
# Tell me about Pod lifecycle in Kubernetes?

**Pod**: The smallest deployable unit in Kubernetes, encapsulating one or more containers.

- **Multi-Container Support**: Can run multiple containers sharing storage & network.
- **Shared Resources**: Containers in a pod share the same IP, hostname, and volumes.
- **Ephemeral**: Designed to be created, destroyed, and replaced dynamically.
- **Managed by Controllers**: Like Deployments, StatefulSets, and DaemonSets for scaling and stability.

**Pod Lifecycle Phases:**

1. **Pending** – The Pod is accepted but not yet running (e.g., waiting for scheduling).
2. **Running** – The Pod has been scheduled, and at least one container is running.
3. **Succeeded** – All containers in the Pod have completed successfully and will not restart.
4. **Failed** – One or more containers have failed, and the Pod has stopped running.
5. **Unknown** – The state of the Pod is unknown (e.g., due to network issues).

**Which type of workload is most likely to have a Pod in the "Succeeded" state?**

A) A continuously running web server
B) A batch job that processes a dataset and exits
C) A long-running database service
D) A network load balancer

**Answer:** B) A batch job that processes a dataset and exits

---

**In Kubernetes, what happens to a Pod in the "Succeeded" state by default?**

A) It automatically restarts

B) It remains in the cluster indefinitely unless deleted

C) It is automatically deleted after some time

D) It enters the "Pending" state again

**Answer:** B) It remains in the cluster indefinitely unless deleted