

GROUP 6

ASSIGNMENT 1

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**USE KUBERNETES HALM PACKAGE INSTALLER AND PERFORM INSTALLATION ,
CONFIGURATION AND REVISION OF SOFTWARE PACKAGE .**

1. Created kubernetes cluster on aws ec2 instance (red hat linux 8):

Master node - node 7

Worker node - node 8

```
[root@node7 ~]# kubectl get nodes
NAME     STATUS   ROLES   AGE     VERSION
node7   Ready    master   13m    v1.14.2
node8   NotReady <none>   4m17s   v1.14.2
[root@node7 ~]# kubectl get nodes
NAME     STATUS   ROLES   AGE     VERSION
node7   Ready    master   13m    v1.14.2
node8   Ready    <none>   6m12s   v1.14.2
```

2. Downloading Helm Script:

```
[root@node7 ~]#
[root@node7 ~]# ls -ltr
total 4232236
-rw-r--r--. 1 root root      26888 Mar  7  2017 container-selinux-2.9-4.el7.noarch.rpm
-rw-r--r--. 1 root root      56988 Aug 10  2017 libseccomp-2.3.1-3.el7.x86_64.rpm
-rw-r--r--. 1 root root     15080 Oct  2  2017 epel-release-latest-7.noarch.rpm
-rw-r--r--. 1 root root  264129476 Jul 11  2018 splunk-7.1.2-a0c72a66db66-linux-2.6-x86_64.rpm
-rw-r--r--. 1 root root 4043309056 Dec 25  2018 rhel-server-7.2-x86_64-dvd.iso
-rw-----. 1 root root      1182 Dec 26  2018 anaconda-ks.cfg
drwxr-xr-x. 3 root root   311296 Dec 30  2018 rhelrepo
-rw-r--r--. 1 root root      337 Jul 19 23:48 dashboard-admin.yaml
-rw-r--r--. 1 root root     4577 Jul 20 00:58 kubernetes-dashboard.yaml
-rw-----. 1 root root     3990 Jul 20 01:03 nohup.out
-rw-r--r--. 1 root root  25688386 Jul 31 06:26 splunkforwarder-7.3.1-bd63e13aa157-Linux-x86_64.tgz
-rw-r--r--. 1 root root     88525 Aug  8 08:20 thank-you-universalforwarder.html
-rw-r--r--. 1 root root   136149 Aug  8 22:23 index.html
drwxr-xr-x. 2 root root    4096 Aug 20 10:09 httpd-webserver-deployment-manifests
-rw-r--r--. 1 root root     7034 Oct  7 23:02 get_helm.sh
```

3. Run the script:

```
[root@node7 ~]# ./get_helm.sh
Downloading https://get.helm.sh/helm-v2.14.3-linux-amd64.tar.gz
Preparing to install helm and tiller into /usr/local/bin
helm installed into /usr/local/bin/helm
tiller installed into /usr/local/bin/tiller
Run 'helm init' to configure helm.
```

4. Creating Tiller Service Account:

```
[root@node7 ~]# kubectl -n kube-system create serviceaccount tiller
serviceaccount/tiller created
[root@node7 ~]#
```

5. Bind the Tiller Service Account to Cluster Admin Role:

```
[root@node7 ~]# kubectl create clusterrolebinding tiller --clusterrole cluster-admin --serviceaccount=kube-system:tiller
clusterrolebinding.rbac.authorization.k8s.io/tiller created
[root@node7 ~]#
```

6. Initialising Helm:

```
[root@node7 ~]# helm init --service-account tiller
Creating /root/.helm
Creating /root/.helm/repository
Creating /root/.helm/repository/cache
Creating /root/.helm/repository/local
Creating /root/.helm/plugins
Creating /root/.helm/starters
Creating /root/.helm/cache/archive
Creating /root/.helm/repository/repositories.yaml
Adding stable repo with URL: https://kubernetes-charts.storage.googleapis.com
Adding local repo with URL: http://127.0.0.1:8879/charts
$HELM_HOME has been configured at /root/.helm.

Tiller (the Helm server-side component) has been installed into your Kubernetes Cluster.

Please note: by default, Tiller is deployed with an insecure 'allow unauthenticated users' policy.
To prevent this, run `helm init` with the `--tiller-tls-verify` flag.
For more information on securing your installation see: https://docs.helm.sh/using_helm/#securing-your-helm-installation
```

7. To Verify Tiller is Running:

```
[root@node7 ~]# kubectl get pods --namespace kube-system
NAME                               READY   STATUS    RESTARTS   AGE
coredns-5c98db65d4-fns8q          1/1    Running   17        81d
coredns-5c98db65d4-t8jwd          1/1    Running   18        81d
etcd-node7                         1/1    Running   18        81d
kube-apiserver-node7              1/1    Running   18        81d
kube-controller-manager-node7     1/1    Running   33        81d
kube-flannel-ds-amd64-5mnvg       1/1    Running   18        81d
kube-flannel-ds-amd64-w2tr6       1/1    Running   7         81d
kube-proxy-p41bm                   1/1    Running   7         81d
kube-proxy-v7http                  1/1    Running   18        81d
kube-scheduler-node7              1/1    Running   32        81d
kubernetes-dashboard-7ddbd6949-r8x76 1/1    Running   14        60d
tiller-deploy-8557598fbc-xgzvm   1/1    Running   0         18s
[root@node7 ~]#
```

8. Deploying a Nginx Ingress Application using Helm:

```
[root@node7 ~]# helm install stable/nginx-ingress --name nginx-ingress
```

NAME	REVISION	UPDATED	STATUS	CHART	APP VERSI
ON	NAMESPACE				
nginx-ingress	1	Mon Oct 7 23:34:43 2019	DEPLOYED	nginx-ingress-1.24.0	0.26.1
	default				

9. Deploying Sample App:

NAME	HOSTS	ADDRESS	PORTS	AGE
hello-app	www.devopsbyexample.io	ad0b075fe724641af93daa8bcfdd97bb-681003025.us-east-1.elb.amazonaws.com	80	104s

10. Deleting the Nginx Ingress Deployment :

```
[root@node7 ~]# helm ls
NAME          REVISION      UPDATED      STATUS      CHART      APP VERSI
ON  NAMESPACE
nginx-ingress  1            Mon Oct 7 23:34:43 2019  DEPLOYED  nginx-ingress-1.24.0  0.26.1
      default
[root@node7 ~]# helm delete nginx-ingress
release "nginx-ingress" deleted
[root@node7 ~]# helm ls
[root@node7 ~]#
```