

## HiPerGator specification sheet

HiPerGator went into production in August 2013 with 21,000 cores, 16,000 AMD cores from a new Dell system and 5,000 older cores. In 2016, HiPerGator was expanded by adding 30,000 Intel cores and an extra 1 PB, bringing the total to 51,000 cores and a 3 PB high-performance file system. In addition there are a number of edge servers integrated with HiPerGator to provide Galaxy portal, datyabase services, 1 TB large memory per core, and NVIDIA and Xeon Phi accelerators.

### CPU (central processor unit) core and RAM (random access memory) details

There are 30,000 cores in Intel E5-2698v3 processors with 4 GB of RAM per core. The total RAM of the HiPerGator 2.0 expansion is 120 TB.

### Computing speed

The theoretical maximum speed of the original HiPerGator is 157 Teraflops, or 157 trillion floating point operations. The 30,000-core HiPerGator expansion adds another 1,100 Teraflops of speed. This is also equal to 1.1 Petaflops. The fastest computer in the world, Tianhe-2, has a maximum speed of 50 Petaflops.

### Storage details

The total Lustre 2.8 parallel files system for the 51,000 cores of the expanded HiPerGator is 3 PB.

### Accelerator details

HiPergator has 80 NVIDIA GPUs (graphical processor units of two types: M2070 and m2090).

With the expansion, there are 24 NVIDIA K20 accelerators for enhance visualization as well as for very fast, highly-parallel computations.

New with the HiPerGator expansion are 24 Intel Xeon Phi 5110P accelerators.

In addition some nodes have both NVIDIA K2 Grid processors for visualization and an accelerator, either an NVIDIA K80 or an Intel Xeon Phi 5110P to specialized applications that need both fast visualization and acceleration of numerical computations.

### Further information

Consult the UFIT Research Computing web site for more details:

- HiPerGator <https://www.rc.ufl.edu/services/computation/hipergator/>
- Accelerators <https://devrc.rc.ufl.edu/services/computation/hipergator/accelerators/>
- Buying resources <https://www.rc.ufl.edu/services/computation/>