**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.

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

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

cat file1.txt

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***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.*

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

cat file2.txt

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1. Review the output of the two file contents:
2. analyst@4fb6d613b6b0:-$ cat file1.txt
3. X5O!P%@AP[4\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H\*
4. analyst@4fb6d613b6b0:-$ cat file2.txt

X5O!P%@AP[4\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H\*

Do the contents of the two files appear identical when you use the cat command?



Yes



No

Submit

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.

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

sha256sum file1.txt

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

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

sha256sum file2.txt

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1. Review the generated hashes of the contents of the two files:
2. analyst@4fb6d613b6b0:-$ sha256sum file1.txt
3. 131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffbdfd8267 file1.txt
4. analyst@4fb6d613b6b0:-$ sha256sum file2.txt

2558ba9a4cad1e69804ce03aa2a029526179a91a5e38cb723320e83af9ca017b file2.txt

Do both files produce the same generated hash value?



Yes



No

Submit

Click **Check my progress** to verify that you have completed this task correctly.

Generate hashes for files

Check my progress

**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

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

1. 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

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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.

1. Use the cat command to display the hash values in the file1hash and file2hash files.
2. 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.

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

cmp file1hash file2hash

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

analyst@4fb6d613b6b0:-$ cmp file1hash file2hash

file1hash file2hash differ: char1, line 1

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

Based on the hash values, is file1.txt different from file2.txt?



Yes



No

Submit

Click **Check my progress** to verify that you have completed this task correctly.

Compare hashes

**Console intro**

**analyst@de9ab2d07d81:~$ ls**

**file1.txt file2.txt**

**analyst@de9ab2d07d81:~$ cat file1.txt**

**X5O!P%@AP[4\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H\***

**analyst@de9ab2d07d81:~$ cat file2.txt**

**X5O!P%@AP[4\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H\***

**9sxa5Yq20Ranalyst@de9ab2d07d81:~$ sha256sum file1.txt**

**131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffbdfd8267 file1.txt**

**analyst@de9ab2d07d81:~$ sha256sum file2.txt**

**2558ba9a4cad1e69804ce03aa2a029526179a91a5e38cb723320e83af9ca017b file2.txt**

**analyst@de9ab2d07d81:~$ sha256sum file1.txt >> file1hash**

**analyst@de9ab2d07d81:~$ sha256sum file2.txt >> file2hash**

**analyst@de9ab2d07d81:~$ ls**

**file1.txt file1hash file2.txt file2hash**

**analyst@de9ab2d07d81:~$ cat file1hash**

**131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffbdfd8267 file1.txt**

**analyst@de9ab2d07d81:~$ cat file2hash**

**2558ba9a4cad1e69804ce03aa2a029526179a91a5e38cb723320e83af9ca017b file2.txt**

**analyst@de9ab2d07d81:~$ cmp file1hash file2hash**

**file1hash file2hash differ: char 1, line 1**

**analyst@de9ab2d07d81:~$**