Proceed:

1. Make sure you have already installed TDM800 card and plugged in power cable.
2. Take version zaptel-1.4.12 for example. If you are using other version such as zaptel-1.4.3, please replace the zaptel-1.4.12 with zaptel-1.4.3 in all places.

Begin to Install:

1. Choose a path to save the installation file, such as /usr/src

```
[root@localhost ~]# cd /usr/src
```
2. Download zaptel you want to use from asterisk website, such as zaptel-1.4.12

```
[root@localhost src]# wget http://downloads.digium.com/pub/zaptel/releases/zaptel-1.4.12.tar.gz
```
3. Download the driver patch for corresponding zaptel version. Here we take zaptel-1.4.12 for example, and download the corresponding patch.

```
[root@localhost src]# wget http://www.yeostar.com/download/ystdm8xx-zaptel-1.4.12.patch.tar.gz
```

4. Decompress the downloaded files

```
[root@localhost src]# tar xzvf zaptel-1.4.12.tar.gz
[root@localhost src]# tar xzvf ystdm8xx-zaptel-1.4.12.patch.tar.gz
```

5. Install patch

```
[root@localhost src]# patch -p0 < ystdm8xx-zaptel-1.4.12.patch
```

You should see the following lines after entering the above command

```
patching file zaptel-1.4.12/Makefile
patching file zaptel-1.4.12/ystdm8xx.c
patching file zaptel-1.4.12/zaptel.sysconfig
```

Note 1: If it appear the lines be shown like follow:

```
-bash: patch: command not found
```

That is mainly the system doesn't have patch command, please follow below steps to install patch:

```
[root@localhost src]# yum install patch
```

Note 2: If it appears the lines be shown following rather than the above three

```
patching file zaptel-1.4.12/Makefile
Reversed (or previously applied) patch detected! Assume -R? [n]
```

It indicates that you had patched something before. If you want to keep the previous patch, please refer to <[Install TDM800 Driver Manually](#)>; or please delete the zaptel file and decompress and install patch again. Steps as show below:

```
[root@localhost src]# rm zaptel-1.4.12 -rf
[root@localhost src]# tar xzvf zaptel-1.4.12.tar.gz
[root@localhost src]# patch -p0 < ystdm8xx-zaptel-1.4.12.patch
```

6. Install kernel code and gcc compiler

```
[root@localhost src]# yum install kernel-devel-`uname -r`
[root@localhost src]# yum install gcc
```

Note: For lack of *newt.h* file in kernel-headers, please download it from Yeostar website:

```
[root@localhost src]# wget http://www.yeostar.com/download/newt.h
[root@localhost src]# mv newt.h /usr/include/
```

7. If you are using Linux kernel version 2.6.9-34.0.2.EL or 2.6.9-34.0.2.ELsmp (Trixbox2.2 embedded version), you should amend an error in kernel as show below. If you are not using those versions mentioned, please skip this step.

```
[root@localhost src]# vi /usr/src/kernels/2.6.9-34.0.2.EL-i686/include/linux/spinlock.h
```

Or

```
[root@localhost src]# vi /usr/src/kernels/2.6.9-34.0.2.EL-smp-i686/include/linux/spinlock.h
```

Original:

```
#define DEFINE_RWLOCK(x)          rw_lock_t x = RW_LOCK_UNLOCKED
```

Modified:

```
#define DEFINE_RWLOCK(x) rwlock_t x = RW_LOCK_UNLOCKED
```

8. Compile and Install

```
[root@localhost src]# cd zaptel-1.4.12
[root@localhost zaptel-1.4.12]# make clean
[root@localhost zaptel-1.4.12]# make
```

Note: Versions of zaptel 1.4 serial will come out the command as Figure 1 after entering 'make'

```
configure: *** Zaptel build successfully configured ***
****
**** The configure script was just executed, so 'make' needs to be
**** restarted.
****
make: *** [config.status] Error 1
[root@asterisk1 zaptel-1.4.6]#
```

<Figure 2.1>

You can ignore the error because it's just an error output of zaptel and has no influence to operation. Please continue to the next step:

```
[root@localhost zaptel-1.4.12]# make install
[root@localhost zaptel-1.4.12]# make config
```

9. Reboot to finish the installation

```
[root@localhost zaptel-1.4.12]# reboot
```

10. Read card information

Enter command **genzaptelconf**

```
[root@localhost ~]# genzaptelconf
```

Note1: Please executive 'genzaptelconf' again if any error occurred.

Note2: Check asterisk have load TDM800 card.

```
[root@localhost ~]# asterisk -r
asterisk1*CLI> restart now
[root@localhost ~]# asterisk -r
asterisk1*CLI> zap show channels
```

check the channels, if the channel number is error. Please do like below:

```
[root@localhost ~]# vi /etc/asterisk/zapata.conf
```

Modify the blue line <Figure 2.2> to the red line like <Figure 2.3>

```
;Include genzaptelconf configs
#include zapata-auto.conf

group=1

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

<Figure 2.2>

```

:Include genzaptelconf configs
#include zapata-channels.conf

group=1

:Include AMP configs
#include zapata_additional.conf

```

<Figure 2.3>

Save file.

```

[root@localhost ~]# genzaptelconf
[root@localhost ~]# asterisk -r
asterisk1*CLI> restart now

```

11. Check the configuration of TDM800 card

```
[root@localhost ~]# vi /etc/zaptel.conf
```



```

Autogenerated by /usr/local/sbin/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: WCTDM/O "YSTDM8xx REV E Board 1"
fxsk=1
fxsk=2
fxok=3
fxok=4
fxsk=5
fxsk=6
fxok=7
fxok=8

# Global data
loadzone      = us
defaultzone   = us

```

<Figure 2.4>

12. Modify configuration of card

On /etc/zaptel.conf file, change the loadzone and defaultzone to the country where you are. You can find the abbreviation on zonedata.c of folder zaptel. If your country is unavailable, please use the default 'us'.

```
[root@localhost ~]# vi /usr/src/zaptel-1.4.12/zonedata.c
```



```

root@asterisk1:/usr/src/zaptel-1.4.6
{ ZT_TONE_DIALRECALL, "!425/100,!0/100,!425/100,!0/100,!425/10
0,!0/100,425/330,0/330,425/660,0/660" },
/* RECORDTONE - not specified */
{ ZT_TONE_RECORDTONE, "1400/500,0/14000" },
{ ZT_TONE_INFO, "950/330,0/30,1400/330,0/30,1800/330,0/1000" }
},
/* STUTTER - not specified */
{ ZT_TONE_STUTTER, "425/450,0/50" },
},
},
{ 33, "cn", "China", ( 1000, 4000 ),
{
/* Reference: http://www.itu.int/ITU-T/inr/forms/files/tones-0
203.pdf */
{ ZT_TONE_DIALTONE, "450" },
{ ZT_TONE_BUSY, "450/350,0/350" },
{ ZT_TONE_RINGTONE, "450/1000,0/4000" },
{ ZT_TONE_CONGESTION, "450/700,0/700" },
{ ZT_TONE_CALLWAIT, "450/400,0/4000" },
{ ZT_TONE_DIALRECALL, "450" },
{ ZT_TONE_RECORDTONE, "950/400,0/10000" },
{ ZT_TONE_INFO, "450/100,0/100,450/100,0/100,450/100,0/100,450
/400,0/400" },

```

<Figure 2.5>

[root@localhost ~]# vi /etc/zaptel.conf

```

# Autogenerated by /usr/local/sbin/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: WCTDM/O "YSTDM8xx REV E Board 1"
fxsks=1
fxsks=2
fxoks=3
fxoks=4
fxsks=5
fxsks=6
fxoks=7
fxoks=8

# Global data
loadzone      = cn
defaultzone   = cn

```

<Figure 2.6>

Save and take it effect:

[root@localhost utils]# ztcfg -v

13. Source code installation is complete.

Note: If you are Trixbox 2.4 User and hears no sound on the telephone that connected with FXS, please empty the echocancel and echotraining when configuring extension for FXS, shown as below. It is a bug on Trixbox.

Device Options

This device uses zap technology.

channel	<input type="text" value="7"/>
context	<input type="text" value="from-internal"/>
immediate	<input type="text" value="no"/>
signalling	<input type="text" value="fxo_ks"/>
echocancel	<input type="text"/>
echocancelwhenbridged	<input type="text" value="no"/>
echotraining	<input type="text"/>
busydetect	<input type="text" value="no"/>
busycount	<input type="text" value="7"/>
callprogress	<input type="text" value="no"/>
dial	<input type="text" value="ZAP/7"/>
accountcode	<input type="text"/>
mailbox	<input type="text" value="5007@device"/>

<Figure 2.7>

Method 3: Quick-Install TDM800 Driver for Trixbox(Binary)

Three steps to quick-install TDM800 driver module(ystdm8xx)

Please make sure that Trixbox is already installed and network is setuped

Step 1. Execute below commands to get driver module from yeastar website

```
# wget http://www.yeastar.com/download/trixbox2.2/ystdm8xx-`uname -r`.ko.tar.gz
```

Note: if you trixbox version is [trixbox 2.3](#),

the URL is <http://www.yeastar.com/download/trixbox2.3/ystdm8xx-`uname -r`.ko.tar.gz>

```
# tar xzvf ystdm8xx-`uname -r`.ko.tar.gz
```

```
# cp ystdm8xx.ko /lib/modules/`uname -r`/extra/
```

```
# depmod
```

Step 2. Modify file `/etc/sysconfig/zaptel` for autoloading the module when OS starts

Add the red line to file `"zaptel"` and being made before blue line `"MODULES=$MODULES wctdm" ...`. see below

```
TELEPHONY=yes
#DEBUG=yes

# Un-comment as per your requirements; modules to load/unload
#Module Name          Hardware
MODULES="$MODULES tor2" # T400P - Quad Span T1 Card
                        # E400P - Quad Span E1 Card

MODULES="$MODULES wct4xsp" # TE405P - Quad Span T1/E1 Card (5v version)
                        # TE410P - Quad Span T1/E1 Card (3.3v version)

MODULES="$MODULES wct1xsp" # T100P - Single Span T1 Card
                        # E100P - Single Span E1 Card

MODULES="$MODULES wcte11xp" # TE110P - Single Span T1/E1 Card

MODULES="$MODULES wctdm24xsp" # TDM2400P - Modular FXS/FXO interface (1-24 ports)

MODULES="$MODULES wcfxo" # X100P - Single port FXO interface
                        # X101P - Single port FXO interface

MODULES="$MODULES ystdm8xx" # YSTD8XX - Modular FXS/FXO interface (1-8 ports)

MODULES="$MODULES wctdm" # TDM400P - Modular FXS/FXO interface (1-4 ports)
#MODULES="$MODULES wcfxs" # either above or this

MODULES="$MODULES wcusub" # S100U - Single port FXS USB Interface
#MODULES="$MODULES wcfxsusb" # either above or this

#MODULES="$MODULES torisa" # Old Tormenta1 ISA Card

#MODULES="$MODULES ztdummy" # UHCI USB Zaptel Timing Only Interface

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

Step 3. Config FXS / FXO

```
# genzaptelconf
```

```
# reboot
```

ystdm8xx driver module will be loaded and TDM800 LED be lighted.

Note: If you are Trixbox 2.4 User and hears no sound on the telephone that connected with FXS, please empty the echocancel and echotraining when configuring extension for FXS, shown as below. It is a bug on Trixbox.

Device Options

This device uses zap technology.

channel	<input type="text" value="7"/>
context	<input type="text" value="from-internal"/>
immediate	<input type="text" value="no"/>
signalling	<input type="text" value="fxo_ks"/>
echocancel	<input type="text"/>
echocancelwhenbridged	<input type="text" value="no"/>
echotraining	<input type="text"/>
busydetect	<input type="text" value="no"/>
busycount	<input type="text" value="7"/>
callprogress	<input type="text" value="no"/>
dial	<input type="text" value="ZAP/7"/>
accountcode	<input type="text"/>
mailbox	<input type="text" value="5007@device"/>

Method 4: Install TDM800 Driver Manually

Before You Proceed:

1. Make sure you have already installed TDM800 card and plugged in power cable.
2. Take version zaptel-1.4.12 for example. If you are using other version such as zaptel-1.4.3, please replace the zaptel-1.4.12 with zaptel-1.4.3 in all places.

Begin to Install:

1. Choose a path to save the installation file, such as /usr/src
[root@localhost ~]# **cd /usr/src**
2. Download zaptel you want to use from asterisk website, such as zaptel-1.4.12
[root@localhost src]# **wget http://downloads.digium.com/pub/zaptel/releases/zaptel-1.4.12.tar.gz**
3. Decompress the zaptel
[root@localhost src]# **tar xzvf zaptel-1.4.12.tar.gz**
4. Get driver of TDM800 card from Yeastar website
Enter into zaptel file.
[root@localhost src]# **cd zaptel-1.4.12**
[root@localhost zaptel-1.4.12]# **wget http://www.yeastar.com/download/zaptel-1.4.12/ystdm8xx.c**
[root@localhost zaptel-1.4.12]# **ls**
Then you can find the file ystdm8xx.c
5. Modify zaptel.sysconfig
On the file of zaptel.sysconfig, type a line:
MODULES="\$MODULES ystdm8xx" #YSTDM8XX – Modular FXS/FXO interface (1-8 ports)
before the line:
MODULES="\$MODULES wctdm" #TDM400P – Modular FXS/FXO interface (1-4 ports)

[root@localhost zaptel-1.4.12]# **vi zaptel.sysconfig**

```

root@asterisk1:/usr/src/zaptel-1.4.6
# or use /etc/modprobe.d/zaptel or /etc/modprobe.conf .

MODULES="$MODULES wcte12xp"      # TE120P - Single Span T1/E1 Card
MODULES="$MODULES wct1xxp"      # T100P - Single Span T1 Card
                                # E100P - Single Span E1 Card
MODULES="$MODULES wcte11xp"     # TE110P - Single Span T1/E1 Card
MODULES="$MODULES wctdm24xxp"   # TDM2400P - Modular FXS/FXO interface (1-24 ports)
MODULES="$MODULES wcfxo"        # X100P - Single port FXO interface
                                # X101P - Single port FXO interface
MODULES="$MODULES ystdm8xx"     # YSTDM8XX - Modular FXS/FXO interface (1-8 ports)
MODULES="$MODULES wctdm"        # TDM400P - Modular FXS/FXO interface (1-4 ports)
MODULES="$MODULES wcusb"        # S100U - Single port FXS USB Interface
#MODULES="$MODULES torisa"      # Old Tormental ISA Card
#MODULES="$MODULES ztdummy"     # Zaptel Timing Only Interface
#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

```

<Figure 4.1>

6. Modify Makefile

[root@localhost zaptel-1.4.12]# vi Makefile

6.1 Add 'ystdm8xx' before wctdm on either (a) or (b)

(a) Versions above Zaptel 1.4.0 (excluding zaptel-1.4.0), add 'ystdm8xx' on the line of 'TOPDIR_MODULES':

```

ifeq ($(findstring xpp,$(MENUSELECT_MODULES)),)
    BUILD_XPP:=yes
endif

TOPDIR_MODULES:=pciradio tor2 torisa wcfxo wct1xxp ystdm8xx wctdm wcte11xp wcusb zaptel ztd-et
h ztd-loc ztdummy ztdynamic zttranscode wcte12xp
SUBDIR_MODULES:=wct4xxp wctc4xxp xpp wctdm24xxp
TOPDIR_MODULES+=$(MODULES_EXTRA)
SUBDIR_MODULES+=$(SUBDIRS_EXTRA)
BUILD_TOPDIR_MODULES:=$(filter-out $(MENUSELECT_MODULES),$(TOPDIR_MODULES))
BUILD_SUBDIR_MODULES:=$(filter-out $(MENUSELECT_MODULES),$(SUBDIR_MODULES))
BUILD_MODULES:=$(BUILD_TOPDIR_MODULES) $(BUILD_SUBDIR_MODULES)

```

<Figure 4.2>

(b) All versions of Zaptel 1.2 serial and version zaptel-1.4.0, add 'ystdm8xx' on the line of 'MODULES':

```

ifeq ($(HOTPLUG_FIRMWARE), yes)
  CFLAGS+=-DHOTPLUG_FIRMWARE
endif

MODULES:=zaptel tor2 torisa wusb wcfxo ystdm8xx wctdm \
  ztdynamic ztd-eth wctlxxp wctellxp pciradio \
  ztd-loc wctel2xp # ztdummy
#MODULES+=wcfxsusb
ifeq ($(BUILDVER), linux26)
MODULES+=ztdummy zttranscode
endif

```

<Figure 4.3>

6.2 Type commands in blue

(a) Versions **below** zaptel-1.2.19 and **below** zaptel-1.4.4 (excluding Zaptel-1.2.19 and zaptel-1.4.4)

From Zaptel-1.4.0 to zaptel-1.4.3, replace **blue** section with **red** part as <Figure 4.6>

```

fi
if [ -d $(INSTALL_PREFIX)/etc/default ] && [ ! -f $(INSTALL_PREFIX)/etc/default/zaptel ]; then \
  $(INSTALL) -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/default/zaptel; \
fi
if [ -d $(INSTALL_PREFIX)/etc/sysconfig ] && [ ! -f $(INSTALL_PREFIX)/etc/sysconfig/zaptel ]; then \
  $(INSTALL) -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/sysconfig/zaptel; \
fi

```

<Figure 4.4>

Below Zaptel-1.2.19, replace **blue** section with **red** part as <Figure 4.6>

```

fi
if [ -d /etc/default ] && [ ! -f /etc/default/zaptel ]; then \
  install -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/default/zaptel; \
fi
if [ -d /etc/sysconfig ] && [ ! -f /etc/sysconfig/zaptel ]; then \
  install -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/sysconfig/zaptel; \
fi

```

<Figure 4.5>

```

fi
if [ -d /etc/default ]; then \
  install -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/default/zaptel; \
fi
if [ -d /etc/sysconfig ]; then \
  install -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/sysconfig/zaptel; \
fi

```

<Figure 4.6>

(b) Versions **above** zaptel-1.2.19 and above zaptel-1.4.4 (including **Zaptel-1.2.19 and zaptel-1.4.4**)

Add following commands into the **blue** part on <Figure 4.7> and then come out <Figure 4.8>

```
if [ -d /etc/default ]; then \
    install -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/default/zaptel; \
fi
if [ -d /etc/sysconfig ]; then \
    install -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/sysconfig/zaptel; \
fi
```

```
ifneq (, $(ADD_INITD))
    $(ADD_INITD)
endif
    @echo "Zaptel has been configured."
    @echo ""
```

<Figure 4.7>

```
ifneq (, $(ADD_INITD))
    $(ADD_INITD)
endif
    if [ -d /etc/default ]; then \
        install -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/default/zaptel; \
    fi
    if [ -d /etc/sysconfig ]; then \
        install -D -m 644 zaptel.sysconfig $(INSTALL_PREFIX)/etc/sysconfig/zaptel; \
    fi
    @echo "Zaptel has been configured."
    @echo ""
```

<Figure 4.8>

7. Compile and Install

```
[root@localhost src]# cd zaptel-1.4.12
```

```
[root@localhost zaptel-1.4.12]# make clean
```

```
[root@localhost zaptel-1.4.12]# make
```

Note: Versions of zaptel 1.4 serial will come out the commend as <Figure 4.9> after entering 'make'

```
configure: *** Zaptel build successfully configured ***
****
**** The configure script was just executed, so 'make' needs to be
**** restarted.
****
make: *** [config.status] Error 1
[root@asterisk1 zaptel-1.4.6]# █
```

<Figure 4.9>

You can ignore the error because it's just an error output of zaptel and has no influence to operation. Please continue to the next step:

```
[root@localhost zaptel-1.4.12]# make install
```

```
[root@localhost zaptel-1.4.12]# make config
```


8. Reboot to finish the installation

```
[root@localhost zaptel-1.4.12]# reboot
```

9. Read card information

```
[root@localhost ~]# genzaptelconf
```

Note: Please executive 'genzaptelconf' again if any error occurred.

10. Check the configuration of TDM800 card

```
[root@localhost ~]# vi /etc/zaptel.conf
```

```

# Autogenerated by /usr/local/sbin/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: WCTDM/O "YSTDM8xx REV E Board 1"
fxsks=1
fxsks=2
fxoks=3
fxoks=4
fxsks=5
fxsks=6
fxoks=7
fxoks=8

# Global data
loadzone      = us
defaultzone   = us

```

<Figure 4.10>

11. Modify the configuration of TDM800 card

On /etc/zaptel.conf file, change the loadzone and defaultzone to the country where you are. You can find the abbreviation on zonedata.c of folder zaptel. If your country is unavailable, please use the default 'us'.

```
[root@localhost ~]# vi /usr/src/zaptel-1.4.12/zonedata.c
```

```

root@asterisk1:/usr/src/zaptel-1.4.6
{ ZT_TONE_DIALRECALL, "!425/100,!0/100,!425/100,!0/100,!425/10
0,!0/100,425/330,0/330,425/660,0/660" },
/* RECORDTONE - not specified */
{ ZT_TONE_RECORDTONE, "1400/500,0/14000" },
{ ZT_TONE_INFO, "950/330,0/30,1400/330,0/30,1800/330,0/1000" }
,
/* STUTTER - not specified */
{ ZT_TONE_STUTTER, "425/450,0/50" },
},
},
( 33, "cn", "China", ( 1000, 4000 ),
(
/* Reference: http://www.itu.int/ITU-T/inr/forms/files/tones-0
203.pdf */
{ ZT_TONE_DIALTONE, "450" },
{ ZT_TONE_BUSY, "450/350,0/350" },
{ ZT_TONE_RINGTONE, "450/1000,0/4000" },
{ ZT_TONE_CONGESTION, "450/700,0/700" },
{ ZT_TONE_CALLWAIT, "450/400,0/4000" },
{ ZT_TONE_DIALRECALL, "450" },
{ ZT_TONE_RECORDTONE, "950/400,0/10000" },
{ ZT_TONE_INFO, "450/100,0/100,450/100,0/100,450/100,0/100,450
/400,0/400" },

```

<Figure 4.11>

```
[root@localhost ~]# vi /etc/zaptel.conf
```

```

# Autogenerated by /usr/local/sbin/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: WCTDM/O "YSTDM8xx REV E Board 1"
fxsks=1
fxsks=2
fxoks=3
fxoks=4
fxsks=5
fxsks=6
fxoks=7
fxoks=8

# Global data

loadzone      = cn
defaultzone   = cn
~

```

<Figure 4.12>

Save and take it effect:

```
[root@localhost utils]# ztcfg -v
```

12. Driver Installation is complete.

For any technical support, please contact

E-Mail: support@yeostar.com

Skype ID: support.yeostar

MSN ID: support@yeostar.com

<End>