AWS Resilience and Chaos Engineering Day

Gunnar Grosch

Sr. Developer Advocate, AWS

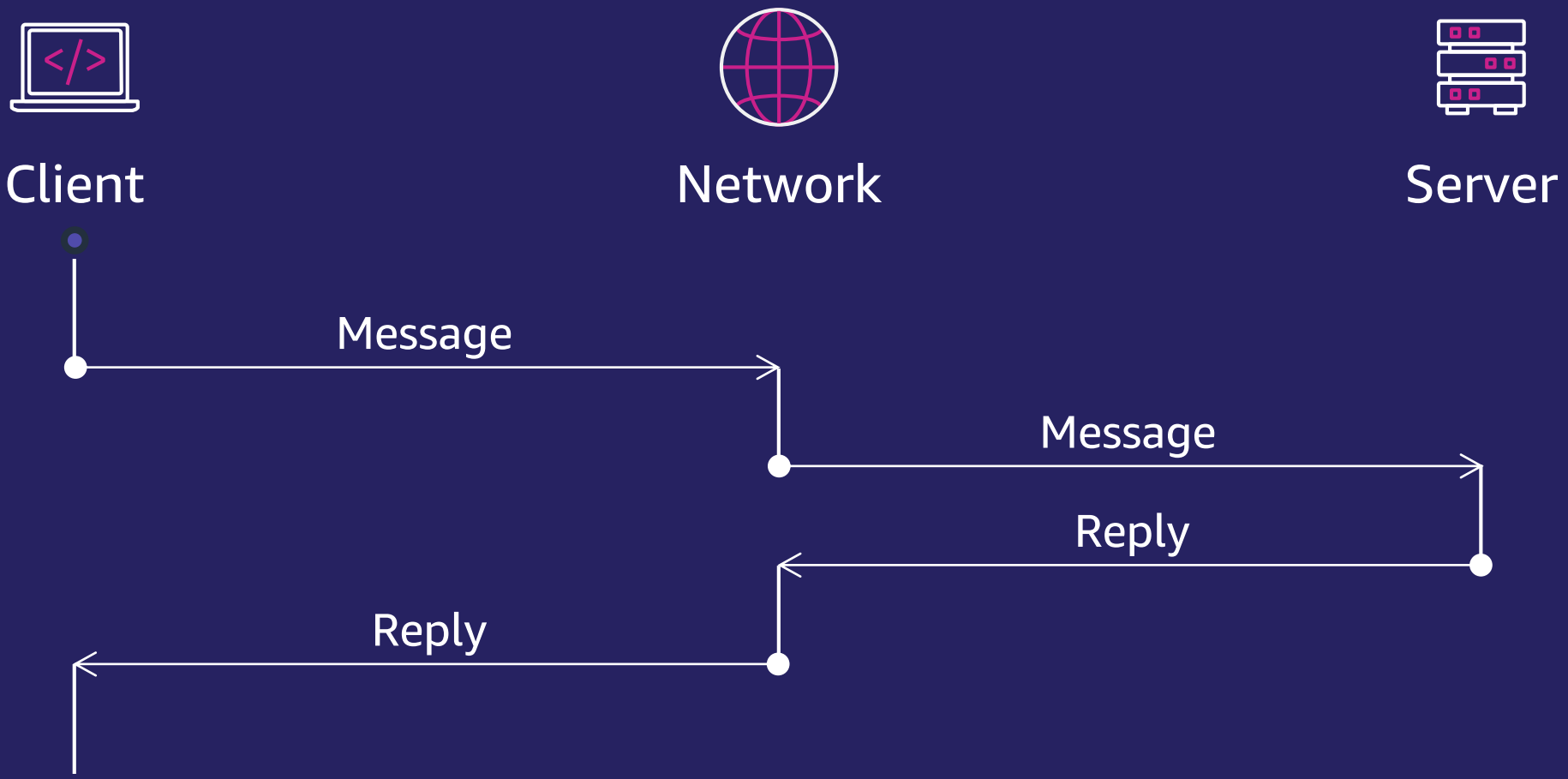
 @gunnargrosch

What we'll cover in this session

- Challenges with distributed systems
- What chaos engineering is
- Phases of chaos engineering
- Common use cases for chaos engineering

Challenges with distributed systems

Distributed systems are complex

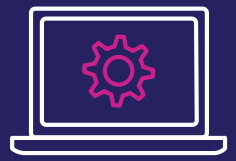


https://aws.amazon.com/builders-library/challenges-with-distributed-systems/

Traditional testing is not enough

Unit testing of components

Tested in isolation to ensure function meets expectations

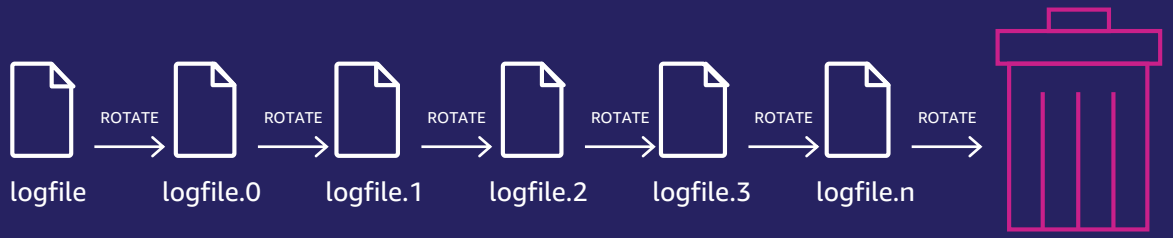


Functional testing of integrations

Each execution path tested to assure expected results

TESTING = VERIFYING A KNOWN CONDITION

And it can get more complicated...



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What is 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”

principlesofchaos.org

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The process of chaos engineering

- Stressing an application by creating disruptive events
- Observing how the system responds
- Implementing improvements

Fundamental goals with chaos engineering

- Improve resilience and performance
- Uncover hidden issues
- Expose blind spots
  Monitoring, observability, and alarm
- And more

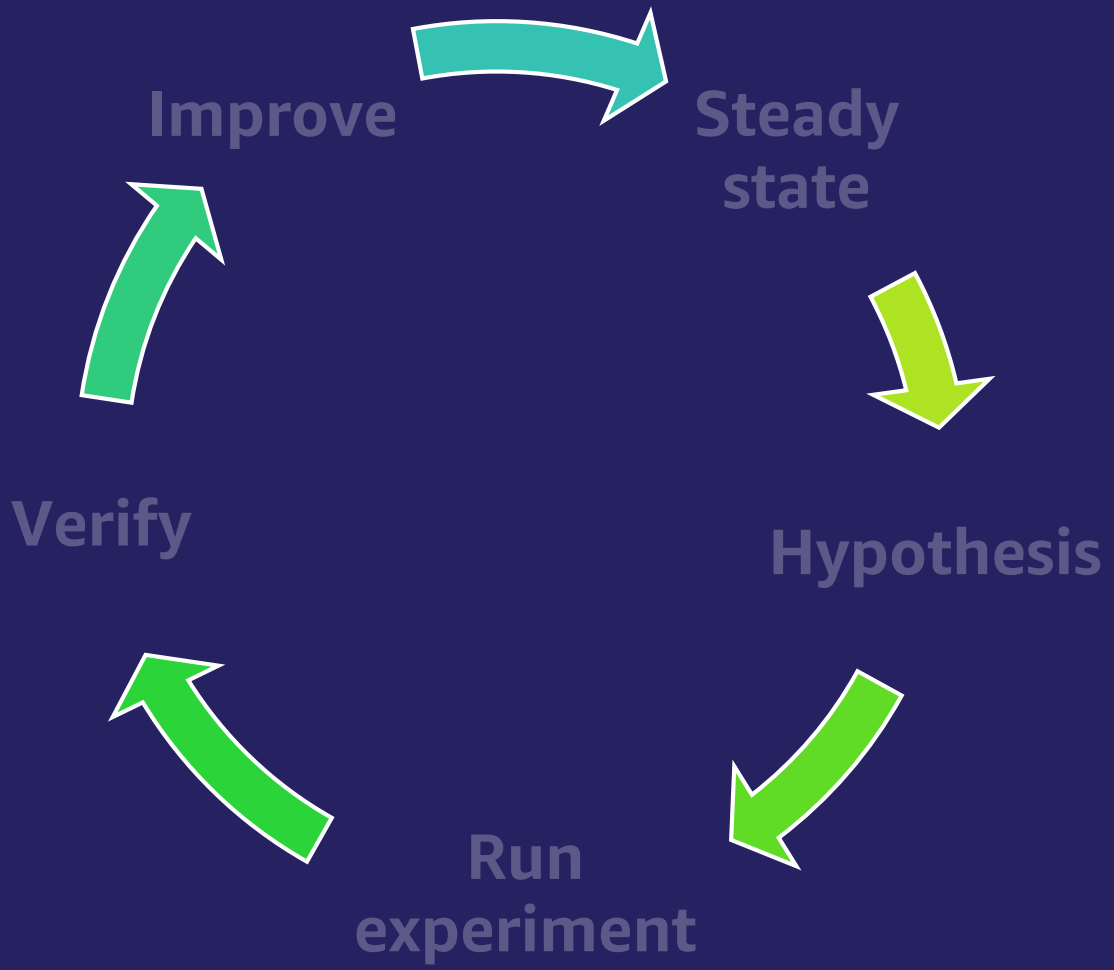
When to do chaos experiments

- Adding new code
- Creating new features
- Adding services
- Adding or changing dependencies
- Continuously
- And more

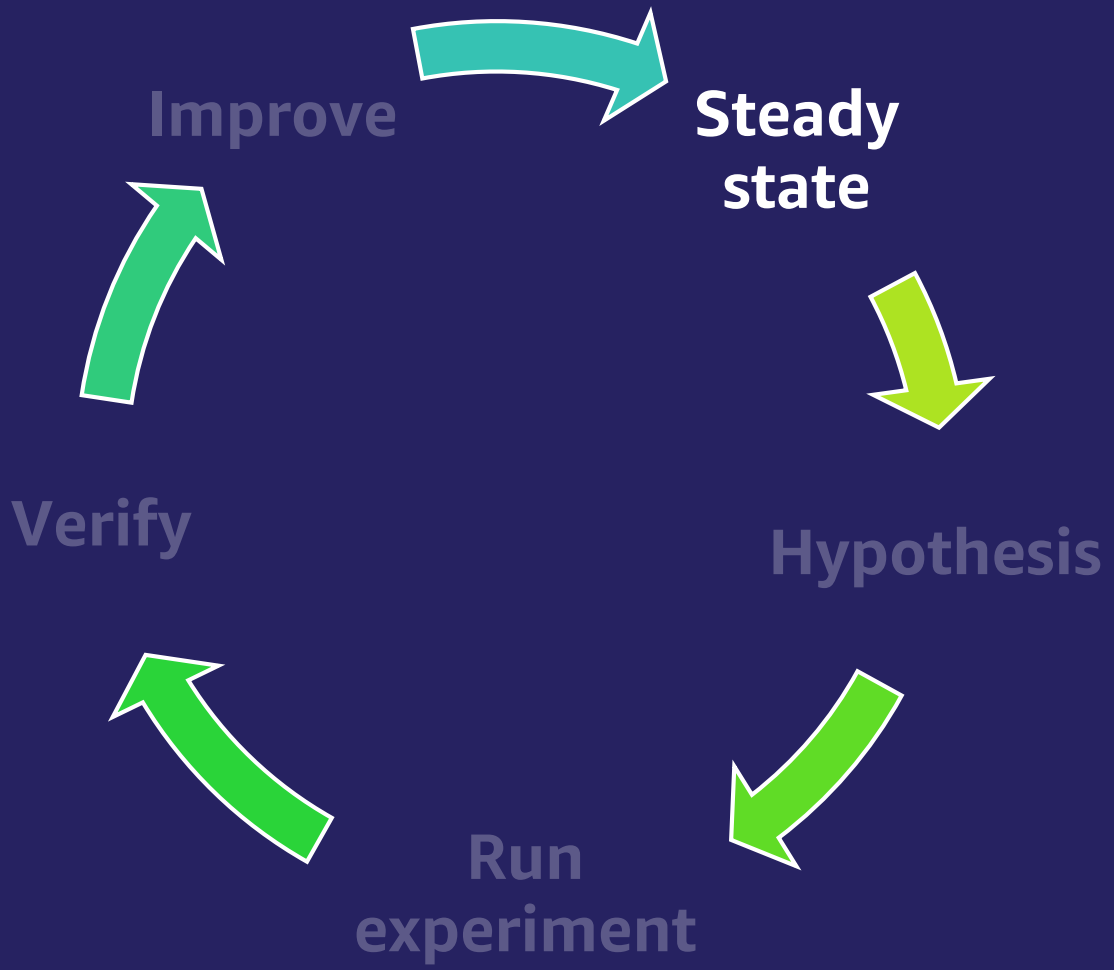
“Don’t ask what happens if a system fails; ask what happens when it fails”

Phases of chaos engineering

Phases of chaos engineering



Phases of chaos engineering



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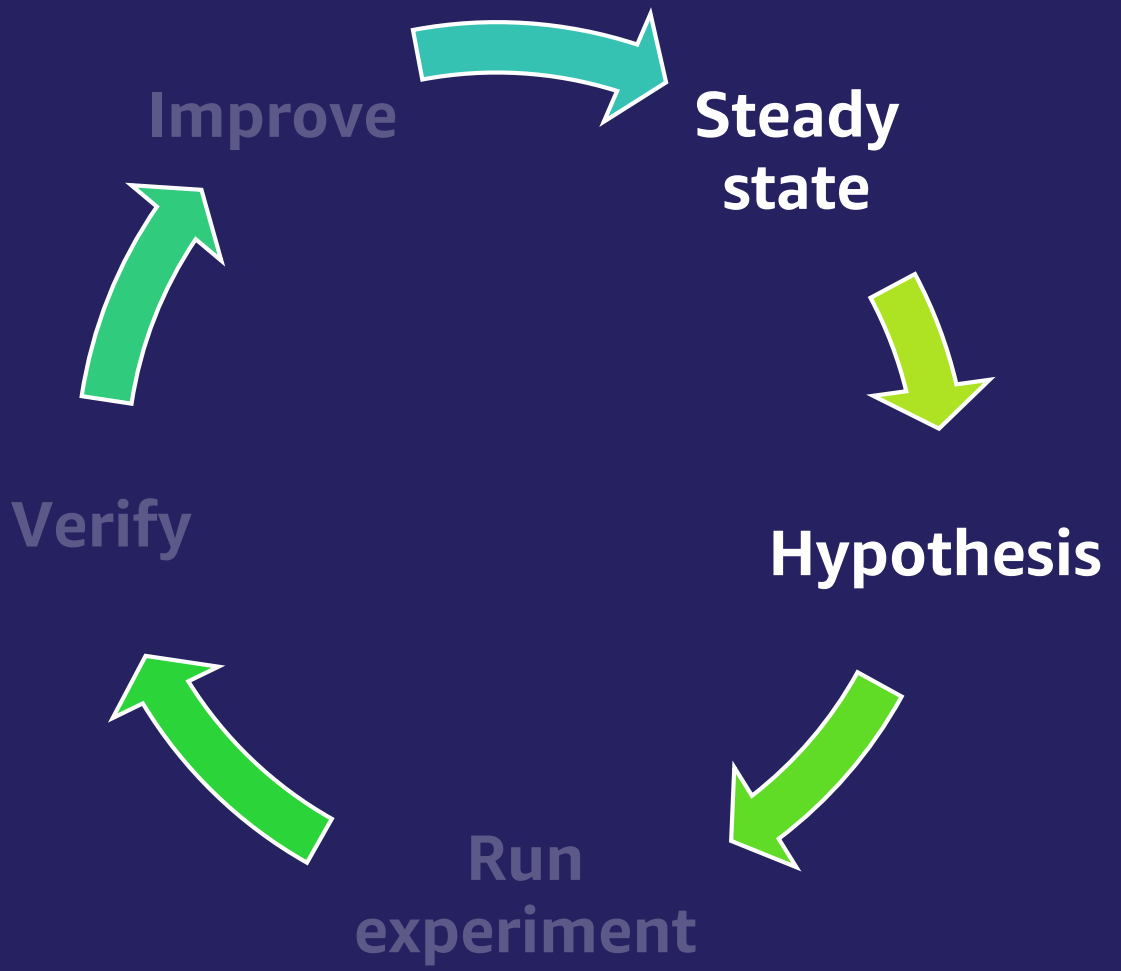

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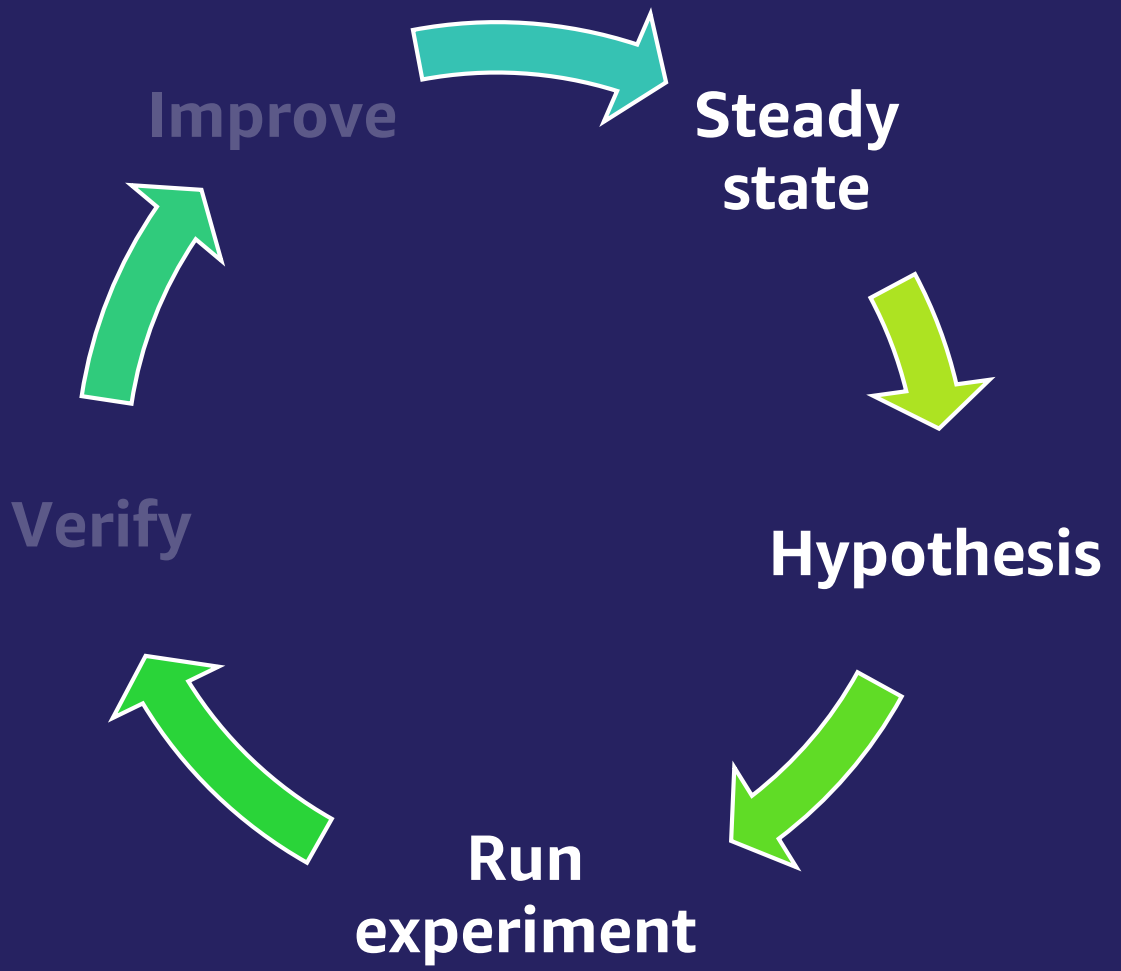

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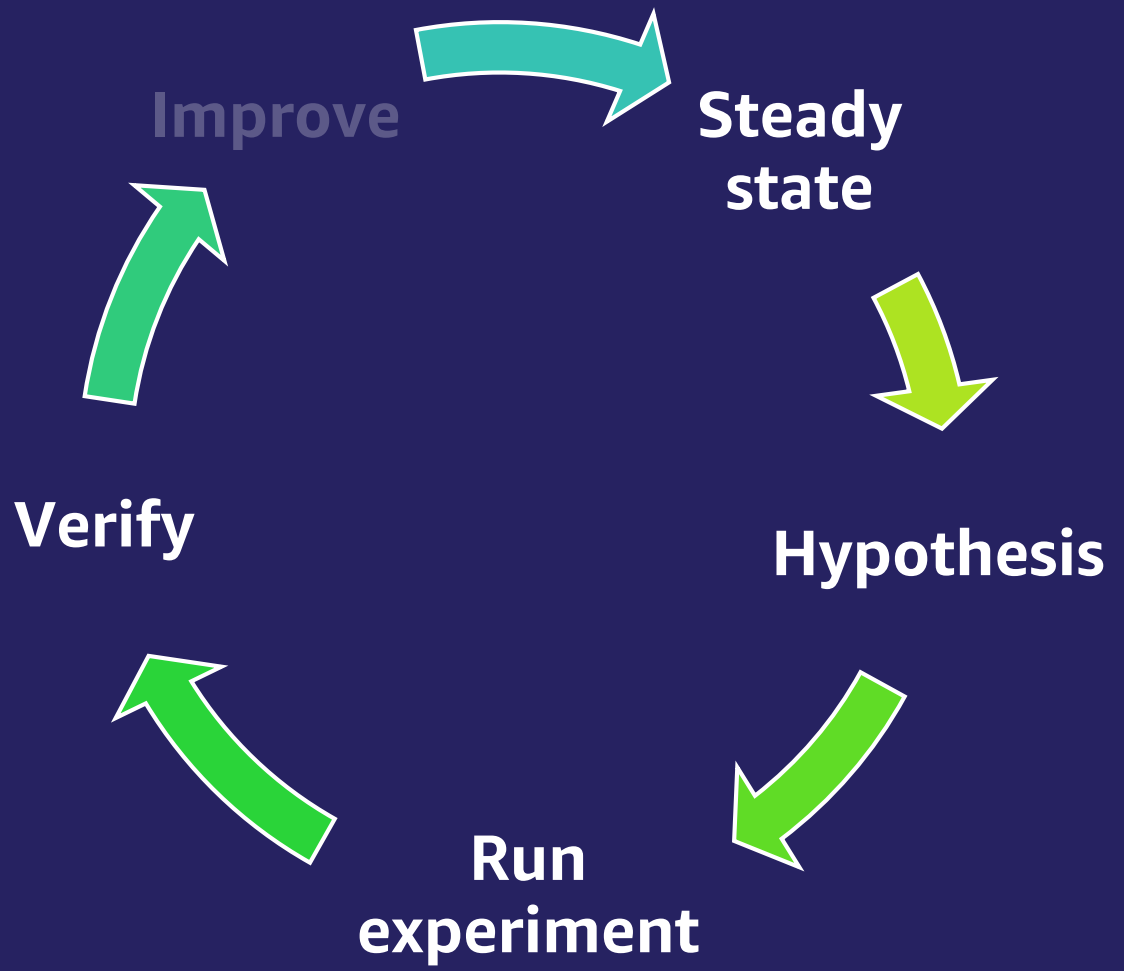

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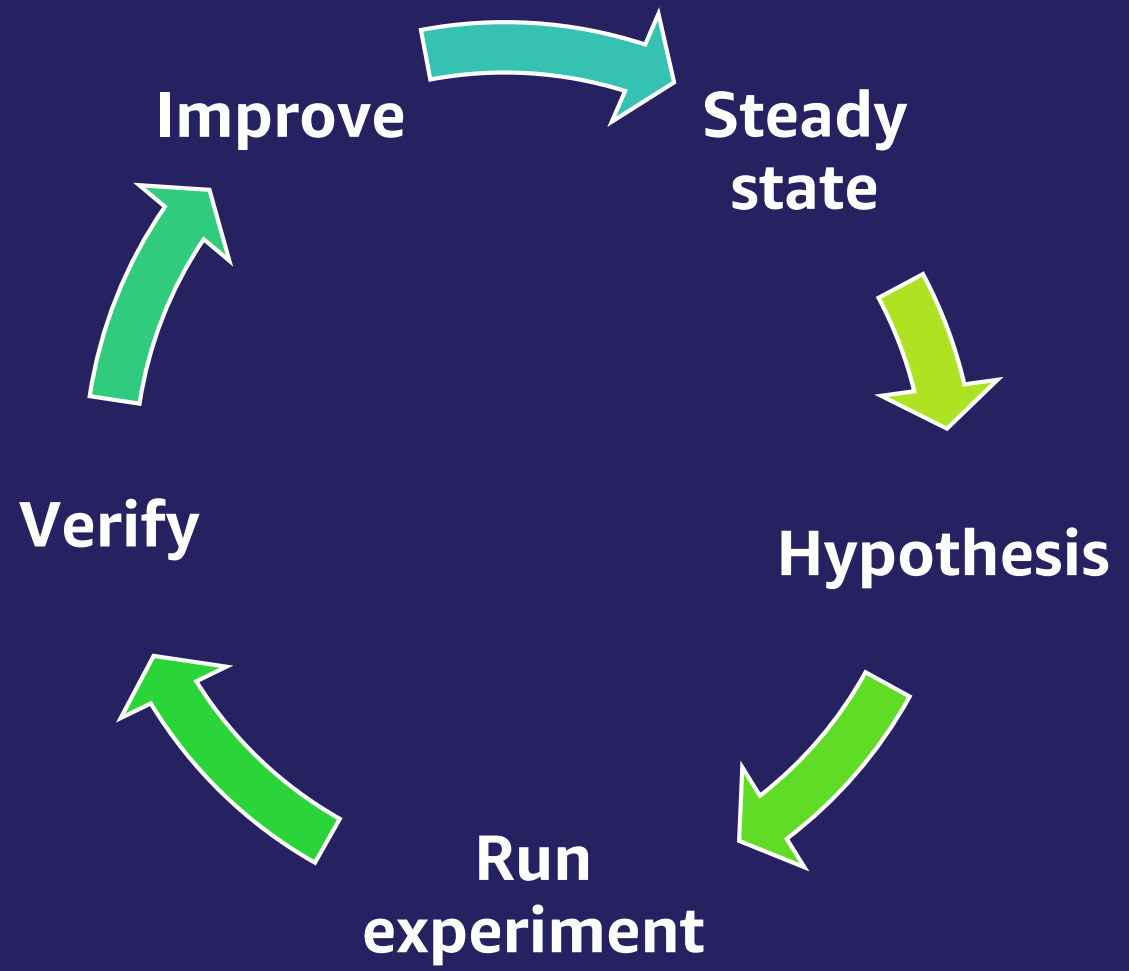

Use cases

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One-off experiments

Periodic game days

Automated experiments

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Automated experiments

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Recurring scheduled experiments

Event-triggered experiments

Continuous delivery experiments

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Recap

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- Phases of chaos engineering
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Thank you!

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