40GbE for Blade Server and ATCA Systems

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Overview

• Blade servers and ATCA systems can scale to take advantage of 40GbE
• 40GbE will extend the longevity of the modular computing systems
Blade server system overview

- Second generation Server blades and ATCA systems are equipped with 4-lane serial interconnects.
- The backplane interconnects can scale from 3.125Gb up to 10.3125Gb serial per lane.
- IEEE 802.3ap backplane Ethernet channel models considered 4-lanes. So many second generation systems already have chassis that are 40GbE ready.
- The 4-lane backplanes can take advantage of 40GbE without system redesign.
- 40GbE provides investment protection by extending the chassis longevity.
  - Especially ATCA / Telecom market demands longer chassis lifetime, typically 10+ years.
Note: The switch cards are shown at the chassis edge for simplicity. In real systems there could be multiple fabrics located at the center, edge, or rear of the chassis.
Backplane System schematic

- Backplane configuration
  - 4-lane Dual Star to support 10GBASE-KX4
  - Can support 10GBASE-KR per lane
  - Allows 40GbE MAC rate leveraging the KR PMD to support “40GBASE-KR4”
Summary

• 40GbE MAC rate allows
  – Existing 4-lane 10GbE backplane systems to scale to 40GbE leveraging the 10GBASE-KR technology

• 40GbE provides future proofing of Blade Server and ATCA systems
  – Extends the longevity of systems for another 5-10 years