Mio.Mines.Edu

Your Supercomputer

You have access to a 90 Tflop HPC cluster for Student and Faculty Research use

Want to get started with supercomputing?

Supercomputing is an increasingly important part of engineering and scientific research. Mines provides an advanced supercomputing cluster called “Mio” for the use of students and faculty who wish to take advantage of this extraordinary high-performance computing resource.

For Students

Students have already purchased some access to Mio with Tech Fee funds—usable for general research, class projects, and learning HPC techniques. Students may also at times use Mio nodes purchased by their academic advisor or other professors. The HPC Group offers assistance to students (and faculty) to get up and running on Mio. Individual consultations and workshops are available.

For Faculty

Mio holds many advantages for professors:

- There’s no need to manage their own HPC resources
- Professors can access other professor's resources when allowed
- Mines supplies high-quality Infiniband network infrastructure, which greatly improves the scalability of multinode applications
- Cost is a reasonable $5,800 per node

Hardware Description

Compute Nodes

- 8 -24 compute cores per node
- 24-192 GB/Node
- 2 GPU nodes - 7.23 Tflops
- 240 TB parallel file system
- 2.5GHz - 3.06GHz
- Infiniband Interconnect
- 8 Phi/MIC cards - 16.0 Tflops
- 2 Power8 w/GPU nodes

Cores	Clock GHz	Nodes	Total Cores
8	2.93	30	240
12	2.93	38	456
12	3.06	40	480
16	2.70	24	384
20	2.80	6	120
24	2.50	44	1056
Phi	-	2	
GPU	-	3	
P8		2	
Total:		189	2736

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Total:		189	2736

Node Owners (Summer 2016)

PI	Department	Nodes
Sum, Amadeu	Chemical & Biological Eng.	compute[051-52], compute[094-099]
Ciobanu, Cristian	Mechanical Engineering	compute054, compute[90-91]
Maupin, Christopher (Mark)	Chemical & Biological Eng.	compute[016-025]
Kaiser, Timothy	HPC	compute[084-089]
Kazemi, Hossein	Petroleum Eng.	compute031
Kaiser, Timothy	HPC	compute[004], compute[005]
Reimanis, Ivar	Metallurgical & Materials Eng.	compute102
Brune, Juergen	Mining Engineering	compute[000-003], compute[100-101]
Carr, Lincoln	Physics	compute[026-030], compute[062-067], compute[128-129]
Lusk, Mark	Physics	compute[008-009], compute[092-093], compute[126-127]
Mooney, Michael (Mike)	Civil & Environmental Eng.	compute[049-050]
Sullivan, Neal	Mechanical Eng.	compute[122-123], compute[122-123]
Constantine, Paul	Applied Mathematics & Statistics	compute[124-125]
Sava, Paul	Geophysics	compute[032-047], compute[068-083], compute[132-135], compute[136-159]
Kaiser, Timothy	HPC	gpu[001-002] *Student Owned*
Ganesh, Mahadevan	Applied Mathematics & Statistics	gpu003
Newman, Alexandra	Economics & Business	compute055 *Student Owned*
Ganesh, Mahadevan	Applied Mathematics & Statistics	compute[056-061], compute[160-167] *Student Owned*
Kaiser, Timothy	HPC	phi[001-002] *Student Owned*
Wu, Zhigang	Physics	compute[010-015]
Tilton, Nils	Mechanical Eng.	compute[130-131]
Thomas, Brian	Mechanical Eng.	compute[168-171]
Kappes, Brian	Mechanical Eng.	compute[174-175]
Kaiser, Tim	HPC	ppc[001-002]

What's in a name?

The name "Mio" is a play on words. It is a Spanish translation of the word "mine," as in "belongs to me." The phrase "The computer is mine" can be translated as "El ordenador es mío."

Want to know more?

http://inside.mines.edu/mio
http://hpc.mines.edu
http://inside.mines.edu/HPC-MachineStat

Timothy H. Kaiser, Ph.D. (tkaiser@mines.edu)
Director of High Performance Computing

Mines
Information Technology

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Kaiser, Timothy	HPC	compute[004], compute[005]
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