

Dual Queue Low Latency Networking Update

IETF 122
March 2025

Comcast Introduces Nation's First Ultra-Low Lag Xfinity Internet Experience with Meta, NVIDIA, and Valve

Jan 29, 2025

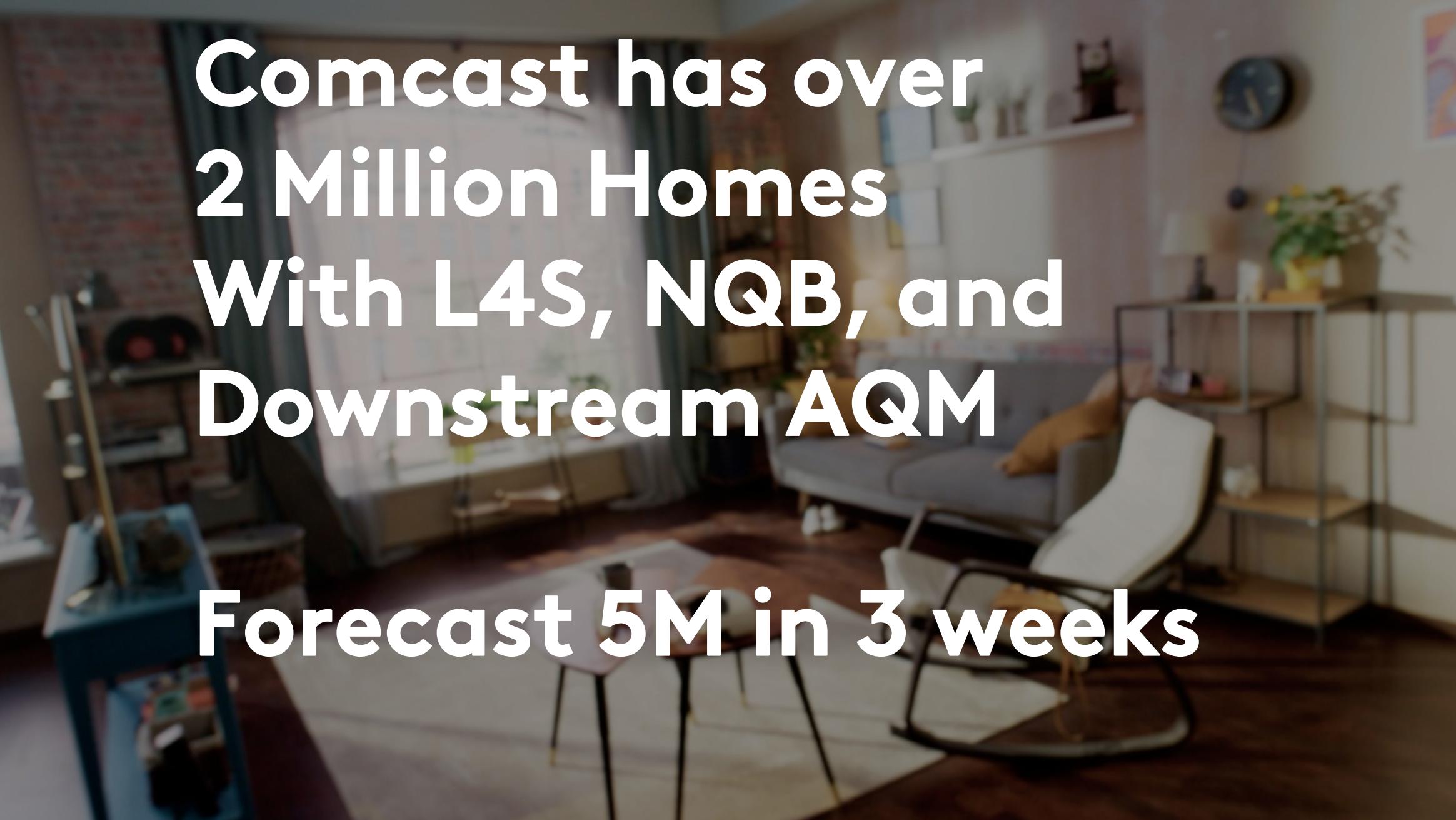


Modern applications are real-time and interactive and require more than just fast speeds. Xfinity Internet's lower lag times will be a differentiator for Comcast.

EMILY WALDORF

SVP, Connectivity and Platforms, Comcast





**Comcast has over
2 Million Homes
With L4S, NQB, and
Downstream AQM**

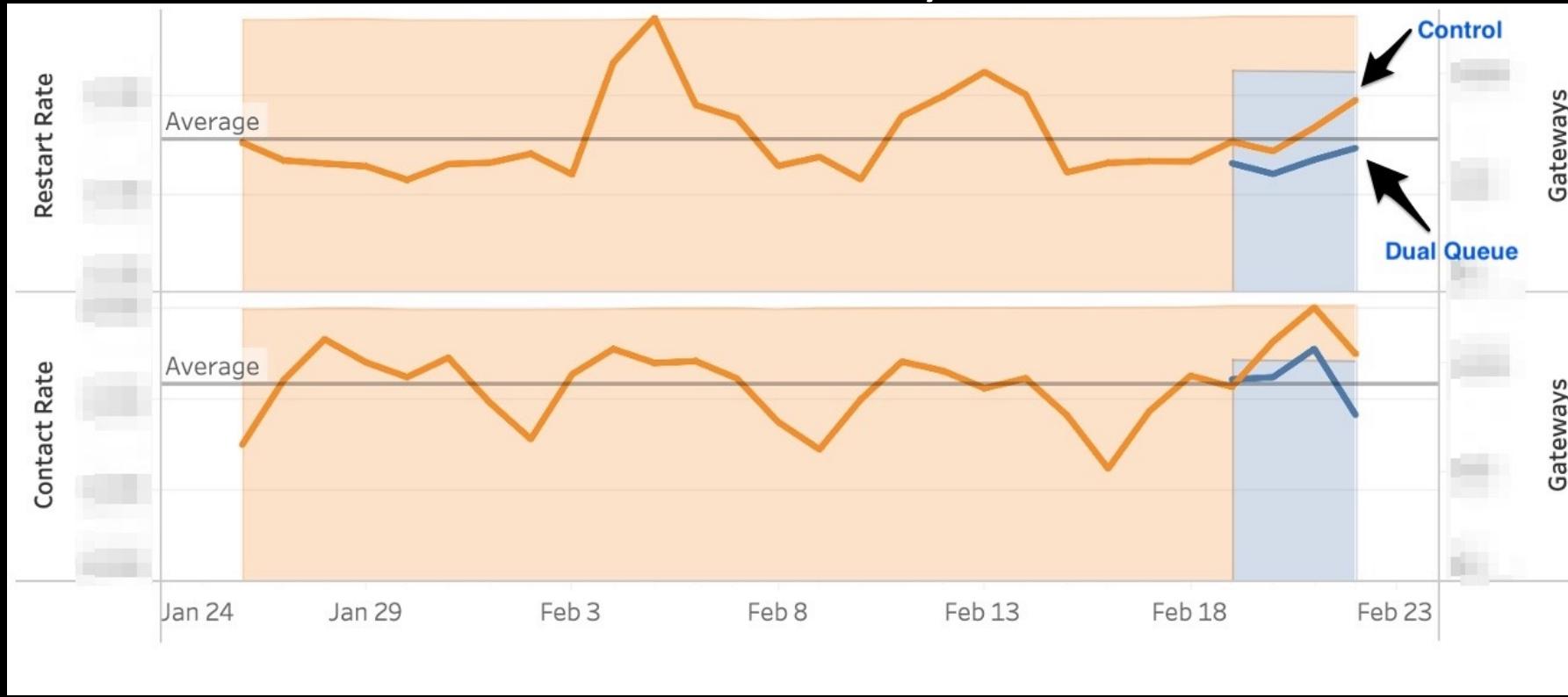
Forecast 5M in 3 weeks

Next Steps in Deployment

- Continue deploying on XB6, XB7, XB8 cable modems through April 2025
- Begin deployment on selected **COAM** (retail) cable modems
- Test **commercial** cable modems
- Begin development for **EPON**

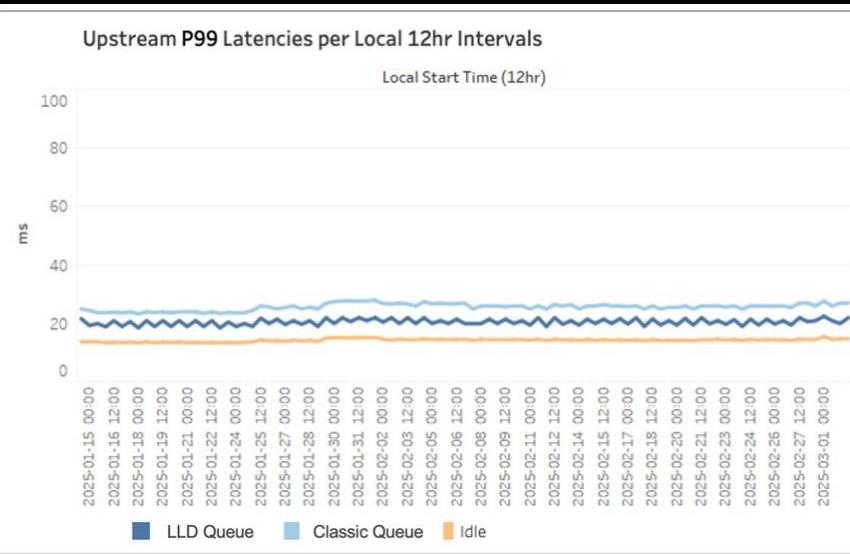
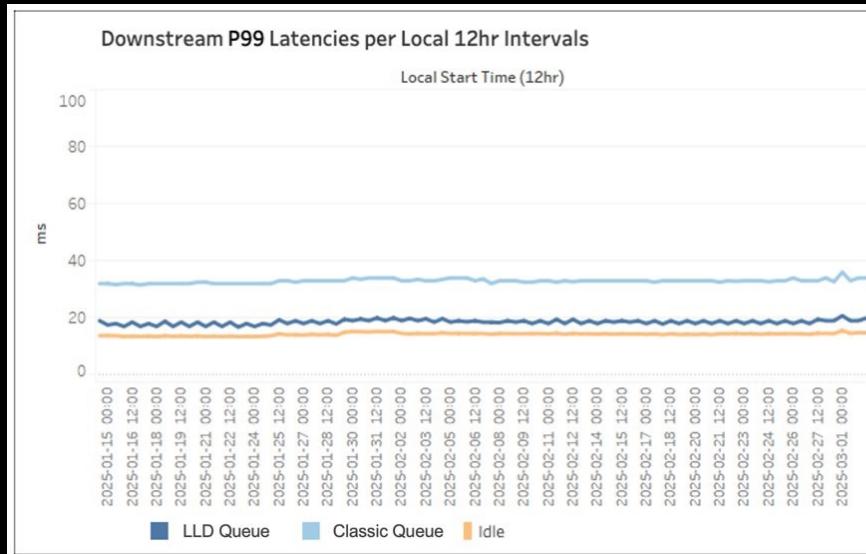
Bumps in the Road

- False alarm on “unexpected” modem reboots
- Were reboots at expected rate? **Turns out YES – no material change.**
- Initial analysis was flawed; scheduled reboots exceeded maintenance window and skewed data erroneously.



Deployment Observations

- Downstream (DS) AQM
 - DS Latency Under Load (LUL) p99 down ~50% **from 65 ms to 33 ms**
- Ultra Low Latency (ULL) Queue – Latency Under Load (LUL)
 - Downstream = 18 ms
 - Upstream = 20.5 ms
 - These are artificial / synthetic tests - will differ from app-layer QoE





Questions?