



Exercise 40.1: Using tar for Backup

1. Create a directory called `backup` and in it place a compressed **tar** archive of all the files under `/usr/include`, with the highest level directory being `include`. You can use any compression method (**gzip**, **bzip2** or **xzip**).
2. List the files in the archive.
3. Create a directory called `restore` and unpack and decompress the archive.
4. Compare the contents with the original directory the archive was made from.

✓ Solution 40.1

1.

```
$ mkdir /tmp/backup
$ cd /usr ; tar zcvf /tmp/backup/include.tar.gz include
$ cd /usr ; tar jcvf /tmp/backup/include.tar.bz2 include
$ cd /usr ; tar Jcvf /tmp/backup/include.tar.xz include
```

or

```
$ tar -C /usr -zcf include.tar.gz include
$ tar -C /usr -jcf include.tar.bz2 include
$ tar -C /usr -Jcf include.tar.xz include
```

Notice the efficacy of the compression between the three methods:

```
$ du -sh /usr/include
55M      /usr/include
```

2.

```
$ ls -lh include.tar.*
c7:/tmp/backup>ls -lh
total 17M
-rw-rw-r-- 1 coop coop 5.3M Jul 18 08:17 include.tar.bz2
-rw-rw-r-- 1 coop coop 6.7M Jul 18 08:16 include.tar.gz
-rw-rw-r-- 1 coop coop 4.5M Jul 18 08:18 include.tar.xz
c7:/tmp/backup>
```

3.

```
$ tar tvf include.tar.xz
qdrwxr-xr-x root/root      0 2014-10-29 07:04 include/
-rw-r--r-- root/root    42780 2014-08-26 12:24 include/unistd.h
-rw-r--r-- root/root     957 2014-08-26 12:24 include/re_comp.h
-rw-r--r-- root/root   22096 2014-08-26 12:24 include/regex.h
-rw-r--r-- root/root    7154 2014-08-26 12:25 include/link.h
.....
```

Note it is not necessary to give the `j`, `J`, or `z` option when decompressing; **tar** is smart enough to figure out what is needed.

4.

```
$ cd .. ; mkdir restore ; cd restore
$ tar xvf ../backup/include.tar.bz2
include/
include/unistd.h
include/re_comp.h
include/regex.h
include/link
.....
$ diff -qr include /usr/include
```