 Why Data Center Requirements Need a Different Approach

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AGENDA

• EQUINIX INTRODUCTION
• TECHNOLOGY TRENDS
• INTRA DATA CENTER OPTICAL INTERCONNECTS
• INTER DATA CENTER OPTICAL INTERCONNECTS
WHO IS EQUINIX?
Internet’s Largest Landlord

5 continents 15 countries 32 metro areas 100+ data centers

[Map showing locations of data centers around the world]
EQUINIX INTERCONNECTION SERVICES

• THE DEMAND…
  – 975+ Network service providers serving enterprises

• SUPPLY…
  – 450+ Cloud service providers (Google, AWS, Azure etc.)

• INTERCONNECTION EXPERIENCE…
  – Operate the world’s largest Internet exchange business
  – Connecting 2.5Tbs of counterparty traffic
  – 1,400 Peering counter parties (>3X our nearest competitor)
  – 140,000 Fiber cross connects and few thousand metro connects

• GLOBAL FOOTPRINT…
  – Internet Exchanges available in 19 Markets
  – Cloud Exchange available in 19 Markets
Technology Trends for Data Center Interconnects
EQUINIX: HOME OF THE INTERCONNECTED CLOUD

• CONNECTION IS KEY TO REALIZING THE PROMISED BUSINESS BENEFITS OF CLOUD

• RETAIL DATA CENTERS WILL BE TRAFFIC MAGNETS

• 1,200+ CLOUD SERVICE PROVIDERS AND IT SERVICES

• ENTERPRISES MIGRATING TO HYBRID CLOUD
EQUINIX CLOUD EXCHANGE

• SINGLE PORT TO CONNECT TO MULTIPLE CSPS AND NSPS

• LAYER 2 AND LAYER 3 SERVICES

• BOTH PORTAL AND API BASED ACCESS

• 1G, 10G AND HIGHER PORT OPTIONS
Intra Data Center Optical Interconnects
INTRA-DATA CENTER
OPTICAL INTERCONNECTS

140,000+ fiber cross-connects globally

Fiber cross-connect services for customers and infrastructure

6” to 24” overhead fiber tray infrastructure

Single-mode and multi-mode fibers

Direct connections and via Equinix infrastructure cages

Optics for interconnects resides on client equipment
INTRA DATA CENTER OPTICAL INTERCONNECTS

Requirements

• OPEN STANDARDS
• COST-EFFECTIVE
• THIRD PARTY OPTICS FOR LAYER 2 AND LAYER 3 CLIENT EQUIPMENT
• SMF OPTICS: INTER CAGE
• MMF OPTICS: INTRA CAGE (INTER SWITCH TRUNKS)
• 10G-BASE-LR, 40G-BASE-LR4, AND 100G-BASE-LR4
• HIGHER DENSE QSFP+ (40G) AND QSFP28 (100G)
• 400GE AND 1 TBE INTERCONNECTS IN 2017
Inter Data Center Optical Network Interconnects
EQUINIX INTER DATA CENTER OPTICAL NETWORKS
Dense Metro Connect Network Infrastructure

• DENSE METRO CONNECT
  – Carrier grade metro optical transport networks interconnecting Data Centers
  – Metro Connect services (10GE/40GE/100GE) and transport backhaul for Equinix Interconnect services (CX and IX)
  – Built-in optical switch or electrical switch based automatic protection

• HIGH NETWORK PERFORMANCE
  – Low latency
  – 50 ms Automatic protection for services
  – Five nines availability
INTER DATA CENTER OPTICAL INTERCONNECTS

Requirements

• **INTRA CAMPUS NETWORKS**
  – SMF only
  – Same optics interfaces as for intra data center

• **INTER DATA CENTER METRO NETWORKS**
  – 300 Km reach high capacity (10 -20 Tb/s) optical systems
  – 100G/200G waves going to 400G/500G/1Tb/s Super-Channels
  – Cost effective, high density platforms
  – Simple photonics and ease of management
  – Open APIs for SDN control and integration
  – Low cost client optics for hand-off from optical platforms
  – 10GE/40GE/100GE Clients today with 400GE/1TbE in 2016/2017
  – Dark fiber direct connects with 40 Km/80 Km optics