

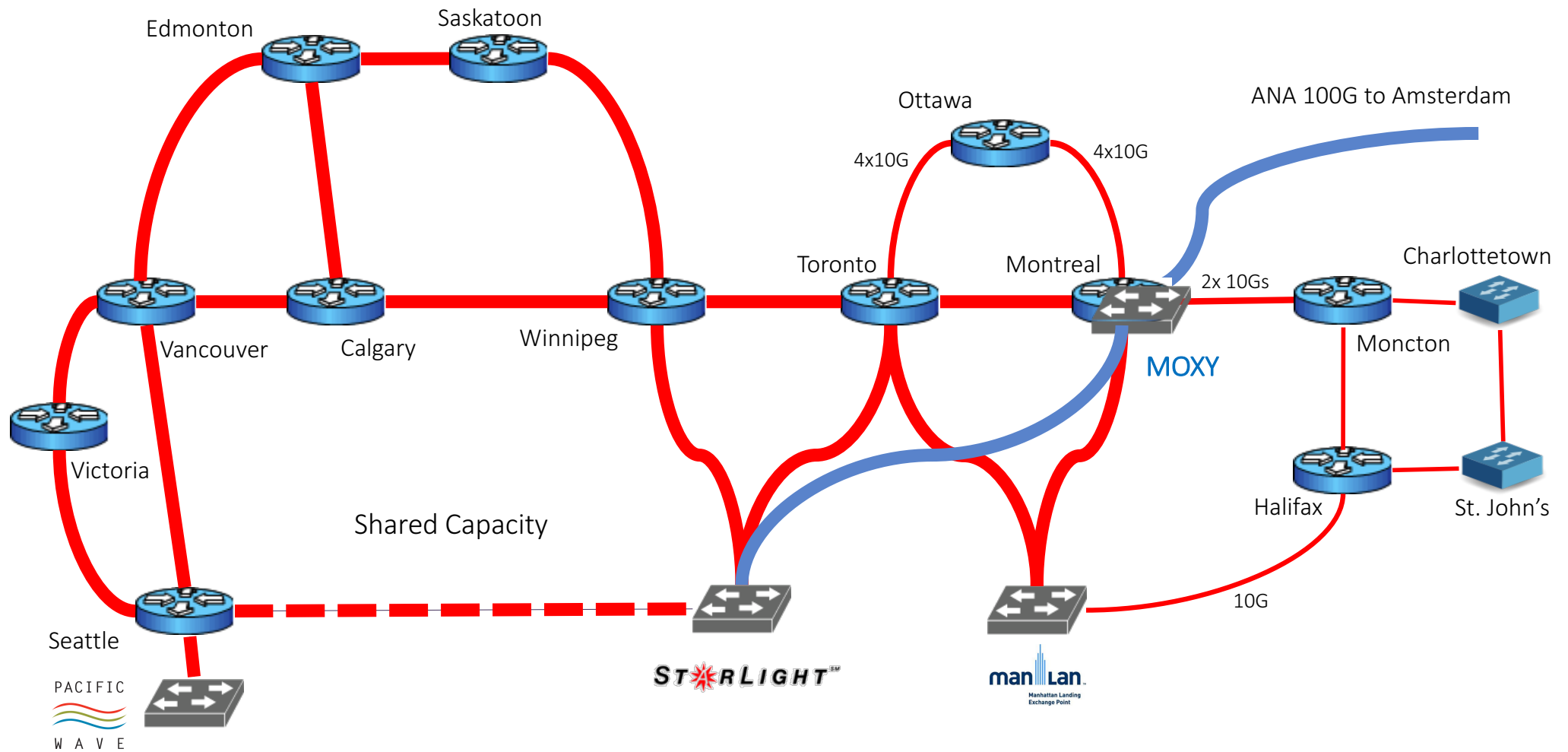


CANARIE - Transforming Networking

Thomas Tam | September 26, 2017



100G IP Core Infrastructure



Network Services

> IP services

- R&E and Content Providers

> MPLS VPLS based services

- L2VPN and L3VPN
- Offering fast reroute

> MOXY (Montreal Open Exchange)

- L2 interconnection service

Growing Trends

> Growing of traffic volume

- LHC
- Compute Canada
 - Centralized data centre in a few instead of 30s
- Research traffic
- Content traffic (Cloud providers)
- SKA ???

> Growing of network capacity and cost

Challenges

> Optimizing the use of the network

- Optimizing traffic flow
 - Utilizing both network paths for services
 - Forcing Traffic in one particular path
- Production vs Experimental traffic
 - Available all the time vs scheduled or requested basis
 - Backup of some experimental traffic unnecessary

> Managing the rising cost of the network

- Delaying the deployment of new backbone links

> Network Management/Operation

- Manual operation

Managing the rising cost of Network

> Network Infrastructure

- Express route vs collector route
- Skipping router hub – minimize network port cost

> Software (SDN) switches vs Routers

- Cost of ownership

Software Defined Everything

- Building Software Intelligence

> Network Software Control Plane

- Provisioning services
- Controlling network traffic flow
 - Forcing traffic to a certain route
 - Shutting down experimental traffic during network outages
 - Reducing production client services during network outages
- Interacting with software applications

> Network Management Software

- Managing alerts
- Event correlation and alerts
- Interacting with Network Software Control Plane



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