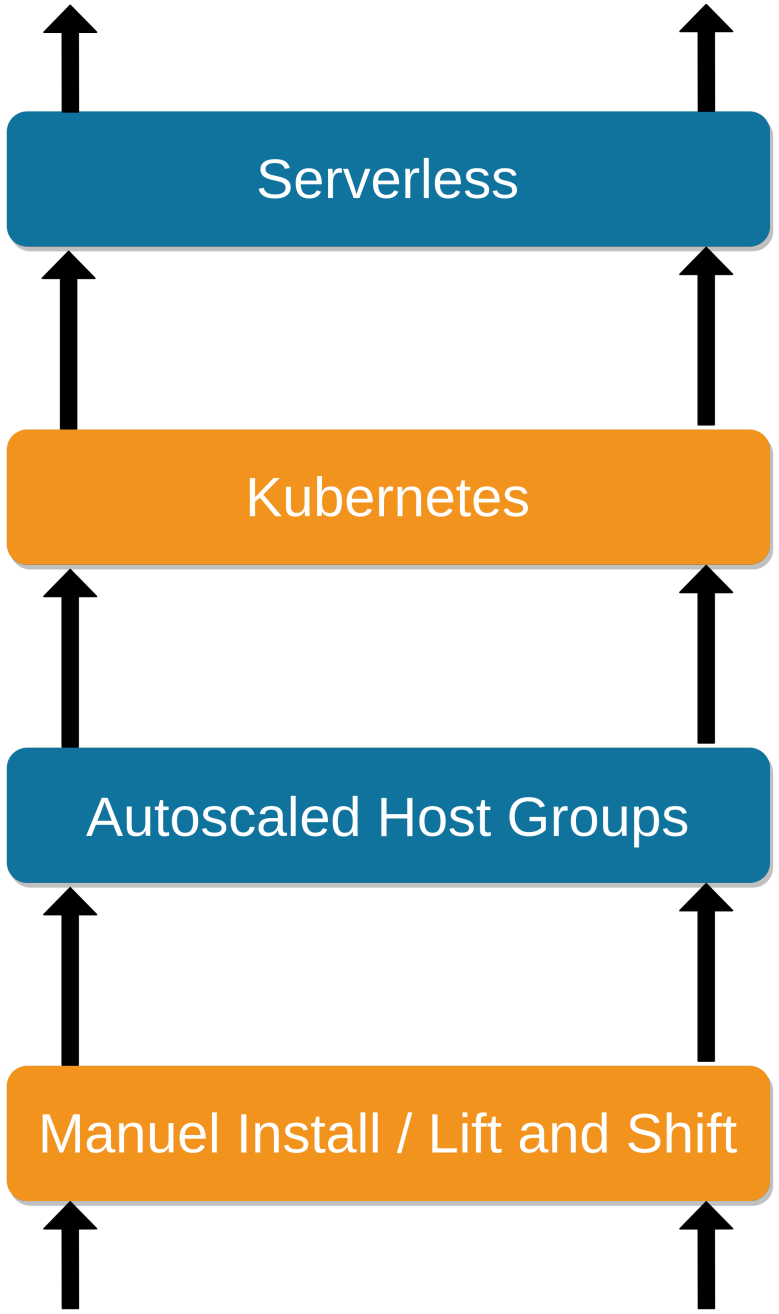
Scaling talk draft

- not just a talk, also demo at bastiandg/scaling-in-the-cloud

Scaling in the cloud

- cloud is not about cost, it is about scaling
- immutable infrastructure required
- Everything talks via http

Scaling Ladder Illustration



Lift and shift

- Migrate legacy VMs/Software with (almost) no modification
- Doesn't scale very well (bigger VMs, faster disks)
- Your mess for less
- Conclusion: don't do it

immutable infrastructure

- Computing infrastructure doesn't change at runtime
- Operating System images are prebuilt
- Separation of storage and computing

Autoscaled Host Groups

- Lift and Shift +
- Paradigm shift: VMs are containers
- Make infrastructure immutable
- Persist data outside VM
- vm scaling mechanisms of the cloud (gcp: managed instance group)

Recipe Autoscaled Host Groups

- Packer
  - VM Image
- Terraform
  - VM Template
  - Managed instance group
  - Loadbalancer

Demo Autoscaled Host Groups

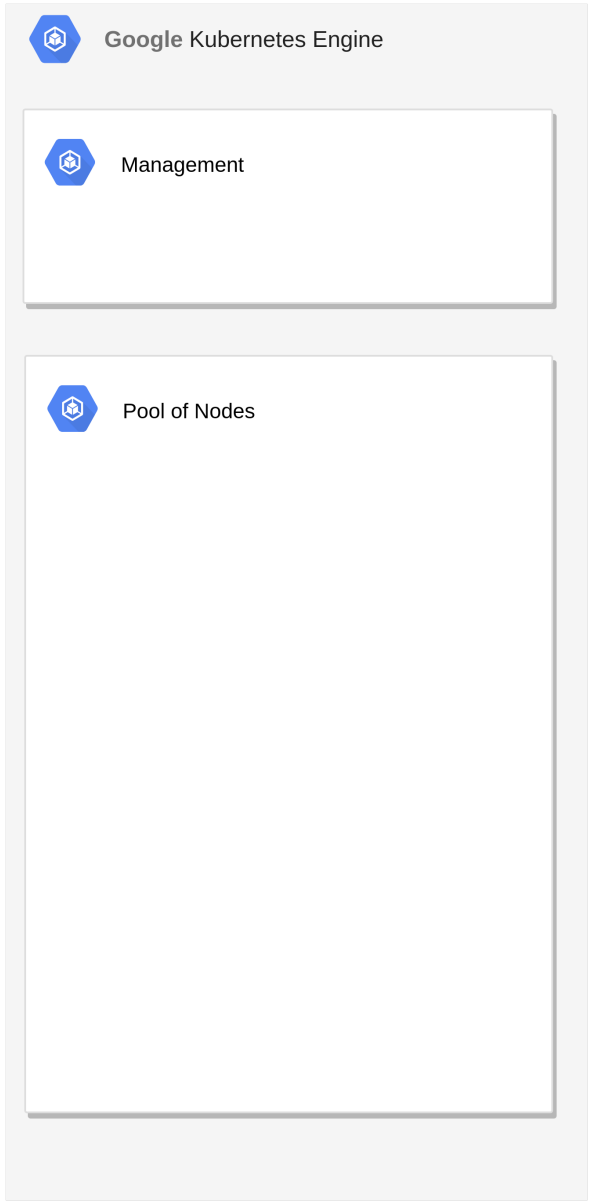
kubernetes

- Paradigm shift: There are no VMs
- Pool of resources
- services containerized

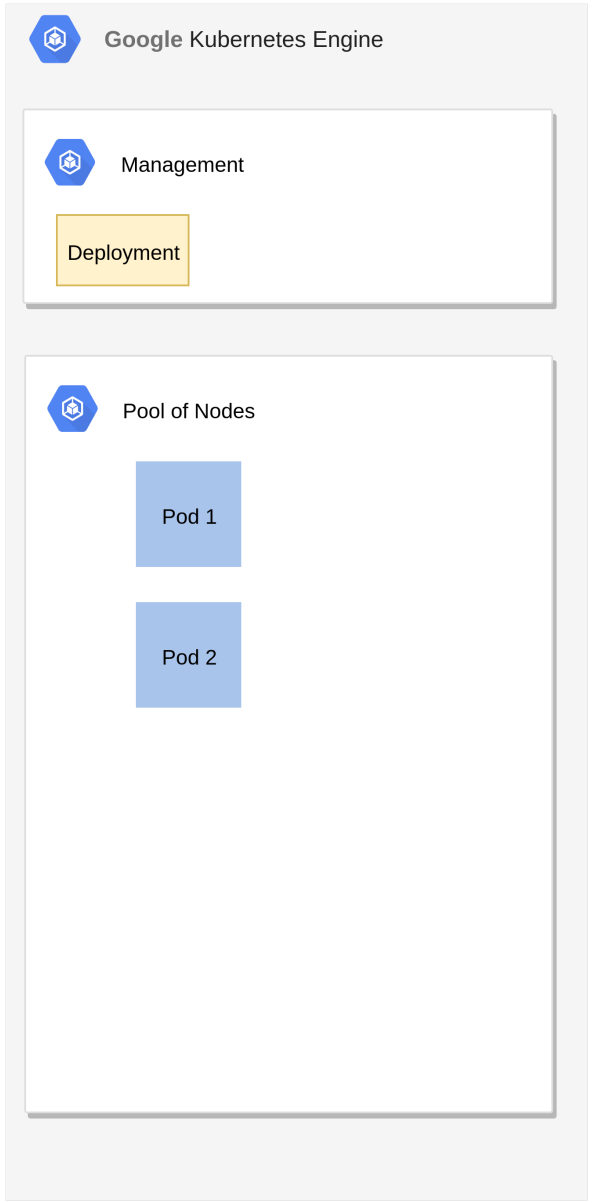
Ingredients kubernetes

- Terraform
  - Node Autoscaler
  - Kubernetes Cluster
- Docker
  - Container image
- Kubernetes
  - Deployment
  - Horizontal Pod Autoscaler
  - Service

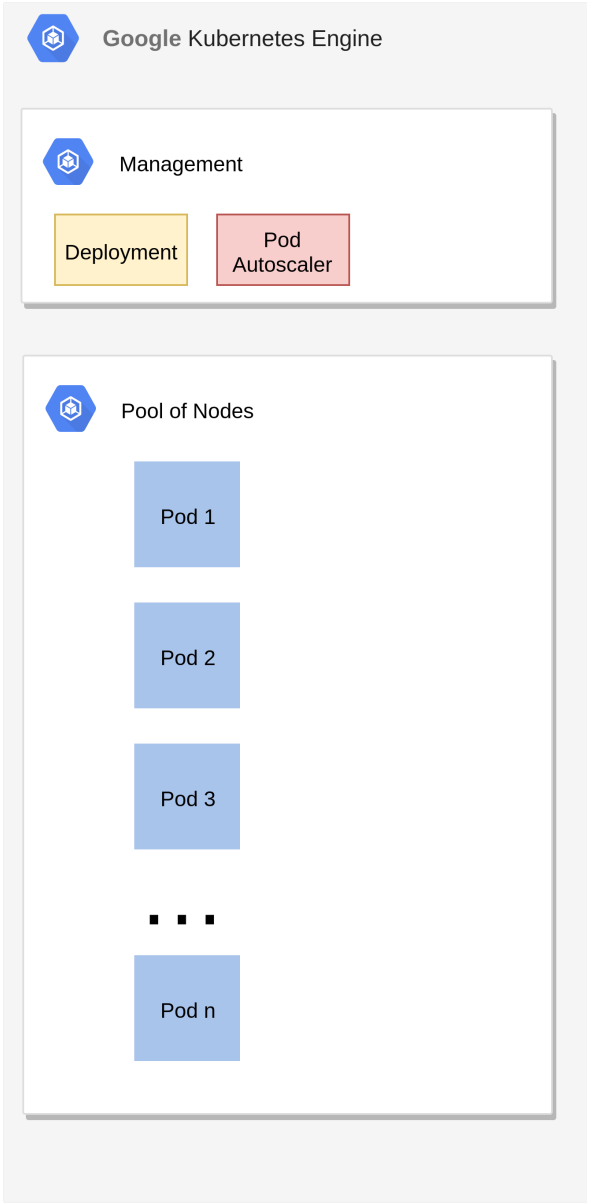
Kubernetes cluster



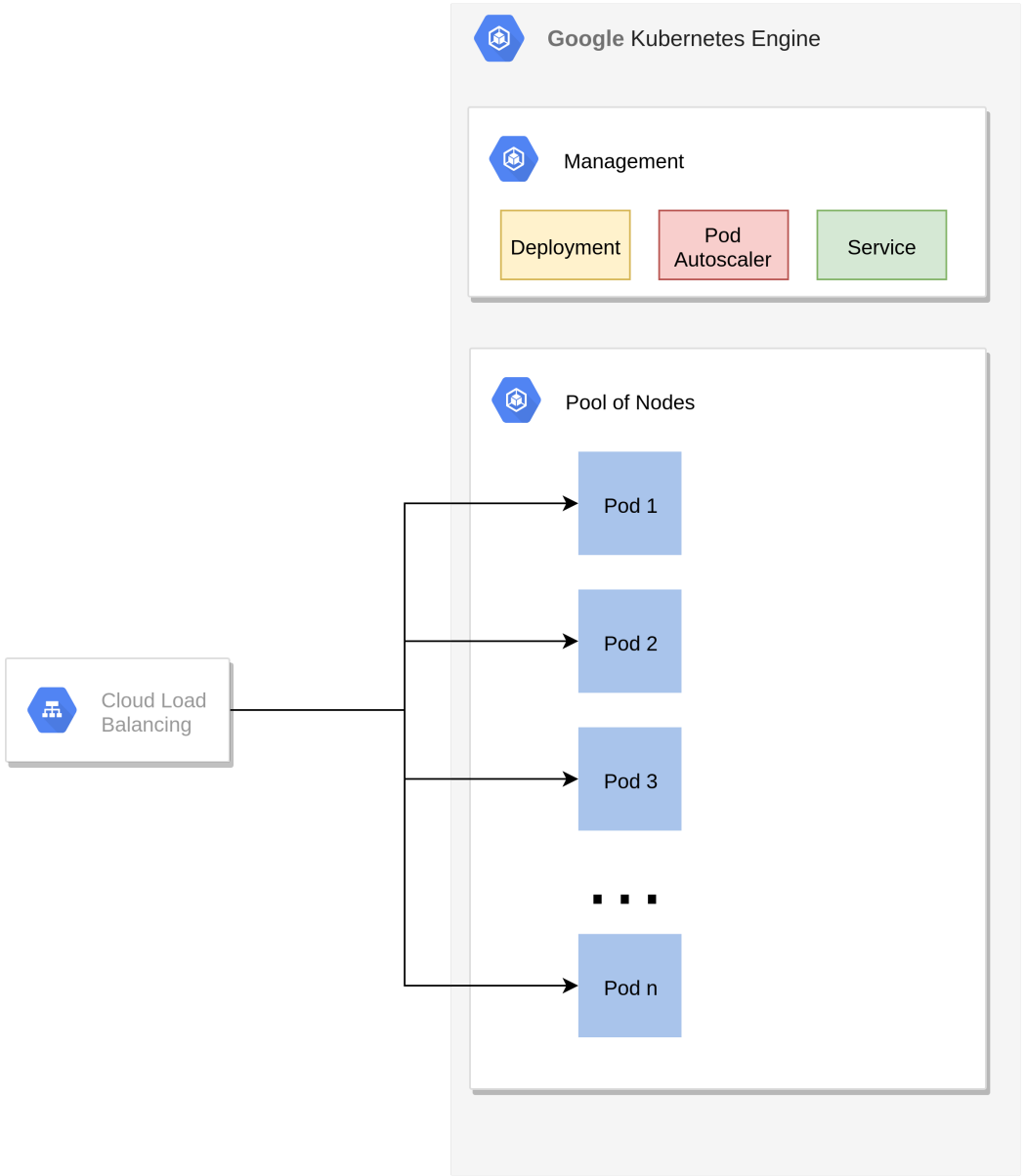
Kubernetes deployment



Kubernetes pod autoscaler



Kubernetes service



Demo kubernetes

serverless

- Paradigm shift: There is no infrastructure
- No infrastructure management
- Pay per use
- stateless

Ingredients serverless

- Docker
  - Container Image
- Cloud Run
  - Deployment

Demo serverless

Takeaways

- Don't do lift and shift
- separate storage from computing