```
Report
```

My repo with code <a href="https://github.com/Mykhailo-Teliatnikov/testing-test/tree/main">https://github.com/Mykhailo-Teliatnikov/testing-test/tree/main</a>

I created EKS cluster cloned repo to aws cloud shell

git clone https://github.com/Mykhailo-Teliatnikov/testing-test.git

Created nodegroup

Installed tekton

```
kubectl apply --filename https://storage.googleapis.com/tekton-
releases/pipeline/latest/release.yaml
```

Installed tekton Cli

```
curl -LO
https://github.com/tektoncd/cli/releases/download/v0.31.1/tkn_0.31.1_Linux_x8
6_64.tar.gz
sudo tar xvzf tkn 0.31.1 Linux x86 64.tar.gz -C /usr/local/bin/ tkn
```

Run a few command for automate process of managing ebs

actions for auto manage ebs

eksctl create iamserviceaccount \

- --name ebs-csi-controller-sa \
- --namespace kube-system \
- --cluster my-testing-task \
- --attach-policy-arn arn:aws:iam::aws:policy/service-role/AmazonEBSCSIDriverPolicy \
- --approve \
- --role-only \
- --role-name AmazonEKS\_EBS\_CSI\_DriverRole

eksctl create addon --name aws-ebs-csi-driver --cluster my-testing-task --service-account-role-arn arn:aws:iam::\$(aws sts get-caller-identity --query Account --output text):role/AmazonEKS\_EBS\_CSI\_DriverRole --force

```
(Cloudshell-user@ip-10-6-114-106 testing-test]$ kubectl get all --all-namespace:

NAMESPACE

NAME

NAME

NAME

pod/aws-node-bzws2

pod/coredns-79df7fff65-2rwsb

pod/coredns-79df7fff65-mbbkc

pod/sube-system

pod/kube-proxy-2ftjr

tekton-pipelines-resolvers

tekton-pipelines

tekton-pipelines

pod/tekton-pipelines-controller-79855b77f7-cbj5w

pod/tekton-pipelines-webhook-7c8c96fc68-xt82m
                                                                      Numc
pod/aws-node-bzws2
pod/coredns-79df7fff65-2rwsb
pod/coredns-79df7fff65-rmbkc
pod/kube-proxy-2ftjr
pod/tekton-pipelines-remote-resolvers-6cb58b58cc-dr68w
pod/tekton-pipelines-controller-79855b77f7-cbj5w
pod/tekton-pipelines-webhook-7c8c96fc68-xt82m
                                                                                                                                                                        CLUSTER-IP
10.100.0.1
10.100.0.10
10.100.26.79
10.100.36.48
                                                                                                                                                                                                                                                PORT(S)
443/TCP
53/UDP,53/TCP
9990/TCP,8008/TCP,8080/TCP
9090/TCP,8008/TCP,443/TCP,8080/TCP
NAMESPACE
                                             NAME
service/kubernetes
                                                                                                                                                                                                               EXTERNAL-IP
 lefault
иеташіс
kube-system
tekton-pipelines
tekton-pipelines
                                             service/kube-dns
service/tekton-pipelines-controller
service/tekton-pipelines-webhook
                                                                                                                                           ClusterIP
ClusterIP
ClusterIP
                                                                                                                                                                                                               <none>
NAMESPACE
                                                                                                                                                                                                           AVAILABLE
1
1
                                                                                                                                                                                                                                         NODE SELECTOR
                                                                                                       DESIRED CURRENT
                                                                                                                                                        READY
                                                                                                                                                                           UP-TO-DATE
                                daemonset.apps/aws-node
daemonset.apps/kube-proxy
cube-system
cube-system
                                                                                                                                                                                                                                                                                         AGE
62m
52m
52m
52m
 IAMESPACE
                                                                                                                                                                                                                           UP-TO-DATE
                                                                                                                                                                                                                                                           AVAILABLE
NWHILFACE
kube-system
tekton-pipelines-resolvers
tekton-pipelines
tekton-pipelines
                                                                      deployment.apps/coredns
deployment.apps/tekton-pipelines-remote-resolvers
deployment.apps/tekton-pipelines-controller
deployment.apps/tekton-pipelines-webhook
                                                                                                                                                                                                                                  DESIRED
                                                                                                                                                                                                                                                           CURRENT
                                                                                                                                                                                                                                                                                    READY
NAMESPACE
 wantspace
wube-system
ekton-pipelines-resolvers
ekton-pipelines
ekton-pipelines
                                                                      nwnc
replicaset.apps/coredns-79df7fff65
replicaset.apps/tekton-pipelines-remote-resolvers-6cb58b58cc
replicaset.apps/tekton-pipelines-controller-79855b77f7
replicaset.apps/tekton-pipelines-webhook-7c8c96fc68
                                           NAME REFERENCE REFERENCE Deployment/tekton-pipelines-webhook Deployment/tekton-pipelines-webhook
                                                                                                                                                                                                                                                                                                         TARGETS <unknown>/100%
                                                                                                                                                                                                                                                                                                                                                  MINPODS MAXPODS REPLICAS
1 5 1
```

I created service account for task create-image.yaml for give access to the docker-login secret (on VM it was necessary but on eks can be skipped after modify a few lines)

After that I run creation of task, during work on run pipeline find out that task create-image.yaml doesn't work on eks obviously because docker daemon is missed so had to move to the build in solution that decribed here https://tekton.dev/docs/how-to-guides/kaniko-build-push/#full-code-samples

```
[cloudshell-user@ip-10-6-114-196 ci]$ kubectl apply -f tasks/git-clone.yaml
task.tekton.dev/git-clone-my configured
[cloudshell-user@ip-10-6-114-196 ci]$ kubectl apply -f tasks/check-files.yaml
task.tekton.dev/check-files configured
[cloudshell-user@ip-10-6-114-196 ci]$ kubectl apply -f tasks/deploy-image.yaml
task.tekton.dev/deploy-image configured
[cloudshell-user@ip-10-6-114-196 ci]$ kubectl apply -f tasks/create-image.yaml
task.tekton.dev/create-image configured
[cloudshell-user@ip-10-6-114-196 ci]$
[cloudshell-user@ip-10-6-114-196 ci]$
[cloudshell-user@ip-10-6-114-196 ci]$ kubectl apply -f run-pipeline.yaml
pipelinerun.tekton.dev/run-fast-api created
```

## Result of work pipeline

```
[cloudshell-user@ip-10-6-114-196 ci]$ kubectl apply -f run-pipeline.yaml
pipelinerun.tekton.dev/run-fast-api created
[cloudshell-user@ip-10-6-114-196 ci]$ kubectl delete -f run-pipeline.yaml
pipelinerun.tekton.dev "run-fast-api" deleted
[cloudshell-user@ip-10-6-114-196 ci]$ kubectl apply -f run-pipeline.yaml
pipelinerun.tekton.dev/run-fast-api created
[cloudshell-user@ip-10-6-114-196 ci]$ tkn pipelinerun logs run-fast-api -f
[fetch-source : check-files] Cloning into 'testing-test'...
[fetch-source : check-files] 1
[fetch-source : check-files] total 24
[fetch-source : check-files] drwxr-xr-x
                                                                          4096 Jul 5 15:01 .
                                               4 root
                                                          root
[fetch-source : check-files] drwxrwxrwx
                                                                                     5 15:01
                                                                            20 Jul
                                               3 root
                                                          root
                                                                                     5 15:01 lost+found
[fetch-source : check-files] drwx-----
                                                                         16384 Jul
                                               2 root
                                                          root
[fetch-source : check-files] drwxr-xr-x
                                                                                     5 15:01 testing-test
                                               7 root
                                                          root
[check-files : check-files] /workspace/source/testing-test/fastapi
[check-files : check-files]
                              total 16
[check-files
              : check-files] drwxr-xr-x
                                                                         4096 Jul
                                                                                   5 15:01 .
                                              2 root
[check-files
              : check-files] drwxr-xr-x
                                             7 root
                                                                         4096 Jul
                                                                                   5 15:01
                                                          root
                              -rw-r--r--
                                                          root
[check-files : check-files]
                                              1 root
                                                                          170 Jul
                                                                                   5 15:01 Dockerfile
[check-files : check-files]
                              -rw-r--r--
                                              1 root
                                                                          255 Jul 5 15:01 main.py
                                                          root
[check-files : check-files]
[check-files : check-files] FROM python:3.9.17
[check-files : check-files]
[check-files : check-files] COPY testing-test/fastapi/main.py /main.py
[check-files : check-files]
[check-files : check-files] RUN pip install fastapi "uvicorn[standard]"
[check-files
             : check-files]
[check-files : check-files] EXPOSE 8000
[check-files : check-files] WORKDIR /
```

```
[cloudshell-user@ip-10-6-114-196 ci]$ tkn pipelinerun logs run-fast-api -f
[fetch-source : check-files] Cloning into 'testing-test'...
[fetch-source : check-files] 1
[fetch-source : check-files] total 24
[fetch-source : check-files] drwxr-xr-x 4 root root
                                                          4096 Jul 5 15:01.
[fetch-source : check-files] drwxrwxrwx 3 root root
                                                             20 Jul 5 15:01 ..
[fetch-source : check-files] drwx----- 2 root root
                                                         16384 Jul 5 15:01 lost+found
[fetch-source : check-files] drwxr-xr-x 7 root root
                                                          4096 Jul 5 15:01 testing-test
[check-files : check-files] /workspace/source/testing-test/fastapi
[check-files : check-files] total 16
[check-files : check-files] drwxr-xr-x 2 root root
                                                        4096 Jul 5 15:01.
[check-files : check-files] drwxr-xr-x 7 root root
                                                        4096 Jul 5 15:01 ..
[check-files : check-files] -rw-r--r-- 1 root root
                                                       170 Jul 5 15:01 Dockerfile
[check-files : check-files] -rw-r--r-- 1 root root
                                                       255 Jul 5 15:01 main.py
[check-files : check-files] ---
[check-files : check-files] FROM python:3.9.17
[check-files : check-files]
[check-files : check-files] COPY testing-test/fastapi/main.py /main.py
[check-files : check-files]
[check-files : check-files] RUN pip install fastapi "uvicorn[standard]"
[check-files : check-files]
[check-files : check-files] EXPOSE 8000
[check-files : check-files] WORKDIR /
[check-files : check-files] CMD ["uvicorn", "main:app", "--reload"]---
[check-files : check-files] from typing import Union
[check-files : check-files] from fastapi import FastAPI
[check-files : check-files] app = FastAPI()
[check-files : check-files] @app.get("/")
[check-files: check-files] def read root():
[check-files: check-files] return {"Hello": "World"}
[check-files : check-files] @app.get("/items/{item_id}")
[check-files : check-files] def read_item(item_id: int, q: Union[str, None] = None):
[check-files: check-files] return {"item id": item id, "q": q}1
[build-push: build-and-push] INFO[0000] Retrieving image manifest python:3.9.17
[build-push: build-and-push] INFO[0000] Retrieving image python: 3.9.17 from registry index.docker.io
[build-push: build-and-push] INFO[0000] Built cross stage deps: map[]
[build-push: build-and-push] INFO[0000] Retrieving image manifest python:3.9.17
[build-push: build-and-push] INFO[0000] Returning cached image manifest
[build-push: build-and-push] INFO[0000] Executing 0 build triggers
[build-push: build-and-push] INFO[0000] Unpacking rootfs as cmd COPY testing-test/fastapi/main.py /main.py
[build-push: build-and-push] INFO[0015] COPY testing-test/fastapi/main.py /main.py
[build-push: build-and-push] INFO[0015] Taking snapshot of files...
[build-push: build-and-push] INFO[0015] RUN pip install fastapi "uvicorn[standard]"
[build-push: build-and-push] INFO[0015] Taking snapshot of full filesystem...
[build-push: build-and-push] INFO[0021] cmd: /bin/sh
[build-push: build-and-push] INFO[0021] args: [-c pip install fastapi "uvicorn[standard]"]
[build-push: build-and-push] INFO[0021] Running: [/bin/sh-c pip install fastapi "uvicorn[standard]"]
[build-push : build-and-push] Collecting fastapi
[build-push: build-and-push] Downloading fastapi-0.99.1-py3-none-any.whl (58 kB)
[build-push : build-and-push]
                - 58.4/58.4 kB 3.5 MB/s eta 0:00:00
[build-push: build-and-push] Collecting uvicorn[standard]
[build-push: build-and-push] Downloading uvicorn-0.22.0-py3-none-any.whl (58 kB)
[build-push : build-and-push]
                58.3/58.3 kB 15.4 MB/s eta 0:00:00
```

[build-push: build-and-push] Collecting pydantic!=1.8,!=1.8.1,<2.0.0,>=1.7.4

```
[build-push: build-and-push] Downloading pydantic-1.10.11-cp39-cp39-
manylinux 2 17 x86 64.manylinux2014 x86 64.whl (3.2 MB)
[build-push : build-and-push]
               - 3.2/3.2 MB 32.8 MB/s eta 0:00:00
[build-push: build-and-push] Collecting typing-extensions>=4.5.0
[build-push: build-and-push] Downloading typing_extensions-4.7.1-py3-none-any.whl (33 kB)
[build-push: build-and-push] Collecting starlette<0.28.0,>=0.27.0
[build-push: build-and-push] Downloading starlette-0.27.0-py3-none-any.whl (66 kB)
[build-push : build-and-push]
                - 67.0/67.0 kB 14.8 MB/s eta 0:00:00
[build-push: build-and-push] Collecting h11>=0.8
[build-push: build-and-push] Downloading h11-0.14.0-py3-none-any.whl (58 kB)
[build-push : build-and-push]
               - 58.3/58.3 kB 13.7 MB/s eta 0:00:00
[build-push: build-and-push] Collecting click>=7.0
[build-push: build-and-push] Downloading click-8.1.3-py3-none-any.whl (96 kB)
[build-push : build-and-push]
               - 96.6/96.6 kB 17.5 MB/s eta 0:00:00
[build-push: build-and-push] Collecting httptools>=0.5.0
[build-push: build-and-push] Downloading httptools-0.5.0-cp39-cp39-
manylinux 2 5 x86 64.manylinux1 x86 64.manylinux 2 17 x86 64.manylinux2014 x86 64.whl (417 kB)
[build-push : build-and-push]
          - 417.9/417.9 kB 26.1 MB/s eta 0:00:00
[build-push: build-and-push] Collecting pyyaml>=5.1
[build-push: build-and-push] Downloading PyYAML-6.0-cp39-cp39-
manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_12_x86_64.manylinux2010_x86_64.whl (661 kB)
[build-push : build-and-push]
          - 661.8/661.8 kB 43.8 MB/s eta 0:00:00
[build-push: build-and-push] Collecting websockets>=10.4
[build-push: build-and-push] Downloading websockets-11.0.3-cp39-cp39-
manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_17_x86_64.manylinux2014_x86_64.whl (129 kB)
[build-push : build-and-push]
           - 129.7/129.7 kB 21.8 MB/s eta 0:00:00
[build-push: build-and-push] Collecting python-dotenv>=0.13
[build-push: build-and-push] Downloading python dotenv-1.0.0-py3-none-any.whl (19 kB)
[build-push: build-and-push] Collecting uvloop!=0.15.0,!=0.15.1,>=0.14.0
[build-push: build-and-push] Downloading uvloop-0.17.0-cp39-cp39-
manylinux_2_17_x86_64.manylinux2014_x86_64.whl (4.2 MB)
[build-push : build-and-push]
               - 4.2/4.2 MB 45.8 MB/s eta 0:00:00
[build-push: build-and-push] Collecting watchfiles>=0.13
[build-push: build-and-push] Downloading watchfiles-0.19.0-cp37-abi3-
manylinux 2 17 x86 64.manylinux2014 x86 64.whl (1.3 MB)
[build-push : build-and-push]
               - 1.3/1.3 MB 30.0 MB/s eta 0:00:00
[build-push: build-and-push] Collecting anyio<5,>=3.4.0
[build-push: build-and-push] Downloading anyio-3.7.0-py3-none-any.whl (80 kB)
[build-push : build-and-push]
               - 80.9/80.9 kB 21.0 MB/s eta 0:00:00
[build-push: build-and-push] Collecting idna>=2.8
[build-push: build-and-push] Downloading idna-3.4-py3-none-any.whl (61 kB)
[build-push : build-and-push]
               - 61.5/61.5 kB 8.3 MB/s eta 0:00:00
[build-push : build-and-push] Collecting exceptiongroup
[build-push: build-and-push] Downloading exceptiongroup-1.1.2-py3-none-any.whl (14 kB)
[build-push: build-and-push] Collecting sniffio>=1.1
[build-push: build-and-push] Downloading sniffio-1.3.0-py3-none-any.whl (10 kB)
```

[build-push: build-and-push] Installing collected packages: websockets, uvloop, typing-extensions, sniffio, pyyaml, python-dotenv, idna, httptools, h11, exceptiongroup, click, uvicorn, pydantic, anyio, watchfiles, starlette, fastapi [build-push: build-and-push] Successfully installed anyio-3.7.0 click-8.1.3 exceptiongroup-1.1.2 fastapi-0.99.1 h11-0.14.0 httptools-0.5.0 idna-3.4 pydantic-1.10.11 python-dotenv-1.0.0 pyyaml-6.0 sniffio-1.3.0 starlette-0.27.0 typing-extensions-4.7.1 uvicorn-0.22.0 uvloop-0.17.0 watchfiles-0.19.0 websockets-11.0.3 [build-push: build-and-push] WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv [build-push: build-and-push] [build-push: build-and-push] [notice] A new release of pip is available: 23.0.1 -> 23.1.2 [build-push: build-and-push] [notice] To update, run: pip install --upgrade pip [build-push: build-and-push] INFO[0027] Taking snapshot of full filesystem... [build-push: build-and-push] INFO[0031] EXPOSE 8000 [build-push: build-and-push] INFO[0031] cmd: EXPOSE [build-push: build-and-push] INFO[0031] Adding exposed port: 8000/tcp [build-push: build-and-push] INFO[0031] WORKDIR / [build-push: build-and-push] INFO[0031] cmd: workdir [build-push: build-and-push] INFO[0031] Changed working directory to / [build-push: build-and-push] INFO[0031] No files changed in this command, skipping snapshotting. [build-push: build-and-push] INFO[0031] CMD ["uvicorn", "main:app", "--reload"] [build-push: build-and-push] INFO[0031] Pushing image to docker.io/krotym2/fastapi [build-push: build-and-push] INFO[0033] Pushed image to 1 destinations [build-push: write-url] docker.io/krotym2/fastapi [deploy-image : create-yaml] ---[deploy-image : create-yaml] apiVersion: apps/v1 [deploy-image : create-yaml] kind: Deployment [deploy-image : create-yaml] metadata: [deploy-image : create-yaml] name: fastapi-deployment [deploy-image : create-yaml] labels: [deploy-image : create-yaml] app: fastapi [deploy-image : create-yaml] spec: [deploy-image : create-yaml] strategy: [deploy-image : create-yaml] type: Recreate [deploy-image : create-yaml] replicas: 1 [deploy-image : create-yaml] selector: [deploy-image : create-yaml] matchLabels: [deploy-image : create-yaml] app: fastapi [deploy-image : create-yaml] template: [deploy-image : create-yaml] metadata: [deploy-image : create-yaml] labels: [deploy-image : create-yaml] app: fastapi [deploy-image : create-yaml] spec: [deploy-image : create-yaml] containers: [deploy-image : create-yaml] - name: fastapi [deploy-image : create-yaml] image: krotym2/fastapi:latest [deploy-image : create-yaml] [deploy-image : create-yaml] - containerPort: 8000 [deploy-image : create-yaml] name: fastapi [deploy-image : create-yaml] command: [ "uvicorn", "main:app", "--reload" ] [deploy-image : create-yaml] [deploy-image : create-yaml] apiVersion: v1 [deploy-image: create-yaml] kind: Service [deploy-image : create-yaml] metadata: [deploy-image : create-yaml] name: fastapi-service [deploy-image : create-yaml] spec: [deploy-image : create-yaml] selector: [deploy-image : create-yaml] app: fastapi

```
[deploy-image : create-yaml] ports:
[deploy-image : create-yaml]
                             - protocol: TCP
                               port: 80
[deploy-image : create-yaml]
[deploy-image : create-yaml]
                               targetPort: fastapi
[deploy-image : create-yaml]
                               name: fastapi
[deploy-image : create-yaml] type: NodePort---
[deploy-image : create-yaml] apiVersion: networking.k8s.io/v1
[deploy-image: create-yaml] kind: Ingress
[deploy-image : create-yaml] metadata:
[deploy-image : create-yaml] name: nginx
[deploy-image : create-yaml] spec:
[deploy-image: create-yaml] ingressClassName: nginx
[deploy-image : create-yaml] rules:
[deploy-image : create-yaml] - host: mteliatnikov.application.com
[deploy-image : create-yaml]
                              http:
[deploy-image : create-yaml]
                               paths:
[deploy-image : create-yaml]
                                - path: /
                                  pathType: Prefix
[deploy-image : create-yaml]
[deploy-image : create-yaml]
                                  backend:
[deploy-image : create-yaml]
                                   service:
[deploy-image : create-yaml]
                                    name: fastapi-service
[deploy-image : create-yaml]
                                    port:
[deploy-image : create-yaml]
                                     number: 80
[deploy-image : create-yaml] ---
[deploy-image : create-yaml] 5
[deploy-image: deploy-image] deployment.apps/fastapi-deployment created
[deploy-image: deploy-image] service/fastapi-service created
[deploy-image : deploy-image] ingress.networking.k8s.io/nginx created
[deploy-image : deploy-image] ---
[deploy-image : deploy-image] 6
```

As it showed below deployments worked but I found out that there is a problem with data that should be showed

```
[cloudshell-user@ip-10-6-114-196 kuber]$ kubectl get pod
                                       READY
                                                            RESTARTS
                                                                        AGE
                                                STATUS
                                                                        30m
fastapi-deployment-86cf8b4f68-cxh7v
                                       1/1
                                                Running
                                                            0
run-fast-api-build-push-pod
                                       0/2
                                                Completed
                                                            0
                                                                        31m
run-fast-api-check-files-pod
                                                Completed
                                                                        31m
                                       0/1
                                                            0
run-fast-api-deploy-image-pod
                                                                        30m
                                       0/2
                                                Completed
                                                            0
run-fast-api-fetch-source-pod
                                       0/1
                                                Completed
                                                                        31m
[cloudshell-user@ip-10-6-114-196 kuber]$ kubectl get svc
                                                EXTERNAL-IP
                                                              PORT(S)
                                                                              AGE
NAME
                  TYPE
                               CLUSTER-IP
                  NodePort
fastapi-service
                               10.100.17.169
                                                              80:31250/TCP
                                                                              13m
                                                <none>
kubernetes
                  ClusterIP
                               10.100.0.1
                                                <none>
                                                              443/TCP
                                                                              3h52m
[cloudshell-user@ip-10-6-114-196 kuber]$ kubectl get deployments
NAME
                     READY
                              UP-TO-DATE
                                           AVAILABLE
                                                        AGE
fastapi-deployment
                     1/1
                                                        31m
```

After a few hours I found the problem and fix it (it was problem with CMD in dockerfile)

Here result of curl

## And here how it looks in browser

