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Apache Web Server configuration on Docker container

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Title

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Background Theory

The Apache HTTP Server, commonly referred to as Apache, is a free and open-source web server software. It is one of the most widely-used web servers in the world and is developed and maintained by the Apache Software Foundation. Apache is known for its stability, security, and flexibility, making it a popular choice for hosting websites and web applications.

Apache can be used on a variety of operating systems, including Windows, Linux, and macOS. It supports many different technologies and protocols, such as HTTP, HTTPS, and various scripting languages like PHP, Perl, and Python. Additionally, it can be extended using various modules, such as mod_rewrite for URL rewriting, mod_ssl for HTTPS support, and mod_proxy for reverse proxying. Apache can be configured using a configuration file called httpd.conf, which contains various settings that control the behavior of the web server. This file can be used to set up virtual hosts, configure security settings, and configure other server options.

Activity

1 Docker Installation

1. Updated system packages.

```
sudo apt update
```

2. Installed dockerpackage.

```
sudo apt install docker
```

3. Checked the version of docker.

```
docker --version
```

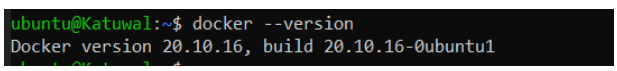

Figure 1: Docker installation

2 Running Docker Image

1. Pulled httpd image

```
sudo docker pull httpd
```

2. Created a html page to be served with apache web server

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Test Server</title>
</head>
<body>
    Hello.
</body>
</html>
```

```
ubuntu@Katuwal:~$ mkdir apacheDocker
ubuntu@Katuwal:~$ ls
apacheDocker
ubuntu@Katuwal:~$ cd apackeDocker
-bash: cd: apackeDocker: No such file or directory
ubuntu@Katuwal:~$ cd apacheDocker
ubuntu@Katuwal:~/apacheDocker$ touch test.html
ubuntu@Katuwal:~/apacheDocker$ cat test.html
ubuntu@Katuwal:~/apacheDocker$ nano test.html
ubuntu@Katuwal:~/apacheDocker$ cat test.html
<!DOCTYPE html>
<html lang = "en">
<head>
        <title>Test Server</title>
</head>
<body>
        Hello.
</body>
</html>
```

Figure 2: HTML file

3. Launched the docker container.

```
sudo docker images
docker run -dit --name my-apache-app -p 8080:80 -v "$PWD":/usr/local/
        apache2/htdocs/ httpd
```

```
ubuntu@Katuwal:~/apacheDocker$ sudo docker run -dit --name Lab2 -p 8080:80 -v "$PWD":/usr/local/apache2/htdocs/ httpd
a9f34362352e37e60890a4a2688d46f4349a53f46c7768d5d5d3784b6f39b0c3
```

Figure 3: Docker run

3 Test server

```
ubuntu@Katuwal:~/apacheDocker$ mv test.html index.html
ubuntu@Katuwal:~/apacheDocker$ ls
index.html
ubuntu@Katuwal:~/apacheDocker$ curl 127.0.0.1:8080
<!DOCTYPE html>
<html lang = "en">
<head>
        <title>Test Server</title>
</head>
<body>
        Hello.
</body>
</html>
```

Figure 4: Docker test

Conclusion

In this report, we have discussed the basic steps for Apache Web Server configuration on Docker container on Linux operating systems. The process of configuring Apache webserver in docker contaimer involves installing the docker software, configuring the apache image, and testing the server to ensure it is working properly.