Ephemeral Containers

Troubleshooting with Ephemeral Containers

Ephemeral Containers

Ephemeral containers in Kubernetes are special-purpose containers used primarily for debugging running Pods.

They are not part of the Pod's original spec and do not survive Pod restarts, which is why they’re called "ephemeral".

The Problem

Example of why ephermeral containers are needed.

- Pod `webapp` is **stuck in** `Running` **but not** `Ready`
- Readiness probe is misconfigured:

```
readinessProbe:
  httpGet:
    path: /wrongpath
    port: 80
```

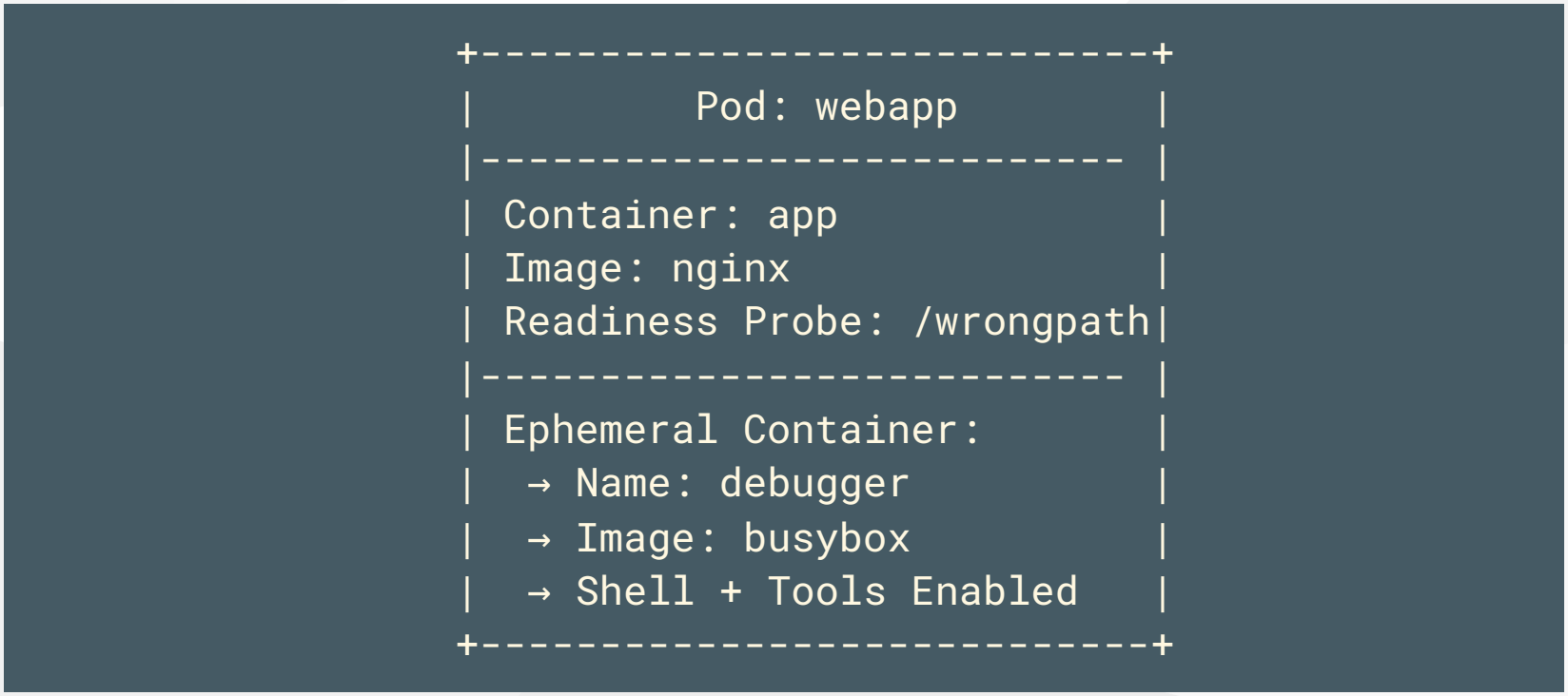
- No shell available inside `nginx`

The Solution: Ephemeral Container Debugger

```
kubectl debug -it webapp \
  --target=app \
  --image=busybox \
  --name=debugger
```

- Shared namespace
- Run `wget`, `ls`, etc.

Visual: Pod Debugging Architecture



After Debugging

- Fix probe using `kubectl patch`
- Pod becomes `READY: 1/1`
- Ephemeral container exits silently