

```
#####  
#                               WARNING!!!!                               #  
# This is a sandbox environment. Using personal credentials             #  
# is HIGHLY! discouraged. Any consequences of doing so are              #  
# completely the user's responsibilites.                                #  
#                                                                         #  
# The PWD team.                                                          #  
#####
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker container run -ti ubuntu bash
```

```
Unable to find image 'ubuntu:latest' locally
```

```
latest: Pulling from library/ubuntu
```

```
3153aa388d02: Pull complete
```

```
Digest: sha256:0bced47fffa3361afa981854fcabcd4577cd43cebbb808cea2b1f33a3dd7f508
```

```
Status: Downloaded newer image for ubuntu:latest
```

```
root@31f02d066efb:/# apt-get update
```

```
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
```

```
Get:2 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
```

```
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
```

```
Get:4 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [949 kB]
```

```
Get:5 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [108 kB]
```

```
Get:6 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
```

```
Get:6 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [720 kB]
Get:9 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [722 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:12 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [44.0 kB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [49.8 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [732 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1008 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1205 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [49.4 kB]
Get:18 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [25.6 kB]
Fetched 25.8 MB in 3s (8703 kB/s)
Reading package lists... Done
root@31f02d066efb:/# apt-get install -y figlet
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  figlet
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
```



```
root@31f02d066efb:/# exit
```

```
exit
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker container ls -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
31f02d066efb	ubuntu	"bash"	About a minute ago	Exited (0) 14 seconds ago		inspiring_moser

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker container commit 31f02d066efb
```

```
sha256:0194de81c4f49c7ac8924fd0f742527b2ceb241b1482b9e6efccab9955a775d8
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image ls
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
<none>	<none>	0194de81c4f4	8 seconds ago	121MB
ubuntu	latest	5a81c4b8502e	2 weeks ago	77.8MB

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image tag 0194de81c4f4 ourfiglet
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image ls
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
ourfiglet	latest	0194de81c4f4	44 seconds ago	121MB
ubuntu	latest	5a81c4b8502e	2 weeks ago	77.8MB

ubuntu latest 5a81c4b8502e 2 weeks ago 77.8MB

[node1] (local) root@192.168.0.13 ~

\$ docker container run ourfiglet figlet hello

```

 _
|_| _ _ _ _ _
|_| ' \ / _ \ / _ \
|_| | | _ / | | ( ) |
|_| | | \ _ | | | \ _ /

```

[node1] (local) root@192.168.0.13 ~

\$ touch Dockerfile

[node1] (local) root@192.168.0.13 ~

\$ ls

Dockerfile

[node1] (local) root@192.168.0.13 ~

\$ touch index.js

[node1] (local) root@192.168.0.13 ~

\$ ls

Dockerfile index.js

[node1] (local) root@192.168.0.13 ~

\$ docker image build -t hello:v0.1 .

[+] Building 4.3s (9/9) FINISHED

```
[+] Building 4.3s (9/9) FINISHED
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 130B 0.0s
=> [internal] load metadata for docker.io/library/alpine:latest 0.3s
=> [internal] load build context 0.0s
=> => transferring context: 3.94kB 0.0s
=> [1/4] FROM docker.io/library/alpine@sha256:82d1e9d7ed48a7523bdebc18 0.5s
=> => resolve docker.io/library/alpine@sha256:82d1e9d7ed48a7523bdebc18 0.0s
=> => sha256:82d1e9d7ed48a7523bdebc18cf6290bdb97b82302 1.64kB / 1.64kB 0.0s
=> => sha256:25fad2a32ad1f6f510e528448ae1ec69a28ef81916a00 528B / 528B 0.0s
=> => sha256:c1aabb73d2339c5ebaa3681de2e9d9c18d5748504 1.47kB / 1.47kB 0.0s
=> => sha256:31e352740f534f9ad170f75378a84fe453d6156e4 3.40MB / 3.40MB 0.1s
=> => extracting sha256:31e352740f534f9ad170f75378a84fe453d6156e40700b 0.3s
=> [2/4] RUN apk update && apk add nodejs 2.6s
=> [3/4] COPY . /app 0.1s
=> [4/4] WORKDIR /app 0.1s
=> exporting to image 0.5s
=> => exporting layers 0.5s
=> => writing image sha256:c8f962d16aa6f4cffd2d475a263aca2686479abc635 0.0s
=> => naming to docker.io/library/hello:v0.1 0.0s
```

```
=> => naming to docker.io/library/hello:v0.1 0.0s
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker container run hello:v0.1
```

```
hello from 5df1dd02b2c7
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image ls
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
hello	v0.1	c8f962d16aa6	47 seconds ago	60.4MB
ourfiglet	latest	0194de81c4f4	4 minutes ago	121MB
ubuntu	latest	5a81c4b8502e	2 weeks ago	77.8MB

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image history 0914de81c4f4
```

```
Error response from daemon: No such image: 0914de81c4f4:latest
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image history c8f96216aa6
```

```
Error response from daemon: No such image: c8f96216aa6:latest
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image history c8f962d16aa6
```

IMAGE	CREATED	CREATED BY	SIZE	COMMENT
c8f962d16aa6	2 minutes ago	CMD ["node" "index.js"]	0B	buildkit.dockerfile.v0
<missing>	2 minutes ago	WORKDIR /app	0B	buildkit.dockerfile.v0
<missing>	2 minutes ago	COPY . /app # buildkit	3.11kB	buildkit.dockerfile.v0

<missing>	2 minutes ago	WORKDIR /app	0B	buildkit.dockerfile.v0
<missing>	2 minutes ago	COPY . /app # buildkit	3.11kB	buildkit.dockerfile.v0
<missing>	2 minutes ago	RUN /bin/sh -c apk update && apk add nodejs ...	53.1MB	buildkit.dockerfile.v0
<missing>	4 weeks ago	/bin/sh -c #(nop) CMD ["/bin/sh"]	0B	
<missing>	4 weeks ago	/bin/sh -c #(nop) ADD file:1da756d12551a0e3e...	7.33MB	

[node1] (local) root@192.168.0.13 ~

\$ echo "console.log(\"this is v0.2\");" >> index.js

[node1] (local) root@192.168.0.13 ~

\$ docker image build -t hello:v0.2 .

[+] Building 0.3s (9/9) FINISHED

```

=> [internal] load build definition from Dockerfile           0.0s
=> => transferring dockerfile: 130B                          0.0s
=> [internal] load .dockerignore                             0.0s
=> => transferring context: 2B                                 0.0s
=> [internal] load metadata for docker.io/library/alpine:latest 0.1s
=> [1/4] FROM docker.io/library/alpine@sha256:82dle9d7ed48a7523bdebc18 0.0s
=> [internal] load build context                             0.0s
=> => transferring context: 944B                               0.0s
=> CACHED [2/4] RUN apk update && apk add nodejs             0.0s
=> [3/4] COPY . /app                                          0.1s
=> [4/4] WORKDIR /app                                         0.0s
=> exporting to image                                         0.0s

```



```
=> exporting to image 0.0s
=> => exporting layers 0.0s
=> => writing image sha256:43bea4f15bca8e4c4cd2cd9b3dc30df507404036f11 0.0s
=> => naming to docker.io/library/hello:v0.2 0.0s
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image ls
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
hello	v0.2	43bea4f15bca	28 seconds ago	60.4MB
hello	v0.1	c8f962d16aa6	3 minutes ago	60.4MB
ourfiglet	latest	0194de81c4f4	7 minutes ago	121MB
ubuntu	latest	5a81c4b8502e	2 weeks ago	77.8MB

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image pull alpine
```

```
Using default tag: latest
```

```
latest: Pulling from library/alpine
```

```
31e352740f53: Already exists
```

```
Digest: sha256:82d1e9d7ed48a7523bdebc18cf6290bdb97b82302a8a9c27d4fe885949ea94d1
```

```
Status: Downloaded newer image for alpine:latest
```

```
docker.io/library/alpine:latest
```

```
[node1] (local) root@192.168.0.13 ~
```

```
$ docker image inspect alpine
```

```
[
```

```
{
  "Id": "sha256:c1aabb73d2339c5ebaa3681de2e9d9c18d57485045a4e311d9f8004bec208d67",
  "RepoTags": [
    "alpine:latest"
  ],
  "RepoDigests": [
    "alpine@sha256:82d1e9d7ed48a7523bdebc18cf6290bdb97b82302a8a9c27d4fe885949ea94d1"
  ],
  "Parent": "",
  "Comment": "",
  "Created": "2023-06-14T20:41:59.079795125Z",
  "Container": "bfc8078c169637d70e40ce591b5c2fe8d26329918dafcb96ebc9304ddff162ea",
  "ContainerConfig": {
    "Hostname": "bfc8078c1696",
    "Domainname": "",
    "User": "",
    "AttachStdin": false,
    "AttachStdout": false,
    "AttachStderr": false,
    "Tty": false,
    "OpenStdin": false,
```

```
"OpenStdin": false,
"StdinOnce": false,
"Env": [
  "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin"
],
"Cmd": [
  "/bin/sh",
  "-c",
  "#(nop) ",
  "CMD [\"/bin/sh\"]"
],
"Image": "sha256:5b8658701c96acefe1cd3a21b2a80220badf9124891ad440d95a7fa500d48765",
"Volumes": null,
"WorkingDir": "",
"Entrypoint": null,
"OnBuild": null,
"Labels": {}
},
"DockerVersion": "20.10.23",
"Author": "",
"Config": {
  "Hostname": "",
```

```
"Hostname": "",
"Domainname": "",
"User": "",
"AttachStdin": false,
"AttachStdout": false,
"AttachStderr": false,
"Tty": false,
"OpenStdin": false,
"StdinOnce": false,
"Env": [
    "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin"
],
"Cmd": [
    "/bin/sh"
],
"Image": "sha256:5b8658701c96acefe1cd3a21b2a80220badf9124891ad440d95a7fa500d48765",
"Volumes": null,
"WorkingDir": "",
"Entrypoint": null,
"OnBuild": null,
"Labels": null
},
```

```
},
"Architecture": "amd64",
"Os": "linux",
"Size": 7331611,
"VirtualSize": 7331611,
"GraphDriver": {
  "Data": {
    "MergedDir": "/var/lib/docker/overlay2/789d5d24a3f6c746b493ee5649c489ff6a325f4e756da39a7ecc27dd9a35b5aa/merged",
    "UpperDir": "/var/lib/docker/overlay2/789d5d24a3f6c746b493ee5649c489ff6a325f4e756da39a7ecc27dd9a35b5aa/diff",
    "WorkDir": "/var/lib/docker/overlay2/789d5d24a3f6c746b493ee5649c489ff6a325f4e756da39a7ecc27dd9a35b5aa/work"
  },
  "Name": "overlay2"
},
"RootFS": {
  "Type": "layers",
  "Layers": [
    "sha256:78a822fe2a2d2c84f3de4a403188c45f623017d6a4521d23047c9fbb0801794c"
  ]
},
"Metadata": {
  "LastTagTime": "0001-01-01T00:00:00Z"
}
```

```
"Size": 7331611,  
"VirtualSize": 7331611,  
"GraphDriver": {  
  "Data": {  
    "MergedDir": "/var/lib/docker/overlay2/789d5d24a3f6c746b493ee5649c489ff6a325f4e756da39a7ecc27dd9a35b5aa/merged",  
    "UpperDir": "/var/lib/docker/overlay2/789d5d24a3f6c746b493ee5649c489ff6a325f4e756da39a7ecc27dd9a35b5aa/diff",  
    "WorkDir": "/var/lib/docker/overlay2/789d5d24a3f6c746b493ee5649c489ff6a325f4e756da39a7ecc27dd9a35b5aa/work"  
  },  
  "Name": "overlay2"  
},  
"RootFS": {  
  "Type": "layers",  
  "Layers": [  
    "sha256:78a822fe2a2d2c84f3de4a403188c45f623017d6a4521d23047c9fbb0801794c"  
  ]  
},  
"Metadata": {  
  "LastTagTime": "0001-01-01T00:00:00Z"  
}  
}
```

```
[node1] (local) root@192.168.0.13 ~
```

```
[node1] (local) root@192.168.0.13 ~  
$ docker image inspect --format "{{ json .RootFS.Layers }}" alpine  
["sha256:78a822fe2a2d2c84f3de4a403188c45f623017d6a4521d23047c9fbb0801794c"]
```

```
[node1] (local) root@192.168.0.13 ~  
$ docker image ls  
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE  
hello         v0.2      43bea4f15bca   2 minutes ago  60.4MB  
hello         v0.1      c8f962d16aa6   6 minutes ago  60.4MB  
ourfiglet     latest    0194de81c4f4   9 minutes ago  121MB  
ubuntu        latest    5a81c4b8502e   2 weeks ago    77.8MB  
alpine        latest    claabb73d233   4 weeks ago    7.33MB
```

```
[node1] (local) root@192.168.0.13 ~  
$ docker image inspect --format "{{ json .RootFS.Layers }}" 0914de91c4f4
```

Error response from daemon: No such image: 0914de91c4f4:latest

```
[node1] (local) root@192.168.0.13 ~  
$ docker image inspect --format "{{ json .RootFS.Layers }}" 0194de81c4f4  
["sha256:59c56aee1fb4dbaeb334aef06088b49902105d1ea0c15a9e5a2a9ce560fa4c5d", "sha256:3ddee09c5d71cfa5f0ae791965d1e326d5881e5e3a643991363  
396471b26d161"]
```

```
[node1] (local) root@192.168.0.13 ~  
$
```