

# L4S/AccECN Interop @ IETF Hackathon

IETF 117  
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San Francisco, California



# Hackathon Plan

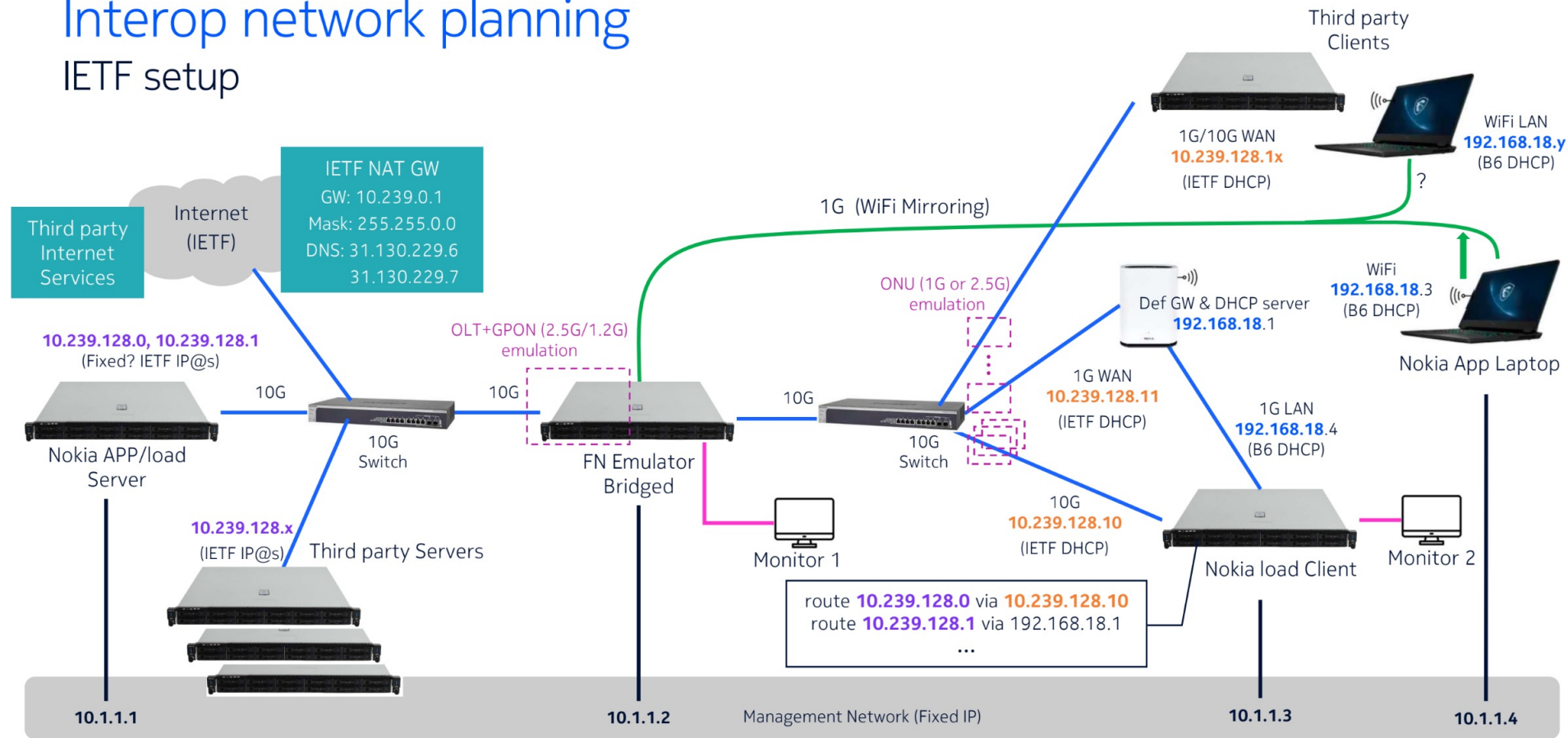
- What problem were you working on?
  - Test very low base RTTs for Fibre NWs
  - Do we need additional Prague requirements for L4S RFC9331?
  - Enhanced tools for testing (iperf2)
  - RFC2322 address assignment
- Network Setup for Testing
  - Interop test on a PON emulation testbed

Relevant RFCs:  
9330, 9331, 9332

draft-ietf-tcpm-accurate-ecn-24

# Interop network planning

## IETF setup



# What got done

- Testing 101 streamed games in parallel on a 200Mbps L4S link, preserving ultra low latency
- Exploring low CWND scenarios – CWND quantization effects, pacing effects
- Raspberry Pis with Prague, verified ECN/L4S over emulated PON L2 network
- Iperf2 L4S testing support
  - Most test cases using iperf2
  - Wrote a UDP iperf2 dissector for WireShark- established plans for TCP dissector
  - Added both ingress shaping and egress delay to verify various TCP RTT scenarios against L4S and Classic
  - Ported netquality RPM too, written in go, to ARM64
  - Free stickers!
- See us at Hackdemo Happy Hour!

# What we learned

- Lessons learned from this hackathon
  - Support lower than min window of 2 is needed
  - Pacing with finer resolution than window per RTT supports better link utilization
- Issues with existing drafts/RFCs
  - Lower min window is currently SHOULD, so maybe consider MUST for future RFC updates

# Team Members

Andrii Vladyka\*

Bjørn Teigen

Bob Briscoe

Bob McMahon\*

Chia-Yu Chang

Chris Box

David Morley

Ermin Sakic

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Michael Tüxen

Neal Cardwell

Richard Scheffenegger

Sebnem Ozer

Vidhi Goel

William Hawkins III\*

\*First timers @  
IETF/Hackathon

Testing/Hacking will continue in the Code Lounge!