

NEND-Report Update

The Lossless Network for Data Centers

Paul Congdon

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Nendica Conference Call

Status

- Latest Version – v4.4
 - <https://mentor.ieee.org/802.1/dcn/18/1-18-0007-03-ICne-draft-report-lossless-data-center-networks.pdf>
- Updates since last Nendica meeting – March 2018
 - Additional Supporters/Contributors
 - Richard Scheffenegger – NetApp
 - Mehmet Toy - Verizon
 - New “Cloudification of CO” diagram
 - Minor tweaks based on review feedback
- IETF-101 Exposure and Review
 - <http://snaggletooth.akam.ai/IETF-101-HotRFC/01-Congdon.pdf>
 - Discussed at TSVWG and ICCRG meetings
 - Individual reviews with with BT, Orange, DT, Bell Canada
- Propose initiating 30-day review cycle per Nendica procedures

Growing Contributors/Supporters

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Report High-Level Outline

- Background
 - Forces driving change – our digital lives
 - Trends in the Data Center – common thread - Parallelism
 - OLDI (context search)
 - Deep Learning (AI)
 - NVMe over Fabrics (storage)
 - **New - Cloudification of the Central Office (CO)**
- Shortcomings of today's Data Centers
 - Current design
 - Issues – ECMP collisions, congestion control loops, incast, head-of-line blocking
- Possible Future Technologies
 - Virtual input queuing
 - Dynamic Virtual Lanes – Congestion Isolation (proposed PAR)
 - Load-Aware Packet Spraying
 - Push-and-Pull Hybrid Scheduling
- **New - Standardization Considerations**
 - Scope for IEEE and IETF Standards
 - Relationship between IEEE and IETF
 - Relevance of future technology to SDO