Compute Canada Overview

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What is Compute Canada?

- Canada's national advanced research computing facility.

- The not-for-profit organization formed to manage that project.

- A federation of 35 member institutions.
  The 35 institutions own the infrastructure and employ the skilled personnel (sysadmins and analysts) that comprise the facilities.

- Provide resources and support for advanced research computing for **all** Canadian academic researchers and collaborators.

- www.computecanada.ca

The federated CC Team has been assembled from long-standing institutional consortia that now participate in CC as partner Regional Organizations:
ACENET, Calcul Quebec, WestGrid, SHARCNET, SciNet and CAC.

Compute Canada Projects

- **ATLAS**: "Tier2" computing and storage for the ATLAS experiment at the CERN Large Hadron Collider.

- **CANFAR**: Computational platform to analyze Canadian astronomy data.

- **CBRAIN**: International project to make brain images and computational tools available to researchers around the world.

- **IceCube**: Compute and storage contribution to the IceCube Neutrino Observatory.

- **LIGO**: Support and Resources for Canadian participants in the Laser Interferometer Gravitational Observatory.

- **SNOLAB**: data analysis for several major experiments at this underground laboratory.

- **TRIUMF**: Canada's national lab for nuclear and particle physics.

- and over 400 allocated projects.

Currently Allocated Systems

www.computecanada.ca/research-portal/national-services/compute

Legacy:

WestGrid	Compute Ontario	Calcul Québec	ACENET
Bugaboo	GPC	Briaree	Placentia
Grex	TCS	Guillimin	glooscap
Orcinus	Orca	Helios	
Parallel	SW	psi	
	Monk	mp2	
	CAC		

New:

Arbutus   **Cedar**   **Graham**

New Systems

Arbutus

- Cloud system
- 7640 cores
- In production

Graham

- General Purpose Cluster
- 33,448 CPU cores
- 320 GPU devices
- In user-testing mode

Cedar

- General Purpose Cluster
- 27,696 CPU cores
- 584 GPU devices
- In user-testing mode

Niagara

- To run large parallel HPC codes.
- Architecture and size yet unknown
- $> 50,000$ CPU cores
  (or something equivalent)
- Delivery aimed at end of 2017

Support and Training

- 200 FTE of support staff
- Training on CC level:
  - IHPCSS
  - Tutorials at HPCS, and
  - Contibutions to Software Carpentry
- Most training by local consortia (local summer schools, courses, workshops)

ACENET: www.acceleratediscovery.ca/training/workshops-seminars
CALCUL QUÉBEC: www.calculquebec.ca/en/support-and-documentation/training
SCINET: courses.scinet.utoronto.ca
SHARCNET: www.sharcnet.ca/my/news/calendar
CAC: http://cac.queensu.ca/wiki/index.php/Training:Workshops
WESTGRID: www.westgrid.ca/support/training

How to Get an Access

www.computecanada.ca/research-portal/account-management/apply-for-an-account

- Any Canadian academic reserarcher can request a Compute Canada account, and then request an account with the local consortia. Researchers can sponsor their group members, as well as (international) collaborators.

- There is no cost involved.

- Always access to support staff.

- Having an account get you *rapid access status*, i.e., you can run at modest scale and at low priority.

- PI can submit to the annual Resource Allocation Competition to request compute (or project) resources; when granted, this translates in priority in the queue and increased limits on number of cores, etc.