DGX-2 COMMANDS

DGX-2 SERVER IP (AI SUPER COMPUTER)

10.6.0.99

VIDEO TUTORIAL

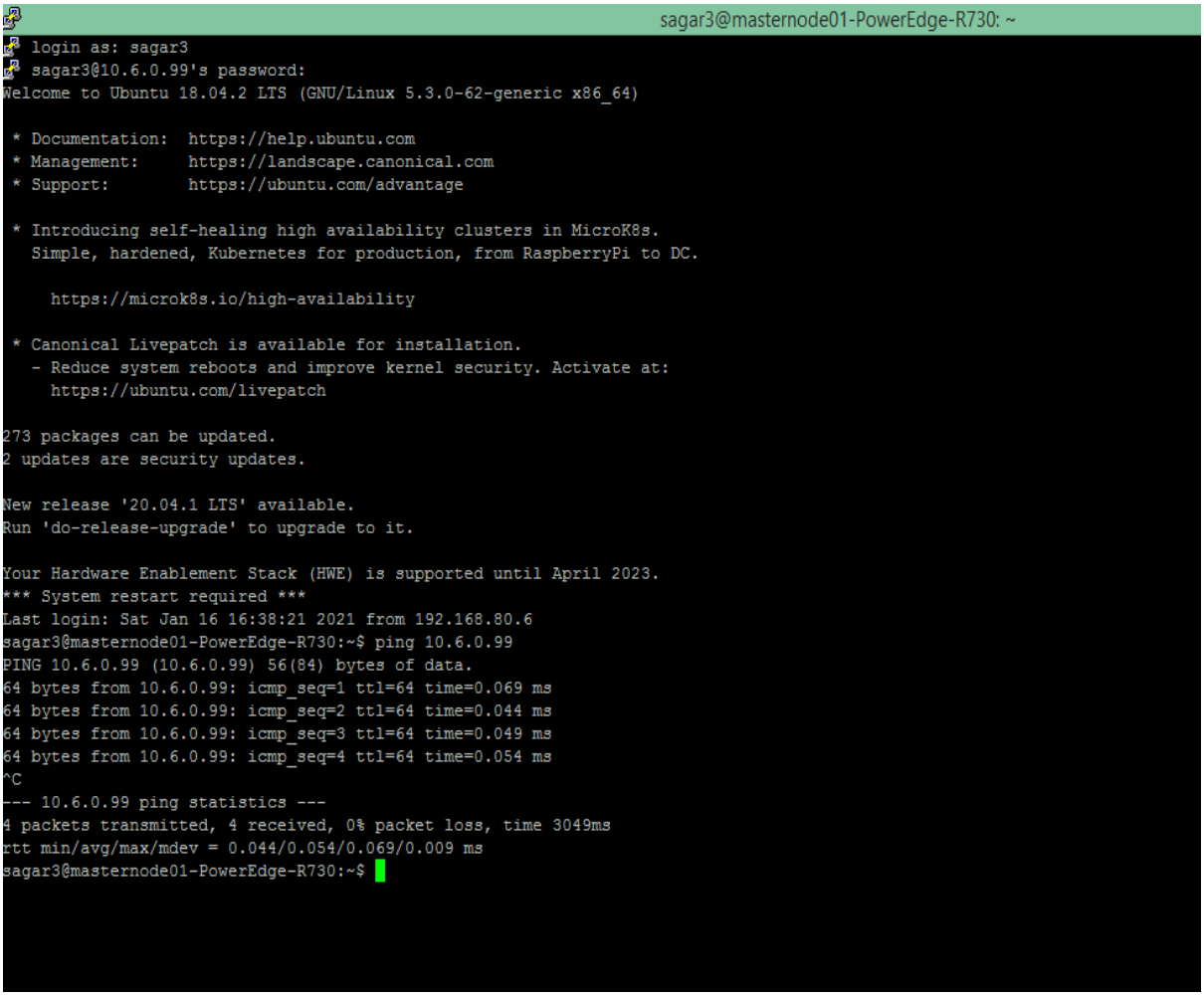
https://www.youtube.com/watch?v=RX8cr3-LB0E

TO CHECK THE SIGNAL

ping 10.6.0.99

TO CHECK THE TRANSMITTED AND RECIEVED PACKETS

Ctrl+c



CREATING POD IN THE SERVER - A pod is a working Environment that isolates your work from everyone else.

USE ls command

```
Last login: Sat Jan 16 16:38:21 2021 from 192.168.80.6
sagar3@masternode01-PowerEdge-R730:~$ ping 10.6.0.99
PING 10.6.0.99 (10.6.0.99) 56(84) bytes of data.
64 bytes from 10.6.0.99: icmp_seq=1 ttl=64 time=0.069 ms
64 bytes from 10.6.0.99: icmp_seq=2 ttl=64 time=0.044 ms
64 bytes from 10.6.0.99: icmp_seq=3 ttl=64 time=0.049 ms
64 bytes from 10.6.0.99: icmp_seq=4 ttl=64 time=0.054 ms
^C
--- 10.6.0.99 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3049ms
rtt min/avg/max/mdev = 0.044/0.054/0.069/0.009 ms
sagar3@masternode01-PowerEdge-R730:~$ ls
examples.desktop  job creation v3.yaml  pod-creation v3.sh
sagar3@masternode01-PowerEdge-R730:~$
```

POD CREATION - sh pod-creation_v3.sh DEFAULT POD

Images= Pytorch/Tensor Flow - **cat /opt/images.txt**

```
sagar3@masternode01-PowerEdge-R730:~$ ls
examples.desktop  job_creation_v3.yaml  pod-creation_v3.sh
sagar3@masternode01-PowerEdge-R730:~$ cat /opt/images.txt
REPOSITORY                    TAG                   IMAGE ID            CREATED             SIZE

nvcr.io/nvidia/tensorflow     19.08-py3_mumax3              48419dfd9a3b        5 weeks ago         14GB
nvcr.io/nvidia/tensorflow     19.08-py3_V3                  ed59c3fa8011        3 months ago        7.48GB
nvcr.io/nvidia/tensorflow     19.08-py3_V2                  efc3fc0f6af5        3 months ago        14GB
nvcr.io/nvidia/tensorflow     20.03-tf2-py3_V2              db3efdb99397        4 months ago        8.66GB
nvcr.io/nvidia/tensorflow     19.08-py3_V4
nvcr.io/nvidia/tensorflow     20.03-tf2-py3_v1      77bf0dea5783        5 seconds ago       8.93GB
nvcr.io/nvidia/tensorflow     20.03-tf2-py3         9af3e368023b        3 months ago        7.44GB
nvcr.io/nvidia/tensorflow     19.08-py3             be978d32a5c3        10 months ago       7.35GB

nvcr.io/nvidia/pytorch        20.03-py3             16c4987611fa        3 months ago        9.39GB
nvcr.io/nvidia/pytorch        19.08-py3             f68208d0a8ef        10 months ago       9.01GB

nvcr.io/nvidia/caffe2         18.08-py3             e82334d03b18        23 months ago       3.02GB
nvcr.io/nvidia/caffe2         18.08-py2             20432e31cf4b        23 months ago       3.02GB

nvcr.io/hpc/gromacs           2020.2                c8a188675719        2 weeks ago         570MB
nvcr.io/hpc/gromacs           2018.2                0c6acfceb224        23 months ago       1.09GB


nvcr.io/hpc/namd              3.0-alpha3-singlenode
sagar3@masternode01-PowerEdge-R730:~$
```

1. Use secure shell (ssh) to login to the login node (Current IP- 10.6.0.99).
   For example- **ssh <user ID>@10.6.0.99** [User Id is your institute email ID without dot(.) Ex. **xyz.3@iitj.ac.in** in that case your login ID and Password is **xyz3**] *(kindly change the password after first login)*

2. From here, *you will need to set-up your libraries / dependencies* ***only***. To do that you will create and start a pod. A pod is a working environment that isolates your work from everyone else. Each pod is built upon an image of an environment. The image simply stores all the configurations of the pod permanently in the hard disk.
   a) To create a pod, you will need to run a pod creation script located in the current directory (Use the ***ls*** command to see). Run it with the following command-
      sh pod-creation_v3.sh
      Then you will need to enter the name of the image from which the pod will be created. (list of images will get from ***cat /opt/images.txt***)
      Ex. **<image name>:<version>**
      nvcr.io/nvidia/tensorflow:19.08-py3
      Then you will need to enter the number of GPUs that you want to allocate for your current work. (Use 0 when you don't need GPUs, for example- during set-up of dependencies)
   b) The pod may take some time to be ready. Use the kubectl (Kubernetes control) command to check the status and the name of your pod-
      kubectl get pods
      If your pod status is ContainerCreating, that means it's not yet ready. Use the following command to check what it is doing-
      kubectl describe pod <your pod name>
   c) Once it is ready, to start the pod, use the following command-

POD CREATION - sh pod-creation_v3.sh

```
REPOSITORY                          TAG                   IMAGE ID            CREATED             SIZE

nvcr.io/nvidia/tensorflow           19.08-py3_mumax3              48419dfd9a3b        5 weeks ago         14GB
nvcr.io/nvidia/tensorflow           19.08-py3_V3                  ed59c3fa8011        3 months ago        7.48GB
nvcr.io/nvidia/tensorflow           19.08-py3_V2                  efc3fc0f6af5        3 months ago        14GB
nvcr.io/nvidia/tensorflow           20.03-tf2-py3_V2              db3efdb99397        4 months ago        8.66GB
nvcr.io/nvidia/tensorflow           19.08-py3_V4
nvcr.io/nvidia/tensorflow           20.03-tf2-py3_v1      77bf0dea5783        5 seconds ago       8.93GB
nvcr.io/nvidia/tensorflow           20.03-tf2-py3         9af3e368023b        3 months ago        7.44GB
nvcr.io/nvidia/tensorflow           19.08-py3             be978d32a5c3        10 months ago       7.35GB

nvcr.io/nvidia/pytorch              20.03-py3             16c4987611fa        3 months ago        9.39GB
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nvcr.io/hpc/gromacs                 2018.2                0c6acfceb224        23 months ago       1.09GB


nvcr.io/hpc/namd                    3.0-alpha3-singlenode
sagar3@masternode01-PowerEdge-R730:~$ sh pod-creation_v3.sh
Enter container image name
nvcr.io/nvidia/tensorflow:20.03-tf2-py3
pod/sagar3 created
sagar3@masternode01-PowerEdge-R730:~$
```

To Check your POD Creation - kubectl get pod

```
sagar3@masternode01-PowerEdge-R730:~$ kubectl get pod
NAME      READY   STATUS    RESTARTS   AGE
sagar3    1/1     Running   0          15m
sagar3@masternode01-PowerEdge-R730:~$
```

TO START THE POD OR TO ENTER IN CMD OF THE POD USE

kubectl exec -it sagar3 -- /bin/bash

```
sagar3@masternode01-PowerEdge-R730:~$ kubectl get pod
NAME      READY   STATUS    RESTARTS   AGE
sagar3    1/1     Running   0          15m
sagar3@masternode01-PowerEdge-R730:~$ kubectl exec -it sagar3 -- /bin/bash
sagar3@dgx2:/workspace$
```

The above screenshot shows that we have entered from master node to dgx2 server cmd.

TO CLONE- use git command

```
sagar3@dgx2:/workspace$ git
usage: git [--version] [--help] [-C <path>] [-c <name>=<value>]
           [--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
           [-p | --paginate | --no-pager] [--no-replace-objects] [--bare]
           [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
           <command> [<args>]

These are common Git commands used in various situations:

start a working area (see also: git help tutorial)
   clone      Clone a repository into a new directory
   init       Create an empty Git repository or reinitialize an existing one

work on the current change (see also: git help everyday)
   add        Add file contents to the index
   mv         Move or rename a file, a directory, or a symlink
   reset      Reset current HEAD to the specified state
   rm         Remove files from the working tree and from the index

examine the history and state (see also: git help revisions)
   bisect     Use binary search to find the commit that introduced a bug
   grep       Print lines matching a pattern
   log        Show commit logs
   show       Show various types of objects
   status     Show the working tree status

grow, mark and tweak your common history
   branch     List, create, or delete branches
   checkout   Switch branches or restore working tree files
   commit     Record changes to the repository
   diff       Show changes between commits, commit and working tree, etc
   merge      Join two or more development histories together
   rebase     Reapply commits on top of another base tip
   tag        Create, list, delete or verify a tag object signed with GPG

collaborate (see also: git help workflows)
   fetch      Download objects and refs from another repository
   pull       Fetch from and integrate with another repository or a local branch
   push       Update remote refs along with associated objects

'git help -a' and 'git help -g' list available subcommands and some
concept guides. See 'git help <command>' or 'git help <concept>'
to read about a specific subcommand or concept.
sagar3@dgx2:/workspace$
```

EXITING FROM THE POD

exit

NOW TO EXECUTE A COMMAND WE NEED TO RUN THE JOB

Use command nano to check about the jobs