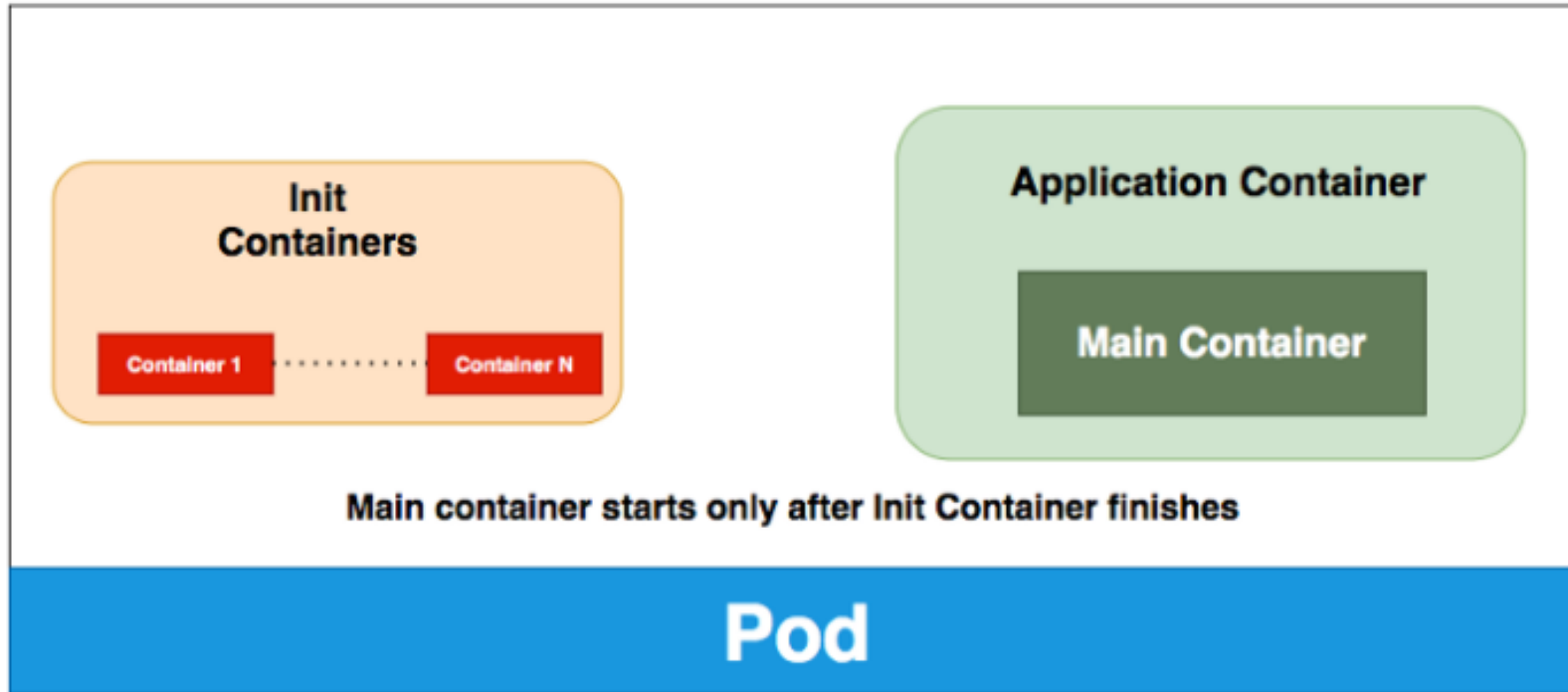# Init containers

What are Init Containers

- Init Containers are the containers that should run and complete before the startup of the main container in the pod.

- It provides a separate lifecycle for the initialization so that it enables separation of concerns in the applications.

- For example, you need to install some specific software before you want to run your application you can do that installation part in the Init Container of the pod.

Init Container Pattern

-
- Init containers are exactly like regular containers, except:
  - Init containers always run to completion.
  - Each init container must complete successfully before the next one starts.
- To specify an init container for a Pod, add the initContainers field into the Pod specification, as an array of container items
- If you specify multiple init containers for a Pod, kubelet runs each init container sequentially. Each init container must succeed before the next can run

yaml

```yaml
spec:
  containers:
  - name: nginx
    image: nginx
    ports:
    - containerPort: 80
    volumeMounts:
    - name: workdir
      mountPath: /usr/share/nginx/html
  # These containers are run during pod initialization
  initContainers:
  - name: busybox
    image: busybox
    command: ["/bin/sh"]
    args: ["-c", "echo '<html><h1>Hi I am from Init container</h1><html>' >> /work-dir/index.html"]
```

```
root@ubuntu20:~# kubectl create -f init-cont.yaml
pod/init-container-demo created
root@ubuntu20:~# kubectl get pods
NAME                  READY    STATUS      RESTARTS    AGE
init-container-demo   0/1      Init:0/1    0           5s
nginx                 1/1      Running     0           46m
root@ubuntu20:~# kubectl get pods
NAME                  READY    STATUS           RESTARTS    AGE
init-container-demo   0/1      PodInitializing  0           7s
nginx                 1/1      Running          0           46m
```

Kubectl describe pods <pod name>

```
Init Containers:
  busybox:
    Container ID:   containerd://c521d7fa66a3c6b50a205f0a02b1819e37807859f2f0d023bead95c0653a5fbb
    Image:          busybox
    Image ID:       docker.io/library/busybox@sha256:20142e89dab967c01765b0aea3be4cec3a5957cc330f061e5503ef6168ae6613
    Port:           <none>
    Host Port:      <none>
    Command:
      /bin/sh
    Args:
      -c
      echo '<html><h1>Hi I am from Init container</h1><html>' >> /work-dir/index.html
    State:          Terminated
      Reason:       Completed
      Exit Code:    0
      Started:      Sat, 10 Sep 2022 06:24:37 +0000
      Finished:     Sat, 10 Sep 2022 06:24:37 +0000
    Ready:          True
    Restart Count:  0
    Environment:    <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-jgp26 (ro)
      /work-dir from workdir (rw)
```