

Network

A list of topics and information related to the network.

- **Specific Network Technologies:**
 - Ethernet: Duplex modes and auto-negotiation, LAN Collisions, LAN Broadcast Domains, FlowControl
 - Wireless LAN (802.11)
 - Mobile IP
 - Switches: Head-of-Line blocking
 - Router Performance: Architectures, Hardware Limits
 - End System Performance
 - InfiniBand, Remote direct memory access (RDMA)
- **General Network Categories and Approaches:**
 - Software Defined Networking (SDN), OpenFlow
 - Multiple Paths (equal-cost multipath, ECMP)
 - Data Center Networks
- **Network performance metrics:**
 - OWD
 - RTT (bandwidth*delay product and "Long Fat Networks" (LFNs))
 - delay variation (Jitter), loss, reordering
 - MTU / Path MTU
- **Network protocols**
 - Transmission Control Protocol (TCP) - terminology
 - Window-based transmission, performance enhancements - Large TCP windows, buffer auto-tuning, Window Scaling option
 - Flow control and congestion avoidance, high-speed TCP variants and land speed records, Selective acknowledgements (SACK)
 - Multipath TCP (MPTCP)
 - User Datagram Protocol (UDP)
 - Real-Time Transport Protocol (RTP)
 - Stream Control Transmission Protocol (SCTP)
 - RDMA over Converged Ethernet (RoCE)
- **Ethernet Operations, Administration & Maintenance (EOAM)**
- **Network tuning**
 - Active Queue Management (AQM), Random Early Detection (RED), CoDel, Explicit Congestion Notification (ECN)
 - Differentiated Services - Premium IP, IntegratedServices
 - Sizing buffers in the network
 - Network proxies or so-called WAN accelerators
 - Cisco (IOS-) specific
 - Support for large frames ("jumbo MTUs")

