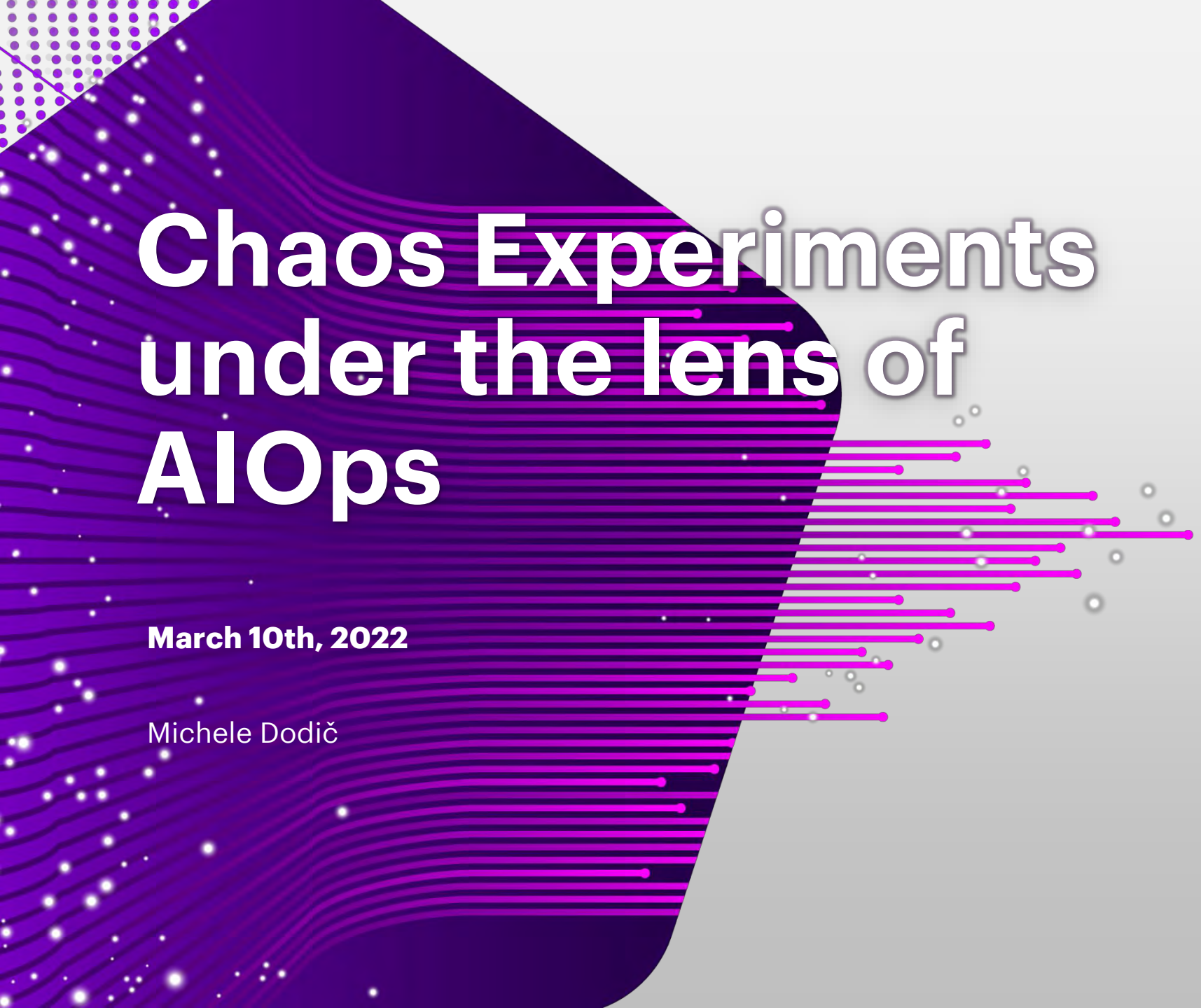

Chaos Experiments under the lens of AIOps

March 10th, 2022

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Accenture Technology

- SRE enthusiast
- Playing around with new tech & building demos
- Interests: AI, automation and (I)IoT
- Traveller, filmophile & aspiring mixologist

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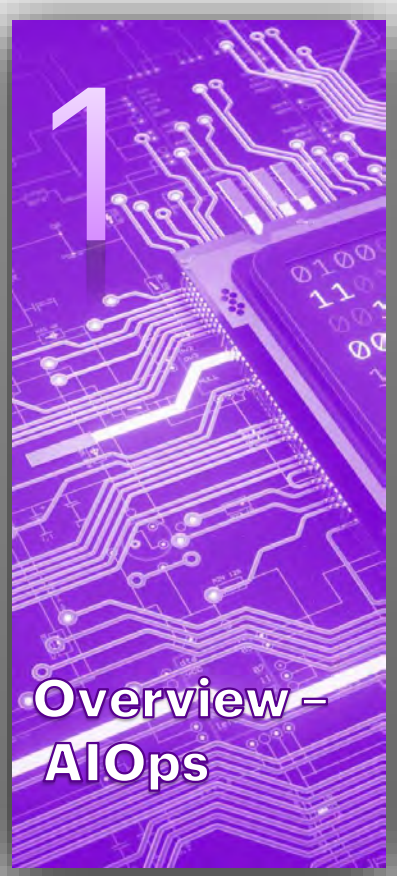
Agenda


1
Overview – AIOps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AIOps for CE


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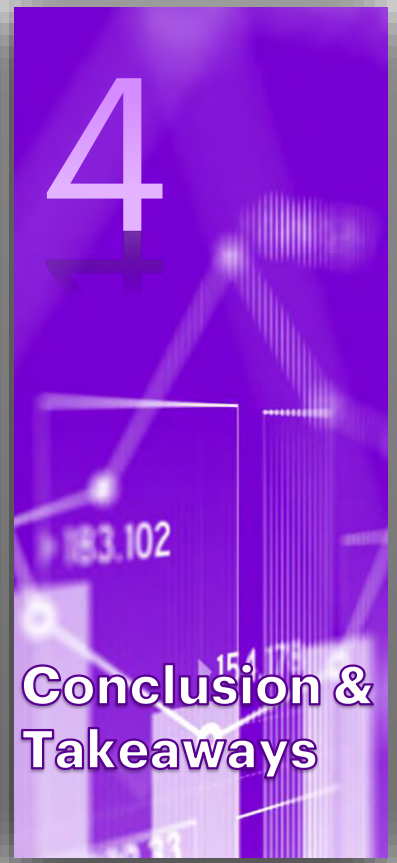
Live Demo

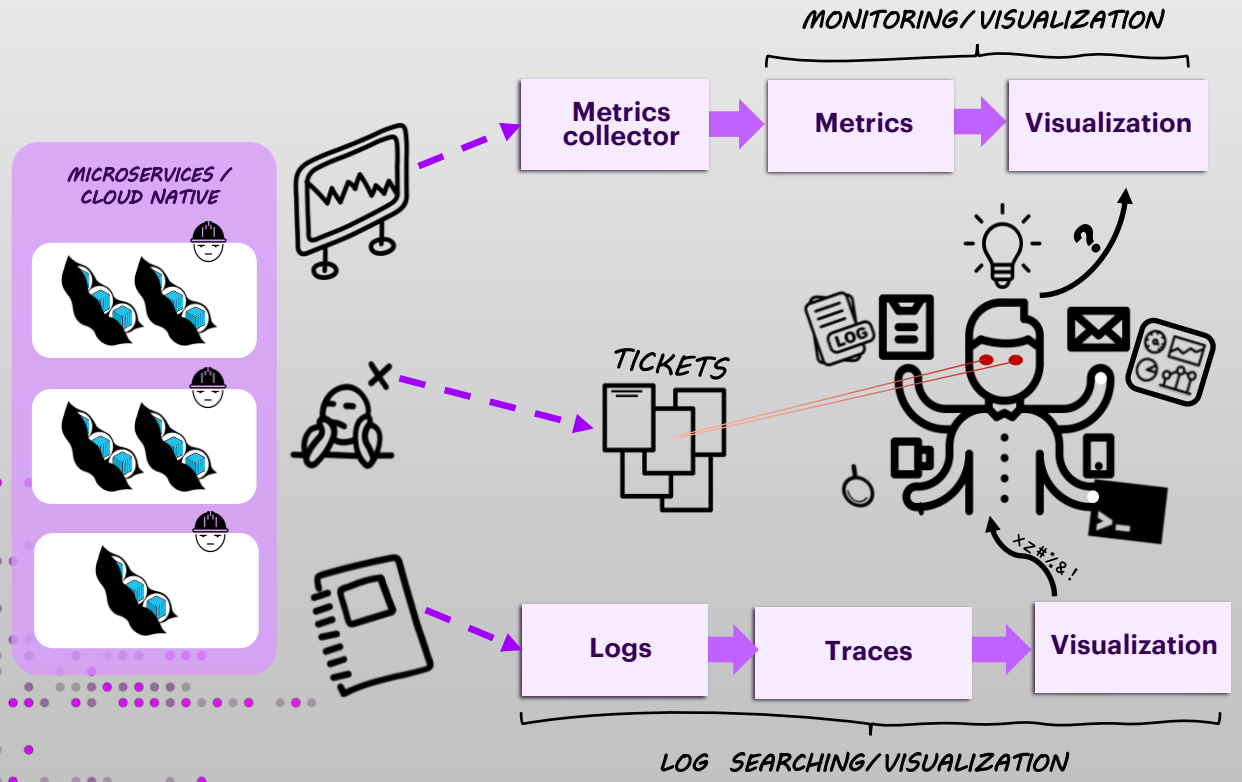

4
Conclusion & Takeaways

Let’s set the scene

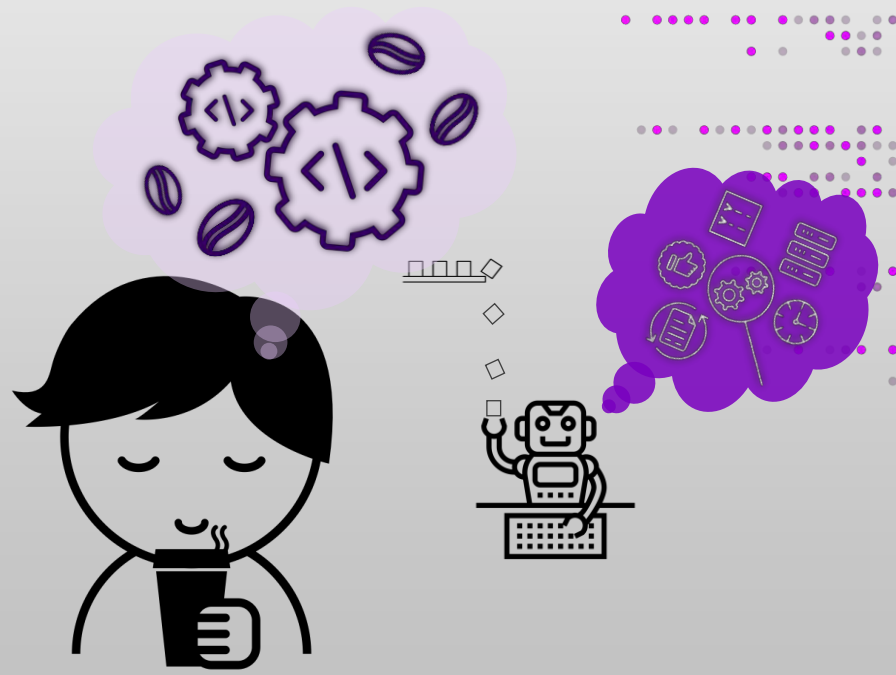
Imagine this:

You (a hard-working SRE) wake up one day and think about all the tasks that await you...

From here..

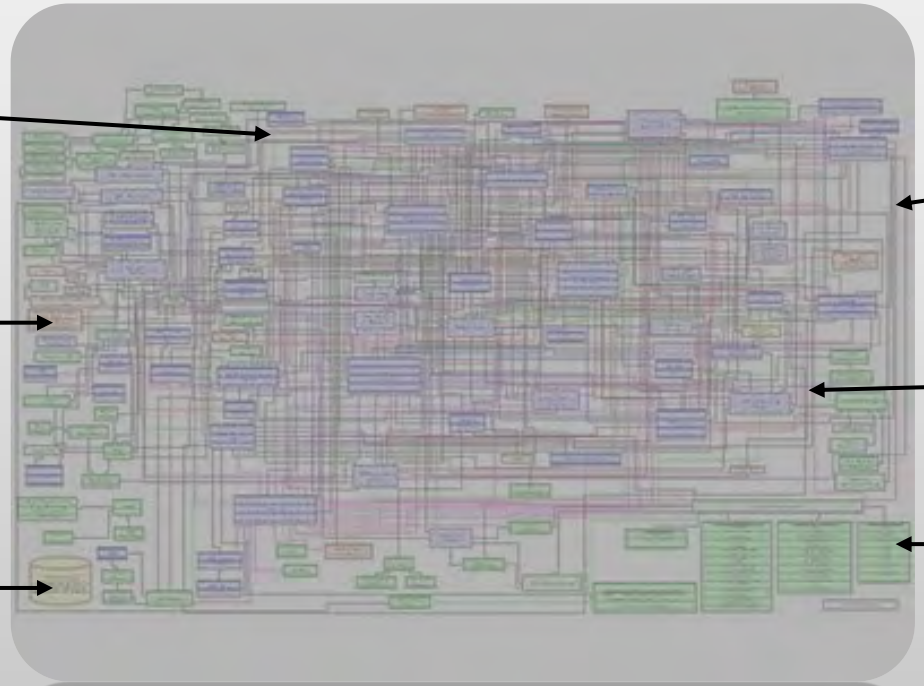


To there



Behind The Scenes...

Systems are becoming more and more critical!

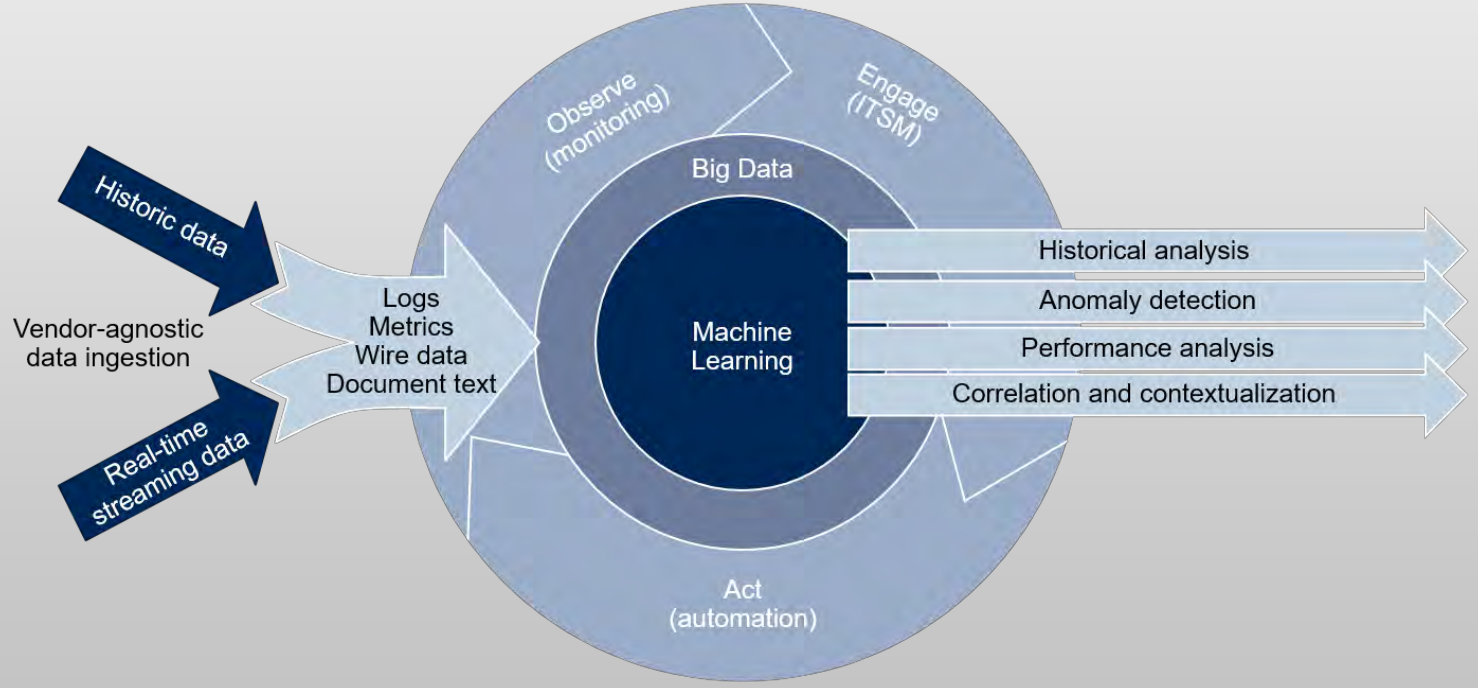


Debug	Info	Warning	Error	Critical
439	384	87	20	5

How can we help an SRE with his daily struggles?

Let’s introduce Artificial Intelligence for IT Operations

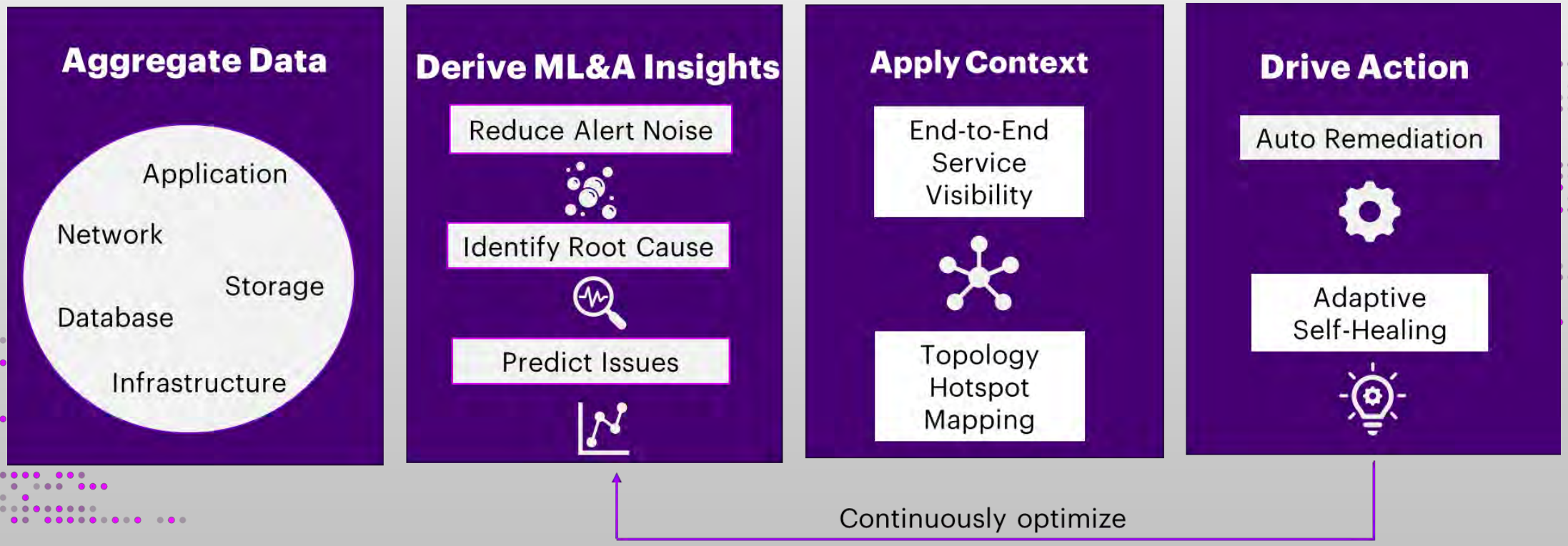
What is AIOps?



Source: Gartner Definition

AIOps Approach

Advanced IT Ops through comprehensive intelligence and self-driven automation



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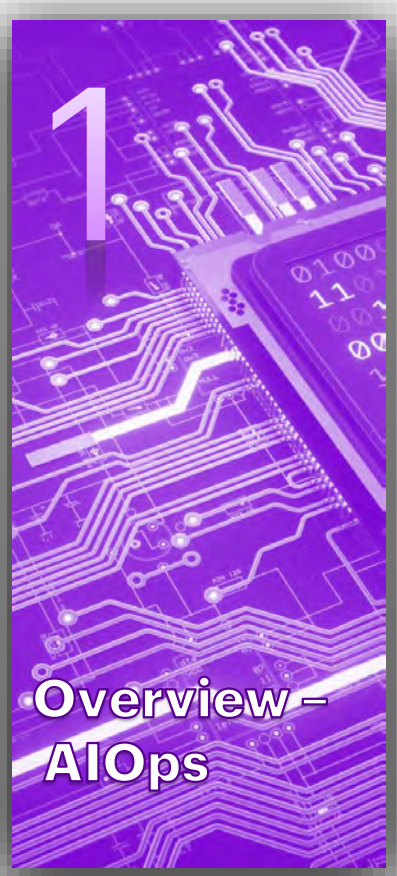
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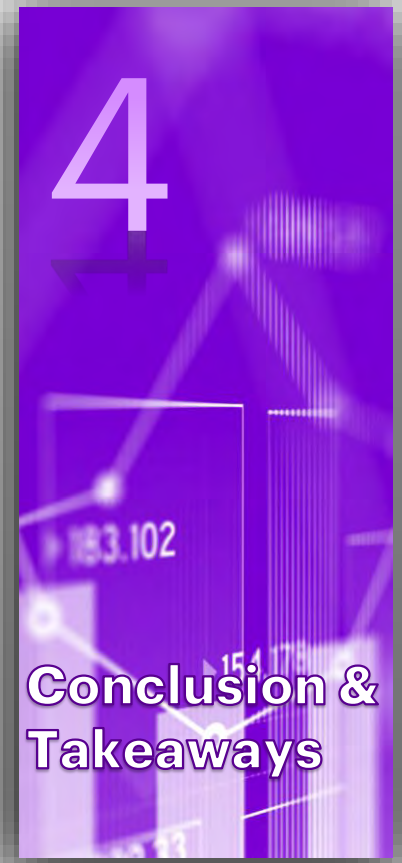
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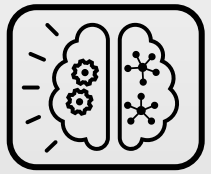
How do we experiment inside AIOps?



AIOps solution

Resiliency?

Robustness?

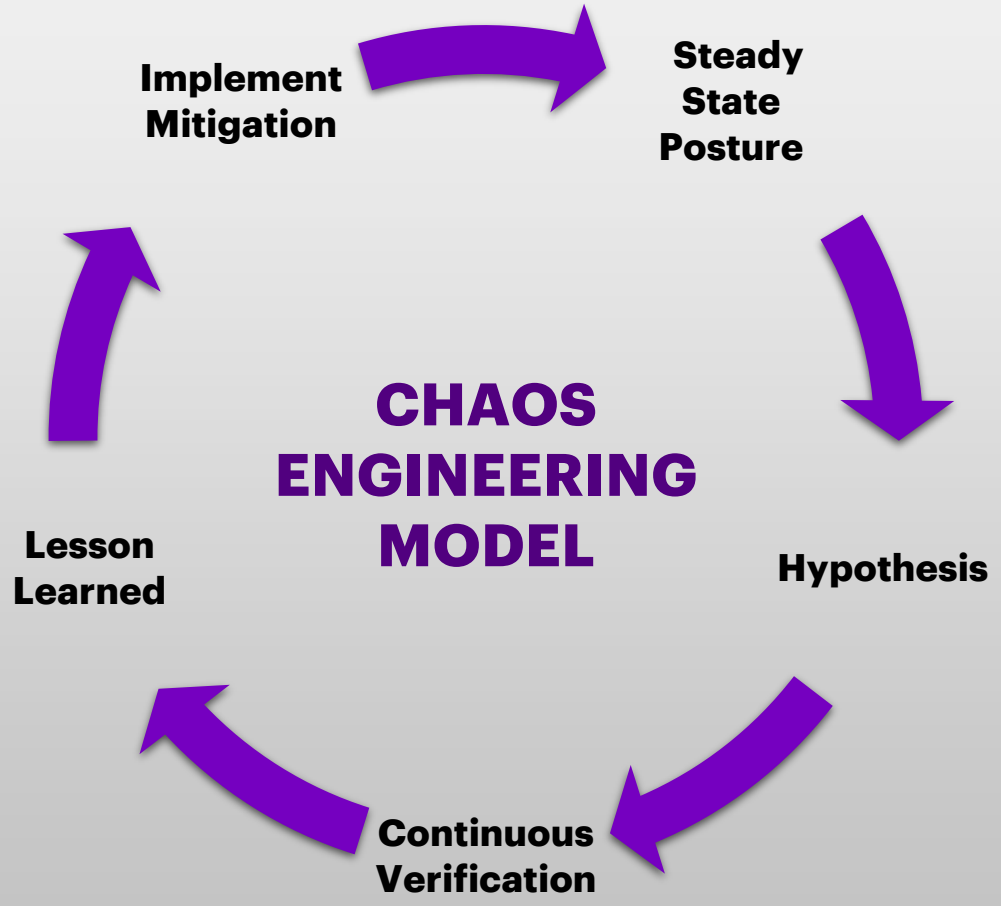
Reliability?

?

... the discipline of performing security experimentation on a distributed system in order to build confidence in the System's capability to withstand turbulent and malicious conditions.

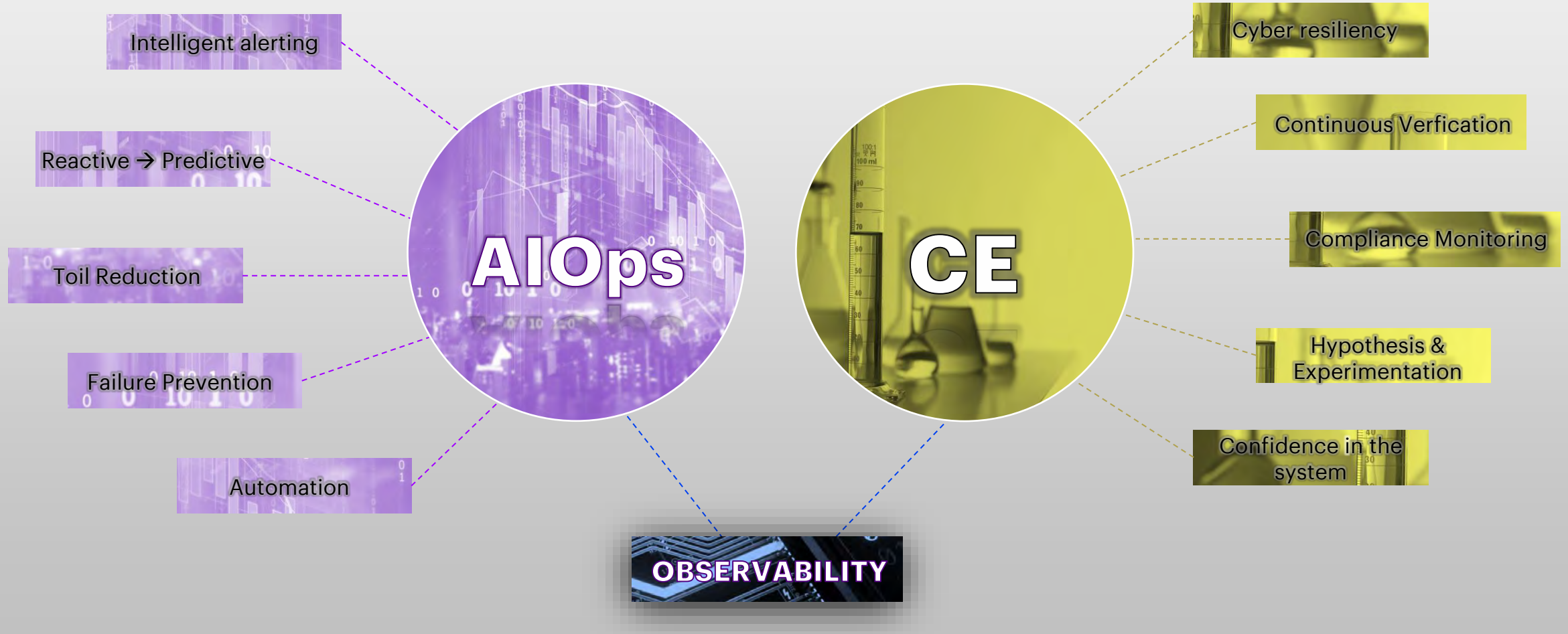
Definition of Security Chaos Engineering based on Netflix's Definition for Chaos Engineering

How Do We Plan and Run a Chaos Experiment?

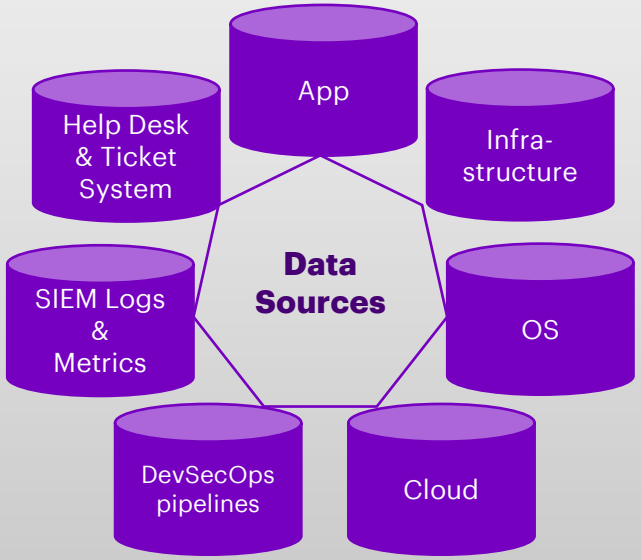


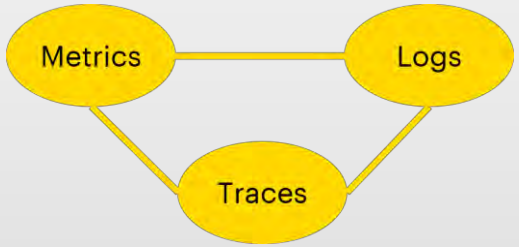
Continuous Cycle of Hypothesis and Experimentation

Where do AIOps and CE meet?

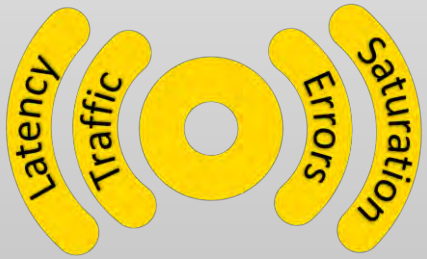


Observability





The **Golden Triangle** of Observability



The Four **Golden Signals**

LATENCY — **LIVE DEMO**

The time it takes to service a request

TRAFFIC

Measure the **bandwidth left** for a service

ERRORS

The error rate **caught during** the service activity

SATURATION

How „full" the service is, while system **is serving requests**

Data Collection

Agenda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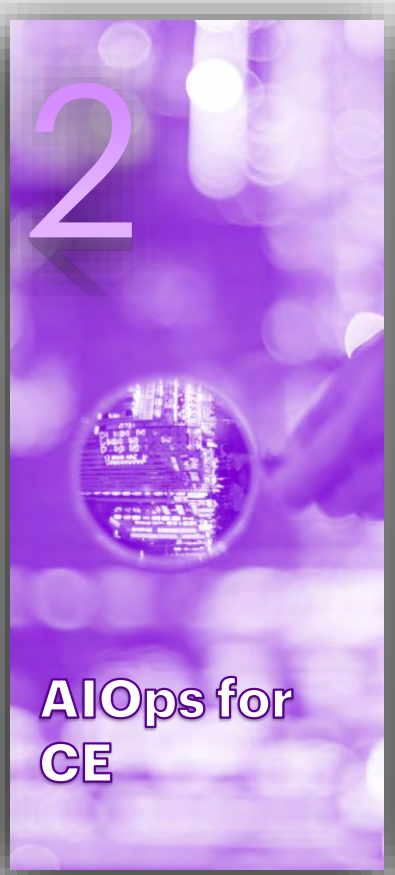
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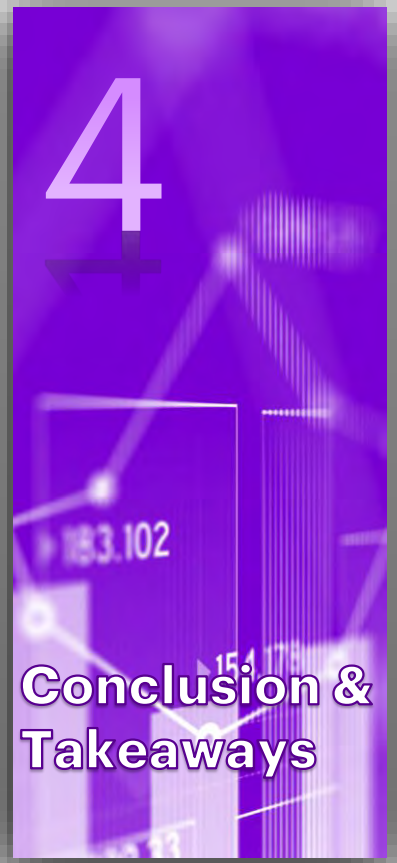
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Hypothesis and Experimentation

Our progress so far:

- We learned about AIOps
- We learned about CE
- We learned about Observability

And NOW? Now we can run an experiment!

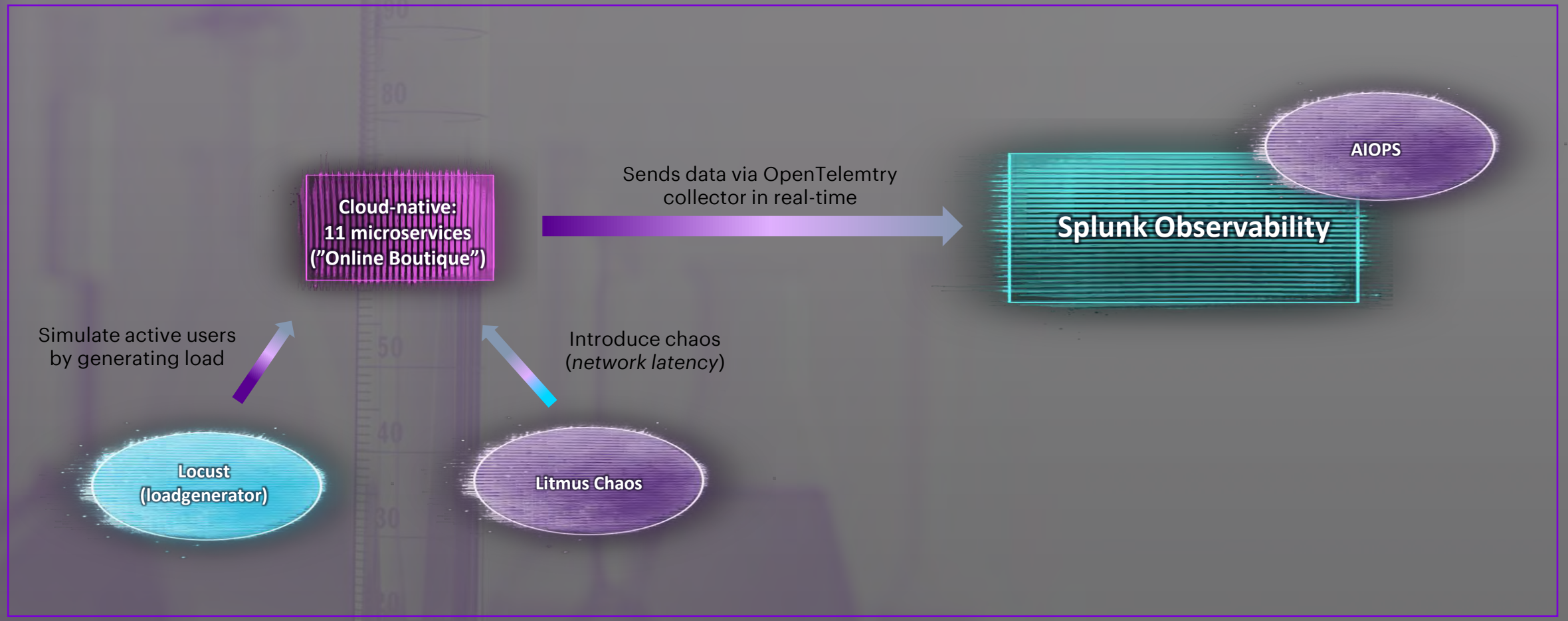
Let's formulate our hypothesis:

> *If we run a chaos experiment, AIOps will detect that there is one. The experiment will either fail or it will be under control.*

There are two questions running on our SRE's mind:

1. How does AIOps react if I run a chaos experiment?
2. Is AIOps capable of recognizing a running Chaos experiment through Observability ?

Architecture / Tech Stack



LIVE DEMO

Starting in 3.... 2.... 1....

Photo by Alex Kondratiev on Unsplash

Agenda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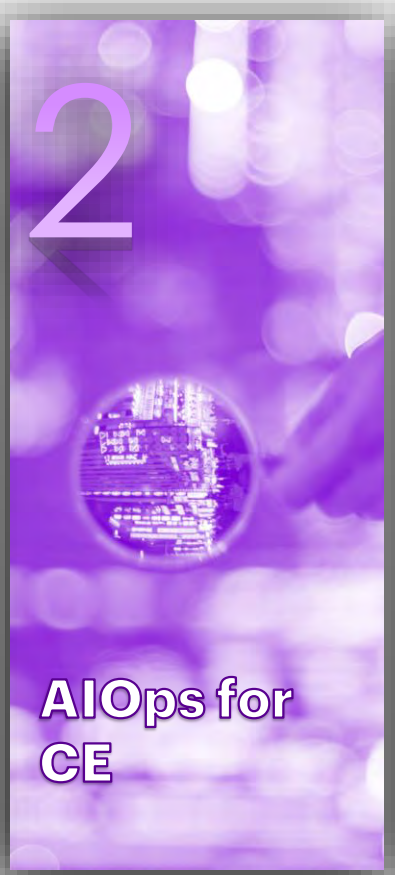
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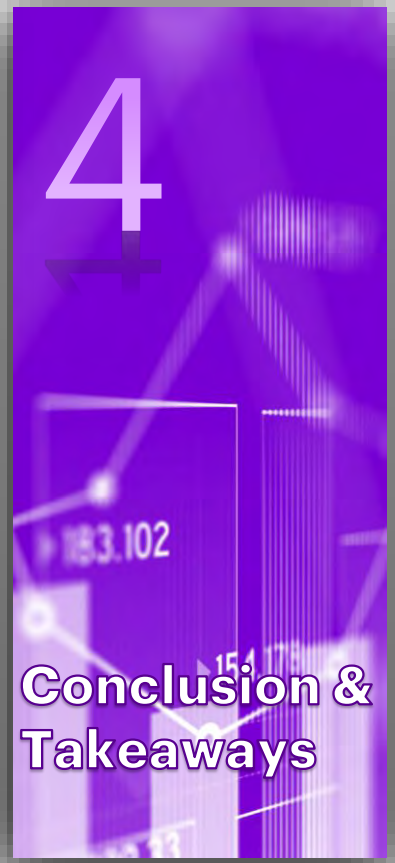
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Conclusion & Takeaways

Conclusion and Takeaways

- Three focus concepts:
  - **AIOps**: AI applied to Ops to predict system degradation
  - **CE**: proactive failure injection to experiment the system's resiliency
  - **Observability**: end-to-end monitoring to ensure system's health throughout its entire lifecycle
- If correctly applied, AIOps can leverage Observability to identify when a Chaos experiment is running.
- The overall process helps to **build trust** in the system, as its **reliability** incrementally increases through iterative **experiments**
- **Start simple** and **scale fast**

Thank you!