

Article on Setting up Basic Authentication

Setup basic authentication on kubernetes

Note: This is not recommended in a production environment. This is only for learning purposes.

Follow the below instructions to configure basic authentication in a kubeadm setup.

Create a file with user details locally at `/tmp/users/user-details.csv`

```
1. # User File Contents
2. password123,user1,u0001
3. password123,user2,u0002
4. password123,user3,u0003
5. password123,user4,u0004
6. password123,user5,u0005
```

Edit the kube-apiserver static pod configured by kubeadm to pass in the user details. The file is located at `/etc/kubernetes/manifests/kube-apiserver.yaml`

```
1. apiVersion: v1
2. kind: Pod
3. metadata:
4.   name: kube-apiserver
5.   namespace: kube-system
6. spec:
7.   containers:
8.     - command:
9.       - kube-apiserver
10.      <content-hidden>
11.      image: k8s.gcr.io/kube-apiserver-amd64:v1.11.3
12.      name: kube-apiserver
13.      volumeMounts:
14.        - mountPath: /tmp/users
15.          name: usr-details
16.          readOnly: true
17.   volumes:
18.     - hostPath:
19.       path: /tmp/users
20.       type: DirectoryOrCreate
21.     name: usr-details
```

Modify the kube-apiserver startup options to include the basic-auth file

```
1. apiVersion: v1
2. kind: Pod
3. metadata:
4.   creationTimestamp: null
5.   name: kube-apiserver
6.   namespace: kube-system
7. spec:
8.   containers:
9.   - command:
10.     - kube-apiserver
11.     - --authorization-mode=Node,RBAC
12.     <content-hidden>
13.     - --basic-auth-file=/tmp/users/user-details.csv
```

Create the necessary roles and role bindings for these users:

```
1. ---
2. kind: Role
3. apiVersion: rbac.authorization.k8s.io/v1
4. metadata:
5.   namespace: default
6.   name: pod-reader
7. rules:
8. - apiGroups: ["" ] # "" indicates the core API group
9.   resources: ["pods"]
10.  verbs: ["get", "watch", "list"]
11.
12. ---
13. # This role binding allows "jane" to read pods in the "default" namespace.
14. kind: RoleBinding
15. apiVersion: rbac.authorization.k8s.io/v1
16. metadata:
17.   name: read-pods
18.   namespace: default
19. subjects:
20. - kind: User
21.   name: user1 # Name is case sensitive
22.   apiGroup: rbac.authorization.k8s.io
23. roleRef:
24.   kind: Role #this must be Role or ClusterRole
25.   name: pod-reader # must match the name of the Role or ClusterRole you wish to bind to
26.   apiGroup: rbac.authorization.k8s.io
```

Once created, you may authenticate into the kube-api server using the users credentials

```
curl -v -k https://localhost:6443/api/v1/pods -u "user1:password123"
```