

Ubuntu&Docker&GPU

2021年1月6日 9:30

一、安装Docker

参考: <https://docs.docker.com/engine/install/ubuntu/>

二、安装NVIDIA Container Toolkit

参考: <https://docs.nvidia.com/datacenter/cloud-native/container-toolkit/install-guide.html#docker>

安装成功截图

NVIDIA-SMI 450.80.02		Driver Version: 450.80.02		CUDA Version: 11.0	
GPU	Name	Persistence-M	Bus-Id	Disp.A	Volatile Uncorr. ECC
Fan	Temp	Perf	Pwr:Usage/Cap	Memory-Usage	GPU-Util Compute M. MIG M.
0	Quadro RTX 8000	Off	00000000:01:00.0	Off	0
33%	23C	P8	11W / 260W	210MiB / 45553MiB	0% Default N/A
Processes:					
GPU	GI	CI	PID	Type	Process name
ID	ID	ID			
					GPU Memory Usage

注1: 如果已经执行完第一步, 请从【Setting up NVIDIA Container Toolkit】以下步骤开始执行

注2: 如果nvidia-docker2无法安装

1.修改hosts文件

```
$ sudo gedit /etc/hosts
```

2.在结尾加入 (修改DNS配置)

185.199.108.153 nvidia.github.io

```

Open  hosts
/etc

127.0.0.1    localhost
127.0.1.1    ubuntuysmlx-Precision-3640-Tower

# The following lines are desirable for IPv6 capable hosts
::1          ip6-localhost ip6-loopback
fe00::0      ip6-localnet
ff00::0      ip6-mcastprefix
ff02::1      ip6-allnodes
ff02::2      ip6-allrouters

185.199.108.153 nvidia.github.io

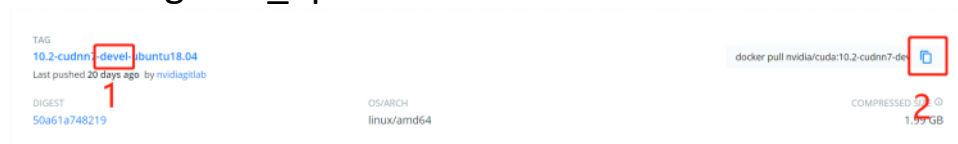
```

3. 执行更新

```
$ sudo apt-get update
```

三、在Docker-Hub下载并安装Docker镜像

参考：https://registry.hub.docker.com/r/nvidia/cuda/tags?page=1&ordering=last_updated



注1：安装带有cudnn的devel版本（必须）

四、检测是否成功安装镜像

查看所有的docker镜像信息

```
$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
nvidia/cuda	10.2-cudnn7-devel-ubuntu18.04	a4bdb1190443	3 weeks ago	3.82GB
nvidia/cuda	11.0-base	2ec708416bb8	4 months ago	122MB
hello-world	latest	bf756fb1ae65	12 months ago	13.3kB

```
$ nvidia-docker run --rm YOUR-REPOSITORY:YOUR-TAG nvidia-smi
```

Sample:

```
$ nvidia-docker run --rm nvidia/cuda:10.2-cudnn7-devel-ubuntu18.04 nvidia-smi
```

删除镜像：

```
$ sudo docker image rm YOUR-IMAGE-ID
```

Sample:

```
$ sudo docker image rm 800a9fc13c35
```

五、基于Docker镜像构建容器

```
$ sudo nvidia-docker run -it -p 6666:22 -p 3000:8090 --privileged=true --name YOUR-NAME YOUR-IMAGE-ID /bin/bash
```

例如：

```
$ sudo nvidia-docker run -it -p 6666:22 -p 3000:8090 --privileged=true --name DOCKER1 a4bdb1190443 /bin/bash
```

六、查看容器

```
$ sudo docker ps -a
```

当前正在运行的容器

```
$ sudo docker ps
```

删除容器

```
$ sudo docker rm YOUR-CONTAINER-ID
```

例如：

```
$ sudo docker rm bd22871bb944
```

七、运行容器

启动容器

```
$ sudo docker start YOUR-CONTAINER-ID
```

例如：

```
$ sudo docker start a0f02ae12099
```

关闭容器

```
$ sudo docker stop YOUR-CONTAINER-ID
```

例如：

```
$ sudo docker stop 00e63736d986
```

进入容器

```
$ sudo docker exec -it YOUR-CONTAINER-ID /bin/bash
```

例如：

```
$ sudo docker exec -it a0f02ae12099 /bin/bash
```

退出容器

```
$ exit
```

八、修改Docker文件目录

查看磁盘

```
$ df -h
```

查看docker基本信息

```
$ sudo docker info
```

停止docker服务

```
$ sudo systemctl stop docker
```

备份移动

```
$ sudo cp -r /var/lib/docker /data/docker
```

```
$ sudo mv /var/lib/docker /var/lib/docker.bak
```

```
$ sudo ln -s /data/docker /var/lib/docker
```

启动docker服务

```
$ sudo systemctl start docker
```