Here are some exercises focused on archiving and compression in Linux:

Exercise 1: Creating a Tar Archive
Objective: Learn how to create a tar archive.

1. Create a new directory called archive_test and navigate into it:
```
mkdir archive_test
cd archive_test
```

2. Create some sample files to archive:
```
echo "This is file 1." > file1.txt
echo "This is file 2." > file2.txt
echo "This is file 3." > file3.txt
```

3. Create a tar archive of the directory:
```
tar -cvf archive.tar file1.txt file2.txt file3.txt
```

4. List the contents of the created archive to verify:
```
tar -tvf archive.tar
```

Exercise 2: Extracting a Tar Archive
Objective: Learn how to extract files from a tar archive.

1. Create a new directory called extracted:
```
mkdir extracted
```

2. Extract the contents of archive.tar into the extracted directory:
```
tar -xvf archive.tar -C extracted
```

3. Verify that the files were extracted correctly:
```
ls extracted
```

Exercise 3: Creating a Compressed Tar Archive
Objective: Learn how to create a compressed tar archive using gzip.

1. Create a compressed tar archive (using gzip) of the archive_test directory:

```
tar -czvf archive.gz archive.tar
```

2. Verify that the compressed archive has been created:
```
ls -lh archive.gz
```

Exercise 4: Extracting a Compressed Tar Archive
Objective: Learn how to extract files from a compressed tar archive.

1. Create a new directory called extracted_gz:
```
mkdir extracted_gz
```

2. Extract the contents of archive.gz into the extracted_gz directory:
```
tar -xzvf archive.gz -C extracted_gz
```

3. Verify that the files were extracted correctly:
```
ls extracted_gz
```

Exercise 5: Creating a Compressed Archive with bzip2
Objective: Learn how to create a compressed archive using bzip2.

1. Create a compressed tar archive using bzip2:
```
tar -cjvf archive.bz2 archive.tar
```

2. Verify that the compressed archive has been created:
```
ls -lh archive.bz2
```

Exercise 6: Extracting a Compressed Archive with bzip2
Objective: Learn how to extract files from a compressed bzip2 archive.

1. Create a new directory called extracted_bz2:
```
mkdir extracted_bz2
```

2. Extract the contents of archive.bz2 into the extracted_bz2 directory:
```
tar -xjvf archive.bz2 -C extracted_bz2
```

3. Verify that the files were extracted correctly:
```
ls extracted_bz2
```

Exercise 7: Using zip and unzip
Objective: Learn how to create and extract zip files.

Note: Make sure you are in your login directory and the `archive_test` directory is present.

1. Create a zip archive of the archive_test directory:
```
zip -r archive.zip archive_test
```

2. Verify that the zip archive has been created:
```
ls -lh archive.zip
```

3. Create a new directory called extracted_zip:
```
mkdir extracted_zip
```

4. Extract the contents of archive.zip into the extracted_zip directory:
unzip archive.zip -d extracted_zip

5. Verify that the files were extracted correctly:
```
ls extracted_zip/archive_test
```

Exercise 8: Cleaning Up
Objective: Remove created files and directories.

1. Remove the archive_test directory and its contents:
```
rm -rf archive_test
```

2. Remove the archives created (archive.tar, archive.gz, archive.bz2, archive.zip):
```
rm archive.tar archive.gz archive.bz2 archive.zip
```

3. Remove the extracted directories:
```
rm -rf extracted extracted_gz extracted_zip
```