

QNX 6.2.1 Installation Notes

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1 Introduction

This document¹ is a typed version of my brain-dump from installing QNX 6.2.1 Neutrino (henceforth referred to as QNX) on my Thinkpad T23 laptop. QNX is a pun on “Quick uNiX” - it was designed during the early 80s to provide a real-time variant of the Unix operating system. For further information on QNX, please see the References section at the end of this document.

This document assumes that you know how to install an UNIX-like OS. Examples include Linux and FreeBSD. You should also be familiar with terms like partition and bootloader. You need an x86 PC that has access to the internet and has a CD-burner ².

CAUTION:

- 1. IF YOU DO NOT HAVE AN EMPTY PARTITION FOR INSTALLING QNX, BACKUP YOUR DATA BEFORE PROCEEDING!**
- 2. SKIM THROUGH THIS ENTIRE DOCUMENT BEFORE INSTALLING QNX!**

I already had Linux running on my laptop, hence I:

1. backed up all my data on the laptop
2. downloaded QNX (see Obtaining the Sources section below) and burned CD images.
3. formatted and partitioned my hard-drive for both QNX (5 GB) and Linux (15 GB).
4. installed Linux
5. installed QNX

¹These notes can be found online at [http://www-inst.eecs.berkeley.edu/~mbharat/QNX6.2.1installinstructions.\[pdf,ps\]](http://www-inst.eecs.berkeley.edu/~mbharat/QNX6.2.1installinstructions.[pdf,ps])

²If you have the QNX CDs, you don't need access to the internet nor do you need a CD-burner

2 Obtaining the Sources

Note: Skip this section if you have the QNX install and repository CDs.

1. Go to [1] and register as a QNX user. It is free of charge.
2. Click on QNX Download and click on QNX 6.2.1 NC ISO image (it is 237.22 MB). Burn the image to a CD.
3. Download all of the QNX6 applications from [1] (click on QNX Download and click on QNX6 Applications folder) and burn CD images . You can use these application CD(s) to install packages after installing the core OS. The alternative is to use pkconfig to search the web once QNX is installed. However, having the CD is easier because you don't have to connect to the web and the CD install is quicker.

3 Installing QNX

Insert the QNX 6.2.1 CD and reboot the machine. Make sure boot from CD-ROM is enabled in the BIOS. Once the QNX install process has begun, there is one very important item: the bootloader configuration. **IF QNX IS NOT THE ONLY (OR PRIMARY) OS ON YOUR COMPUTER, YOU SHOULD NOT INSTALL THE QNX BOOTLOADER ON THE PRIMARY PARTITION. YOU MAY BE UNABLE TO BOOT INTO YOUR OTHER OS.** Rather, leave the bootloader of your primary OS. That is why I installed Linux first - this makes sure I have a bootloader installed and I can boot my computer! I actually did not choose to install QNX's bootloader anywhere. I configured GRUB on my Linux partition to boot into QNX (see the next section). Once you have selected the bootloader configuration, sit back and follow the onscreen instructions. The install process takes about 2 minutes on my 1 GHz T23 laptop.

4 Booting into QNX

If QNX is going to be the only OS on your computer, skip this section. If you have another OS installed, you need to configure the boot-loader to boot into QNX. In my case it was GRUB, so configuration was easy. Here is the partition setup on my laptop:

- a. /dev/hda1: Linux
- b. /dev/hda2: Linux Swap
- c. /dev/hda3: QNX

Thus, my grub.conf looks like:

```
title Red Hat Linux (2.4.20-8)
    root (hd0,0)
    kernel /boot/vmlinuz-2.4.20-8 ro root=LABEL=
```

```
        initrd /boot/initrd-2.4.20-8.img
title QNX Neutrino 6.2.1
        rootnoverify (hd0,2)
        chainloader +4
        boot
```

Remember: GRUB's numbering convention starts from 0, not 1.

5 Completing the QNX Install Process

Once the installation is complete, the system will reboot. When you boot into QNX for the first time, you will be presented with a configuration screen for graphics. Choose the correct driver and correct resolution depending on your graphics card and monitor respectively. I chose the vesa driver with a resolution of 1024x768 and 16-bit color. It will also ask you for the type of login - chose a non-graphical login. Click on *Change mode* to test your setting. Next, you will be presented with the login prompt. Before you login, insert the QNX install CD - you will use this CD to complete the QNX install process.

When you log into QNX for the first time, you have only the root user with no password. Log in as root (there is no password - we will set the password later). Once you login, the QNX installer should start up³.

Once the Installer starts up:

1. Click on *Select All* to select all the packages.
2. Click on *Install* (underneath the File menu) to upgrade the installer. This process takes about 30 seconds on my laptop.
3. Next upgrade QNX and install core utilities like gcc - click on *Select All* and *Install*. This process takes about 3 minutes.

Now the Installer will ask you to reboot. Restart the system and remove the QNX installation CD.

Next, you are going to install the utilities from the repository CD. Once the system reboots, type root (no password) at the login prompt to login. Set a new root password using the passwd command:

```
# passwd
```

Next type ph to start the photon microGUI. If you need to set the correct resolution: Click on *Graphics* under Configure in the toolbar on the right. I have vesa for my video driver and 1024x768 with 16-bit color (click on the arrow before 1024x768) for my resolution. Now, pop in the repository CD and start the Installer.

³If the Installer does not start - click on Installer under the Applications menu in the toolbar on the right side of your screen

1. Under Repositories, select QSSL's Unsupported Repository.
2. Click on *Select All* to select all the software displayed on the right. However, you need to manually deselect some of the software to resolve dependency errors: do not install the armle, mipsle, ppcbe and shle versions of the software and do not install IP Filter (x86). There are about 15 packages you need to deselect.
3. Now, click on *Install*. The Installer will resolve all the dependency errors - it will ask you to choose a version of the Portable Games Library. Choose the 1.1 x86 version.

All dependency errors should be resolved. Wait for the upgrade to complete - it took about 10 minutes on my laptop. That's it - QNX is now ready for use.

6 Some QNX Tips

To add users, open up a new terminal (click on Terminal under Applications) and use the passwd command:

```
# passwd <user-name>
```

You will be presented with some questions about group etc. If you don't know some information, just enter anything, change it later by editing `/etc/group`.

To start the Photon microGUI from a new terminal, type:

```
# ph
```

7 Conclusion

This document is a brain-dump of the procedure that I followed to setup QNX on my laptop. If you have questions/comments/corrections, please email mbharat@cory.eecs.berkeley.edu. In conclusion, I found my experience with QNX to be quite pleasant as compared to the first time I booted into Linux circa 2000. For instance, when I first booted into QNX, it detected my laptop network card, configured DHCP and viola! I was on the web and able to ssh to my email account. I still have to figure out how to configure X, but the photon microGUI has been excellent so far. As for online help, I found the forums and links on [1] to be very helpful. Documentation available on [2] was useful as well. Of course, there is always <http://www.google.com>

8 References

1. **OpenQNX : The QNX Community Portal.** <http://www.openqnx.com>
2. **QNX Realtime operating system (RTOS) software, development tools, and services for embedded applications.** <http://www.qnx.com>