01:00:00

Start Lab

Activity overview Scenario Start your lab Task 1. Generate output with the echo command the expr command

Lab instructions and tasks

Activity: Examine input/output in the Linux shell

✓ Introductory (1) 1 hour No cost ***

This lab may incorporate Al tools to support your learning.

Previously, you discussed how the Bash shell helps you communicate with a computer's

Activity overview

operating system. When you communicate with the shell, the commands in the shell can take input and

return output or error messages. In this lab activity, you'll use the echo command to examine how input is received and

how output is returned in the shell. Next, you'll use the expr command to further explore input and output while performing some basic calculations in the shell. This activity will build foundations in understanding how you communicate with the

Linux operating system through the shell. As a security analyst, you'll need to input

commands into the shell and recognize when the shell returns either output or an error message. Next, you'll explore the scenario!

In this scenario, you have to input a specified string of text that you want the shell to

Here's how you'll do this: First, you'll use the echo command to generate some output in the shell. Second, you'll use the expr command to perform basic mathematical

Finally, you'll have an opportunity to explore the echo and expr commands further. Get ready to examine input and output in the Bash shell!

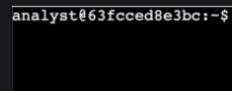
the Bash shell. This means you can start with the tasks as soon as you click the Start Lab button.

either Google Chrome or Mozilla Firefox browsers while accessing the labs.

You'll need to start the lab before you can access the materials. To do this, click the

Start your lab

After you click the Start Lab button, you will see a shell, where you will be performing further steps in the lab. You should have a shell like this:



1. Type echo hello into the shell and press **ENTER**.

The hello string should be returned:

hello

echo "hello" into the shell and press ENTER.

otherwise misinterpreted by the command.

The hello string should be returned again:

Note: The output is the same as before. The quotation marks are optional in this case, but they tell the shell to group a series of characters together. This can be useful if you need to pass a string that contains certain characters that might be

shell.

3. Use the echo command to output your name to the shell. Type echo "name" into the shell, replacing "name" with your own name, and press ENTER.

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

The name you've entered as the string should return as the output.

useful when you need to quickly perform a calculation. Imagine that the system has shown you that you have 32 alerts, but only 8 required action. You want to calculate how many alerts are false positives so that you can provide feedback to the team that configures the alerts.

Task 2. Generate output

To do this, you need to subtract the number of alerts that required action from the total number of alerts.

1. Calculate the number of false positives using the expr command.

Type expr 32 - 8 into the shell and press **ENTER**. The following result should be returned:

24

Note: The expr command requires that all terms and operators in an expression

Now, you need to calculate the average number of login attempts that are expected

over the course of a year. From the information you have, you know that an average of

are separated by spaces. For example: expr 32 - 8, and not expr 32-8.

3500 login attempts have been made each month so far this year.

So, you should be able to calculate the total number of logins expected in a year by multiplying 3500 by 12. 2. Type expr 3500 * 12 into the shell and press ENTER.

42000

Generate output with the expr command

This allows you to start with the cursor at the top of the Bash shell window.

Note: All previous commands and output will be cleared, and the user prompt and cursor will return to the upper left of the shell window.

In this task, you'll use the clear command to clear the Bash shell of all existing output.

When you work in a shell environment, the screen can fill with previous input and output

data. This can make it difficult to process what you're working on. Clearing the screen

allows you to create a clutter-free text environment to allow you to focus on what is

Check my progress

calculations with the expr command You have the opportunity to explore input and output further using the echo and expr

1. Generate at least one new output using the echo command.

(Remember the echo "hello" output you generated).

Note: The expr command performs integer mathematical calculations only, so you cannot use the decimal point or expect a fractional result. All results are rounded down to the nearest integer. Also, all terms and operators in an expression need to

subtracting, dividing, and multiplying are +, -, / and *.

You now have practical experience in using basic Linux Bash shell commands to

Great work!

commands.

 generate output with the echo command, • generate output with the expr command, and • clear the Bash shell with the clear command.

important that you're comfortable with these basic concepts before you go on to work with additional commands.

Understanding input and output is essential when communicating through the shell. It's

and follow these steps: 1. Click End Lab. A pop-up box will appear. Click Submit to confirm that you're done. Ending the lab will remove your access to the Bash shell. You won't be able

to access the work you've completed in it again.

Before you end the lab, make sure you're satisfied that you've completed all the tasks,

- 2. Another pop-up box will ask you to rate the lab and provide feedback comments. You can complete this if you choose to.
- 3. Close the browser tab containing the lab to return to your course.

- Task 2. Generate output with Task 3. Clear the Bash shell Optional task: Perform more calculations with the expr command
- Conclusion End your lab

return as output. You'll also need to input a few mathematical calculations so the OS (operating system) can return the result.

calculations. **Next**, you'll use the clear command to clear the Bash shell window. Note: The lab starts with your user account, called analyst, already logged in to

Disclaimer: For optimal performance and compatibility, it is recommended to use

green "Start Lab" button at the top of the screen. Start Lab

When you have completed all the tasks, refer to the End your Lab section that follows

with the echo command The echo command in the Bash shell outputs a specified string of text. In this task, you'll use the echo command to generate output in the Bash shell.

Task 1. Generate output

the tasks for information on how to end your lab.

The command echo hello is the input to the shell, and hello is the output from the

2. Rerun the command, but include quotation marks around the string data. Type

hello

Generate output with the echo command Check my progress

with the expr command In this task, you'll use the expr command to generate some additional output in the Bash shell. The expr command performs basic mathematical calculations and can be

The correct result should now be returned:

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

Check my progress

• Type clear into the shell and press **ENTER**.

important at that point in time.

Task 3. Clear the Bash shell

Click Check my progress to verify that you have completed this task correctly. Clear the Bash shell

Optional task: Perform more

2. Perform at least one new calculation using the expr command. The mathematical operators you can use with the expr command for adding,

Conclusion

be separated by spaces. For example: expr 25 + 15, and not expr 25+15.

End your lab

4. Refresh the browser tab for the course to mark the lab as complete.

Scenario As a security professional, it's important to understand the concept of communicating with your computer via the shell.