MCS98xx Linux Driver Installation Guide

Revision 1.00
Mar. 20th, 2014

Revision History

Revision	Date	Description
V1.00	2014/03/20	Initial release

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1. Introduction

This installation guide describes the procedures to install MCS9805, MCS9815, MCS9820, MCS9835 and MCS9845 PCI Serial / Parallel ports on Linux platform.

Note: In this document MCS9835 is taken as an example. Please follow the same procedures to install MCS9805, MCS9815, MCS9820 and MCS9845.

2. Linux Serial Port Driver Installation

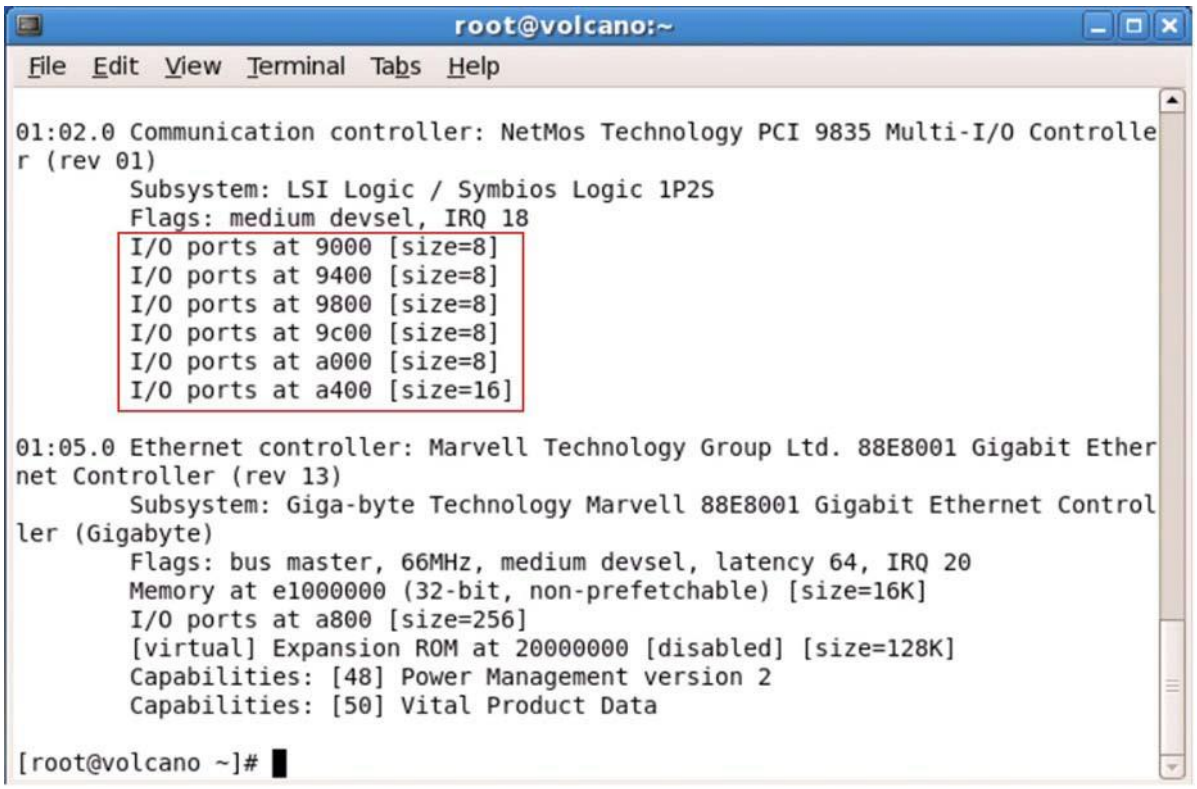
2-1. How to install MCS98xx Linux serial port driver

The following are the MCS98xx Linux serial port driver installation procedures.

1. Connect the tested MCS98xx serial port to the COM port of another PC through RS-232 Null modem cable.

2. Run "lspci -v" command to make sure the assigned MCS98xx Serial Ports I/O and IRQ resources.

   # lspci –v



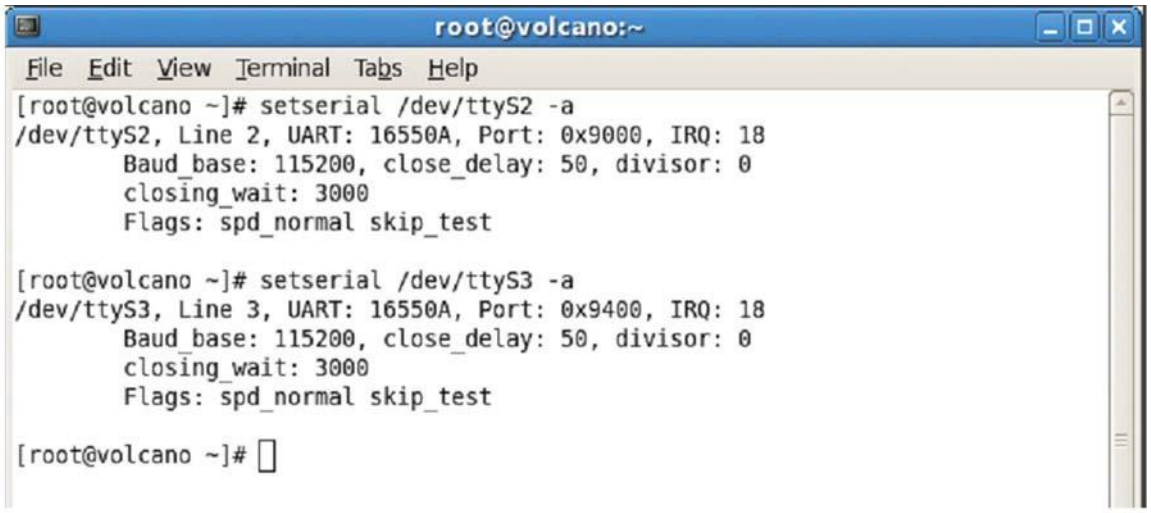
3. Run below commands to install the Linux serial port driver for MCS98xx serial ports.

Note that please run the “setserial /dev/ttyS2 -a” and “setserial /dev/ttyS3 -a” commands to make sure the ttyS2 and ttyS3 are not assigned to other serial ports yet before running the following commands to install the Linux serial port driver.

 # setserial /dev/ttyS2 port 0x9000 uart 16550A irq 18 baud_base 115200
 # setserial /dev/ttyS3 port 0x9400 uart 16550A irq 18 baud_base 115200

4. Run below commands to check the ttyS2 and ttyS3 serial ports setting.

 # setserial /dev/ttyS2 -a
 # setserial /dev/ttyS3 -a



5. Now the MCS98xx serial ports, ttyS2 & ttyS3 are ready now. You can run "minicom" command to test the MCS98xx serial ports if necessary.

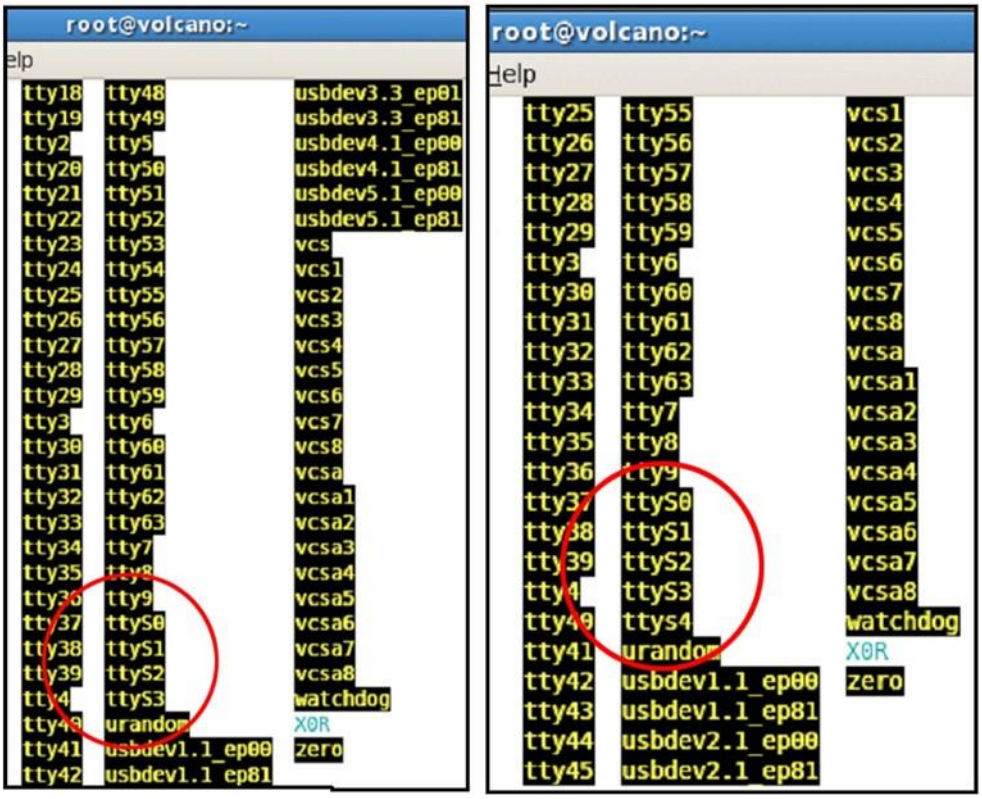
 # minicom

On minicom console, press Ctrl + A and then Z to configure a proper serial port setting such as "/dev/ttyS2", 8N1, etc. After changing the serial port setting, presss "X" command to exit the minicom tool and then run the minicom tool again to take effect the new serial port setting.

2-2. How to manually add a new serial port device node on Linux

Normally, Linux system supports 4 default serial ports (e.g. ttyS0, ttyS1, ttyS2, ttyS3; ttyF0, ttyF1, ttyF2, ttyF3; etc.). Most likely, ttyS0 & ttyS1 are supported by mother board's built-in serial controllers, and ttyS2 & ttyS3 are free for additional I/O card. If you need manually add more serial port device nodes on Linux system, you can refer to the following command to add more serial port device nodes (e.g. ttyS4, ttyS5 as below).

 # mknod /dev/ttyS4 c 4 68
 # mknod /dev/ttyS5 c 4 69



3. Linux Parallel Port Driver Installation

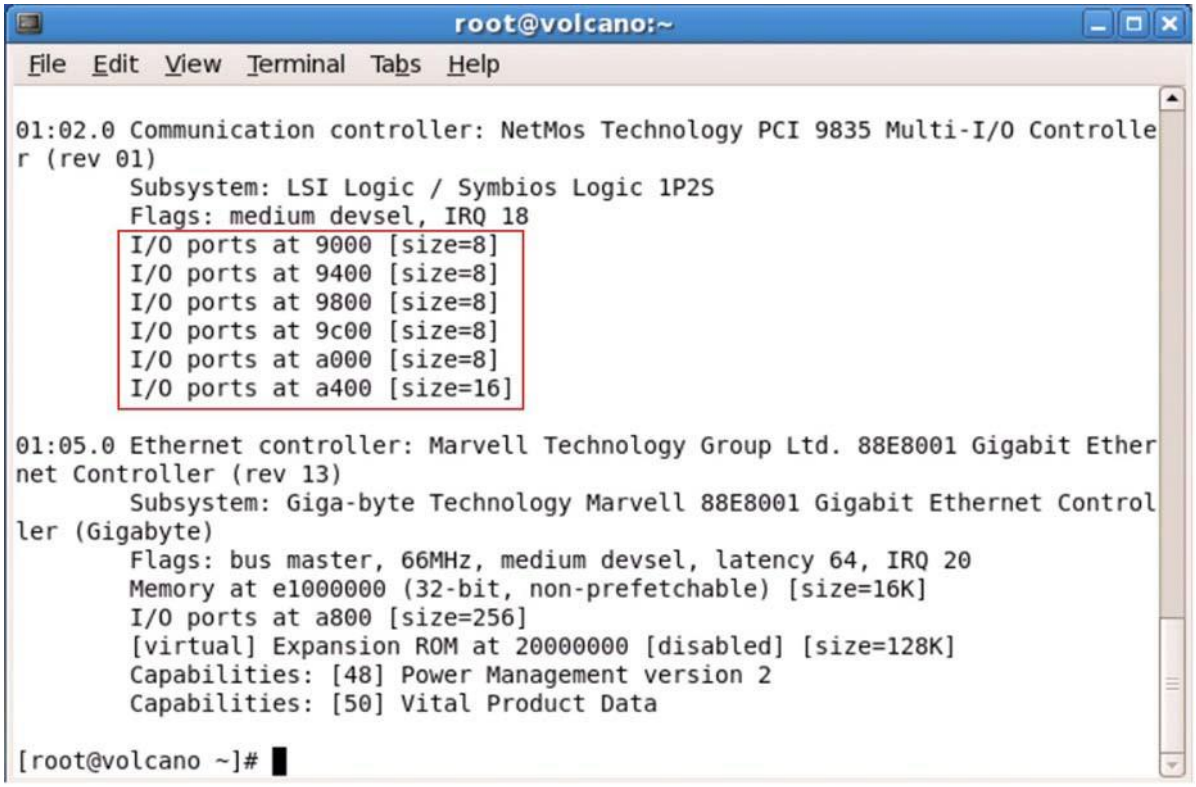
The following are the MCS98xx Linux parallel port driver installation procedures.

3-1. How to install MCS98xx Linux parallel driver

1. Run below commands to install the Linux parallel port driver for MCS98xx parallel port.

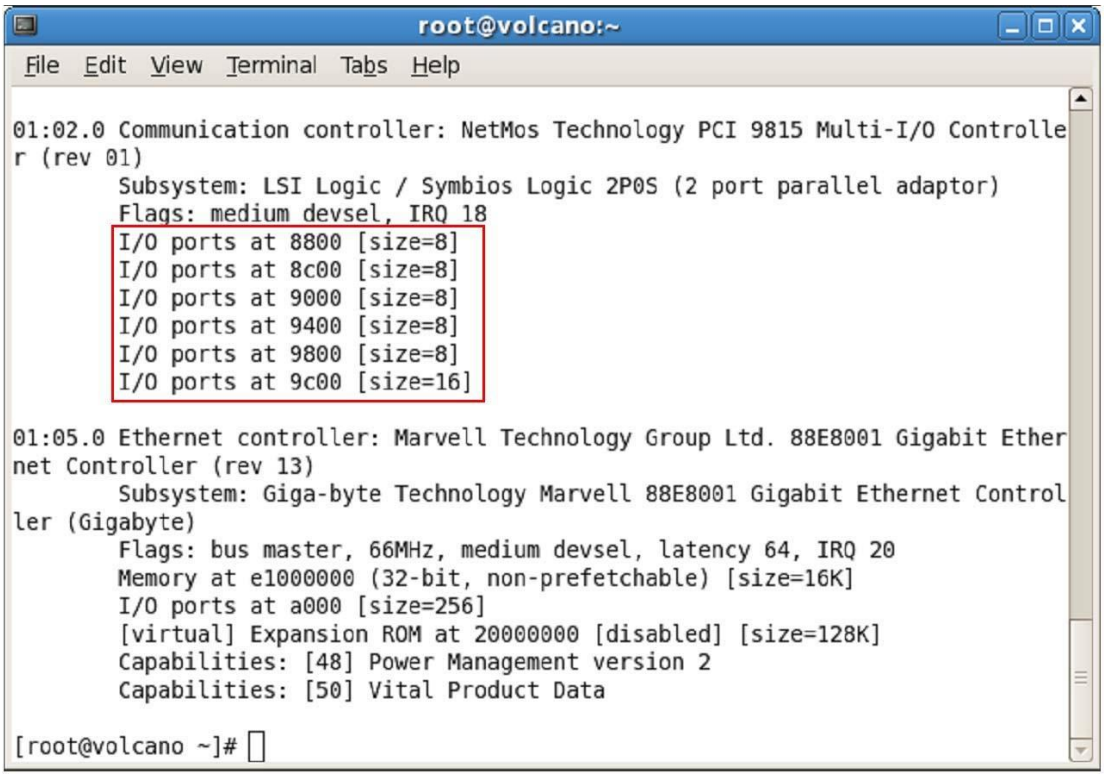
   Below command indicates onboard parallel port at 0x378 with IRQ 4 and MCS98xx parallel port at 0x9800 with IRQ18 as below figure.

   # modprobe parport_pc io=0x378,0x9800 irq=4,18



In case if you require using more than 2 parallel ports (for example MCS9815), you can run below command to install the parallel port driver for two MCS9815 parallel ports as below figure.

 # modprobe parport_pc io=0x378,0x8800,0x9000 irq=4,18,18



2. Connect the printer to MCS98xx LPT port.
3. Boot up Linux system and run below commands to test the MCS98xx parallel port through printer. (The Linux printer driver should be installed automatically while booting up Linux system)

 # dmesg
==> Check if the printer is installed properly or not?

 # ls /dev/lp0
 # ls /dev/parport0
==> Check if the lp0 device is installed properly or not?

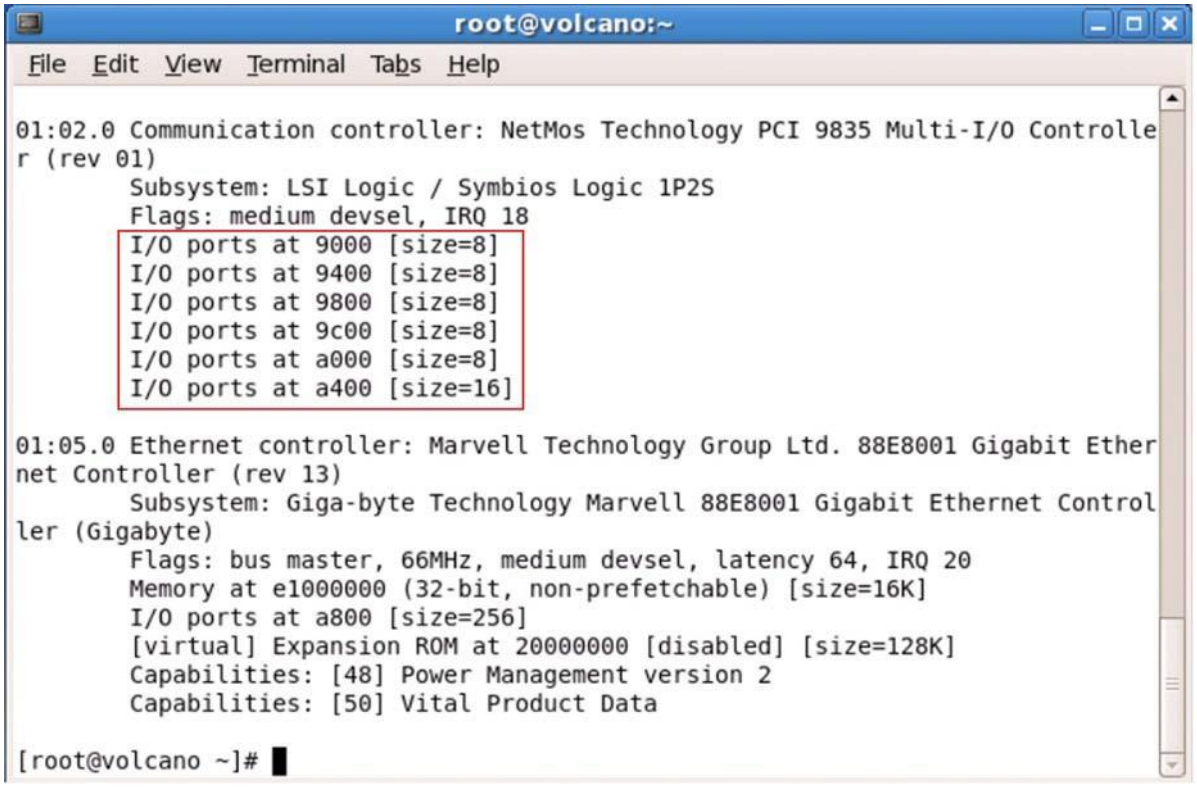
 # cat log1.txt > /dev/lp0
 # echo test1_text > /dev/lp0
==> Print some texts to printer to test MCS98xx LPT port.

3-2. How to manually add a new parallel port device node on Linux

If the “lp0” parallel port device is not created properly, you can run the following commands to manually create the “lp0” parallel port device node.

1. Run "lspci -v" command to make sure the assigned I/O and IRQ resources of MCS98xx Parallel Port (at 0x9800 with IRQ18 as below figure).

   # lspci -v



2. Run the following commands to uninstall all Linux parallel port related drivers first.

```
# rmmod lp
# rmmod ppdev
# rmmod parport_serial
# rmmod parport_pc
# rmmod parport
```

3. Run the following commands to install all Linux parallel port related drivers again.

```
# modprobe parport
# modprobe parport_pc io=0x9800 irq=18
# modprobe parport_serial
# modprobe ppdev
# modprobe lp
```

4. The “lp0” parallel port device node should be ready now.

```
# ls /dev/lp0
# ls /dev/parport0
```

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