

K8s & EC2 Connection

Connect to the Server

1. Generate EC2 Key

- If you have EC2 key, you can skip this step.
- In the EC2 VM, generate key by using

```
ssh-keygen
```

- Hence, we get id_rsa (private key) & id_rsa.pub (public key)
- Store into the folder in home/accountnumber/.ssh => /home/username/.ssh/filename

```
mv id_rsa.pub authorized_keys
```

- Move the private key into ubuntu
- Download id_rsa from local

```
scp root@1.1.1.1:/pwd ./
```

2. Connect to EC2:

- ```
ssh -i <private.key> -L 6445:localhost:6443 username@ssh.diaper-project.com
```

- L mean to forward server's port to local, because Kubernetes exposes port 6445, we would like to forward it to localhost:6443.
- Username is your NetID. An admin account holder should be able to create the linux account for you.

- If permission error

```
sudo chmod 600 private.key
```

- You should see a pop-up looks like this, which means that you have already connected to the server.

```
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro

System information as of Fri Feb 23 20:24:19 UTC 2024

System load: 0.12060546875 Users logged in: 0
Usage of /: 49.9% of 28.89GB IPv4 address for cni0: 10.42.0.1
Memory usage: 20% IPv4 address for docker0: 172.17.0.1
Swap usage: 0% IPv4 address for eth0: 172.31.31.154
Processes: 227

* Ubuntu Pro delivers the most comprehensive open source security and
 compliance features.

 https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

13 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

*** System restart required ***
Last login: Fri Feb 23 20:24:20 2024 from 47.157.220.140
zw738@ip-172-31-31-154: $
```

- 

## Connect to Kubernetes

Reminder, before connecting to the server. **You need to ask the admin for a server token.**

- Install Kubernetes by Docker (you might want to use Docker to build images), check out [Install and turn on Kubernetes](#)
- There are various UI explorers for Kubernetes. Such as k9s, check out [Install \(k9scli.io\)](#).
- Add the server cluster credentials in the Kubernetes config file. (In Mac, config file is located in ~/.kube). The configuration is as follows:

```

a. apiVersion: v1
clusters:
- cluster:
 certificate-authority-data:
LS0tLS1CRUdJTiBDRVJUSUZJQ0FURSB0tLS0tCk1JSUJlRENDQViyZ0F3SUJBZ0lCQURBS0JnZ3Foa2pPUFFRREFqQWpNU0V3SHd
ZRFZRUUREQmhyTTNndGMvYnkKZG1WeUxXTmhrREUzTURjeE56SxPnRF13SGhjTklqUXdNakExTWpJek1UUTJXaGNOTXpRd01qQX
lNak16TVRRMgpXakFqTVNfd0h3WURWUUVFEREJock0zTXRjMlZ5ZG1WeUxXTmhrREUzTURjeE56SxPnRF13V1RBVEJnY3Foa2pPC
lBR5UJZC2dxaGtqTlBRTUJCd05DQUFSeG5lcFhxdloxSUNGcXBrcmNqNkNidDlxK3daSUV6N093ajM5VXJmRnoKTHBBS2tpUzhp
S2NIRGNHMTZiazFjaEhzbVdTLzZjV0ptZm5ueEs3cTg2WDNvME13UURBT0JnTlZiUThtCQWY4RQpCQU1DQXFRd0R3WURWUjBUQVF
IL0JBVXBd0VCL3pBEJnTlZiUTFRFRmdRVUupsRGJlaJrVa2IyV0ZVRjBDREd2CnNrWkUzOG93Q2dZSUTvWk16ajBFQXdlJFRNRQX
dSZ0loQUxKelRCZTQyZfZtMmtTWUJWQW5TW05bWw1TSt1NVcKQVkyalcyamcvMy80QWlFQXdhMTlENk1icThPTS9pMTlSwitXY
UxrdkYjV3UwblMwMmJCV2UzdFjvY2c9Ci0tLS0tRU5EIENFULRJRklDQVRFLS0tLS0K

 server: https://127.0.0.1:6445
 name: diaper-server
contexts:
- context:
 cluster: diaper-server
 user: <Kubernetes service account name>
 name: diaper-server
current-context: diaper-server
kind: Config
preferences: {}
users:
- name: <Kubernetes service account name>
 user:
 token: <Kubernetes service account token>

```

#### 4. Connect to the Kubernetes cluster using the command

```
a. k9s
```

#### 5. then you have

```

Context: diaper-server
Cluster: diaper-server
User: zw738
K9s Rev: v0.26.3 [v0.31.9]
K8s Rev: v1.28.5+k3s1
CPU: 3% ↑
MEM: 34% ↑

- Pods (all) [21] -

```

| NAMESPACE              | NAME                                              | PF | READY | RESTARTS | STATUS  | CPU | MEM | %CPU/R | %CPU/L | R |
|------------------------|---------------------------------------------------|----|-------|----------|---------|-----|-----|--------|--------|---|
| argocd                 | argocd-server-5bdb958c4d-shvnx                    | ●  | 1/1   | 1        | Running | 1   | 72  | n/a    | n/a    | a |
| argocd                 | httpbin-6c989cbc8c-mqrqr                          | ●  | 1/1   | 1        | Running | 1   | 61  | n/a    | n/a    | a |
| argocd                 | minio-6d79d685d-4vcqh                             | ●  | 1/1   | 1        | Running | 1   | 227 | n/a    | n/a    | a |
| argocd                 | workflow-controller-954b4d959-2sjtd               | ●  | 1/1   | 1        | Running | 3   | 60  | n/a    | n/a    | a |
| argocd                 | argo-rollouts-5f665b6dd9-fnprj                    | ●  | 1/1   | 2        | Running | 3   | 74  | n/a    | n/a    | a |
| argocd                 | argocd-application-controller-0                   | ●  | 1/1   | 1        | Running | 6   | 206 | n/a    | n/a    | a |
| argocd                 | argocd-applicationset-controller-8478f5d679-ng92j | ●  | 1/1   | 1        | Running | 1   | 39  | n/a    | n/a    | a |
| argocd                 | argocd-dex-server-5b76f5bbb6-h145q                | ●  | 1/1   | 1        | Running | 1   | 94  | n/a    | n/a    | a |
| argocd                 | argocd-notifications-controller-5dfb54dc99-8fcdv  | ●  | 1/1   | 1        | Running | 1   | 41  | n/a    | n/a    | a |
| argocd                 | argocd-redis-66d9777b78-bf6wx                     | ●  | 1/1   | 1        | Running | 2   | 10  | n/a    | n/a    | a |
| argocd                 | argocd-repo-server-96fb99b69-blzt9                | ●  | 1/1   | 1        | Running | 2   | 102 | n/a    | n/a    | a |
| argocd                 | argocd-server-d6f878fbd-7bndr                     | ●  | 1/1   | 1        | Running | 1   | 22  | n/a    | n/a    | a |
| coredns                | coredns-6799fbc5-chnsk                            | ●  | 1/1   | 6        | Running | 2   | 59  | 2      | n/a    | 5 |
| local-path-provisioner | local-path-provisioner-84db5d44d9-hzh52           | ●  | 1/1   | 6        | Running | 1   | 33  | n/a    | n/a    | a |
| metrics-server         | metrics-server-67c658944b-hsb24                   | ●  | 1/1   | 6        | Running | 5   | 59  | 5      | n/a    | 4 |
| svclb-nexus            | svclb-nexus-427bc072-zsd7f                        | ●  | 1/1   | 0        | Running | 0   | 0   | n/a    | n/a    | a |
| svclb-traefik          | svclb-traefik-59387152-4h22r                      | ●  | 2/2   | 2        | Running | 0   | 0   | n/a    | n/a    | a |
| traefik                | traefik-75874fc48-nkbk7                           | ●  | 1/1   | 0        | Running | 2   | 41  | n/a    | n/a    | a |

- a. `<pod>`
- b. If you don't see all pods running, it is probably because you're viewing a specific namespace. You can simply press '0' to view pods in all namespaces.
- c. To navigate between Services, Deployments, or Pods, you can type  

```
:services or :deployments or :pods
```
- d. To port-forward a pod, type `shift+F`. To view the log, type `l`. To kill a pod, type `ctrl+k`.... You can always view these commands by typing ? (question mark).

More k9s Tutorial: [derailed/k9s: Kubernetes CLI To Manage Your Clusters In Style! \(github.com\)](https://github.com/derailed/k9s)