NANOG 80 Keynote:

The Awe, Angst, and Challenge of Being a Networker in 2020

Avi Freedman
CEO, Kentik
avi@kentik.com
Prelude
2020 has been a difficult year. In many ways, the world depends on you!

THANK YOU!
State of the Network World
The Need For Networks is Growing

Applications are growing… Running on networks

Growing connectivity - people, homes, businesses, devices

Greater bandwidth requirements

Networks are the water of the clouds

More layers, fewer people, too much hair on fire
But Wait - the Outsider View

Isn’t it all virtual?

Isn’t it all APIs?

Aren’t networks self-driving?
Where We Have Been:
Networker Evolution + DNA
History; Networking DNA

• A lot of us started as generalists + hobbyists
• And got fascinated by connections and how they work
• On the network front line, anyone who can help has opportunity!
• As a mix of ‘book knowledge’ and tribal knowledge / apprenticeship
• And breaking things
History; Networking DNA

- You’ve got to think it’s cool to be reasoning from first principles!
  - (How often do you find a kernel bug, Mrs. SRE??????)
- It seems simple (make the packets go from here to there)
- But reality - convolved with politics - can often be more complex
This is awesome but…

how do we replicate / scale / grow?
The Awe and the Angst
Networkers run the largest distributed system out there

That is amazingly resilient

And supports the digital world

The Awe

IDEAS
The System That Actually Worked
How the internet kept running even as society closed down around it
MAY 6, 2020
Charles Fishman
The Angst: 2020 Networker Challenges

- Ops Silos: Tools + Knowledge
- Cloud Clue + Telemetry Gap
- Automation != Simplicity
- Buzz and Hype
- Gender and Race Diversity
- Need to Attract Next Generations
WHY OH WHY DO YOU
ALWAYS BLAME THE NETWORK
Where We’re Going: Hype and Reality
2020: Reality
2020: Reality

- Automation is real, but early
- General AI/ML to fix everything is not coming in 2021
- Cloud is real and growing faster than on-prem
- Streaming Telemetry is some, but not all, of what we need
Forecast: 2021+

- Telemetry and AI will help
- Specific ops patterns will be automated
- Security, ops tooling will converge
- Net + Dev/SRE/App ops will integrate
- Public cloud will outpace ‘owned’ networking
Calls to Action
Suggestions For The Industry

Things we can do to help with diversity for the next generation - and cross-ops understanding

- Agree on common and clear terminology
- Cut the hype - it holds us back
- Education, foundations AND cutting the hype!
- Help other groups see into the network
How Do We Get There?

Specific suggestion for NA networkers - Panels, more tutorials, working groups to curate great content

As individuals

As companies - Do well by doing good!

As an industry - NANOG, ARIN, RIPE, IETF, ...
Practitioner Recommendations

Automation
APIs are your friend

Cloudify
We need to learn the ‘cloud’ side

Career + Community
Document, teach, and mentor
Questions?

Avi Freedman
CEO, Kentik
avi@kentik.com
FIN

Avi Freedman
CEO, Kentik
avi@kentik.com