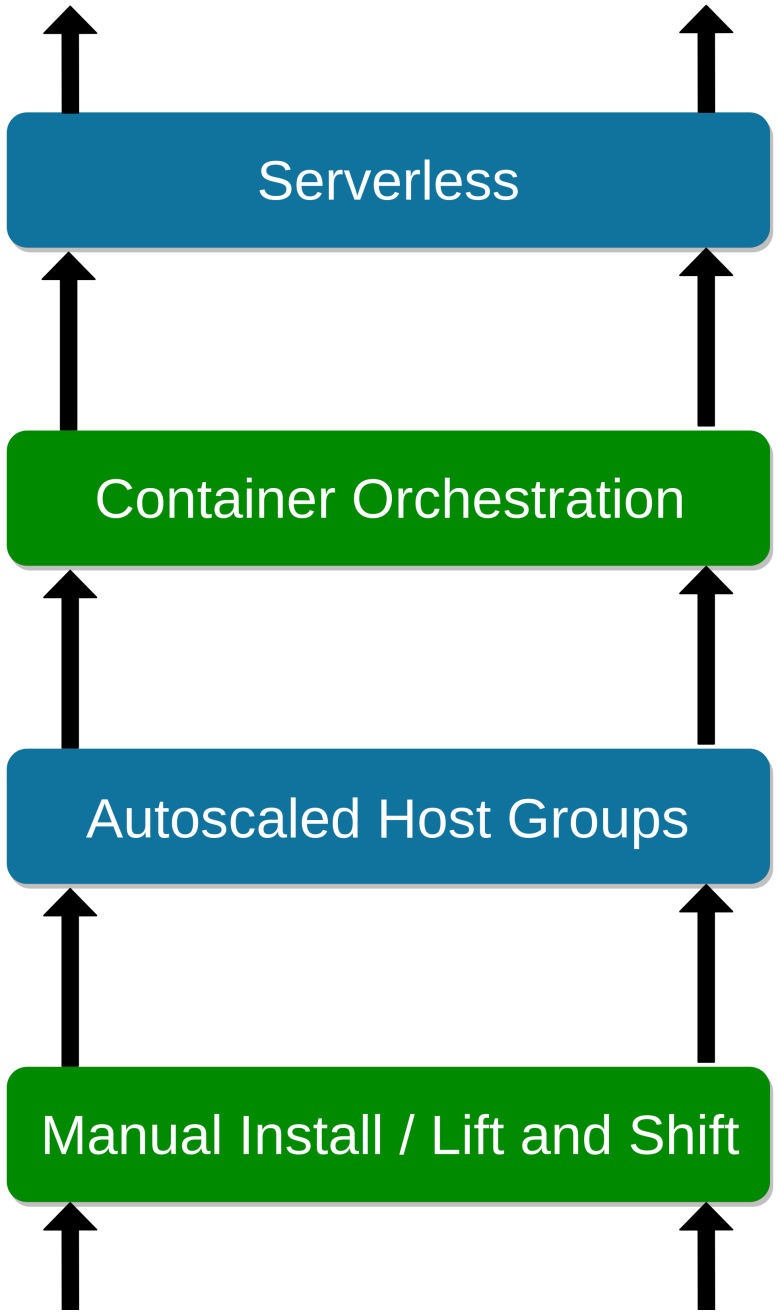
Climbing up the Scaling Ladder

Scaling in the Cloud

- Disclaimer: Focus on standard applications (not ML or storage)
- 3 Scaling scenarios (with examples)
- Demos at scale.8c.at ⚖️8🐱
- Cloud is not about cost, it is about scaling
- Reduced cost is a side effect


Serverless
Container Orchestration
Autoscaled Host Groups
Manual Install / Lift and Shift

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 (in most cases)

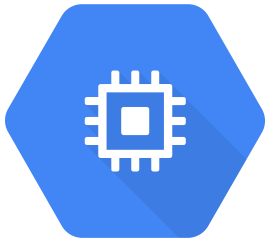
Autoscaled Host Groups

- Lift and Shift done right
- Paradigm shift: VMs are containers
- Make infrastructure immutable
- Persist data outside VM

Example Autoscaled Host Groups

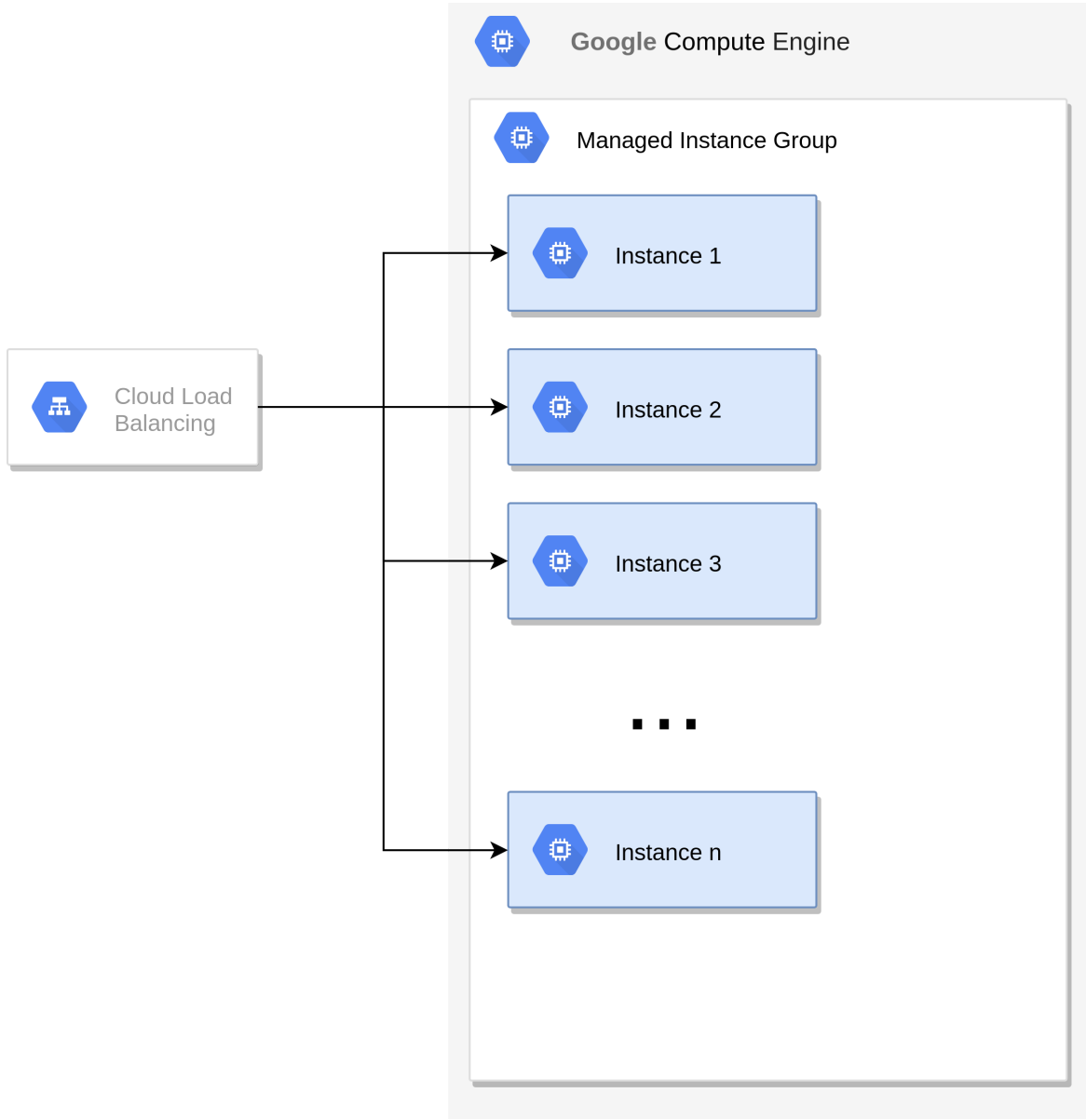
- VM Template
- Managed instance group
- Loadbalancer

- VM Image



- Managed Instance Group -> VM Autoscaler

Managed Instance Group in GCP



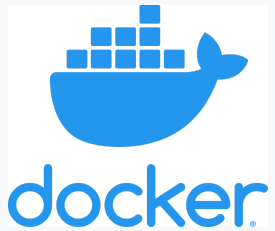
Demo Managed Instance Group

Container Orchestration

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

Example Container Orchestration

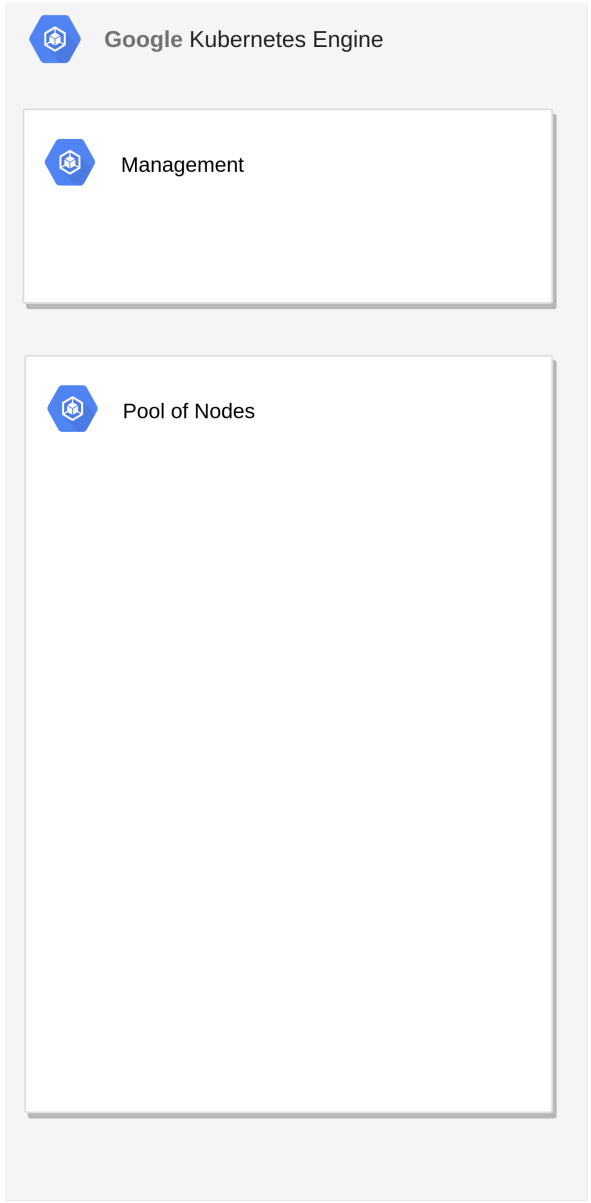
- Kubernetes Cluster
- Node Autoscaler



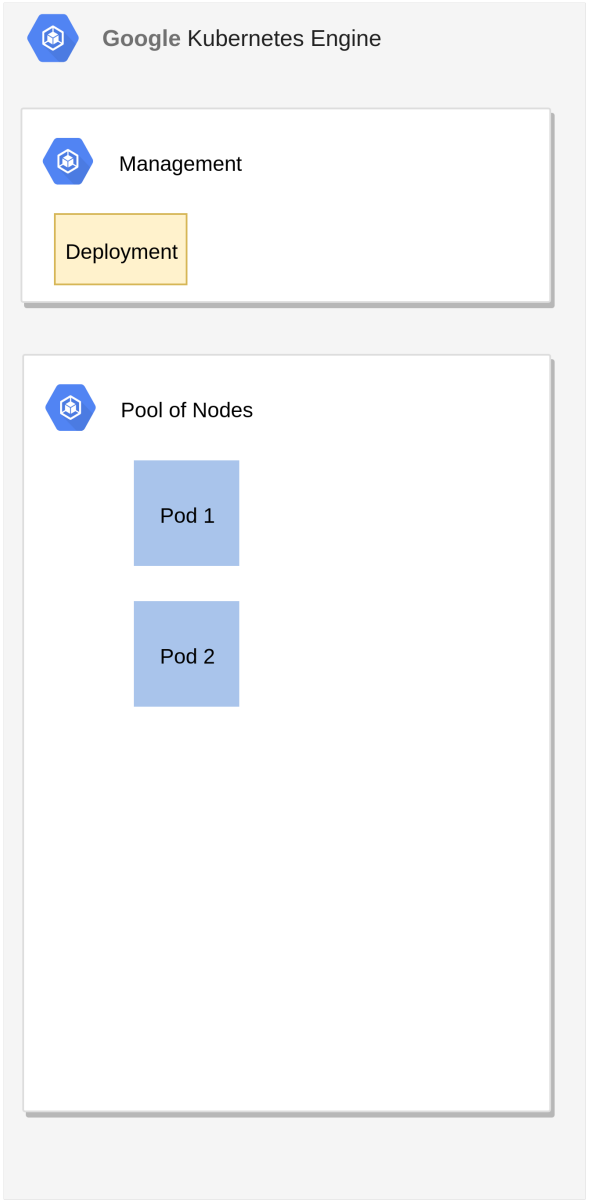
- Container Image

- Deployment
- Horizontal Pod Autoscaler
- Service

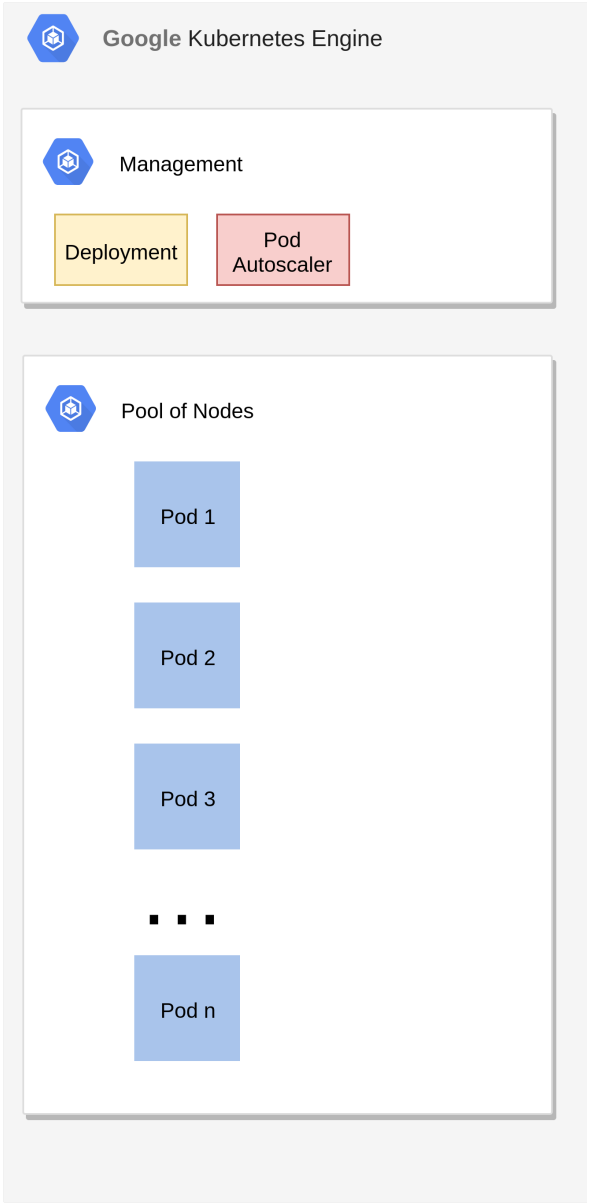
Kubernetes cluster



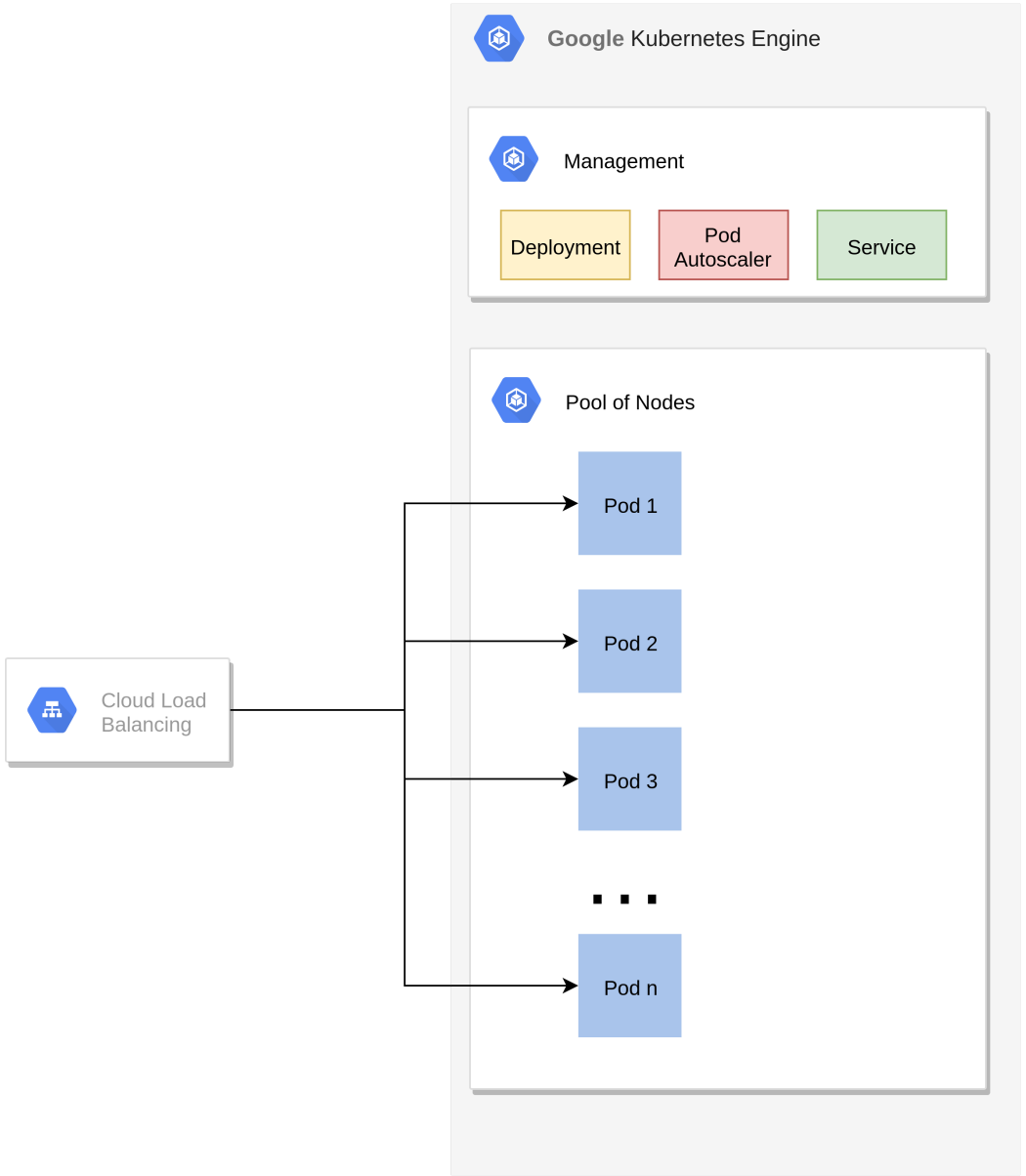
Kubernetes Deployment



Kubernetes Pod Autoscaler



Kubernetes Service

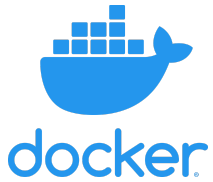


Demo Kubernetes

Serverless

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

Example Serverless



Container Image

Deployment

Demo Serverless

Takeaways

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