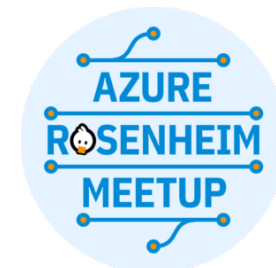


# white duck

## Chaos Engineering with Azure Chaos Studio pt. 2

Azure Rosenheim Meetup, 2023-04-27



 **Microsoft**  
Solutions Partner

Digital & App Innovation  
Azure

Specialist  
Modernization of Web  
Applications

# Who we are



**Nico Meisenzahl (Head of DevOps Consulting and Operations,  
Cloud Solution Architect, Azure & Developer Technologies MVP, GitLab Hero)**

Twitter: [@nmeisenzahl](https://twitter.com/nmeisenzahl)

LinkedIn: <https://www.linkedin.com/in/nicomeisenzahl/>



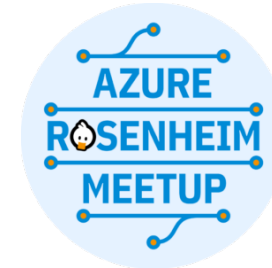
[twitter.com/whiteduck\\_gmbh](https://twitter.com/whiteduck_gmbh)



**Philip Welz (Senior Kubernetes & DevOps Engineer &  
Azure MVP, GitLab Hero & CKA, CKAD)**

Twitter: [@philip\\_welz](https://twitter.com/philip_welz)

LinkedIn: <https://www.linkedin.com/in/philip-welz>



[twitter.com/AzureMeetup](https://twitter.com/AzureMeetup)



[twitter.com/CloudNative\\_Ro](https://twitter.com/CloudNative_Ro)

# Housekeeping

- this meetup will be streamed on YouTube!
- want to participate?
  - join our meetup to get access to the Zoom meeting
    - <https://www.meetup.com/Azure-Meetup-Rosenheim>
  - we do also monitor the comments on YouTube

# Housekeeping

- Missed the first part?
  - watch the Chaos Engineering intro on YouTube
    - <https://www.youtube.com/live/mN3Luc3eYIc>

# Agenda

- Azure News
- Introduction to Chaos Engineering
- Key Principles
- Azure Chaos Studio
- FAQ / Networking

Chaos Engineering with Azure Chaos Studio

# **AZURE NEWS**

# Azure News

- Mount Azure Files and ephemeral storage in Azure Container Apps
- Larger SKUs for App Service Environment v3
- Azure Monitor Alerts now support duplicating alert rules
- Azure Private Link support for Inbound traffic in Azure API Management
- Service Principal and Managed Identity support on Azure DevOps

# AKS KubeCon News

- Azure CNI Overlay becomes GA
- AAD workload identity with AKS turns GA
- Kubernetes 1.26 support in AKS going GA
- Announcement of AKS Long Term Support (LTS) version
- OpenCost for AKS cost visibility
- Public Preview of Node Resource Group (NRG) lockdown
- Public Preview of AKS Service Mesh Addon for Istio



Chaos Engineering with Azure Chaos Studio

# **INTRODUCTION TO CHAOS ENGINEERING**

# History

- 2003 – Amazon
  - GameDays
- 2006 – Google
  - DiRT
- 2010/2011 – Netflix
  - Chaos Monkey
  - Simian Army
- 2012 – Martin Fowler
  - Phoenix Servers
- 2014 - Chaos Engineer (Netflix)



# Today

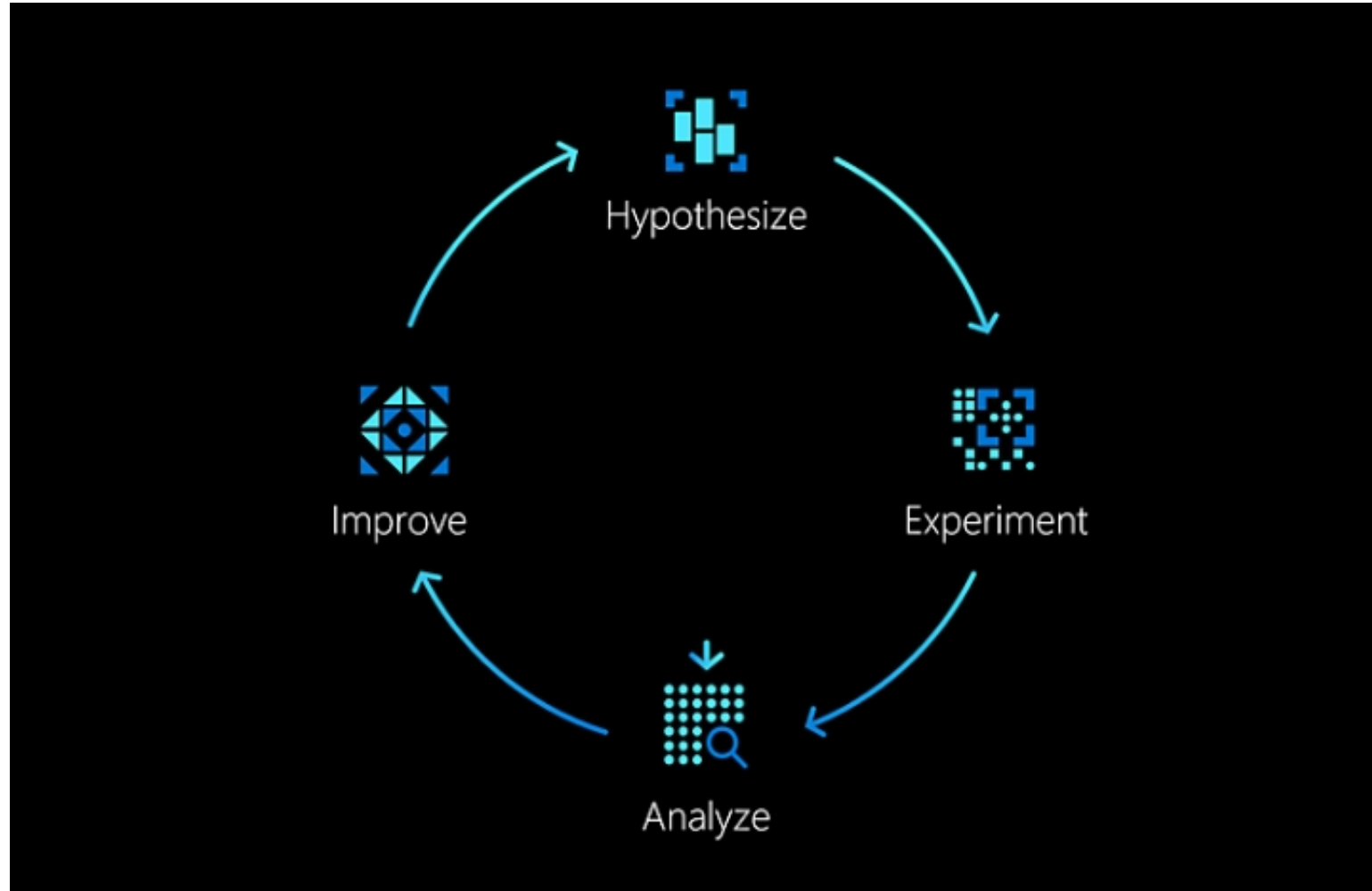
- Pillar of Well-Architected Framework (WAF)
  - AWS, Azure, ...
- Conferences
  - Chaos Conf, Chaos Carnival, Conf42, ...
- CNCF
  - Chaos Mesh, Litmus Chaos, ...

# Chaos Engineering

*Chaos Engineering is the discipline of experimenting on a system in order to build confidence in the system's capability to withstand turbulent conditions in **production**.*

- <https://principlesofchaos.org>

# Practice



Chaos Engineering with Azure Chaos Studio

# **AZURE CHAOS STUDIO**

# General

- Managed with deep ARM integration
- Pillar of the Azure Well-Architected Framework (WAF)
- As of now Public Preview
  - Likely this will change in April
- Orchestrate fault-injection into Azure Resources
- Private option via vNet injection

# Faults

- *Types*
  - *Service-direct* faults
    - Run directly against an Azure resource without installation
  - *Agent-based* faults
    - Installation of an Agent needed
- Providers
- Library



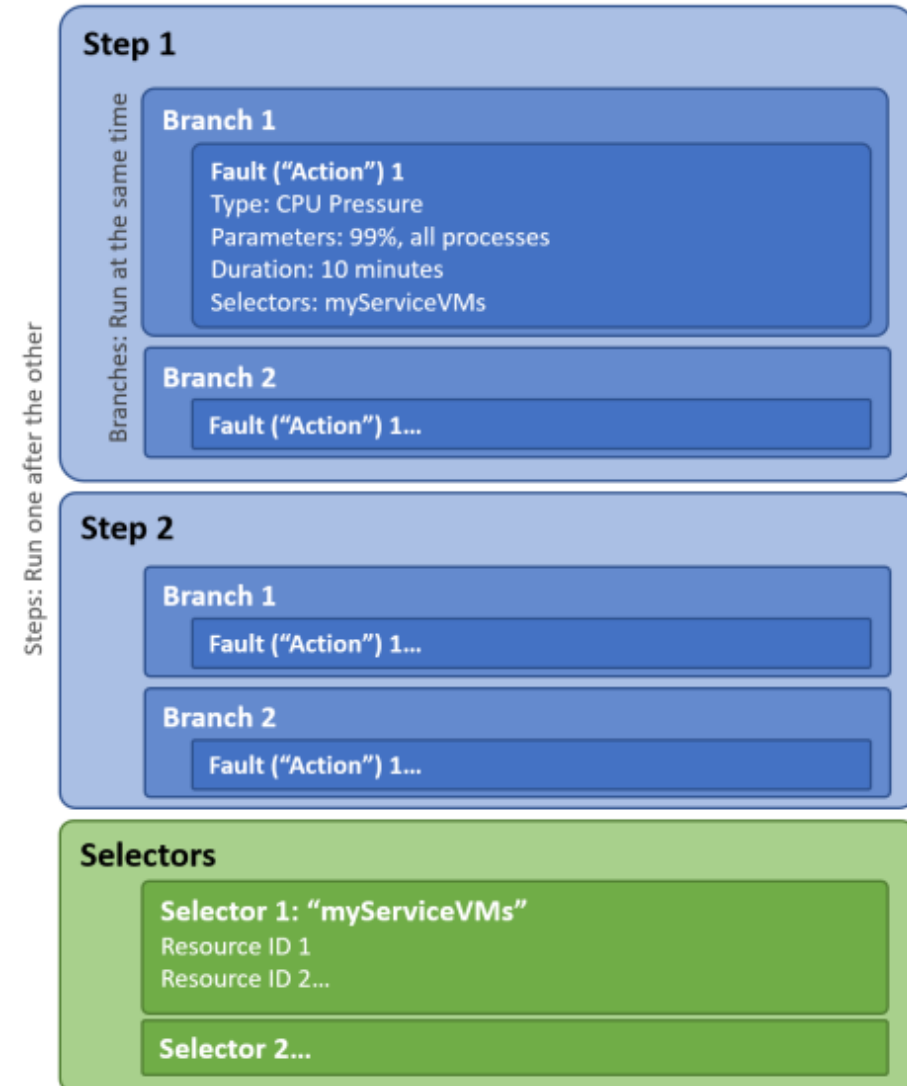
# Resources

- *Target*
  - Enables Chaos Studio to interact with an Azure resource
- *Capability*
  - Child resource of Target
  - Enables a particular fault for a resource
- *Experiment*
  - Describes the faults to run and the resources to run against

# Experiment

- Logic: How and When
  - Steps
    - Run one after the other
  - Branches
    - Run at the same time
- Selector: Target

## Chaos Experiment



# Permissions & Security

- *3 Layers*
  - Azure AD
  - Experiments
    - System Managed Identity
  - Resource onboarding
- Agents
  - User Assigned Identity

Chaos Engineering with Azure Chaos Studio

# **CHAOS MESH**

# Chaos Mesh

- Open Source
- CNCF incubating
- Built on CRDs
- 3 main components
  - Chaos Dashboard
  - Chaos Controller Manager
  - Chaos Demon

Chaos Engineering with Azure Chaos Studio

# DEMO

# FUTURE EVENTS

# Pulumi & Azure

- Engin Diri from Pulumi
- 23.05.2023 18:00 CEST



**PULUMI & AZURE:  
DER TURBO-BOOST  
FÜR DEINE CLOUD-  
PROJEKTE**





# Cilium & AKS Workshop Day

- 29.06.2023 at Microsoft Munich
- <https://whiteduck.de/cilium-aks-workshop-day>



Chaos Engineering with Azure Chaos Studio

# **FAQ / NETWORKING**

# Useful links

- <https://github.com/philwelz/azure-chaos-studio>
- <https://principlesofchaos.org/>
- <https://netflixtechblog.com/the-netflix-simian-army-16e57fbab116>
- <https://martinfowler.com/bliki/PhoenixServer.html>
- <https://learn.microsoft.com/en-us/azure/chaos-studio/>

# Questions?



**Nico Meisenzahl (Head of DevOps Consulting and Operations,  
Cloud Solution Architect, Azure & Developer Technologies MVP, GitLab Hero)**

Twitter: [@nmeisenzahl](https://twitter.com/nmeisenzahl)

LinkedIn: <https://www.linkedin.com/in/nicomeisenzahl/>



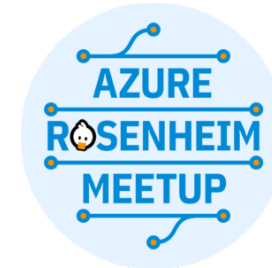
[twitter.com/whiteduck\\_gmbh](https://twitter.com/whiteduck_gmbh)



**Philip Welz (Senior Kubernetes & DevOps Engineer &  
Azure MVP, GitLab Hero & CKA, CKAD)**

Twitter: [@philip\\_welz](https://twitter.com/philip_welz)

LinkedIn: <https://www.linkedin.com/in/philip-welz>



[twitter.com/AzureMeetup](https://twitter.com/AzureMeetup)



[twitter.com/CloudNative\\_Ro](https://twitter.com/CloudNative_Ro)