Gigapop Geeks BOF
NLR connections discussion

Vancouver Joint Techs

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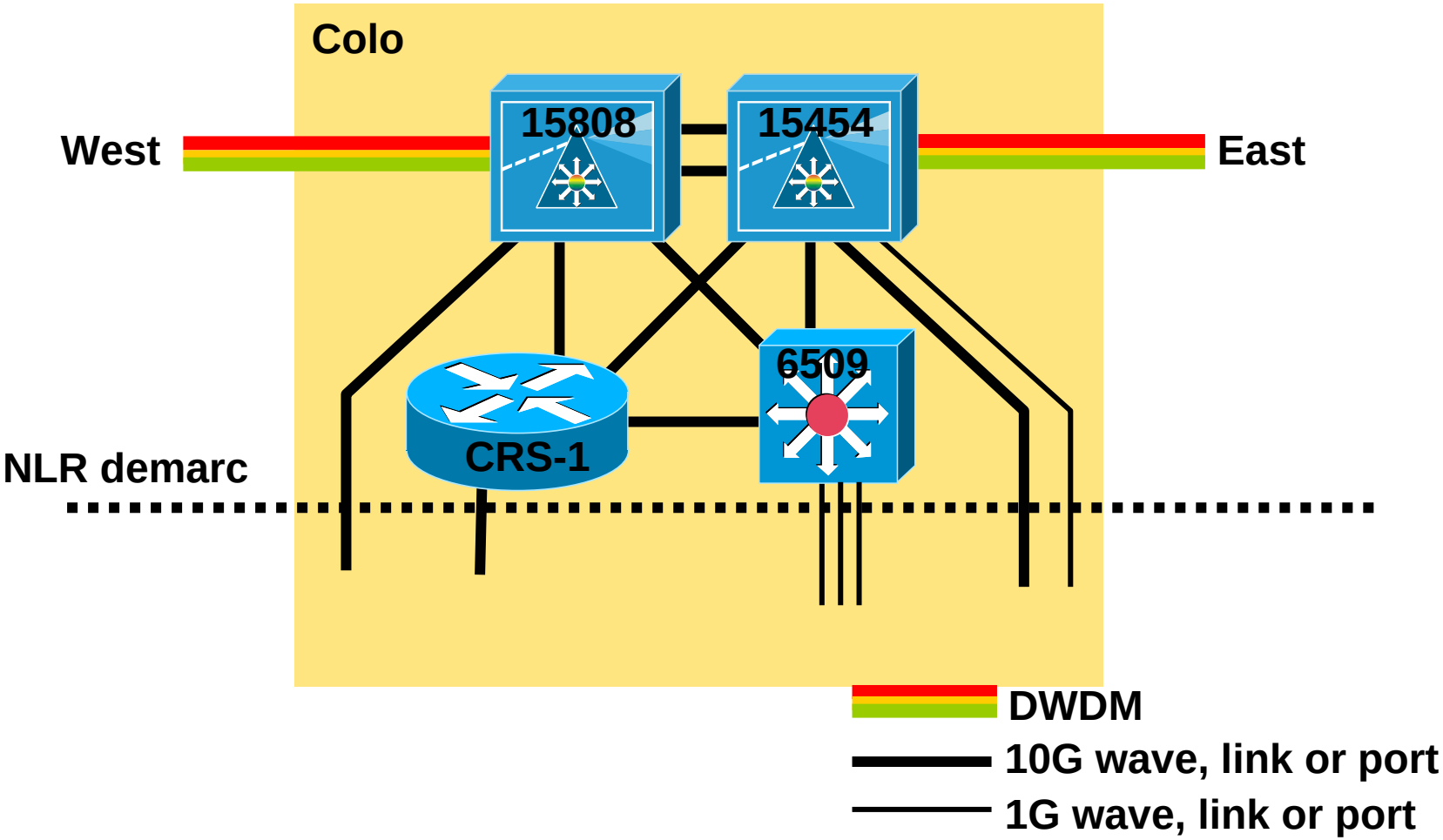
How are Gigapops and RONs (planning on) connecting to NLR?

- Layer 1/2/3 baselines
- Options at:
  - Layer1
  - Layer2
  - Layer3

Generic NLR L1, L2 and L3 PoP Layout



Layer 1 baseline

- Opportunity to connect into lambda fabric
  - Point to point
  - Other endpoint could be anywhere
- Early examples:
  - HOPI
  - Ultralight
- Experiments support center (for all layers)

Layer 2 baseline

- 1GE Connection into local 6500
  - Access to “national peering VLAN”
  - Additional Options:
    - Dedicated point to point Etherrnet, Nx1GE
    - Best-effort point to multipoint (no dedicated bw)
  - Soon:
    - 10GE ports
    - Dedicated point-to-multipoint

Layer3 baseline

- Each member gets two routed connections
  - “local” 10GE
  - VLAN backhauled to 2nd node
- BGP peering with NLR L3 network
- IPv4 unicast
- IPv4 multicast (MBGP/PIM/MSDP)
- IPv6 unicast (multicast later)
- An ‘experimental’ (changeable, changing) L3 network

Layer 3 coming

- Likely eventual logical routers
- More 1GE options
- More 10G options
- Pre-emptable connections
- MPLS
- More user control—scheduling, testing, etc
- User access to measurement data

So what?

- What are you going to do with it?
  - CIC, for example: Omnipop-integrate a number of dark-fiber connections; single connection to NLR
  - SOX-MOVAZ fanout to customer; recouping cost a challenge; POP location; use central locations (Chi)
  - NOX-wait for the need
- What would you like to be able to do with it?
  - Need costs!
  - Some are still grappling with where to go, how to get there.
  - Political problems: franchise-
  - holders vs asset-holders
  - Need l2 and l3 functional-requirement docs to be published!