Hacker Rank - Proactive DevOps Engineer - Fabian Alejandro Rodriguez Peñuela

1. **Installation tools**
    a. Create docker images with necessary components
        i. docker-images/jenkins-master-node.dockerfile
        ii. docker-images/jenkins-linux-node.dockerfile

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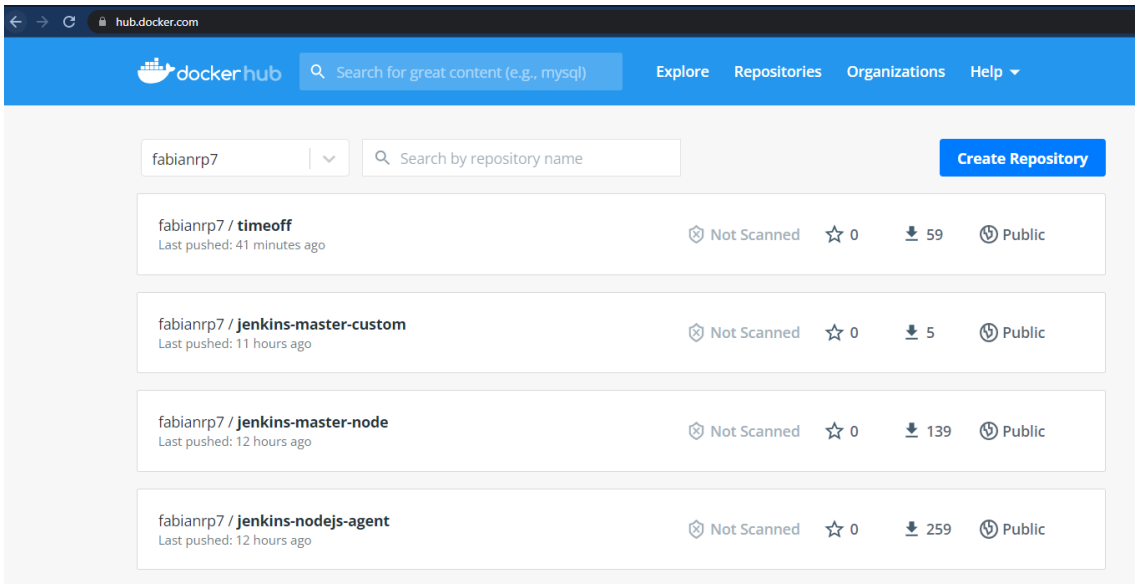
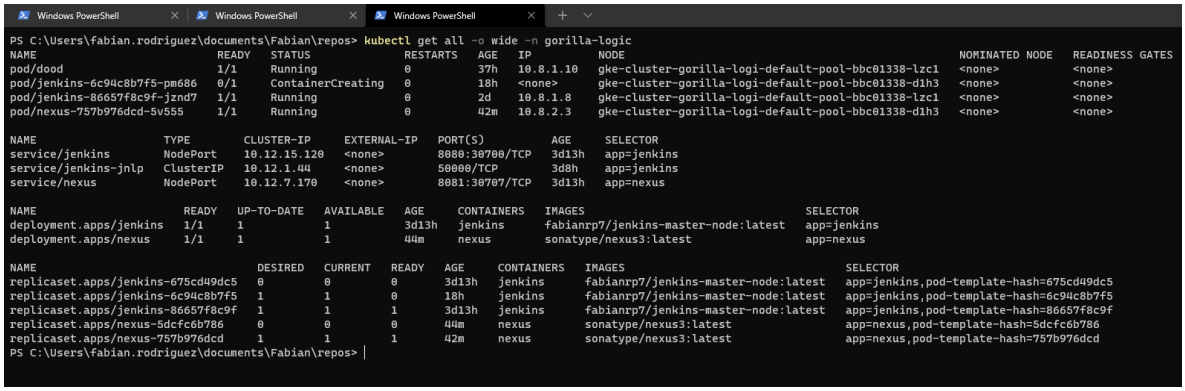
jenkins-master-node.dockerfile U ×
docker > jenkins-master-node.dockerfile
22  RUN /usr/local/bin/install-plugins.sh ws-cleanup
23  RUN /usr/local/bin/install-plugins.sh remote-file
24  RUN /usr/local/bin/install-plugins.sh kiuwanJenkinsPlugin
25  RUN /usr/local/bin/install-plugins.sh sonar
26
27  # Plugins for better UX (not mandatory)
28  RUN /usr/local/bin/install-plugins.sh ansicolor
29  RUN /usr/local/bin/install-plugins.sh greenballs
30
31  # Plugin for scaling Jenkins agents
32  RUN /usr/local/bin/install-plugins.sh kubernetes
33
34
35  #nodejs and tools
36  RUN apt update -y
37  RUN apt-get install curl -y
38  RUN apt install zip -y
39  RUN apt install unzip -y
40  RUN apt install tar -y
41  RUN curl -sL https://deb.nodesource.com/setup_14.x | bash -
42  RUN apt-get install -y nodejs
43
44  #kubernetes
45  RUN  apt-get update &&  apt-get install -y apt-transport-https gnupg2 curl
46  RUN  curl -s https://packages.cloud.google.com/apt/doc/apt-key.gpg |  apt-key add -
47  RUN  echo "deb https://apt.kubernetes.io/ kubernetes-xenial main" |  tee -a /etc/apt/sources.list.d/kubernetes.list
48  RUN  apt-get update
49  RUN  apt-get install -y kubectl
50  RUN mkdir /root/.kube
51  # COPY config /root/.kube/
52  COPY .npmrc /root/
53
54  #install gcp
55  RUN echo "deb [signed-by=/usr/share/keyrings/cloud.google.gpg] https://packages.cloud.google.com/apt cloud-sdk main" | tee -a /etc/apt/sources.list.d/google-cloud-sdk.list
56  RUN apt-get install apt-transport-https ca-certificates gnupg
57  RUN curl https://packages.cloud.google.com/apt/doc/apt-key.gpg | apt-key --keyring /usr/share/keyrings/cloud.google.gpg add -
58  RUN apt-get update && apt-get install google-cloud-sdk
59
60  #USER jenkins
```

    b. Build and publish images



c. Deploy Jenkins, nexus and Docker In Docker, in Kubernetes
   i. k8s-deplyments/docker-in-docker-deployment.yaml
   ii. k8s-deplyments/jenkins-deployment.yaml
   iii. k8s-deplyments/nexus-deployment.yaml



```
Windows PowerShell | Windows PowerShell | Windows PowerShell

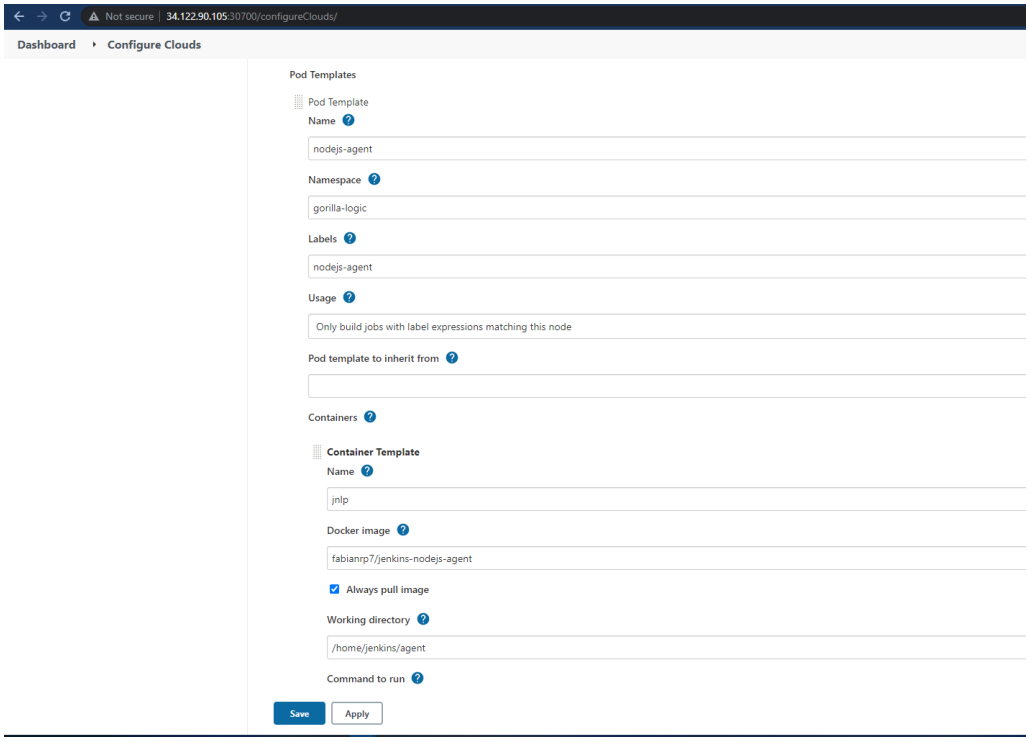
PS C:\Users\fabian.rodriguez\documents\Fabian\repos> kubectl get all -o wide -n gorilla-logic
NAME                          READY   STATUS              RESTARTS   AGE   IP          NODE                                                NOMINATED NODE   READINESS GATES
pod/dood                      1/1     Running             0          37h   10.8.1.10   gke-cluster-gorilla-logi-default-pool-bbc01338-lzc1   <none>           <none>
pod/jenkins-6c94c8b7f5-pm686  0/1     ContainerCreating   0          18h   <none>      gke-cluster-gorilla-logi-default-pool-bbc01338-d1h3   <none>           <none>
pod/jenkins-86657f8c9f-jznd7  1/1     Running             0          2d    10.8.1.8    gke-cluster-gorilla-logi-default-pool-bbc01338-lzc1   <none>           <none>
pod/nexus-757b976dcd-5v555    1/1     Running             0          42m   10.8.2.3    gke-cluster-gorilla-logi-default-pool-bbc01338-d1h3   <none>           <none>

NAME                 TYPE        CLUSTER-IP     EXTERNAL-IP   PORT(S)          AGE     SELECTOR
service/jenkins      NodePort    10.12.15.120   <none>        8080:30700/TCP   3d13h   app=jenkins
service/jenkins-jnlp ClusterIP   10.12.1.44     <none>        50000/TCP        3d8h    app=jenkins
service/nexus        NodePort    10.12.7.170    <none>        8081:30707/TCP   3d13h   app=nexus

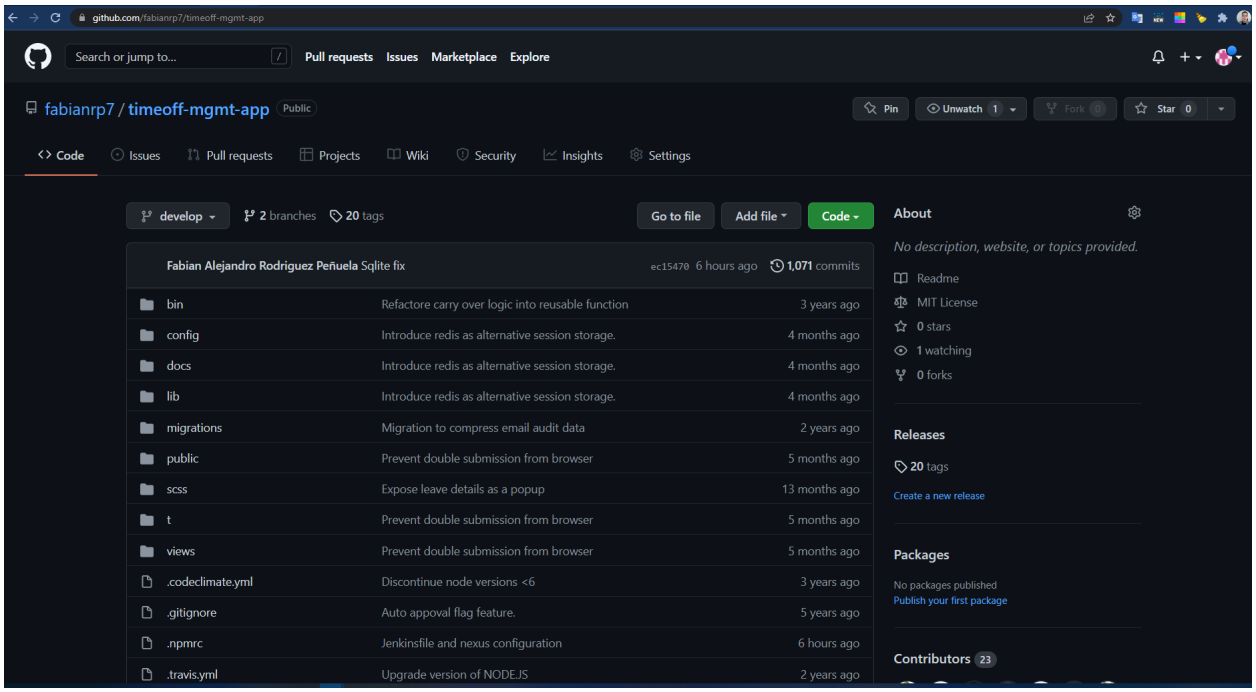
NAME                     READY   UP-TO-DATE   AVAILABLE   AGE     CONTAINERS   IMAGES                                SELECTOR
deployment.apps/jenkins  1/1     1            1           3d13h   jenkins      fabianrp7/jenkins-master-node:latest  app=jenkins
deployment.apps/nexus    1/1     1            1           44m     nexus        sonatype/nexus3:latest                app=nexus

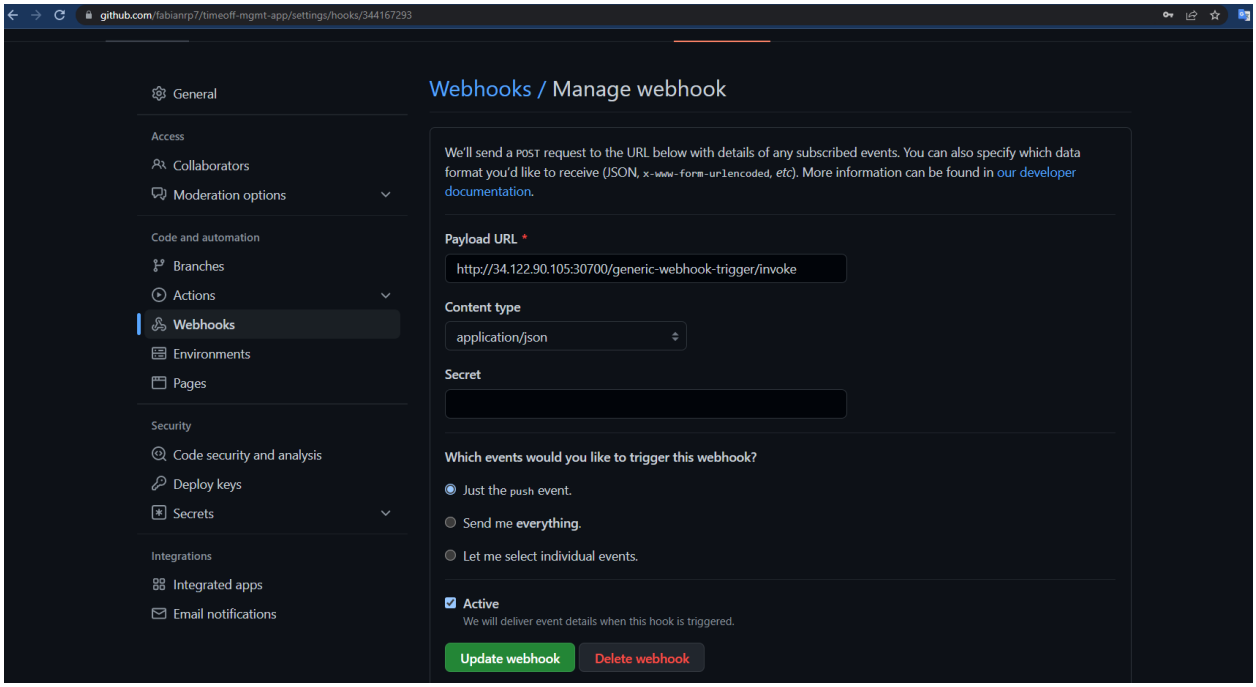
NAME                                DESIRED   CURRENT   READY   AGE     CONTAINERS   IMAGES                                SELECTOR
replicaset.apps/jenkins-675cd49dc5  0         0         0       3d13h   jenkins      fabianrp7/jenkins-master-node:latest  app=jenkins,pod-template-hash=675cd49dc5
replicaset.apps/jenkins-6c94c8b7f5  1         1         0       18h     jenkins      fabianrp7/jenkins-master-node:latest  app=jenkins,pod-template-hash=6c94c8b7f5
replicaset.apps/jenkins-86657f8c9f  1         1         1       3d13h   jenkins      fabianrp7/jenkins-master-node:latest  app=jenkins,pod-template-hash=86657f8c9f
replicaset.apps/nexus-5dcfc6b786    0         0         0       44m     nexus        sonatype/nexus3:latest                app=nexus,pod-template-hash=5dcfc6b786
replicaset.apps/nexus-757b976dcd    1         1         1       42m     nexus        sonatype/nexus3:latest                app=nexus,pod-template-hash=757b976dcd
PS C:\Users\fabian.rodriguez\documents\Fabian\repos>
```

d. Jenkins kubernetes cloud and nodejs-agent configuration

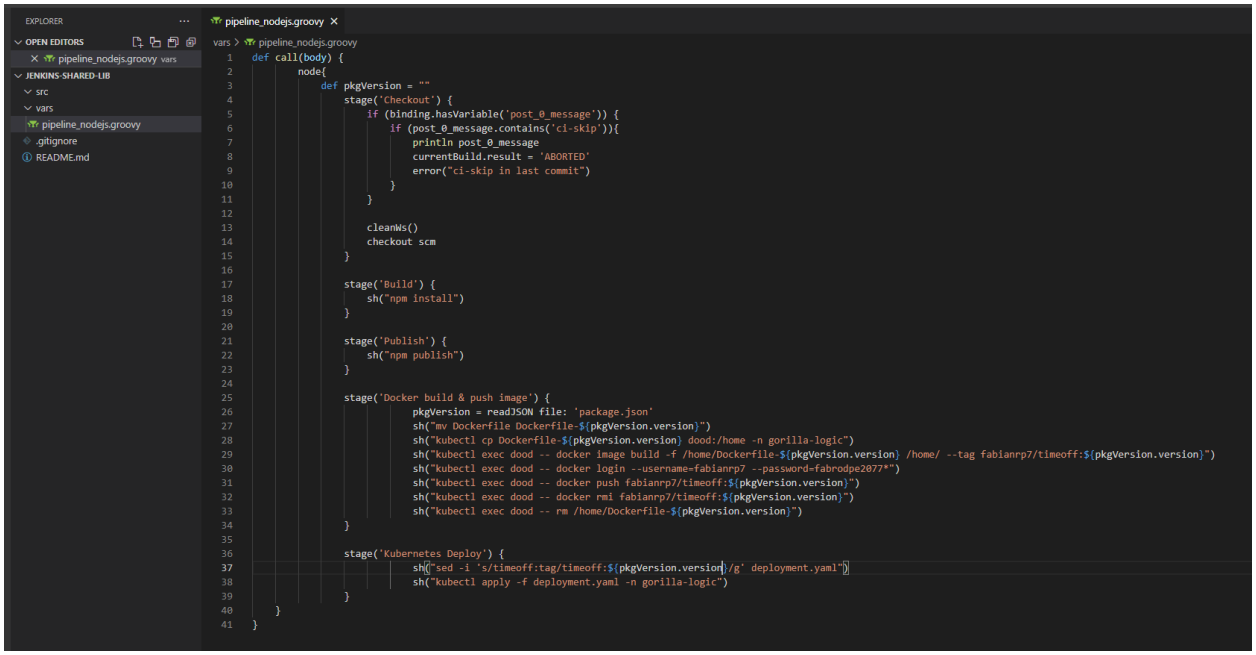


e. Repo https://github.com/fabianrp7/timeoff-mgmt-app (Webhook configuration)

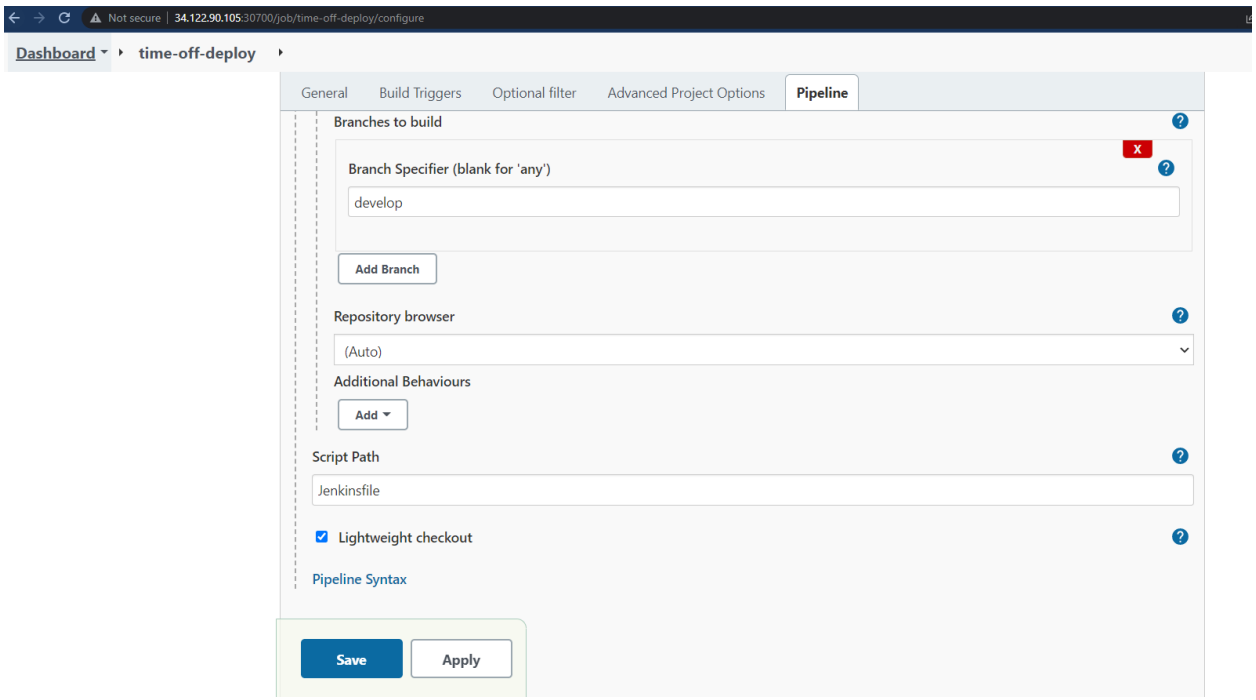




f. Jenkins shared lib creation https://github.com/fabianrp7/jenkins-shared-lib



g. Jenkins pipeline creation



GCP require authentication of user through web browser, from each machine that use a config file to connect to GCP clusters, based on that, I decided to use the master node to run the pipeline instead of on-demand nodejs-agent