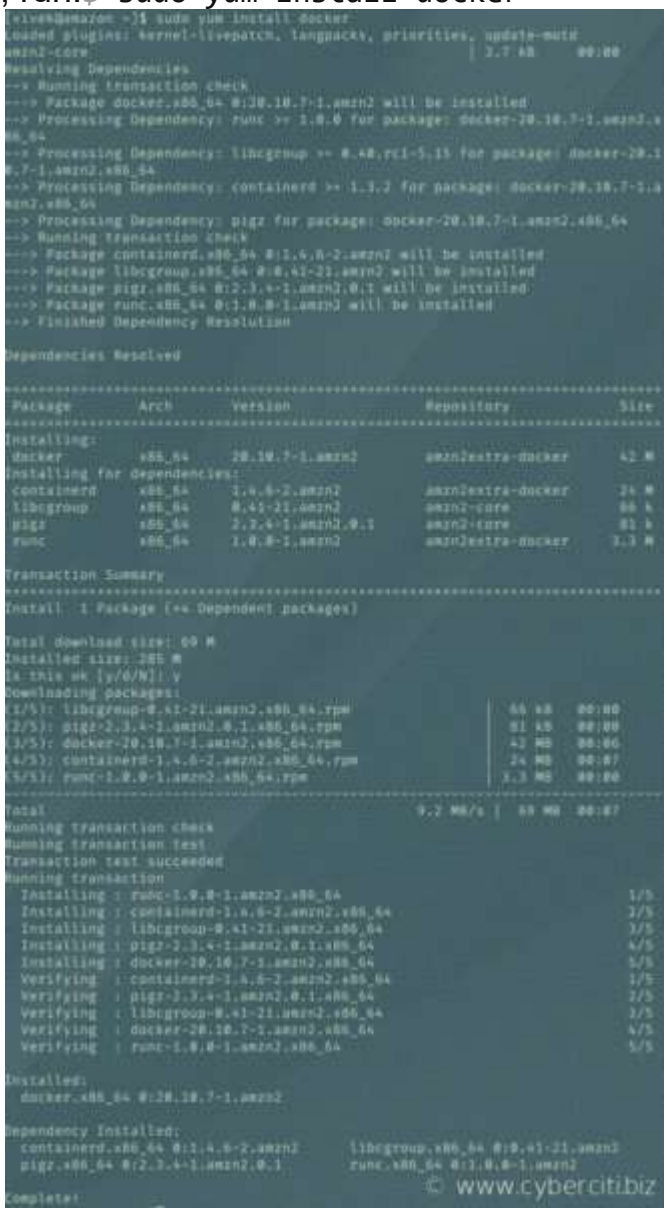
Installing Docker on Amazon Linux 2

The procedure to install Docker on AMI 2 (Amazon Linux 2) running on either EC2 or Lightsail instance is as follows:

1. Login into the remote AWS server using the ssh command:`$ ssh ec2-user@ec2-ip-address-dns-name-here`
2. Apply pending updates using the yum command:`$ sudo yum update`
3. Search for Docker package:`$ sudo yum search docker`
4. Get version information:`$ sudo yum info docker`

Getting Docker version (click to enlarge)

5. Install docker, run:`$ sudo yum install docker`



Amazon Linux 2: Install docker command (click to enlarge)

6. Add group membership for the default ec2-user so you can run all docker commands without using the sudo command:`$ sudo usermod -a -G docker ec2-user`
   `$ id ec2-user`
   `# Reload a Linux user's group assignments to docker w/o logout`
   `$ newgrp docker`
7. Need docker-compose too? Try any one of the following commands:

```
8. # 1. Get pip3
9. sudo yum install python3-pip
10.
```

```
# 2. Then run any one of the following
sudo pip3 install docker-compose # with root access

# OR #

pip3 install --user docker-compose # without root access for security reasons
```

OR

```
wget https://github.com/docker/compose/releases/latest/download/docker-compose-$(uname -s)-$(uname -m)
sudo mv docker-compose-$(uname -s)-$(uname -m) /usr/local/bin/docker-compose
sudo chmod -v +x /usr/local/bin/docker-compose
```

How to install docker-compose in Amazon Linux (click to enlarge)

16. Enable docker service at AMI boot time: `$ sudo systemctl enable docker.service`
17. Start the Docker service: `$ sudo systemctl start docker.service`

Verification

Now that both required software installed, we need to make sure it is working. Hence, type the following commands.

Finding status

Get the docker service status on your AMI instance, run:

```
$ sudo systemctl status docker.service
```

Outputs:

```
● docker.service - Docker Application Container Engine
   Loaded: loaded (/usr/lib/systemd/system/docker.service; enabled;
vendor preset: disabled)
   Active: active (running) since Wed 2021-09-08 05:03:52 EDT; 18s ago
     Docs: https://docs.docker.com
  Process: 3295 ExecStartPre=/usr/libexec/docker/docker-setup-
runtimes.sh (code=exited, status=0/SUCCESS)
  Process: 3289 ExecStartPre=/bin/mkdir -p /run/docker (code=exited,
status=0/SUCCESS)
 Main PID: 3312 (dockerd)
    Tasks: 9
   Memory: 39.9M
   CGroup: /system.slice/docker.service
           └─3312 /usr/bin/dockerd -H fd:// --
containerd=/run/containerd/c...

Sep 08 05:03:51 amazon.example.local dockerd[3312]: time="2021-09-
08T05:03...
Sep 08 05:03:51 amazon.example.local dockerd[3312]: time="2021-09-
08T05:03...
Sep 08 05:03:51 amazon.example.local dockerd[3312]: time="2021-09-
08T05:03...
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08T05:03...
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08T05:03...
Sep 08 05:03:52 amazon.example.local dockerd[3312]: time="2021-09-
08T05:03...
Sep 08 05:03:52 amazon.example.local dockerd[3312]: time="2021-09-
08T05:03...
Sep 08 05:03:52 amazon.example.local systemd[1]: Started Docker
Applicatio...
Sep 08 05:03:52 amazon.example.local dockerd[3312]: time="2021-09-
08T05:03...
Hint: Some lines were ellipsized, use -l to show in full.
```

Getting docker version info on Amazon Linux

How to control docker service

Use the systemctl command as follows:

```
sudo systemctl start docker.service #<-- start the service
sudo systemctl stop docker.service #<-- stop the service
sudo systemctl restart docker.service #<-- restart the service
sudo systemctl status docker.service #<-- get the service status
```

Creating your first Docker project

Make a new project folder using the mkdir command and cd into it using the cd command. For instance:

```
$ mkdir static-website-1
$ cd static-website-1
```

Use the echo command as follows to create a new index.html for our project:

```
echo 'Docker Apache static site by nixCraft' > index.html
```

Make a new Dockerfile using a text editor such as nano command or vim command:

```
$ vim Dockerfile
```

Append the following config for your Amazon Linux container:

```
FROM rockylinux/rockylinux:latest

MAINTAINER nixCraft
LABEL Remarks="RockyLinux test image for installing static webpage with Apache2"

# Install apache2 with less
RUN yum -y update && \
yum -y install httpd && \
yum clean all

# Sample index.html for test
COPY index.html /var/www/html/index.html

# Port and set entry point for container
EXPOSE 80
ENTRYPOINT /usr/sbin/httpd -DFOREGROUND
```

Build it:

```
$ sudo docker build -t staticsite01 .
```

Sample outputs:

```
Sending build context to Docker daemon  3.072kB
Step 1/7 : FROM rockylinux/rockylinux:latest
latest: Pulling from rockylinux/rockylinux
ecce7a433753: Pull complete
Digest: sha256:98dcf3fbe75741058c16ece621f5917e0ff52d9333073e6389c5de8efaa3d5c4
Status: Downloaded newer image for rockylinux/rockylinux:latest
 ---> 86f02aa837b3
Step 2/7 : MAINTAINER nixCraft
 ---> Running in 7f4f35c8d95a
Removing intermediate container 7f4f35c8d95a
 ---> e40cd8411b69
Step 3/7 : LABEL Remarks="CentOS 8 test image for installing ng with Apache2"
 ---> Running in 31bf348db2fb
Removing intermediate container 31bf348db2fb
 ---> 28accfe0f9ff
Step 4/7 : RUN yum -y update && yum -y install httpd && yum clean all
 ---> Running in f588730a294f
Rocky Linux 8 - AppStream                       6.2 MB/s |  10 MB     00:01
Rocky Linux 8 - BaseOS                          6.7 MB/s | 7.7 MB     00:01
Rocky Linux 8 - Extras                           59 kB/s |  12 kB     00:00
Dependencies resolved.
================================================================================
 Package                 Arch      Version                      Repo       Size
================================================================================
Upgrading:
 gzip                    x86_64    1.9-13.el8_5                 baseos    166 k
 libreport-filesystem    x86_64    2.9.5-15.el8.rocky.6.3       baseos     20 k
 openssl-libs            x86_64    1:1.1.1k-6.el8_5             baseos    1.5 M
 vim-minimal             x86_64    2:8.0.1763-16.el8_5.13       baseos    574 k
 zlib                    x86_64    1.2.11-18.el8_5              baseos    101 k
Installing dependencies:
 openssl                 x86_64    1:1.1.1k-6.el8_5             baseos    708 k
Installing weak dependencies:
 openssl-pkcs11          x86_64    0.4.10-2.el8                 baseos     65 k

Transaction Summary
================================================================================
Install  2 Packages
Upgrade  5 Packages

Total download size: 3.1 M
.....
..
.....
  rocky-logos-httpd-85.0-3.el8.noarch

Complete!
27 files removed
Removing intermediate container f588730a294f
 ---> c72a6a74580e
Step 5/7 : COPY index.html /var/www/html/index.html
```

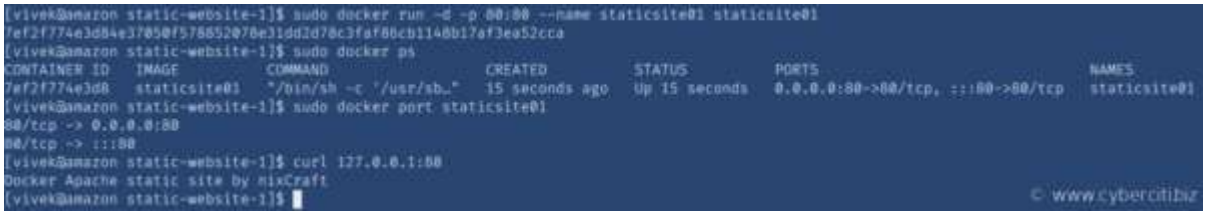
```
 ---> bb05689ae9d3
Step 6/7 : EXPOSE 80
 ---> Running in dda665ce8a4a
Removing intermediate container dda665ce8a4a
 ---> 04f4b6d74635
Step 7/7 : ENTRYPOINT /usr/sbin/httpd -DFOREGROUND
 ---> Running in 2a9d3c85cbd7
Removing intermediate container 2a9d3c85cbd7
 ---> 51c5c08cf14d
Successfully built 51c5c08cf14d
Successfully tagged staticsite01:latest
```

List images:

```
$ sudo docker images
REPOSITORY              TAG       IMAGE ID       CREATED         SIZE
staticsite01            latest    51c5c08cf14d   3 minutes ago   232MB
rockylinux/rockylinux   latest    86f02aa837b3   6 weeks ago     205MB
```

Run it:

```
$ sudo docker run -d -p 80:80 --name staticsite01 staticsite01
$ sudo docker ps
$ sudo docker port staticsite01
$ curl 127.0.0.1:80
```



Click to enlarge

Summing up

That is all for now. You learned how to install Docker on AMI 2 and deploy Apache 2 as the Docker container for a static website. See Amazon Linux 2 home page for more information. Use the following command to get an overview of available commands:

```
$ docker help
$ docker --help
```

For specific client examples please see the man page for the specific Docker command using the man command. For instance:

```
$ man docker-build
$ man docker-run
```