

Docker Basic

Practice A – Lab Time

Docker basic

```
[root@servera ~]# docker version
Client: Docker Engine - Community
Version:      19.03.5
API version:  1.40
Go version:   go1.12.12
Git commit:   633a0ea
Built:        Wed Nov 13 07:25:41 2019
OS/Arch:     linux/amd64
Experimental: false
```

```
Server: Docker Engine - Community
Engine:
Version:      19.03.5
API version:  1.40 (minimum version 1.12)
Go version:   go1.12.12
Git commit:   633a0ea
Built:        Wed Nov 13 07:24:18 2019
OS/Arch:     linux/amd64
Experimental: false
containerd:
Version:      1.2.10
GitCommit:    b34a5c8af56e510852c35414db4c1f4fa6172339
runc:
Version:      1.0.0-rc8+dev
GitCommit:    3e425f80a8c931f88e6d94a8c831b9d5aa481657
docker-init:
Version:      0.18.0
GitCommit:    fec3683
```

```
[root@servera ~]# docker info
Client:
Debug Mode: false

Server:
Containers: 2
  Running: 0
  Paused: 0
  Stopped: 2
Images: 6
Server Version: 19.03.5
Storage Driver: overlay2
  Backing Filesystem: xfs
  Supports d_type: true
  Native Overlay Diff: true
Logging Driver: json-file
Cgroup Driver: cgroupfs
Plugins:
  Volume: local
  Network: bridge host ipvlan macvlan null overlay
  Log: awslogs fluentd gcplogs gelf journald json-file local logentries splunk syslog
Swarm: inactive
Runtimes: runc
Default Runtime: runc
Init Binary: docker-init
containerd version: b34a5c8af56e510852c35414db4c1f4fa6172339
runc version: 3e425f80a8c931f88e6d94a8c831b9d5aa481657
init version: fec3683
Security Options:
  seccomp
   Profile: default
Kernel Version: 3.10.0-1062.9.1.el7.x86_64
Operating System: CentOS Linux 7 (Core)
OSType: linux
Architecture: x86_64
CPUs: 2
Total Memory: 1.795GiB
```

Docker Basic

- Docker command line structure
- Old (still works) docker <command> (options)
- New : docker <command> <sub-command> (options)

```
[root@servera ~]# docker run hello-world
```

```
Hello from Docker!
```

```
This message shows that your installation appears to be working correctly.
```

```
[root@servera ~]# docker container run hello-world
```

```
Hello from Docker!
```

```
This message shows that your installation appears to be working correctly.
```

Docker Basic

- Internet is a MUST – high speed
- Docker hub access
- Firstly, verify we have no existing image and any container is running

```
[root@servera ~]# docker image ls -a
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
------------	-----	----------	---------	------

```
[root@servera ~]#  
[root@servera ~]#  
[root@servera ~]# docker container ls -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
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```
[root@servera ~]#
```

Docker Basic

```
[root@servera ~]# docker container run -p 80:80 nginx
Unable to find image 'nginx:latest' locally
latest: Pulling from library/nginx
8ec398bc0356: Pull complete
dfb2a46f8c2c: Pull complete
b65031b6a2a5: Pull complete
Digest: sha256:8aa7f6a9585d908a63e5e418dc5d14ae7467d2e36e1ab4f0d8f9d059a3d071ce
Status: Downloaded newer image for nginx:latest
```



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

Docker Basic – detached mode

```
[root@servera ~]# docker container run -p 80:80 -d nginx
7bbfd133c3a247f30b09413c60535bale5ca9b65905908b0398bf0c551e2bc79
[root@servera ~]#
```

```
[root@servera ~]# docker container ls
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
7bbfd133c3a2	nginx	"nginx -g 'daemon of..."	2 minutes ago	Up 2 minutes	0.0.0.0:80->80/tcp	elastic_nobel

```
[root@servera ~]# ss -tanp | grep 80
LISTEN      0      128          [::]:80          [::]:*          users: (("docker-proxy",pid=19123,fd=4))
[root@servera ~]#
```

```
[root@servera ~]# docker container ls
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
7bbfd133c3a2	nginx	"nginx -g 'daemon of..."	6 minutes ago	Up 6 minutes	0.0.0.0:80->80/tcp	elastic_nobel

```
[root@servera ~]#
[root@servera ~]#
[root@servera ~]# docker container stop 7bb
7bb
[root@servera ~]#
[root@servera ~]# docker container ls
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
--------------	-------	---------	---------	--------	-------	-------

```
[root@servera ~]#
```

Docker Basic -naming

```
[root@servera ~]# docker container run -p 80:80 -d --name mywebhost nginx
69971d7b9cc935ad22c0792a4b99e4220a3196b421f09b423a715489ce63f2a1
```

```
[root@servera ~]#
```

```
[root@servera ~]# docker container ls
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
69971d7b9cc9	nginx	"nginx -g 'daemon of..."	6 seconds ago	Up 5 seconds	0.0.0.0:80->80/tcp	mywebhost

```
[root@servera ~]# docker container rename mywebhost panpanweb
```

```
[root@servera ~]#
```

```
[root@servera ~]# docker container ls
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
69971d7b9cc9	nginx	"nginx -g 'daemon of..."	53 seconds ago	Up 53 seconds	0.0.0.0:80->80/tcp	panpanweb

Docker Basic - Logs

```
[root@servera ~]# docker container logs panpanweb
172.17.0.1 - - [11/Jan/2020:07:15:15 +0000] "GET / HTTP/1.1" 304 0 "-" "Mozilla/5.0 (X11; Linux x86_64; rv:68.0) Gecko/20100101 Firefox/68.0" "-"
172.17.0.1 - - [11/Jan/2020:07:15:16 +0000] "GET / HTTP/1.1" 304 0 "-" "Mozilla/5.0 (X11; Linux x86_64; rv:68.0) Gecko/20100101 Firefox/68.0" "-"
```


Docker Basic - top

```
[root@servera ~]# docker container top panpanweb
```

UID	PID	PPID	C	STIME	TTY	TIME
root	CMD					
00	19890	19873	0	15:06	?	00:00:
101	nginx: master process nginx -g daemon off;					
00	19924	19890	0	15:06	?	00:00:
	nginx: worker process					

Docker Basic - Cleanup

```
[root@servera ~]# docker container ls -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
69971d7b9cc9	nginx	"nginx -g 'daemon of..."	21 minutes ago	Up 21 minutes	0.0.0.0:80->80/tcp	panpanweb
7bbfd133c3a2	nginx	"nginx -g 'daemon of..."	31 minutes ago	Exited (0) 25 minutes ago		elastic_nobel
fb33db263f88	nginx	"nginx -g 'daemon of..."	35 minutes ago	Exited (0) 31 minutes ago		goofy_moser

```
[root@servera ~]#  
[root@servera ~]# docker container stop 69971d7b9cc9 7bbfd133c3a2 fb33db263f88  
69971d7b9cc9  
7bbfd133c3a2  
fb33db263f88  
[root@servera ~]# docker container ls -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
69971d7b9cc9	nginx	"nginx -g 'daemon of..."	21 minutes ago	Exited (0) 2 seconds ago		panpanweb
7bbfd133c3a2	nginx	"nginx -g 'daemon of..."	32 minutes ago	Exited (0) 25 minutes ago		elastic_nobel
fb33db263f88	nginx	"nginx -g 'daemon of..."	35 minutes ago	Exited (0) 32 minutes ago		goofy_moser

```
[root@servera ~]#  
[root@servera ~]# docker container rm 69971d7b9cc9 7bbfd133c3a2 fb33db263f88  
69971d7b9cc9  
7bbfd133c3a2  
fb33db263f88  
[root@servera ~]#  
[root@servera ~]# docker container ls -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
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```
[root@servera ~]#
```

Docker Basic

Practice A – End of LAB