CentOS install GPU

1. Download CentOS iso
   - http://free.nchc.org.tw/centos/7.8.2003/isos/x86_64/
   - Install system with minimal installation

2. update linux package
   - $ yum update

3. Download nvidia graphics card driver
   - https://us.download.nvidia.com/XFree86/Linux-x86_64/450.80.02/NVIDIA-Linux-x86_64-450.80.02.run
   - This url is for download 1650 GPU card . If you need other card please ask principal for driver

4. Install the required packages
   - $ yum install gcc
   - $ yum install kernel-devel
   - $ yum install "kernel-devel-uname-r == $(uname -r)"
     If you see this message “No package kernel-devel-uname-r == 3.10.0-1062.el7.x86_64 available.” It is mean your kernel version devel can not find in repo . So please download your kernel version devel and install then install driver.
   - You can use command “uname -a” to find your kernel version .
     Like this “Linux localhost.localdomain **3.10.0-1062.el7.x86_64** #1 SMP Wed Aug 7 18:08:02 UTC 2019 x86_64 x86_64 x86_64 GNU/Linux”
   - If you can not find devel package, please ask principal for it.

5. install nvidia driver

6. check nvidia-smi
   - $ nvidia-smi
   - make sure command output show your graphics card information

Install Docker

1. Uninstall old versions
   - $ sudo yum remove docker \
     docker-client \
     docker-client-latest \
     docker-common \
     docker-latest \
     docker-latest-logrotate \
     docker-logrotate \
     docker-engine

2. Install using the repository
   - $ sudo yum install -y yum-utils
   - $ sudo yum-config-manager \
     --add-repo \
     https://download.docker.com/linux/centos/docker-ce.repo

3. Install docker engine
   - $ sudo yum install docker-ce docker-ce-cli containerd.io

4. Start Docker
   - $ sudo systemctl start docker

5. Check that the Docker version is greater than or equal to 19.0
   - $ docker –version

6. install nvidia-container-runtime repository
   - $ distribution=$(. /etc/os-release;echo IDVERSION_ID)
   - $ curl -s -L https://nvidia.github.io/nvidia-container-runtime/$distribution/nvidia-container-runtime.repo | \
     sudo tee /etc/yum.repos.d/nvidia-container-runtime.repo
   - $ sudo yum-config-manager --enable libnvidia-container-experimental

- $ sudo yum-config-manager --enable nvidia-container-experimental

7. Updating repository keys
   - DIST=$(sed -n 's/releasever=//p' /etc/yum.conf)
   - DIST=${DIST:-$(. /etc/os-release; echo $VERSION_ID)}
   - sudo rpm -e gpg-pubkey-f796ecb0
   - sudo gpg --homedir /var/lib/yum/repos/$(uname -m)/$DIST/nvidia-container-runtime/gpgdir --delete-key f796ecb0
   - sudo yum makecache
8. install nvidia-container-runtime
   - $ sudo yum install nvidia-container-runtime

9. Docker Engine setup
   - Systemd drop-in file
     - $ sudo mkdir -p /etc/systemd/system/docker.service.d
     - $ sudo tee /etc/systemd/system/docker.service.d/override.conf <<EOF
       [Service]
       ExecStart=
       ExecStart=/usr/bin/dockerd --host=fd://
       --add-runtime=nvidia=/usr/bin/nvidia-container-runtime
       EOF
     - $ sudo systemctl daemon-reload
     - $ sudo systemctl restart docker
   - Daemon configuration file
     - $ sudo tee /etc/docker/daemon.json <<EOF

```
{
    "runtimes": {
        "nvidia": {
            "path": "/usr/bin/nvidia-container-runtime",
            "runtimeArgs": []
        }
    }
}
EOF
```

     - $ sudo pkill -SIGHUP dockerd
   - Restart docker
     - $ sudo systemctl restart docker

10. Please refer to the following URL for any problems encountered when installing nvidia-container-runtime
    - https://github.com/NVIDIA/nvidia-container-runtime/