EECS 678 - Lab 2 - Kam Bielawski (2972621)

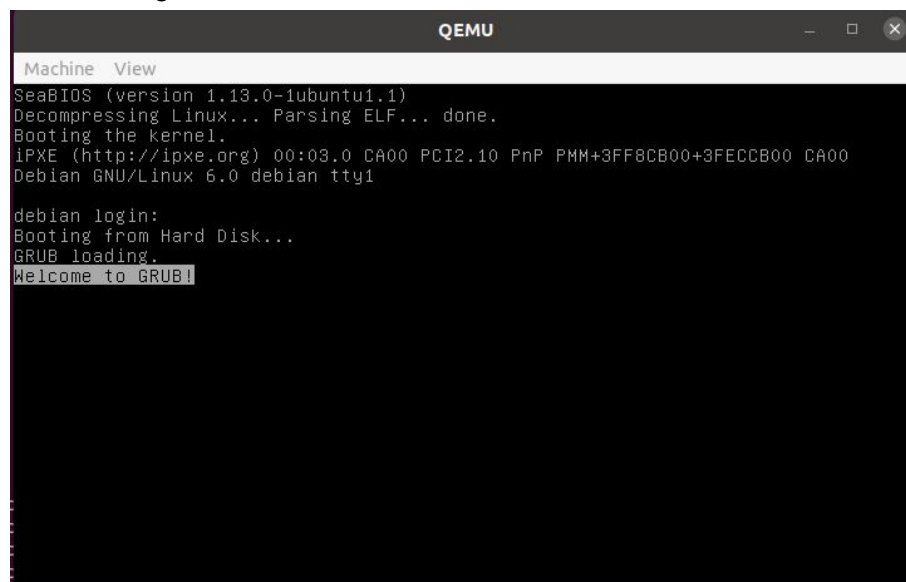Downloading base image

```
kam:~/dev/school/operating_systems_678/lab2$ scp k341b218@cycle1.eecs.ku.edu:/srv/EECS_678/eecs678_base.qcow .
The authenticity of host 'cycle1.eecs.ku.edu (129.237.87.111)' can't be established.
ECDSA key fingerprint is SHA256:q0zOpvN/9UOpkRIkV4lrJpjL/uVSjYO5WTat2ZCmsno.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'cycle1.eecs.ku.edu,129.237.87.111' (ECDSA) to the list of known hosts.
k341b218@cycle1.eecs.ku.edu's password:
Cannot open display "default display"
eecs678_base.qcow                                            100% 2215MB   6.2MB/s   05:58
```

Differential image

```
kam:~/dev/school/operating_systems_678/lab2$ qemu-img create -f qcow2 -b eecs678_base.qcow kam.qcow
Formatting 'kam.qcow', fmt=qcow2 size=21474836480 backing_file=eecs678_base.qcow cluster_size=65536 lazy_refcoun
ts=off refcount_bits=16
```

Booted image

```
                                QEMU                          _  □  ✕
 Machine  View
SeaBIOS (version 1.13.0-1ubuntu1.1)
Decompressing Linux... Parsing ELF... done.
Booting the kernel.
iPXE (http://ipxe.org) 00:03.0 CA00 PCI2.10 PnP PMM+3FF8CB00+3FECCB00 CA00
Debian GNU/Linux 6.0 debian tty1

debian login:
Booting from Hard Disk...
GRUB loading.
Welcome to GRUB!
```

Create my user

```
root@debian$ adduser kam
Adding user `kam' ...
Adding new group `kam' (1000) ...
Adding new user `kam' (1000) with group `kam' ...
Creating home directory `/home/kam' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for kam
Enter the new value, or press ENTER for the default
        Full Name []: kam
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
```

Writing /etc/sudoers and making me a superuser

```
 "/etc/sudoers" 2L, 37C written

 [~]
 root@debian$ usermod -a -G sudo kam

 [~]
 root@debian$ _
```

Moving linux kernel to different directory & giving me ownership

```
 [~]
 root@debian$ mkdir /home/kam/kernel

 [~]
 root@debian$ mv linux-2.6.32.60/ /home/kam/kernel/

 [~]
 root@debian$ chown -R kam:kam /home/kam/kernel/

 [~]
```

Being the kam user and installing libz-dev

```
 unpacking zlib1g-dev (from .../zlib1g-dev_1%3a1.2.3.4.d
 Processing triggers for man-db ...
 Setting up zlib1g-dev (1:1.2.3.4.dfsg-3) ...
 kam@debian:/root$ _
```

Adding concurrency to build process?

```
 1 #!/bin/sh
 2 rev=$1
 3 if [ -z "$rev" ]; then
 4         echo "Usage: build64 <revision>"
 5         exit 1
 6 fi
 7 make-kpkg -j 2 --rootcmd fakeroot --initrd --revision=$rev kernel_image 2>&1
```

Building the kernel

```
kam@debian:~/kernel/linux-2.6.32.60$ sudo kvm-kernel-build 1
exec make kpkg_version=12.036+nmu1 -f /usr/share/kernel-package/ruleset/minimal.
mk debian DEBIAN_REVISION=1  INITRD=YES  ROOT_CMD=fakeroot
```

Install kernel

```
[/home/kam/kernel]
root@debian$ dpkg -i linux-image-2.6.32.60_1_i386.deb
Selecting previously deselected package linux-image-2.6.32.60.
(Reading database ... 23905 files and directories currently installed.)
Unpacking linux-image-2.6.32.60 (from linux-image-2.6.32.60_1_i386.deb) ...
Done.
Setting up linux-image-2.6.32.60 (1) ...
Running depmod.
Examining /etc/kernel/postinst.d.
run-parts: executing /etc/kernel/postinst.d/initramfs-tools 2.6.32.60 /boot/vmli
nuz-2.6.32.60
update-initramfs: Generating /boot/initrd.img-2.6.32.60
run-parts: executing /etc/kernel/postinst.d/zz-update-grub 2.6.32.60 /boot/vmlin
uz-2.6.32.60
Generating grub.cfg ...
Found linux image: /boot/vmlinuz-2.6.32.60
Found initrd image: /boot/initrd.img-2.6.32.60
Found linux image: /boot/vmlinuz-2.6.32-5-686
Found initrd image: /boot/initrd.img-2.6.32-5-686
done
```

Booted into Linux debian 2.6.32.60

```
kam@debian:~$ uname -a
Linux debian 2.6.32.60 #2 SMP Fri Feb 19 17:49:56 CST 2021 i686 GNU/Linux
kam@debian:~$ _
```