

From DevOps to Site Reliability Engineering

A Journey



Photo by [Ben Kitching](#) on Unsplash

Hi,
I'm "Konst" (Konstantin) Tchernov

Site Reliability Engineer – GitLab

Views are my own

Links: <https://konst.kiwi/>

History



Photo by [York Minster](#) on Flickr

Old School IT



A charity in Auckland

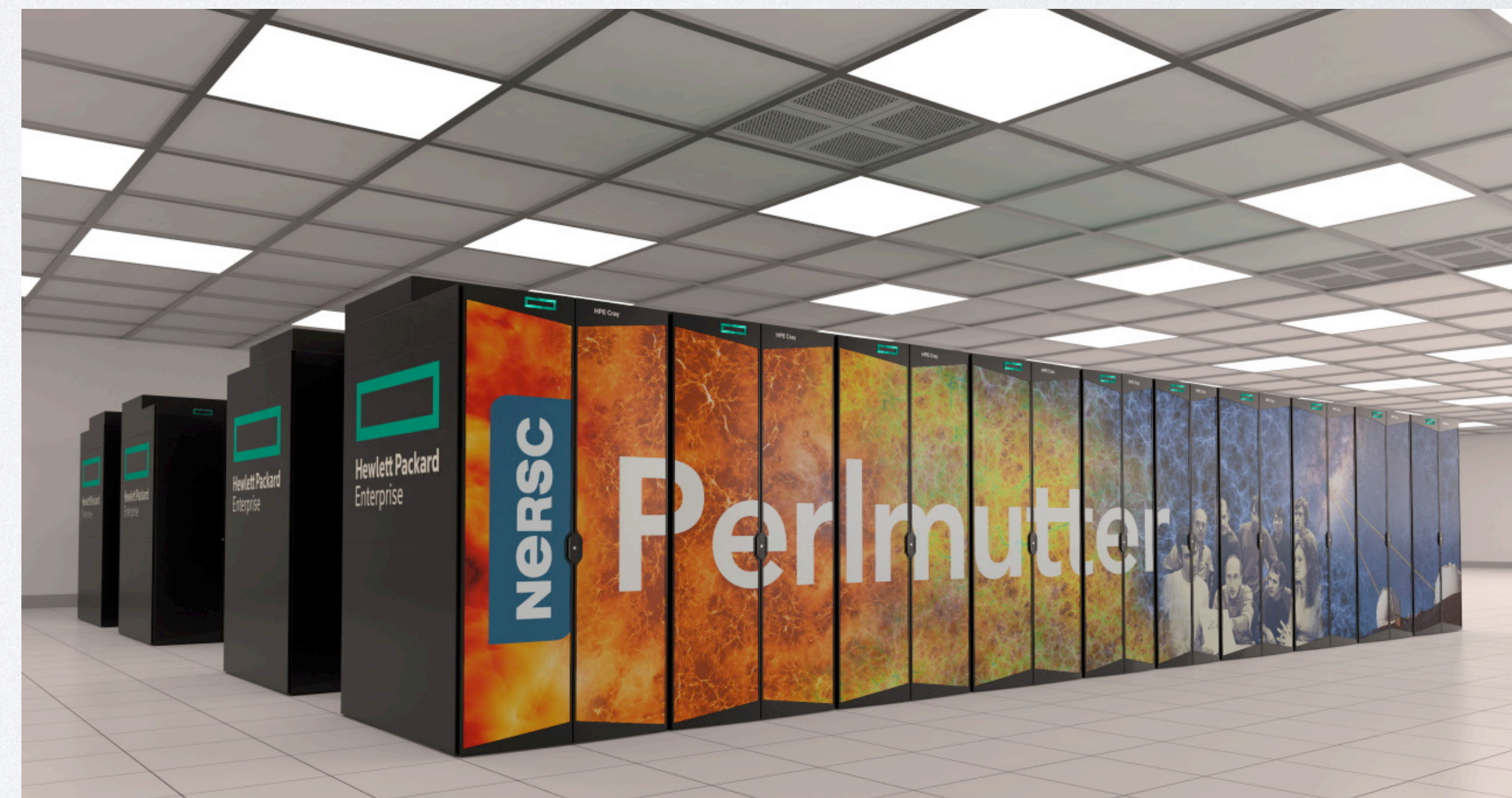
On-Premise



A software
company
in Auckland

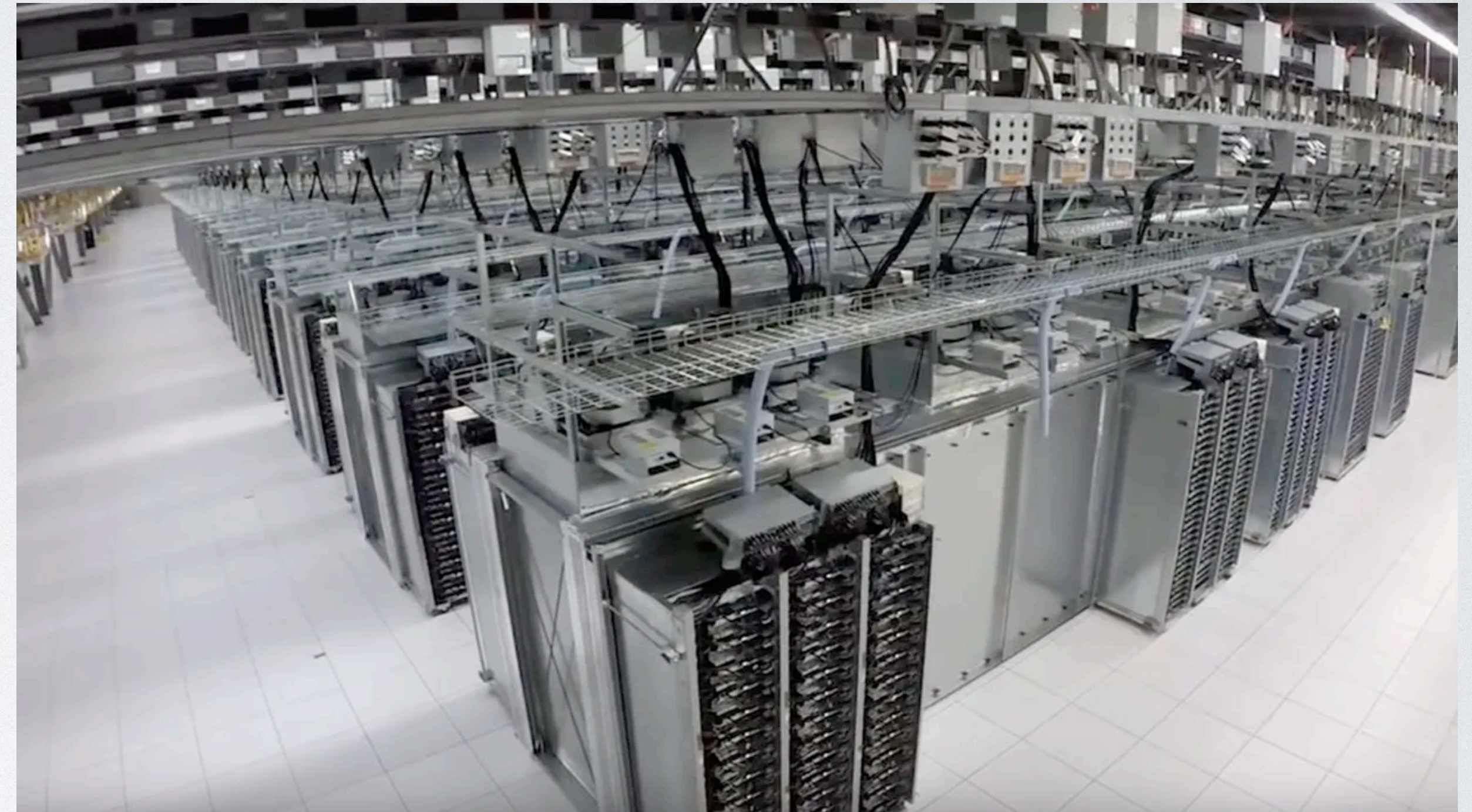
Big Data Centres

NERSC, Berkley,
California



Public Cloud Computing

Google Cloud



Provisioning a New VM

Google Cloud with Python

```
instance_client = compute_v1.InstancesClient()

operation = instance_client.start(
    project=project_id, zone=zone, instance=instance_name
)
```

Google Cloud with CLI

```
gcloud compute instances create my-instance \
    --zone us-central1-a \
    --image-family=debian-10
```

Google Cloud with Terraform

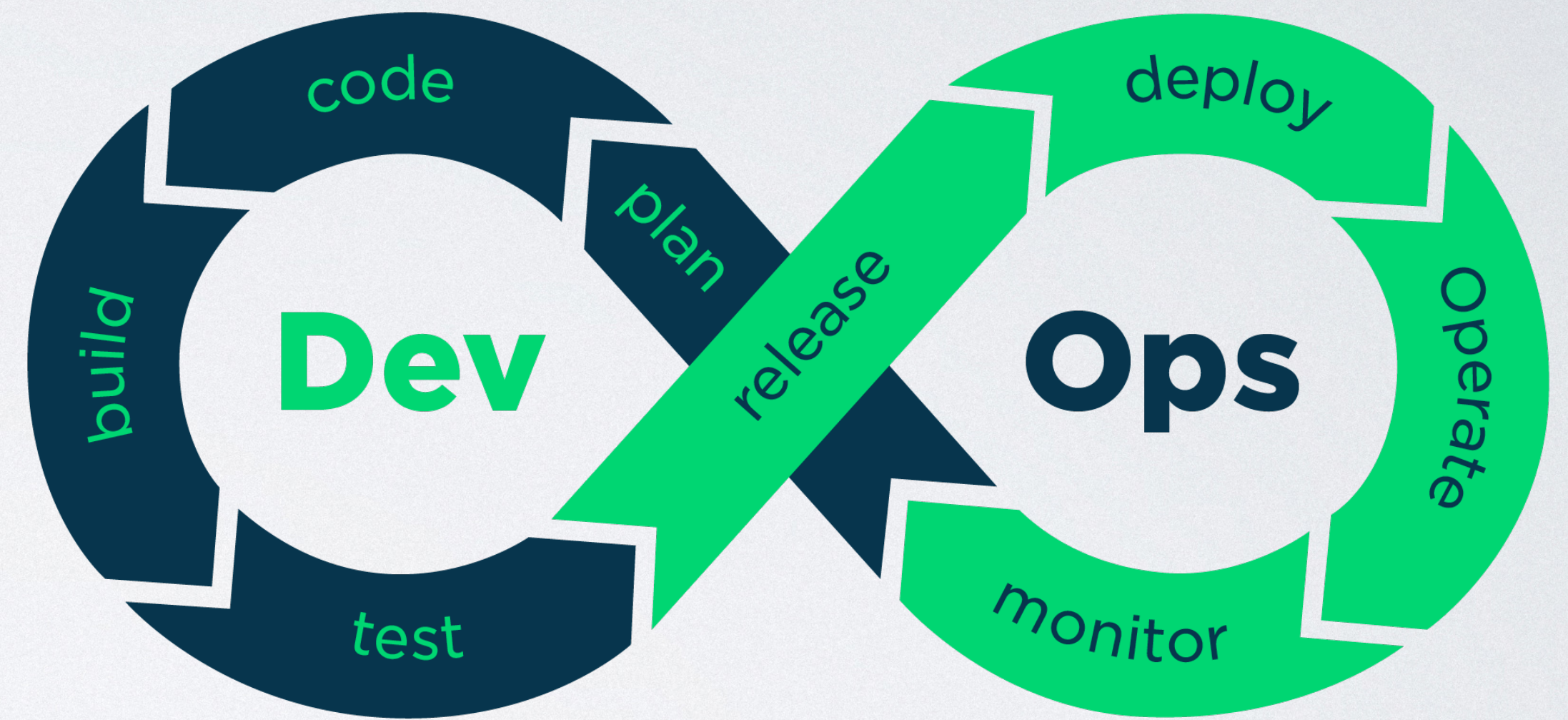
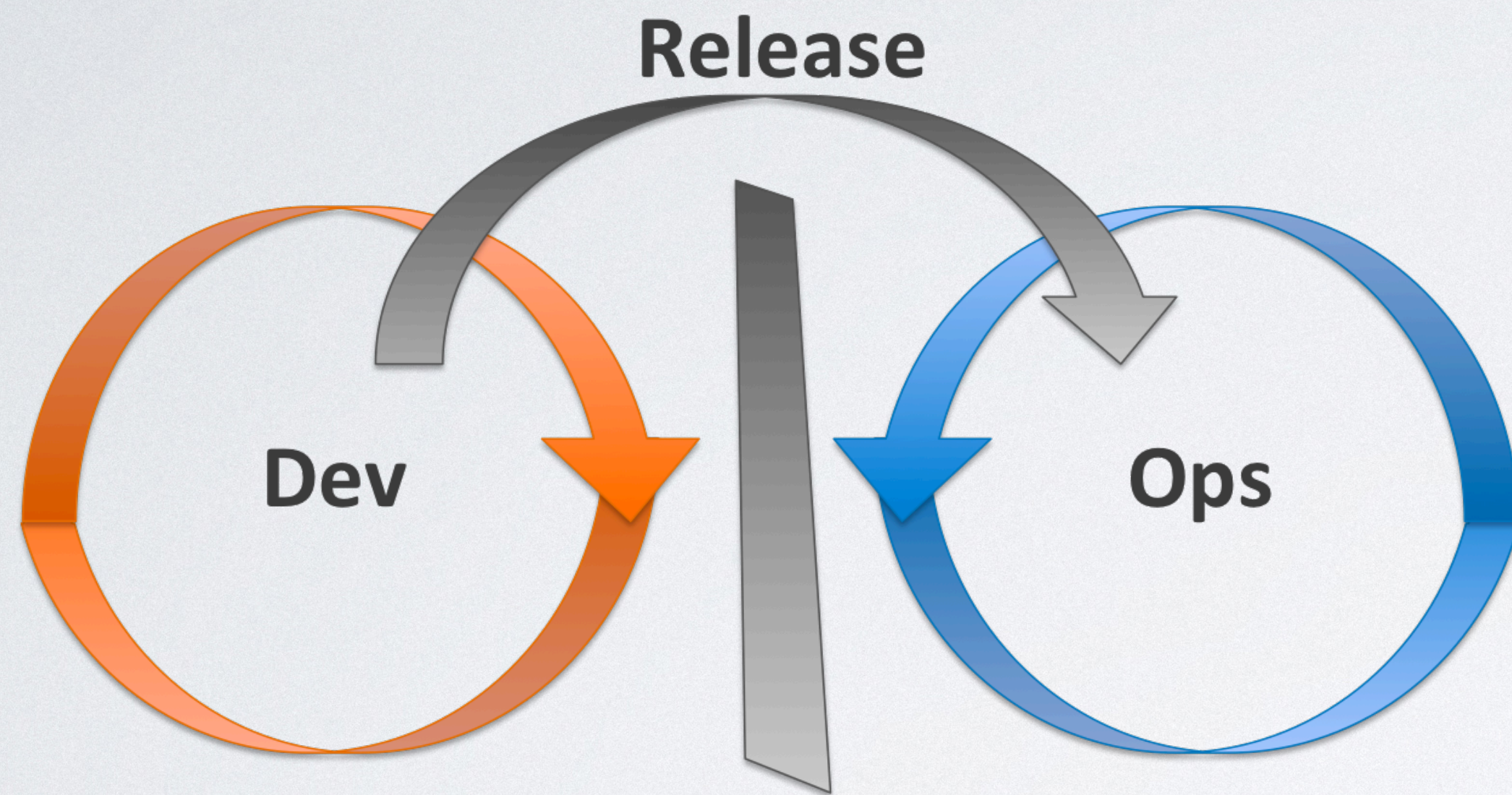
```
resource "google_compute_instance" "my_instance" {
  name          = "my-instance"
  machine_type  = "n1-standard-1"
  zone          = "us-central1-a"

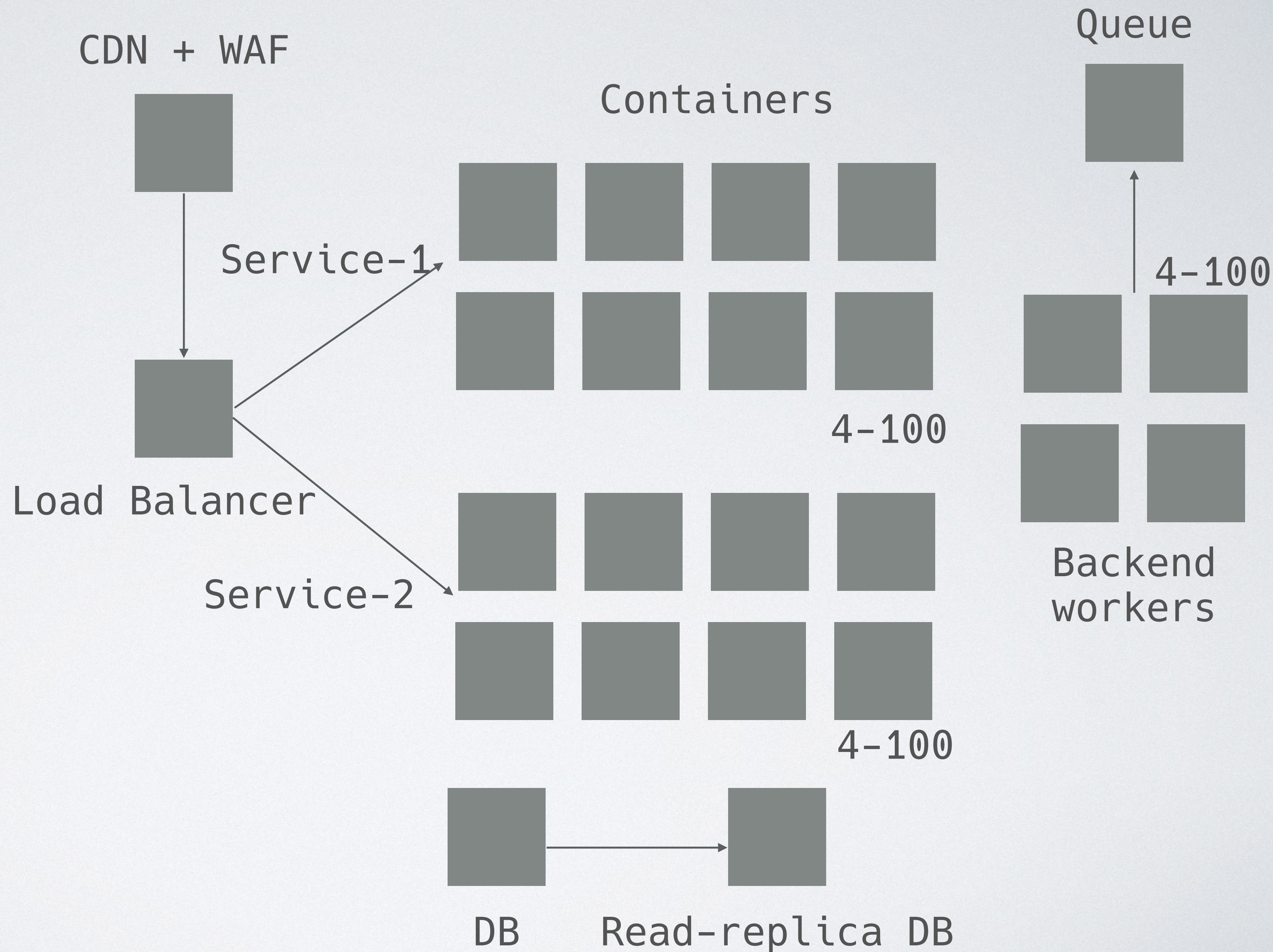
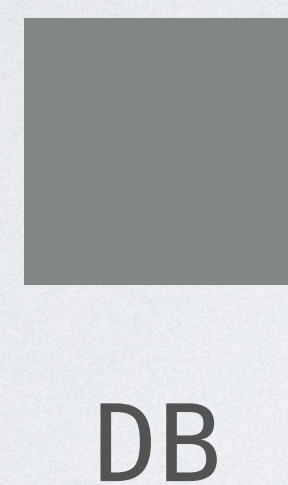
  boot_disk {
    initialize_params {
      image = "debian-10"
    }
  }

  network_interface {
    network = "default"
    access_config {}
  }
}
```


Let's talk about "DevOps"

Defining DevOps





Site Reliability Engineering (SRE)

- “A specific implementation of DevOps”
- Software Engineering approach to reliability.
- Automation.

Service Level Objectives (SLOs)

- Meet an agreed level of reliability.
- Simplest SLO: % uptime.
- Or:
$$\frac{\text{number of successful API responses}}{\text{total API responses}}$$

Uptime to Minutes

- 99.99% => 0.01% downtime, 4m 21s per month
- 99.9% => 0.1% downtime, 43m 28s per month
- 99.5% => 0.5% downtime, 3h 37m 21s per month



100% Reliability



Automate SL0s.

Embracing Failure

Postmortems: learning from failure

Blamelessly.

Look for Technical Solutions.

Toil



SRE Things

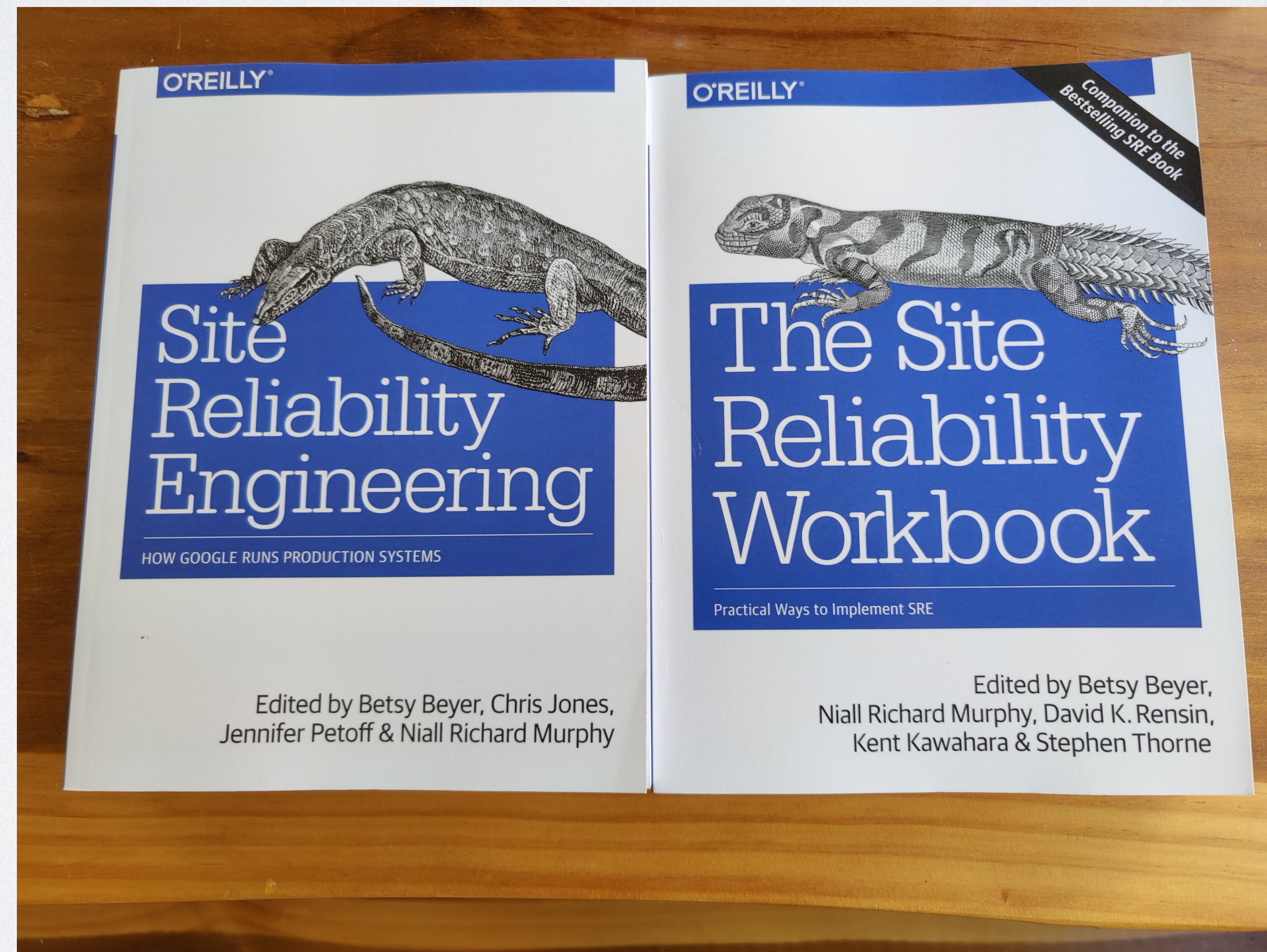
- SLO
- Embracing Failure
- Managing Toil

Other SRE Things

- Disaster Recovery
- On-call and Incident Management
- Observability & Monitoring
- Feature Dev

Site Reliability Engineering (SRE)

<https://sre.google/books/>



Questions

<https://konst.kiwi/>