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## Method 1: Patch TDM800/1600 Driver for Asterisk

### Before You Proceed:

1. Make sure you have already installed TDM800/1600 card and plugged in power cable.
2. Make sure you have already installed the kernel source code and gcc compiler.
3. Take version dahdi-linux-2.4.0 for example.

### Begin to Install:

1. Choose a path to save the installation file, such as /usr/src  
[root@localhost ~]# **cd /usr/src**
2. Download dahdi you want to use from asterisk website, such as dahdi-linux-2.4.0  
[root@localhost src]# **wget http://downloads.asterisk.org/pub/telephony/dahdi-linux/releases/dahdi-linux-2.4.0.tar.gz**
3. Download the driver patch for corresponding dahdi version. Here we take dahdi-linux-2.4.0 for example, and download the corresponding patch.  
[root@localhost src]# **wget http://www.yeastar.com/download/dahdi/ystdm-dahdi-2.4.0.patch.tar.gz**

4. Decompress the downloaded files  
[root@localhost src]# **tar xzvf dahdi-linux-2.4.0.tar.gz**  
[root@localhost src]# **tar xzvf ystdm-dahdi-2.4.0.patch.tar.gz**

5. Install patch  
[root@localhost src]# **patch -p0 < ystdm-dahdi-2.4.0.patch**

You should see the following lines after entering the above command

```
patching file dahdi-linux-2.4.0/drivers/dahdi/Kbuild
patching file dahdi-linux-2.4.0/drivers/dahdi/Kconfig
patching file dahdi-linux-2.4.0/drivers/dahdi/ystdm16xx.c
patching file dahdi-linux-2.4.0/drivers/dahdi/ystdm8xx.c
```

**Note 1:** If it appears the lines 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 shown like follow:

```
patching file dahdi-linux-2.4.0/drivers/dahdi/Kbuild
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 TDM800/1600 Driver Manually](#)>; or please delete the dahdi file and decompress and install patch again. Steps as show below:

```
[root@localhost src]# rm dahdi-linux-2.4.0 -rf
[root@localhost src]# tar xzvf dahdi-linux-2.4.0.tar.gz
[root@localhost src]# patch -p0 < ystdm-dahdi-2.4.0.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 Yeastar website:

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

## 7. Compile and Install

```
[root@localhost src]# cd dahdi-linux-2.4.0  
[root@localhost dahdi-linux-2.4.0]# make  
[root@localhost dahdi-linux-2.4.0]# make install
```

## 8. Install dahdi-tools

```
[root@localhost ~]# cd /usr/src/  
[root@localhost src]# wget http://downloads.asterisk.org/pub/telephony/dahdi-tools/releases/dahdi-tools-2.2.0.tar.gz  
[root@localhost src]# tar xzvf dahdi-tools-2.2.0.tar.gz  
[root@localhost src]# cd dahdi-tools-2.2.0  
[root@localhost dahdi-tools-2.2.0]# ./configure  
[root@localhost dahdi-tools-2.2.0]# make  
[root@localhost dahdi-tools-2.2.0]# make install  
[root@localhost dahdi-tools-2.2.0]# make config
```

## 9. Make sure the driver will be loaded when system start up

```
[root@localhost dahdi-tools-2.2.0]# vi /etc/dahdi/modules
```

**Add these 2 lines to the end of the file:**

```
ystdm16xx  
ystdm8xx
```

## 10. Reboot to finish the installation of the card's driver

```
[root@localhost dahdi-tools-2.2.0]# reboot
```

## 11. Read card information

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

**Note:** If it appears the lines be shown following lines:

```
/usr/sbin/dahdi_genconf: Cannot read '/etc/dahdi/genconf_parameters': No such file or directory
```

That is mainly the folder doesn't have file `genconf_parameters`, Please follow below steps to link the file:

```
[root@localhost ~]# touch /etc/dahdi/genconf_parameters  
[root@localhost ~]# dahdi_genconf
```

You can run `dahdi_cfg -vv` to show the card information

## 12. Modify configuration of asterisk

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

Add the following line at the end of the file:

**#include dahdi-channels.conf**

13. Patching is complete.
14. Restart asterisk to make the changes take effect.

## Method 2: Patch TDM800/1600 Driver for Asterisk with DAHDI-complete and oslec echo cancellation

### Before You Proceed:

1. Make sure you have already installed TDM800/1600 card and plugged in power cable.
2. Make sure you have already installed the kernel source code and gcc compiler.
3. Only version start from dahdi-linux-complete-2.2.0+2.2.0 support for this method.
4. Take version dahdi-linux-complete-2.2.1+2.2.1 for example.

### Begin to Install:

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

```
[root@localhost ~]# cd /usr/src
```

2. Download dahdi-complete you want to use from asterisk website, such as dahdi-linux-complete-2.2.1+2.2.1

```
[root@localhost src]# wget http://downloads.asterisk.org/pub/telephony/dahdi-linux-complete/releases/dahdi-linux-complete-2.2.1+2.2.1.tar.gz
```

3. Download the driver patch for corresponding dahdi version. Here we take dahdi-linux-complete-2.2.1+2.2.1 for example, and download the corresponding patch.

```
[root@localhost src]# wget http://www.yeostar.com/download/dahdi-complete/ystdm-dahdi-complete-2.2.1+2.2.1.patch.tar.gz
```

4. Decompress the downloaded files

```
[root@localhost src]# tar xzvf dahdi-linux-complete-2.2.1+2.2.1.tar.gz  
[root@localhost src]# tar xzvf ystdm-dahdi-complete-2.2.1+2.2.1.patch.tar.gz
```

5. Install patch

```
[root@localhost src]# patch -p0 < ystdm-dahdi-complete-2.2.1+2.2.1.patch
```

You should see the following lines after entering the above command

```
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/dahdi/Kbuild  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/dahdi/Kconfig  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/dahdi/ystdm16xx.c  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/dahdi/ystdm8xx.c  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/bit_operations.h  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/echo.c  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/echo.h  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/.echo.ko.cmd  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/echo.mod.c  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/.echo.mod.o.cmd  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/.echo.o.cmd  
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/fir.h
```

```
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/Kbuild
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/Kconfig
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/Makefile
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/mmx.h
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/oslec.h
patching file dahdi-linux-complete-2.2.1+2.2.1/linux/drivers/staging/echo/TODO
patching file dahdi-linux-complete-2.2.1+2.2.1/tools/modules.sample
patching file dahdi-linux-complete-2.2.1+2.2.1/tools/xpp/genconf_parameters
```

**Note 1:** If it appears the lines 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 shown like follow:

**patching file dahdi-linux-complete-2.2.1+2.2.1/drivers/dahdi/Kbuild  
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 TDM800/1600 Driver Manually](#)>; or please delete the dahdi file and decompress and install patch again. Steps as show below:

```
[root@localhost src]# rm dahdi-linux-complete-2.2.1+2.2.1 -rf
```

```
[root@localhost src]# tar xzvf dahdi-linux-complete-2.2.1+2.2.1.tar.gz
```

```
[root@localhost src]# patch -p0 < ystdm-dahdi-complete-2.2.1+2.2.1.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. Compile and Install

```
[root@localhost src]# cd dahdi-linux-complete-2.2.1+2.2.1
```

```
[root@localhost dahdi-linux-complete-2.2.1+2.2.1]# make
```

```
[root@localhost dahdi-linux-complete-2.2.1+2.2.1]# make install
```

```
[root@localhost dahdi-linux-complete-2.2.1+2.2.1]# make config
```

## 8. Make sure the driver will be loaded when system start up

```
[root@localhost dahdi-linux-complete-2.2.1+2.2.1]# vi /etc/dahdi/modules
```

**Make sure that there are these lines at the end of the file:**

**ystdm16xx**

**ystdm8xx**

## 9. Reboot to finish the installation of the card's driver

```
[root@localhost dahdi-linux-complete-2.2.1+2.2.1]# reboot
```

**10.** Make sure we are using oslec

```
[root@localhost ~]# vi /etc/dahdi/genconf_parameters
```

**Find and Uncomment this line** #echo\_can oslec

**Before change:**

```
#echo_can hpec  
#echo_can oslec  
#echo_can none # to avoid echo canceler altogether
```

**After change:**

```
#echo_can hpec  
echo_can oslec  
#echo_can none # to avoid echo canceler altogether
```

**Save the changes**

**11.** Generate card information

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

You can run **dahdi\_cfg -vv** to show the card information

**12.** Modify configuration of asterisk

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

**Add the following line at the end of the file:**

```
#include dahdi-channels.conf
```

**13.** Patching is complete.

**14.** Restart asterisk to make the changes take effect.

## Method 3: Install TDM800 Driver Manually

### Before You Proceed:

1. Make sure you have already installed TDM800/1600 card and plugged in power cable.
2. Make sure you have already installed the kernel source code and gcc compiler.
3. Take version dahdi-linux-2.4.0 for example.

### 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-1.4.10  
[root@localhost src]# **wget http://downloads.asterisk.org/pub/telephony/dahdi-linux/dahdi-linux-2.4.0.tar.gz**
3. Decompress the dahdi  
[root@localhost src]# **dahdi-linux-2.4.0.tar.gz**
4. Get driver of TDM800/1600 card from Yeostar website  
Enter into zaptel file.  
[root@localhost src]# **cd dahdi-linux-2.4.0/drivers/dahdi/**  
[root@localhost dahdi]# **wget http://www.yeostar.com/download/dahdi/dahdi-linux-2.4.0/ystdm8xx.c**  
[root@localhost dahdi]# **wget http://www.yeostar.com/download/dahdi/dahdi-linux-2.4.0/ystdm16xx.c**  
[root@localhost dahdi]# **ls**  
**Then you can find the file ystdm8xx.c and ystdm16xx.c**
5. Modify Kconfig and Kbuild  
[root@localhost dahdi]# **vi Kconfig**  
**Add the following lines at the end of the file:**  
**config DAHDI\_YSTDM8XX**  
**tristate "Yeostar YSTDM8xx Support"**  
**depends on DAHDI && PCI**  
**default DAHDI**  
**---help---**  
**This driver provides support for the Yeostar YSTDM8xx.**  
  
**To compile this driver as a module, choose M here: the**  
**module will be called ystdm8xx.**  
  
**If unsure, say Y.**



```
config DAHDI_YSTDM16XX
```

```
    tristate "Yeostar YSTDM16xx Support"
```

```
    depends on DAHDI && PCI
```

```
    default DAHDI
```

```
    ---help---
```

```
        This driver provides support for the Yeostar YSTDM16xx.
```

```
        To compile this driver as a module, choose M here: the
        module will be called ystdm16xx.
```

```
        If unsure, say Y.
```

```
[root@localhost dahdi]# vi Kbuild
```

**Add the following lines before `obj-m += $(DAHDI_MODULES_EXTRA)`**

```
obj-$(DAHDI_BUILD_ALL)$(CONFIG_DAHDI_YSTDM8XX) += ystdm8xx.o
```

```
obj-$(DAHDI_BUILD_ALL)$(CONFIG_DAHDI_YSTDM16XX) += ystdm16xx.o
```

#### 6. Compile and Install

```
[root@localhost src]# cd dahdi-linux-2.4.0
```

```
[root@localhost dahdi-linux-2.4.0]# make
```

```
[root@localhost dahdi-linux-2.4.0]# make install
```

#### 7. Install dahdi-tools

```
[root@localhost ~]# cd /usr/src/
```

```
[root@localhost src]# wget http://downloads.asterisk.org/pub/telephony/dahdi-tools/dahdi-tools-2.2.0.tar.gz
```

```
[root@localhost src]# tar xzvf dahdi-tools-2.2.0.tar.gz
```

```
[root@localhost src]# cd dahdi-tools-2.2.0
```

```
[root@localhost dahdi-tools-2.2.0]# ./configure
```

```
[root@localhost dahdi-tools-2.2.0]# make
```

```
[root@localhost dahdi-tools-2.2.0]# make install
```

```
[root@localhost dahdi-tools-2.2.0]# make config
```

#### 8. Make sure the driver will be loaded when system start up

```
[root@localhost dahdi-tools-2.2.0]# vi /etc/dahdi/modules
```

**Add these lines to the end of the file:**

```
ystdm16xx
```

```
ystdm8xx
```

#### 9. Reboot to finish the installation of the card's driver

```
[root@localhost dahdi-tools-2.2.0]# reboot
```

#### 10. Read card information

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

**Note:** If it appears the lines be shown following lines:

```
/usr/sbin/dahdi_genconf: Cannot read '/etc/dahdi/genconf_parameters': No such file or directory
```

That is mainly the folder doesn't have file `genconf_parameters`, Please follow below steps to link the file:

```
[root@localhost ~]# touch /etc/dahdi/genconf_parameters
```

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

You can run `dahdi_cfg -vv` to show the card information

**11.** Modify configuration of asterisk

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

**Add the following line at the end of the file:**

```
#include dahdi-channels.conf
```

**12.** Driver Installation is complete.

**13.** Restart asterisk to make the changes take effect.

**14.** Add support for OSLEC

Please see [How to add OSLEC for DAHDI for more detail.](#)

For any technical support, please contact

E-Mail: [support@yeastar.com](mailto:support@yeastar.com)

Skype ID: support.yeastar

MSN ID: support@yeastar.com

**<End>**