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SRE Roundtable with 4 DevOps Institute Ambassadors



Part One

- DevOps and SRE
- SRE and ITIL
- SRE and Security
- Benefits of SRE

Part Two

- Panel Discussion

Part Three

- Your Questions!



POLL

How familiar are you with SRE?

Origins and Comparisons



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DevOps	SRE
Started as a movement from DevOps Days	Started at Google
2009	2003 - but the first book published 2016
Started as 'agile system administration'	Started as a need to scale
Dev led	Ops led
Key concept: CICD	Key concept: Wisdom of Production
Focus on speed	Focus on stability
Scales to the enterprise	Designed for the enterprise

SRE and ITIL



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- In general, an SRE team is responsible for availability, latency, performance, efficiency, change management, monitoring, emergency response, and capacity planning (Google)
- Numerous ITIL practices contribute to these activities
- SRE principles and approaches can be used to adapt ITIL practices
- SRE is particularly relevant to organizations looking to achieve higher levels of velocity

ITIL 4 embraces new ways of working such as Agile, Lean, DevOps, and SRE.

Leveraging SRE Principles and Approaches

- **Service level management**
 - ✓ Define service level objectives (SLOs)
 - ✓ Measure using service level indicators (SLIs)
 - ✓ Service level agreements (SLAs) include the consequences of not meeting SLOs
- **Change enablement**
 - ✓ Form an error budget (one minus the availability target) and set consequences
 - ✓ Error budgets are the tool SRE uses to balance service reliability with the pace of innovation
 - ✓ Ideally, spend the error budget taking risks
- **Incident management**
 - ✓ Leverage swarming; particularly for high-impact incidents
 - ✓ Draw on concepts from the Incident Command System (ICS)
 - ✓ The Incident Commander role concentrates on the 3Cs (coordination, communication, control)
- **Problem management**
 - ✓ Postmortem culture: learning from failure
 - ✓ Blameless postmortems are a tenet of SRE culture
- **Continual improvement**
 - ✓ Foster a culture of continuous experimentation, learning and improvement

POLL

How do you use error budgets?

SRE and Security



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- As per Google, Security and Privacy are closely related concepts.
- In designing for reliability and security, you must consider different risks. Primary reliability risks are non-malicious in nature like a bad software update or a physical device failure. Security risks comes from adversaries who are actively trying to exploit system vulnerabilities.
- Reliability and Security Tradeoff – Redundancy
- Reliability and Security Tradeoff – Incident Management – Special small team with skills to handle security related incidents
- Security and Reliability is about Confidentiality, Integrity and Availability

SRE and Security



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- Intersection of Reliability and Security – Effects of Insiders
 - Design of Security and Reliability
 - Design for least privilege
 - Design for understandability
 - Design for resilience
 - Design for recovery
 - Mitigating Denial of Service (DOS) attacks

Benefits of SRE - for the Organization



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- Enhanced stability and reliability of services - SRE is about reliability
- Better understanding of how production services work - through observability and shared “wisdom of production”
- A better balance between the investment in customer experience and technical reliability - SLO’s are business objectives
- A greater appreciation of the operational impact of services in development teams - shift left, SRE’s in teams, designing for operations
- Improvements in staff morale and retention - HOW? LET’S CONSIDER THE INDIVIDUAL FIRST....

Benefits of SRE - for the Individual



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- A better work balance with ring fenced time for improvement - 50% split, operational v improvement work, a clear focus on toil reduction
- Less stressful on-call experiences and a reduction in overall call-out volumes - automation of incident response, “chaos engineering”, blameless post mortems
- Broader skills-based opportunities that leverage the latest in automation - a future-proof “toolbox”
- An improvement in workplace culture - Westrum model
- Opportunities for “shifting left” and helping to ensure development teams deliver more reliable services - getting the wisdom of production into teams
- WHICH SHOULD LEAD TO - Improvements in morale and staff retention

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What % of time do you spend on
toil?



PANEL DISCUSSION





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Q&A





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THANK YOU!