10 Gigabit Ethernet
MAC and LAN PHY

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The Enterprise Backbone

[Network diagram with routers labeled 'Si' connected to devices with bandwidth labels such as '100', '10', and '1 G'. Connections are indicated with lines and colors: green for '10 G', blue for '1 G', and purple for '10'.]
10 Gigabit Ethernet LAN Features

• Full Duplex 802.3 MAC operation
• Fiber optic medium
• 10,000 Mb/s data rate
• Consistency with 10/100/1000 Mb/s
  – frame format
  – services
  – management attributes
Interfaces

MAC
TXC
TXD
RXC
RXD

PCS/PMA

PMD

PHY

Management

Mgmt
MDC
MDIO

Parallel
Serial

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Possible LAN PHY Features

- Block Code (e.g. 8B/10B, MB810)
  - Similar to 1000BASE-X
  - Rapid development of Std and products
- Media Independent Interface - XMII
- Flexible interface to PMD
  - CWDM, Parallel, Serial, MAS, Scrambled
10 Gigabit Ethernet
The World’s Favorite LAN
Going Faster (again!)