Supercomputing at UCSB

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http://www.ets.ucsb.edu/services/supercomputing
Service Overview

• Help UCSB faculty, researchers, students:
  
  • Understand the capabilities of High Performance Computing (HPC) and get to include it in their research and education work.
  
  • Get access to local, regional and national HPC resources.
  
  • Maintenance of accounts, allocations, computing time, grant writing.
  
  • Provide technical expertise (~10 years of HPC research experience), and user support.
  
  • Connect UCSB users with the broader community in their field.
  
  • Provide training, organize workshops and seminars.
Resources Overview

• Triton Shared Computing Cluster (TSCC) at San Diego Supercomputing Center

• Extreme Science and Engineering Discovery Environment (XSEDE)

• UCSB Center for Scientific Computing (CSC) clusters
TSCC

• Encourages campus participation, allowing researchers to use time and storage space on SDSC computing and data resources.

• UCSB purchases blocks of computer hours which researchers may request from the supercomputing consultant.

• Primarily used for educational purposes, but some groups also use it for research.
XSEDE is an NSF sponsored service organization that provides access to computing resources.

https://portal.xsede.org

www.xsede.org

Currently XSEDE supports more than a dozen supercomputers and high-end visualization and data analysis resources.
Available XSEDE Resources

- **Workhorse**
  - General purpose, more Big Data
  - Large memory, big data

- **Big Data**
  - Visualization, data analysis
  - High throughput
  - Long term storage

- **Visualization**

- **Data Analysis**

- **High Throughput**

- **Long Term Storage**

- **Large Memory, Big Data**

https://www.xsede.org/resources/overview
Campus Champions Program

Represents XSEDE on the campus

- **Campus Champion Trial Allocation**
  - Freely available to UCSB
  - Used for getting familiar with XSEDE and testing codes

- **Startup & Educational Allocation**
  - Requires a short allocation grant
  - Used for testing, code development and getting a head start in research
  - For classes

- **Research Allocation**
  - Requires an allocation grant
  - Millions of computer hours available
  - Users need to justify their request for hours (via code performance tests)
Support for Scripting Languages (R, Python)

Example: [http://www.presidency.ucsb.edu/](http://www.presidency.ucsb.edu/)