---

apiVersion: v1

kind: Pod

metadata:

  name: pod1

spec:

  containers:

    - image: nginx

      name: nginx-pod

      ports:

        - containerPort: 80

**Replica set:**

In Kubernetes, a ReplicaSet is a resource object used to ensure that a specified number of replicas (identical Pods) are running at all times. It is one of the core components for achieving high availability, scalability, and reliability of applications deployed in a Kubernetes cluster.

apiVersion: apps/v1

kind: ReplicaSet

metadata:

  name: my-replicaset

spec:

  replicas: 3

  selector:

    matchLabels:

      app: my-app

  template:

    metadata:

      labels:

        app: my-app

    spec:

      containers:

        - name: my-container

          image: nginx

In this example, we're creating a ReplicaSet named **my-replicaset** that maintains three replicas of a Pod template with the label **app: my-app**. Each replica runs a container with the image **nginx**.

**Deployment:**

apiVersion: apps/v1

kind: Deployment

metadata:

  name: my-deployment

spec:

  replicas: 3

  selector:

    matchLabels:

      app: my-app

  template:

    metadata:

      labels:

        app: my-app

    spec:

      containers:

        - name: my-container

          image: nginx