SRE (and DevOps) at a Startup

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SRE @ Split
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My Background

- Internet Connect
- NetApp
- Skyfire
- 4info
- LinkedIn
- Matterport
- Crunchbase
- Split

- Food
  - Le Cordon Bleu
  - Masters Italian Cuisine
  - Masters Gastronomy
What is Split?

- https://www.split.io/
- Feature Flags and Experimentation
  - SDKs (open sourced) in a number of languages.
- Based near San Francisco
- Series B
Overview

- Defining SRE and DevOps
- Startup
- Case for Hiring an SRE
- Hiring: When and Who
- SRE’s Plan After Starting
What is SRE?

- Site Reliability Engineering
- SRE is "what happens when a software engineer is tasked with what used to be called operations."
  - Ben Treynor (Google VP that coined the term)
- Ops teams (sysadmins) have always written code.
- Different mindset when always thinking about using software.
  - "Automation" vs "Autonomous"
- Member of the team that focuses on monitoring, configuration, and deployment (release).
- SRE is an implementation of the DevOps paradigm.
Defining DevOps

• Historically: devs wrote code, ops supported it (in prod).
  • “Throw the software over the wall.”
• Extremely dysfunctional!
  • “It works on my machine.”
• Idea was to break down the wall between “dev” and “ops”.
  • “If you wrote it, you support it [in prod].”
• Werner Vogels, Amazon CTO and VP
DevOps is Not a Job Title

• “Show me your agile department.”
• DevOps is a paradigm that teams implement along a spectrum.
• Confusing message to other engineers.
• Alternatives:
  • SRE SWE
  • Production Engr
  • Infrastructure Engr
Life at a Startup

- Fewer economies of scale.
- Fewer internal tools, more SaaS.
- Everyone wears many hats.
- Where does the “SRE hat” fall?
  - Developers manage their own systems?
  - Hire a specialist?
Pure DevOps

- Aka. Put the “SRE hat” on the developers.
- The developers manage their own automation.
- Scales as teams scale.
- Torn have to balance “product work” and “devops work”.
Developers Have Product Focus

• Keeping up to date on all tools may prove difficult.
  • Security updates
  • Best practices
  • Integration Issues
• Learn minimal amount of the tools.
  • Even more difficult with SaaS.
• Inconsistent “best practices”.
  • E.g. incomplete metrics.
Specialist (aka SRE)

- Part of the development teams
- Can serve as a “consultant” to dev teams.
- Dev teams can vary along the spectrum of DevOps
  - Some more self-sustaining, others are less so.
- Context-switching between teams is not ideal.
Pure DevOps vs Specialist

• Hat on Dev
  • Devs are focused on product development.
    • Tools are too often secondary.
  • Inconsistent best practices.
• Hat on Specific Person (SRE)
  • Focus on configuration, deployment and monitoring.
  • Switching between dev teams can be challenging.
• YMMV
When To Hire

• Any site outages…
  • … reported by the customer *FIRST*?
• Running code not checked in to SCM?
• Deployments impeding feature release?
• When you have problems, is there enough data to debug?
• If yes to any; hire an SRE.
Who To Hire

• Unicorn of skills
  • Linux (sysadmin-ish), Distributed Systems
  • Coding
  • SaaS providers
• IME: Coding is the hardest to find.
• Diversity is important.
SRE Hierarchy of Reliability

- Product
- Development
- Capacity Planning
- Testing + Release procedures
- Postmortem / Root Cause Analysis
- Incident Response
- Monitoring
Where I Focus Initially

- Monitoring
- Incident Response
- Postmortem / Root Cause Analysis
- Testing + Release procedures
- Capacity Planning
- Development
- Product
Metrics and Monitoring

- Metrics
  - Golden Signals
    - Latency
    - Traffic
    - Errors
    - Saturation
  - Customer perspective
    - SLAs
    - Alert fatigue
Incident Response

- Know who to contact
- Single communication channel
- Fix and report
Release

- Simple
- Get developers involved
- CI is mandatory
  - Implementation is on dev
- CD can be more complicated
- Semver
- Trunk development
Capacity Planning

- SaaS is easier, but expensive.
- Work with business
Summary

- SRE is an implementation of the DevOps paradigm.
- SREs are members of the dev team.
- In small orgs, you can have developers perform “SRE tasks”. But, usually it makes more sense to hire an SRE.
- Use “SRE Hierarchy of Reliability” to prioritize initial work.
  - Metrics are first.
  - Metrics are key to everything else.
- Net Net: Empower developers.
SRE Books

https://landing.google.com/sre/books/
Questions?

Twitter: craigs55
LinkedIn: https://www.linkedin.com/in/craigsebenik
GitHub: craig5

Split is hiring!!!
https://www.split.io/