



Building Secure and Reliable Systems

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Senior Site Reliability Engineer at Google
Worked on BeyondCorp and CI/CD systems

Contributor to the “Building Secure and Reliable Systems” book

Security enthusiast - CTF player with team Tasteless, co-organizer of the Google CTF



Security & Reliability

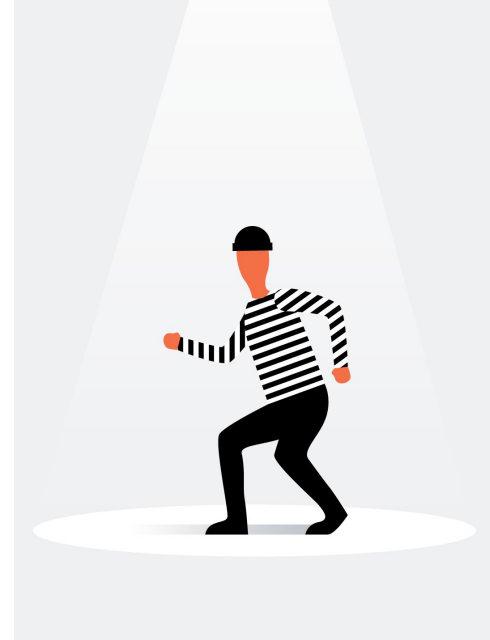
- Common properties
- Different design considerations



Managing Security Risk

Understanding Adversaries

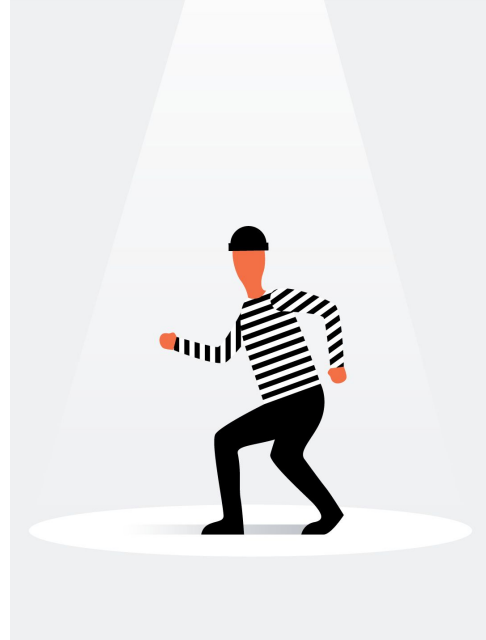
- Actor / Role
- Motive
- Actions
- Target



Managing Security Risk

Design strategies

- Least Privilege
- Zero Trust
- Multi-Party Authorization
- Auditing and Detection
- Recovery



Managing Reliability Risk

Error budgets

- All stakeholders in the organization have approved a Service Level Objective (SLO) reliability target as being fit for the product.
- “Budget of unreliability” (or the error budget) represents the difference between 100% and the reliability target.



Managing Reliability Risk

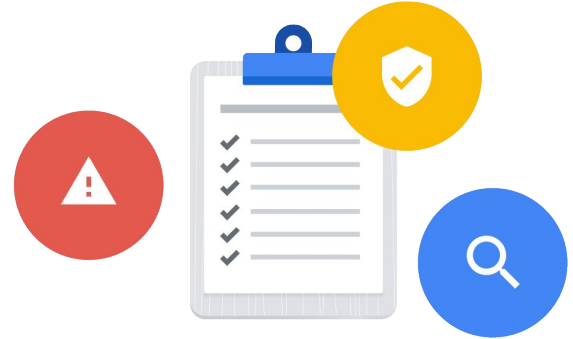
Design strategies

- Least Privilege
- Zero Touch
- Multi-Party Authorization
- Auditing and Detection
- Recovery



Shift Security & Reliability Left

- Commitment to the full system lifecycle.
- Security & Reliability central elements in the architecture of systems.



Thank you!

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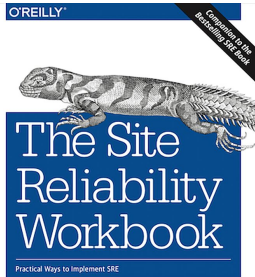
Building Secure & Reliable Systems

SRE and Security Best Practices



Heather Adkins, Betsy Beyer,
Paul Blankinship, Piotr Lewandowski,
Ana Oprea & Adam Stubblefield

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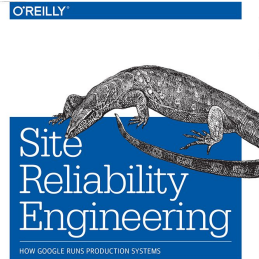


The Site Reliability Workbook

Practical Ways to Implement SRE

Edited by Betsy Beyer,
Niall Richard Murphy, David K. Rensin,
Kent Kawahara & Stephen Thorne

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Site Reliability Engineering

HOW GOOGLE RUNS PRODUCTION SYSTEMS

Edited by Betsy Beyer, Chris Jones,
Jennifer Petoff & Niall Murphy