Operations First, Feature Second Philosophy
Lessons Learned at Facebook

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Skills network engineers need in the future?
virtualization
hyper-converged systems!
linux
internet based networking in the cloud
multi-cloud architecture
saas

Be her.

Be her.

soft skills
automate or die
IOT
SD WAN
cloud
application analysis
API not CLI
2.2 billion monthly active users
300+ million
photo uploads per day
Submarine sighting. Just another morning commute in the PNW.
Operations First Mindset!
Automation
Engineers build robots, robots manage the network
Automation alone doesn't get you there!
Think operations first, features second
Failproof vs Failfast
(detect quickly, mitigate in 1 sec or less)
Iterate vs Architect
Don’t perpetuate or create “legacy”
Hurricane Sandy disrupts Northeast U.S. telecom networks

Flooding, power outages from Hurricane Sandy lead to Internet, phone service disruptions

How Hurricane Sandy Knocked Out East Coast Internet Connectivity

A video shows hurricane taking out communications as it makes landfall.

November 1, 2012
100s of Tb/s
10s of Megawatts
Thousands of software services
Can we run Facebook without one of our data center regions?
Sandstorm
OCT 2012 - JUN 2014
Commit

Tooling

Embrace Failure
WHAT WOULD YOU DO IF YOU WEREN’T AFRAID?
What did we gain?
Learnings, lots of them

Automation

Better app developer behavior

Faster more predictable recovery
Tree Down SEV!
To Summarize
THINK WRONG