Evaluation of the Pre-production Implementation of the Intel Omni-Path Interconnect Technology
(Highlights)

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Summary / Highlights

- Remote evaluation of the pre-production Intel Omni-Path hardware and software was performed by the RACF in Dec 2015 using the Intel owned "Diamond" cluster provided with a non-blocking Intel Omni-Path fabric based on a single 48-port pre-production Omni-Path switch

- Performance measurements have demonstrated that it is feasible to extract close to the specification limits performance from the pre-production Intel Omni-Path hardware for the latency-bound applications utilizing the range of MPI message sizes from 1 byte to 4 MB:

  - Carrying up to 96.9 Gbps of aggregated unidirectional MPI message traffic though a single interface (with 100 Gbps as the hardware limit)

  - Observe point-to-point unidirectional latency between two compute nodes in a single switch based fabric that is as low as 0.93 µs

  - Bring a single IP over Omni-Path interface up to the level of 99.2 Gbps of aggregated unidirectional TCP/IP traffic with multi-threaded iperf tests

  - The hardware and software features of pre-production Intel Omni-Path technology make it a viable alternative to the Mellanox 4X EDR Infiniband for both latency-bound and bandwidth-bound HPC and HTC workloads