

HPC2013

HPC2013 is a machine is a 781 node machine from which 768 nodes are serving as compute node. This machine had a rank of 130 in the top 500 list published www.top500.org in November 2013. In the initial ratings it had a Rpeak of 307.2 Terra-Flops and Rmax of 282.6 Terra-Flops. Extensive testing of this machine was carried out and we were able to achieve an efficiency of 96% on the Linpack benchmark. The new rated Rmax would be around 292.9 Terra-Flops. It is based on Intel Xeon E5-2670V 2.5 GHz 2 CPU-20-core-IvyBridge on HP-Proliant-SL-230s-Gen8 servers with 128GB of RAM per node E5-2670v2x10 core2.5 GHz. The nodes are connected by Mellanox FDR Infiniband chassis based switches that can provide 56Gbps of throughput. It also has 500 Terra-Bytes of storage with an aggregate performance of around 23Gbps on write and 15 GBps on read. It is divided into a home(13/7 w/r GBps) and a scratch(22/12 w/r GBps) file system. The home file system is around 169 Terra-Bytes and the scratch file system is around 332 Terra-Bytes. It has PBS Pro Scheduler from Altair and is divided into queues as follows:

queue	nodes	Min-Max nodes	Min-Max cores	Wall time
large	362	6-32	120-640	96 hours
medium	256	2-6	40-120	96 hours
small	96	1-2	20-40	120 hours
mini	32	1-2	20-40	2 hours
hyperthread	16	1-2	40-80	120 hours
workq	4	1	1-20	24 hours 2 hrs cpu
highmem	5	1-1	2-20	120 hours
test	2	NA	NA	NA

HPC2010

HPC2010 is a machine is a 376 node machine from which 368 nodes are serving as compute node. This machine had a rank of 369 in the top 500 list published www.top500.org in June 2010. In the initial ratings it had a Rpeak of 34.05 Terra-Flops and Rmax of 29.01 Terra-Flops. It is based on Intel Xeon X5570 2.93 GHz 2 CPU-8-core-Nehalem on HP-Proliant-BL-280c-Gen6 servers with 48 GB of RAM per node. The nodes are connected by Qlogic QDR Infiniband federated switches that can provide 40Gbps of throughput. It also has 100 Terra-Bytes of storage with an aggregate performance of around 5Gbps on write performance. It is divided into a home(1.7/1.3 w/r GBps) and a scratch(3.4/2.4 w/r GBps) file system. The home file system is around 60 Terra-Bytes and the scratch file system is around 40 Terra-Bytes. It has PBS Pro Scheduler from Altair and is divided into queues as follows:

queue	nodes	Min-Max nodes	Min-Max cores	Wall time
large	184	16-32	128-256	72 hours
medium	100	4-12	32-96	96 hours
small	59	1-4	2-32	120 hours
mini	32	1-2	20-40	2 hours
workq	6	1	1-6	24 hours 2 hrs cpu
test	3	NA	NA	NA

This cluster was later augmented with 96 nodes of Intel Xeon E-52670 2.6 GHz 2 CPU-16-core-Sandy-Bridge on HP-Proliant-SL-230s-Gen8 servers with 64 GB of RAM per node that add an additional theoretical 31 Terra-Flops to the above 2010 cluster. PBS Pro is the scheduler of choice. Though it has FDR Infiniband cards it is connected to the QDR Infiniband fabric seamlessly.

queue	nodes	Min-Max nodes	Min-Max cores	Wall time
mediumsb	47	2-6	32-96	96 hours
smallsb	47	1-2	2-32	120 hours
workqsb	1	1	1-1	24 hours 2 hours cpu
testsb	1	NA	NA	NA