



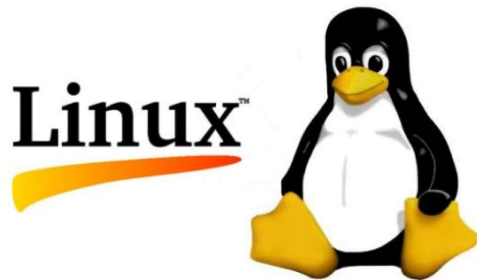
CS 1550

Week 3 – Setting up environment
for Project 1

Teaching Assistant
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Setting up environment for Project 1

- Last time we set the environment for **xv6** and compiled the code from source
- Now we will compile a **Linux** distro from source



Setting up environment for Project 1

1. First log to your **thoth.cs.pitt.edu** account
 - Command line
 - Terminal
 - PowerShell

Setting up environment for Project 1

1. First log to your **thoth.cs.pitt.edu** account
 - Command line
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2. Navigate to **/u/OSLab/username**
 - Copy linux source from `/u/OSLab/original/linux-2.6.23.1.tar.bz2`
 - Run `cp /u/OSLab/original/linux-2.6.23.1.tar.bz2 .`

Setting up environment for Project 1

3. Extract files locally

- Run `tar xjf linux-2.6.23.1.tar.bz2`

Setting up environment for Project 1

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 - Run `tar xjf linux-2.6.23.1.tar.bz2`
4. Move into **linux-2.6.23.1/**
 - Run `cd linux-2.6.23.1`

Setting up environment for Project 1

3. Extract files locally

- Run `tar xjf linux-2.6.23.1.tar.bz2`

4. Move into **linux-2.6.23.1/**

- Run `cd linux-2.6.23.1`

5. Copy the .config file

- Run `cp /u/OSLab/original/.config .`

Setting up environment for Project 1

3. Extract files locally
 - Run `tar xvj linux-2.6.23.1.tar.bz2`
4. Move into **linux-2.6.23.1/**
 - Run `cd linux-2.6.23.1`
5. Copy the .config file
 - Run `cp /u/OSLab/original/.config .`
6. Build linux source code
 - Run `make ARCH=i386 bzImage`

Setting up environment for Project 1

- Repeating from step **2** will give you a new environment
 - This will not be necessary unless you really need to

Setting up environment for Project 1

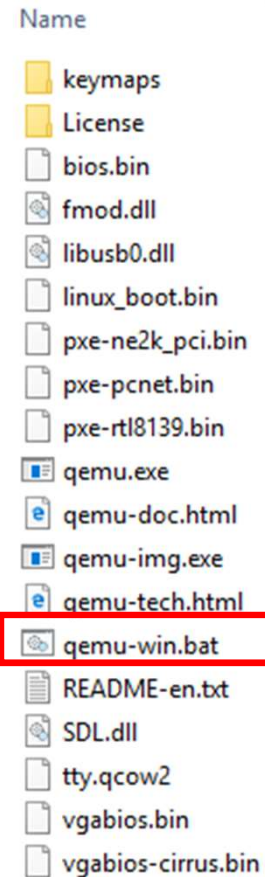
- To add the changes you will need to rebuild the Kernel
 - Run again `make ARCH=i386 bzImage`

Configuring Qemu

- We need a x86 version of Qemu (username and pass is **root**)
 - Windows Users
 - Download Qemu and a Image from:
 - Linux/Mac Users
 - Qemu-test

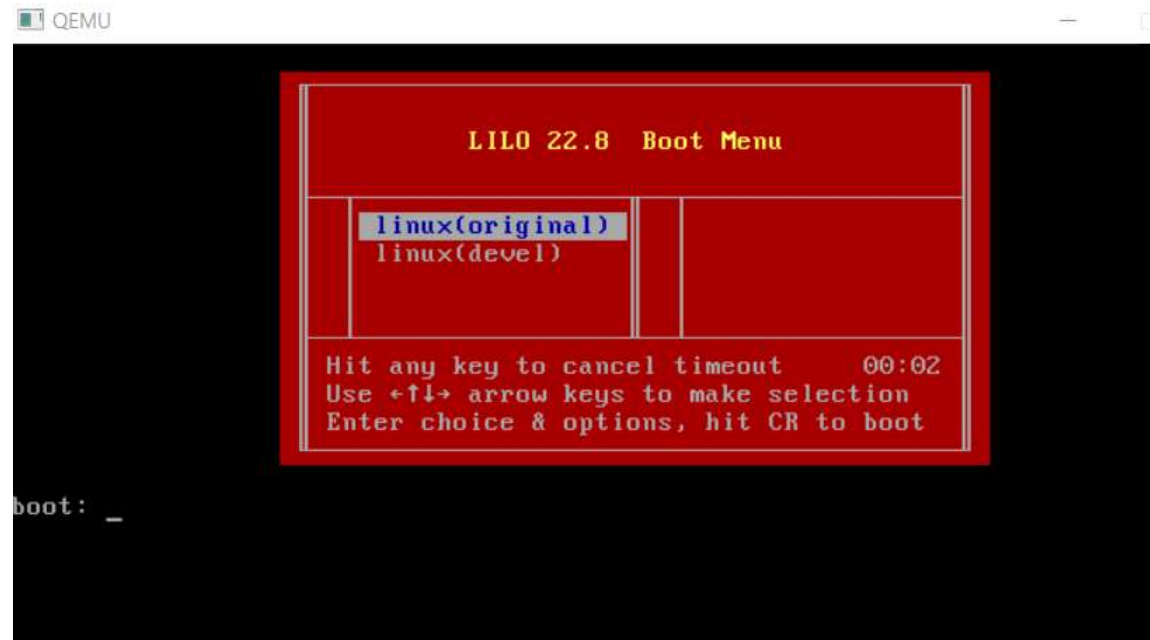
Configuring Qemu

- Unzip Qemu.zip and double-click/execute
 - qemu-win.bat



Configuring Qemu

- Choose Linux(original)



Copying files from Linux to Qemu

- Now we need two files from the Linux we just built
 - Kernel File **bzImage** from:
 - linux- 2.6.23.1/arch/i386/boot/
 - System call map **System.map** from:
 - linux-2.6.23.1/

Copying files from Linux to Qemu

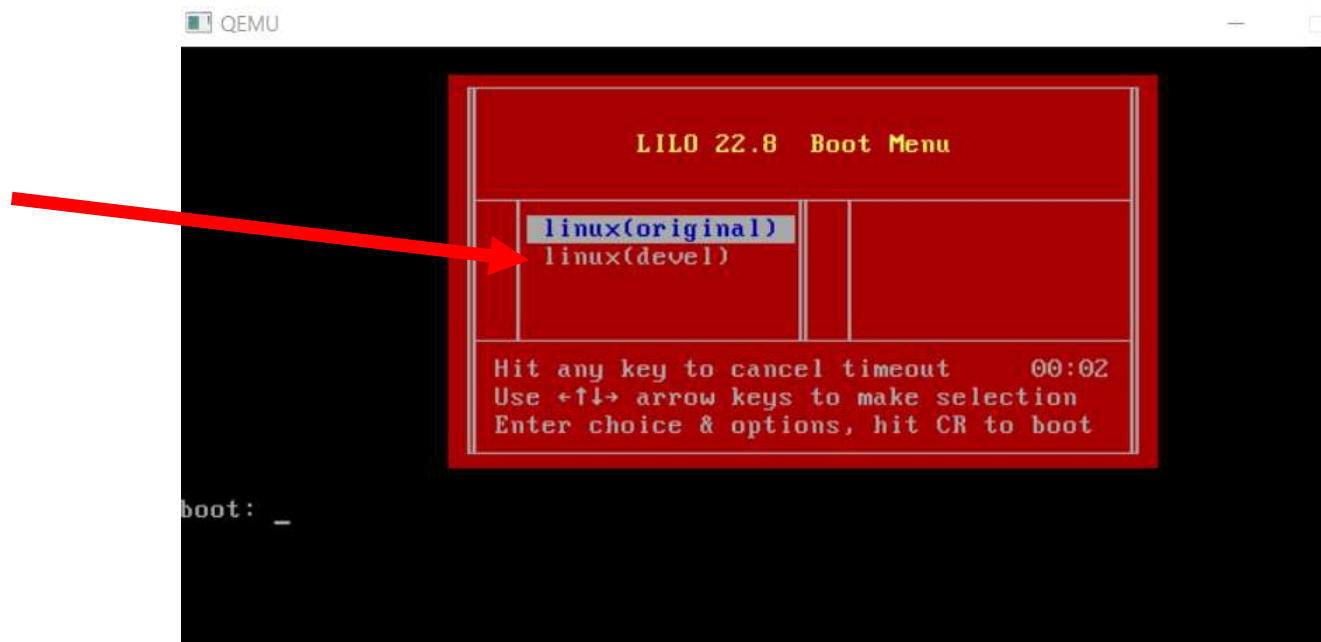
- **FROM WITHIN THE NEW QEMU**
- Download the files from your compiled Linux:
 - `scp USERNAME@thoth.cs.pitt.edu:/u/OSLab/USERNAME/linux-2.6.23.1/arch/i386/boot/bzImage .`
 - `scp USERNAME@thoth.cs.pitt.edu:/u/OSLab/USERNAME/linux-2.6.23.1/System.map .`

Copying files from Linux to Qemu

- After this run **linux load** command:
 - Run **lilo**
- This will relink the new modified kernel you just copied
- Then reboot the system with the command:
 - Run **reboot**

Copying files from Linux to Qemu

- You will change to **linux(devel)** kernel
 - So to see changes always remind to choose it when opening Qemu



Setup Guidance

- https://github.com/maher460/Pitt_CS1550_recitation_materials/tree/master/project1



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