Programmable Supernetworks, Science DMZ based Networking

Rodney G. Wilson
Sr. Director, External Research Programs
CTO - Ciena

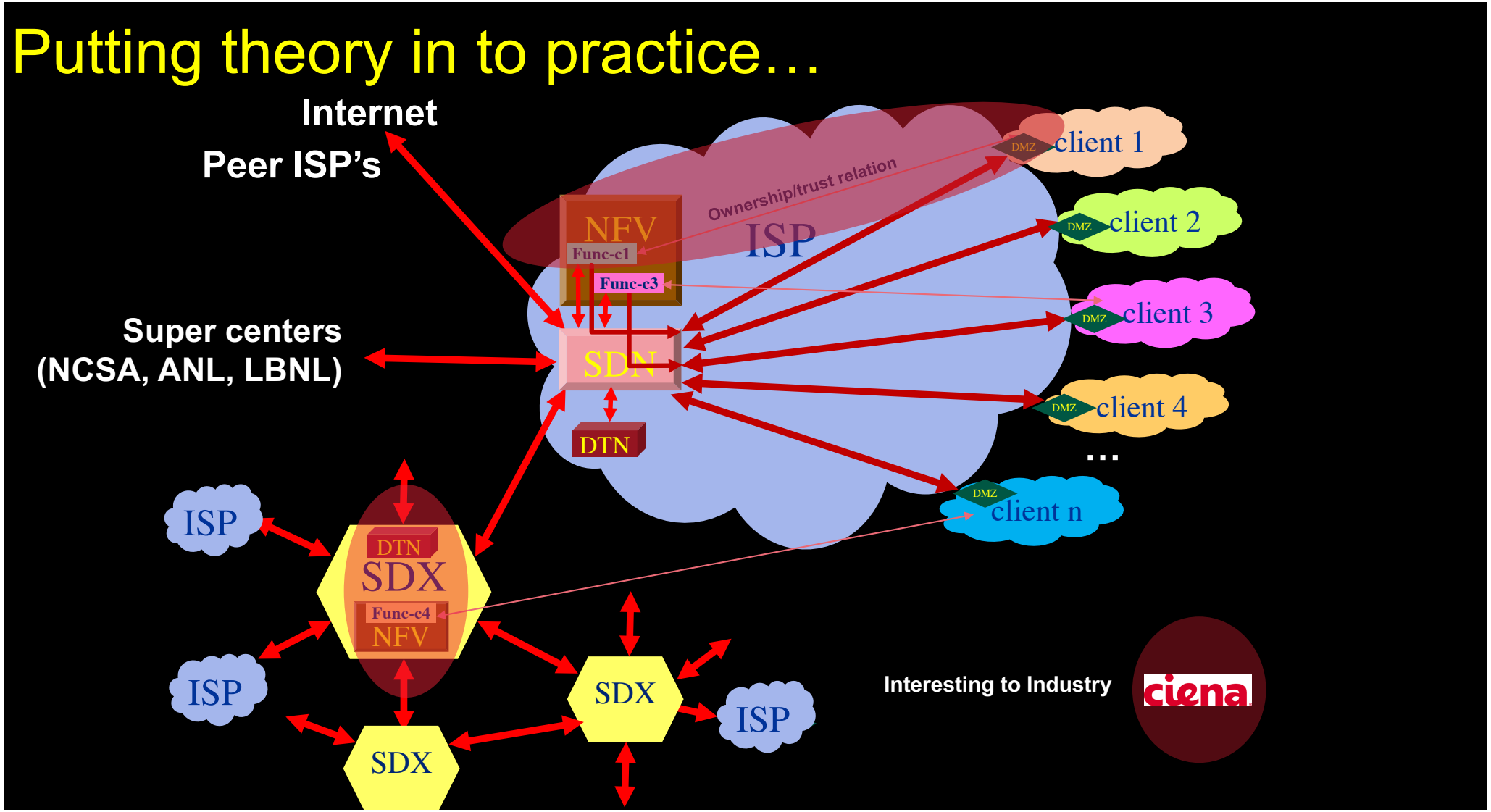
Industry Interests

Issues in moving large dataflows

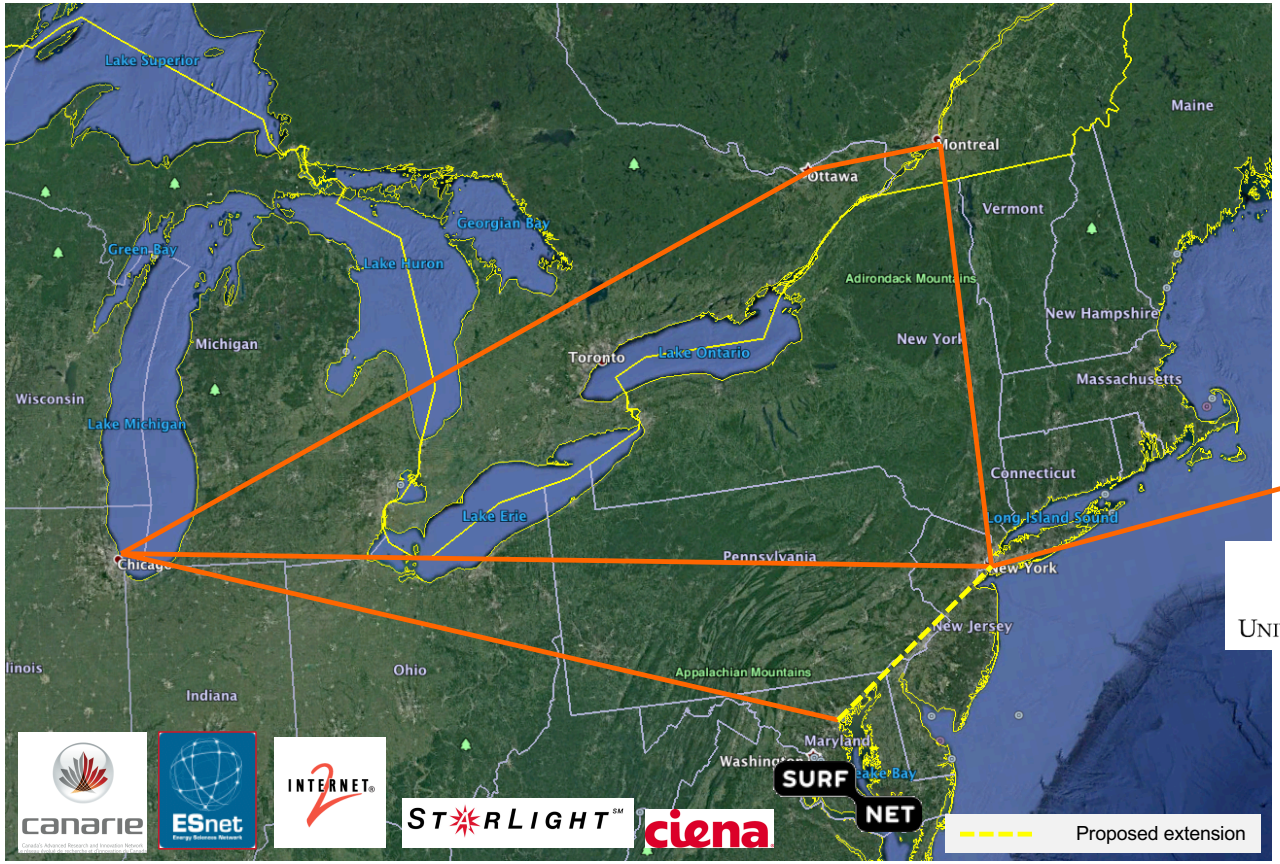
We have issues with trust & security

Tomorrow's problems today

Putting theory in to practice…



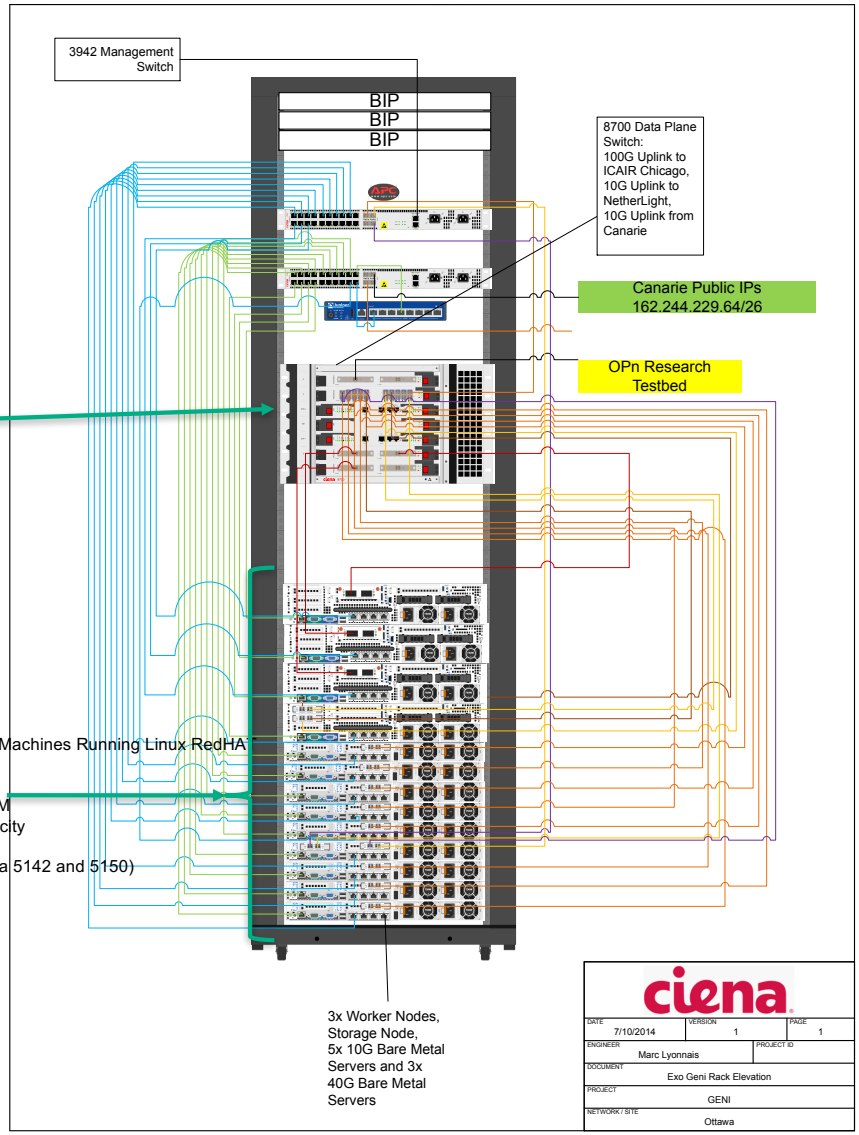
Field lab



CENI “client resource”
NFV Engines
DMZ vs. lockdown

8700 Packet Wave Platform
- ❑ 4 Slot with 560G of L2 Capacity
- ❑4x40G (2 PSLM-200-2)
- ❑2x100G (1 PSLM-200-2)
- ❑20x10GE (1 PSLM-200-20)

CENI Ottawa System Specifications
- ❑14 Dell Servers
  - ❑180 Physical Cores -> approx. 330 Virtual Core Machines Running Linux RedHAT 6.0
  - ❑Up to ~ 80 VMs (using 4 Cores each.)
  - ❑608 GB of Physical RAM -> approx. 1.2TB VRAM
  - ❑6 TB of HD-> more than 12TB Virtual Disk Capacity
- ❑100GE Upload Capacity, first of its kind for GENI
- ❑20GE in Management Ethernets ports (approx 48 ports) via 5142 and 5150)
- ❑All DC powered (approx. 100A)
- ❑175 Public IP addresses on CANARIE Network



Field Lab Architecture