Introduction to Computing

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Data Acquisition & Storage

PACS Bourget (14Y / 44Tb)

findsession & copy to Lab owned storage

/space/<computername>

/cluster/<name>
Command line terminal (shell)

Linux: terminal
right-click anywhere on the desktop
Command line terminal (shell)

Linux: terminal
right-click anywhere on the desktop

Or
Applications Menu > System Tools
Command line terminal (shell)

Mac: terminal
Applications > Utilities > Terminal
Command line terminal (shell)

Mac: terminal
Applications > Utilities > Terminal
Command line terminal (shell)

Mac: terminal
Applications > Utilities > Terminal
ssh sam@door.nmr.mgh.harvard.edu
Command line terminal (shell)

Mac: terminal
Applications > Utilities > Terminal
ssh sam@door.nmr.mgh.harvard.edu
Command line terminal (shell)

Windows: putty.exe
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html
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Command line terminal (shell)

Windows: putty.exe
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

Enter hostname
Command line terminal (shell)

Windows: putty.exe
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

Enter hostname
Example: michigan.nmr.mgh.harvard.edu
Command line terminal (shell)

Windows: putty.exe
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

Enter hostname
Example: michigan.nmr.mgh.harvard.edu
Press “Open”
Command line terminal (shell)

Windows: putty.exe
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

Enter hostname
Example:
michigan.nmr.mgh.harvard.edu
Press “Open”
Login with NMR username and password
### Basic Commands

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<td><strong>w</strong></td>
<td>Lists users currently logged in</td>
<td></td>
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<td><strong>pwd</strong></td>
<td>Prints the current working directory</td>
<td></td>
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<td><strong>ls</strong></td>
<td>Lists the contents of a directory</td>
<td></td>
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<td><strong>ls –a</strong></td>
<td>Includes hidden files</td>
<td></td>
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<td><strong>ls –l</strong> (or <strong>ll</strong>)</td>
<td>Lists contents with permissions</td>
<td></td>
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<td><strong>cd</strong></td>
<td>Change to a new directory</td>
<td><strong>cd /space/michigan/1/users/whynhow</strong></td>
</tr>
<tr>
<td><strong>cd -</strong></td>
<td>Changes to previous directory</td>
<td></td>
</tr>
<tr>
<td><strong>mkdir</strong></td>
<td>Create a directory</td>
<td><strong>mkdir /space/michigan/1/users/whynhow/newdir</strong></td>
</tr>
<tr>
<td><strong>rmdir</strong></td>
<td>Delete an empty directory</td>
<td></td>
</tr>
<tr>
<td><strong>rm</strong></td>
<td>Delete a file (cannot undo!!)</td>
<td></td>
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<tr>
<td><strong>cat</strong></td>
<td>Output the entire contents of a file</td>
<td><strong>cat filename</strong></td>
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<tr>
<td><strong>less</strong></td>
<td>An easier way to view files</td>
<td>Press ‘q’ to exit less</td>
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<tr>
<td><strong>grep</strong></td>
<td>Search file for specific string of text</td>
<td></td>
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<tr>
<td><strong>nano</strong></td>
<td>A very basic text editor</td>
<td></td>
</tr>
<tr>
<td><strong>vim</strong></td>
<td>A more feature-ful text editor</td>
<td></td>
</tr>
<tr>
<td><strong>emacs</strong></td>
<td>A popular text editor</td>
<td></td>
</tr>
<tr>
<td><strong>rsync</strong></td>
<td>A tool for copying files</td>
<td><strong>rsync –aP [source] [destination]</strong></td>
</tr>
<tr>
<td><strong>man</strong></td>
<td>For reading the manual pages.</td>
<td><strong>man rsync</strong></td>
</tr>
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findsession
http://www.freesurfer.net/fswiki/findsession

Findsession Examples

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
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<tr>
<td><code>findsession -h</code></td>
<td>Display the help file.</td>
</tr>
<tr>
<td><code>findsession -t</code></td>
<td>Display all scans pushed that day.</td>
</tr>
<tr>
<td><code>findsession -p epd</code></td>
<td>Display all scans where project epd is listed in the OPERATOR field.</td>
</tr>
<tr>
<td><code>findsession pilot4</code></td>
<td>Display all scans with the string ‘pilot4’ in the subject name.</td>
</tr>
</tbody>
</table>
Demo findsession

hydra:xmehlsa[114] findsession -p wmf

SUBJECT:  VETSATest_8_bay4
SUBJ ID:  11.04.27-08:16:41-DST-1.3.12.2.1107.5.2.32.35006
DATE   :  April 27, 2011
TIME   :  08:17:43
OPERATR:  mar35:wmf (bay4) [M]
XPRMNTR:
PATH   :  /cluster/archive/292/siemens/TrioTim-35006-20110427-081743-329000

gate:xmehlsa[81] findsession -o 2012-12-15

SUBJECT:  VETSA_11915A
SUBJ ID:  12.12.15-07:39:25-STD-1.3.12.2.1107.5.2.32.35006
DATE   :  December 15, 2012
TIME   :  07:40:01
OPERATR:  Maritza:lts (bay4) [D]
XPRMNTR:
PATH   :  /cluster/archive/302/siemens/TrioTim-35006-20121215-074001-311000
Demo rsync

First check the size of the dataset you wish to copy

Example:
```
du -kh /cluster/archive/301/siemens/TrioTim-35006-20120824-160112-992000
2.9G /cluster/archive/301/siemens/TrioTim-35006-20120824-160112-992000
```

Check to make sure you have enough free space at the destination:

Example:
```
df -h /space/michigan/1/users/xmehlsa/scans
```

```
Filesystem Size Used Avail Use% Mounted on
autofs 432G 197G 235G 46% /autofs/space/michigan_001
```

Now copy (all one line):

```
rsync -aP /cluster/archive/301/siemens/TrioTim-35006-20120824-160112-992000
/space/michigan/1/users/xmehlsa/scans/
```
Operator Field!!!
Project Permission Group

https://www.nmr.mgh.harvard.edu/facility/acct/tools.html

http://www.freesurfer.net/fswiki/findsession
Unix Groups

• Find out what groups you’re in:
  
groups

• Find out what groups someone else is in:
  
groups <username>

• List the members of a specific group:
  
ypmatch <groupname> group

• Find a user’s username:
  
finger <name>
  
finger <username>
• Unix permissions.

Tutorial:

http://www.nmr.mgh.harvard.edu/martinos/userInfo/computer/perms.php

[root@anderson scripts]# ls -l run-pasl_withingroup.sh
-rw-rw-r-- 1 gcoombs dinahgp 6898 Aug 23 16:11 run-pasl_withingroup.sh
setgrp

Show permissions:  ls –l

```
ls -l /cluster/itgroup/mehlsa/scans
```

```
089763987
```

```
09033011
```

```
98234798
```

Use setgrp to make files accessible to your group

```
michigan:xmehlsa[198] ls -l /cluster/itgroup/mehlsa/scans
```

```
drwxrwxrwx  3 xmehlsa xmehlsa  4096 Sep 20 08:52 089763987
```

```
drwxrwxrwx  3 xmehlsa xmehlsa  4096 Mar 30  2009 09033011
```

```
drwxrwxrwx  3 xmehlsa xmehlsa  4096 Sep 20 08:51 98234798
```

Remove access for anyone not in your group

```
michigan:xmehlsa[222] /usr/pubsw/bin/setgrp -c sysadm /cluster/itgroup/mehlsa/scans
```

```
michigan:xmehlsa[223] ls -l /cluster/itgroup/mehlsa/scans
```

```
drwxrwsr-x  3 xmehlsa sysadm  4096 Sep 20 08:52 089763987
```

```
drwxrwsr-x  3 xmehlsa sysadm  4096 Mar 30  2009 09033011
```

```
drwxrwsr-x  3 xmehlsa sysadm  4096 Sep 20 08:51 98234798
```

```
michigan:xmehlsa[222] /usr/pubsw/bin/setgrp -c -p sysadm /cluster/itgroup/mehlsa/scans
```

```
michigan:xmehlsa[223] ls -l /cluster/itgroup/mehlsa/scans
```

```
drwxrws---  3 xmehlsa sysadm  4096 Sep 20 08:52 089763987
```

```
drwxrws---  3 xmehlsa sysadm  4096 Mar 30  2009 09033011
```

```
drwxrws---  3 xmehlsa sysadm  4096 Sep 20 08:51 98234798
```
.cshrc

• Sourcing the freesurfer environment creates login dependencies.

```bash
setenv SUBJECTS_DIR /space/michigan/1/users/mehlsa/subj
source /usr/local/freesurfer/nmr-stable53-env
```
• Sourcing the freesurfer environment creates login dependencies.
  
  setenv SUBJECTS_DIR /space/michigan/1/users/mehlsa/subj
  source /usr/local/freesurfer/nmr-stable53-env

• Better to make aliases

  alias subj setenv SUBJECTS_DIR /space/michigan/1/users/mehlsa/
  alias fs source /usr/local/freesurfer/nmr-stable53-env
DATA BACK UP

For suggestions on backing up Windows or Macs:

http://help.nmr.mgh.harvard.edu/ > BACKUPS

To check the status of your linux backups:

https://www.nmr.mgh.harvard.edu/martinos/userInfo/computer/nmr-secure/listHistory.php
Remote Access Tools

ssh, X2Go

In order to ssh from outside the Partners firewall, you must use one of the three gateway servers:

gate.nmr.mgh.harvard.edu
entry.nmr.mgh.harvard.edu
door.nmr.mgh.harvard.edu

From there you should ssh to your own linux workstation.

https://www.nmr.mgh.harvard.edu/intranet/computer/remote-access/x2go
Martinos Center IT Group
help@nmr.mgh.harvard.edu

- Paul Raines PhD (Hired in 2000)
- Sam Mehl (Hired in 2004)
- Tom McManus (Hired Jan, 2014)
- Ryan Feeley (Hired Sept, 2014)

Not to be confused with the Partners IT Service Desk (https://partnershealthcare.service-now.com/phsess/)

*Partners email
*Cisco telephones & Network Ports
*Insight / RedCap / PeopleSoft / SharePoint / eBuy
Support

~ 2345 ‘NMR’ login/email accounts since 2004. 960 currently active.

~ 580 Desktop Computers
CentOS Linux (433), Windows (105) Mac OSX (47)

~ 714 Laptops registered by users approx 1/3 we encrypted

Approx 2000 emails received by help@nmr.mgh.harvard.edu every month.
Where to get help.

1. http://www.yahoo.com
2. Your Lab
5. martinos-tech@yahoo.com
6. Other NMR mailing lists http://mail.nmr.mgh.harvard.edu
7. help@nmr.mgh.harvard.edu
How to ask for help.

If the computer has a name, what is it?
Where is it physically located?

What are the details of your problem?

What were you doing when the problem occurred?

Is the problem constant or intermittent?

Is the problem reproducible?

Have you attempted mitigation on your own? If so what were the results.

If files are involved, what is the full path to the files?

If programs are involved, which version?

Copy/paste any commands you ran along with any error messages (verbatim).

Provide more details than you think matter.
The End