

# Metro 100G: A Service Provider Perspective

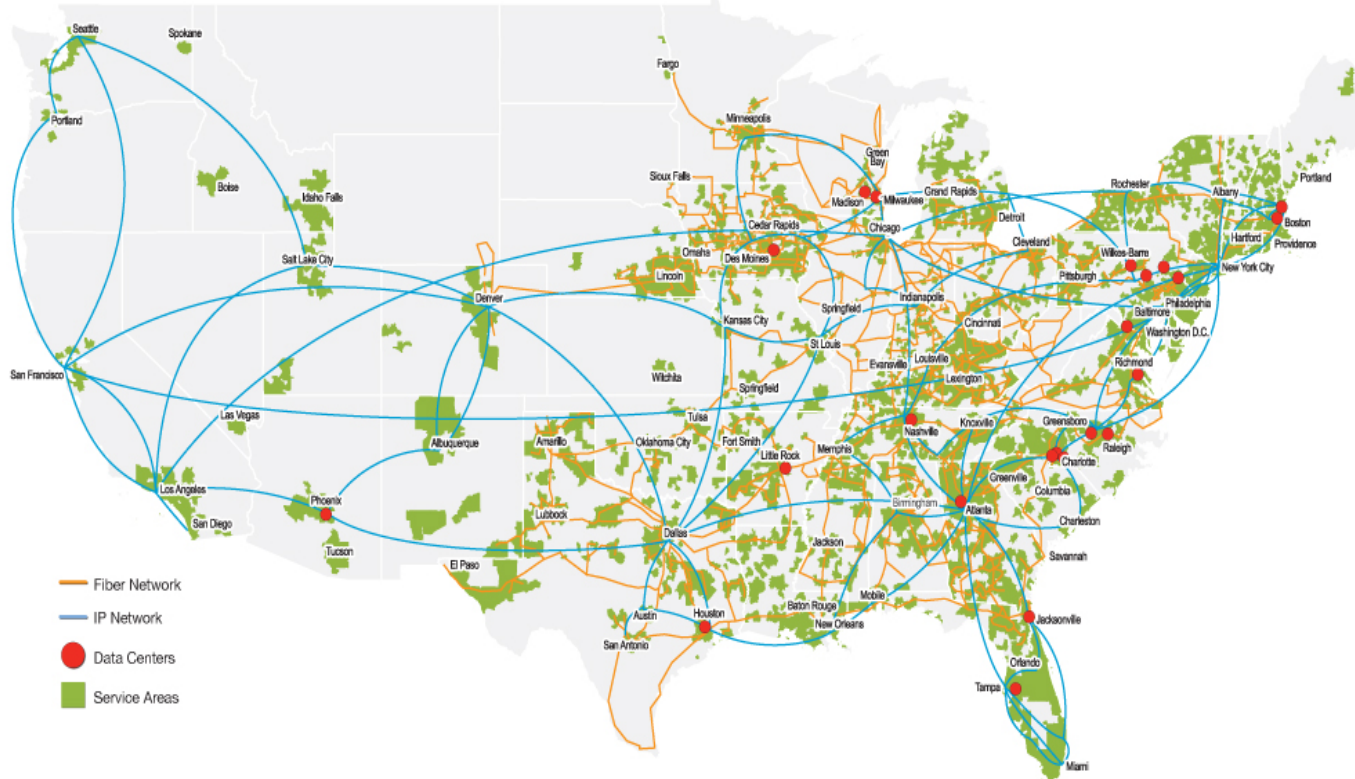
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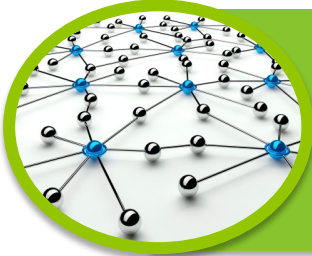
# Windstream Network Overview



- A complete set of network assets
  - 118,00+ route mile fiber optic network
  - Single converged IP/MPLS network
  - Extensive Data Center and Cloud capabilities
- A national wireline telecommunication s service provider serving Enterprise, Consumer and Carrier customers in 48 states.
- A full suite of advanced network, cloud and managed services.



# Foundational Network Technologies



## IP / MPLS

Internet Protocol  
Multi Protocol Label Switching

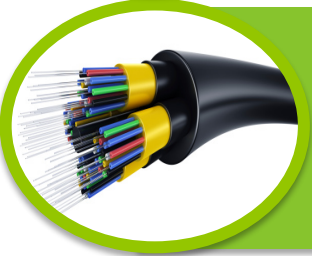


## ETHERNET



## DWDM

Dense Wave Division Multiplexer



## FIBER



# 100G Today at Windstream

- National 100G LH DWDM Network
  - Infinera 8Tbps OTN intercity network
- Regional and Metro 100G DWDM Networks
  - Cisco Metro and Regional 100G networks
  - Tellabs Regional 100G networks
- Regional and Metro 100G Packet Optical Networks
  - Cyan Metro and Regional 100G networks
- National IP/MPLS Network
  - 100GE Juniper core network
  - 100GE ALU BNG routers



# 100G Drivers and Observations

- IP/MPLS network requirements
  - Consumer Broadband largest b/w driver
- Augmentation speed & ease of planning/operation
  - 100G wavelength is right-sized
- Essential 10G vs. 100G unit cost parity
  - Internal electronics same—transceiver costs declining
  - 100G+ channel speed less important than less costly 100G
- Significant b/w requirements outside of DCI
  - Traditional metro aggregation and transport in top 50 MSAs
  - Regional aggregation and transport to PE and NFV edge





# 100G Packet Optical Network Example

## West Texas – 100G Backhaul Ring & CAF1R2 Subrings

