Lab - Multi-tier Guestbook App on k8s

Deploy the Redis Leader

```
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl apply -f https://k8s.io/examples/application/guestbook/redis-lea
der-deployment.yaml
deployment.apps/redis-leader created
```

```
redis-leader-6465bf85d4-v882m          1/1     Running   0          77s
```

```
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl logs -f deployment/redis-leader
Found 2 pods, using pod/redis-deployment-d5cb85bc6-j6ppf
1:C 16 Feb 2026 14:41:04.299 # oO0oOO0oOO0o Redis is starting oO0oOO0oOO0o
1:C 16 Feb 2026 14:41:04.299 # Redis version=6.2.21, bits=64, commit=00000000, modified=0, pid=1, just started
1:C 16 Feb 2026 14:41:04.299 # Warning: no config file specified, using the default config. In order to specify a config file use red
is-server /path/to/redis.conf
1:M 16 Feb 2026 14:41:04.300 * monotonic clock: POSIX clock_gettime
1:M 16 Feb 2026 14:41:04.301 * Running mode=standalone, port=6379.
1:M 16 Feb 2026 14:41:04.301 # Server initialized
1:M 16 Feb 2026 14:41:04.301 * Ready to accept connections
1:M 16 Feb 2026 15:41:13.243 * 1 changes in 3600 seconds. Saving...
1:M 16 Feb 2026 15:41:13.244 * Background saving started by pid 20
20:C 16 Feb 2026 15:41:13.249 * DB saved on disk
20:C 16 Feb 2026 15:41:13.250 * RDB: 0 MB of memory used by copy-on-write
1:M 16 Feb 2026 15:35:10.320 * Background saving terminated with success
```

```
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl apply -f https://k8s.io/examples/application/guestbook/redis^Cea
der-service.yaml
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl apply -f https://k8s.io/examples/application/guestbook/redis-lea
der-service.yaml
service/redis-leader created
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl get svc
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
hello	NodePort	10.99.6.155	<none>	8080:32345/TCP	3d7h
java-app-service	NodePort	10.105.77.100	<none>	80:30080/TCP	17m
kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	3d7h
redis-leader	ClusterIP	10.100.191.184	<none>	6379/TCP	9s
redis-service	NodePort	10.101.251.26	<none>	6379:30079/TCP	141m

Deploy the Redis Followers

```
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl apply -f https://k8s.io/examples/application/guestbook/redis-fol
lower-deployment.yaml

deployment.apps/redis-follower created
```

redis-deployment-d5cb85bc6-j6ppf	1/1	Running	0	143m
redis-follower-6958c9f49c-mw4b4	1/1	Running	0	69s
redis-follower-6958c9f49c-rxsct	1/1	Running	0	69s
redis-leader-6465bf85d4-v882m	1/1	Running	0	6m15s

```
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl apply -f https://k8s.io/examples/application/guestbook/redis-fol
lower-service.yaml
service/redis-follower created
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl get svc
NAME                TYPE        CLUSTER-IP        EXTERNAL-IP    PORT(S)          AGE
hello               NodePort    10.99.6.155       <none>         8080:32345/TCP   3d7h
java-app-service    NodePort    10.105.77.100     <none>         80:30080/TCP     22m
kubernetes          ClusterIP   10.96.0.1         <none>         443/TCP          3d7h
redis-follower      ClusterIP   10.107.181.168    <none>         6379/TCP         32s
redis-leader        ClusterIP   10.100.191.184    <none>         6379/TCP         4m53s
redis-service       NodePort    10.101.251.26     <none>         6379:30079/TCP   145m
```

Deploy the Guestbook Front End

```
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl apply -f https://k8s.io/examples/application/guestbook/frontend-
deployment.yaml
deployment.apps/frontend created
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl get pods -l app=guestbook -l tier=frontend
NAME                       READY    STATUS              RESTARTS    AGE
frontend-88dcd974c-8rnrm   0/1      ContainerCreating   0           7s
frontend-88dcd974c-j5sc4   0/1      ContainerCreating   0           7s
frontend-88dcd974c-zs2k7   0/1      ContainerCreating   0           7s
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl apply -f https://k8s.io/examples/application/guestbook/frontend-
service.yaml
service/frontend created
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl get svc
NAME                TYPE        CLUSTER-IP        EXTERNAL-IP    PORT(S)          AGE
frontend            ClusterIP   10.105.173.196    <none>         80/TCP           7s
hello               NodePort    10.99.6.155       <none>         8080:32345/TCP   3d7h
java-app-service    NodePort    10.105.77.100     <none>         80:30080/TCP     24m
kubernetes          ClusterIP   10.96.0.1         <none>         443/TCP          3d7h
redis-follower      ClusterIP   10.107.181.168    <none>         6379/TCP         2m33s
redis-leader        ClusterIP   10.100.191.184    <none>         6379/TCP         6m54s
redis-service       NodePort    10.101.251.26     <none>         6379:30079/TCP   147m
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$
```

Access the Guestbook

127.0.0.1:9080

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Guestbook

Messages

Submit

Guest1
Guest2
Guest3

Scaling the Front End

```
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl scale deployment frontend --replicas=5
deployment.apps/frontend scaled
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl get pods -l app=guestbook -l tier=frontend
NAME                      READY    STATUS     RESTARTS    AGE
frontend-88dcd974c-4g68v  1/1      Running    0           10s
frontend-88dcd974c-8rnrm  1/1      Running    0           7m8s
frontend-88dcd974c-d6qjd  1/1      Running    0           10s
frontend-88dcd974c-j5sc4  1/1      Running    0           7m8s
frontend-88dcd974c-zs2k7  1/1      Running    0           7m8s
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl scale deployment frontend --replicas=2
deployment.apps/frontend scaled
```

```
vijayagagla@DESKTOP-FP4OP26:~/kubernetes/multitier-guestapp$ kubectl get pods -l app=guestbook -l tier=frontend
NAME                      READY    STATUS     RESTARTS    AGE
frontend-88dcd974c-8rnrm  1/1      Running    0           7m35s
frontend-88dcd974c-zs2k7  1/1      Running    0           7m35s
```