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100 Gigabit Ethernet - Tomorrow is Too Late

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100G Ethernet

Tomorrow Is Too Late

- Where We Need 100G
- Aggregation vs. Edge
- Pain of Upgrade
- Future Technologies
- Historical Process

Where We Need 100G

- Three Defined Environments
 - Carriers
 - Needs bandwidth today
 - Hundreds of ports (potential - each)
 - Data Center
 - Needs bandwidth today
 - Scores of ports (potential - each)
 - Servers (Blade Server / Aggregation)
 - Does not need bandwidth today – but would use it if available
 - Several Hundred - Thousands of ports (potential - each)

Aggregation vs. Edge

- If Edge is made up of 10G or 40G, the aggregation point (Core) must be greater.
 - What is the result if Edge overruns the Core capabilities?
- Today's only solution is Link Aggregation
 - Costly
 - Not Scalable
 - Painful

Pain of Upgrade

- Upgrading Server ports is relatively easy
 - Drop server, upgrade, bring back into service
- Upgrading Infrastructure is brutal
 - Distribution and Core support hundreds if not thousands of devices
 - Exceeding 10G today.
 - If we need to upgrade, we would rather use link aggregation instead of installing 40G. If we installed 40G we would be upgrading again before we complete the 1st round of migrations.
 - Not willing to put the environment at risk for a 4x upgrade, when link aggregation presents less risk.
 - Willing to accept environmental risk for a 10x upgrade.

Future Technologies - DataCenter

- What is being delayed?
 - Data Center Virtualization
 - 100G Access Layer Uplinks
 - Virtual Clustering
 - Disaster Recovery / Avoidance Technologies
 - Tape Virtualization
 - Large Scale Tape and DASD
 - Remote Silo Functionality
 - SAN Virtualization
 - Large remote SAN Fabrics
 - Disaster Avoidance

Historical Process

- First the Infrastructure – then the Server ports.
- If the infrastructure can support higher server speeds then the servers will use that bandwidth
- If the infrastructure is a bottleneck, no one will be buying faster server ports
 - Lack of 100G in the Infrastructure is depressing sale of 10G ports at the server level



Thank You!