

General Interest Webinar

James Desjardins

Overview:

Slide presentation:

- SHARCNet file systems and their properties
- Basic command line tools for file management
- Data transfer avenues (dtn.sharcnet.ca and Globus)
- Overview of visual file handling strategies
- Folder mounting on local machine
- Other clients and cloud resources

Online Documentation:

- How do I organize my files?
- Using storage
- Analyzing I/O Performance
- Remote Graphical Connections

Demonstration:

- Add “quota” to .bashrc
- Globus / Globus Connect Personal file transfer
- Visualize temporary files from development node and viz system
- Use sshfs to mount SHARCNet folder and meld locally
- Use other local software to edit mounted folder

File system properties:

Access:

- Unified = Same files regardless of where you log in
- Per-cluster = unique files on each system
- Per-node = unique files on each node

Back up:

In general one version of each file is stored for the previous 5 working days, one for each of the 4 previous weeks, and one version per month before that.

Quota:

Time:

Auto deletion of files

Size:

Hard quota = write errors

Soft quota = account constraints

Number of files:

Soft quota = account constraints (1,000,000 files on any system)

Handling: File transferring, Archiving/Compressing (e.g. tar dar)

SHARCNet file systems and their properties:

	access	backup	Quota size	time
/home	unified	yes	1/10GB hard	none
/work	unified	no	1TB soft	none
/scratch	per-cluster	no	none	2 months
/tmp	per-node	no	none	2 days
/archive	unified	no	none	none

Purpose:

- /home = source and small configuration files
- /work = active data
- /scratch = temporary files
- /tmp = (very) temporary files
- /archive = long term storage

Basic command line tools for file management:

Quota:

Filesystem	Limit	Used	File Count	Checked
bull:/home	1 GB	455.1 MB (44%)	5,042	22h ago
cove:/work	1 TB	587 GB (57%)	21,692	21h ago

scp:

Secure copy, e.g. `scp -r myFolder remoteLocation`

rsync:

Synchronize, e.g. `rsync -avz myFolder remoteLocation`

tar:

Archive pack, e.g. `tar cvf myArchive.tar myFolder`

Archive unpack, e.g. `tar xvf myArchive.tar`

dar:

Split pack, e.g. `dar -s 4G -w -c myArchive -g myFolder`

Temporary unpack, e.g. `dar -R . -O -x myArchive -v -g pathToPlace`

Setfacl:

Set permission, e.g. `setfacl -Rm u:stefon:r-- myFolder`

Getfacl:

`user::rwx`

`user:stefon:r--`

`group::r-x`

`mask::r-x`

`other::r-x`

Data transfer avenues:

Data Transfer Node:

dtm.sharcnet.ca

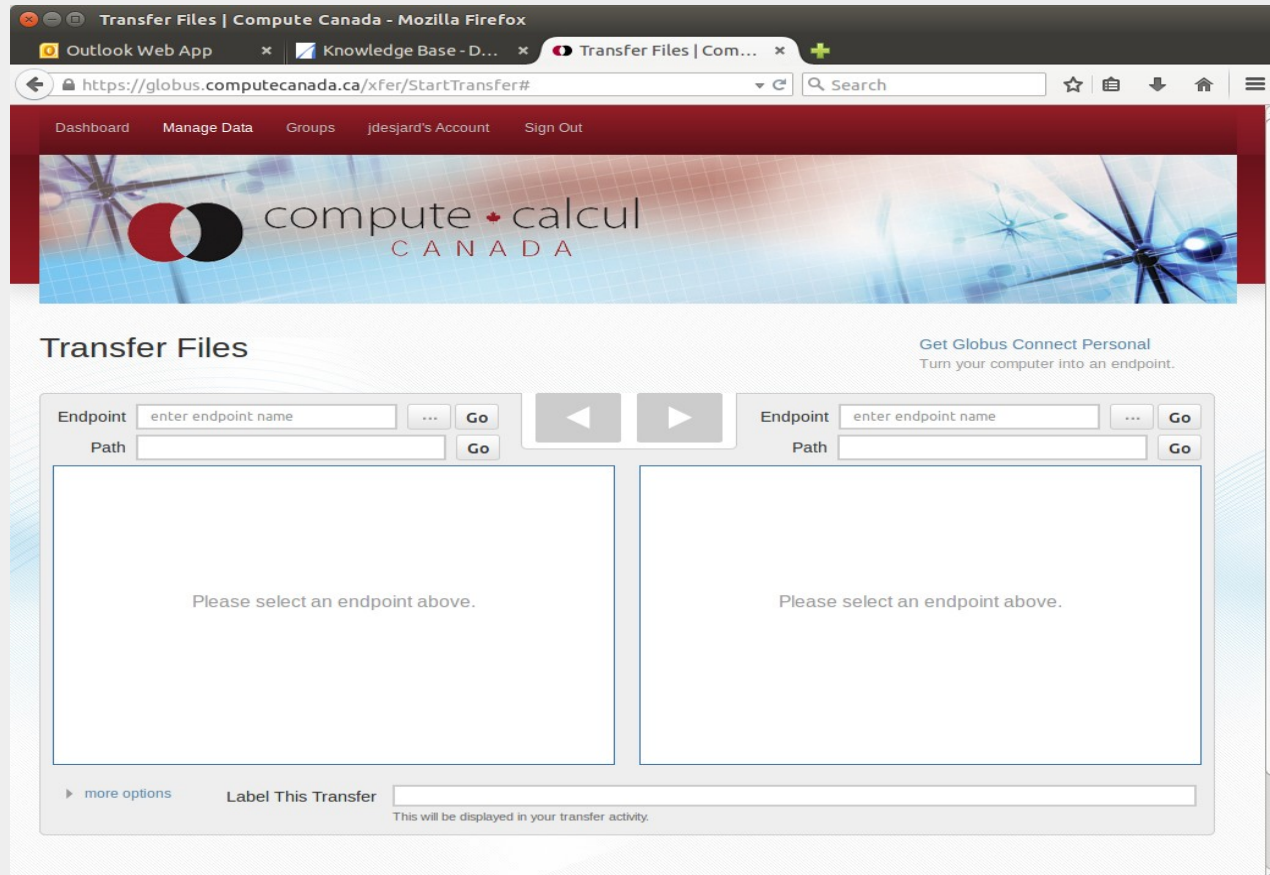
Sees internet and most SHARCNET file systems

No cputime limit on processes

Globus:

globus.computecanada.ca

Globus Connect Personal



The screenshot shows a web browser window titled "Transfer Files | Compute Canada - Mozilla Firefox". The address bar shows the URL "https://globus.computecanada.ca/xfer/StartTransfer#". The page features a navigation menu with "Dashboard", "Manage Data", "Groups", "jdesjard's Account", and "Sign Out". Below the menu is a banner for "compute + calcul CANADA". The main content area is titled "Transfer Files" and includes a sub-header "Get Globus Connect Personal Turn your computer into an endpoint." The interface contains two side-by-side panels for file transfer. Each panel has an "Endpoint" field with a dropdown menu and a "Go" button, and a "Path" field with a "Go" button. Below these fields are two large empty boxes with the text "Please select an endpoint above." At the bottom, there is a "Label This Transfer" section with a text input field and a "more options" link. A note at the bottom states "This will be displayed in your transfer activity."

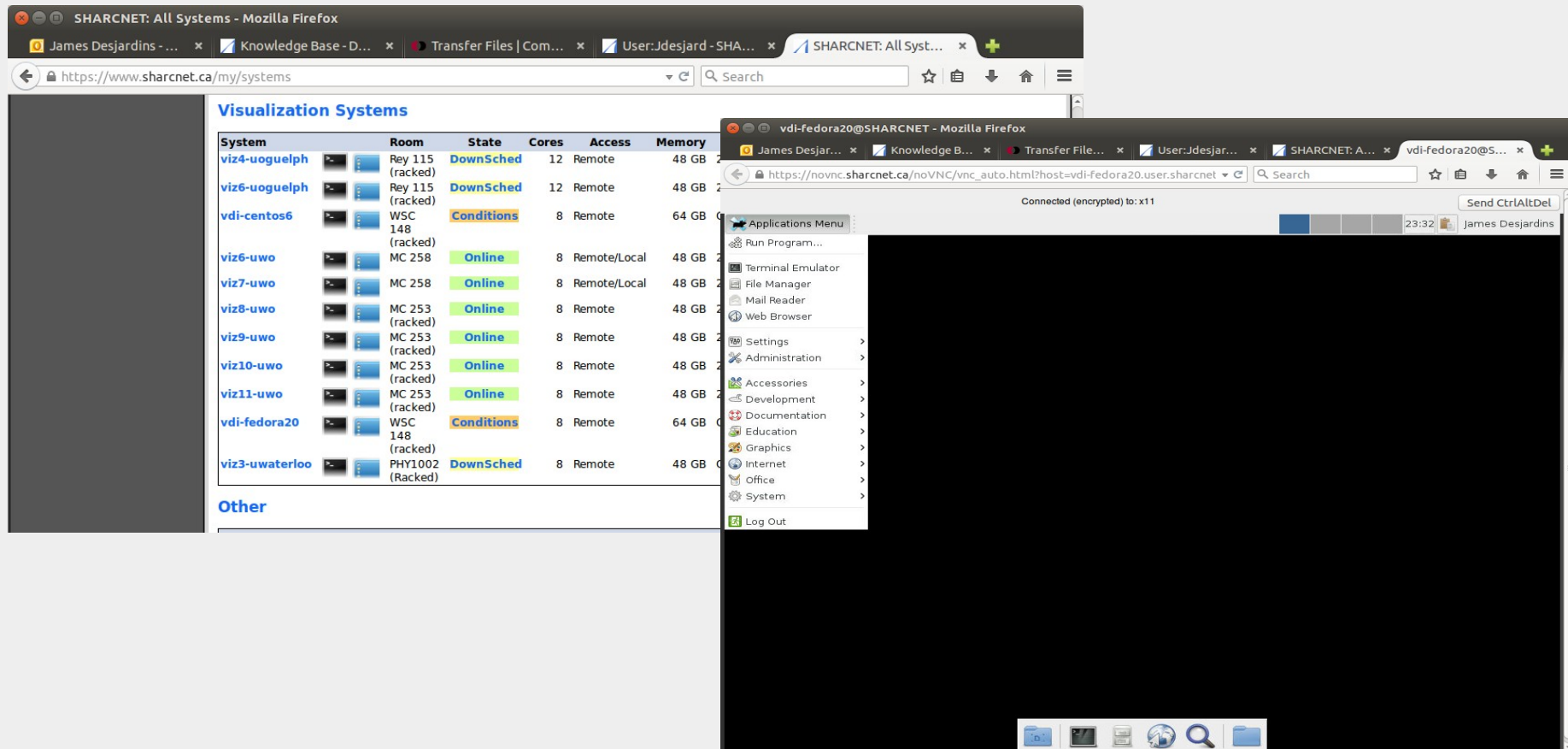
Overview of visual file handling strategies:

Development nodes:

```
ssh -Y jdesjard@kraken.sharcnet.ca
```

```
ssh -Y kraken-devel1
```

Visualization systems:



The image shows two overlapping browser windows. The background window displays the 'SHARCNET: All Systems' management page, which includes a table of visualization systems. The foreground window shows a VNC viewer connected to a 'vdi-fedora20' system, displaying a Fedora desktop environment with an applications menu open.

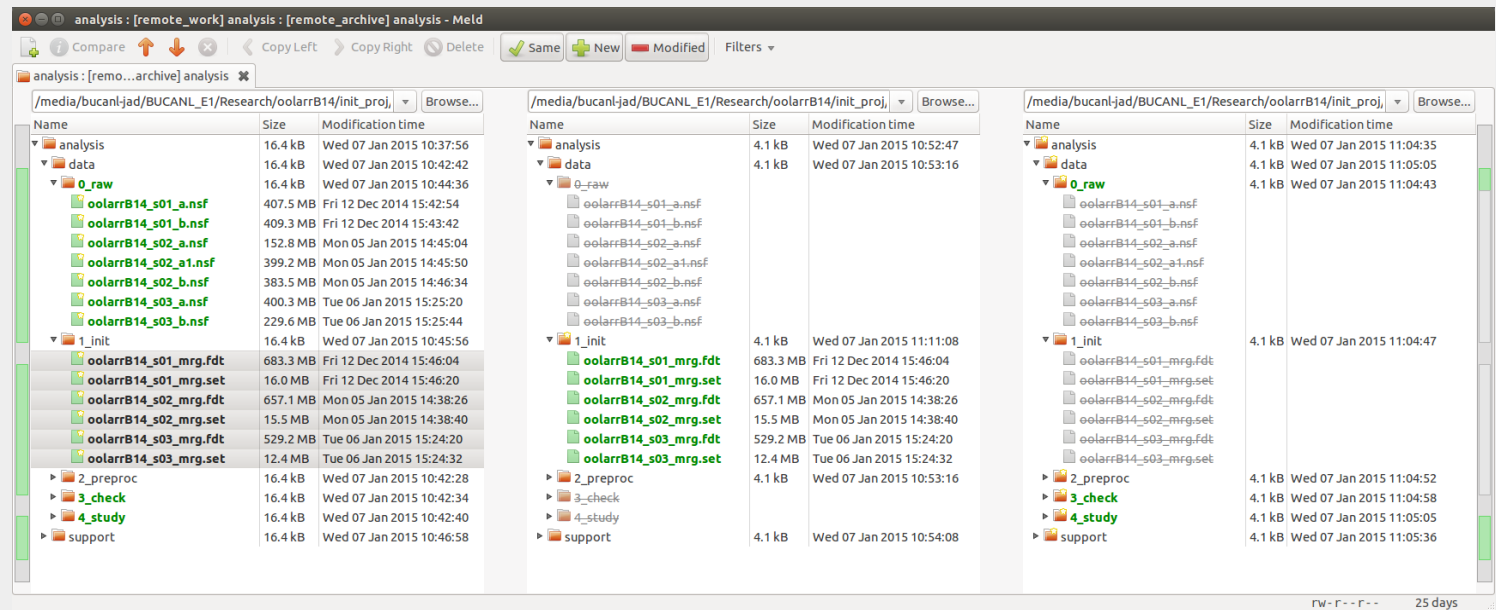
System	Room	State	Cores	Access	Memory
viz4-uoguelph	Rey 115 (racked)	DownSched	12	Remote	48 GB
viz6-uoguelph	Rey 115 (racked)	DownSched	12	Remote	48 GB
vdi-centos6	WSC 148 (racked)	Conditions	8	Remote	64 GB
viz6-uwo	MC 258	Online	8	Remote/Local	48 GB
viz7-uwo	MC 258	Online	8	Remote/Local	48 GB
viz8-uwo	MC 253 (racked)	Online	8	Remote	48 GB
viz9-uwo	MC 253 (racked)	Online	8	Remote	48 GB
viz10-uwo	MC 253 (racked)	Online	8	Remote	48 GB
viz11-uwo	MC 253 (racked)	Online	8	Remote	48 GB
vdi-fedora20	WSC 148 (racked)	Conditions	8	Remote	64 GB
viz3-uwaterloo	PHY1002 (Racked)	DownSched	8	Remote	48 GB

Folder mounting on local machine

Local sshfs mount:

Mount, e.g. `sshfs remoteLocation mountPath`

Compare directories, e.g. `meld localPath mountPath`



Unmount, e.g. `fusermount -u mountPath`

SFTP File browser Ctrl-I

Other clients and cloud resources:

OwnCloud (<http://owncloud.org/>)

SeaFile (<http://seafiler.com/en/home/>)

FileZilla (http://sourceforge.net/projects/filezilla/?source=typ_redirect)

Windows clients:

Bitvise (<http://www.bitvise.com/>)

MobaXTerm (<http://mobaxterm.mobatek.net/>)

Win-sshfs (<https://code.google.com/p/win-sshfs/>)