

Compute Canada Overview

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What is Compute Canada?

- Canada's national advanced research computing facility of Canada.
- 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:

<i>WestGrid</i>	<i>Compute Ontario</i>	<i>Calcul Québec</i>	<i>ACENET</i>
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
 - ▶ Contributions to Software Carpentry
- Most training by local consortia (local summer schools, courses, workshops)

ACENET: www.accelerateddiscovery.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 researcher 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.

