

# CAPSTONE PROJECT

Name: Z.MD SHARUF RAJ

Batch: D015

Project: Application Deployment (Deploy the given react application to a production ready state)

Solution:

1.Cloning into the below mentioned Repo and Deploying the Application in HTTP port 80:

<https://github.com/sriram-R-krishnan/devops-build>

```
ubuntu@ip-172-31-15-171:~$ git clone https://github.com/sriram-R-krishnan/devops-build
Cloning into 'devops-build'...
remote: Enumerating objects: 21, done.
remote: Counting objects: 100% (2/2), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 21 (delta 0), reused 0 (delta 0), pack-reused 19
Receiving objects: 100% (21/21), 720.09 KiB | 13.33 MiB/s, done.
ubuntu@ip-172-31-15-171:~$
```

2.Dockerizing the application by creating a dockerfile:

Installing Docker:

```
ubuntu@ip-172-31-15-171:~$ docker --version
Docker version 24.0.7, build 24.0.7-0ubuntu4
ubuntu@ip-172-31-15-171:~$
```

Creating Dockerfile, Docker Build and Docker Run:

Dockerfile:

```
ubuntu@ip-172-31-15-171:~/devops-build$ cat Dockerfile
FROM nginx:alpine
COPY build/ /usr/share/nginx/html
EXPOSE 80
CMD ["nginx","-g","daemon off;"]
ubuntu@ip-172-31-15-171:~/devops-build$
```

Docker Build:

```

ubuntu@ip-172-31-15-171:~/devops-build$ docker build -t app:v1 .
DEPRECATED: The legacy builder is deprecated and will be removed
            Install the buildx component to build images with Buildx
            https://docs.docker.com/go/buildx/

Sending build context to Docker daemon  3.419MB
Step 1/4 : FROM nginx:alpine
alpine: Pulling from library/nginx
4abcf2066143: Pull complete
fc21a1d387f5: Pull complete
e6ef242c1570: Pull complete
13fcfbc94648: Pull complete
d4bca490e609: Pull complete
5406ed7b06d9: Pull complete
8a3742a9529d: Pull complete
0d0c16747d2c: Pull complete
Digest: sha256:516475cc129da42866742567714ddc681e5eed7b9ee0b9e9c0
Status: Downloaded newer image for nginx:alpine
--> 501d84f5d064
Step 2/4 : COPY build/ /usr/share/nginx/html
--> c4cf79556ab6
Step 3/4 : EXPOSE 80
--> Running in aea6aeda9629
Removing intermediate container aea6aeda9629
--> 35ced80b98de
Step 4/4 : CMD ["nginx", "-g", "daemon off;"]
--> Running in 181c7ccca2a3
Removing intermediate container 181c7ccca2a3
--> d1e377174fae

```

```

Step 4/4 : CMD ["nginx", "-g", "daemon off;"]
--> Running in 181c7ccca2a3
Removing intermediate container 181c7ccca2a3
--> d1e377174fae
Successfully built d1e377174fae
Successfully tagged app:v1

```

### Docker Run:

```

ubuntu@ip-172-31-15-171:~/devops-build$ docker run -d -it -p 80:80 app:v1
d15f3ca969884b07b0c25fb2ac5f78b4de51a8ace139688dbdd6196ab83bb8d7

```

### Docker image Name:

```

ubuntu@ip-172-31-15-171:~/devops-build$ docker images

```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
app	v1	d1e377174fae	2 minutes ago	50.9MB
nginx	alpine	501d84f5d064	3 days ago	48.3MB

```

ubuntu@ip-172-31-15-171:~/devops-build$

```

### Running Docker Image in Port 80 HTTP:

**Inbound rules** [Info](#)

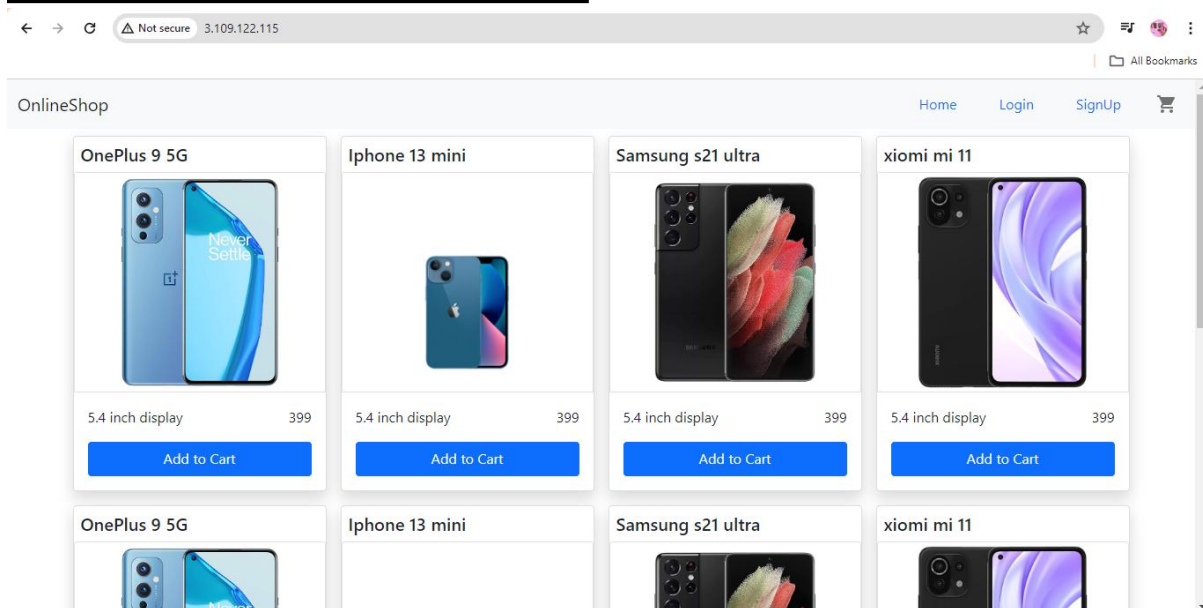
Security group rule ID	Type	Protocol	Port range	Source	Description - optional	
sgr-0b2d42648d2412654	SSH	TCP	22	Cust...		Delete
-	HTTP	TCP	80	Any...	0.0.0.0/0	Delete

[Add rule](#)

Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Preview changes](#) [Save rules](#)

## React Application output in port 80 HTTP:



## Creating docker-compose file for the above image:

```
ubuntu@ip-172-31-15-171:~/devops-build$ cat docker-compose.yml
version: '3'
services:
  app:
    image: app:v1
    ports:
      - "80:80"
    container_name: test
ubuntu@ip-172-31-15-171:~/devops-build$
```

## 3.Bash Scripts:

### Build.sh for building docker images:



```

ubuntu@ip-172-31-15-171:~/devops-build$ vi build.sh
ubuntu@ip-172-31-15-171:~/devops-build$ chmod +X build.sh
ubuntu@ip-172-31-15-171:~/devops-build$ sh build.sh
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
             Install the buildx component to build images with BuildKit:
             https://docs.docker.com/go/buildx/

Sending build context to Docker daemon  3.421MB
Step 1/4 : FROM nginx:alpine
--> 501d84f5d064
Step 2/4 : COPY build/ /usr/share/nginx/html
--> Using cache
--> c4cf79556ab6
Step 3/4 : EXPOSE 80
--> Using cache
--> 35ced80b98de
Step 4/4 : CMD ["nginx","-g","daemon off;"]
--> Using cache
--> d1e377174fae
Successfully built d1e377174fae
Successfully tagged app:v1
Docker image app:v1 built successfully.
ubuntu@ip-172-31-15-171:~/devops-build$

```

#### deploy.sh for deploying the image to the server:

```

ubuntu@ip-172-31-15-171:~/devops-build$ sh deploy.sh
The push refers to repository [docker.io/sharufdock/dev]
cfbec7f2b4f6: Pushed
ce495f7b0b7d: Mounted from library/nginx
9c70f446f6e2: Mounted from library/nginx
5be225e16e44: Mounted from library/nginx
3d04ead9b400: Mounted from library/nginx
af5598fef05f: Mounted from library/nginx
8fbd5a835e5e: Mounted from library/nginx
75061be64847: Mounted from library/nginx
d4fc045c9e3a: Mounted from library/nginx
appv1: digest: sha256:3970421ae44de84bdf5ba985f8d6ca8b30f31c8984fcf2a930d84aef806b9e02 size: 2199
The push refers to repository [docker.io/sharufdock/prod]
cfbec7f2b4f6: Mounted from sharufdock/dev
ce495f7b0b7d: Mounted from sharufdock/dev
9c70f446f6e2: Mounted from sharufdock/dev
5be225e16e44: Mounted from sharufdock/dev
3d04ead9b400: Mounted from sharufdock/dev
af5598fef05f: Mounted from sharufdock/dev
8fbd5a835e5e: Mounted from sharufdock/dev
75061be64847: Mounted from sharufdock/dev
d4fc045c9e3a: Mounted from sharufdock/dev
appv1: digest: sha256:3970421ae44de84bdf5ba985f8d6ca8b30f31c8984fcf2a930d84aef806b9e02 size: 2199
ubuntu@ip-172-31-15-171:~/devops-build$

```

#### 4.Version Control:

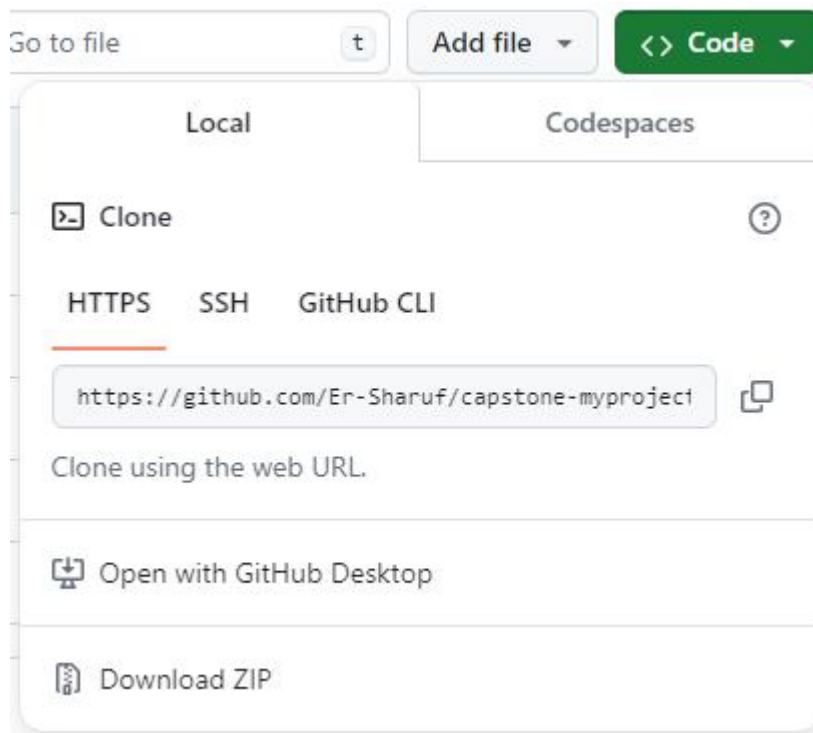
##### Creating a github repo and cloning the repo:

Type
Language
Sort
New

capstone-myproject
Public
Star

HTML Updated 4 minutes ago

##### Copying the repo URL from github:



### Preparing for Git Environment:

```
ubuntu@ip-172-31-15-171:~/capstone$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
```

```
ubuntu@ip-172-31-15-171:~/capstone$ git add .
ubuntu@ip-172-31-15-171:~/capstone$ git commit -m "commit"
[master (root-commit) 91e9edb] commit
  Committer: Ubuntu <ubuntu@ip-172-31-15-171.ap-south-1.compute.amazonaws.com>
  Your name and email address were configured automatically based on your username and hostname. Please check that they are accurate. You can suppress this message by setting them explicitly. Run the following command and follow the instructions in your editor to edit your configuration file:
```

```
    git config --global --edit
```

After doing this, you may fix the identity used for this commit:

```
    git commit --amend --reset-author
```

```
19 files changed, 209 insertions(+)
create mode 100644 Dockerfile
create mode 100644 build.sh
create mode 100644 build/_redirects
create mode 100644 build/asset-manifest.json
create mode 100644 build/favicon.ico
create mode 100644 build/index.html
create mode 100644 build/logo192.png
create mode 100644 build/logo512.png
create mode 100644 build/manifest.json
create mode 100644 build/robots.txt
create mode 100644 build/static/css/main.cf5c13c5.css
create mode 100644 build/static/css/main.cf5c13c5.css.map
```

```
create mode 100644 build/robots.txt
create mode 100644 build/static/css/main.cf5c13c5.css
create mode 100644 build/static/css/main.cf5c13c5.css.map
create mode 100644 build/static/js/787.2f5360e2.chunk.js
create mode 100644 build/static/js/787.2f5360e2.chunk.js.map
create mode 100644 build/static/js/main.f1c48542.js
create mode 100644 build/static/js/main.f1c48542.js.LICENSE.txt
create mode 100644 build/static/js/main.f1c48542.js.map
create mode 100644 deploy.sh
create mode 100644 docker-compose.yml
```

#### **Adding the github repo URL and moving to dev branch:**

```
ubuntu@ip-172-31-15-171:~/capstone$ git remote add origin https://github.com/Er-Sharuf/capstone-myproject.git
ubuntu@ip-172-31-15-171:~/capstone$ git checkout -b dev
Switched to a new branch 'dev'
```

#### **Doing Git add, Git commit & Git push and pushing the code to Dev branch:**




```

ubuntu@ip-172-31-15-171:~/capstone$ git add .
ubuntu@ip-172-31-15-171:~/capstone$ git commit -m "push the code"
On branch dev
nothing to commit, working tree clean
ubuntu@ip-172-31-15-171:~/capstone$ git push origin dev
Username for 'https://github.com': devopsguy
Password for 'https://devopsguy@github.com':
Enumerating objects: 25, done.
Counting objects: 100% (25/25), done.
Compressing objects: 100% (24/24), done.
Writing objects: 100% (25/25), 720.30 KiB | 4.59 MiB/s, done.
Total 25 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Er-Sharuf/capstone-myproject.git
 * [new branch]      dev -> dev

```


### New Branch dev using CLI created in github:


capstone-myproject
Public
Pin
Unwatch 1

dev
1 Branch
0 Tags
Go to file
Add file
Code

Ubuntu commit		91e9edb · 26 minutes ago	1 Commits
build	commit	26 minutes ago	
Dockerfile	commit	26 minutes ago	
build.sh	commit	26 minutes ago	
deploy.sh	commit	26 minutes ago	
docker-compose.yml	commit	26 minutes ago	

### Code Files in Git Hub in dev branch:


capstone-myproject
Public
Pin
Unwatch 1

dev
1 Branch
0 Tags
Go to file
Add file
Code

Ubuntu commit		91e9edb · 2 hours ago	1 Commits
build	commit	2 hours ago	
Dockerfile	commit	2 hours ago	
build.sh	commit	2 hours ago	
deploy.sh	commit	2 hours ago	
docker-compose.yml	commit	2 hours ago	

▼ 4 Dockerfile

... @@ -0,0 +1,4 @@

1 + FROM nginx:alpine

2 + COPY build/ /usr/share/nginx/html

3 + EXPOSE 80

4 + CMD ["nginx","-g","daemon off;"]

▼ 17 build.sh

... @@ -0,0 +1,17 @@

1 + #!/bin/bash

2 +

3 + # Define variables

4 + DOCKER\_IMAGE\_NAME="app"

5 + DOCKER\_IMAGE\_TAG="v1"

6 +

7 + # Build the Docker image

8 + docker build -t "\${DOCKER\_IMAGE\_NAME}:\${DOCKER\_IMAGE\_TAG}" .

9 +

10 + # Check if the build was successful

11 + if [ \$? -eq 0 ]; then

12 + echo "Docker image \${DOCKER\_IMAGE\_NAME}:\${DOCKER\_IMAGE\_TAG} built successfully."

13 + else

14 + echo "Failed to build Docker image \${DOCKER\_IMAGE\_NAME}:\${DOCKER\_IMAGE\_TAG}."

15 + exit 1

16 + fi

17 +



▼ 1 ■■■■■ build/\_redirects

...    ...    @@ -0,0 +1 @@

1 + /\* /index.html 200

⊖

▼ 15 ■■■■■ build/asset-manifest.json

...    ...    @@ -0,0 +1,15 @@

1 + {

2 +    "files": {

3 +      "main.css": "/static/css/main.cf5c13c5.css",

4 +      "main.js": "/static/js/main.f1c48542.js",

5 +      "static/js/787.2f5360e2.chunk.js": "/static/js/787.2f5360e2.chunk.js",

6 +      "index.html": "/index.html",

7 +      "main.cf5c13c5.css.map": "/static/css/main.cf5c13c5.css.map",

8 +      "main.f1c48542.js.map": "/static/js/main.f1c48542.js.map",

9 +      "787.2f5360e2.chunk.js.map": "/static/js/787.2f5360e2.chunk.js.map"

10 +    },

11 +    "entrypoints": [

12 +      "static/css/main.cf5c13c5.css",

13 +      "static/js/main.f1c48542.js"

14 +    ]

15 + }

⊖

▼ BIN +3.78 KB build/favicon.ico

...

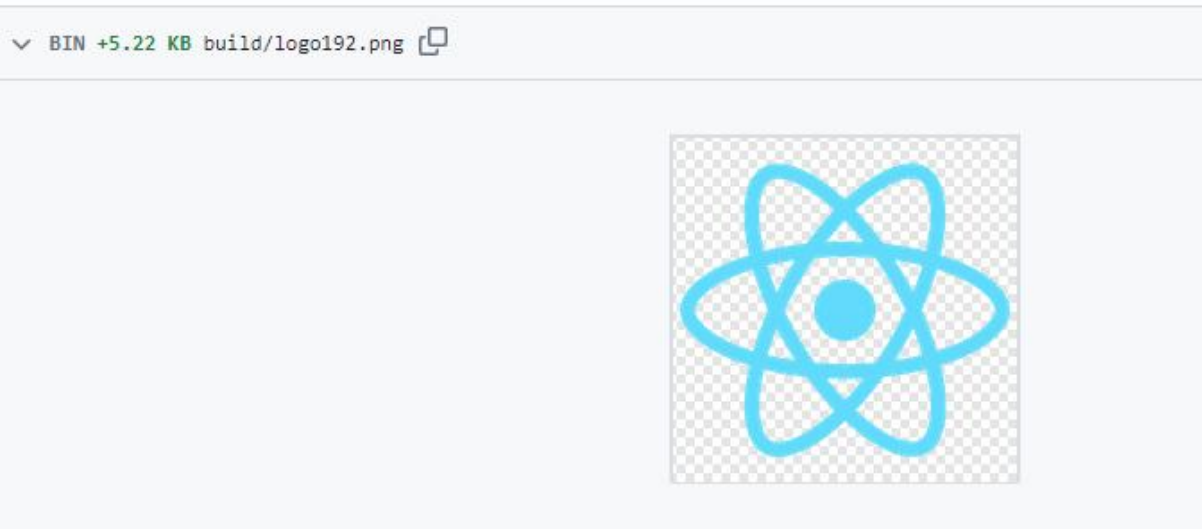
Binary file not shown.

▼ 1 ■■■■■ build/index.html

...    ...    @@ -0,0 +1 @@

1 + <!doctype html><html lang="en"><head><meta charset="utf-8"><link rel="icon" href="/favicon.ico"/><meta name="viewport" content="width=device-width,initial-scale=1"/><meta name="theme-color" content="#000000"/><meta name="description" content="Web site created using create-react-app"/><link rel="apple-touch-icon" href="/logo192.png"/><link rel="manifest" href="/manifest.json"/><link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-1BmE4kWBq78iYhF1dvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3" crossorigin="anonymous"/><link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.10.5/font/bootstrap-icons.css"><title>React App</title><script defer="defer" src="/static/js/main.f1c48542.js"></script><link href="/static/css/main.cf5c13c5.css" rel="stylesheet"></head><body><noscript>You need to enable JavaScript to run this app.</noscript><div id="root"></div></body></html>

⊖



▼ 5 deploy.sh

```
...    @@ -0,0 +1,5 @@
1 + docker tag app:v1 sharufdock/dev:appv1
2 + docker tag app:v1 sharufdock/prod:appv1
3 + docker push sharufdock/dev:appv1
4 + docker push sharufdock/prod:appv1
5 +
```

▼ 7 docker-compose.yml

```
...    @@ -0,0 +1,7 @@
1 + version: '3'
2 + services:
3 +   app:
4 +     image: app:v1
5 +     ports:
6 +       - "80:80"
7 +     container_name: test
```

## 5.Docker Hub:

### Creating 2 repos Prod as private and Dev as public in dockerhub:

sharufdock Search by repository name All Content Create repository

sharufdock / prod	Security unknown	0	0	Private
Contains: Image • Last pushed: 39 minutes ago				
sharufdock / dev	Security unknown	0	0	Public
Contains: Image • Last pushed: 39 minutes ago				

## 6.Jenkins:

### Installation Jenkins and opening the official page for jenkins:

```
ubuntu@ip-172-31-15-171:~$ java --version
openjdk 11.0.23 2024-04-16
OpenJDK Runtime Environment (build 11.0.23+9-post-Ubuntu-1ubuntu1)
OpenJDK 64-Bit Server VM (build 11.0.23+9-post-Ubuntu-1ubuntu1, mixed mode, sharing)
ubuntu@ip-172-31-15-171:~$ jenkins --version
2.456
ubuntu@ip-172-31-15-171:~$ █
```

### Official Page of Jenkins using the ip address:

⚠ Not secure 3.109.122.115:8080/login?from=%2F

Getting Started

## Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log ([not sure where to find it?](#)) and this file on the server:

```
/var/lib/jenkins/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

Administrator password

Continue

### Setting up Jenkins:

Getting Started

Getting Started

✓ Folders	OWASP Markup Formatter	Build Timeout	Credentials binding	2012-01-15 API
Timestampers	Workspace Cleanup	Ant	Gradle	Folders
Pipeline	GitHub Branch Source	Pipeline: GitHub Groovy Libraries	Pipeline Graph View	OWASP Markup Formatter
Git	SSH Build Agents	Matrix Authorization Strategy	PAM Authentication	** ASM API
LDAP	Email Extension	Mailer	Dark Theme	** JSON Path API
				** Structs
				** Pipeline: Step API
				** Token Macro
				Build Timeout

\*\* - required dependency

Jenkins 2.456

⚠ Not secure 3.109.122.115:8080

Getting Started

Jenkins is ready!

Your Jenkins setup is complete.

Start using Jenkins

Setting a new project:



## New Item

Enter an item name

myprojectcapstone

Select an item type



### Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.



### Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



### Multi-configuration project

OK

## Adding Github repo URL and linking with jenkins:

### Source Code Management



None



Git ?

#### Repositories ?

Repository URL ?

https://github.com/Er-Sharuf/capstone-myproject.git

Credentials ?

- none -

+ Add ▼

Branches to build ?

Branch Specifier (blank for 'any') ?

\*/master and \*/dev

### Auto build trigger through Poll SCM:

#### Build Triggers

- ☐ Trigger builds remotely (e.g., from scripts) ?
- ☐ Build after other projects are built ?
- ☐ Build periodically ?
- ☒ GitHub hook trigger for GITScm polling ?
- ☐ Poll SCM ?

### Adding WebHook in GitHub Repository:

## Webhooks / Add webhook

We'll send a POST request to the URL below with details of any subscribed events. You can also specify which data format you'd like to receive (JSON, x-www-form-urlencoded, etc). More information can be found in [our developer documentation](#).

Payload URL \*

`http://3.109.122.115:8080/job/myprojectcapstone`

Content type

`application/json`

Secret

Which events would you like to trigger this webhook?

- ☒ Just the push event.
- ☐ Send me everything.

## Checking the console output in jenkins:



### Console Output



```
Started by an SCM change
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/myprojectcapstone
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/myprojectcapstone/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Er-Sharuf/capstone-myproject.git # timeout=10
Fetching upstream changes from https://github.com/Er-Sharuf/capstone-myproject.git
> git --version # timeout=10
> git --version # 'git version 2.43.0'
> git fetch --tags --force --progress -- https://github.com/Er-Sharuf/capstone-myproject.git
+refs/heads/*:refs/remotes/origin/* # timeout=10
Seen branch in repository origin/dev
Seen 1 remote branch
> git show-ref --tags -d # timeout=10
Checking out Revision 52b97f080def1181eb502f62d3536746ba834781 (origin/dev)
> git config core.sparsecheckout # timeout=10
> git checkout -f 52b97f080def1181eb502f62d3536746ba834781 # timeout=10
Commit message: "Create code push"
> git rev-list --no-walk 91e9edbc6ecd142eb6f51fc1f74a0a59bd89d13f # timeout=10
Finished: SUCCESS
```

### **Pushing the image to the Docker hub Repo:**

sharufdock / [Repositories](#) / [prod](#) / [Tags](#)

---


General **Tags** Builds Collaborators Webhooks Settings

---

☐ Sort by Newest

☐

TAG

 [appv1](#)

Last pushed 15 hours ago by [sharufdock](#)

Digest	OS/ARCH
<a href="#">3970421ae44d</a>	linux/amd64

sharufdock / [Repositories](#) / [dev](#) / [Tags](#)

---


General **Tags** Builds Collaborators Webhooks Settings

---

☐ Sort by Newest

☐

TAG

 [appv1](#)

Last pushed 15 hours ago by [sharufdock](#)

Digest	OS/ARCH
<a href="#">3970421ae44d</a>	linux/amd64

**Setup a monitoring system to check the health status of the application. (open-source):**

**Installing Prometheus:**



```

ubuntu@ip-172-31-15-171:~/capstone$ curl -LO https://github.com/prometheus/prometheus/releases/download/v2.22.0/prometheus-2.22.0.linux-amd64.tar
.gz
tar -xvf prometheus-2.22.0.linux-amd64.tar.gz
mv prometheus-2.22.0.linux-amd64 prometheus-files
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
  0     0    0     0    0     0     0     0     0  0:00:00  0:00:00  0:00:00     0
100 61.3M 100 61.3M    0     0  9.9M    0  0:00:06  0:00:06  0:00:00 12.8M
prometheus-2.22.0.linux-amd64/
prometheus-2.22.0.linux-amd64/NOTICE
prometheus-2.22.0.linux-amd64/prometheus
prometheus-2.22.0.linux-amd64/consoles/
prometheus-2.22.0.linux-amd64/consoles/node-cpu.html
prometheus-2.22.0.linux-amd64/consoles/prometheus-overview.html
prometheus-2.22.0.linux-amd64/consoles/node.html
prometheus-2.22.0.linux-amd64/consoles/node-overview.html
prometheus-2.22.0.linux-amd64/consoles/index.html.example
prometheus-2.22.0.linux-amd64/consoles/prometheus.html
prometheus-2.22.0.linux-amd64/consoles/node-disk.html
prometheus-2.22.0.linux-amd64/console_libraries/
prometheus-2.22.0.linux-amd64/console_libraries/prom.lib
prometheus-2.22.0.linux-amd64/console_libraries/menu.lib
prometheus-2.22.0.linux-amd64/promtool
prometheus-2.22.0.linux-amd64/LICENSE
prometheus-2.22.0.linux-amd64/prometheus.yml
ubuntu@ip-172-31-15-171:~/capstone$

```

## Create a Prometheus user, required directories, and make Prometheus the user as the owner of those directories:

```

ubuntu@ip-172-31-15-171:~/capstone$ sudo useradd --no-create-home --shell /bin/false prometheus
ubuntu@ip-172-31-15-171:~/capstone$ sudo mkdir /etc/prometheus
ubuntu@ip-172-31-15-171:~/capstone$ ls
Dockerfile  build  build.sh  deploy.sh  docker-compose.yml  prometheus-2.22.0.linux-amd64.tar.gz  prometheus-files
ubuntu@ip-172-31-15-171:~/capstone$ sudo mkdir /var/lib/prometheus
ubuntu@ip-172-31-15-171:~/capstone$ sudo chown prometheus:prometheus /etc/prometheus
ubuntu@ip-172-31-15-171:~/capstone$ sudo chown prometheus:prometheus /var/lib/prometheus
ubuntu@ip-172-31-15-171:~/capstone$ ls
Dockerfile  build  build.sh  deploy.sh  docker-compose.yml  prometheus-2.22.0.linux-amd64.tar.gz  prometheus-files
ubuntu@ip-172-31-15-171:~/capstone$

```

## Copy prometheus and promtool binary from prometheus-files folder to /usr/local/bin and change the ownership to prometheus user:

```

ubuntu@ip-172-31-15-171:~/capstone$ sudo cp prometheus-files/prometheus /usr/local/bin/
ubuntu@ip-172-31-15-171:~/capstone$ sudo cp prometheus-files/promtool /usr/local/bin/
ubuntu@ip-172-31-15-171:~/capstone$ sudo chown prometheus:prometheus /usr/local/bin/prometheus
ubuntu@ip-172-31-15-171:~/capstone$ sudo chown prometheus:prometheus /usr/local/bin/promtool

```

## Move the consoles and console libraries directories from prometheus-files to /etc/prometheus folder and change the ownership to prometheus user:

```

ubuntu@ip-172-31-15-171:~/capstone$ sudo cp -r prometheus-files/consoles /etc/prometheus
ubuntu@ip-172-31-15-171:~/capstone$ sudo cp -r prometheus-files/console_libraries /etc/prometheus
ubuntu@ip-172-31-15-171:~/capstone$ sudo chown -R prometheus:prometheus /etc/prometheus/consoles
ubuntu@ip-172-31-15-171:~/capstone$ sudo chown -R prometheus:prometheus /etc/prometheus/console_libraries
ubuntu@ip-172-31-15-171:~/capstone$

```

## Setup Prometheus Configuration:

### Creating the prometheus.yml file:

```

ubuntu@ip-172-31-15-171:~/capstone$ touch prometheus.yml
ubuntu@ip-172-31-15-171:~/capstone$ ls
Dockerfile  build  build.sh  deploy.sh  docker-compose.yml  prometheus-2.22.0.linux-amd64.tar.gz  prometheus-files  prometheus.yml
ubuntu@ip-172-31-15-171:~/capstone$

```

```

global:
  scrape_interval: 10s

scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 5s
    static_configs:
      - targets: ['localhost:9090']

```

### Changing the ownership of the file to prometheus user:

```

ubuntu@ip-172-31-15-171:~/capstone$ sudo chown prometheus:prometheus /etc/prometheus/prometheus.yml
ubuntu@ip-172-31-15-171:~/capstone$ ls -l /etc/prometheus/prometheus.yml
-rw-r--r-- 1 prometheus prometheus 156 May  8 06:14 /etc/prometheus/prometheus.yml
ubuntu@ip-172-31-15-171:~/capstone$

```

### Setting up Prometheus Service File:

#### Creating a prometheus service file:

```

[Unit]
Description=Prometheus
Wants=network-online.target
After=network-online.target

[Service]
User=prometheus
Group=prometheus
Type=simple
ExecStart=/usr/local/bin/prometheus \
  --config.file /etc/prometheus/prometheus.yml \
  --storage.tsdb.path /var/lib/prometheus/ \
  --web.console.templates=/etc/prometheus/consoles \
  --web.console.libraries=/etc/prometheus/console_libraries

[Install]
WantedBy=multi-user.target

```

### Reload the systemd service to register the prometheus service and start the prometheus service: