In-Network Computing and Security Offloads

Machine learning applications are based on training deep neural networks, which require complex computations and fast and efficient data delivery. Besides doubling the speed and providing the higher radix switch, Mellanox's new HDR 200G switch and adapter hardware supports in-networking computing (application offload capability) and in-network memory. Mellanox's HDR InfiniBand solution offers offloads beyond that of RDMA and GPUDirect® to computation for higher level communication framework collectives. This dramatically improves neural network training performance and overall machine learning applications, while saving on CPU cycles and increasing the efficiency of the network.

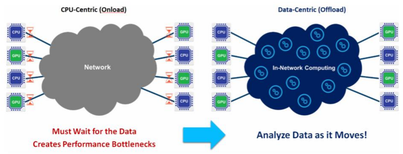
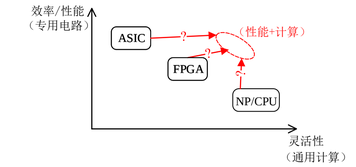
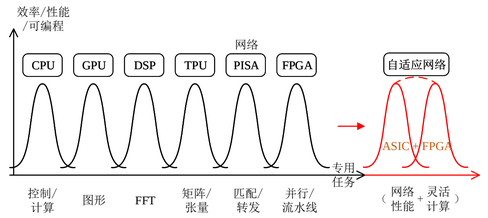
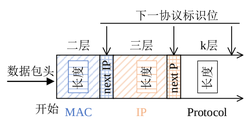
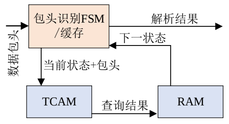


Figure 2. HDR100 Requires 1.6X Fewer Switches for 400 Nodes

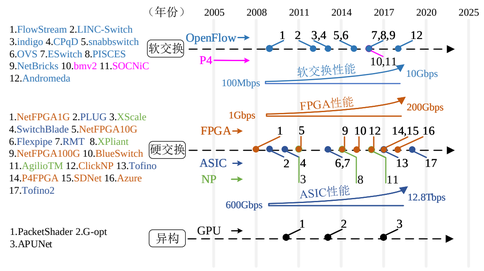


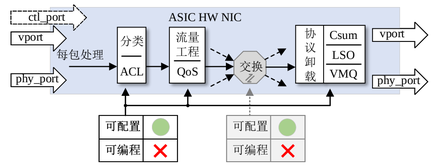


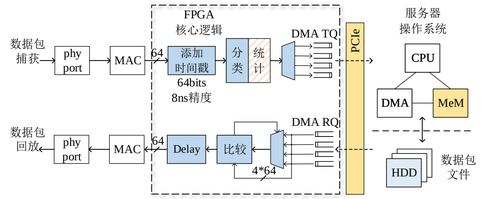




查询结果







控制字	数据字 64bits			
8'h FF	目的端口	长度	源端口	长度
8'h FE	时间戳			
⋮	数据包 ⋮			
8'h 00	包结尾			

指数计算表

指数(X)	指数值 (b^X, b = 1.006)
1	1.006
2	1.012
3	1.018
⋮	⋮
385	10.00
⋮	⋮
1536	9784
⋮	⋮
3072	$95.15*10^8$

基于硬件的对数函数
查找计算
12次跳转