Task 1. Generate hashes for files

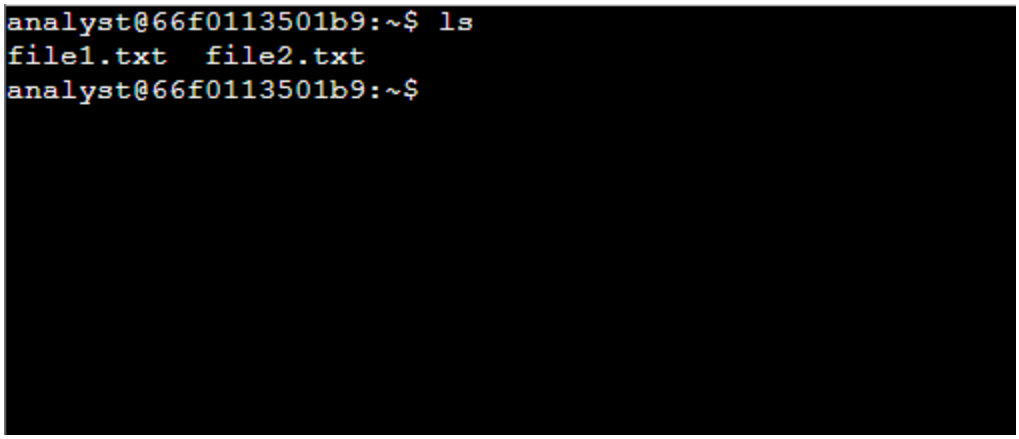
The lab starts in your home directory, `/home/analyst`, as the current working directory. This directory contains two files `file1.txt` and `file2.txt`, which contain different data.

In this task, you need to display the contents of each of these files. You'll then generate a hash value for each of these files and send the values to new files, which you'll use to examine the differences in these values later.

1. Use the `ls` command to list the contents of the directory.

The command to complete this step:

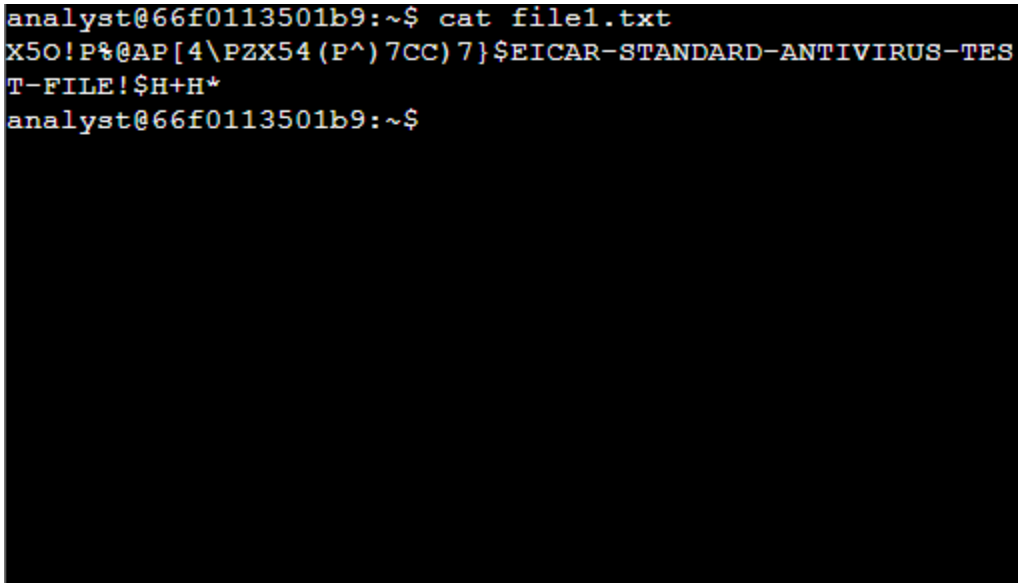
Ls



Two files, `file1.txt` and `file2.txt`, are listed.

2. Use the `cat` command to display the contents of the `file1.txt` file:

```
cat file1.txt
```



Note: *If you enter a command incorrectly and it fails to return to the command-line prompt, you can press* ***CTRL+C*** *to stop the process and force the shell to return to the command-line prompt.*

3. Use the `cat` command to display the contents of the `file2.txt` file:

```
cat file2.txt
```

```
analyst@66f0113501b9:~$ cat file2.txt
X5O!P%@AP[4\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TES
T-FILE!$H+H*
9sxa5Yq20Ranalyst@66f0113501b9:~$
```

Although the contents of both files appear identical when you use the `cat` command, you need to generate the hash for each file to determine if the files are actually different.

5. Use the `sha256sum` command to generate the hash of the `file1.txt` file:

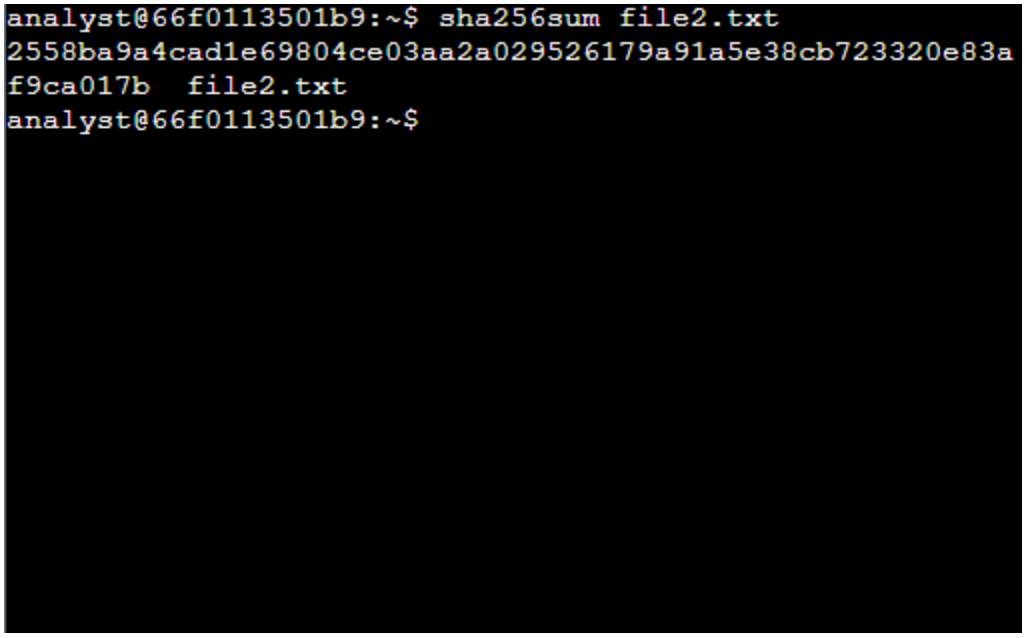
```
sha256sum file1.txt
```

```
analyst@66f0113501b9:~$ sha256sum file1.txt
131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ff
bdfd8267  file1.txt
analyst@66f0113501b9:~$
```

You now need to follow the same step for the `file2.txt` file.

6. Use the `sha256sum` command to generate the hash of the `file2.txt` file:

```
sha256sum file2.txt
```



Task 2. Compare hashes

In this task, you'll write the hashes to two separate files and then compare them to find the difference.

1. Use the `sha256sum` command to generate the hash of the `file1.txt` file, and send the output to a new file called `file1hash`:

```
sha256sum file1.txt >> file1hash
```

```
analyst@66f0113501b9:~$ sha256sum file1.txt >> file1hash
analyst@66f0113501b9:~$
```

You now need to complete the same step for the `file2.txt` file.

2. Use the `sha256sum` command to generate the hash of the `file2.txt` file, and send the output to a new file called `file2hash`:

```
sha256sum file2.txt >> file2hash
```

```
analyst@66f0113501b9:~$ sha256sum file2.txt >> file2hash
analyst@66f0113501b9:~$
```

Now, you should have two hashes written to separate files. The first hash was written to the `file1hash` file, and the second hash was written to the `file2hash` file.

You can manually display and compare the differences.

3. Use the `cat` command to display the hash values in the `file1hash` and `file2hash` files.

The command to complete this step:

```
cat file1hash
cat file2hash
```

```
analyst@66f0113501b9:~$ cat file1hash
131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffb
dfd8267  file1.txt
131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffb
dfd8267  file1.txt
131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffb
dfd8267  file1.txt
analyst@66f0113501b9:~$
analyst@66f0113501b9:~$ cat file2hash
2558ba9a4cad1e69804ce03aa2a029526179a91a5e38cb723320e83af
9ca017b  file2.txt
2558ba9a4cad1e69804ce03aa2a029526179a91a5e38cb723320e83af
9ca017b  file2.txt
analyst@66f0113501b9:~$
analyst@66f0113501b9:~$
```

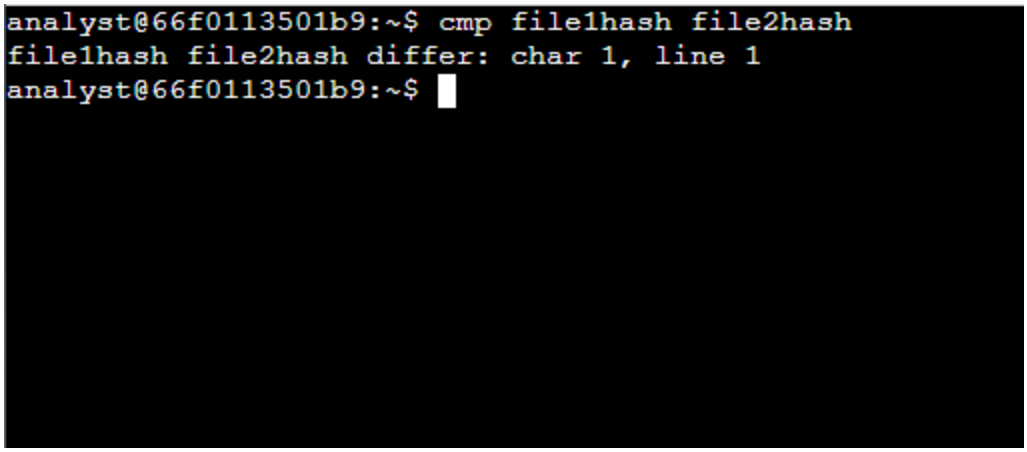
4. Inspect the output and note the difference in the hash values.

Note: *Although the content in `file1.txt` and `file2.txt` previously appeared identical, the hashes written to the `file1hash` and `file2hash` files are* ***completely*** *different.*

Now, you can use the `cmp` command to compare the two files byte by byte. If a difference is found, the command reports the byte and line number where the first difference is found.

5. Use the `cmp` command to highlight the differences in the `file1hash` and `file2hash` files:

```
cmp file1hash file2hash
```



6. Review the output, which reports the first difference between the two files:

Note: *The output of the* `cmp` *command indicates that the hashes differ at the first character in the first line.*