Hardware Overview

Introduction

The Salomon cluster consists of 1008 computational nodes of which 576 are regular compute nodes and 432 accelerated nodes. Each node is a powerful x86-64 computer, equipped with 24 cores (two twelve-core Intel Xeon processors) and 128GB RAM. The nodes are interlinked by high speed InfiniBand and Ethernet networks. All nodes share 0.5PB /home NFS disk storage to store the user files. Users may use a DDN Lustre shared storage with capacity of 1.69 PB which is available for the scratch project data. The user access to the Salomon cluster is provided by four login nodes.

More about schematic representation of the Salomon cluster compute nodes IB topology.

Figure 1: Salomon

The parameters are summarized in the following tables:

General information

In general **Primary purpose High Performance Computing Architecture of compute nodes x86-64 Operating system CentOS 6.7 Linux Compute nodes Totally 1008 Processor 2x Intel Xeon E5-2680v3,**

2.5GHz, 12cores RAM 128GB, 5.3GB per core, DDR4@2133 MHz Local disk drive no Compute network / Topology InfiniBand FDR56 / 7D Enhanced hypercube w/o accelerator 576 MIC accelerated 432 In total Total theoretical peak performance (Rpeak) 2011 Tflop/s Total amount of RAM 129.024 TB Compute nodes ———-

`|Node|Count|Processor|Cores|Memory|Accelerator|`

——— - |—|—|———— —- —— ——— ——— |w/o accelerator|576|2x Intel Xeon E5-2680v3, 2.5GHz|24|128GB|-| |MIC accelerated|432|2x Intel Xeon E5-2680v3, 2.5GHz|24|128GB|2x Intel Xeon Phi 7120P, 61cores, 16GB RAM|

For more details please refer to the Compute nodes.

Remote visualization nodes

For remote visualization two nodes with NICE DCV software are available each configured:

`|Node|Count|Processor|Cores|Memory|GPU Accelerator|`

——— - |—|—|———— —- —— ——— |visualization|2|2x Intel Xeon E5-2695v3, 2.3GHz|28|512GB|NVIDIA QUADRO K5000, 4GB RAM|

SGI UV 2000

For large memory computations a special SMP/NUMA SGI UV 2000 server is available:

|Node |Count |Processor |Cores

Memory

Extra HW | | — | — | |UV2000 |1 |14x Intel Xeon E5-4627v2, 3.3GHz, 8cores |112 |3328GB DDR3@1866MHz |2x 400GB local SSD1x NVIDIA GM200(GeForce GTX TITAN X),12GB RAM |

Figure 2: