



# copilot-ops

Go From Zero to DevOps Hero in Under 10  
Seconds

Oleg Silkin

Associate Software Engineer

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# Application Deployment

- ▶ Done Through Kubernetes/OCP
- ▶ Requires YAML Knowledge
- ▶ Repetitive Structure

# MySQL Deployment

mysql-deployment.yaml

```

45 lines (45 sloc) | 1.05 KB
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    labels:
5      app: mysql
6      application-crd-id: kubeflow-pipelines
7      name: mysql
8  spec:
9    selector:
10     matchLabels:
11       app: mysql
12       application-crd-id: kubeflow-pipelines
13    strategy:
14     type: Recreate
15    template:
16     metadata:
17       labels:
18         app: mysql
19         application-crd-id: kubeflow-pipelines
20     spec:
21       containers:
22         - args:
23             - --ignore-db-dir=lost+found
24             - --datadir
25             - /var/lib/mysql
26         env:
27           - name: MYSQL_ALLOW_EMPTY_PASSWORD
28             value: "true"
29         image: mysql
30         name: mysql
31         ports:
32           - containerPort: 3306
33             name: mysql
34         resources:
35           requests:
36             cpu: 100m
37             memory: 800Mi
38         volumeMounts:
39           - mountPath: /var/lib/mysql
40             name: mysql-persistent-storage
41       serviceAccountName: mysql
42       volumes:
43         - name: mysql-persistent-storage
44           persistentVolumeClaim:
45             claimName: mysql-pv-claim

```

mysql-service.yaml

```

14 lines (14 sloc) | 251 Bytes
1  apiVersion: v1
2  kind: Service
3  metadata:
4    labels:
5      application-crd-id: kubeflow-pipelines
6      name: mysql
7  spec:
8    ports:
9      - port: 3306
10      protocol: TCP
11      targetPort: 3306
12    selector:
13      app: mysql
14      application-crd-id: kubeflow-pipelines

```

mysql-pvc.yaml

```

12 lines (12 sloc) | 217 Bytes
1  apiVersion: v1
2  kind: PersistentVolumeClaim
3  metadata:
4    labels:
5      application-crd-id: kubeflow-pipelines
6      name: mysql-pv-claim
7  spec:
8    accessModes:
9      - ReadWriteOnce
10   resources:
11     requests:
12       storage: 20Gi

```

# Ready to Implement?

# Implementing a Deployment

! pvc-deployment.yml ✕

```
home > osilkin > Programming > demo > copilot-ops > ! pvc-deployme  
io.k8s.api.apps.v1.Deployment (v1@deployment.json)  
1  apiVersion: apps/v1
```

# Implementing a Deployment

! pvc-deployment.yml ✕

home > osilkin > Programming > demo > copilot-ops > ! pvc-deployme

io.k8s.api.apps.v1.Deployment (v1@deployment.json)

1 apiVersion: apps/v1

2 kind: Deployment

# Implementing a Deployment

! pvc-deployment.yml ✕

home > osilkin > Programming > demo > copilot-ops > ! pvc-deployme

io.k8s.api.apps.v1.Deployment (v1@deployment.json)

```
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    | name: mysql-deployment
```

# Implementing a Deployment

! pvc-deployment.yml ✕

home > osilkin > Programming > demo > copilot-ops > ! pvc-deployme

io.k8s.api.apps.v1.Deployment (v1@deployment.json)

```
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    | name: mysql-deployment
5  spec:
6    | selector:
7    |   matchLabels:
```

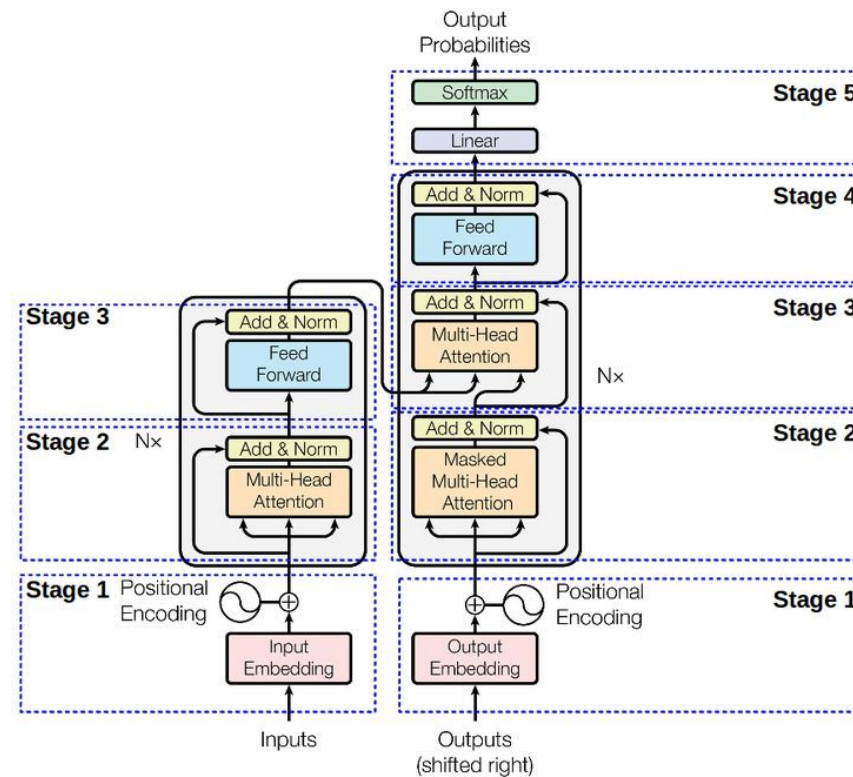


# Implementing a Deployment

# Getting Help From Transformers



# Generative Transformers: GPT-3



# GPT-3 Codex

```
1  import { React } from 'react';  
2  
3  // This react app displays a list of todo items and allows the user to add or delete items  
4  const App = (props) => {
```

# GPT-3 Codex

```
1  import { React } from 'react';
2
3  // This react app displays a list of todo items and allows the user to add or delete items
4  const App = (props) => {
5    const [todos, setTodos] = useState([]);
6    const [input, setInput] = useState('');
7
8    const handleSubmit = (e) => {
9      e.preventDefault();
10     setTodos([...todos, input]);
11     setInput('');
12   };
13
14   const handleDelete = (index) => {
15     const newTodos = [...todos];
16     newTodos.splice(index, 1);
17     setTodos(newTodos);
18   };
19
```

# GPT-3 Codex: YAML Mode

```
1  # Create a Kubernetes MySQL deployment using MySQL version 5.7
2  kind: Deployment
```

# GPT-3 Codex: YAML Mode

```
1  # Create a Kubernetes MySQL deployment using MySQL version 5.7
2  kind: Deployment
3  apiVersion: apps/v1
4  metadata:
5    name: mysql
6    labels:
7      app: mysql
8  spec:
9    replicas: 1
10   selector:
11     matchLabels:
12       app: mysql
```

# Demo: Can GPT-3 Solve This?

mysql-deployment.yaml

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9    selector:
10     matchLabels:
11       app: mysql
12       application-crd-id: kubeflow-pipelines
13    strategy:
14     type: Recreate
15    template:
16     metadata:
17       labels:
18         app: mysql
19         application-crd-id: kubeflow-pipelines
20     spec:
21       containers:
22         - args:
23             - --ignore-db-dir=lost+found
24             - --datadir
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27           - name: MYSQL_ALLOW_EMPTY_PASSWORD
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31         ports:
32           - containerPort: 3306
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35           requests:
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39           - mountPath: /var/lib/mysql
40             name: mysql-persistent-storage
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13      app: mysql
14      application-crd-id: kubeflow-pipelines

```

mysql-pvc.yaml

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2  kind: PersistentVolumeClaim
3  metadata:
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5      application-crd-id: kubeflow-pipelines
6      name: mysql-pv-claim
7  spec:
8    accessModes:
9      - ReadWriteOnce
10    resources:
11      requests:
12        storage: 20Gi

```



# How Can copilot-ops

- ▶ Improve?  
Fine-tuning codex model
- ▶ Clever prompt engineering



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operate-first / apps

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14



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96



Star

27



Code



Issues

53



Pull requests

18



Actions



Wiki



Security



Insights



master



5 branches



0 tags

Go to file

Add file



Code



HumairAK Merge pull request #2017 from Humair...



386de6f 5 days ago



2,179 commits



.github

Fix typo in sync action.

2 months ago



acm

Add new group with access to acm cluster provision...

28 days ago



acme-operator

Add acme-operator to osc-cl2.

4 months ago



alertreceiver

Remove zero cluster manifests and references.

5 months ago



argocd-notifications

Fix argocd url format for argocd notif config.

4 months ago



argocd

Disable anon user in argocd.

5 days ago



ceph

Remove zero cluster manifests and references.

5 months ago

## About

Operate-first application manifests

hacktoberfest

kustomize



Readme



GPL-3.0 license



27 stars



14 watching



96 forks

## Releases

No releases published



Search or jump to...



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Public

Watch

14



Fork

96



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18



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**Want to contribute to operate-first/apps?**

Dismiss

If you have a bug or an idea, read the [contributing guidelines](#) before opening an issue.  
If you're ready to tackle some open issues, [we've collected some good first issues for you](#).

Filters



is:issue is:open



Labels

132



Milestones

0

New issue

53 Open ✓ 261 Closed

Author

Label

Projects

Milestones

Assignee

Sort



**Open Infra Summit Demo on Operate First**

priority/critical-urgent

2

#2014 opened 6 days ago by oindrillac



**Python 3.6 too old for pandas, pint, etc.**

#2009 opened 7 days ago by MichaelTiemannOSC



## Update mysql deployment

Write

Preview

**H** **B** *I*          ▾

Leave a comment

Attach files by dragging & dropping, selecting or pasting them.



 Styling with Markdown is supported

Submit new issue

 Remember, contributions to this repository should follow its [contributing guidelines](#).



## Update mysql deployment

Write

Preview

H B I ≡ <> 🔗 ☰ ½☰ ☑ @ ↗ ↶

<!-- reference files here -->

`@kfp-tekton/base/deployments/mysql.yaml`

<!-- describe your issue here -->

Update the deployment to use mysql-persistent-storage-backup as storage.

Attach files by dragging & dropping, selecting or pasting them.



Styling with Markdown is supported

Submit new issue

# Update mysql deployment #2018

Open

RobotSail opened this issue 13 minutes ago · 0 comments



RobotSail commented 13 minutes ago

`@kfp-tekton/base/deployments/mysql.yaml`Update the deployment to use `mysql-persistent-storage-backup` as storage.

copilot-ops-bot mentioned this issue 9 minutes ago

**\*bzz\* \*bzz\* making update #2019**

Open



Write

Preview

H B I ≡ <> 🔗 ☰ ≡ ☑ @ ↗ ↶

Leave a comment



# \*bzz\* \*bzz\* making update #2019

[Edit](#)[Code](#)

CONFIDENTIAL designator

[Open](#)copilot-ops-bot wants to merge 1 commit into `operate-first:master` from `copilot-ops-bot:robot-update`[Conversation](#) 0[Commits](#) 1[Checks](#) 0[Files changed](#) 1

+2 -2

Changes from **all commits** File filter Conversations Jump to

0 / 1 files viewed

[Review changes](#)

kfp-tektion/base/deployments/mysql.yaml

☐ Viewed

@@ -2,7 +2,7 @@ apiVersion: apps/v1

2

2

kind: Deployment

3

3

metadata:

4

4

labels:

5

- app: mysql

5

+ app: mysql-backup

6

6

application-crd-id: kubeflow-pipelines

7

7

name: mysql

8

8

spec:



@@ -40,6 +40,6 @@ spec:

40

40

name: mysql-persistent-storage

41

41

serviceAccountName: mysql

42

42

volumes:

43

- name: mysql-persistent-storage

43

+ - name: mysql-persistent-storage-backup

44

44

persistentVolumeClaim:

45

45

claimName: mysql-pv-claim





# \*bzz\* \*bzz\* making update #2019

Edit

&lt;&gt; Code ▾

Open

copilot-ops-bot wants to merge 2 commits into `operate-first:master` from `copilot-ops-bot:robot-update` 

Conversation 2

Commits 2

Checks 0

Files changed 1

+1 -1 

Changes from all commits ▾

File filter ▾



Conversations ▾

Jump to ▾

0 / 1 files viewed



Review changes ▾

2  kfp-tektion/base/deployments/mysql.yaml ☐ Viewed

@@ -40,6 +40,6 @@ spec:

40 40 name: mysql-persistent-storage

41 41 serviceAccountName: mysql

42 42 volumes:

43 - - name: mysql-persistent-storage

43 + - name: mysql-persistent-storage-backup

44 44 persistentVolumeClaim:

45 45 claimName: mysql-pv-claim

# EOF

- ▶ Project Page:

<https://github.com/redhat-et/copilot-ops>

- ▶ Reach out to [osilkin@redhat.com](mailto:osilkin@redhat.com) for API key provisioning