

# Web Development Application Lab

## Assignment - 2B

**Name : Atharva Dere**

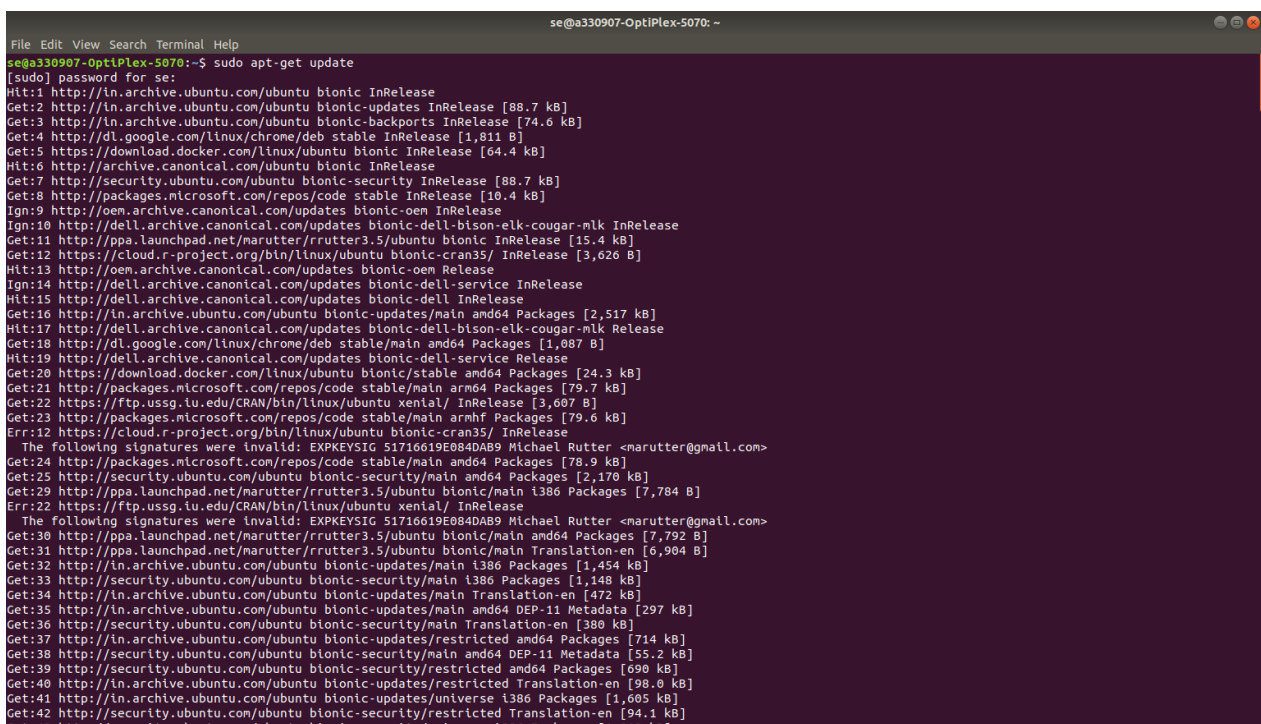
**Roll No : 33219**

**Class : TE-10**

### **Problem Statement :**

Create Docker Container Environment (NVIDIA Docker or any other).

### **Screenshots :**



```
se@se330907-OptiPlex-5070: ~  
File Edit View Search Terminal Help  
se@se330907-OptiPlex-5070:~$ sudo apt-get update  
[sudo] password for se:  
Hit:1 http://in.archive.ubuntu.com/ubuntu bionic InRelease  
Get:2 http://in.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]  
Get:3 http://in.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]  
Get:4 http://dl.google.com/linux/chrome/deb stable InRelease [1,811 B]  
Get:5 https://download.docker.com/linux/ubuntu bionic InRelease [64.4 kB]  
Hit:6 http://archive.canonical.com/ubuntu bionic InRelease  
Get:7 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]  
Get:8 http://packages.microsoft.com/repos/code stable InRelease [10.4 kB]  
Ign:9 http://oem.archive.canonical.com/updates bionic-oem InRelease  
Ign:10 http://dell.archive.canonical.com/updates bionic-dell-bison-elk-cougar-nlk InRelease  
Get:11 http://ppa.launchpad.net/marutter/rutter3.5/ubuntu bionic InRelease [15.4 kB]  
Get:12 https://cloud.r-project.org/bin/linux/ubuntu bionic-cran35/ InRelease [3,626 B]  
Hit:13 http://oem.archive.canonical.com/updates bionic-oem Release  
Ign:14 http://dell.archive.canonical.com/updates bionic-dell-service InRelease  
Hit:15 http://dell.archive.canonical.com/updates bionic-dell InRelease  
Get:16 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [2,517 kB]  
Hit:17 http://dell.archive.canonical.com/updates bionic-dell-bison-elk-cougar-nlk Release  
Get:18 http://dl.google.com/linux/chrome/deb stable/main amd64 Packages [1,087 B]  
Hit:19 http://dell.archive.canonical.com/updates bionic-dell-service Release  
Get:20 https://download.docker.com/linux/ubuntu bionic/stable amd64 Packages [24.3 kB]  
Get:21 http://packages.microsoft.com/repos/code stable/main arm64 Packages [79.7 kB]  
Get:22 https://ftp.ussg.iu.edu/CRAN/bin/linux/ubuntu xenial/ InRelease [3,607 B]  
Get:23 http://packages.microsoft.com/repos/code stable/main armhf Packages [79.6 kB]  
Err:12 https://cloud.r-project.org/bin/linux/ubuntu bionic-cran35/ InRelease  
The following signatures were invalid: EXPKEYSIG 51716619E084DAB9 Michael Rutter <marutter@gmail.com>  
Get:24 http://packages.microsoft.com/repos/code stable/main amd64 Packages [78.9 kB]  
Get:25 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [2,170 kB]  
Get:29 http://ppa.launchpad.net/marutter/rutter3.5/ubuntu bionic/main i386 Packages [7,784 B]  
Err:22 https://ftp.ussg.iu.edu/CRAN/bin/linux/ubuntu xenial/ InRelease  
The following signatures were invalid: EXPKEYSIG 51716619E084DAB9 Michael Rutter <marutter@gmail.com>  
Get:30 http://ppa.launchpad.net/marutter/rutter3.5/ubuntu bionic/main amd64 Packages [7,792 B]  
Get:31 http://ppa.launchpad.net/marutter/rutter3.5/ubuntu bionic/main Translation-en [6,904 B]  
Get:32 http://in.archive.ubuntu.com/ubuntu bionic-updates/main i386 Packages [1,454 kB]  
Get:33 http://security.ubuntu.com/ubuntu bionic-security/main i386 Packages [1,148 kB]  
Get:34 http://in.archive.ubuntu.com/ubuntu bionic-updates/main Translation-en [472 kB]  
Get:35 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 DEP-11 Metadata [297 kB]  
Get:36 http://security.ubuntu.com/ubuntu bionic-security/main Translation-en [380 kB]  
Get:37 http://in.archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [714 kB]  
Get:38 http://security.ubuntu.com/ubuntu bionic-security/main amd64 DEP-11 Metadata [55.2 kB]  
Get:39 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [690 kB]  
Get:40 http://in.archive.ubuntu.com/ubuntu bionic-updates/restricted Translation-en [98.0 kB]  
Get:41 http://in.archive.ubuntu.com/ubuntu bionic-updates/universe i386 Packages [1,605 kB]  
Get:42 http://security.ubuntu.com/ubuntu bionic-security/restricted Translation-en [94.1 kB]  
Get:43 http://security.ubuntu.com/ubuntu bionic-security/universe i386 Packages [54.4 kB]
```



```

se@a330907-OptiPlex-5070: ~
File Edit View Search Terminal Help
se@a330907-OptiPlex-5070:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg
gpg: WARNING: unsafe ownership on homedir '/home/se/.gnupg'
File '/usr/share/keyrings/docker-archive-keyring.gpg' exists. Overwrite? (y/N) y
se@a330907-OptiPlex-5070:~$ echo \
> "deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://download.docker.com/linux/ubuntu \
> $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
se@a330907-OptiPlex-5070:~$ echo \
> "deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://download.docker.com/linux/ubuntu \
> $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
se@a330907-OptiPlex-5070:~$ sudo apt-get update
Hit:1 http://ln.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://ln.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:3 https://cloud.r-project.org/bin/linux/ubuntu bionic-cran35/ InRelease [3,626 B]
Get:4 http://ln.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:5 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Err:3 https://cloud.r-project.org/bin/linux/ubuntu bionic-cran35/ InRelease
  The following signatures were invalid: EXPKEYSIG 51716619E084DAB9 Michael Rutter <marutter@gmail.com>
Ign:6 http://oem.archive.canonical.com/updates bionic-oem InRelease
Ign:7 http://dell.archive.canonical.com/updates bionic-dell-bison-elk-cougar-mlk InRelease
Hit:8 https://download.docker.com/linux/ubuntu bionic InRelease
Hit:9 http://ppa.launchpad.net/marutter/rutter3.5/ubuntu bionic InRelease
Hit:10 http://archive.canonical.com/ubuntu bionic InRelease
Hit:11 http://dl.google.com/linux/chrome/deb stable InRelease
Hit:12 http://oem.archive.canonical.com/updates bionic-oem Release
Ign:13 http://dell.archive.canonical.com/updates bionic-dell-service InRelease
Get:14 http://packages.microsoft.com/repos/code stable InRelease [10.4 kB]
Hit:15 http://dell.archive.canonical.com/updates bionic-dell InRelease
Hit:16 http://dell.archive.canonical.com/updates bionic-dell-bison-elk-cougar-mlk Release
Hit:18 http://dell.archive.canonical.com/updates bionic-dell-service Release
Get:17 https://ftp.ussg.iu.edu/CRAN/bin/linux/ubuntu xenial/ InRelease [3,607 B]
Err:17 https://ftp.ussg.iu.edu/CRAN/bin/linux/ubuntu xenial/ InRelease
  The following signatures were invalid: EXPKEYSIG 51716619E084DAB9 Michael Rutter <marutter@gmail.com>
Fetched 270 kB in 3s (94.5 kB/s)
Reading package lists... Done
W: An error occurred during the signature verification. The repository is not updated and the previous index files will be used. GPG error: https://cloud.r-project.org/bin/linux/ubuntu bionic-cran35/ InRelease: The following signatures were invalid: EXPKEYSIG 51716619E084DAB9 Michael Rutter <marutter@gmail.com>
W: An error occurred during the signature verification. The repository is not updated and the previous index files will be used. GPG error: https://ftp.ussg.iu.edu/CRAN/bin/linux/ubuntu xenial/ InRelease: The following signatures were invalid: EXPKEYSIG 51716619E084DAB9 Michael Rutter <marutter@gmail.com>
W: Failed to fetch https://ftp.ussg.iu.edu/CRAN/bin/linux/ubuntu/xenial/InRelease The following signatures were invalid: EXPKEYSIG 51716619E084DAB9 Michael Rutter <marutter@gmail.com>
W: Failed to fetch https://cloud.r-project.org/bin/linux/ubuntu/bionic-cran35/InRelease The following signatures were invalid: EXPKEYSIG 51716619E084DAB9 Michael Rutter <marutter@gmail.com>
W: Some index files failed to download. They have been ignored, or old ones used instead.
se@a330907-OptiPlex-5070:~$ sudo apt-get install docker-ce docker-ce-cli containerd.io
Reading package lists... Done
Building dependency tree

```

```

se@a330907-OptiPlex-5070: ~
File Edit View Search Terminal Help
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  docker-ce-rootless-extras docker-scan-plugin pigz
Suggested packages:
  aufs-tools cgroupfs-mount | cgroup-lite
Recommended packages:
  slirp4netns
The following NEW packages will be installed:
  containerd.io docker-ce docker-ce-cli docker-ce-rootless-extras docker-scan-plugin pigz
0 upgraded, 6 newly installed, 0 to remove and 25 not upgraded.
Need to get 96.3 MB of archives.
After this operation, 405 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ln.archive.ubuntu.com/ubuntu bionic/universe amd64 pigz amd64 2.4-1 [57.4 kB]
Get:2 https://download.docker.com/linux/ubuntu bionic/stable amd64 containerd.io amd64 1.5.11-1 [22.9 MB]
Get:3 https://download.docker.com/linux/ubuntu bionic/stable amd64 docker-ce-cli amd64 5:20.10.14-3-0-ubuntu-bionic [41.0 MB]
Get:4 https://download.docker.com/linux/ubuntu bionic/stable amd64 docker-ce amd64 5:20.10.14-3-0-ubuntu-bionic [20.9 MB]
Get:5 https://download.docker.com/linux/ubuntu bionic/stable amd64 docker-ce-rootless-extras amd64 5:20.10.14-3-0-ubuntu-bionic [7,926 kB]
Get:6 https://download.docker.com/linux/ubuntu bionic/stable amd64 docker-scan-plugin amd64 0.17.0-ubuntu-bionic [3,521 kB]
Fetched 96.3 MB in 1min 36s (1,007 kB/s)
Selecting previously unselected package pigz.
(Reading database ... 216443 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.4-1_amd64.deb ...
Unpacking pigz (2.4-1) ...
Selecting previously unselected package containerd.io.
Preparing to unpack .../1-containerd.io_1.5.11-1_amd64.deb ...
Unpacking containerd.io (1.5.11-1) ...
Selecting previously unselected package docker-ce-cli.
Preparing to unpack .../2-docker-ce-cli_5%3a20.10.14-3-0-ubuntu-bionic_amd64.deb ...
Unpacking docker-ce-cli (5:20.10.14-3-0-ubuntu-bionic) ...
Selecting previously unselected package docker-ce.
Preparing to unpack .../3-docker-ce_5%3a20.10.14-3-0-ubuntu-bionic_amd64.deb ...
Unpacking docker-ce (5:20.10.14-3-0-ubuntu-bionic) ...
Selecting previously unselected package docker-ce-rootless-extras.
Preparing to unpack .../4-docker-ce-rootless-extras_5%3a20.10.14-3-0-ubuntu-bionic_amd64.deb ...
Unpacking docker-ce-rootless-extras (5:20.10.14-3-0-ubuntu-bionic) ...
Selecting previously unselected package docker-scan-plugin.
Preparing to unpack .../5-docker-scan-plugin_0.17.0-ubuntu-bionic_amd64.deb ...
Unpacking docker-scan-plugin (0.17.0-ubuntu-bionic) ...
Setting up containerd.io (1.5.11-1) ...
Setting up docker-ce-rootless-extras (5:20.10.14-3-0-ubuntu-bionic) ...
Setting up docker-scan-plugin (0.17.0-ubuntu-bionic) ...
Setting up docker-ce-cli (5:20.10.14-3-0-ubuntu-bionic) ...
Setting up pigz (2.4-1) ...
Setting up docker-ce (5:20.10.14-3-0-ubuntu-bionic) ...

```

```
se@a330907-OptiPlex-5070: ~  
File Edit View Search Terminal Help  
se@a330907-OptiPlex-5070:~$ apt-cache madison docker-ce  
docker-ce | 5:20.10.14-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.13-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.12-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.11-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.10-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.9-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.8-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.7-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.6-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.5-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.4-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.3-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.2-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.1-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:20.10.0-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.15-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.14-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.13-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.12-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.11-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.10-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.9-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.8-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.7-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.6-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.5-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.4-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.3-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.2-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.1-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:19.03.0-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.9-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.8-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.7-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.6-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.5-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.4-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.3-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.2-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.1-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.0-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 18.06.3-ce-3-0-ubuntu | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 18.06.2-ce-3-0-ubuntu | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 18.06.1-ce-3-0-ubuntu | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 18.06.0-ce-3-0-ubuntu | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 18.03.0-ce-3-0-ubuntu | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages
```

```
se@a330907-OptiPlex-5070: ~  
File Edit View Search Terminal Help  
docker-ce | 5:18.09.8-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.7-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.6-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.5-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.4-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.3-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.2-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.1-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 5:18.09.0-3-0-ubuntu-bionic | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
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docker-ce | 18.06.2-ce-3-0-ubuntu | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 18.06.1-ce-3-0-ubuntu | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 18.06.0-ce-3-0-ubuntu | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
docker-ce | 18.03.1-ce-3-0-ubuntu | https://download.docker.com/linux/ubuntu | bionic/stable | amd64 | Packages  
se@a330907-OptiPlex-5070:~$ sudo apt-get install docker-ce<VERSION_STRING> docker-ce-cli<VERSION_STRING> containerd.io  
bash: VERSION_STRING: No such file or directory  
se@a330907-OptiPlex-5070:~$ sudo docker run hello-world  
Unable to find image 'hello-world:latest' locally  
latest: Pulling from library/hello-world  
2db2971b123e: Pull complete  
Digest: sha256:bfe6278a0a267fad2634554f4f0c6f31981eea41c553dfd5a83e95a41d40c38  
Status: Downloaded newer image for hello-world:latest  
  
Hello from Docker!  
This message shows that your installation appears to be working correctly.  
  
To generate this message, Docker took the following steps:  
1. The Docker client contacted the Docker daemon.  
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.  
(amd64)  
3. The Docker daemon created a new container from that image which runs the  
executable that produces the output you are currently reading.  
4. The Docker daemon streamed that output to the Docker client, which sent it  
to your terminal.  
  
To try something more ambitious, you can run an Ubuntu container with:  
$ docker run -it ubuntu bash  
  
Share images, automate workflows, and more with a free Docker ID:  
https://hub.docker.com/  
  
For more examples and ideas, visit:  
https://docs.docker.com/get-started/  
se@a330907-OptiPlex-5070:~$
```