Data Center Cabling

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Data Center Network technologies

- **LAN:**
  - 10 GBE
  - GBE

- **SAN, Server, Mainframe**
  - Fiber Channel for storage connections
  - 10 GBE for LAN connection
  - GBE for LAN connection
Fiber Channel Concepts

- ANSI protocol not based on OSI Layers
- Used to connect Host and Mainframe to storage devices
  - Ficon over FC for IBM Mainframe
  - SCSI over FC for Hosts
- Main characteristics:
  - Addressing for up to 16 million nodes
  - Speeds up to 1200 MBps (10.5 GB/s)
  - Segments of up to 10km (without extenders)
  - Support for multiple protocols
Top of Rack Cabling

LAN

SANA

SAN B

10GE Ports

4GFC

10GE Ports

4GFC
Head of Line Rack cabling

LAN

10GE Ports

4GFC

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Data Center cables management

- Aerial Cable Tray connecting racks to manage cables
Example of cables managing
Data Center Pre-terminated solutions

- Solutions using cables that are terminated in the factory, not in the field
- If terminated with standard connectors, it’s basically, a collection of long patch cords
  - This is not significantly advantageous
- If terminated with high-density connectors, the dynamics change
High-density Pre-terminated solutions

- Cables are terminated in the factory with high-density connectivity
- Cassettes, which fan out the high-density connectivity to standard connectivity, are also built in the factory
- “Place and Plug” links are constructed in the field using trunk cables, cassettes and standard patch cords
- Use of MPO or MTP connectors based on MT connector

Patch panel containing modules

Module

Trunk cable 12 F.O.

MPO/MTP connector

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MTP/MTO connections

Trunk with Module and Jumpers on End 1; Harness on End 2 Installed Directly into Electronics
MPT/MPO trunk cable example of use

Servers racks

Networking racks

Trunk cable