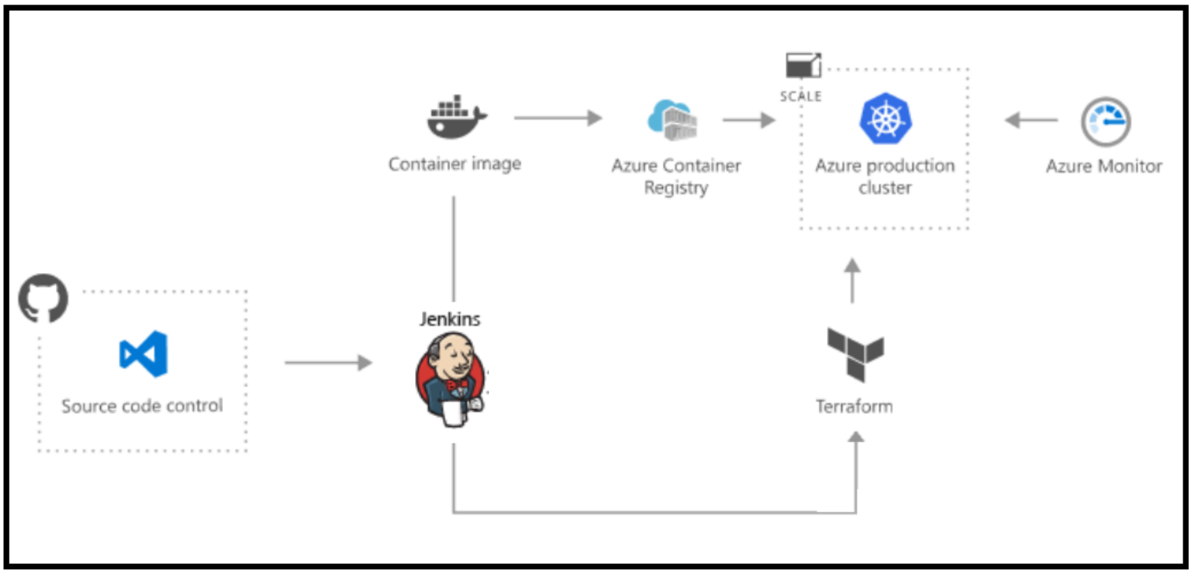
High-level architecture solution and approach to the problem.

Technical Stack Used :

Azure [ACR , AKE , BITNAMI Jenkins Cluster, Azure Cosmo DB] , Terraform , Jenkins

Application Code : Python , Flask (framework) , Beautiful Soup (pkg), Selenium

Note: *Alternatively we can use Azure DevOps instead of Jenkins and Azure Data Factory , to strip the data from the provided datasource [*data*] . This will simplify the solution.*



1. A GIT repo carrying the file parsing application code.

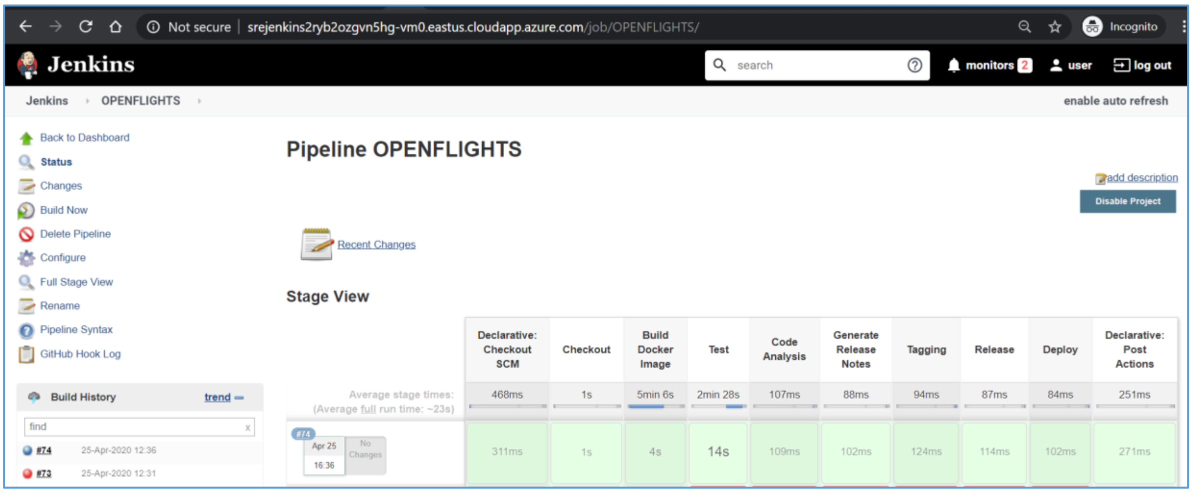
   https://github.com/nalubotula/openflightsproj.git

2. A GIT repo carrying pipeline setup using pipeline as a code script (an added advantage).

   https://github.com/nalubotula/openflights.git

3. Provisioned infrastructure should be well defined with proper tagging and naming convention.

   As we are using docker infrastructure, tagging and versioning is done during the build process which carries into the container registry
   Infrastructure tags and naming conventions propagates form the code git repositories/branches to Jenkins as parameters, then to the hosting infrastructure code.
   Application is auto built and deployed on a test server as a docker image [snapshots below]

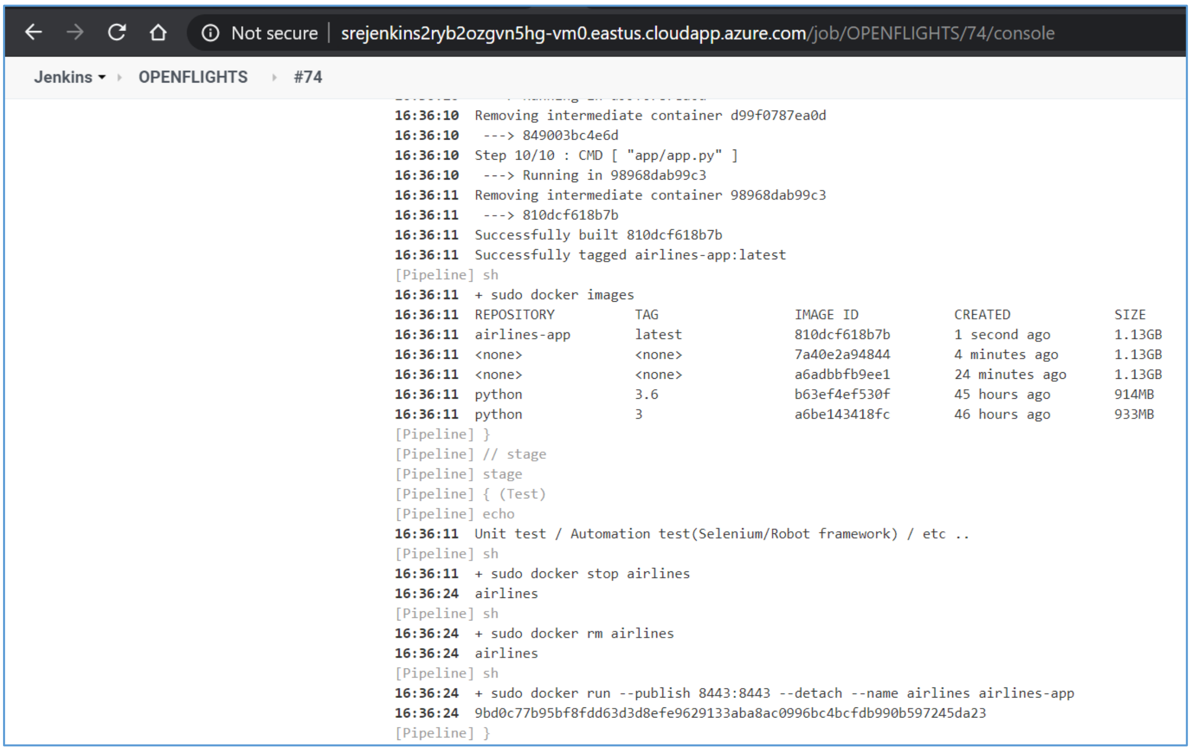


Pipeline OPENFLIGHTS

Build	Date
#74	25-Apr-2020 12:36
#73	25-Apr-2020 12:31

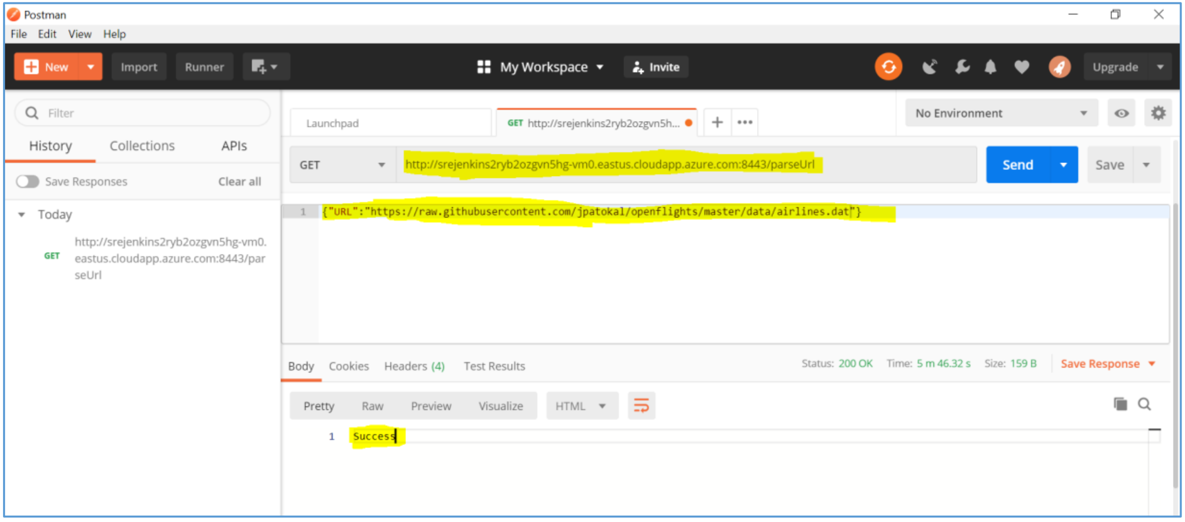
Stage View

	Declarative: Checkout SCM	Checkout	Build Docker Image	Test	Code Analysis	Generate Release Notes	Tagging	Release	Deploy	Declarative: Post Actions
Average stage times: (Average full run time: ~23s)	468ms	1s	5min 6s	2min 28s	107ms	88ms	94ms	87ms	84ms	251ms
#74 Apr 25 16:36 No Changes	311ms	1s	4s	14s	109ms	102ms	124ms	114ms	102ms	271ms


Not secure
srejenkins2ryb2ozgvn5hg-vm0.eastus.cloudapp.azure.com/job/OPENFLIGHTS/74/console
Jenkins › OPENFLIGHTS › #74

```
16:36:10  Removing intermediate container d99f0787ea0d
16:36:10   ---> 849003bc4e6d
16:36:10  Step 10/10 : CMD [ "app/app.py" ]
16:36:10   ---> Running in 98968dab99c3
16:36:11  Removing intermediate container 98968dab99c3
16:36:11   ---> 810dcf618b7b
16:36:11  Successfully built 810dcf618b7b
16:36:11  Successfully tagged airlines-app:latest
[Pipeline] sh
16:36:11  + sudo docker images
16:36:11  REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
16:36:11  airlines-app        latest              810dcf618b7b        1 second ago        1.13GB
16:36:11  <none>              <none>              7a40e2a94844        4 minutes ago       1.13GB
16:36:11  <none>              <none>              a6adbbfb9ee1        24 minutes ago      1.13GB
16:36:11  python              3.6                 b63ef4ef530f        45 hours ago        914MB
16:36:11  python              3                   a6be143418fc        46 hours ago        933MB
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Test)
[Pipeline] echo
16:36:11  Unit test / Automation test(Selenium/Robot framework) / etc ..
[Pipeline] sh
16:36:11  + sudo docker stop airlines
16:36:24  airlines
[Pipeline] sh
16:36:24  + sudo docker rm airlines
16:36:24  airlines
[Pipeline] sh
16:36:24  + sudo docker run --publish 8443:8443 --detach --name airlines airlines-app
16:36:24  9bd0c77b95bf8fdd63d3d8efe9629133aba8ac0996bc4bcfdb990b597245da23
[Pipeline] }
```

We will hit the deployed app end point from the postman , with the provide data file URL
The application is having scrappy engine, which will parse the html data and insert into the Cosmo DB.



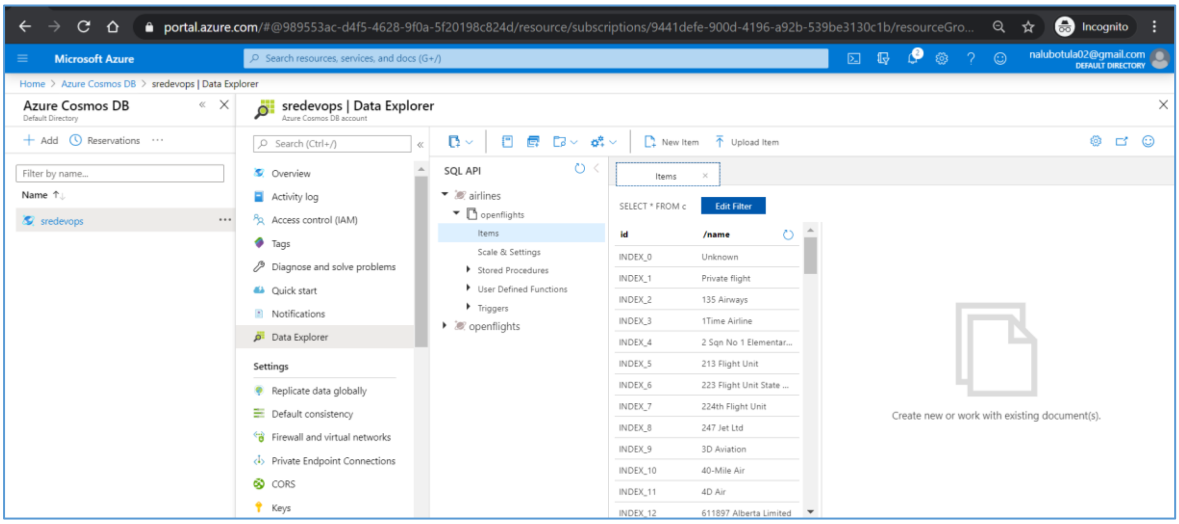
GET http://srejenkins2ryb2ozgvn5hg-vm0.eastus.cloudapp.azure.com:8443/parseUrl

```
{"URL":"https://raw.githubusercontent.com/jpatokal/openflights/master/data/airlines.dat"}
```

Status: 200 OK Time: 5 m 46.32 s Size: 159 B

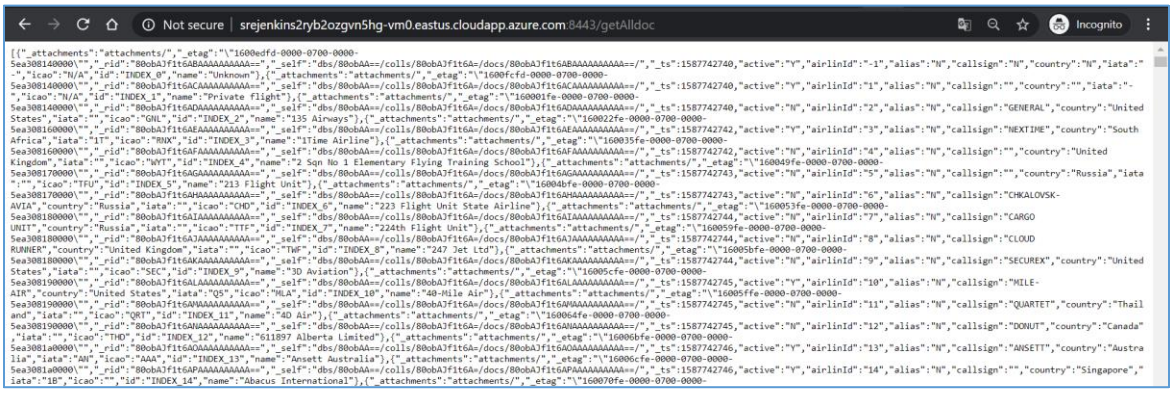
```
Success
```

We can see the data been inserted into the Azure Cosmos DB [snapshots are provided below]



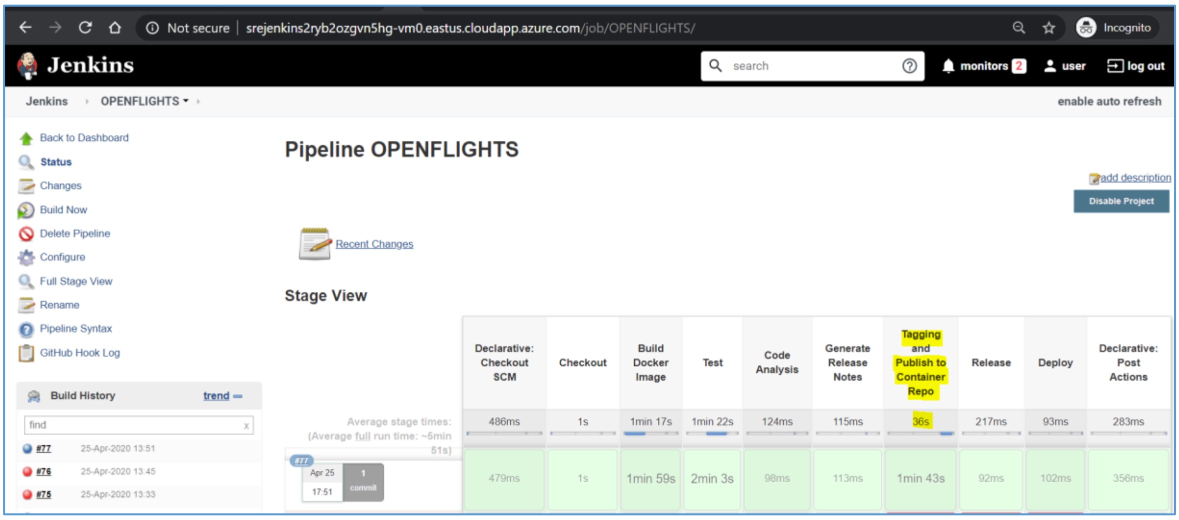
id	/name
INDEX_0	Unknown
INDEX_1	Private flight
INDEX_2	135 Airways
INDEX_3	1Time Airline
INDEX_4	2 Sqn No 1 Elementar...
INDEX_5	213 Flight Unit
INDEX_6	223 Flight Unit State ...
INDEX_7	224th Flight Unit
INDEX_8	247 Jet Ltd
INDEX_9	3D Aviation
INDEX_10	40-Mile Air
INDEX_11	4D Air
INDEX_12	611897 Alberta Limited

The application also has the service to fetch the data , which can be viewed from the browser on below mentioned URL.


Not secure | srejenkins2ryb2ozgvn5hg-vm0.eastus.cloudapp.azure.com:8443/getAlldoc
Incognito

```
[{"_attachments":"attachments/","_etag":"\"1600edfd-0000-0700-0000-
5ea308140000\"","_rid":"80obAJf1t6ABAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6ABAAAAAAAAAA==/","_ts":1587742740,"active":"Y","airlinId":"-1","alias":"N","callsign":"N","country":"N","iata":"
-","icao":"N/A","id":"INDEX_0","name":"Unknown"},{"_attachments":"attachments/","_etag":"\"1600fcfd-0000-0700-0000-
5ea308140000\"","_rid":"80obAJf1t6ACAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6ACAAAAAAAAAA==/","_ts":1587742740,"active":"Y","airlinId":"1","alias":"N","callsign":"","country":"","iata":"-
","icao":"N/A","id":"INDEX_1","name":"Private flight"},{"_attachments":"attachments/","_etag":"\"160001fe-0000-0700-0000-
5ea308140000\"","_rid":"80obAJf1t6ADAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6ADAAAAAAAAAA==/","_ts":1587742740,"active":"N","airlinId":"2","alias":"N","callsign":"GENERAL","country":"United
States","iata":"","icao":"GNL","id":"INDEX_2","name":"135 Airways"},{"_attachments":"attachments/","_etag":"\"160022fe-0000-0700-0000-
5ea308160000\"","_rid":"80obAJf1t6AEAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6AEAAAAAAAAAA==/","_ts":1587742742,"active":"Y","airlinId":"3","alias":"N","callsign":"NEXTIME","country":"South
Africa","iata":"1T","icao":"RNX","id":"INDEX_3","name":"1Time Airline"},{"_attachments":"attachments/","_etag":"\"160035fe-0000-0700-0000-
5ea308160000\"","_rid":"80obAJf1t6AFAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6AFAAAAAAAAAA==/","_ts":1587742742,"active":"N","airlinId":"4","alias":"N","callsign":"","country":"United
Kingdom","iata":"","icao":"WYT","id":"INDEX_4","name":"2 Sqn No 1 Elementary Flying Training School"},{"_attachments":"attachments/","_etag":"\"160049fe-0000-0700-0000-
5ea308170000\"","_rid":"80obAJf1t6AGAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6AGAAAAAAAAAA==/","_ts":1587742743,"active":"N","airlinId":"5","alias":"N","callsign":"","country":"Russia","iata
":"","icao":"TFU","id":"INDEX_5","name":"213 Flight Unit"},{"_attachments":"attachments/","_etag":"\"16004bfe-0000-0700-0000-
5ea308170000\"","_rid":"80obAJf1t6AHAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6AHAAAAAAAAAA==/","_ts":1587742743,"active":"N","airlinId":"6","alias":"N","callsign":"CHKALOVSK-
AVIA","country":"Russia","iata":"","icao":"CHD","id":"INDEX_6","name":"223 Flight Unit State Airline"},{"_attachments":"attachments/","_etag":"\"160053fe-0000-0700-0000-
5ea308180000\"","_rid":"80obAJf1t6AIAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6AIAAAAAAAAAA==/","_ts":1587742744,"active":"N","airlinId":"7","alias":"N","callsign":"CARGO
UNIT","country":"Russia","iata":"","icao":"TTF","id":"INDEX_7","name":"224th Flight Unit"},{"_attachments":"attachments/","_etag":"\"160059fe-0000-0700-0000-
5ea308180000\"","_rid":"80obAJf1t6AJAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6AJAAAAAAAAAA==/","_ts":1587742744,"active":"N","airlinId":"8","alias":"N","callsign":"CLOUD
RUNNER","country":"United Kingdom","iata":"","icao":"TWF","id":"INDEX_8","name":"247 Jet Ltd"},{"_attachments":"attachments/","_etag":"\"16005bfe-0000-0700-0000-
5ea308180000\"","_rid":"80obAJf1t6AKAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6AKAAAAAAAAAA==/","_ts":1587742744,"active":"N","airlinId":"9","alias":"N","callsign":"SECUREX","country":"United
States","iata":"","icao":"SEC","id":"INDEX_9","name":"3D Aviation"},{"_attachments":"attachments/","_etag":"\"16005cfe-0000-0700-0000-
5ea308190000\"","_rid":"80obAJf1t6ALAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6ALAAAAAAAAAA==/","_ts":1587742745,"active":"Y","airlinId":"10","alias":"N","callsign":"MILE-
AIR","country":"United States","iata":"Q5","icao":"MLA","id":"INDEX_10","name":"40-Mile Air"},{"_attachments":"attachments/","_etag":"\"16005ffe-0000-0700-0000-
5ea308190000\"","_rid":"80obAJf1t6AMAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6AMAAAAAAAAAA==/","_ts":1587742745,"active":"N","airlinId":"11","alias":"N","callsign":"QUARTET","country":"Thail
and","iata":"","icao":"QRT","id":"INDEX_11","name":"4D Air"},{"_attachments":"attachments/","_etag":"\"160064fe-0000-0700-0000-
5ea308190000\"","_rid":"80obAJf1t6ANAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6ANAAAAAAAAAA==/","_ts":1587742745,"active":"N","airlinId":"12","alias":"N","callsign":"DONUT","country":"Canada"
,"iata":"","icao":"THD","id":"INDEX_12","name":"611897 Alberta Limited"},{"_attachments":"attachments/","_etag":"\"16006bfe-0000-0700-0000-
5ea3081a0000\"","_rid":"80obAJf1t6AOAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6AOAAAAAAAAAA==/","_ts":1587742746,"active":"Y","airlinId":"13","alias":"N","callsign":"ANSETT","country":"Austra
lia","iata":"AN","icao":"AAA","id":"INDEX_13","name":"Ansett Australia"},{"_attachments":"attachments/","_etag":"\"16006cfe-0000-0700-0000-
5ea3081a0000\"","_rid":"80obAJf1t6APAAAAAAAAAA==","_self":"dbs/80obAA==/colls/80obAJf1t6A=/docs/80obAJf1t6APAAAAAAAAAA==/","_ts":1587742746,"active":"Y","airlinId":"14","alias":"N","callsign":"","country":"Singapore","
iata":"1B","icao":"","id":"INDEX_14","name":"Abacus International"},{"_attachments":"attachments/","_etag":"\"160070fe-0000-0700-0000-
```

The tested application image is now tagged and pushed to Azure Container Registry [We can see in the snapshots]

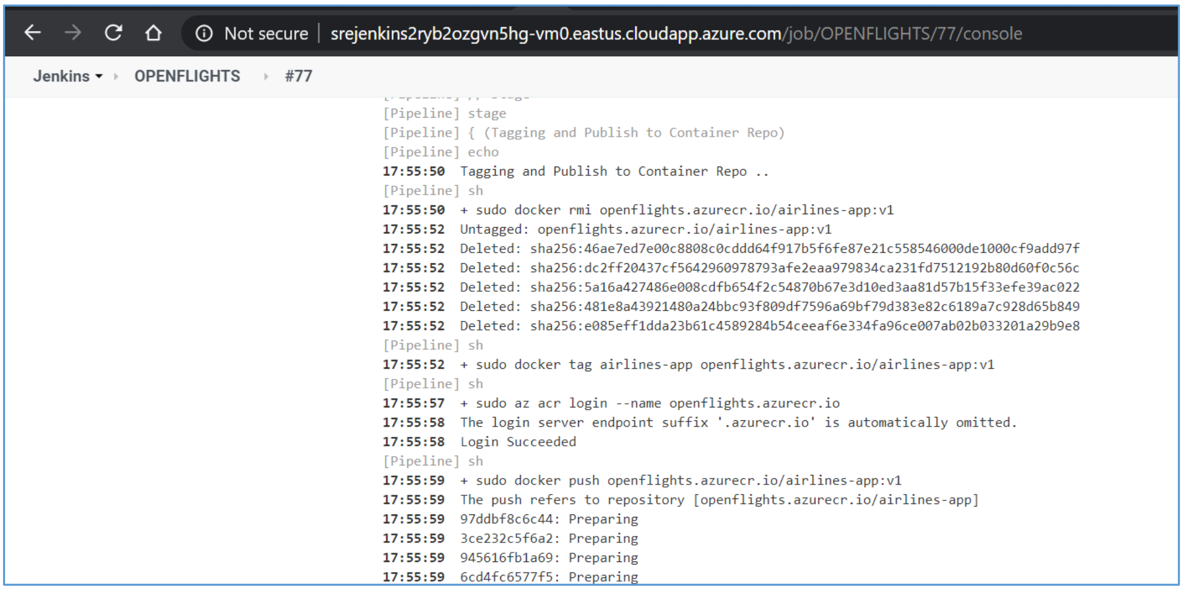


Pipeline OPENFLIGHTS

Build	Date
#77	25-Apr-2020 13:51
#76	25-Apr-2020 13:45
#75	25-Apr-2020 13:33

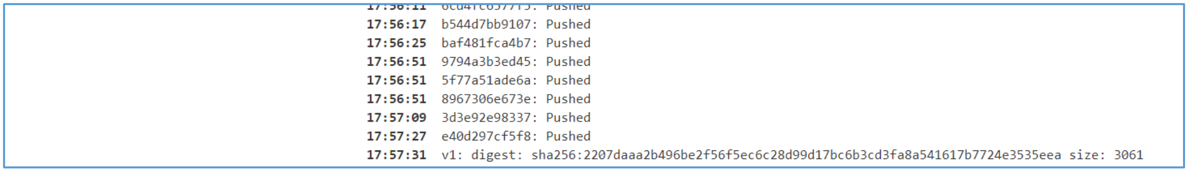
Stage View

	Declarative: Checkout SCM	Checkout	Build Docker Image	Test	Code Analysis	Generate Release Notes	Tagging and Publish to Container Repo	Release	Deploy	Declarative: Post Actions
Average stage times: (Average full run time: ~5min 51s)	486ms	1s	1min 17s	1min 22s	124ms	115ms	36s	217ms	93ms	283ms
#77 Apr 25 17:51 1 commit	479ms	1s	1min 59s	2min 3s	98ms	113ms	1min 43s	92ms	102ms	356ms

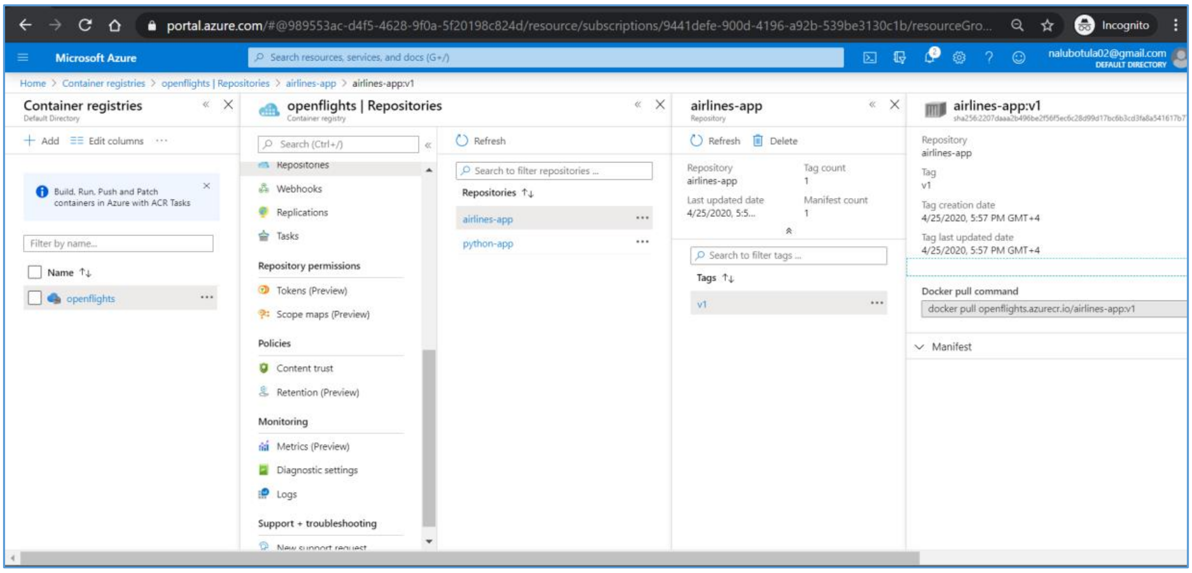


Not secure | srejenkins2ryb2ozgvn5hg-vm0.eastus.cloudapp.azure.com/job/OPENFLIGHTS/77/console
Jenkins ▾ › OPENFLIGHTS › #77

```
[Pipeline] stage
[Pipeline] { (Tagging and Publish to Container Repo)
[Pipeline] echo
17:55:50  Tagging and Publish to Container Repo ..
[Pipeline] sh
17:55:50  + sudo docker rmi openflights.azurecr.io/airlines-app:v1
17:55:52  Untagged: openflights.azurecr.io/airlines-app:v1
17:55:52  Deleted: sha256:46ae7ed7e00c8808c0cddd64f917b5f6fe87e21c558546000de1000cf9add97f
17:55:52  Deleted: sha256:dc2ff20437cf5642960978793afe2eaa979834ca231fd7512192b80d60f0c56c
17:55:52  Deleted: sha256:5a16a427486e008cdfb654f2c54870b67e3d10ed3aa81d57b15f33efe39ac022
17:55:52  Deleted: sha256:481e8a43921480a24bbc93f809df7596a69bf79d383e82c6189a7c928d65b849
17:55:52  Deleted: sha256:e085eff1dda23b61c4589284b54ceeaf6e334fa96ce007ab02b033201a29b9e8
[Pipeline] sh
17:55:52  + sudo docker tag airlines-app openflights.azurecr.io/airlines-app:v1
[Pipeline] sh
17:55:57  + sudo az acr login --name openflights.azurecr.io
17:55:58  The login server endpoint suffix '.azurecr.io' is automatically omitted.
17:55:58  Login Succeeded
[Pipeline] sh
17:55:59  + sudo docker push openflights.azurecr.io/airlines-app:v1
17:55:59  The push refers to repository [openflights.azurecr.io/airlines-app]
17:55:59  97ddbf8c6c44: Preparing
17:55:59  3ce232c5f6a2: Preparing
17:55:59  945616fb1a69: Preparing
17:55:59  6cd4fc6577f5: Preparing
```



```
17:56:17  b544d7bb9107: Pushed
17:56:25  baf481fca4b7: Pushed
17:56:51  9794a3b3ed45: Pushed
17:56:51  5f77a51ade6a: Pushed
17:56:51  8967306e673e: Pushed
17:57:09  3d3e92e98337: Pushed
17:57:27  e40d297cf5f8: Pushed
17:57:31  v1: digest: sha256:2207daaa2b496be2f56f5ec6c28d99d17bc6b3cd3fa8a541617b7724e3535eea size: 3061
```



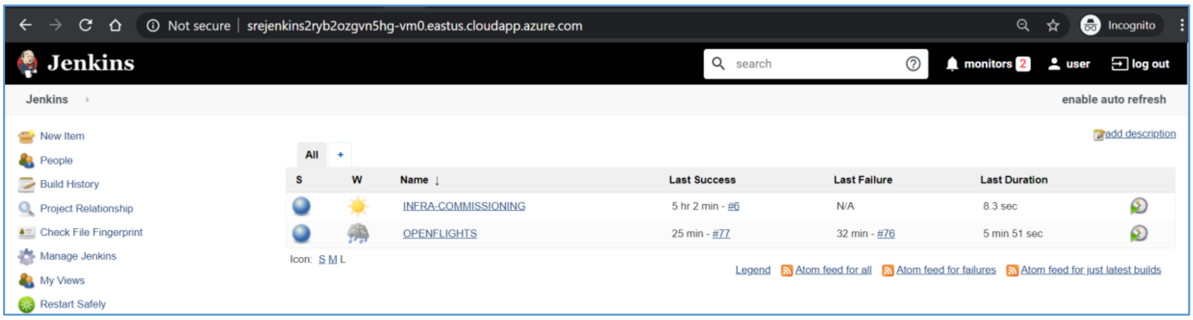
Repository: airlines-app
Tag count: 1
Last updated date: 4/25/2020, 5:5...
Manifest count: 1

Repository
airlines-app
Tag
v1
Tag creation date
4/25/2020, 5:57 PM GMT+4
Tag last updated date
4/25/2020, 5:57 PM GMT+4

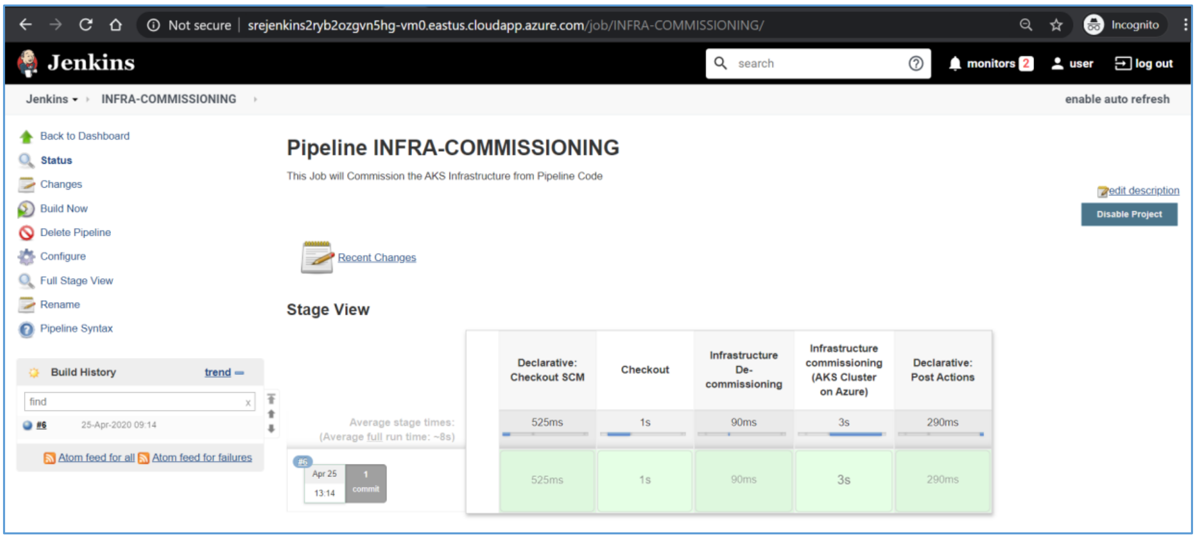
Docker pull command
docker pull openflights.azurecr.io/airlines-app:v1

We will further deploy this application into an Azure AKS Cluster

1. Infrastructure also will be provisioned via terraform scripts from a github repo.
2. Jenkins Job will initiate the provisioning.



S	W	Name ↓	Last Success	Last Failure	Last Duration
●	☀	INFRA-COMMISSIONING	5 hr 2 min - #6	N/A	8.3 sec
●	☁	OPENFLIGHTS	25 min - #77	32 min - #76	5 min 51 sec



Not secure | srejenkins2ryb2ozgvn5hg-vm0.eastus.cloudapp.azure.com/job/INFRA-COMMISSIONING/

Jenkins ▸ INFRA-COMMISSIONING

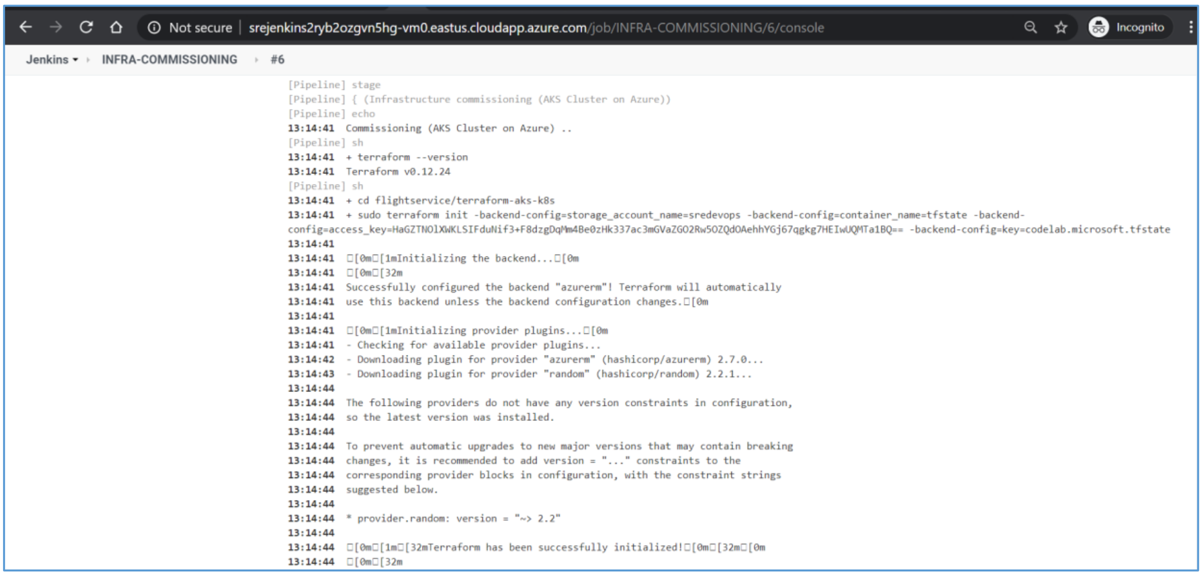
Pipeline INFRA-COMMISSIONING

This Job will Commission the AKS Infrastructure from Pipeline Code

Stage View

	Declarative: Checkout SCM	Checkout	Infrastructure De-commissioning	Infrastructure commissioning (AKS Cluster on Azure)	Declarative: Post Actions
Average stage times: (Average full run time: ~8s)	525ms	1s	90ms	3s	290ms
#6 Apr 25 13:14 — 1 commit	525ms	1s	90ms	3s	290ms

Build History: #6 25-Apr-2020 09:14



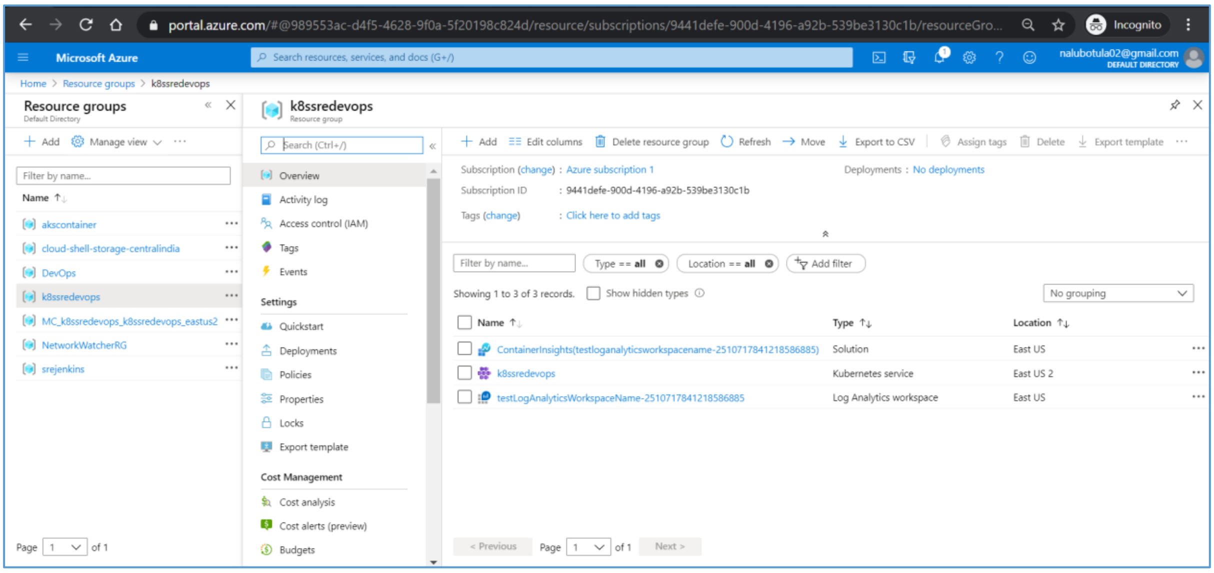
Not secure | srejenkins2ryb2ozgvn5hg-vm0.eastus.cloudapp.azure.com/job/INFRA-COMMISSIONING/6/console

Jenkins ▸ INFRA-COMMISSIONING ▸ #6

```
[Pipeline] stage
[Pipeline] { (Infrastructure commissioning (AKS Cluster on Azure))
[Pipeline] echo
13:14:41  Commissioning (AKS Cluster on Azure) ..
[Pipeline] sh
13:14:41  + terraform --version
13:14:41  Terraform v0.12.24
[Pipeline] sh
13:14:41  + cd flightservice/terraform-aks-k8s
13:14:41  + sudo terraform init -backend-config=storage_account_name=sredevops -backend-config=container_name=tfstate -backend-
config=access_key=HaGZTNOlXWKLSIFduNif3+F8dzgDqMm4Be0zHk337ac3mGVaZGO2Rw5OZQdOAehhYGj67qgkg7HEIwUQMTa1BQ== -backend-config=key=codelab.microsoft.tfstate
13:14:41
13:14:41  □[0m□[1mInitializing the backend...□[0m
13:14:41  □[0m□[32m
13:14:41  Successfully configured the backend "azurerm"! Terraform will automatically
13:14:41  use this backend unless the backend configuration changes.□[0m
13:14:41
13:14:41  □[0m□[1mInitializing provider plugins...□[0m
13:14:41  - Checking for available provider plugins...
13:14:42  - Downloading plugin for provider "azurerm" (hashicorp/azurerm) 2.7.0...
13:14:43  - Downloading plugin for provider "random" (hashicorp/random) 2.2.1...
13:14:44
13:14:44  The following providers do not have any version constraints in configuration,
13:14:44  so the latest version was installed.
13:14:44
13:14:44  To prevent automatic upgrades to new major versions that may contain breaking
13:14:44  changes, it is recommended to add version = "..." constraints to the
13:14:44  corresponding provider blocks in configuration, with the constraint strings
13:14:44  suggested below.
13:14:44
13:14:44  * provider.random: version = "~> 2.2"
13:14:44
13:14:44  □[0m□[1m□[32mTerraform has been successfully initialized!□[0m□[32m□[0m
13:14:44  □[0m□[32m
```

We can see the kubernetes cluster created in the Azure as AKS Service.

Current node size is 2



portal.azure.com/#@989553ac-d4f5-4628-9f0a-5f20198c824d/resource/subscriptions/9441defe-900d-4196-a92b-539be3130c1b/resourceGro...

Microsoft Azure

Home > Resource groups > k8ssredevops

Resource groups — Default Directory

akscontainer
cloud-shell-storage-centralindia
DevOps
k8ssredevops
MC_k8ssredevops_k8ssredevops_eastus2
NetworkWatcherRG
srejenkins

k8ssredevops — Resource group

Subscription (change) : Azure subscription 1

Subscription ID : 9441defe-900d-4196-a92b-539be3130c1b

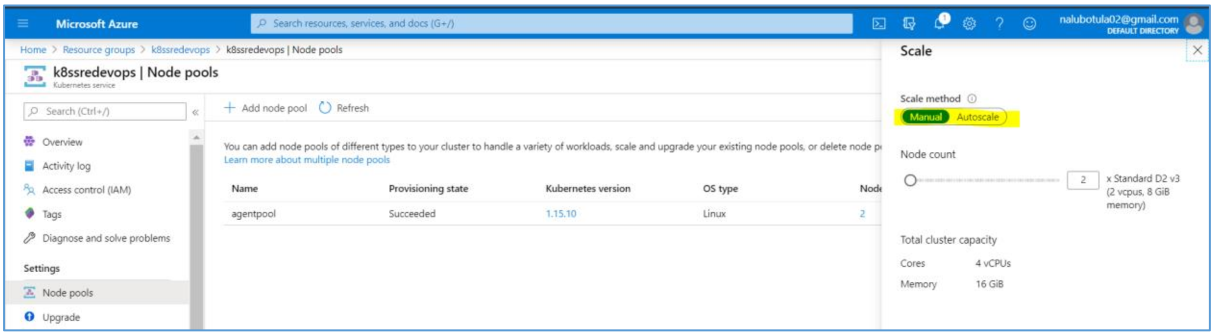
Tags (change) : Click here to add tags

Deployments : No deployments

Showing 1 to 3 of 3 records.

Name	Type	Location
ContainerInsights(testloganalyticsworkspacename-2510717841218586885)	Solution	East US
k8ssredevops	Kubernetes service	East US 2
testLogAnalyticsWorkspaceName-2510717841218586885	Log Analytics workspace	East US

We can upscale the nodes based on load, or enable auto-scaling option.



k8ssredevops | Node pools
Kubernetes service

You can add node pools of different types to your cluster to handle a variety of workloads, scale and upgrade your existing node pools, or delete node p
Learn more about multiple node pools

Name	Provisioning state	Kubernetes version	OS type	Nod
agentpool	Succeeded	1.15.10	Linux	2

Scale

Scale method
● Manual ○ Autoscale

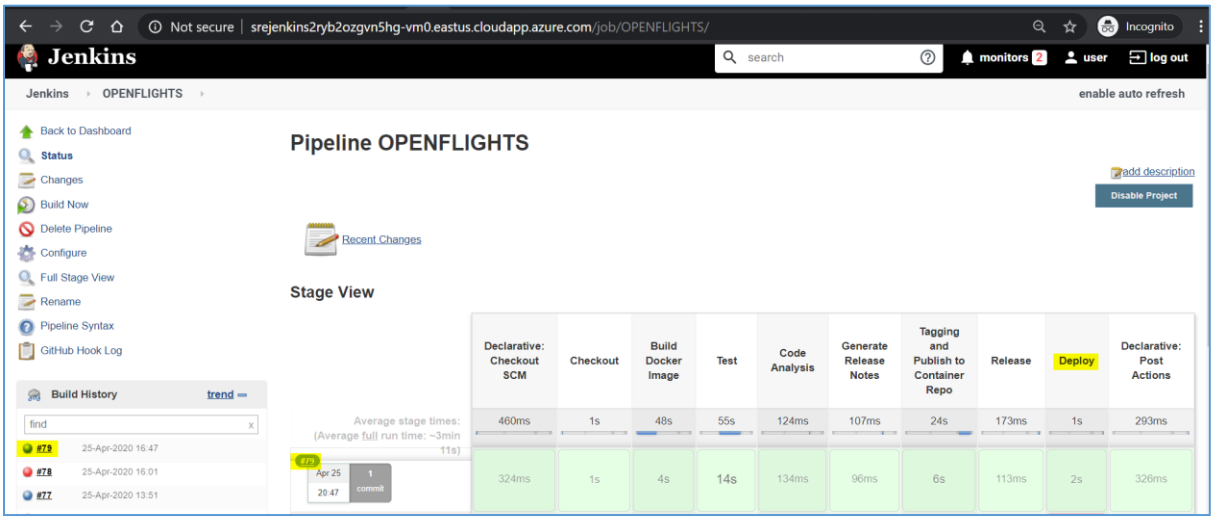
Node count
2 x Standard D2 v3 (2 vcpus, 8 GiB memory)

Total cluster capacity

Cores	4 vCPUs
Memory	16 GiB

Now I have deployed the application to AKE Cluster , using deploy.yaml [code is available in the repo]

Configured pipeline script, to execute as part of Jenkins pipeline.

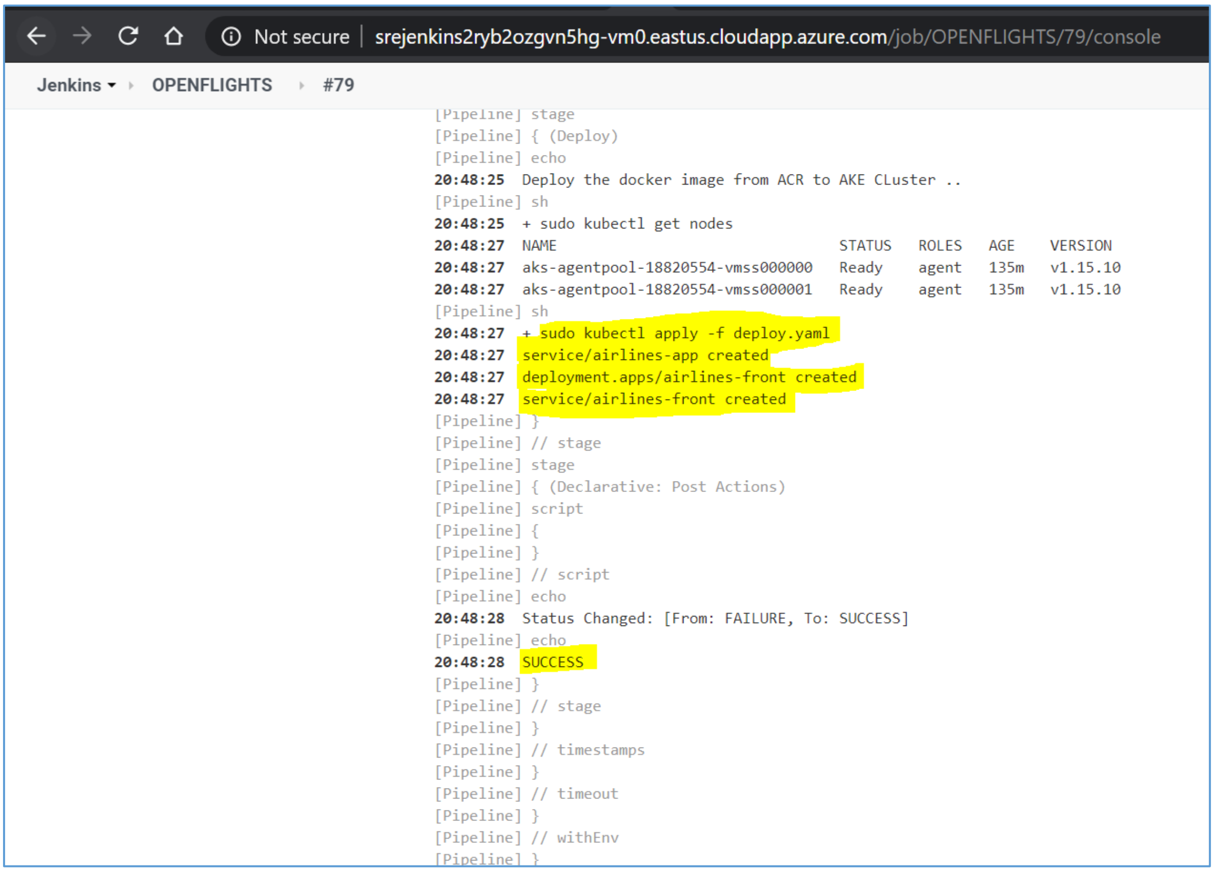


Pipeline OPENFLIGHTS

#79	25-Apr-2020 16:47
#78	25-Apr-2020 16:01
#77	25-Apr-2020 13:51

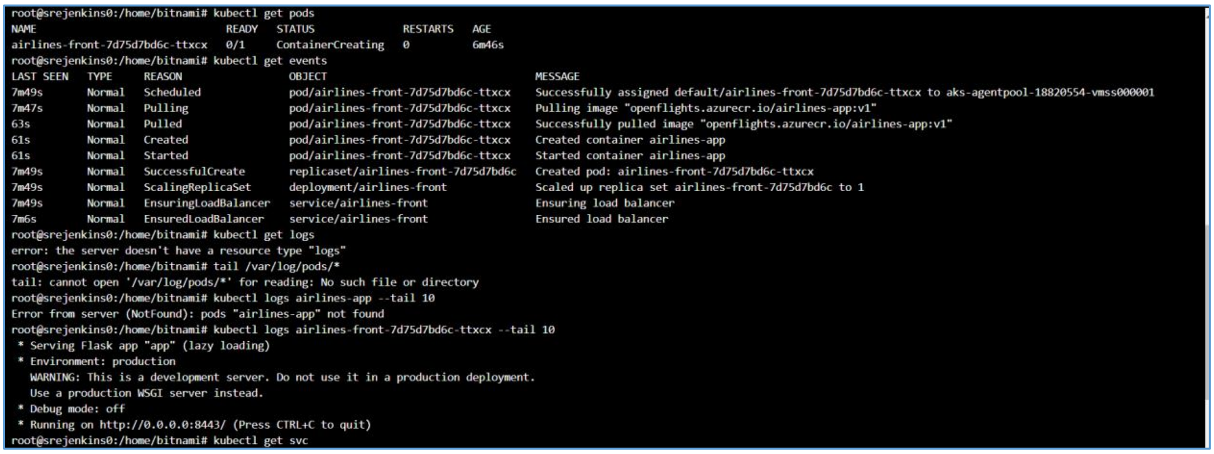
Stage View

	Declarative: Checkout SCM	Checkout	Build Docker Image	Test	Code Analysis	Generate Release Notes	Tagging and Publish to Container Repo	Release	Deploy	Declarative: Post Actions
Average stage times: (Average full run time: ~3min 11s)	460ms	1s	48s	55s	124ms	107ms	24s	173ms	1s	293ms
#79 Apr 25 20:47 1 commit	324ms	1s	4s	14s	134ms	96ms	6s	113ms	2s	326ms

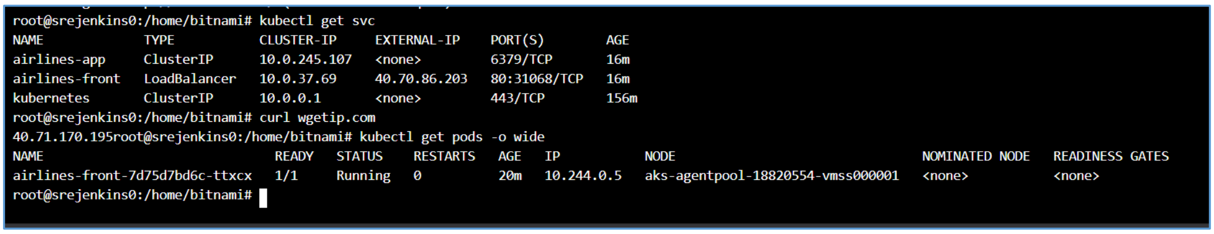

Not secure | srejenkins2ryb2ozgvn5hg-vm0.eastus.cloudapp.azure.com/job/OPENFLIGHTS/79/console
Jenkins › OPENFLIGHTS › #79

```
[Pipeline] stage
[Pipeline] { (Deploy)
[Pipeline] echo
20:48:25  Deploy the docker image from ACR to AKE CLuster ..
[Pipeline] sh
20:48:25  + sudo kubectl get nodes
20:48:27  NAME                                STATUS   ROLES   AGE    VERSION
20:48:27  aks-agentpool-18820554-vmss000000   Ready    agent   135m   v1.15.10
20:48:27  aks-agentpool-18820554-vmss000001   Ready    agent   135m   v1.15.10
[Pipeline] sh
20:48:27  + sudo kubectl apply -f deploy.yaml
20:48:27  service/airlines-app created
20:48:27  deployment.apps/airlines-front created
20:48:27  service/airlines-front created
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] script
[Pipeline] {
[Pipeline] }
[Pipeline] // script
[Pipeline] echo
20:48:28  Status Changed: [From: FAILURE, To: SUCCESS]
[Pipeline] echo
20:48:28  SUCCESS
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // timestamps
[Pipeline] }
[Pipeline] // timeout
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
```

Since I have not installed any kubernetes monitoring tools, I had to check backend.

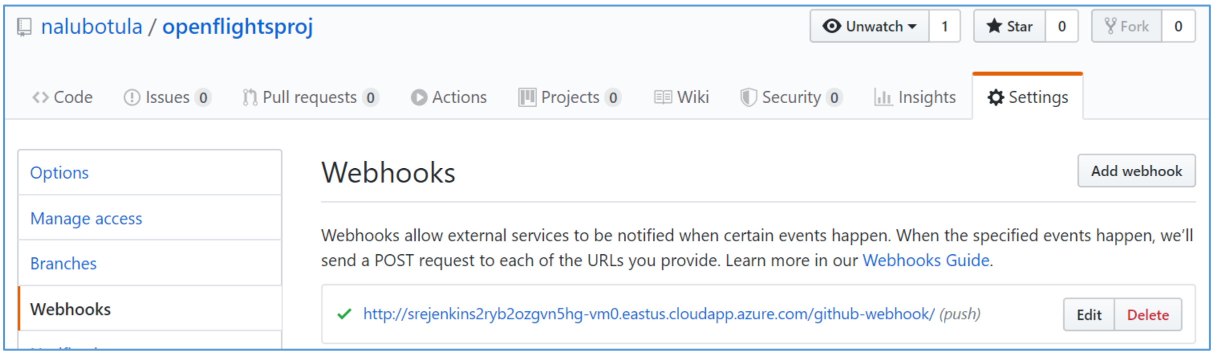


```
root@srejenkins0:/home/bitnami# kubectl get pods
NAME                              READY   STATUS              RESTARTS   AGE
airlines-front-7d75d7bd6c-ttxcx   0/1     ContainerCreating   0          6m46s
root@srejenkins0:/home/bitnami# kubectl get events
LAST SEEN   TYPE     REASON                 OBJECT                                 MESSAGE
7m49s       Normal   Scheduled              pod/airlines-front-7d75d7bd6c-ttxcx    Successfully assigned default/airlines-front-7d75d7bd6c-ttxcx to aks-agentpool-18820554-vmss000001
7m47s       Normal   Pulling                pod/airlines-front-7d75d7bd6c-ttxcx    Pulling image "openflights.azurecr.io/airlines-app:v1"
63s         Normal   Pulled                 pod/airlines-front-7d75d7bd6c-ttxcx    Successfully pulled image "openflights.azurecr.io/airlines-app:v1"
61s         Normal   Created                pod/airlines-front-7d75d7bd6c-ttxcx    Created container airlines-app
61s         Normal   Started                pod/airlines-front-7d75d7bd6c-ttxcx    Started container airlines-app
7m49s       Normal   SuccessfulCreate       replicaset/airlines-front-7d75d7bd6c   Created pod: airlines-front-7d75d7bd6c-ttxcx
7m49s       Normal   ScalingReplicaSet      deployment/airlines-front              Scaled up replica set airlines-front-7d75d7bd6c to 1
7m49s       Normal   EnsuringLoadBalancer   service/airlines-front                 Ensuring load balancer
7m6s        Normal   EnsuredLoadBalancer    service/airlines-front                 Ensured load balancer
root@srejenkins0:/home/bitnami# kubectl get logs
error: the server doesn't have a resource type "logs"
root@srejenkins0:/home/bitnami# tail /var/log/pods/*
tail: cannot open '/var/log/pods/*' for reading: No such file or directory
root@srejenkins0:/home/bitnami# kubectl logs airlines-app --tail 10
Error from server (NotFound): pods "airlines-app" not found
root@srejenkins0:/home/bitnami# kubectl logs airlines-front-7d75d7bd6c-ttxcx --tail 10
 * Serving Flask app "app" (lazy loading)
 * Environment: production
   WARNING: This is a development server. Do not use it in a production deployment.
   Use a production WSGI server instead.
 * Debug mode: off
 * Running on http://0.0.0.0:8443/ (Press CTRL+C to quit)
root@srejenkins0:/home/bitnami# kubectl get svc
```



```
root@srejenkins0:/home/bitnami# kubectl get svc
NAME             TYPE           CLUSTER-IP     EXTERNAL-IP    PORT(S)        AGE
airlines-app     ClusterIP      10.0.245.107   <none>         6379/TCP       16m
airlines-front   LoadBalancer   10.0.37.69     40.70.86.203   80:31068/TCP   16m
kubernetes       ClusterIP      10.0.0.1       <none>         443/TCP        156m
root@srejenkins0:/home/bitnami# curl wgetip.com
40.71.170.195root@srejenkins0:/home/bitnami# kubectl get pods -o wide
NAME                              READY   STATUS    RESTARTS   AGE   IP           NODE                                NOMINATED NODE   READINESS GATES
airlines-front-7d75d7bd6c-ttxcx   1/1     Running   0          20m   10.244.0.5   aks-agentpool-18820554-vmss000001   <none>           <none>
root@srejenkins0:/home/bitnami# 
```

Note: A WebHook has been created on the application git [github] repo, which initiates the Jenkins Build and Deploy process, on every commit into master branch



Webhooks

Webhooks allow external services to be notified when certain events happen. When the specified events happen, we'll send a POST request to each of the URLs you provide. Learn more in our Webhooks Guide.

✓ http://srejenkins2ryb2ozgvn5hg-vm0.eastus.cloudapp.azure.com/github-webhook/ (push)