Tasks To Be Performed:

1. Create a Dockerfile with the following specs:
   - Ubuntu container
   - Apache2 installed
   - Apache2 should automatically run once the container starts

2. Submit the Dockerfile for assignment completion

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-01f1e575998e280f3&osUser=ubuntu&sshPort...

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```
  libsasl2-modules-db libsqlite3-0 libssh-4 libxml2 mailcap media-types
  mime-support netbase openssl perl perl-modules-5.34 publicsuffix ssl-cert
  xz-utils
0 upgraded, 43 newly installed, 0 to remove and 4 not upgraded.
Need to get 25.6 MB of archives.
After this operation, 111 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 perl-modules-5.34 all 5.34.0-3ubuntu1.2 [2977 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 libgdbm6 1.23-1 [33.9 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy/main amd64 libgdbm-compat4 1.23-1 [6606 B]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libperl5.34 amd64 5.34.0-3ubuntu1.2 [4818 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 perl 5.34.0-3ubuntu1.2 [232 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapr1 amd64 1.7.0-8ubuntu0.22.04.1 [108 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libexpat1 amd64 2.4.7-1ubuntu0.2 [91.0 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1 amd64 1.6.1-5ubuntu4.22.04.1 [92.6 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libsqlite3-0 amd64 3.37.2-2ubuntu0.1 [641 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-5ubuntu4.22.04.1 [11.3 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libsasl2-modules-db amd64 2.1.27+dfsg-3ubuntu1.2 [20.5 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libsasl2-2 amd64 2.1.27+dfsg-3ubuntu1.2 [53.8 kB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libldap-2.5-0 amd64 2.5.15+dfsg-0ubuntu0.22.04.1 [183 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-ldap amd64 1.6.1-5ubuntu4.22.04.1 [9168 B]
Get:15 http://archive.ubuntu.com/ubuntu jammy/main amd64 libbrotli1 amd64 1.0.9-2build6 [315 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy/main amd64 libnghttp2-14 amd64 1.43.0-1build3 [76.3 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy/main amd64 libpsl5 amd64 0.21.0-1.2build2 [58.4 kB]
Get:18 http://archive.ubuntu.com/ubuntu jammy/main amd64 librtmp1 amd64 2.4+20151223.gitfa8646d.1-2build4 [58.2 kB]
Get:19 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libssh-4 amd64 0.9.6-2ubuntu0.22.04.1 [185 kB]
Get:20 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libcurl4 amd64 7.81.0-1ubuntu1.13 [290 kB]
Get:21 http://archive.ubuntu.com/ubuntu jammy/main amd64 libjansson4 amd64 2.13.1-1.1build3 [32.4 kB]
Get:22 http://archive.ubuntu.com/ubuntu jammy/main amd64 liblua5.3-0 amd64 5.3.6-1build1 [140 kB]
Get:23 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libicu70 amd64 70.1-2 [10.6 MB]
Get:24 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libxml2 amd64 2.9.13+dfsg-1ubuntu0.3 [763 kB]
Get:25 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-bin amd64 2.4.52-1ubuntu4.6 [1345 kB]
```

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-01f1e575998e280f3&osUser=ubuntu&sshPort...

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Get:37 http://archive.ubuntu.com/ubuntu jammy/main amd64 file amd64 1:5.41-3 [21.5 kB]
Get:38 http://archive.ubuntu.com/ubuntu jammy/main amd64 publicsuffix all 20211207.1025-1 [129 kB]
Get:39 http://archive.ubuntu.com/ubuntu jammy/main amd64 xz-utils amd64 5.2.5-2ubuntu1 [84.8 kB]
Get:40 http://archive.ubuntu.com/ubuntu jammy/main amd64 bzip2 amd64 1.0.8-5build1 [34.8 kB]
Get:41 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libldap-common all 2.5.15+dfsg-0ubuntu0.22.04.1 [15.8 kB]
Get:42 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libsasl2-modules amd64 2.1.27+dfsg-3ubuntu1.2 [68.8 kB]
Get:43 http://archive.ubuntu.com/ubuntu jammy/main amd64 ssl-cert all 1.1.2 [17.4 kB]
debconf: delaying package configuration, since apt-utils is not installed
Fetched 25.6 MB in 1s (49.4 MB/s)
Selecting previously unselected package perl-modules-5.34.
(Reading database ... 4395 files and directories currently installed.)
Preparing to unpack .../00-perl-modules-5.34_5.34.0-3ubuntu1.2_all.deb ...
Unpacking perl-modules-5.34 (5.34.0-3ubuntu1.2) ...
Selecting previously unselected package libgdbm6:amd64.
Preparing to unpack .../01-libgdbm6_1.23-1_amd64.deb ...
Unpacking libgdbm6:amd64 (1.23-1) ...
Selecting previously unselected package libgdbm-compat4:amd64.
Preparing to unpack .../02-libgdbm-compat4_1.23-1_amd64.deb ...
Unpacking libgdbm-compat4:amd64 (1.23-1) ...
Selecting previously unselected package libperl5.34:amd64.
Preparing to unpack .../03-libperl5.34_5.34.0-3ubuntu1.2_amd64.deb ...
Unpacking libperl5.34:amd64 (5.34.0-3ubuntu1.2) ...
Selecting previously unselected package perl.
Preparing to unpack .../04-perl_5.34.0-3ubuntu1.2_amd64.deb ...
Unpacking perl (5.34.0-3ubuntu1.2) ...
Selecting previously unselected package libapr1:amd64.
Preparing to unpack .../05-libapr1_1.7.0-8ubuntu0.22.04.1_amd64.deb ...
Unpacking libapr1:amd64 (1.7.0-8ubuntu0.22.04.1) ...
Selecting previously unselected package libexpat1:amd64.
Preparing to unpack .../06-libexpat1_2.4.7-1ubuntu0.2_amd64.deb ...
Unpacking libexpat1:amd64 (2.4.7-1ubuntu0.2) ...
```

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-01f1e575998e280f3&osUser=ubuntu&sshPort...

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Preparing to unpack .../41-libsasl2-modules_2.1.27+dfsg2-3ubuntu1.2_amd64.deb ...
Unpacking libsasl2-modules:amd64 (2.1.27+dfsg2-3ubuntu1.2) ...
Selecting previously unselected package ssl-cert.
Preparing to unpack .../42-ssl-cert_1.1.2_all.deb ...
Unpacking ssl-cert (1.1.2) ...
Setting up libexpat1:amd64 (2.4.7-1ubuntu0.2) ...
Setting up media-types (7.0.0) ...
Setting up libpsl5:amd64 (0.21.0-1.2build2) ...
Setting up libmagic-mgc (1:5.41-3) ...
Setting up libbrotli1:amd64 (1.0.9-2build6) ...
Setting up libsqlite3-0:amd64 (3.37.2-2ubuntu0.1) ...
Setting up libsasl2-modules:amd64 (2.1.27+dfsg2-3ubuntu1.2) ...
Setting up libnghttp2-14:amd64 (1.43.0-1build3) ...
Setting up libmagic1:amd64 (1:5.41-3) ...
Setting up libapr1:amd64 (1.7.0-8ubuntu0.22.04.1) ...
Setting up file (1:5.41-3) ...
Setting up perl-modules-5.34 (5.34.0-3ubuntu1.2) ...
Setting up bzip2 (1.0.8-5build1) ...
Setting up libldap-common (2.5.15+dfsg-0ubuntu0.22.04.1) ...
Setting up libjansson4:amd64 (2.13.1-1.1build3) ...
Setting up libsasl2-modules-db:amd64 (2.1.27+dfsg2-3ubuntu1.2) ...
Setting up librtmp1:amd64 (2.4+20151223.gitfa8646d.1-2build4) ...
Setting up xz-utils (5.2.5-2ubuntu1) ...
update-alternatives: using /usr/bin/xz to provide /usr/bin/lzma (lzma) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/man1/lzma.1.gz because associated file /usr/share/man/man1/xz.1.gz (of link group lzma)
doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/unlzma.1.gz because associated file /usr/share/man/man1/unxz.1.gz (of link group lz
ma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzcat.1.gz because associated file /usr/share/man/man1/xzcat.1.gz (of link group lz
ma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzmore.1.gz because associated file /usr/share/man/man1/xzmore.1.gz (of link group
```

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```
lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzcmp.1.gz because associated file /usr/share/man/man1/xzcmp.1.gz (of link group lz
ma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzgrep.1.gz because associated file /usr/share/man/man1/xzgrep.1.gz (of link group
lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzegrep.1.gz because associated file /usr/share/man/man1/xzegrep.1.gz (of link grou
p lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzfgrep.1.gz because associated file /usr/share/man/man1/xzfgrep.1.gz (of link grou
p lzma) doesn't exist
Setting up libsasl2-2:amd64 (2.1.27+dfsg2-3ubuntu1.2) ...
Setting up libssh-4:amd64 (0.9.6-2ubuntu0.22.04.1) ...
Setting up liblua5.3-0:amd64 (5.3.6-1build1) ...
Setting up netbase (6.3) ...
Setting up apache2-data (2.4.52-1ubuntu4.6) ...
Setting up openssl (3.0.2-0ubuntu1.10) ...
Setting up publicsuffix (20211207.1025-1) ...
Setting up libgdbm6:amd64 (1.23-1) ...
Setting up libicu70:amd64 (70.1-2) ...
Setting up libaprutil1:amd64 (1.6.1-5ubuntu4.22.04.1) ...
Setting up libaprutil1-dbd-sqlite3:amd64 (1.6.1-5ubuntu4.22.04.1) ...
Setting up libldap-2.5-0:amd64 (2.5.15+dfsg-0ubuntu0.22.04.1) ...
Setting up ca-certificates (20230311ubuntu0.22.04.1) ...
debconf: unable to initialize frontend: Dialog
debconf: (TERM is not set, so the dialog frontend is not usable.)
debconf: falling back to frontend: Readline
Updating certificates in /etc/ssl/certs...
137 added, 0 removed; done.
Setting up ssl-cert (1.1.2) ...
debconf: unable to initialize frontend: Dialog
debconf: (TERM is not set, so the dialog frontend is not usable.)
debconf: falling back to frontend: Readline
```

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```
debconf: falling back to frontend: Readline
Setting up libgdbm-compat4:amd64 (1.23-1) ...
Setting up libcurl4:amd64 (7.81.0-1ubuntu1.13) ...
Setting up libxml2:amd64 (2.9.13+dfsg-1ubuntu0.3) ...
Setting up apache2-utils (2.4.52-1ubuntu4.6) ...
Setting up libperl5.34:amd64 (5.34.0-3ubuntu1.2) ...
Setting up libaprutil1-ldap:amd64 (1.6.1-5ubuntu4.22.04.1) ...
Setting up perl (5.34.0-3ubuntu1.2) ...
Setting up mailcap (3.70+nmu1ubuntu1) ...
Setting up mime-support (3.66) ...
Setting up apache2-bin (2.4.52-1ubuntu4.6) ...
Setting up apache2 (2.4.52-1ubuntu4.6) ...
Enabling module mpm_event.
Enabling module authz_core.
Enabling module authz_host.
Enabling module authn_core.
Enabling module auth_basic.
Enabling module access_compat.
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
```

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```
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...
Processing triggers for ca-certificates (20230311ubuntu0.22.04.1) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
Removing intermediate container 86d2a2146fe9
 ---> 3a4d947f2a78
Step 4/4 : ENTRYPOINT apachectl -D FOREGROUND
 ---> Running in 6789ef6a9245
Removing intermediate container 6789ef6a9245
 ---> b7e237b40d77
Successfully built b7e237b40d77
Successfully tagged image7:latest
ubuntu@ip-172-31-85-54:~/folder1$ sudo docker images
REPOSITORY              TAG       IMAGE ID       CREATED          SIZE
image7                  latest    b7e237b40d77   31 seconds ago   228MB
shanbhai7/dockerimage2  latest    2cbf210ab7be   About an hour ago  228MB
ubuntu                  latest    5a81c4b8502e   5 weeks ago      77.8MB
ubuntu@ip-172-31-85-54:~/folder1$ sudo docker run -itd -p 80:80 image7
6220cf5429b54c7c73c6640a4225945f48ff57572f8eec37793d3617a03b0f3c
docker: Error response from daemon: driver failed programming external connectivity on endpoint inspiring_wescoff (e5f2a88700c9a23c01c9aaea79122c9c483
0f43044380c87840c3f642ea032d5): Bind for 0.0.0.0:80 failed: port is already allocated.
ubuntu@ip-172-31-85-54:~/folder1$ sudo docker run -itd -p 88:80 image7
5ca7ab27cff17bc82a67af3e50c5277b8cdac6e10e77d5eb0962e68cdaba7825
ubuntu@ip-172-31-85-54:~/folder1$ sudo docker ps
CONTAINER ID   IMAGE                   COMMAND                CREATED          STATUS          PORTS                               NAMES
5ca7ab27cff1   image7                  "/bin/sh -c 'apachec…" 17 seconds ago   Up 17 seconds   0.0.0.0:88->80/tcp, :::88->80/tcp   elastic_sanderso
n
1bef7b8777da   shanbhai7/dockerimage2  "/bin/bash"            32 minutes ago   Up 31 minutes   0.0.0.0:80->80/tcp, :::80->80/tcp   magical_lehmann
ubuntu@ip-172-31-85-54:~/folder1$
```

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 apache2-doc package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|       `--  ports.conf
|-- mods-enabled
|       |-- *.load
|       `-- *.conf
|-- conf-enabled
|       `-- *.conf
|-- sites-enabled
|       `-- *.conf
```

- `apache2.conf` is the main configuration file. It puts the pieces together by including all remaining configuration files when starting up the web server.
- `ports.conf` is always included from the main configuration file. It is used to determine the listening ports for incoming connections, and this file can be customized anytime.
- Configuration files in the `mods-enabled/`, `conf-enabled/` and `sites-enabled/` directories contain particular configuration snippets which manage modules, global configuration fragments, or virtual host configurations, respectively.
- They are activated by symlinking available configuration files from their respective *-available/ counterparts. These should be managed by using our helpers `a2enmod`, `a2dismod`, `a2ensite`, `a2dissite`, and `a2enconf`, `a2disconf` . See their respective man pages for detailed information.
- The binary is called apache2 and is managed using systemd, so to start/stop the service use `systemctl start apache2` and `systemctl stop apache2`, and use `systemctl status apache2` and `journalctl -u apache2` to check status. `system` and `apache2ctl` can also be used for service management if desired. **Calling `/usr/bin/apache2` directly will not work** with the default configuration.

Document Roots

By default, Ubuntu does not allow access through the web browser to *any* file outside of those located in `/var/www`, **public_html** directories (when enabled) and `/usr/share` (for web applications). If your site is using a web document root located elsewhere (such as in `/srv`) you may need to whitelist your document root directory in `/etc/apache2/apache2.conf`.

The default Ubuntu document root is `/var/www/html`. You can make your own virtual hosts under `/var/www`.

Reporting Problems

Please use the `ubuntu-bug` tool to report bugs in the Apache2 package with Ubuntu. However, check **existing bug reports** before reporting a new bug.

Please report bugs specific to modules (such as PHP and others) to their respective packages, not to the web server itself.