

阿尔通公司 PCMCIA 转串口卡驱动安装记录(Ubuntu 系统)

问题：PCMCIA 卡自带光盘中的 Linux 驱动在 redhat enterprise5.1 下成功编译并加载

insmod wch.ko

但 IBM-T42 安装了 ubuntu10.4 并将内核升级到了 linux-2.6.38.8, 然后在这系统中编译安装 wch 驱动不成功, 出现如下错误

```
cd driver;\nmake\nmake[1]: Entering directory `/home/wch/driver'\nmake -C /lib/modules/2.6.38-13-generic/build SUBDIRS=/home/wch/driver modules\nmake[2]: Entering directory `/usr/src/linux-headers-2.6.38-13-generic'\nCC [M] /home/wch/driver/wch_main.o\nCC [M] /home/wch/driver/wch_devtable.o\nCC [M] /home/wch/driver/wch_serial.o\n/home/wch/driver/wch_serial.c:4:8: warning: type defaults to 'int' in declaration of 'DECLARE_MUTEX'\n/home/wch/driver/wch_serial.c:4:1: warning: parameter names (without types) in function declaration\n/home/wch/driver/wch_serial.c: In function 'ser_startup'\n/home/wch/driver/wch_serial.c:489:9: error: implicit declaration of function 'DECLARE_MUTEX'\n/home/wch/driver/wch_serial.c: In function 'ser_get'\n/home/wch/driver/wch_serial.c:1876:8: error: 'ser_port_sem' undeclared (first use in this function)\n/home/wch/driver/wch_serial.c:1876:8: note: each undeclared identifier is reported only once for each function it appears in\n/home/wch/driver/wch_serial.c: In function 'wch_ser_add_one_port'\n/home/wch/driver/wch_serial.c:3142:8: error: 'ser_port_sem' undeclared (first use in this function)\n/home/wch/driver/wch_serial.c: In function 'wch_ser_remove_one_port'\n/home/wch/driver/wch_serial.c:3255:8: error: 'ser_port_sem' undeclared (first use in this function)\n/home/wch/driver/wch_serial.c: At top level:\n/home/wch/driver/wch_serial.c:4:8: warning: 'DECLARE_MUTEX' declared 'static' but never defined\nmake[3]: *** [/home/wch/driver/wch_serial.o] Error 1\nmake[2]: *** [_module_/home/wch/driver] Error 2\nmake[2]: Leaving directory `/usr/src/linux-headers-2.6.38-13-generic'\nmake[1]: *** [modules] Error 2\nmake[1]: Leaving directory `/home/wch/driver'\nmake: *** [driver_make] Error 2
```

发现 snx 的驱动是可以在 ubuntu 下编译成功的, 对比发现 snx 的驱动是对 linux2.6.37 以上的内核版本的作了修改。

分别在如下三处作对应修改红色为增加的内容

```
#if(LINUX_VERSION_CODE >= KERNEL_VERSION(2,6,37)) //addbylee\n    static DEFINE_SEMAPHORE(ser_port_sem);\n#else\n    static DECLARE_MUTEX(ser_port_sem);\n#endif
```

```

#if(LINUX_VERSION_CODE >= KERNEL_VERSION(2,6,37)) //addbylee
    sema_init(&info->tmpbuf_sem,1);
#else
    init_Mutex(&info->tmpbuf_sem);
#endif

#if(LINUX_VERSION_CODE >= KERNEL_VERSION(2,6,37)) //addbylee
    sema_init(&state->sem,1);
#else
    init_Mutex(&state->sem);
#endif

```

然后编译就可以通过了。

另附安装过程：

驱动目录 wch

```
#cd wch
```

```
#make install
```

在安装的过程中会创建 wch 的一系列串口设备虚拟文件 ttyWCH0-ttyWCH32

```
#find /dev/ttyWCH*查看
```

如果没创建成功则

```
#cd wch/wchmknod/./mknod 创建设备节点
```

Device node creation

Each serial port has one device node which is named "ttyWCH?",
maximum up to 32 serial ports.

This setp will be done when do "make clean ; make install", if
device nodes aren't in /dev, do commands:

```
# cd /temp/wch/wchmknod
# ./wchmknod
```

This will create device nodes in /dev.

然后插入 PCMCIA 卡

```
#cd driver
```

```
#insmod wch.ko
```

```
#lsmod | grep wch
```

```
#rmmod wch
```

以下是如何在系统启动时加载驱动的设置

Loading driver automatic after system bootup

E.1 RedHat Fedora Core 11

Edit /etc/rc.d/rc.local for loading driver

automatic after system bootup. Use vi or other editor to open rc.local,
and add "modprobe wch" in last line.

E.2 SuSE 11.2 Milestone 4

Edit /etc/rc.d/boot.local for loading driver automatic after system bootup.

Use vi or other editor to open boot.local, and add "modprobe wch" in last line.

Edit /etc/rc.d/halt.local After finish item D. Edit /etc/rc.d/rc.local for loading driver
automatic after system bootup. Use vi or other editor to open rc.local,
and add "modprobe wch" in last line.ocal for unloading driver when system halt.

Use vi or other editor to open halt.local, and add "rmmod wch" in last line.

E.3 Ubutu 8.04 Destop

After finish item D. Edit /etc/init.d/rc.local for loading driver

automatic after system bootup. Use vi or other editor to open rc.local,
and add words as below in last line.

E.4 Red Hat Enterprise Liunx 4.0

After finish item D. Edit /etc/rc.d/rc.local for loading driver

automatic after system bootup. Use vi or other editor to open rc.local,
and add words as below in last line.

这里在 ubuntu 下修改的是/etc/init.d/rc.local
在最后加上 modprobe wch

驱动自带 wchdump 与 wchterm 功能
具体可尝试使用
wchdump 可以查看当前的 wch 设备

参考网站 unix 公司的

CBS1009 1 port RS-232 CardBus

驱动来修改阿尔通公司的驱动盘 <http://www.altomtech.com/download.asp>

中关于 wch 在 linux 下的驱动

<http://www.sunix.com.tw/category/expresscard-cardbus.html>