UNLEASH THE POWER OF LIMITLESS CONNECTIVITY
Operational Transformation

Strategies for Continuous Deployment at Scale at the Network Edge: a.k.a. The Pursuit of the Zero-Downtime Headend

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Introduction

Photo by carlos aranda on Unsplash
What is it?

• "Edge of the network" constantly changing
• Microwave, Coaxial tree-and-branch, modern HFC
• Moving closer to consumers
• Where optical signals hand off to RF or the output of set-top box
• Depends who you ask!

Photo by Denny Müller on Unsplash
Our Focus

• Focus on the headend, CMTS
• CMTS devices transformed into vCMTSs
• Network edges must always be healthy and ready for anything
• Big focus on CI/CD
Continuous Integration / Continuous Deployment

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Benefits of CI/CD

- Make changes quickly and safely
- Zero downtime
- Huge industry support around tooling, best practices
- Encouraged to “fail fast”
- Agile, Devops, SDLC
The CI/CD Journey at Comcast

- Multiple teams already leveraging different platforms
- Unite internal community under one platform
- Architecture Guild and Architecture Design Record
- Ever evolving, community driven language of best practices
Single Platform Focus

- Unified platform agreed upon
- Separate, individual team responsible for maintenance and upkeep
- Community assisted onboarding and troubleshooting
CI/CD at the Network Edge

CI/CD Driving Improvements

• vCMTS patches and updates handled via CI/CD
• Changes that previously required a technician in the field
• Changes pushed out to over 10K devices
• Push button deployment
CI/CD Driving Improvements

- Prior mistakes to human error eliminated
- Changes that took days completed in a few hours
- Rolling back changes can be done in minutes in some scenarios
- In some cases, opt to rebuild software vs debug and fix
Thank You!

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