# SRE (and DevOps) at a Startup

Craig Sebenik

SRE @ Split

29 Oct 2018

usenix LISA18

October 29–31, 2018 | Nashville, TN, USA
www.usenix.org/lisa18 #lisa18

# 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”.

# Lots of Pieces



# 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

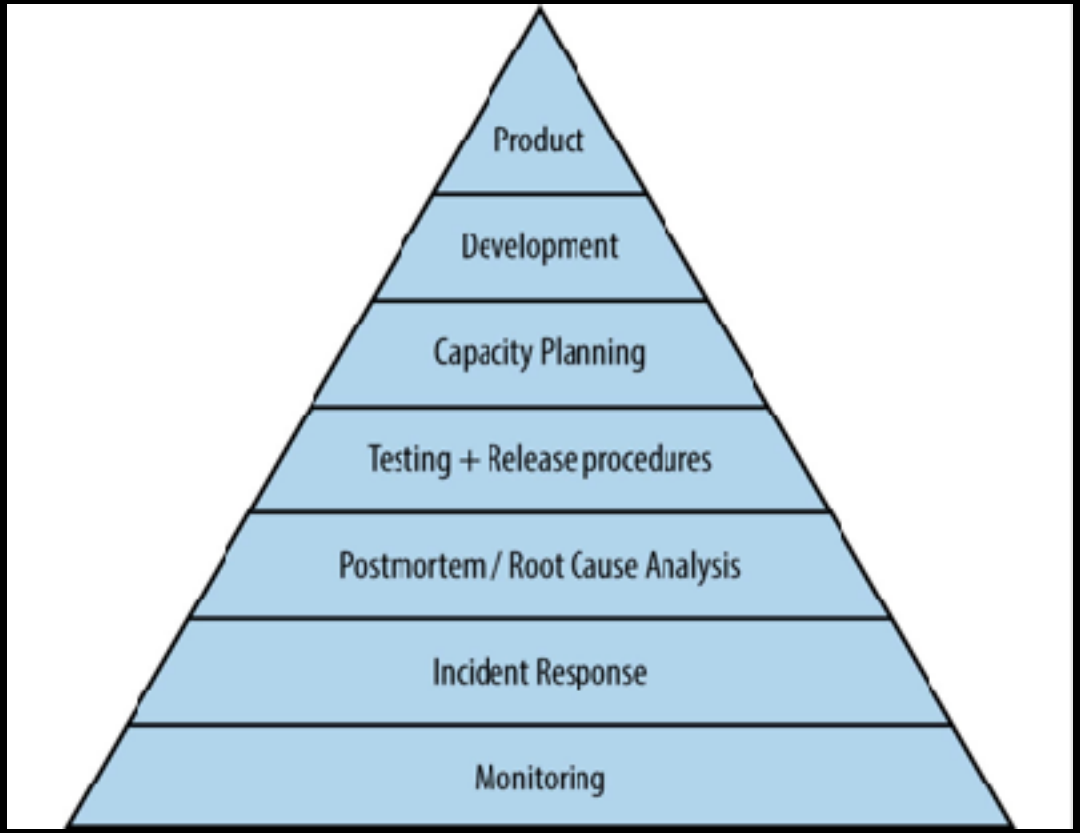
# When To Hire

- 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.

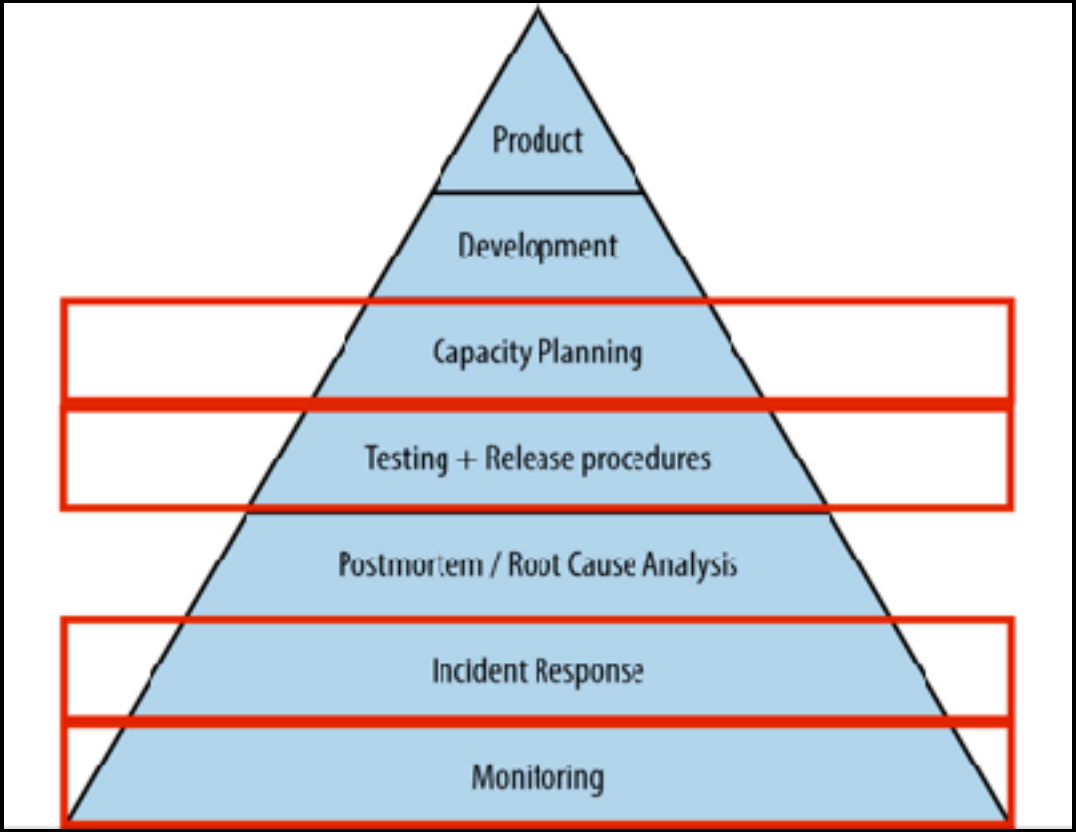
# Who To Hire

- 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

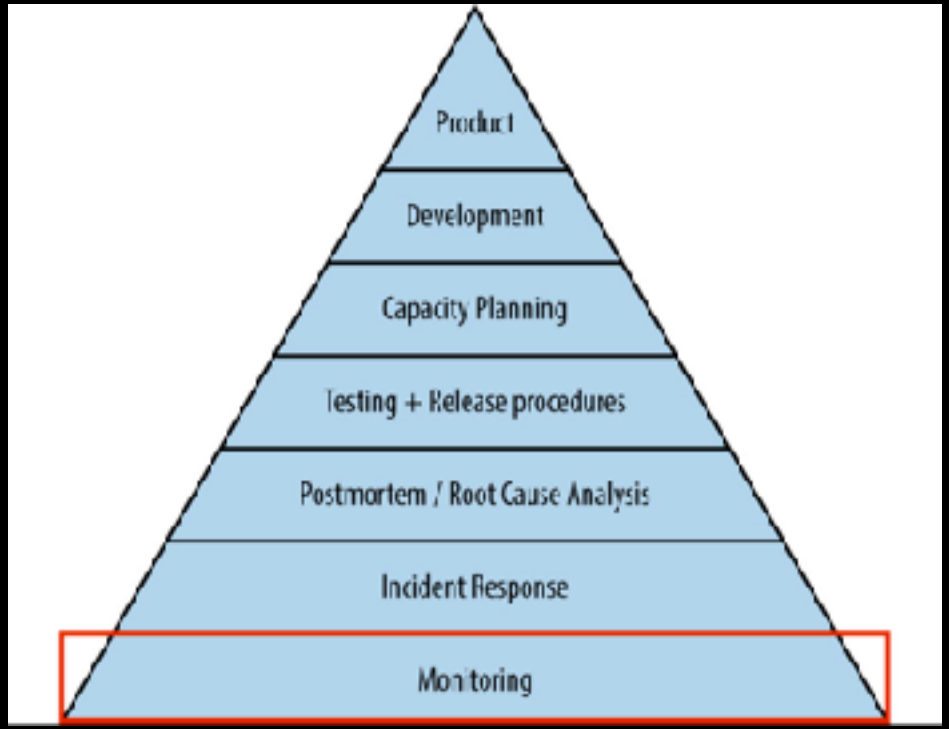


# Where I Focus Initially



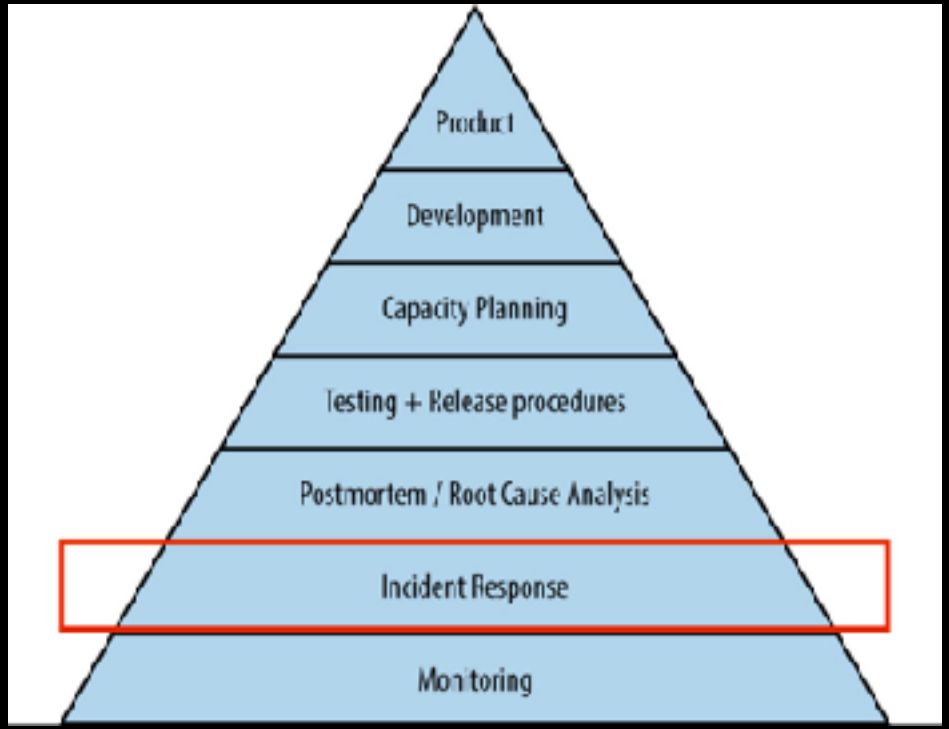
# Metrics and Monitoring

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



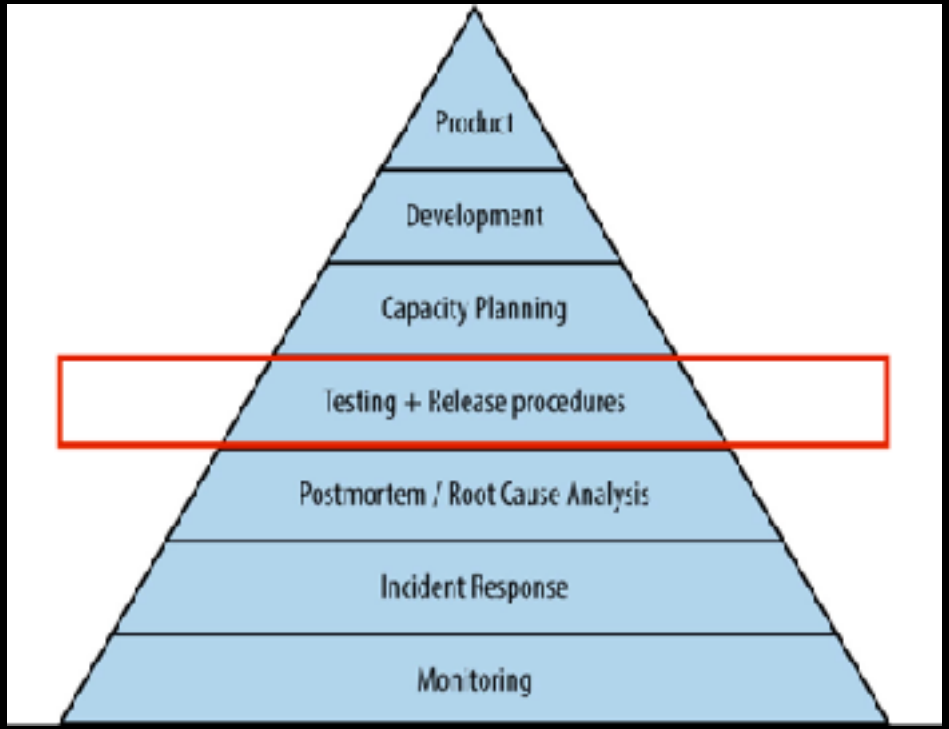
# Incident Response

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



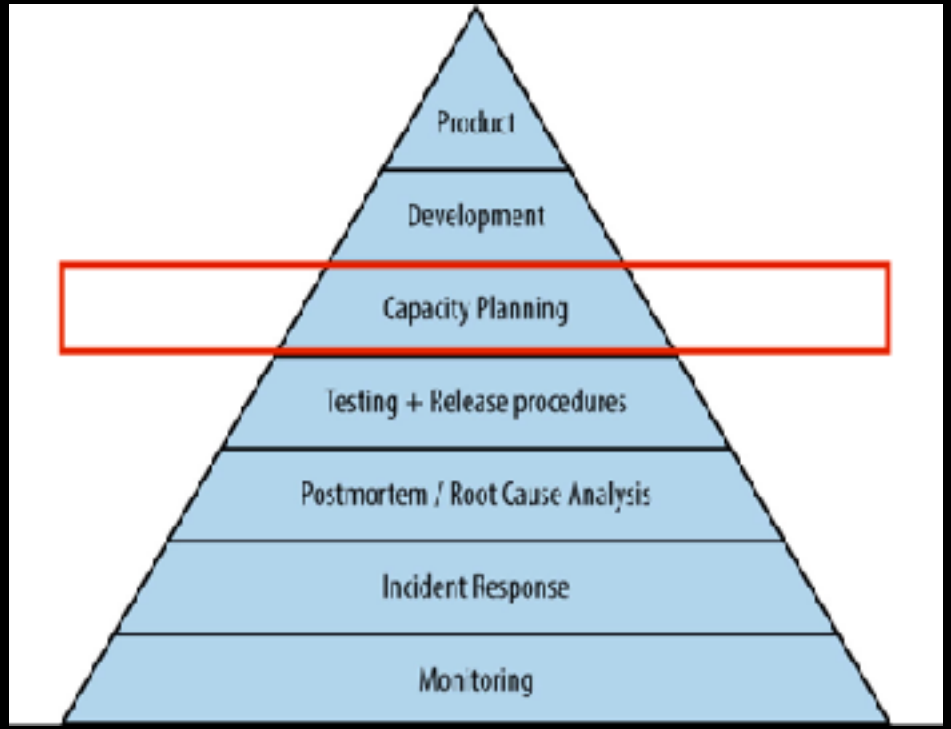
# Release

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



# Capacity Planning

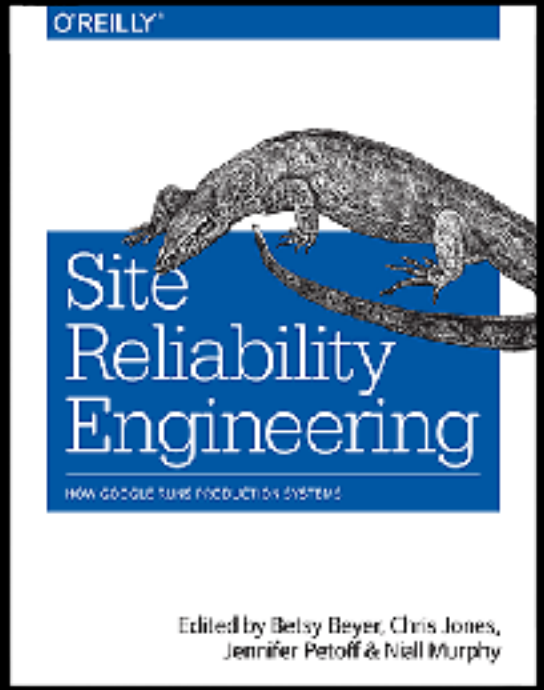
- SaaS is easier, but expensive.
- Work with business

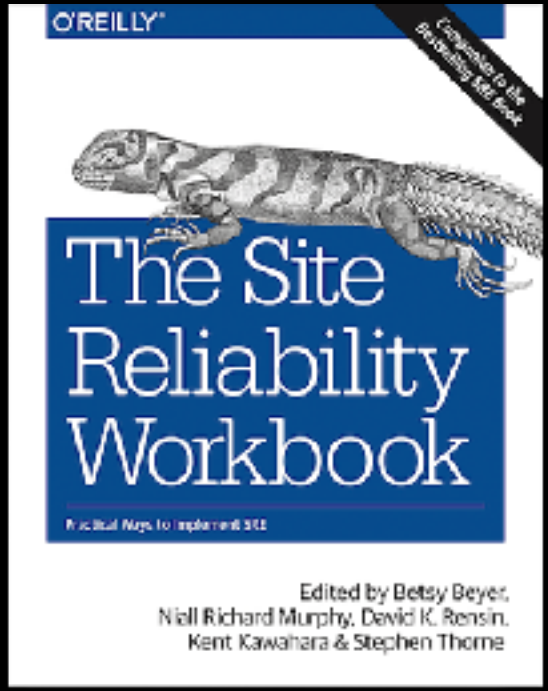


# Summary

- 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/