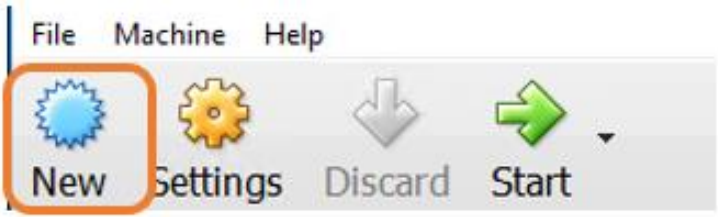
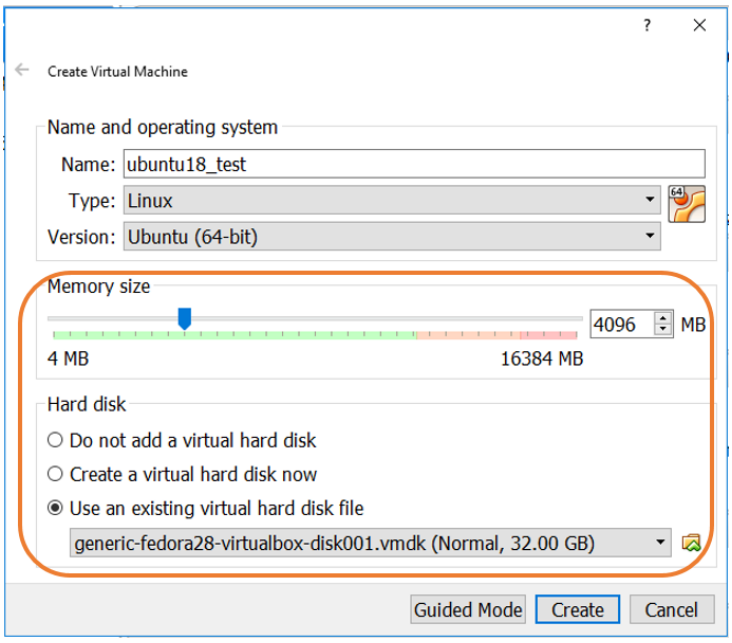
SPDK Vagrant Box Install Instructions

Before attending the SPDK lab, please follow the steps below to install the Vagrant development environment and SPDK on you laptop.

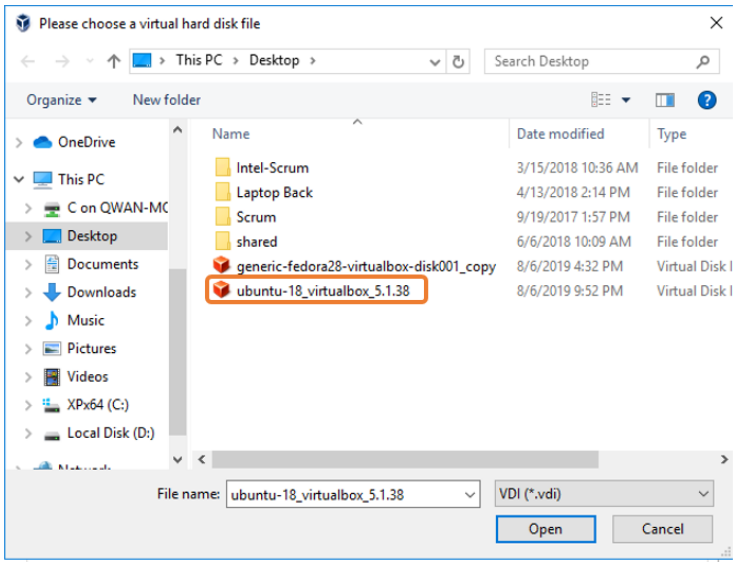
1. Install VirtualBox and its dependencies
   i. Install VirtualBox 5.1 or newer (tested on windows os version 1607/mac os 10.13.4, suggested version is 5.1.38)
      Note: VirtualBox requires virtualization to be enabled in the BIOS.
   ii. Install VirtualBox Extension Pack (tested on windows os version 1607/mac os 10.13.4, suggested version is 5.1.38)
      Note: You should disable Hyper-V in Windows RS 3 laptop. Search 'windows features', uncheck Hyper-V, restart laptop
2. Install Vagrant 1.9.4 or newer (tested on windows os version 1607/mac os 10.13.4, suggested version is 1.9.4)
3. Download the *.vdi file from the baidu network drive link is: https://pan.baidu.com/s/1ecOg5hP-ijEleeS_Y6YBUg (retrieve code is "**gxce**"), you need to download both ubuntu-18_virtualbox_5.1.38.vdi and nvme_disk_copy.vdi file there.
4. Create the virtual machine using the *.vdi file
   i. Create the Virtual Machine
      i Click New button on the menu bar



      ii Open the expert mode to configure the virtual machine



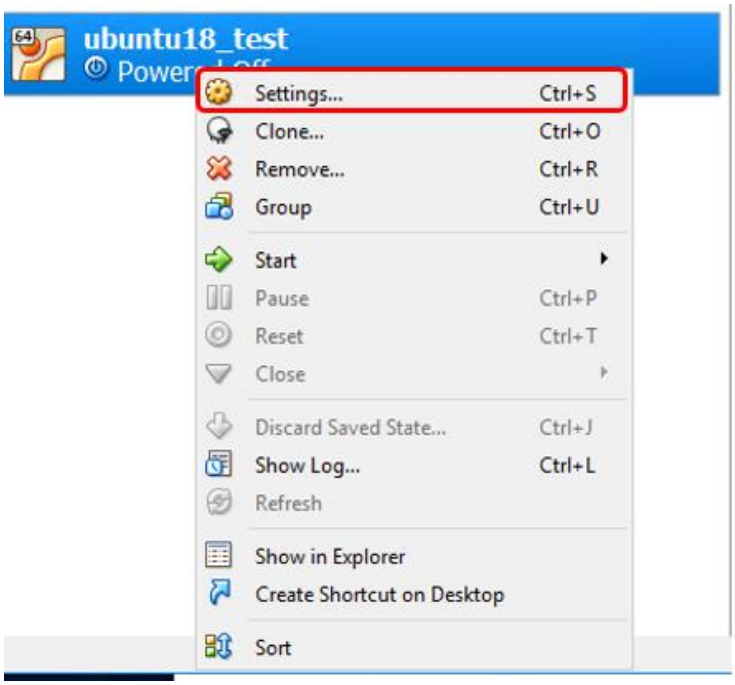
      iii Select the existing virtual hard disk file



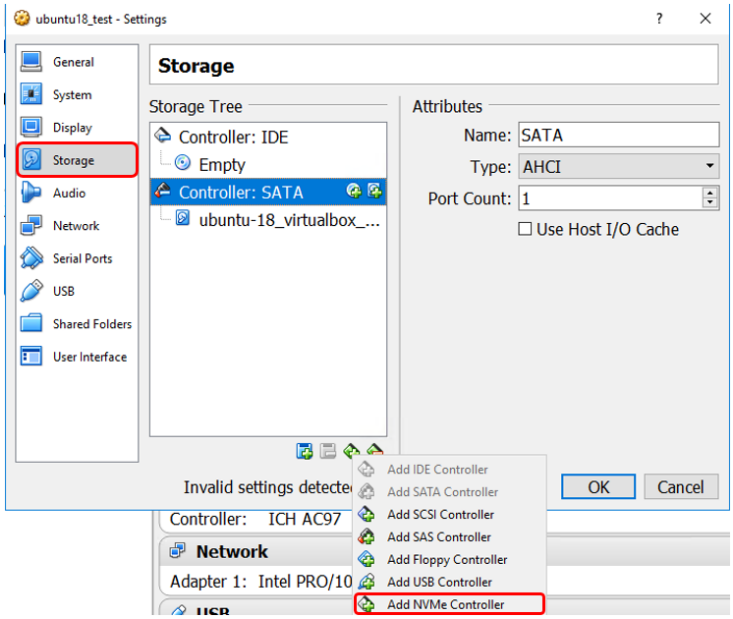
iv Click “Create” button

ii. Add the “NVME” device

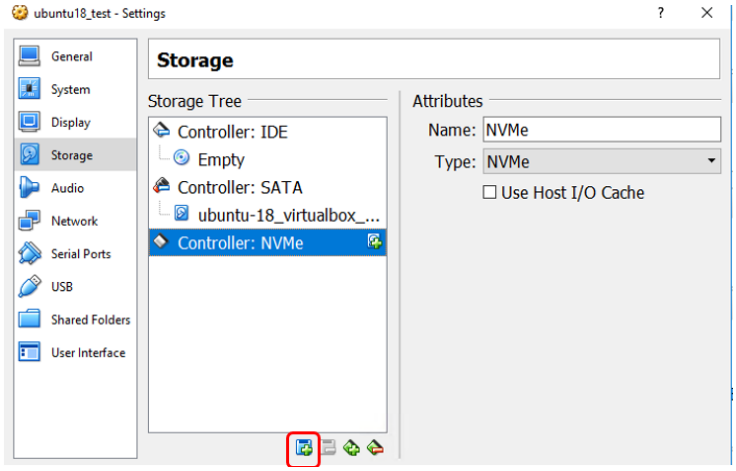
i Right click the VM that’s created just now. Click “Settings…” button



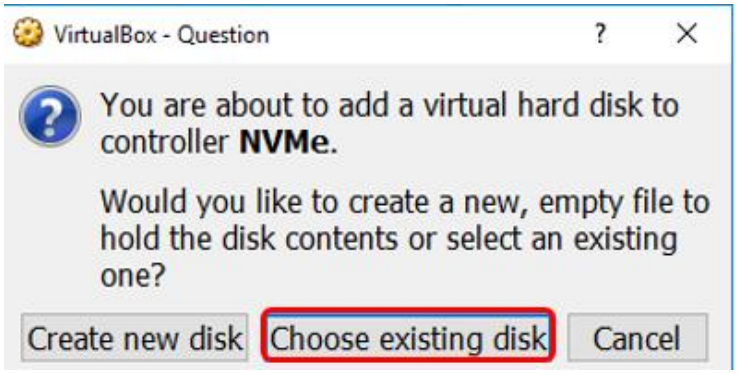
ii Select “Storage”->”Add NVMe Controller”



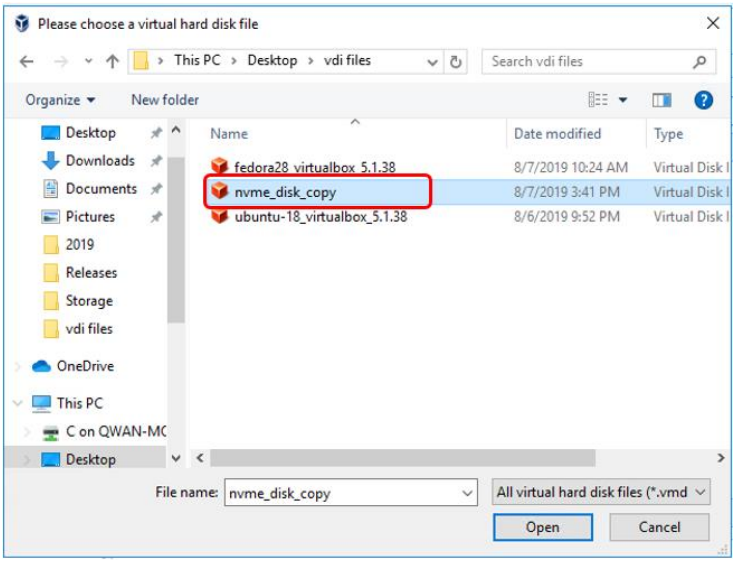
iii Click “Adds new storage attachment.”



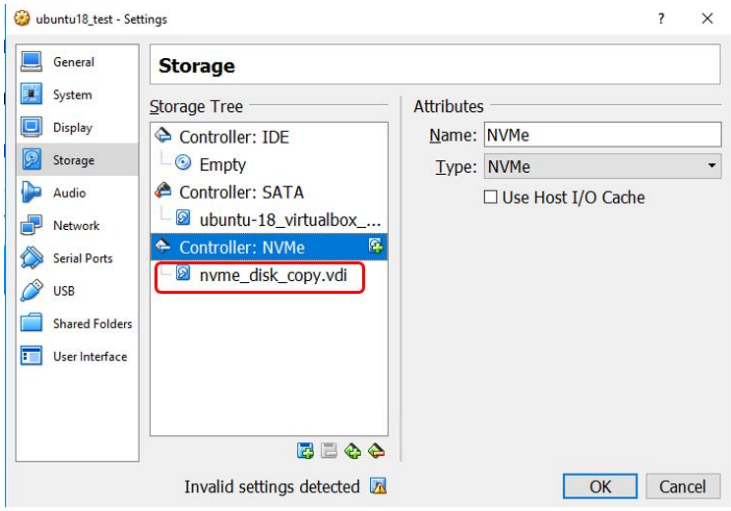
iv Select “Choose existing disk”



v Select the file “nvme_disk_copy” and click “Open”



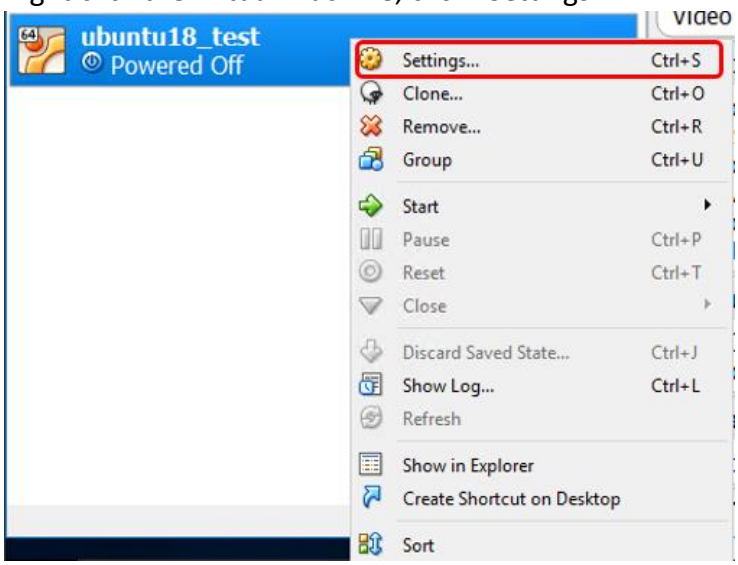
vi Then you will see the nvme device is attached as follows



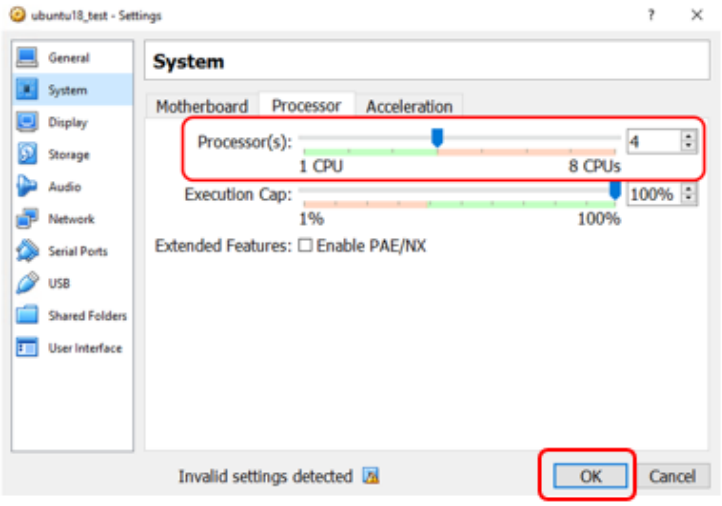
vii Click “OK”

iii. Increate the CPU# from 1 to 4

i Right click the virtual machine, click “Settings”

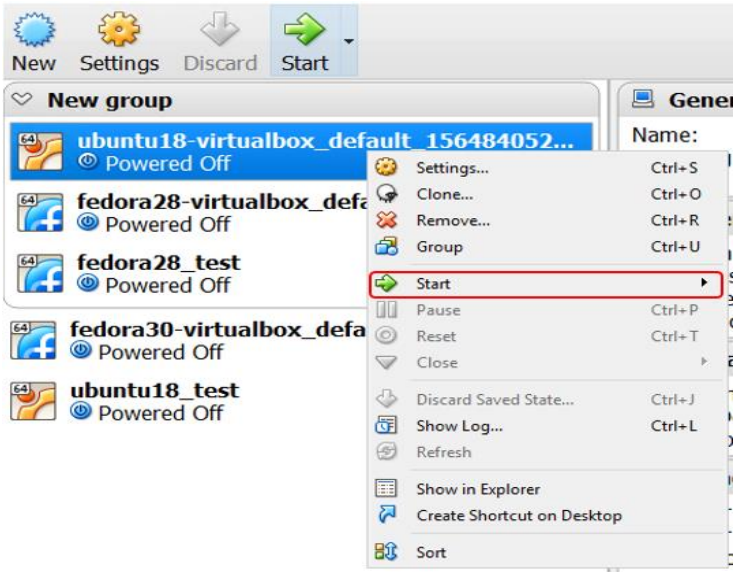


ii Change the CPU# from 1 to 4, click “OK”

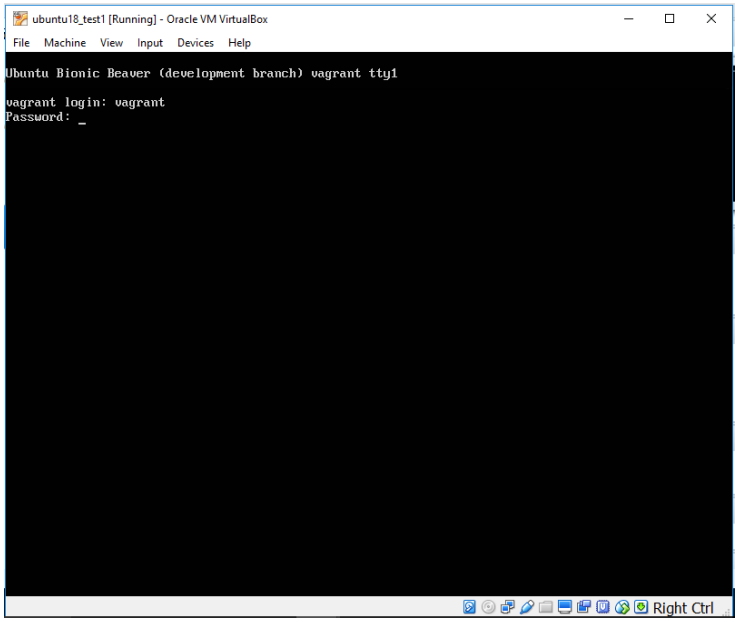


iv. Start the newly created virtual machine, when virtual machine finished initialization

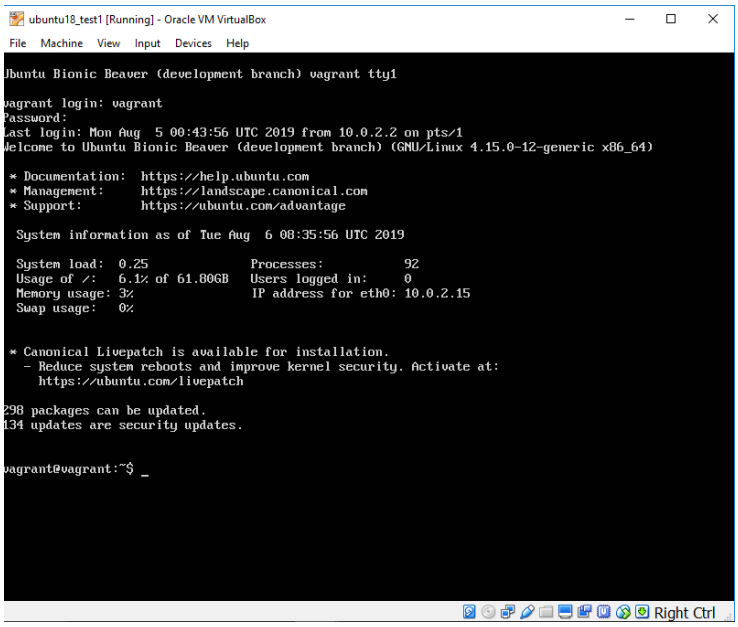
i Right click the virtual machine and click “Start”



ii login with vagrant/vagrant



iii After login successfully, you may see the welcome message as follows



iv Then type in "*sudo su*" command to change to root user

Note: Congratulations!! Start from now, you are working in the virtual machine

i. Verify you have an emulated NVMe device *vagrant@localhost:~$ lspci | grep "Non-Volatile"*

00:0e.0 Non-Volatile memory controller: InnoTek Systemberatung GmbH Device 4e56

ii. If you are behind a corporate firewall, configure the following proxy settings

i. Set the http_proxy and https_proxy

vagrant@localhost:/# export http_proxy=….

vagrant@localhost:/# export https_proxy=….

iii. Download and build SPDK.

vagrant@localhost:/~# cd /home/vagrant

vagrant@localhost:/# git clone https://github.com/spdk/spdk

vagrant@localhost:/# cd /spdk

vagrant@localhost:/# git checkout remotes/origin/v19.07.x

vagrant@localhost:/spdk# git submodule update --init

vagrant@localhost:/spdk# ./configure

vagrant@localhost:/spdk# make

iv. Run the hello_world example to validate the environment is set up correctly.

vagrant@localhost:/spdk# scripts/setup.sh

vagrant@localhost:/spdk# cd examples/bdev/hello_world/

vagrant@localhost:/spdk# ./hello_bdev –c bdev.conf

v. Download and install the fio tool to run performance test.

vagrant@localhost:/vagrant# git clone https://github.com/axboe/fio

vagrant@localhost:/vagrant# cd fio && git checkout fio-3.3

vagrant@localhost:/vagrant# ./configure

vagrant@localhost:/vagrant# make

vagrant@localhost:/vagrant# make install

Contact: When you have any issue that not solved with this document.

You may also escalate to the following contact for further help. Thanks.

Cao, Gang: gang.cao@intel.com

Wan, Qun: qun.wan@intel.com