

# Review of The Lossless Network For Data Centers

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# The Lossless Network For Data Centers

- Presented at IEEE 802 Industry Connections – NEND in November 2017
  - <https://mentor.ieee.org/802.1/dcn/17/1-17-0006-01-ICne-the-lossless-network-for-data-centers-white-paper.pdf>.
- Consideration for publication as output from NEND – Modify as needed

# White Paper 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)
- 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

# What is needed to create a NEND contribution from this base?

- Structural changes to document?
- Additional application scenarios driving change?
- Expand discussion of current issues in today's data center?
- Replace asserted future technologies with requirements?
- Expand potential future solutions with additional input?