

Technology, Technology, Everywhere

Brian Corrie
Collaboration and Visualization Coordinator
WestGrid/IRMACS
Simon Fraser University

- Context
- WestGrid: An example...
- Technology, technology, everywhere...

Context: Research environment

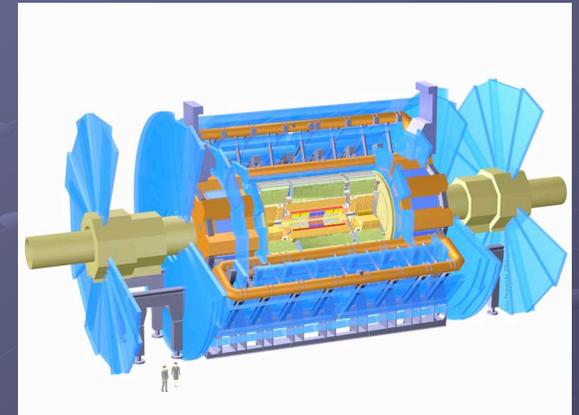
- Global in nature
 - Complex, multi-disciplinarian problems
 - Large scale, often worldwide projects
- Increasingly complex data
 - Computational simulation
 - High resolution instruments

Computational communities

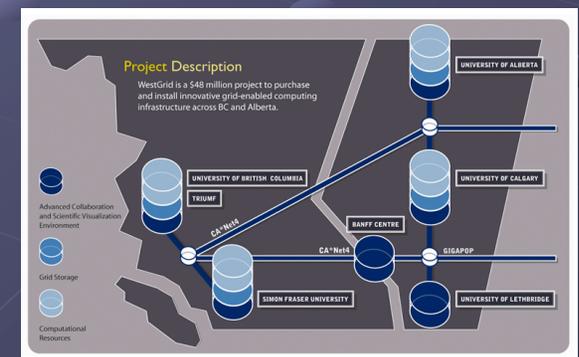
- Formed to meet specific research needs
 - Distributed scientists, focused research area
 - Evolve naturally over time (need)

- Formed to meet needs of wider community
 - Common research infrastructure across institutions
 - Range of resources, economies of scale
 - Typically result in consortia

ATLAS Detector



WestGrid

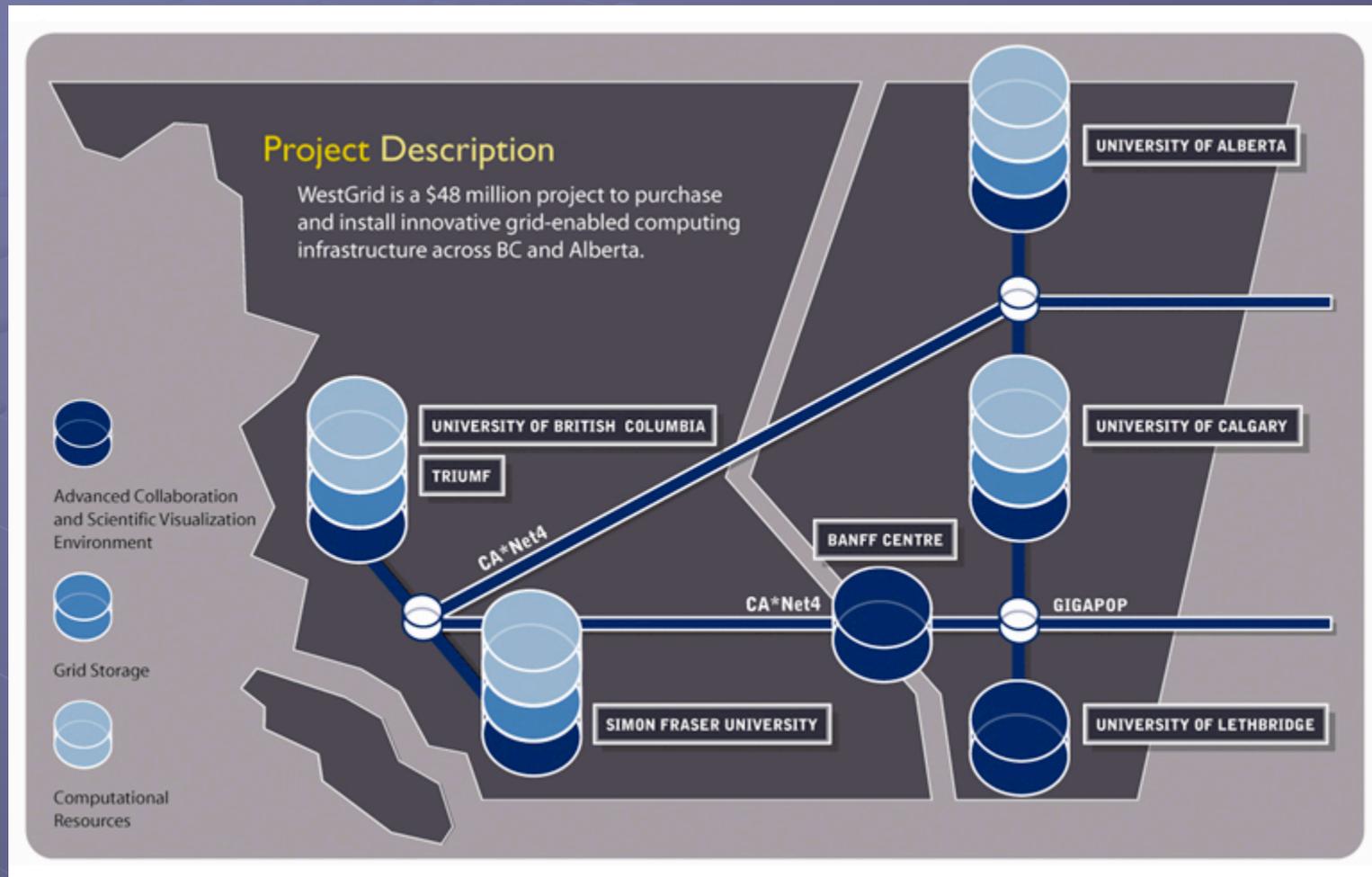


Context: Technology environment

- Computation
 - Perform computation that was until recently impractical
- Ubiquitous displays
 - Multiple displays, high res, tabletop, 3D, mobile
- Sensors and interaction
 - Touch sensitive devices, 3D tracking, RF ID tags
- Networking
 - Wireless (mobility), optical networking
- All add to capability, and complexity, of ACEs

- Context
- WestGrid: An example...
- Technology, technology, everywhere...

What is WestGrid?

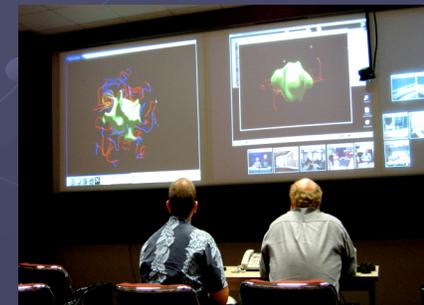




The WestGrid

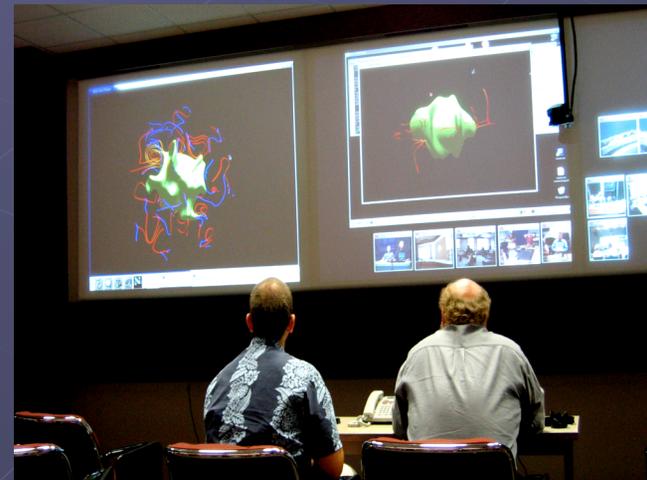
Collaboration Infrastructure

- AccessGrid foundation
 - AG rooms deployed at each site
- Wide range of scales and types
 - Large scale, multi-user rooms
 - Smart interaction environments
 - Visualization laboratories
- WestGrid VenueServer
 - Meeting rooms and multicast bridging

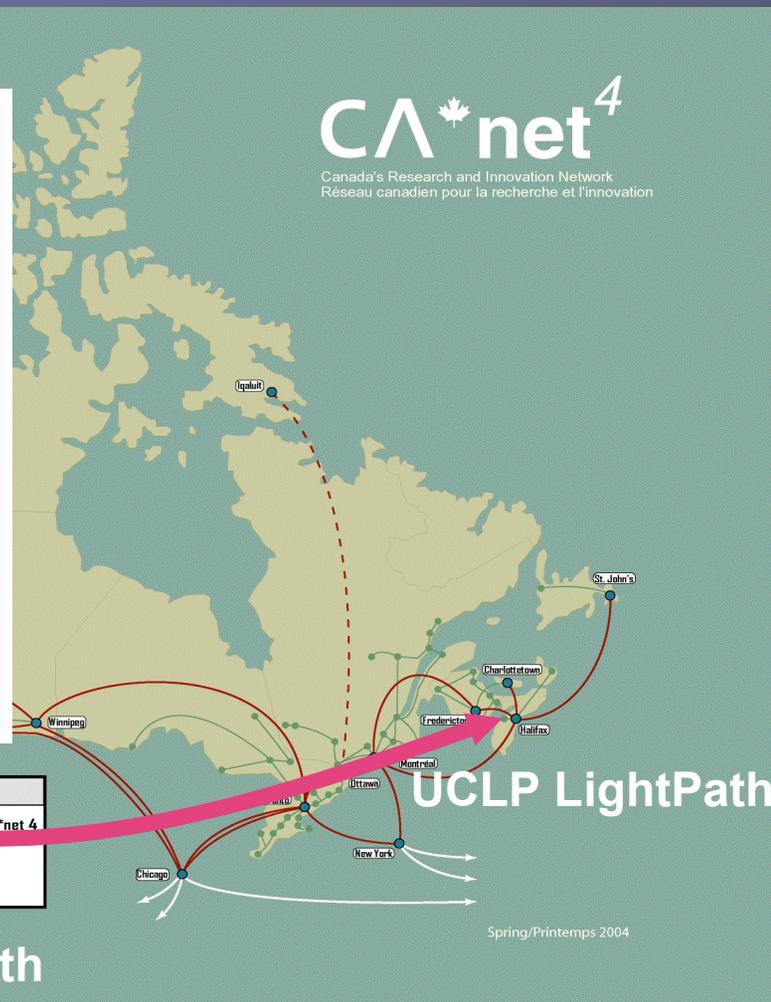
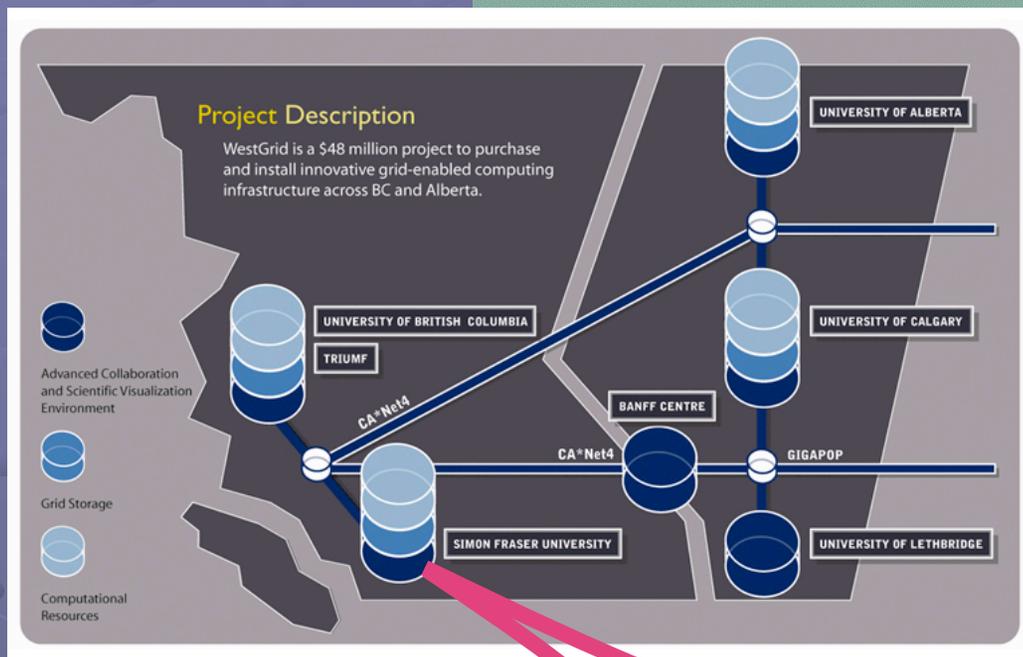


Visualization Infrastructure

- Visualization environments
 - Deployed across WestGrid
 - Range of displays types
 - Fully immersive VR rooms
 - Low cost passive stereo
 - No glasses auto-stereo
- Visualization Server
 - Grid enabled visualization resource
 - Visualization to the desktop
- Solutions server
 - Human in the loop computation



The WestGrid Networking Infrastructure

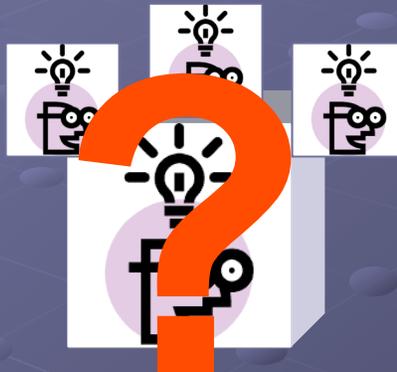


GLVF LightPath

- Context
- WestGrid: An example...
- Technology, technology, everywhere...



So now what?



WACE 2005, Sep 8-9, 2005

Guilty as charged!

- Technology, technology, everywhere!
 - Throwing technology at the problem
 - Computation – this works
 - Data storage – ditto
 - Collaboration – I don't think so!
 - Great environment for ACE research
 - What does it do for the scientific user?
 - Too complex, too capable!
 - Barrier too high for the user...

The sentence

- Damn, we have to work with the users!
- Understanding user needs
 - Needs are task specific
 - What are collaborators trying to accomplish?
 - Ranking importance of needs of task
 - What is important for the task being undertaken?
 - Mapping needs to technologies
 - How can we use technologies effectively?
- Working with user needs is very hard!!!
 - User centered design methodology

An emerging ACE HCD methodology

- *What are we trying to accomplish?*
 - Ask the question at all levels
 - Design of computational communities
 - Design of a tool to meet a specific need

- *What is the task being performed?*
 - Determine the user needs to accomplish the task
 - Talk to the users, watch the users
 - Local HCI, techno-savvy psychology researcher is handy here

- *Make use of task based frameworks*
 - Apply conceptual frameworks to ACE development

Applying the ACE HCD Methodology

- Ad-hoc emergence in our research
 - Built technology
 - Watched people struggle
 - Created solutions that addressed problems

- Applying the methodology in the future
 - Observe user communities
 - Identify collaboration tasks of importance
 - Design tools to meet needs of tasks
 - Test success of tools with users
 - Apply knowledge to task oriented frameworks
 - Develop more sophisticated task oriented frameworks

Acknowledgements

● Acknowledgements

- Todd Zimmerman (SFU) and WestGrid colleagues
- Andrew Patrick and the ACE group (NRC/CRC)
- Peggy Storey and the Chisel Group (UVic)
- Pierre Boulanger and AMMI group (WestGrid/UoA)
- Funders: CFI, BCKDF, AIS, SGI

● For more information:

- Contact Brian Corrie (bcorrie@sfu.ca)



Questions/Discussion...



Questions/Discussion...