Introduction to the Compute Canada Federation

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Compute Canada is a not-for-profit organization funded by the Canadian Foundation for Innovation and supported by regional partnerships to provide the essential digital infrastructure for industry and researchers in Canada.

Our ~200 staff are world class experts and train thousands of researchers a year in computation and big data analytics - ensuring we produce knowledge experts for competitive industries.
Regional Consortia

Compute/Calcul Ontario

Calcul Quebec

WestGrid

Acenet
Supporting Research

Resources
Services
Expertise
Resources

- High performance, big data and GPU computing and storage
- Cloud environment development space and storage that includes an outward facing IP address
- Data storage and backup systems provide stability and security options over your desktop
High Performance Compute

National Systems

- **Beluga** - CPU, GPU, Storage
- **Graham** - CPU, GPU, Storage, Cloud
- **Niagra** - CPU, Storage
- **Cedar** - CPU, GPU, Cloud, Storage
- **Arbutus** - Cloud
Services

• Training

• Centralized software stack

• NextCloud

• Specialized Data Portals - i.e., Jupyter
  Hub

• FRDR Collaboration

• Globus File Transfer
Training
Regional and National

Discipline specific training

The Carpentries

High Performance Computing Carpentry

Visualization

Summer Schools

Calculated Québec
Expertise

• Consultation - Helping to determine the resources needed
• Designing, optimizing and troubleshooting computer code
• Customizing tools
• Specialized support is available for a range of disciplines
• Visualization specialist
• Cybersecurity
HSS Support

• Humanities and Social Sciences experts in WestGrid and Acenet

• A National Humanities and Social Sciences team with domain and technical experts located at sites across the country.

• HSS targeted training courses - including Software and Data Carpentry

• Support for Digital Humanities Summer Institute
## Getting Access

How do I access the resources, services, and expertise?

[https://www.computecanada.ca/home/](https://www.computecanada.ca/home/)  support@computecanada.ca

### Resources
- RAS - On-Demand
- RAC - yearly
- Resources for Research Groups (RRG)
- Research Platforms and Portals (RPP)

### Services
- CCF Wiki
- Disciplinary Support
- Software
- Special support, i.e. COVID

### Expertise
- Visit Consortia websites
- Visit disciplinary support wiki
- Attend training courses
Recipe for an efficiency
How to get the most out of resources and services you get?

- **Advanced Research Computing**, as anything else in our lives, benefits from standards, rules and sets of best practices

- **Data** are both: a resource and a product for Advanced Research Computing

- Achieving research goals depends, substantially, on our ability to properly use tools and resources, in our disposal

- **Research Data Management** is one of the most important and the most challenging aspects of computing
Research Data management
Best practices to help you stay in control

- Start planning data storage, processing and access long before you have any data, so when you do -- you are prepared.

- Set and maintain practices for data collection and access that are consistent, easy to understand and follow.

- As data sets and their number grow larger over time -- your ability to manipulate them diminishes. Implement sustainable and scalable mechanisms at the beginning, so you only manipulate them -- not data itself.

- Do not move or copy data if it can be avoided. Plan data storage to be, where data are being processed en mass. What looks like a trivial task of managing hundreds of files becomes a challenge with thousands and a nightmare -- with millions.
THANK YOU

for more information please visit

https://www.computecanada.ca/