Facilities and Other Resources

Harvard Medical School

Overview

O_2 is a platform for Linux-based high-performance computing at Harvard Medical School that is readily available to BCH employees. The name is derived from being the next generation of the HMS "Orchestra" cluster, hence "O"$_2$. O_2 is managed by the Research Computing Group, part of HMS IT. O_2 is an HPC cluster built on Linux and the SLURM open source job scheduler.

Detail

O_2 currently includes 371 computing nodes for a total of 11356 cores and ~98TB of memory:

- 232 nodes, each node hostname is composed by the prefix compute-a-16- or compute-a-17- and the node number, for example compute-a-16-28, compute-a-16-29, ..., compute-a-16-171. Each node has 32 physical compute cores, 256GB of memory and is connected to the network with a 10Gb ethernet card and in addition with a 40Gb Infiniband card.

- 69 nodes, each node hostname is composed by the prefix compute-e-16- and the node number. Each node has 28 physical compute cores, 256GB of memory and is connected to the network with a 10Gb ethernet card.

- 17 nodes, each node hostname is composed by the prefix compute-f-16- and the node number. Each node has 20 physical compute cores, 188GB of memory and is connected to the network with a 10Gb ethernet card.

- 11 heterogenous high memory nodes, each node hostname is composed by the prefix compute-h-16- and the node number; 7 nodes have 750GB of memory, 1 node 300GB and the other node 1TB.

- 6 GPU compute nodes, each node hostname is composed by the prefix compute-g-16- and the node number. Two nodes have 4 Tesla V100 each, two nodes have 8 Tesla K-80 each and two nodes have 4 Tesla M-40 for a total of 32 GPU units.

- 3 transfer nodes, each node hostname is composed by the prefix compute-t-16- and the node number. Each node is a VM with 4 cores and 6GB of memory, those nodes are intended for data transfer to/from the /files filesystem.

- 31 contributed nodes, for a total of 1160 cores and ~10TB of memory.