

Lab0

主要是环境的配置

```
vim ~/.bashrc
```

进入环境的编辑

```
export RISCV=/home/luhaozhhe/riscv/riscv64-unknown-elf-toolchain-10.2.0-2020.12.8-x86_64-linux-ubuntu14
export PATH=$RISCV/bin:$PATH
```

加入两行环境变量

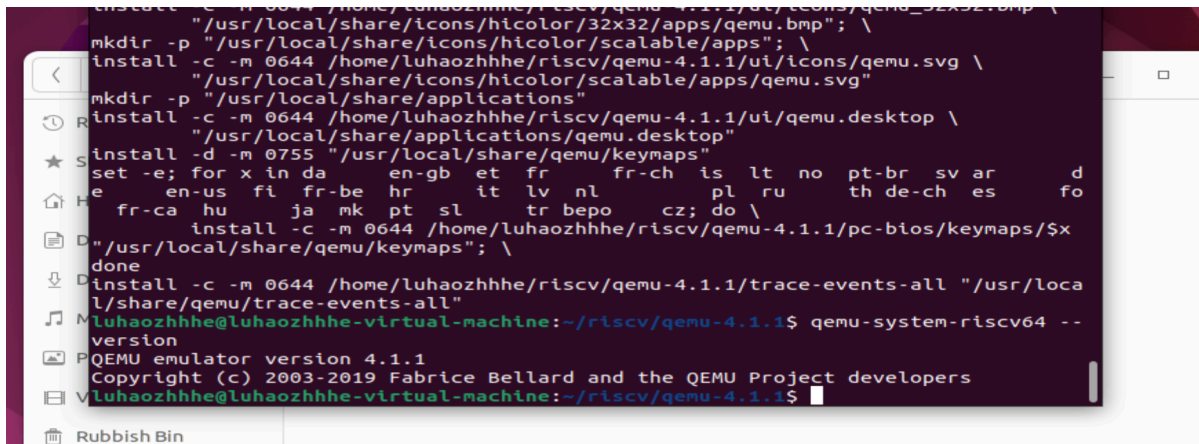
```
source ~/.bashrc
```

保存环境的编辑

发现gcc已经安装好了

下面安装qemu，失败了好多次。。。

```
$ wget https://download.qemu.org/qemu-4.1.1.tar.xz
$ tar xvjf qemu-4.1.1.tar.xz
$ cd qemu-4.1.1
$ ./configure --target-list=riscv32-softmmu,riscv64-softmmu
$ make -j
$ sudo make install
```



qemu安装成功!

输入

```
$ qemu-system-riscv64 \
  --machine virt \
  --nographic \
  --bios default
```

```
luhaozhhe@luhaozhhe-virtual-machine: ~/riscv/qemu-4.1.1
install -c -m 0644 /home/luhaozhhe/riscv/qemu-4.1.1/ui/icons/qemu.svg \
"/usr/local/share/icons/hicolor/scalable/apps/qemu.svg"
mkdir -p "/usr/local/share/applications"
install -c -m 0644 /home/luhaozhhe/riscv/qemu-4.1.1/ui/qemu.desktop \
"/usr/local/share/applications/qemu.desktop"
install -d -m 0755 "/usr/local/share/qemu/keymaps"
set -e; for x in da en-gb et fr fr-ch is lt no pt-br sv ar de en-us fl fr-be hr it lv r
ru th de-ch es fo fr-ca hu ja mk pt sl tr bepo cz; do \
install -c -m 0644 /home/luhaozhhe/riscv/qemu-4.1.1/pc-bios/keymaps/$x "/usr/local/share/qemu/keymaps"; \
done
install -c -m 0644 /home/luhaozhhe/riscv/qemu-4.1.1/trace-events-all "/usr/local/share/qemu/trace-events-all"
luhaozhhe@luhaozhhe-virtual-machine:~/riscv/qemu-4.1.1$ qemu-system-riscv64 --version
QEMU emulator version 4.1.1
Copyright (c) 2003-2019 Fabrice Bellard and the QEMU Project developers
luhaozhhe@luhaozhhe-virtual-machine:~/riscv/qemu-4.1.1$ qemu-system-riscv64 \
--machine virt \
--nographic \
--bios default
OpenSBI v0.4 (Jul  2 2019 11:53:53)

Platform Name       : QEMU Virt Machine
Platform HART Features : RV64ACDFIMSU
Platform Max HARTs   : 8
Current Hart        : 0
Firmware Base       : 0x80000000
Firmware Size       : 112 KB
Runtime SBI Version  : 0.1

PMP0: 0x0000000080000000-0x000000008001ffff (A)
PMP1: 0x0000000000000000-0xffffffffffffffff (A,R,W,X)
```

说明环境配置成功!

我们进行lab0的测试

```
luhaozhhe@luhaozhhe-virtual-machine: ~/riscv/riscv64-ucore-labcodes/lab0
luhaozhhe@luhaozhhe-virtual-machine:~$ ls
Desktop  Downloads  Pictures  riscv  Templates
Documents Music      Public    snap   Videos
luhaozhhe@luhaozhhe-virtual-machine:~$ cd riscv
luhaozhhe@luhaozhhe-virtual-machine:~/riscv$ ls
qemu-4.1.1
qemu-4.1.1.tar.xz
riscv64-ucore-labcodes
riscv64-unknown-elf-toolchain-10.2.0-2020.12.8-x86_64-linux-ubuntu14
riscv64-unknown-elf-toolchain-10.2.0-2020.12.8-x86_64-linux-ubuntu14.tar.gz
luhaozhhe@luhaozhhe-virtual-machine:~/riscv$ cd riscv64-ucore-labcodes
luhaozhhe@luhaozhhe-virtual-machine:~/riscv/riscv64-ucore-labcodes$ ls
lab0 lab1 lab2 lab3 lab4 lab5 lab6 lab7 lab8 README.md
luhaozhhe@luhaozhhe-virtual-machine:~/riscv/riscv64-ucore-labcodes$ cd lab0
luhaozhhe@luhaozhhe-virtual-machine:~/riscv/riscv64-ucore-labcodes/lab0$ make qemu

OpenSBI v0.4 (Jul  2 2019 11:53:53)

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PMP0: 0x0000000080000000-0x000000008001ffff (A)
PMP1: 0x0000000000000000-0xffffffffffffffff (A,R,W,X)
(THU.CST) os is loading ...
```

成功! lab0就结束了