Chaos Engineering for Cloud Native Systems

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Agenda

- B.C.E. - Before Chaos Engineering
- What is Chaos Engineering?
- Cloud Native Chaos Engineering
- Benefits
- Chaos tools & platforms
- Introduction to LitmusChaos
- Demo time!
- Litmus in a nutshell
- Future roadmap

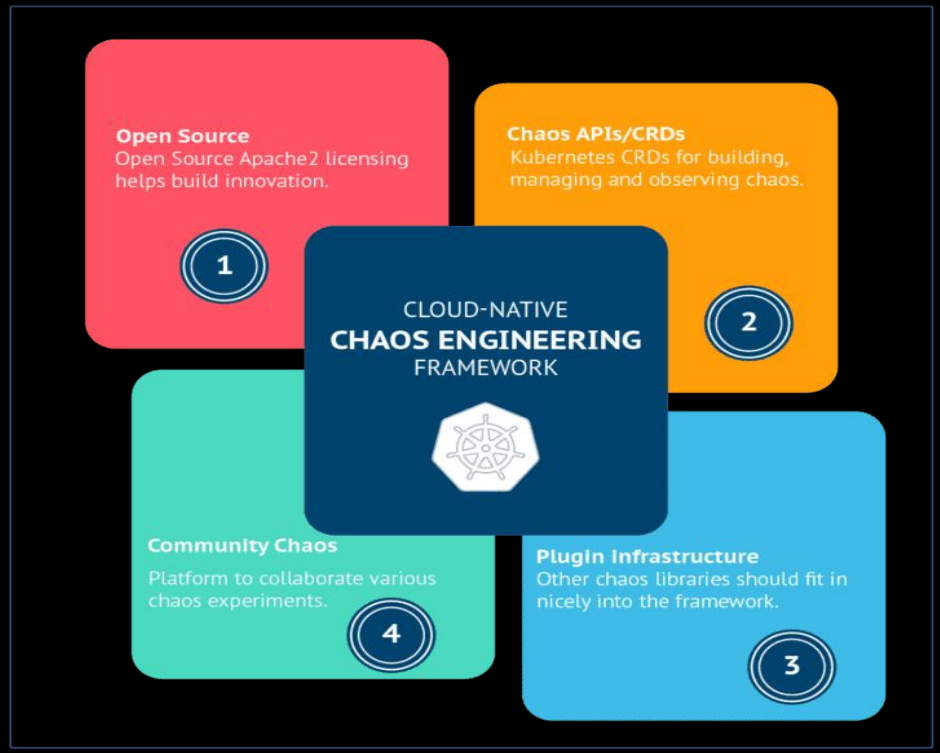
B.C.E – Before Chaos Engineering

- Customer & service impacting outages
- Higher MTTR
- “Blame”less post-mortems
- Rudimentary monitoring & observability infrastructure

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

Cloud native Chaos engineering



Source: Chaos Engineering for Cloud Native systems, Uma Mukkara

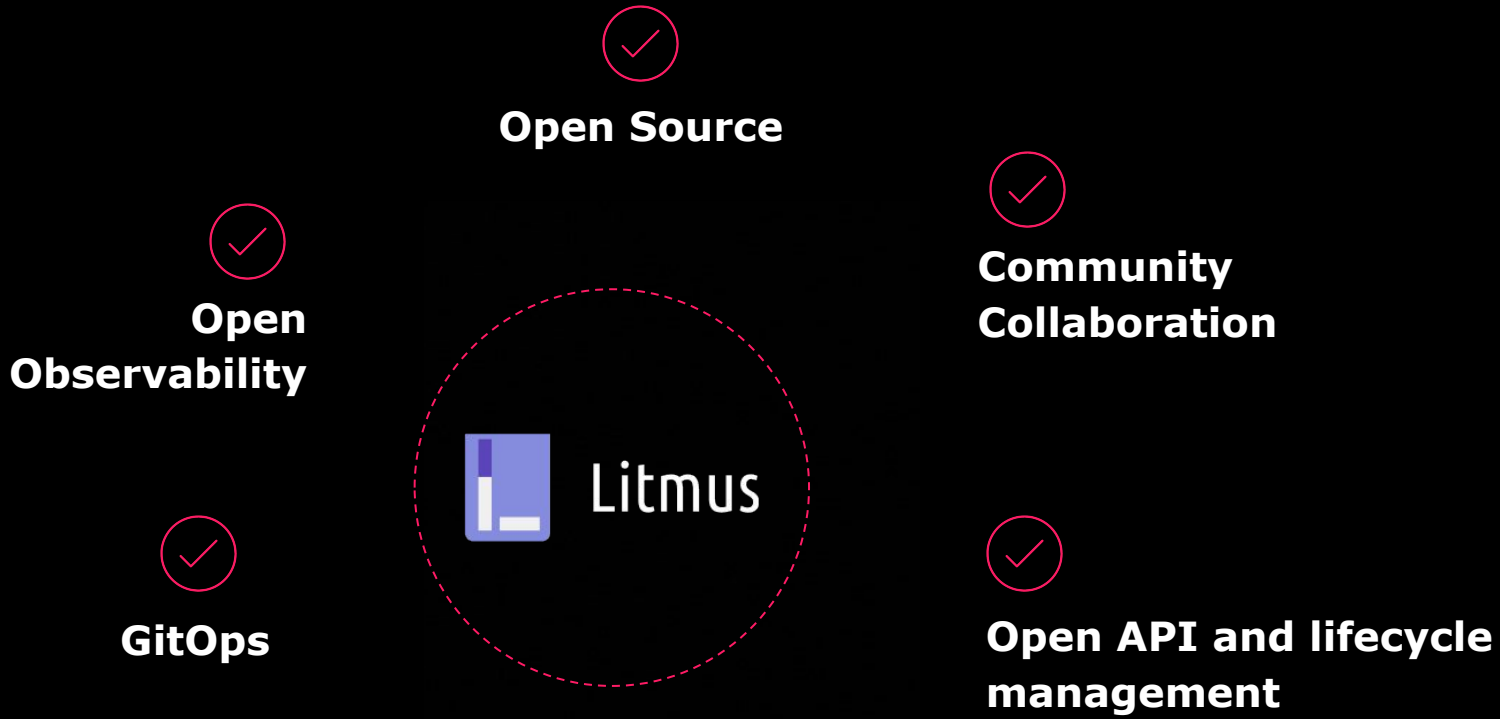
Benefits

01	**Customer**	• Better MTTR • Lesser Outages
02	**Business**	• Improved Operation & Maintenance Flows • Efficient Incident Management • Prevention of losses
03	**Technical staff**	• Reliable systems = Lesser oncalls!

Chaos tools & platforms

- LitmusChaos
- Chaos Monkey
- Chaos Mesh
- Chaos Blade
- Gremlin
- Chaos Toolkit
- ChaosKube
- Pystol
- SteadyBit
- Muxy
- Amazon FIS
- Simmy,etc

Litmus is built for modern Chaos Engineering



LitmusChaos project overview

Litmus is an open source toolset for practicing highly scalable chaos engineering practices in cloud native environments.

53 Chaos Experiments
270,000+ Experiment runs
100,000 + installations

1800+ GitHub stars
700+ Slack members

Project status

CNCF Sandbox; Applied for Incubation

Maintainers

ChaosNative, Amazon, Intuit

Other Notable Contributors

Intuit (116), RingCentral (108), Deutsche Telecom (72), Full Stack (66), RedHat (66), Microsoft (34), Ericsson (31), Amadeus (27), HSBC (26) and more

Contrib count = A combination of pr/review/issues

Litmus components

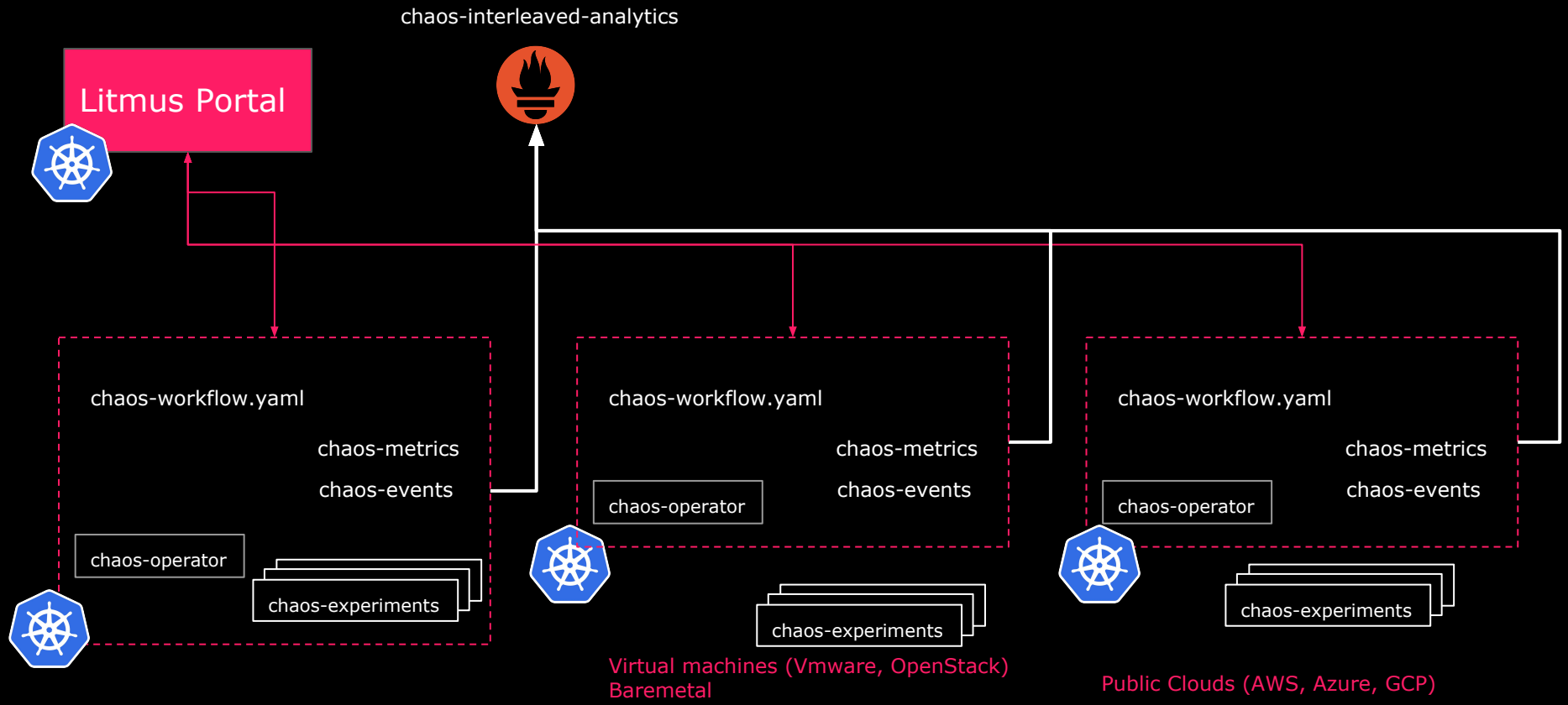
A helm chart

A public ChaosHub

A private ChaosHub

Demo Time!

Litmus in a nutshell



Future roadmap

With the increase in adoption of chaos engineering, the tools need to become smart too!

- Automation of the analysis activities
- Improvised monitoring of application using machine learning tools

Thankyou!