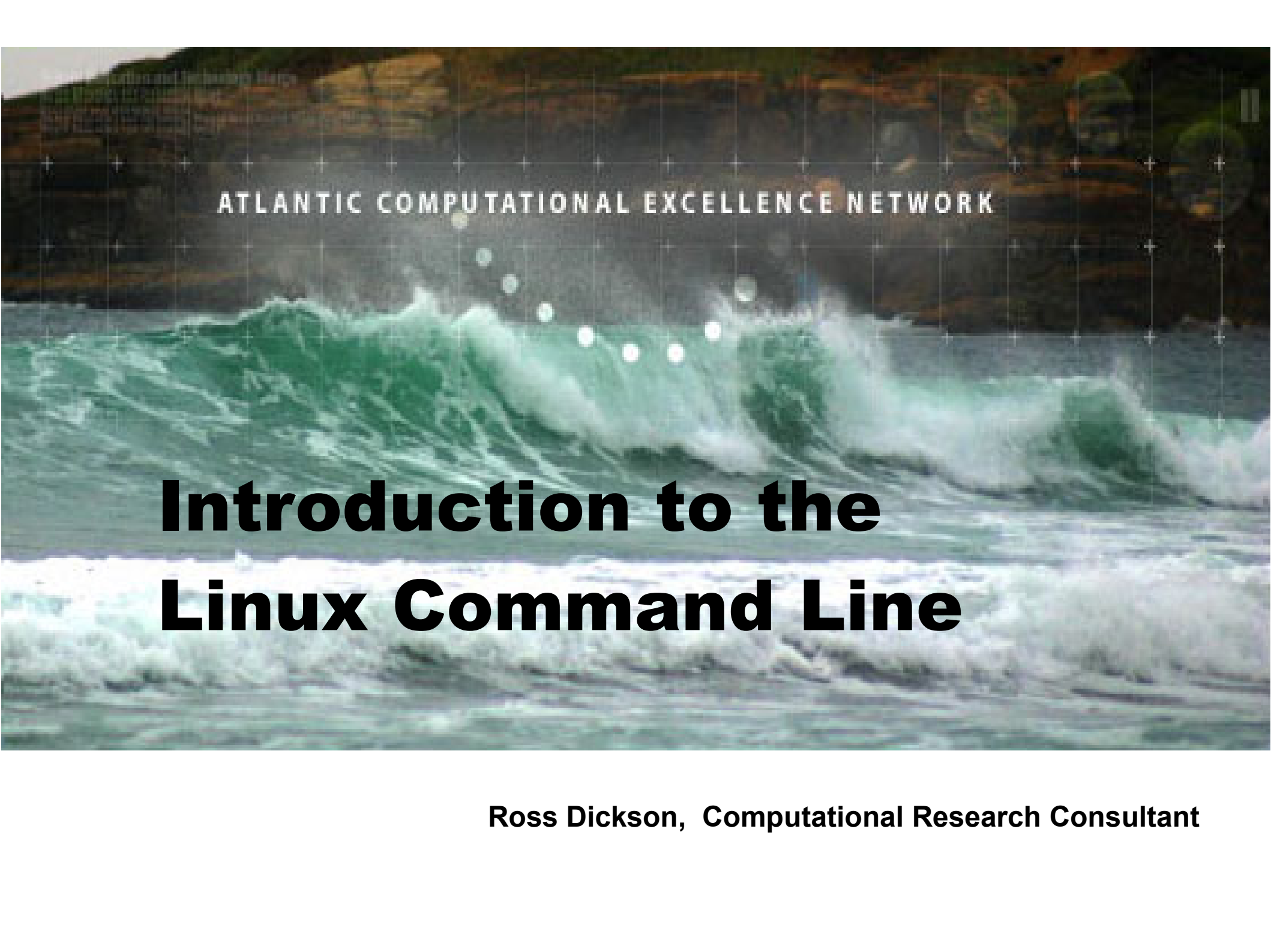




ATLANTIC COMPUTATIONAL EXCELLENCE NETWORK

Introduction to the Linux Command Line

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Login

Generally,

```
> ssh userid@host.ace-net.ca
```

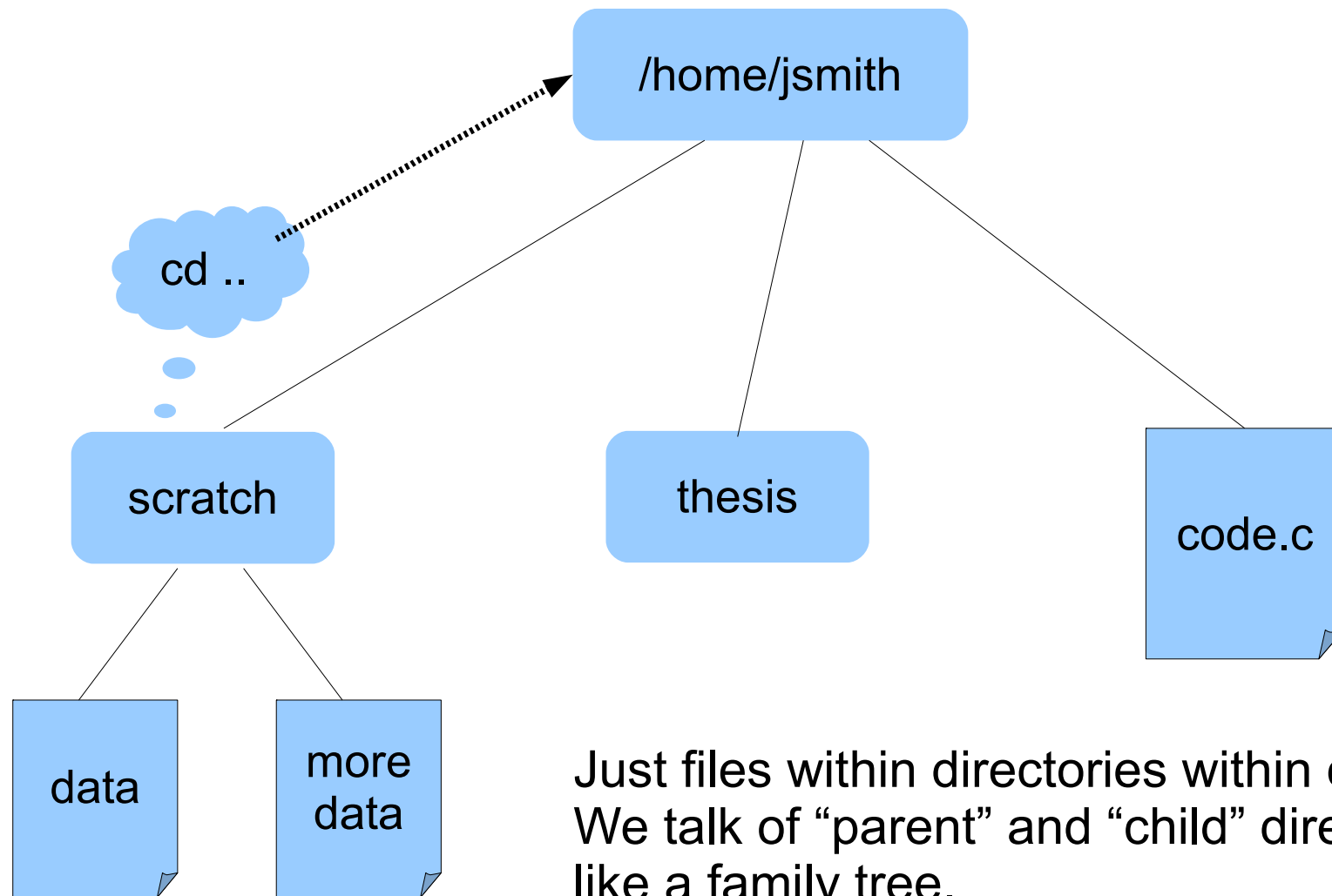
Specifically, today:

```
> ssh userid@mahone.ace-net.ca
```

Looking Around

- **pwd**
 - “print working directory”
 - where am I?
- **ls**
 - “list”
 - what files are here? what subdirectories?
- **ls -l**
 - “list, long”, gives more details

Linux directories = Windows folders



Just files within directories within directories. We talk of “parent” and “child” directories, like a family tree.

Getting around

- **`mkdir newdir`**
 - “make directory”
- **`cd directory`**
 - “change directory”
- **directory “nicknames”**
 - `..` means “parent directory” or “one level up”
 - `~` means “my home directory”, `/home/userid/`
 - `.` means “right here”
 - `/` is separator, not `\`

Create your (empty) directory

```
$ mkdir workshop  
$ cd workshop  
$ ls  
$ pwd  
/home/userid/workshop  
$
```

Moving stuff around

- ***mv from to***
 - “move”, also “rename”
- ***cp from to***
 - “copy”
- ***rm file***
 - “remove”
 - Careful --- There's no recycle bin!
- ***rmdir directory***

Paths, directories, abbreviations

- directory separator is “/”
- /home/jsmith/code/test is an *absolute path*
 - begins with “/”
- code/test is a *relative path*
 - no “/” at the beginning
 - same thing if pwd is /home/jsmith
- *
- asterisk is “wildcard”

Get some files

```
$ pwd
```

```
/home/userid/workshop
```

```
$ cp /home/rdickson/demo/Coding/* .
```

```
$ ls
```

```
biginput      infile          script
```

```
hello.c      integrate.f95
```

```
$
```



Don't miss the dot!

What kind of path is "/home/rdickson/demo/Coding" ?

What's inside?

- **cat *file***
 - send the whole file to the screen
- **more *file***
 - use **spacebar** to page down
 - scroll through file, one screen at a time
 - **q** to quit, **ctrl-B** to back up
- *Exercise:*
 - What is in `~/workshop/infile`?

Changing stuff: Editors.

- **nano**
 - easy-to-use text editor
- **vi** or **vim**
 - **vi** often the default Unix editor
 - **vimtutor** is online tutorial for **vi** & **vim**
- **emacs**
 - very powerful!
- *Exercise:*
 - use one of these to change the contents of `~/workshop/infile`

Running stuff

- To run a program, type its name
 - must be executable – can't run data!
 - must be "on your PATH"
 - use `module load` to set PATH
- Programs may take arguments, options, standard input, or combinations. Examples:
 - `nano argument`
 - `ls -l`
 - `g09 <stdin`

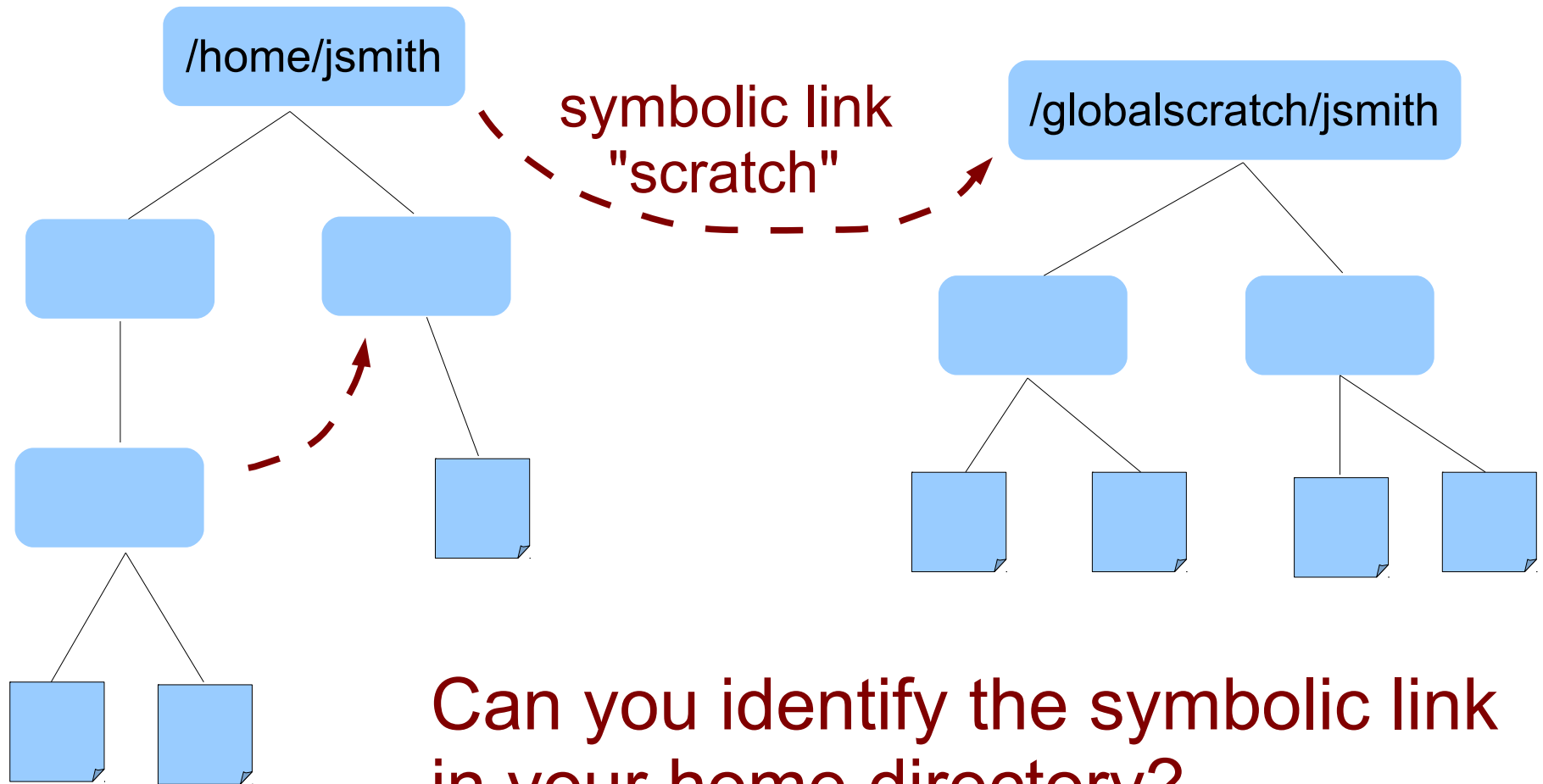
Disk usage

- **quota**
 - your file space used, versus your allowance
- **du -sh *list...***
 - "display usage, summary, human-readable" of each file or directory in *list...*
- *Exercise:*
 - Check your **quota** standing

Filesystems, and symbolic links

/home filesystem

/globalscratch filesystem



Can you identify the symbolic link
in your home directory?

Online manual

- ***command --help***
 - many commands have built-in help
- ***man command***
 - online manual
 - great if you want to know what options available
 - lousy if you don't know the command you want
- ***man -k keyword***
 - might help you find the command you want

Where to go for help

- Web tutorials
 - Google “Unix command line tutorial”
- Books
 - e.g. Kernighan & Pike, *The Unix Programming Environment*... many others...
- ACEnet User Wiki
 - <http://www.ace-net.ca/>
- User support line
 - email: support@ace-net.ca