

## 05-statefulset

StatefulSet What it is StatefulSet manages stateful Pods with stable identity and stable storage. When to use Databases, queues, distributed systems Ordered startup/shutdown requirements Persistent data per replica Key fields `spec.serviceName`: headless service for network identity `spec.replicas`: number of instances `spec.volumeClaimTemplates[]`: per-Pod PVC template `spec.podManagementPolicy`: OrderedReady or Parallel Common commands

```
bash kubectl get statefulset kubectl describe statefulset postgres
kubectl scale statefulset postgres --replicas=3 kubectl rollout status
statefulset/postgres kubectl delete statefulset postgres
```

YAML example

```
yaml
apiVersion: apps/v1 kind: StatefulSet metadata: name: postgres spec:
  serviceName: postgres-headless replicas: 2 selector: matchLabels: app:
  postgres template: metadata: labels: app: postgres spec: containers: -
  name: postgres image: postgres:16 env: - name: POSTGRES_PASSWORD value:
  change-me volumeMounts: - name: data mountPath: /var/lib/postgresql/data
  volumeClaimTemplates: - metadata: name: data spec: accessModes:
  ["ReadWriteOnce"] resources: requests: storage: 10Gi
```

Practical notes Pod names are ordinal (postgres-0, postgres-1). Deleting StatefulSet does not automatically delete bound PVCs unless separately configured.