

Background Information

- The `ssh` and `scp` commands are useful to copy between UNIX hosts. (“UNIX” includes Macs and Linux PCs.)
- It is fairly simple to set up public key encryption between UNIX hosts (and between UNIX servers and Windows clients.)

Procedure

1. On your Mac or Linux PC, open a **Terminal** window and run `ssh-keygen -t rsa` (Simply press Enter for all prompts.)

This creates a `.ssh` directory and two key files:

- `id_rsa` -- The private key
- `id_rsa.pub` -- The public key

2. Transfer only the public key file from each machine to the other:

```
scp ~/.ssh/id_rsa.pub user@host:
```

where *host* is the hostname or IP address of the other machine and *user* is your username on that machine.

3. Update (or create) the authorized keys file on the server machine. First, log on with

```
ssh user@host:
```

Then run

```
cat ~/id_rsa.pub >> ~/.ssh/authorized_keys
```

- SSH is very sensitive about permissions. The default `umask` may create incompatible permissions on `authorized_keys`. To fix it:

```
chmod 644 ~/.ssh/authorized_keys
```

Clean up by removing the uploaded public key file:

```
rm -i ~/id_rsa.pub
```

4. Ctrl-D to log out. Now `ssh` and `scp` will not prompt you for a password again.

To Log on to a Host via SSH

From a terminal window, log in to the Technology server using `ssh`. For example,

```
ssh -p 443 jblough1@192.197.62.35
```

to log on to the Technology server, where your home directory is hosted. (The `-p` switch specifies the *listening port* of the SSH server – the default is **22**; my Technology server uses port 443 instead.)

To Copy Files or Directories from One Host to Another via SSH

You can use `scp` to copy a file across the network (and, like FTP and SSH, the other way, if you wish).

Examples:

1. To copy a file called "*myfile*" from my Linux PC to the Technology web server:

```
scp -P 443 myfile jblough1@192.192.62.35:
```

The file is copied to your home directory on Technology.

NOTE: The `ssh` command uses a lower-case `-p` switch to specify the port; `scp` uses an upper-case `-P` switch.

*Don't forget to type in the colon (:) at the end of the line.
(Otherwise, `scp` will simply make a copy of the file locally.)*

2. To copy an entire directory called "*somedir*" (and all of its contents), and rename it at the destination (works for files, too):

```
scp -P 443 -r somedir jblough1@192.197.62.35:nameofdestdir
```

In both cases, `192.197.62.35` is the IP of the *destination* machine and `jblough1` is a user on the destination machine.