Increasing interest in iWARP

- Public/private cloud uses:
  - File and Block Storage
  - Virtual Machine migration
  - Low-latency messaging middleware
  - HPC-as-a-Service

- Key iWARP value propositions for these usage cases:
  - Engineered for best-effort Ethernet
    - Neither lossless Ethernet nor DCB required
  - Natively Routable
  - Multi-pathing supported at Layer 3 (as well as Layer 2)
  - Reliable and proven TCP Transport
    - Mature and efficient retransmission algorithms
    - Dynamic and verified congestion algorithms
Driving iWARP Extensions into the iWARP specification
- Focused on eliminating the application-visible differences between iWARP and InfiniBand

draft-ietf-storm-rdmap-ext-08
- Authors from multiple iWARP providers
- Adds missing iWARP operations:
  - Atomic Operations
  - RDMA Write with Immediate Data
- Last Call closed on Oct 15, 2013
- Ready to submission to STORM AD and IESG for initial request for publication as an RFC

Next phase ready for discussion
iWARP currently leverages:
  - TCP
    - Reliable transport and congestion management
  - Explicit Congestion Notification
    - Inherited from TCP/IP layers

iWARP will naturally adopt/use:
  - Tunneling/Network Overlays
    - iWARP works with (but does not require) existing tunnel protocols (ie Generic Routing Encapsulation) and NVO3 technology investigations

Connectionless messaging to complement iWARP RDMA
  - Typically realized with unreliable datagrams (unicast and multicast)
  - Infiniband has Unreliable Datagram (UD)
  - UDP may be used in place of UD for Ethernet implementations
    - No new wire protocol standards required
Future iWARP Expansions

- Remaining InfiniBand/iWARP differences
  - RDMA Read semantics
  - Send with Immediate Operations
  - New draft coming soon

- Storage
  - Acknowledged Writes
  - Reliable multicast

- HPCaaS
  - Address known RDMA resource scaling deficiencies when used in very high core count clusters