

Introduction to WestGrid

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Seminar Details

- Webcasting
 - www.westgrid.ca/live
 - Questions: questions@westgrid.ca
 - VNC: vnc.netera.ca
- Local Questions

Site Introductions

- British Columbia
 - SFU, UBC
- Alberta
 - UofA, UofC, UofL
- Saskatchewan
 - UofS
- Manitoba
 - UofM

Today's Seminar

- Overview of WestGrid
- WestGrid Support
- Getting Started
- Overview of resources

About WestGrid

- ❑ Operates HPC, collaboration and visualization infrastructure across western Canada.
- ❑ 14 institutions in 4 provinces
- ❑ Part of Compute/Calcul Canada and one of 7 HPC Consortia in Canada
- ❑ WestGrid has a number of people which make it work

Compute/Calcul Canada

- National Initiative
- Brings together 7 regional consortia
- Funded under CFI's National Platforms Fund
- Waiting award agreement
- Almost \$150 Million - \$50 Million to WestGrid
- www.computecanada.org

What does WestGrid provide?

- High Performance Computers
- Mass storage
- Visualization resources
- High Capacity Networking
- Software
- Access Grid infrastructure
- Support people

Three Distinct Uses

- High Performance Computing
- Collaboration through the Access Grid
- Tools and support for scientific visualizations

WestGrid vs Dedicated Resources

	WestGrid	Dedicated
Hardware Expenditure	No	Yes
Availability	Queued with other WestGrid users	Dedicated or fewer users
Support	WestGrid support	You provide administration
Match between platform and job	Greater variety	Generally one choice
Control	WestGrid attempts to accommodate everyone	Greater/full control of resources

Access to WestGrid

- Who can use WestGrid Resources?

http://www.westgrid.ca/support/accounts/conditions_of_use

- How much does it cost to use WestGrid?

Access to resources is free

- How do I access WestGrid resources?

http://www.westgrid.ca/support/accounts/applying_for_an_account

Applying for an Account

- Two ways to get an account on WestGrid
 1. Lead researcher
 - Apply for an account for your ‘project’
 - n Join an existing project
 - PDF, grad students, research assistants
 - Need to provide project ID

http://www.westgrid.ca/support/accounts/applying_for_an_account

WestGrid Support

- Two major information sources when starting out with WestGrid:

1. Website:

www.westgrid.ca

2. Support team:

support@westgrid.ca

Grid computing and WestGrid

- A knowledge of grid computing is not required but can be useful.
 - Seminar: Cameron Kiddle (new year)
- For HPC, you will need to know:
 - some UNIX
 - your software applications
 - how to submit jobs

Using WestGrid

- Logging in
- Submitting jobs
 - Submit to the appropriate site
 - Sites use either TORQUE/Moab or PBS/Maui for job submission
- Programming
 - Serial programming, parallel programming, debugging, optimization

WestGrid Job Scheduling

- WestGrid uses Fairshare to determine the priority of jobs.
- Job priorities are set by Resource Allocation Committee.

Access to WestGrid

- To connect to WestGrid, do I need a UNIX workstation or can I use Windows?
 - You can use a variety of platforms (eg: UNIX, Windows, OS X, etc)
 - If you are connecting from Windows, or have limited UNIX knowledge, the October 10 Seminar **Using WestGrid from the Desktop** is for you

WestGrid Resources

- Cluster
 - Glacier (UBC) - Robson (SFU)
- Shared memory
 - Nexus & Cortex (UofA)
- Clusters with high speed interconnect
 - Lattice & Matrix (UofC) - Tantalus (SFU)
- Visualization
 - Hydra (SFU)
- Storage facility
 - Gridstore & Blackhole (SFU)

http://www.westgrid.ca/resources_services/compute_facilities

University of Victoria Resources

- Currently being integrated into the WestGrid environment
- Storage: 140TB disk and 440TB tape
- Cluster: 410 processor IBM eServer Blade Center (Xeon cluster)
- SMP: IBM RS600/SP nighthawk-2

WestGrid Software

- Operating System
- Development tools
 - Language compilers
 - Libraries
- Grid tools
- Applications
- Some applications only run on one machine
- Some applications have differing version
 - <http://www.westgrid.ca/support/software>

Collaboration: Access Grid

- Widely used in scientific community
- Open source, Multi-platform
- AG node can be personal (desktop) or room-based
- Integration a variety of shared applications
- Meetings, seminars, conferences etc.
- Available resources:
 - <http://www.westgrid.ca/support/collaboration>
 - <http://mailman.cybera.ca/pipermail/westgrid-agtech-l/>
 - <http://mailman.cybera.ca/mailman/listinfo/westgrid-agtech-l>

Visualization

- Can help you to understand large and complex data sets
 - Visualization server is a 24 processor SGI UltimateVision graphics supercomputer
 - Gigabit network
 - Advanced visualization packages
- <http://www.westgrid.ca/support/visualization>

Learning More About WestGrid

- Upcoming seminars

- Website:

www.westgrid.ca and www.westgrid.ca/support

- Contact

support@westgrid.ca