虚拟机网络性能测试

工程实践与科技创新III-D 虚拟化与云计算 EI313

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要求

Virtualized and bare metal network performance test.

- Download QEMU 5.2.0 from https://www.qemu.org/download/ and compile.
- Create 2 VMs with TAP mode network (e1000 and virtio-net) by QEMU.
- Connect to your VM through VNC viewer or SSH.
- Compare the network performance of your host machine and VMs.

1 编译 QEMU

使用 QEMU 5.2.0 (Dec 8th 2020),为了方便后续的版本对比,根据说明文档^[1]直接克隆存储库。根据官方的 wiki 说明^[2],需要安装一些额外包。通过下面的脚本进行下载、编译:

Listing 1: INSTALL.sh

```
1 #!/bin/bash
₃ sudo apt-get install git
4 git clone -- recurse-submodules https://git.sjtu.edu.cn/sjtug/qemu.git
5 cd qemu
6 mkdir build
7 cd build
8 sudo apt-get install glib2.0-dev libglib2.0-dev libfdt-dev libpixman-1-dev
        zlib1q-dev
9 sudo apt-get install git-email
sudo apt-get install libaio-dev libbluetooth-dev libbrlapi-dev libbz2-dev
11 sudo apt-get install libcap-dev libcap-ng-dev libcurl4-gnutls-dev libgtk-3-
sudo apt-get install libibverbs-dev libjpeg8-dev libncurses5-dev libnuma-dev
sudo apt-get install librbd-dev librdmacm-dev
sudo apt-get install libsasl2-dev libsdl1.2-dev libseccomp-dev libsnappy-dev
        libssh2-1-dev
15 sudo apt-get install libvde-dev libvdeplug-dev libxen-dev liblzo2-dev
sudo apt-get install valgrind xfslibs-dev
17 sudo apt-get install libnfs-dev libiscsi-dev
18 sudo apt-get install ninja-build
19 sudo apt-get install libsdl1.2-dev
20 ../configure --enable-kvm --enable-debug --enable-vnc --enable-werror --
        target-list="x86_64-softmmu"
21 make - j4
22 make install
```

其中libvte-2.90-dev包已经被废弃。编译如图1所示成功,安装如图2所示成功。

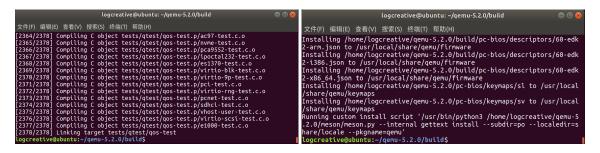


图 1: QEMU 编译

图 2: QEMU 安装

参考文献

- [1] QEMU. QEMU readme[M/OL]. 2021. https://gitlab.com/qemu-project/qemu/-/blob/m aster/README.rst.
- [2] QEMU. QEMU on Linux hosts[EB/OL]. 2012. https://wiki.qemu.org/Hosts/Linux#Requ ired_additional_packages.