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ADVANTECH

AdvQNX Install CD

Version 1.30 Beta3

User Manual

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Version History

Date	Version	Part no	Remark
2010-03-19	1.30 Beta3		Draft version

Table of Contents

1. About AdvQNX

AdvQNX is a product for Advantech hardware board to run with QNX OS. It's a mini-version OS which cutting from standard QNX Neutrino release version. In addition to does not include development & build environment, AdvQNX almost includes all base functions of QNX Neutrino.

AdvQNX v1.30 is based on QNX Neutrino 6.4.1 version.

2. About AdvQNX Install CD

The install CD is a carrier tool for user to use AdvQNX. With the install CD, user could get AdvQNX services very easily.

The install CD could be installed with CD-ROM (IDE or USB interface). To some hardware board maybe USB interface CD-ROM could not running successful, user must change to use IDE interface CD-ROM, because IDE interface CD-ROM is more compatible than USB.

3. AdvQNX Version History

2010-01-14
AdvQNX v1.30 Beta3
Make base on QNX Neutrino 6.4.1, reference AdvQNX v1.30 Beta2.

2009-08-19
AdvQNX v1.30 Beta2
Make base on QNX Neutrino 6.4.1, reference AdvQNX v1.30 Beta1.

2009-07-15
AdvQNX v1.30 Beta1
Make base on QNX Neutrino 6.4.1, reference AdvQNX v1.20.

2009-06-30
AdvQNX v1.20
Make base on QNX Neutrino 6.4.0, reference AdvQNX v1.10.

2008-06-16
AdvQNX v1.10
Make base on QNX Neutrino 6.3.2, reference AdvQNX v1.00.

2007-11-30
AdvQNX v1.00
Make base on QNX Neutrino 6.3.0 SP3.

4. AdvQNX v1.30 Beta3 Release Note

AdvQNX v1.30 Beta3 is based on QNX Neutrino 6.4.1, and references to AdvQNX v1.30 Beta2 version.

This version has following base new functions:

Support the newest bootloader (v1.20b)

Support SMP kernel

Support QNX6 file system, which is a power safe file system

Support Photon GUI (GF & OpenGL ES)

Support io-pkt nework architecture

Support SATA AHCI Mode Driver

Add more drivers for new Graphics chip, network chip and Audio chip, etc.

For more information, please see *QNX® Software Development Platform 6.4.1Release Notes*.

To be successfully installing AdvQNX v1.30 Beta3 on the hardware platform, the board smallest request limits is:

- CPU: Pentium or above
- Hard Disk: 256MB or above
- Memory: 64M or above

5. How To Install AdvQNX v1.30 Beta3

5.1 Install Notes

Before install AdvQNX, user should be pay attention on the following tips:

- To be make sure that the installation will be successful, the capacity of storage and size of memory strongly recommend that is fitted to the AdvQNX minimal requirements (256MB), otherwise, the installation will be failed.
- In order to make the installing process more easily, AdvQNX Install CD does not provide steps for use to allocate disk partition manually. AdvQNX just touch the disk size, and check: if disk size is smaller than 512MB, all disk space will be allocated only one partition for AdvQNX OS; if the size is larger than 512MB, only about 512MB size is allocated for AdvQNX OS, other space is free.
- Because install process will re-allocate target disk partition, data at target disk will be losted, user must backup useful data before installing AdvQNX.
- Because this CD does not show information for user to allocate target disk, so AdvQNX could not be installed as multi-boot OS.

5.2 Install Preparation

Before install AdvQNX OS, user should prepare the following items:

- AdvQNX v1.30 Beta3 Install CD
- IDE/USB interface CD-ROM (To some platforms, maybe must use IDE interface CD-ROM)
- Compact Flash or SATA Disk which size is larger than 256MB
- Board Memory larger than 64MB
- Advantech hardware board, other company board is not supported

5.3 Install Process

After power on the target board and boot from the install CD, user will see the *Figure 5-3-1* first:

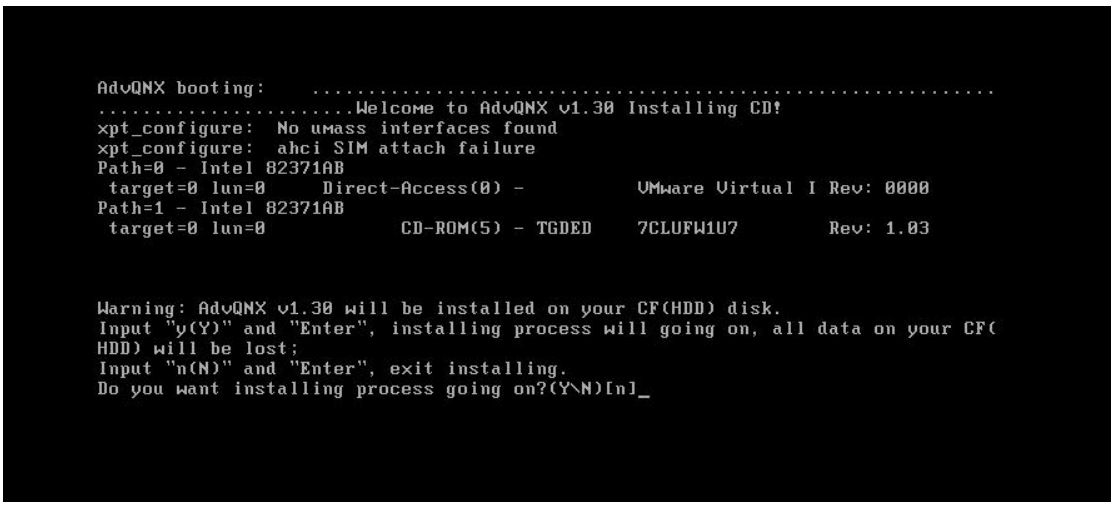


Figure 5-3-1

But if the target board is not advantech hardware, the information at *Figure 5-3-1* will be replaced with *Figure 5-3-2* information, this information warning user that this CD could install at target board.

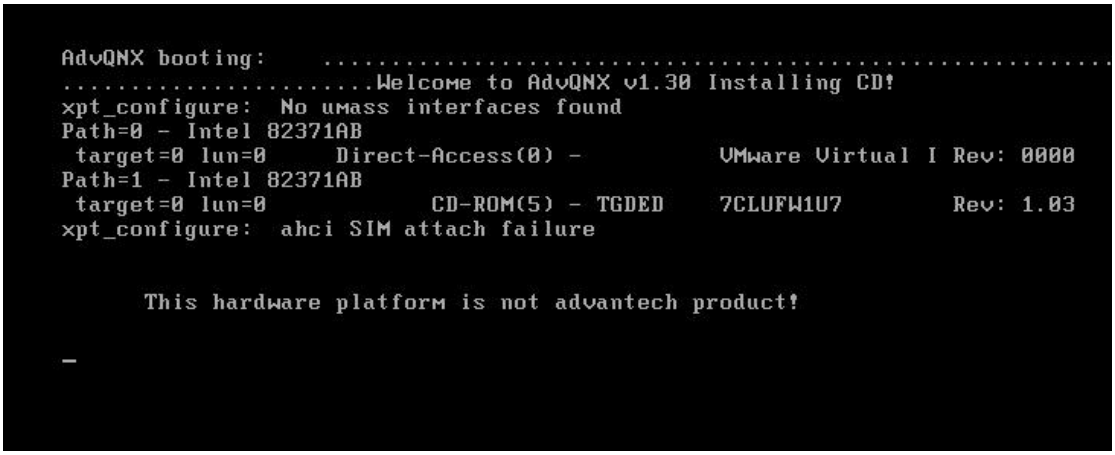


Figure 5-3-2

At *Figure 5-3-1* position, if user input “y” key and “Enter” key, install process will go on, other operation will exit the installing process. The going steps will show information as the following (*Figure 5-3-3*, e.g. Advantech PCM-9361 platform):

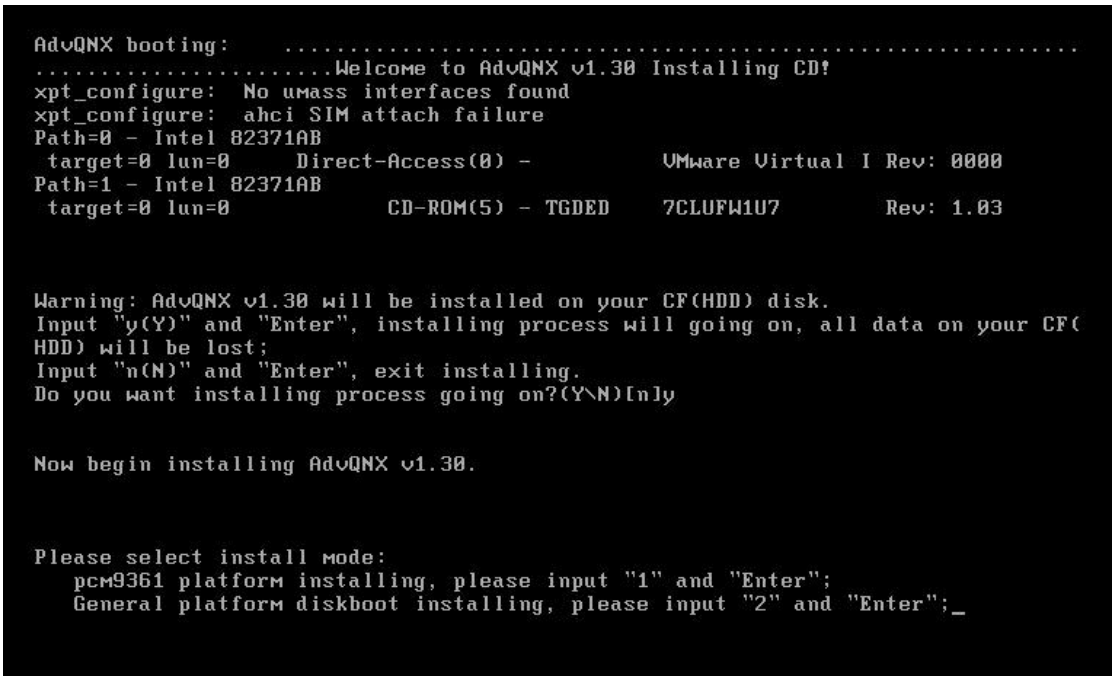


Figure 5-3-3

If target platform BSP is not included at this version CD, *Figure 5-3-3* will be replaced with *Figure 5-3-4*, which means target platform only has general diskboot install mode.

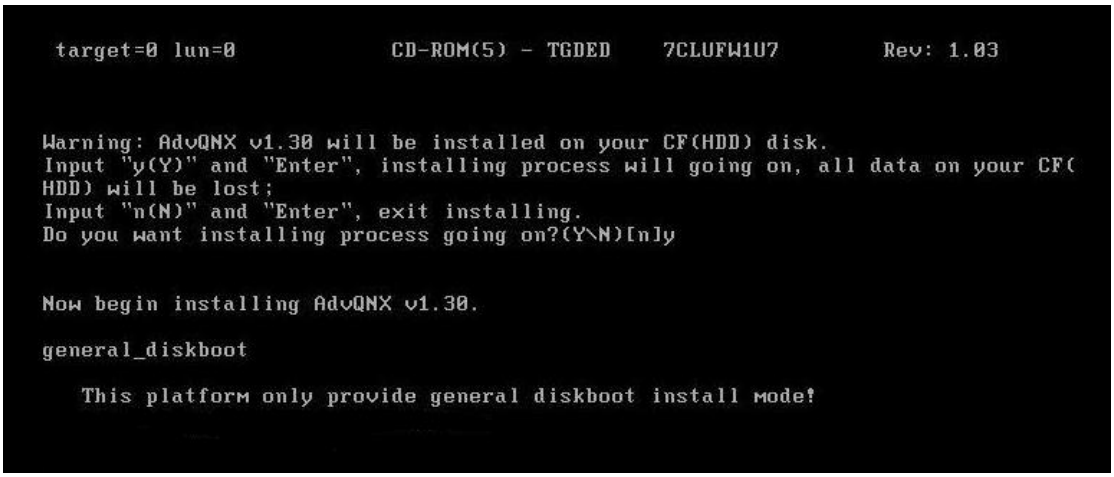


Figure 5-3-4

At *Figure 5-3-3* position, if user inputs “2” and “Enter” key choose general diskboot install mode, or just target platform only has general diskboot install mode as *Figure 5-3-4* showing, the following steps will run automatic. As *Figure 5-3-5* showing, until 100% finished.

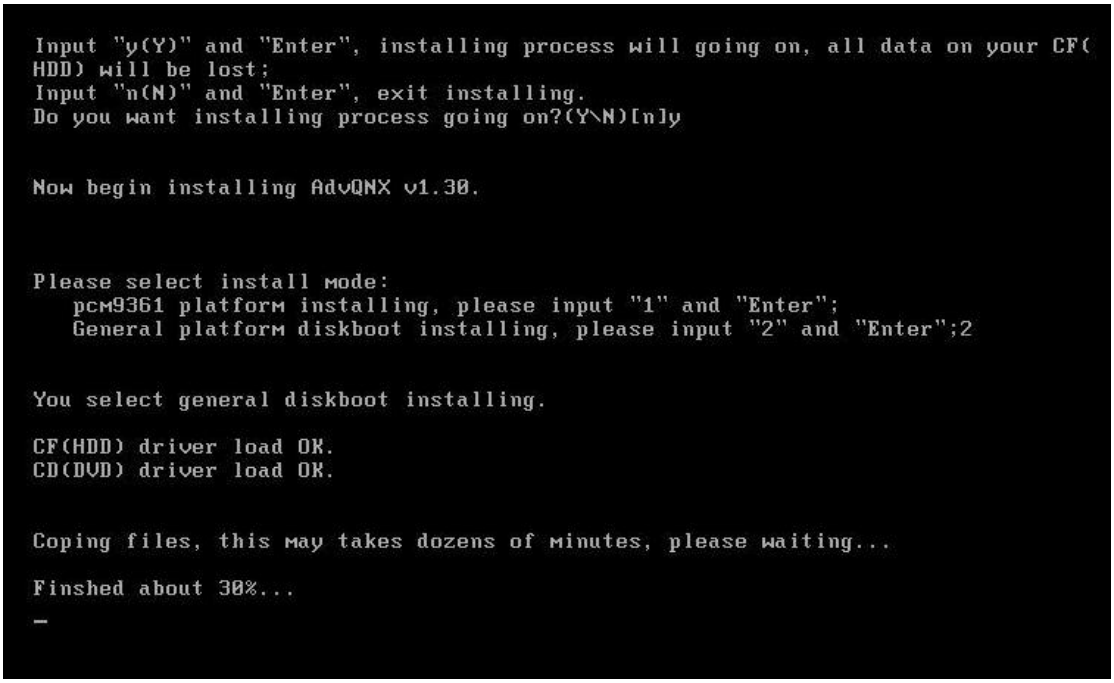


Figure 5-3-5

At *Figure 5-3-3* position, if user inputs “1” and “Enter” key choose pcm9361 platform install mode, the following step will let user choose one type of the givern three types, as Figure 5-3-6 showing:

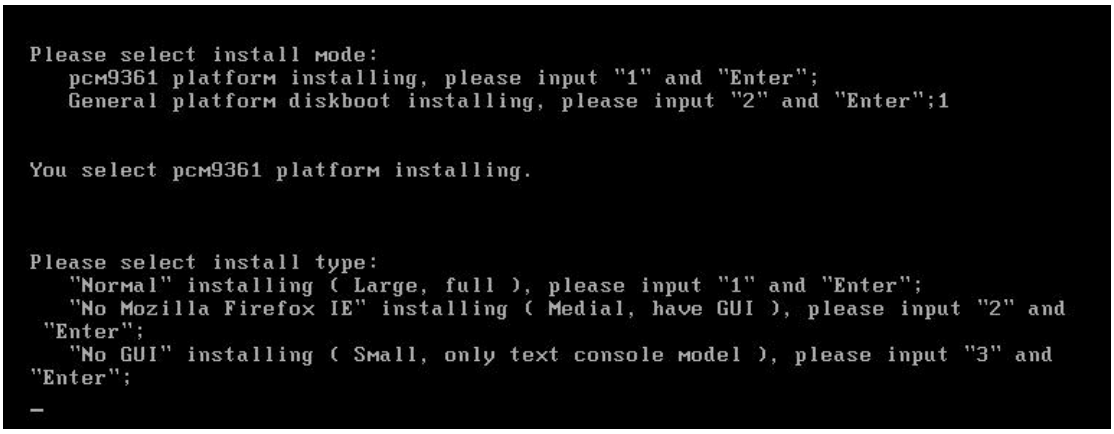


Figure 5-3-6

After choose the wanted type and input “Enter” key, the following steps will run automatic. As *Figure 5-3-5* showing, until 100% finished, as *Figure 5-3-7* showing:

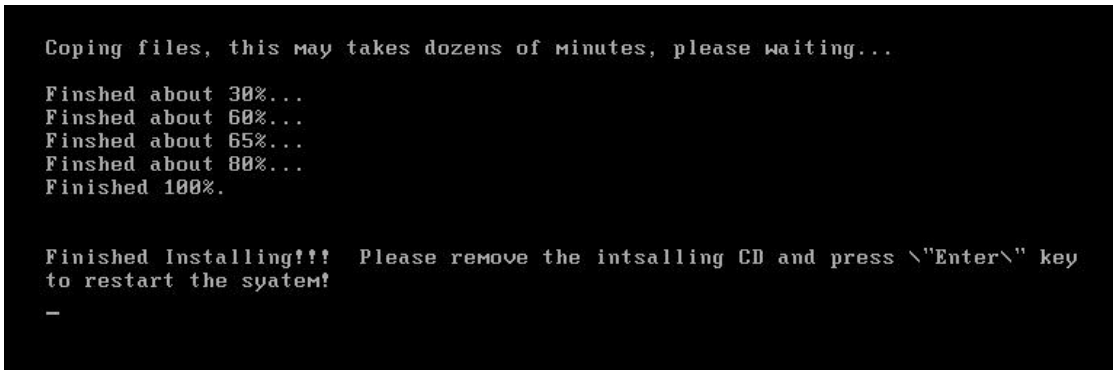


Figure 5-3-7

After install program run to *Figure 5-3-7* position, user just removes the Install CD from CD-ROM and press “Enter” key, system will reboot and booting AdvQNX v1.30 OS installed just now.

6. How To Use AdvQNX v1.30 Beta3

6.1 AdvQNX Booting

After insert the disk with AdvQNX v1.30 OS and power on the target board, AdvQNX will boot and directly run to QNX Photon GUI logging in interface as *Figure 6-1-2* showing: (If it's diskboot image and booting first times, display driver settings will be required before logging in interface, as *Figure 6-1-1* showing)

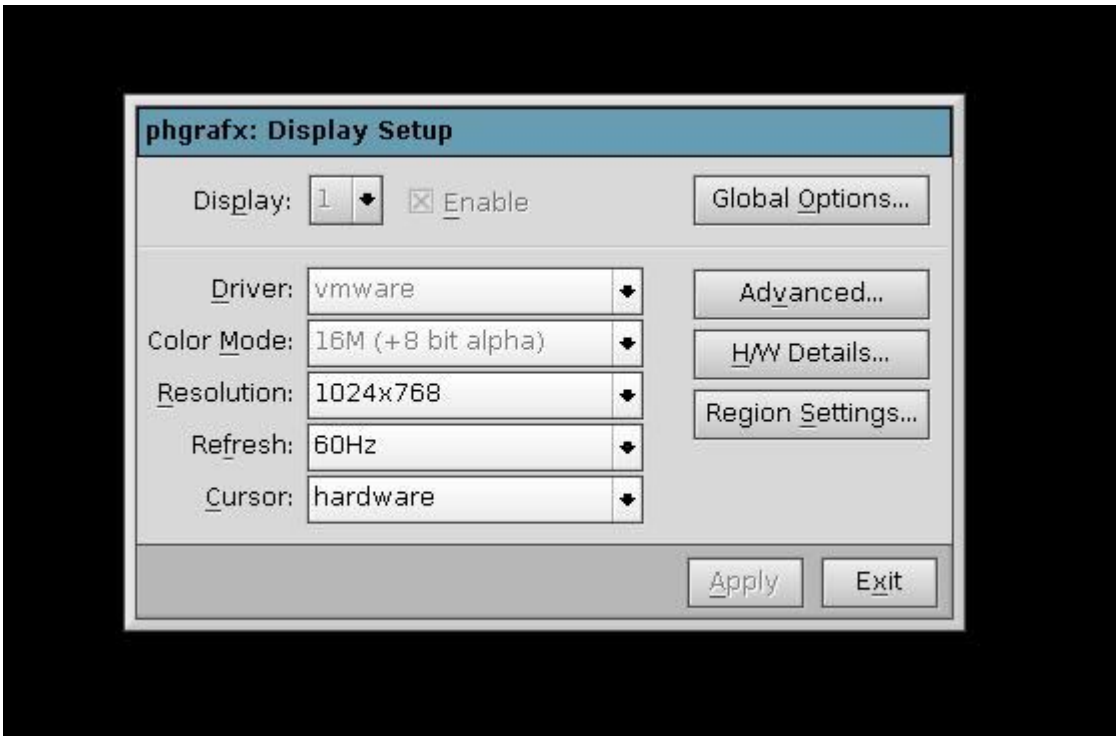


Figure 6-1-1

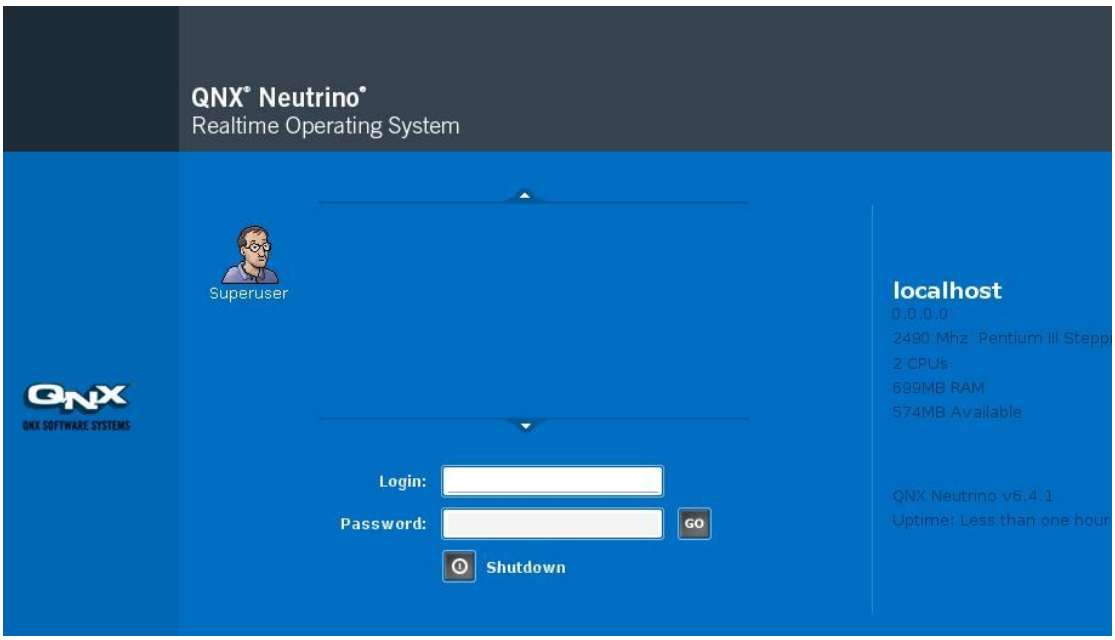


Figure 6-1-2

At *Figure 6-1-2* position, user just input “root” or press “Superuser” icon, AdvQNX OS will run as root user, as *Figure 6-1-3* showing:

Figure 6-1-3

6.2 AdvQNX Base Hardware Items Checking

6.2.1 Processor Number & SMP Checking

If AdvQNX image is used with SMP kernel and target board CPU is Core2 or Aotom serials processor, user should see two CPU monitor graphic chart at Photon GUI desktop:

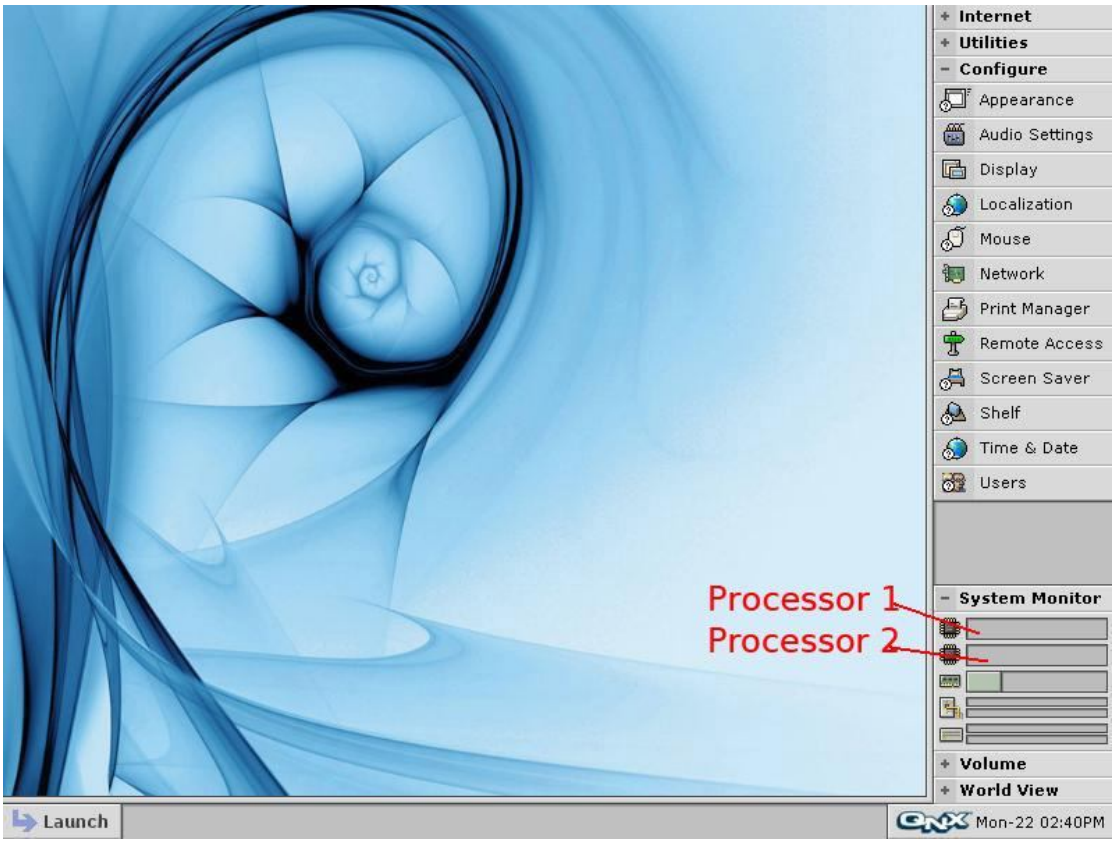


Figure 6-2-1-1

If only one CPU monitor graphic chart running, maybe SMP function has some error.

6.2.2 Display Driver Checking

At Photon GUI desktop, press “Configure” lists “Display” item, will show display configure dialog. At the dialog, user could from display name position to choose wanted and supported display driver:

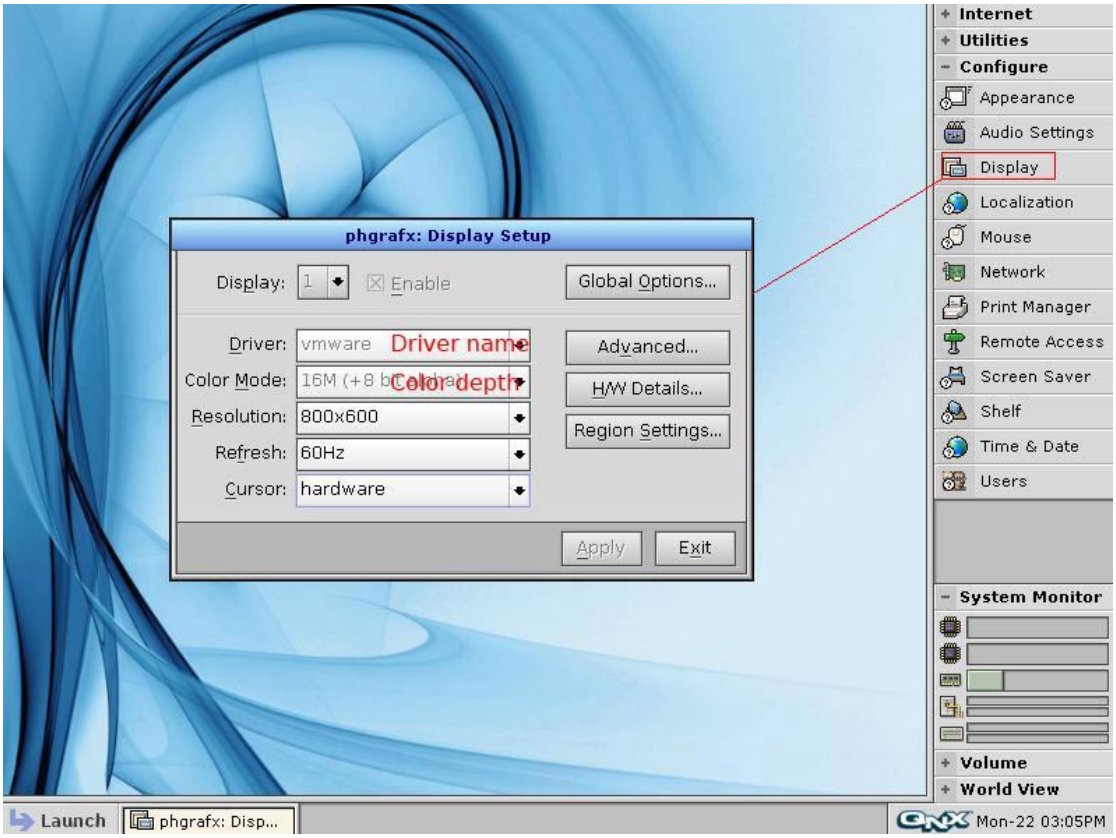


Figure 6-2-2-1

6.2.3 Network Driver Checking

At Photon GUI desktop, press “Configure” lists “Network” item, will show network configure dialog. At the dialog, user could see network device numbers and also could set each device with DHCP or Manual mode:

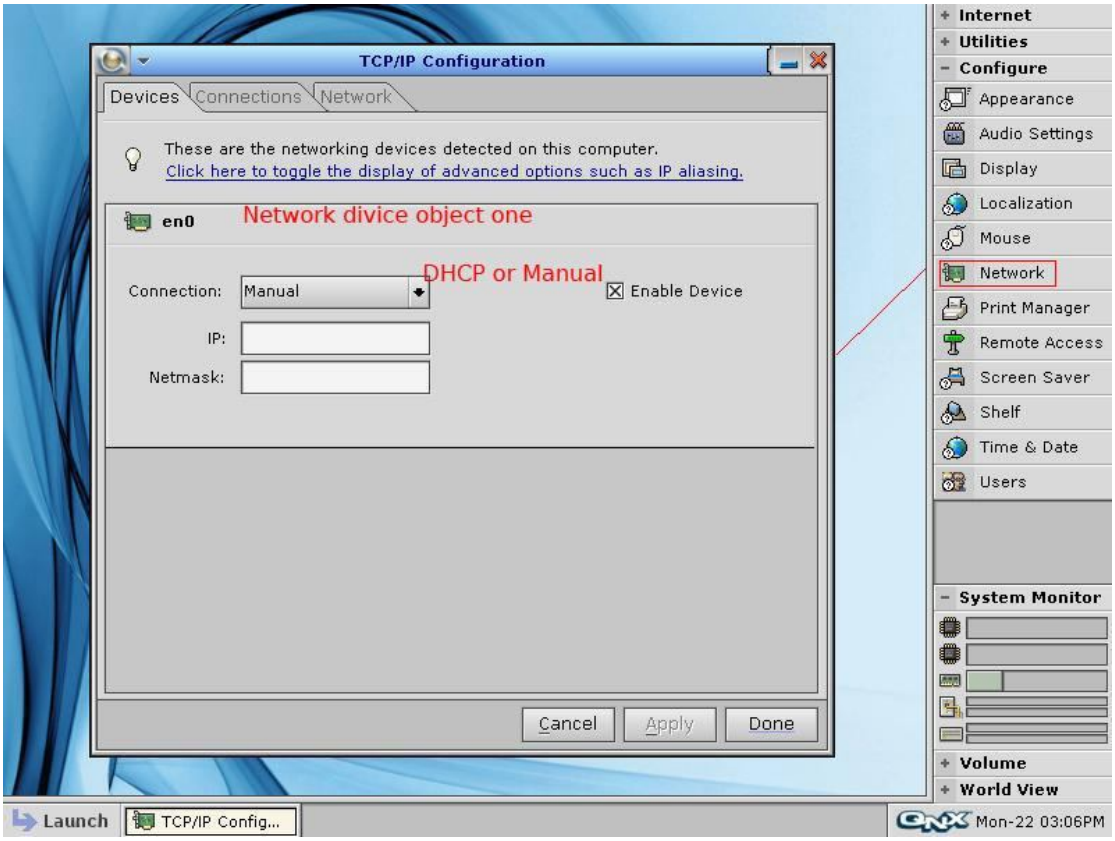


Figure 6-2-3-1

If the “Devices” table is not exist at network configure dialog, target board network driver supported must have some error.

6.2.4 Audio Driver Checking

At Photon GUI desktop, press “Configure” lists “Audio Settings” item, will show audio configure dialog. At the dialog, user could see audio device driver name which is used now.

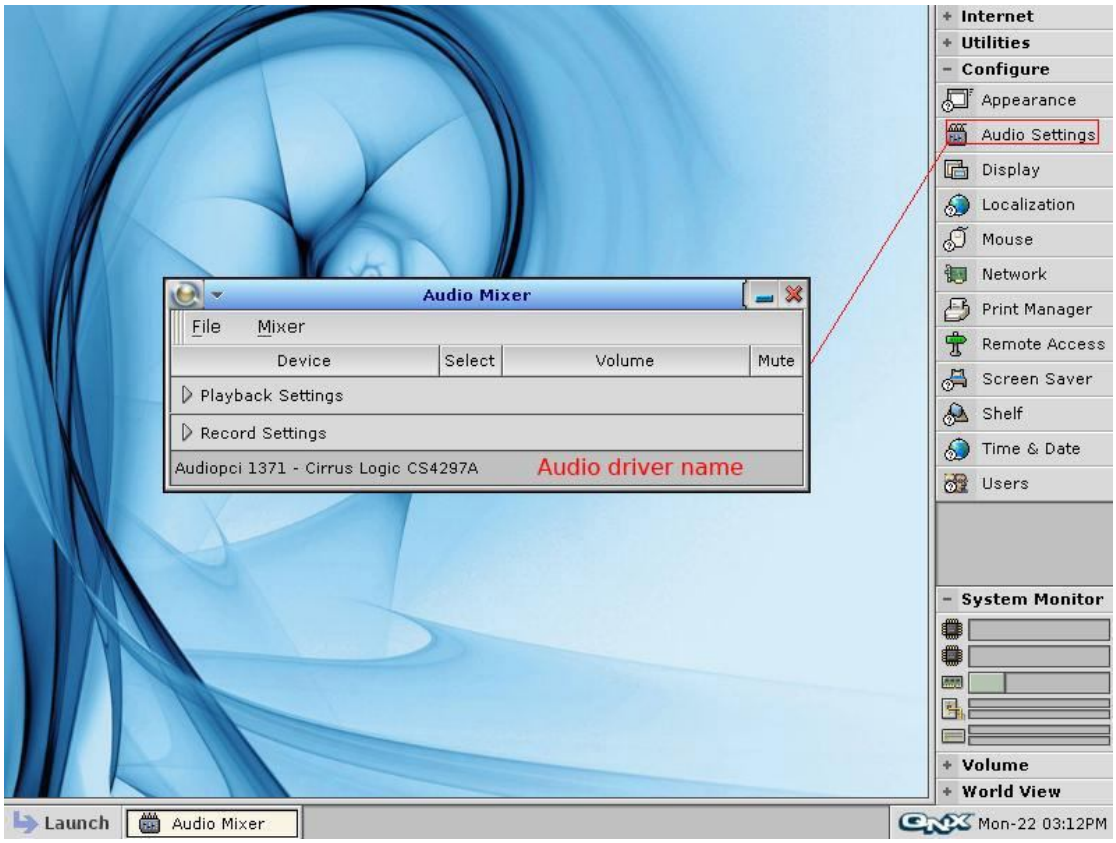


Figure 6-2-3-1

If press “Audio Settings” item, but have errors occur and also could not see audio driver name used, target board audio driver supported must have some error.

If Audio driver is OK, at Photon GUI desktop, press “Utilities” lists “File Manager” item, and change to “/dev/snd/” directory, user could see target audio device PCM channel numbers:

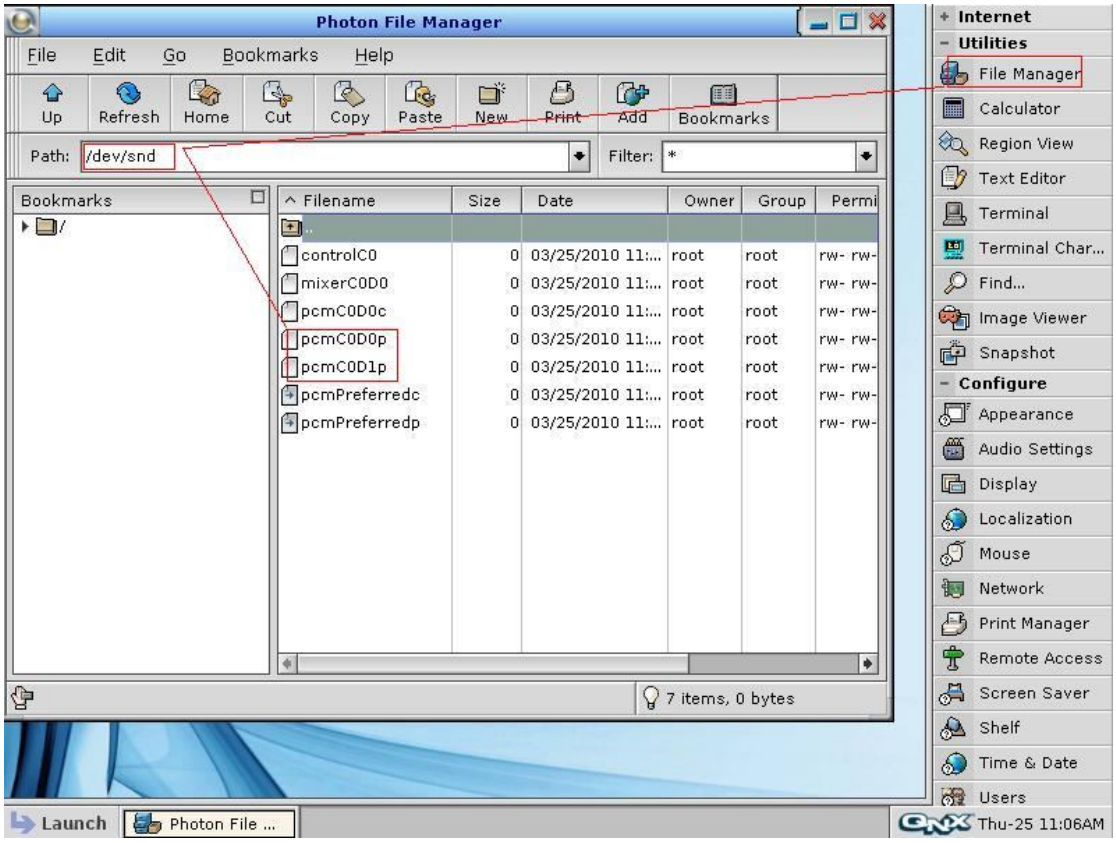


Figure 6-2-3-2

To test if target audio driver could play wave file, user could use "waveplay" tool to test:

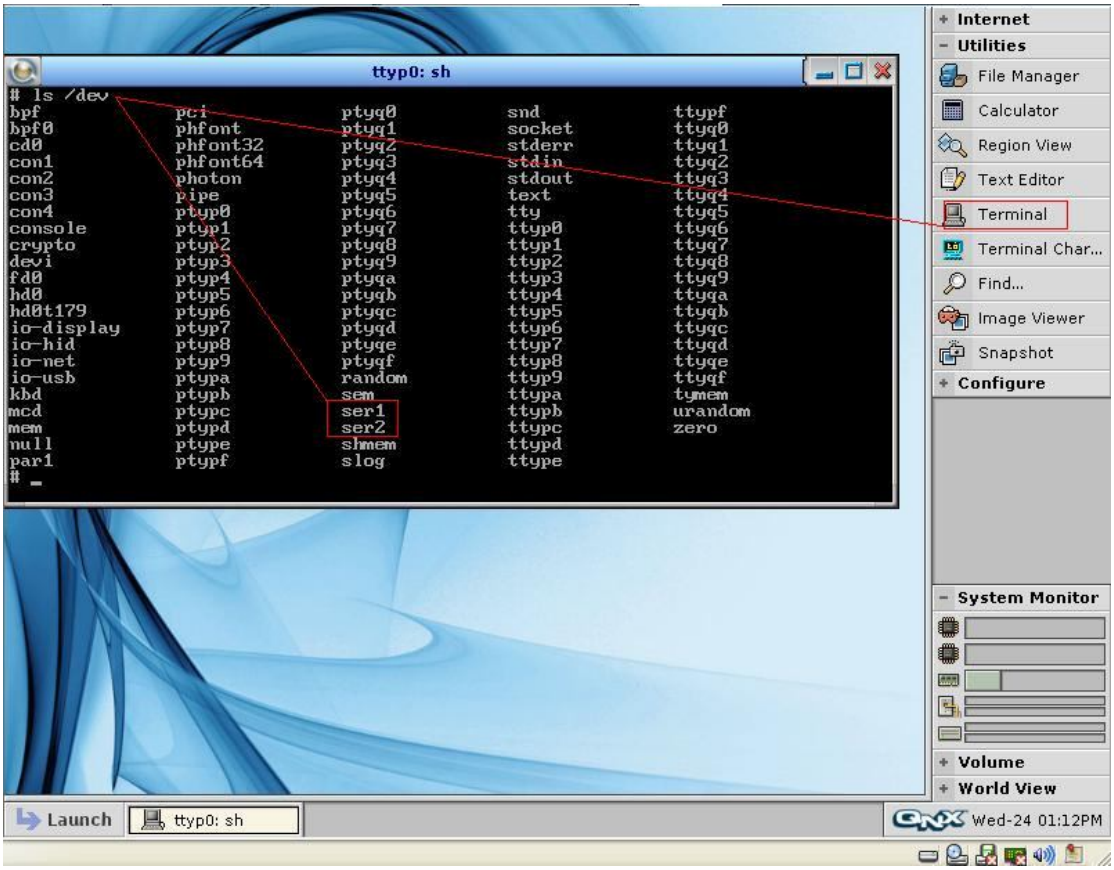
"waveplay ./xxx.wav": From PCM channel 0 to play wave file.

"waveplay –a 0:0 ./xxx.wav": From PCM channel 0 to play wave file.

"waveplay –a 0:1 ./xxx.wav": From PCM channel 1 to play wave file.

6.2.5 Serial Port Driver & Communications Checking

At Photon GUI desktop, press “Utilities” lists “Terminal” item, will open an virtual terminal. From the terminal, input “ls /dev” could see loaded serial device objects number:



To test each serial port communication status, please use “sertest” utility.

6.2.6 USB KB/MS, USB Disk Checking

To USB KB/MS, just plug the KB/MS device to target USB interface, if the driver is OK, target device will work, else the device could not work.

To USB disk, after plug the disk device to one target USB interface, at "/dev/" directory will add Disk device file. Generally, to Disk, the device file maybe is "hd1" or "umass0", to Disk partition, the device file maybe is "hd1t11" (FAT32) or "umass0t11" (FAT32).

To mount USB Disk file system to QNX Neutrino OS, maybe could use following commands:

USB Disk FAT16 file system to mount:

```
mount –t dos /dev/umass0t6 /fs/usb0
mount –t dos /dev/hd1t6 /fs/usb0
```

USB Disk FAT32 file system to mount:

```
mount –t dos /dev/umass0t11 /fs/usb0
mount –t dos /dev/hd1t11 /fs/usb0
```

USB Disk QNX4 file system to mount:

```
mount –t qnx4 /dev/umass0t79 /fs/usb0
mount –t qnx4 /dev/hd1t79 /fs/usb0
```

USB Disk QNX6 file system to mount:

```
mount –t qnx6 /dev/umass0t179 /fs/usb0
mount –t qnx6 /dev/hd1t179 /fs/usb0
```