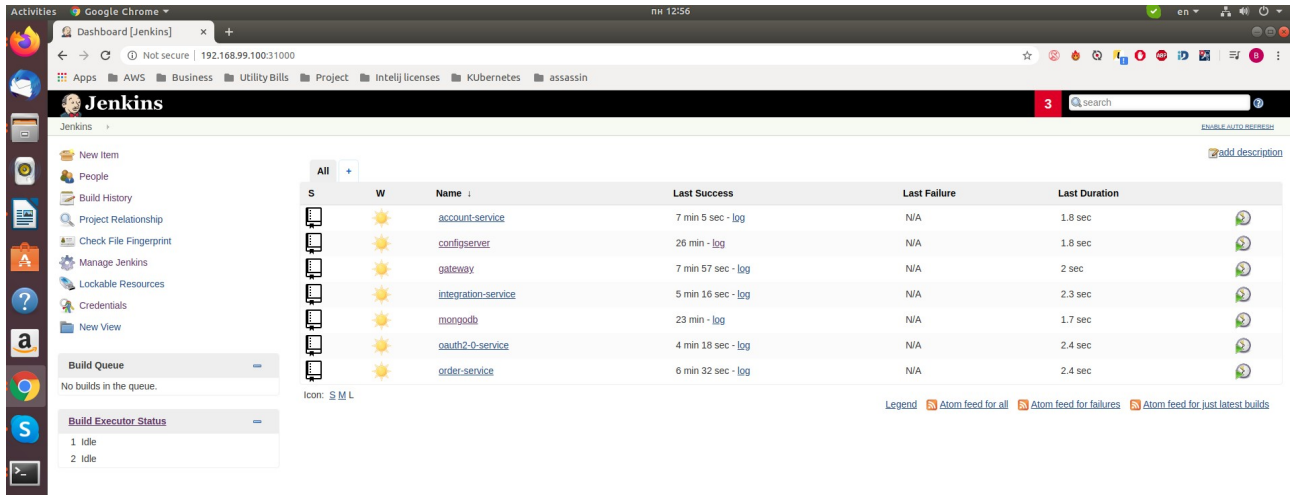
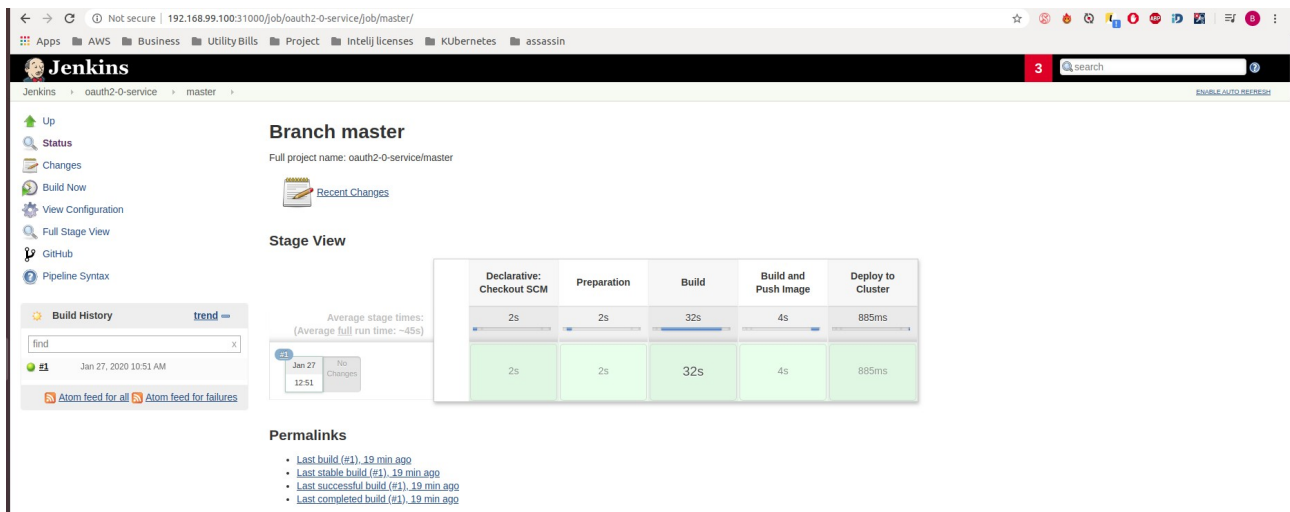


1 ) Deployed Jenkins as Kubernetes Pod to practice with setting up simple CI/CD platform for my project. All services are deployed successfully on GitHub WebHook on merge to master



The screenshot shows the Jenkins Dashboard in a web browser. The dashboard has a sidebar on the left with navigation links: New Item, People, Build History, Project Relationship, Check File Fingerprint, Manage Jenkins, Lockable Resources, Credentials, and New View. The main area displays a table of builds for the 'oauth2-o-service' project. The table has columns for Status (S), Weather icon (W), Name, Last Success, Last Failure, and Last Duration. There are 7 builds listed, all with a status of 'Success' (S) and a weather icon of a sun. The builds are: account-service, configserver, gateway, integration-service, monopoda, oauth2-o-service, and order-service. The 'Build Queue' section on the left shows 'No builds in the queue.' and the 'Build Executor Status' shows 1 Idle and 2 Idle executors.

S	W	Name	Last Success	Last Failure	Last Duration
S	☀	account-service	7 min 5 sec - log	N/A	1.8 sec
S	☀	configserver	26 min - log	N/A	1.8 sec
S	☀	gateway	7 min 57 sec - log	N/A	2 sec
S	☀	integration-service	5 min 16 sec - log	N/A	2.3 sec
S	☀	monopoda	23 min - log	N/A	1.7 sec
S	☀	oauth2-o-service	4 min 18 sec - log	N/A	2.4 sec
S	☀	order-service	6 min 32 sec - log	N/A	2.4 sec



The screenshot shows the Jenkins 'Branch master' view for the 'oauth2-o-service' project. The page includes a 'Recent Changes' section, a 'Stage View' table, and a 'Permalinks' section. The 'Stage View' table shows the average stage times for the build. The stages are: Declarative: Checkout SCM (2s), Preparation (2s), Build (32s), Build and Push Image (4s), and Deploy to Cluster (885ms). The 'Permalinks' section lists links to the last build, last stable build, last successful build, and last completed build, all of which are 19 minutes ago.

Declarative: Checkout SCM	Preparation	Build	Build and Push Image	Deploy to Cluster
2s	2s	32s	4s	885ms

Permalinks

- Last build (#1) 19 min ago
- Last stable build (#1) 19 min ago
- Last successful build (#1) 19 min ago
- Last completed build (#1) 19 min ago

## 2) Here you can see all deployed pods

```
user@sys-009:~/Documents/03. Education/financial-stock-broker-2/jenkins$ kubectl get all

NAME                                     READY   STATUS    RESTARTS   AGE
pod/account-5b5797b599-mmqr8r          1/1     Running   0           21m
pod/auth-984864b7b-r4x4v               1/1     Running   0           18m
pod/configserver-768cf48485-mqntv      1/1     Running   0           39m
pod/feign-656f4cc9f5-7qf7f             1/1     Running   0           18m
pod/gateway-74754c568d-pvqbz          1/1     Running   2           21m
pod/jenkins-9f877b65c-75jhp            1/1     Running   0           65m
pod/mongodb-7dc4596644-5zx7s          1/1     Running   0           38m
pod/order-6fdfccbf5d-zh1b4             1/1     Running   0           19m

NAME                                     TYPE          CLUSTER-IP   EXTERNAL-IP   PORT(S)                  AGE
service/account                         NodePort      10.96.165.133 <none>        8081:31380/TCP           21m
service/auth                           NodePort      10.96.59.143  <none>        8084:32540/TCP           18m
service/configserver                   NodePort      10.96.153.46  <none>        8888:32251/TCP           39m
service/feign                          NodePort      10.96.14.96   <none>        8099:30715/TCP           18m
service/fleetman-mongodb               ClusterIP     10.96.73.215  <none>        27017/TCP                38m
service/gateway                        NodePort      10.96.128.130 <none>        5000:31547/TCP           21m
service/jenkins                        NodePort      10.96.89.69   <none>        8080:31000/TCP,50000:32370/TCP 65m
service/kubernetes                     ClusterIP     10.96.0.1     <none>        443/TCP                  66m
service/order                          NodePort      10.96.196.242 <none>        8092:32457/TCP           19m

NAME                                     READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/account                 1/1     1             1           21m
deployment.apps/auth                    1/1     1             1           18m
deployment.apps/configserver            1/1     1             1           39m
deployment.apps/feign                   1/1     1             1           18m
deployment.apps/gateway                 1/1     1             1           21m
deployment.apps/jenkins                 1/1     1             1           65m
deployment.apps/mongodb                 1/1     1             1           38m
deployment.apps/order                   1/1     1             1           19m

NAME                                     DESIRED   CURRENT   READY   AGE
replicaset.apps/account-5b5797b599      1         1         1       21m
replicaset.apps/auth-984864b7b          1         1         1       18m
replicaset.apps/configserver-768cf48485 1         1         1       39m
replicaset.apps/feign-656f4cc9f5        1         1         1       18m
replicaset.apps/gateway-74754c568d      1         1         1       21m
replicaset.apps/jenkins-9f877b65c       1         1         1       65m
replicaset.apps/mongodb-7dc4596644      1         1         1       38m
replicaset.apps/order-6fdfccbf5d        1         1         1       19m
```

## 3) Setup of Kubernetes UI for management of deployment. Example of scaling services

Workloads

Workload Status

Deployments

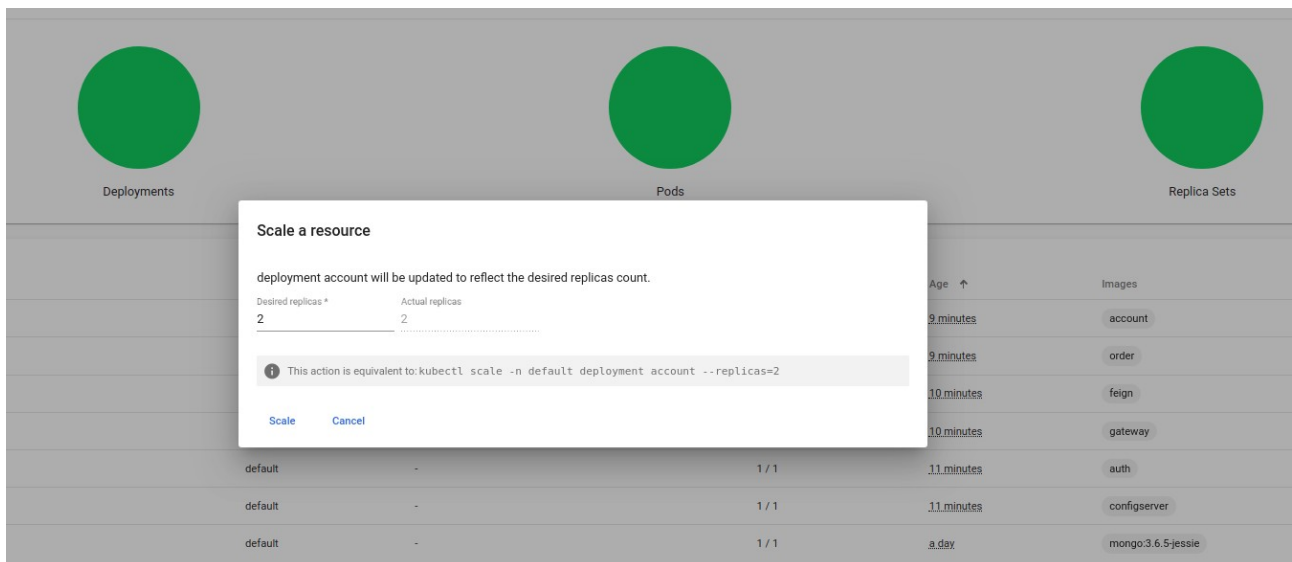
Pods

Replica Sets

Deployments

Name	Namespace	Labels	Pods	Age ↑	Images	
✓ account	default	-	1 / 1	6 minutes	account	⋮
✓ order	default	-	1 / 1	6 minutes	order	⋮
✓ feign	default	-	1 / 1	6 minutes	feign	⋮
✓ gateway	default	-	1 / 1	7 minutes	gateway	⋮
✓ auth	default	-	1 / 1	7 minutes	auth	⋮
✓ configserver	default	-	1 / 1	8 minutes	configserver	⋮
✓ mongodb	default	-	1 / 1	a day	mongo:3.6.5-jessie	⋮
✓ jenkins	default	-	1 / 1	2 days	myjenkins:latest	⋮

1 - 8 of 8 |< < > >|

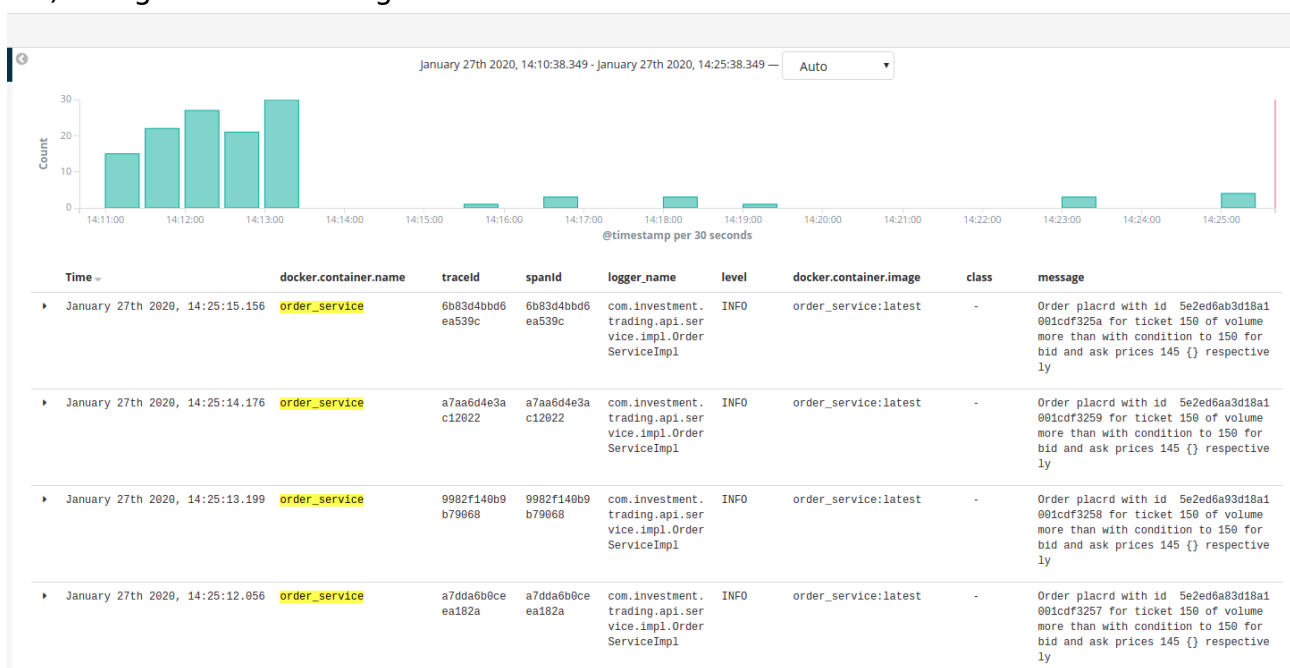


4) We can check if our services have scaled up as expected

Name	Namespace	Labels	Pods	Age	Images
✓ account	default	-	2 / 2	9 minutes	account
✓ order	default	-	3 / 3	9 minutes	order

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/account	2/2	2	2	43m
deployment.apps/auth	1/1	1	1	41m
deployment.apps/configserver	1/1	1	1	61m
deployment.apps/feign	1/1	1	1	41m
deployment.apps/gateway	1/1	1	1	44m
deployment.apps/jenkins	1/1	1	1	88m
deployment.apps/mongodb	1/1	1	1	61m
deployment.apps/order	3/3	3	3	42m

5) Using ELK to trace logs



## 5) Kafka Connect with Cassandra setup

Kafka Connect UI: Create New Connector

Search connectors

CassandraSinkConnector

Kafka Connect: /api/kafka-connect-1  
Kafka Connect Version: 1.1.0-cp1  
Kafka Connect UI Version: 0.9.7

Powered by LANDOOP

CREATE

Kafka Connect UI: Dashboard

Search connectors

CassandraSinkConnector

Kafka Connect: /api/kafka-connect-1  
Kafka Connect Version: 1.1.0-cp1  
Kafka Connect UI Version: 0.9.7

Powered by LANDOOP

EXPORT CONFIG

SINK CONNECTORS: 1

SOURCE CONNECTORS: 0

TOPICS USED BY CONNECTORS: 1

Connect topology

## 6) Data sent to Kafka topic are sent to Cassandra Sink in Kafka as Avro:

```
root@broker:/# kafka-console-consumer --bootstrap-server localhost:9092 --topic quote --from-beginning
g1&2019-12-20 16:00:0MSFT157.5200157.5300157.4000
785507157.2400
g2&2019-12-20 15:59:0MSFT157.4600157.5300157.5250
214735157.4600
g3&2019-12-20 15:58:0MSFT157.4300157.5000157.4650
146344157.4200
g4&2019-12-20 15:57:0MSFT157.4000157.4600157.4400
167296157.3800
g5&2019-12-20 16:00:0MSFT157.5200157.5300157.4000
785507157.2400
g6&2019-12-20 15:59:0MSFT157.4600157.5300157.5250
214735157.4600
g7&2019-12-20 15:58:0MSFT157.4300157.5000157.4650
146344157.4200
g8&2019-12-20 15:57:0MSFT157.4000157.4600157.4400
167296157.3800
g9&2019-12-20 16:00:0MSFT157.5200157.5300157.4000
785507157.2400
```

in Cassandra mirrored through Kafka Connect:

```
cqlsh:mykeyspace> select * from cassandra_table_1;

 id | close | date | high | low | open | ticket | volume
-----+-----+-----+-----+-----+-----+-----+-----
(0 rows)
cqlsh:mykeyspace> select * from cassandra_table_1;

 id | close | date | high | low | open | ticket | volume
-----+-----+-----+-----+-----+-----+-----+-----
g3 | 157.4650 | 2019-12-20 15:58:00 | 157.5000 | 157.4200 | 157.4300 | MSFT | 146344
g2 | 157.5250 | 2019-12-20 15:59:00 | 157.5300 | 157.4600 | 157.4600 | MSFT | 214735
g10 | 157.5250 | 2019-12-20 15:59:00 | 157.5300 | 157.4600 | 157.4600 | MSFT | 214735
g6 | 157.5250 | 2019-12-20 15:59:00 | 157.5300 | 157.4600 | 157.4600 | MSFT | 214735
g8 | 157.4400 | 2019-12-20 15:57:00 | 157.4600 | 157.3800 | 157.4000 | MSFT | 167296
g7 | 157.4650 | 2019-12-20 15:58:00 | 157.5000 | 157.4200 | 157.4300 | MSFT | 146344
g5 | 157.4000 | 2019-12-20 16:00:00 | 157.5300 | 157.2400 | 157.5200 | MSFT | 785507
g1 | 157.4000 | 2019-12-20 16:00:00 | 157.5300 | 157.2400 | 157.5200 | MSFT | 785507
g4 | 157.4400 | 2019-12-20 15:57:00 | 157.4600 | 157.3800 | 157.4000 | MSFT | 167296
g11 | 157.4650 | 2019-12-20 15:58:00 | 157.5000 | 157.4200 | 157.4300 | MSFT | 146344
g12 | 157.4400 | 2019-12-20 15:57:00 | 157.4600 | 157.3800 | 157.4000 | MSFT | 167296
g9 | 157.4000 | 2019-12-20 16:00:00 | 157.5300 | 157.2400 | 157.5200 | MSFT | 785507
```

Avro schema in Schema Registry Client

POST GET POST POST GET POST GET POST GET POST POST POST GET GET

No Environment

Untitled Request

GET http://localhost:8081/subjects/quote-value/versions/1 Send Save

Params Authorization Headers (19) Body Pre-request Script Tests Settings Cookies

Query Params

KEY	VALUE	DESCRIPTION
Key	Value	Description

Body Cookies Headers (5) Test Results Status: 200 OK Time: 29ms Size: 365 B Save Response

Pretty Raw Preview Visualize BETA JSON

```
1 {
2   "subject": "quote-value",
3   "version": 1,
4   "id": 1,
5   "schema": "{\n  \"type\": \"record\",\n  \"name\": \"Quote\",\n  \"namespace\": \"avro\",\n  \"fields\": [\n    {\n      \"name\": \"id\",\n      \"type\": \"string\",\n    },\n    {\n      \"name\": \"date\",\n      \"type\": \"string\",\n    },\n    {\n      \"name\": \"ticket\",\n      \"type\": \"string\",\n    },\n    {\n      \"name\": \"open\",\n      \"type\": \"string\",\n    },\n    {\n      \"name\": \"high\",\n      \"type\": \"string\",\n    },\n    {\n      \"name\": \"close\",\n      \"type\": \"string\",\n    },\n    {\n      \"name\": \"volume\",\n      \"type\": \"string\",\n    },\n    {\n      \"name\": \"low\",\n      \"type\": \"string\"\n    }\n  ]\n}"
6 }
```