

## Module 3: Docker Part 1 Assignment-1

### Pre-requisites:

- An aws instace with docker installed

### Docker installation:

- `sudo apt-get update`
- `sudo apt-get install docker.io -y`

#### 1. Pull Ubuntu container

- Ubuntu image is pulled using “docker pull” command

```
ubuntu@ip-172-31-45-255:~$ docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
a48641193673: Pull complete
Digest: sha256:6042500cf4b44023ea1894effe7890666b0c5c7871ed83a97c36c76ae560bb9b
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
ubuntu@ip-172-31-45-255:~$
```

- Listing the docker images by “docker images” command

```
ubuntu@ip-172-31-45-255:~$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
ubuntu              latest             174c8c134b2a       8 days ago         77.9MB
kevin/custom        latest             aca5d3f07411       2 weeks ago        240MB
venkat/custom       latest             18c42ccf14b9       2 weeks ago        240MB
hello-world         latest             9c7a54a9a43c       7 months ago       13.3kB
```

#### 2. Run this container and map port 80 on the local

- Running the container from ubuntu image on port 80 using “docker run” command

```
ubuntu@ip-172-31-45-255:~$ docker run -it -d -p 80:80 ubuntu
2c9841a7b910849d10bd71df9d6aa066a16e9b2d4a11f72bac84fba4449ebac8
ubuntu@ip-172-31-45-255:~$
```

#### 3. Install Apache2 on this container

- Navigated into the container by “docker exec” command

```
ubuntu@ip-172-31-45-255:~$ docker exec -it 2c9841a7b910 /bin/bash
root@2c9841a7b910:/# sudo apt update
```

- Packages are updated by “apt update”

```
root@2c9841a7b910:/# 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://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1326 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [1046 kB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [44.0 kB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [1572 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1599 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1305 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1602 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [49.8 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [50.4 kB]
Get:18 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [28.1 kB]
Fetched 28.9 MB in 3s (9003 kB/s)
Reading package lists... Done
```

- Apache server is installed into the container

```
root@2c9841a7b910:/# apt-get install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils bzip2 ca-certificates file libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libbrotli1
  libcurl4 libexpat1 libgdbm-compat4 libgdbm6 libicu70 libjansson4 libldap-2.5-0 libldap-common liblua5.3-0 libmagic-mgc libmagic1
  libnghttp2-14 libperl5.34 libpsl5 librtmp1 libsasl2-2 libsasl2-modules libsasl2-modules-db libsasl2-modules-gssapi-mit libsasl2-modules-gssapi-heimdal
  libsasl2-modules-ldap libsasl2-modules-otp libsasl2-modules-sql perl-doc perl-modules-5.34 publicsuffix ssl-cert xz-utils
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser ufw bzip2-doc gdbm-l10n libsasl2-modules-gssapi-mit
  | libsasl2-modules-gssapi-heimdal libsasl2-modules-ldap libsasl2-modules-otp libsasl2-modules-sql perl-doc libterm-readline-gnu-perl
  | libterm-readline-perl-perl make libtap-harness-archive-perl
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils bzip2 ca-certificates file libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libbrotli1 libcurl4 libexpat1 libgdbm-compat4 libgdbm6 libicu70 libjansson4 libldap-2.5-0 libldap-common liblua5.3-0 libmagic-mgc
  libmagic1 libnghttp2-14 libperl5.34 libpsl5 librtmp1 libsasl2-2 libsasl2-modules libsasl2-modules-db libsasl2-modules-gssapi-mit libsasl2-modules-gssapi-heimdal
  libsasl2-modules-ldap libsasl2-modules-otp libsasl2-modules-sql perl-doc perl-modules-5.34 publicsuffix ssl-cert xz-utils
0 upgraded, 43 newly installed, 0 to remove and 0 not upgraded.
Need to get 25.6 MB of archives.
After this operation, 111 MB of additional disk space will be used.
```

```
root@2c9841a7b910:/# service apache2 start
* Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.3. Set the 'ServerName' directive globally to suppress this message
*
```

#### 4. Check if you are able to access the Apache page on your browser

- Apache server is accessed successfully on port 80



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## Apache2 Default Page

# Ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

### Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the