

SSH FileSystem

- there is a filesystem client based on the SSH File Transfer Protocol
- advantages
 - since most SSH servers already support this protocol it is very easy to set up: i.e. on the server side there's nothing to do
 - on the client side mounting the filesystem is as easy as logging into the server with ssh
- features:
 - implemented in userspace (although there is a kernel implementation if required)
 - multithreaded: more than one request can be on it's way to the server
 - allows large reads (max 64k)
 - caches directory contents

How to mount a filesystem

- once sshfs is installed, running it is very simple:

```
$ mkdir mountpoint
$ sshfs hostname: mountpoint
```

Example of ssh filesystem

Example of ssh filesystem

```
$ df -h .
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda3       57G  2.7G  51G   6% /home
$ mkdir foo
$ sshfs fred@mcgreg.comp.glam.ac.uk:/home/fred/Sandpit /h
Password:
$ df
Filesystem      1K-blocks    Used Available Use% M
/dev/sda1       9614116  2372668   6753076   26% /
udev            10240      52    10188    1% /
devshm          518260      0   518260    0% /
/dev/sda3       59020704  2816436  53206140    6% /
sshfs#fred@mcgreg.comp.glam.ac.uk:/home/fred/Sandpit
7999999992      0 7999999992    0% /
$ cd foo
$ ls
autopassword      MorlocSounds.tar
autopassword.tar.gz MPlayer-1.0pre7t:
build             MPlayer-1.0pre7t:
build-32         oa051
```

```
$ cd ..
$ fusermount -u foo
$ df
Filesystem      1K-blocks    Used Available Use% M
/dev/sda1       9614116  2372668   6753076   26% /
udev            10240      52    10188    1% /
devshm          518260      0   518260    0% /
/dev/sda3       59020704  2816436  53206140    6% /
$
```

Summary of ssh

- ssh uses public/private key encryption
 - all usernames, passwords and data are encrypted

- can be used to tunnel any TCP port across the ssh port (22)
 - contents of this port is encrypted
 - can also tunnel X11 traffic across this port
 - ssh has a basic ftp client (`sftp`)

- sshfs exists and can be installed (client side on GNU/Linux, MacOS, FreeBSD)
 - no server side additions are needed