Engineering Reliable Mobile Applications

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SREcon’17
Current State of SRE
“In general, an SRE team is responsible for availability, latency, performance, efficiency, change management, monitoring, emergency response, and capacity planning.”

- Ben Treynor, VP of Engineering, Google
Why Mobile?
Current State of Mobile
Caveat

Primarily based on Android
Challenges

The mobile environment is nonuniform and uncontrollable
Challenges

There are many options for application monitoring but no option is perfect.
Challenges

Effecting change is hard
SRE&Mobile
“In general, an SRE team is responsible for availability, latency, performance, efficiency, change management, monitoring, emergency response, and capacity planning.”

- Ben Treynor, VP of Engineering, Google
“In general, an SRE team for mobile is responsible for availability, latency, performance, efficiency, change management, monitoring, and emergency response.”
- Kristine Chen, this talk, SRECon’17
Monitoring
Server-side Monitoring

Device

Application

Server
Client-side Monitoring*

Device

Application

Logs processing

Monitoring system

Server
Blackbox Monitoring

Application

Device/Emulator

Prober

Server

Monitoring system
Emergency Response
Emergency Response

Server-side change

Application

Device

Broken client code

???
Change Management
Staged Rollout
Stages: Alpha

- Internal devices
- Poor diversity
- Small population
Stages: (Open) Beta

- Internal devices
- Poor diversity
- Small population
Stages: Canary

- Alpha
  - Internal devices
  - Poor diversity
  - Small population

- Beta/Open Beta
  - Public devices
  - Lots of diversity
  - Appropriately sized population

- Canary
Stages: Production

Alpha
- Internal devices
- Poor diversity
- Small population

Beta/Open Beta

Canary
- Public devices
- Lots of diversity
- Appropriately sized population

Production
- Newest version available for upgrade
Other Changes
Future
What does success look like?

- Effective release tooling
- Easy experimentation
- Low latency for feedback loop
- Insight into client-side performance and business logic
- Sensible server-side controls