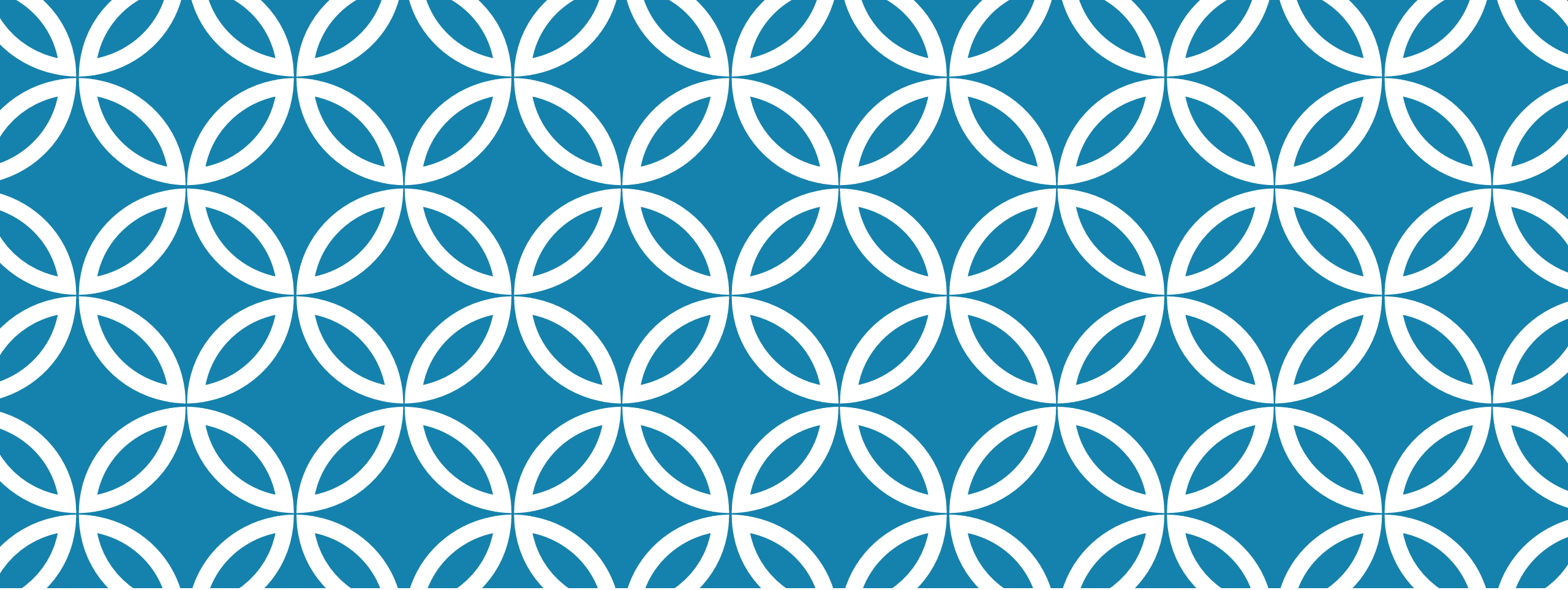


KUBERNETES AUF AZURE

Karsten Ulferts

0 QUICKSTART

#Microsoft Marketing

https://azure.microsoft.com/de-de/services/container-service/kubernetes

#Microsoft Dokumentation

https://docs.microsoft.com/de-de/azure/aks/kubernetes-walkthrough#run-the-application

1 CLUSTER ERSTELLEN

#Managed Kubernetes Cluster erstellen

az aks create -g rg-mkubernetes -n mkc1 --generate-ssh-keys --node-vm-size Standard_D1_v2

#Unmanaged Kubernetes Cluster erstellen

az acs create --orchestrator-type kubernetes --resource-group rg-ukubernetes --name ukc1 --generate-ssh-keys

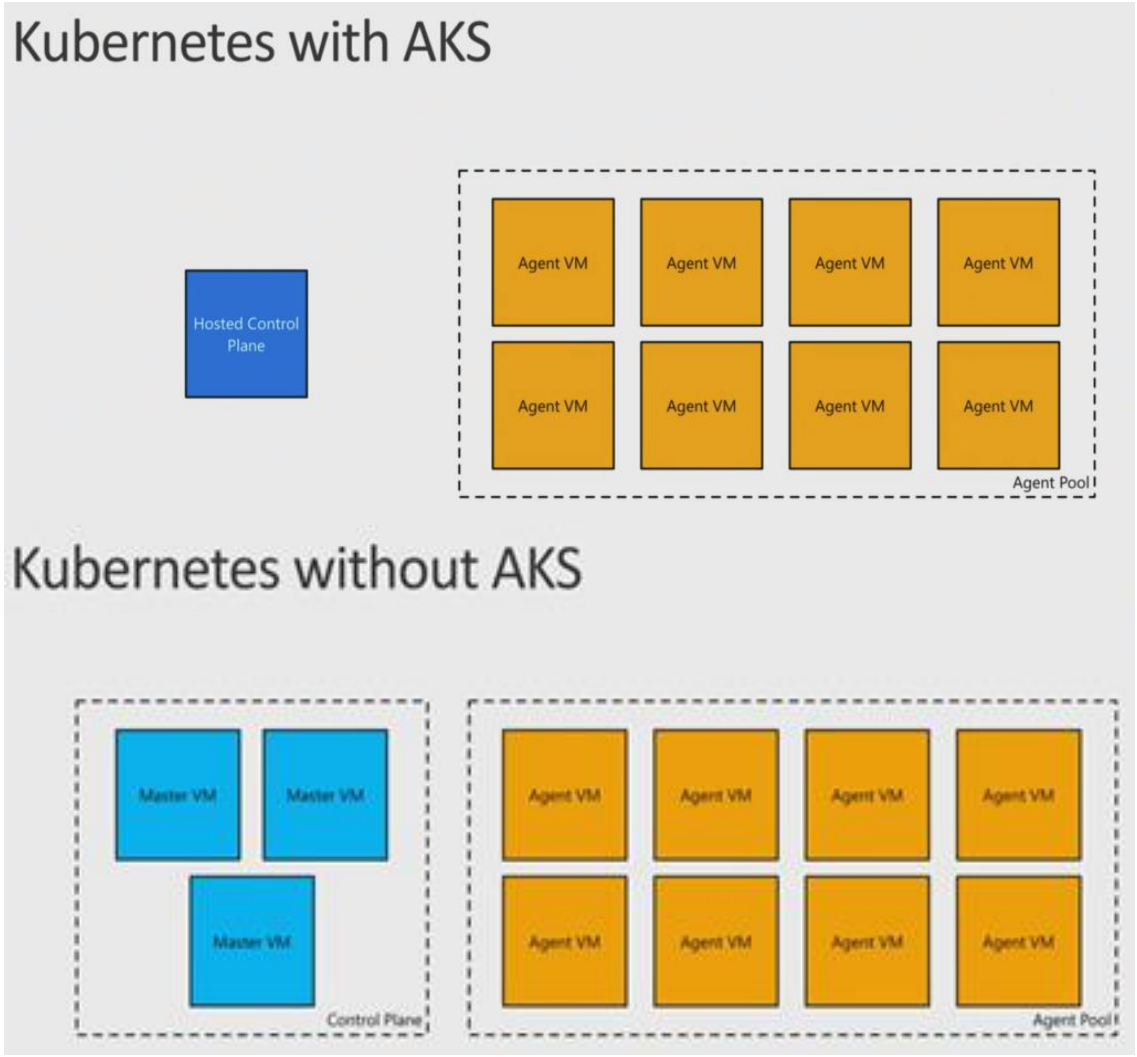
#Zugangsdaten herunterladen

az aks get-credentials -g rg-kubernetes -n cluster1

#Nodes (Agent VM) abfragen

kubectl get nodes

AKS VS. ACS


Kubernetes with AKS
Hosted Control Plane
Agent VM
Agent VM
Agent VM
Agent VM
Agent VM
Agent VM
Agent VM
Agent VM
Agent Pool
Kubernetes without AKS
Master VM
Master VM
Master VM
Control Plane
Agent VM
Agent VM
Agent VM
Agent VM
Agent VM
Agent VM
Agent VM
Agent VM
Agent Pool

PRO AKS

Kostenloser Dienst (Nodes ausgenommen)

Automatische Kubernetes Upgrades

Selbstheilung des Control Plane

etcd Verzeichnis läuft auf SSD

Azure Backup/Restore

RBAC, Azure AD integriert

Cluster Skalierbarkeit

2 ANWENDUNG BEREITSTELLEN

#Desired State Configuration erstellen

nano azure-vote.yaml

#Load Balancer deployment

kubectl create -f azure-vote.yaml

#Deployment Status überwachen

kubectl get service azure-vote-front –watch

#Pods und VMs abfragen

kubectl get pods –o wide

3 CLUSTER VERÄNDERN

#Anzahl von Nodes verändern

az aks scale -g rg-kubernetes -n myCluster --node-count 4

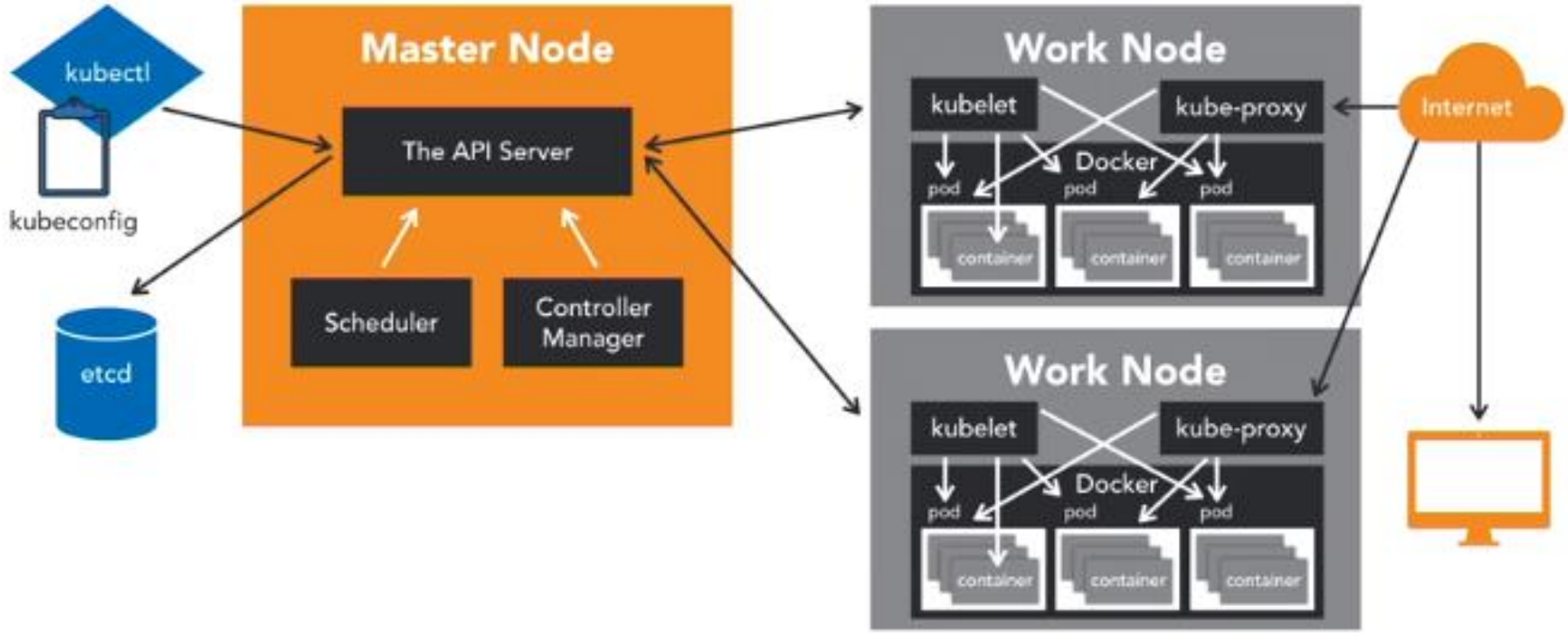
#Upgrade durchführen

az aks upgrade -g rg-kubernetes -n myCluster --kubernetes-version 1.8.1

#Pods löschen (Self healing)

kubectl delete pods --all

4 ARCHITEKTUR



4 DEBUGGING

#Tunneling to client

kubectl proxy (funktioniert nicht bei AKS)

#Auslastung der Nodes feststellen

kubectl top node

KUBERNETES DASHBOARD

#Proxy erstellen (CLI)

az aks browse -g rg-kubernetes -n cluster1

kubernetes

Search

+ CREATE

Overview

Cluster

- Namespaces
- Nodes
- Persistent Volumes
- Roles
- Storage Classes

Namespace

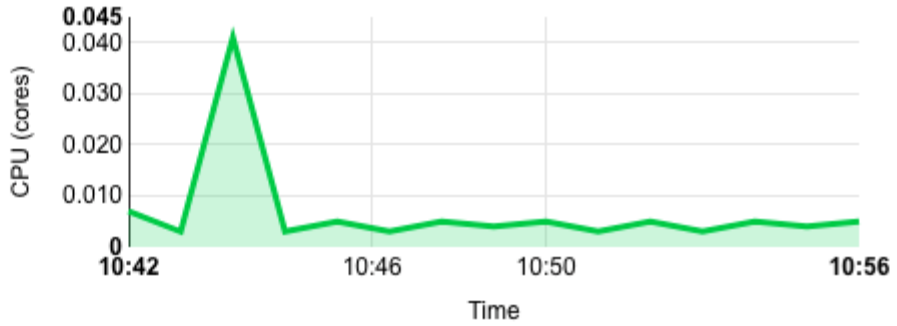
kube-system

Overview

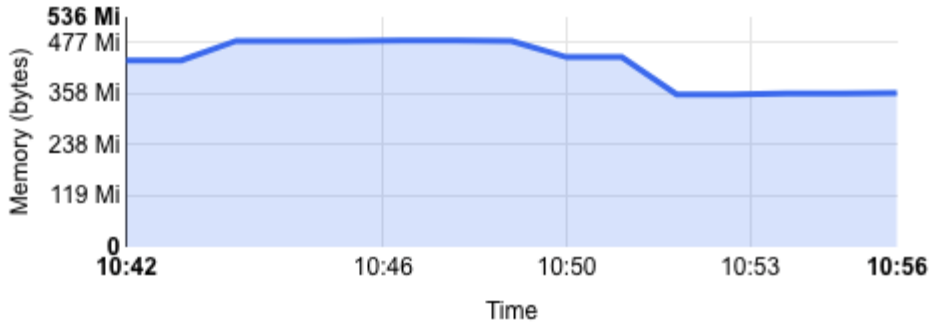
Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets

CPU usage



Memory usage



Workloads

Workloads Statuses