UNIVERSIDAD POLITÉCNICA DE QUINTANA ROO
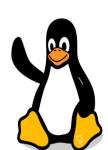
Actividad: Tarea #991 – Rooms de Linux

SISTEMAS OPERATIVOS

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Welcome to the first part of the "Linux Fundamentals" room series. You're most likely using a Windows or Mac machine, both are different in visual design and how they operate. Just like Windows, iOS and MacOS, Linux is just another operating system and one of the most popular in the world powering smart cars, android devices, supercomputers, home appliances, enterprise servers, and more.

We'll be covering some of the history behind Linux and then eventually starting your journey of being a Linux-wizard! This room will have you:

- Running your very first commands in an interactive Linux machine in your browser
- Teaching you some essential commands used to interact with the file system
- Introduce you to how users and groups work on Linux (and what this means for us as penetration testers)

Answer the questions below

Let's get started!

No answer needed	Correct Answer

Where is Linux Used?

It's fair to say that Linux is a lot more intimidating to approach than Operating System's (OSs) such as Windows. Both variants have their own advantages and disadvantages. For example, Linux is considerably much more lightweight and you'd be surprised to know that there's a good chance you've used Linux in some form or another every day! Linux powers things such as:

- Websites that you visit
- Car entertainment/control panels
- Point of Sale (PoS) systems such as checkout tills and registers in shops
- Critical infrastructures such as traffic light controllers or industrial sensors

Flavours of Linux

The name "Linux" is actually an umbrella term for multiple OS's that are based on UNIX (another operating system). Thanks to UNIX being open-source, variants of Linux comes in all shapes and sizes - suited best for what the system is being used for.

For example, Ubuntu & Debian are some of the more commonplace distributions of Linux because it is so extensible. I.e. you can run Ubuntu as a server (such as websites & web applications) or as a fully-fledged desktop. For this series, we're going to be using Ubuntu.
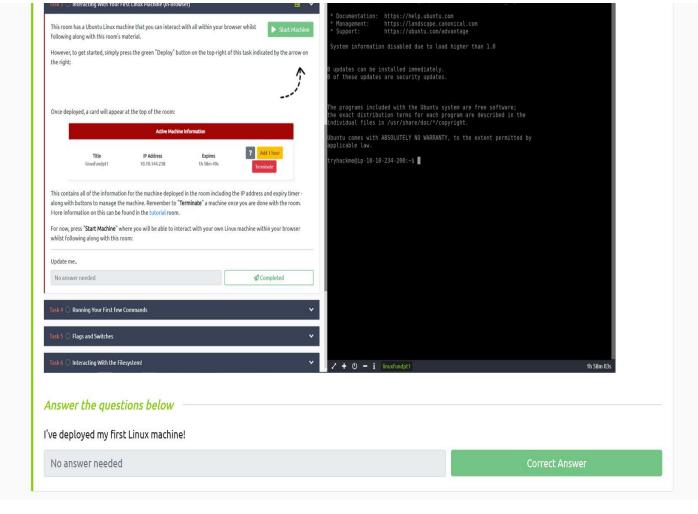
> *Ubuntu Server can run on systems with only 512MB of RAM*
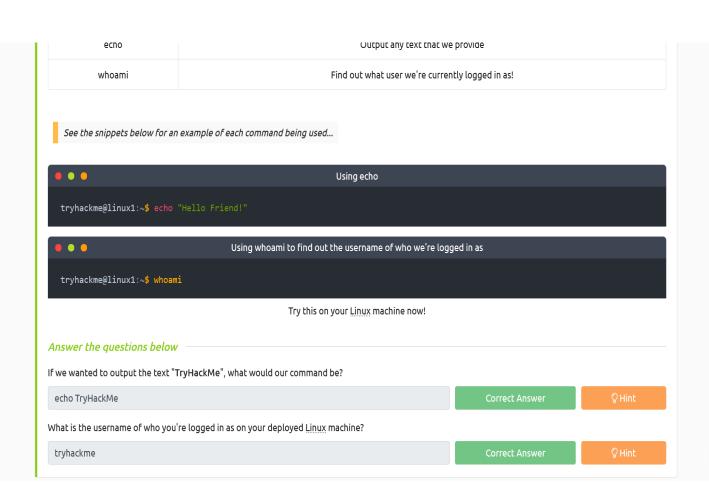
Similar to how you have different versions Windows (7, 8 and 10), there are many different versions/distributions of Linux.

Answer the questions below

Research: What year was the first release of a Linux operating system?

1991	Correct Answer

Task 3 ⬡ Interacting With Your First Linux Machine (In-Browser)

This room has a Ubuntu Linux machine that you can interact with all within your browser whilst following along with this room's material.

However, to get started, simply press the green "Deploy" button on the top-right of this task indicated by the arrow on the right:

▶ Start Machine

Once deployed, a card will appear at the top of the room:

Active Machine Information			
Title	**IP Address**	**Expires**	? Add 1 hour
linuxfundpt1	10.10.144.238	1h 58m 49s	Terminate

This contains all of the information for the machine deployed in the room including the IP address and expiry timer - along with buttons to manage the machine. Remember to "**Terminate**" a machine once you are done with the room. More information on this can be found in the tutorial room.

For now, press "**Start Machine**" where you will be able to interact with your own Linux machine within your browser whilst following along with this room:

Update me..

No answer needed	✓ Completed

Task 4 ⬡ Running Your First few Commands ⌄

Task 5 ⬡ Flags and Switches ⌄

Task 6 ⬡ Interacting With the Filesystem! ⌄

```
*  Documentation:  https://help.ubuntu.com
*  Management:     https://landscape.canonical.com
*  Support:        https://ubuntu.com/advantage

System information disabled due to load higher than 1.0

0 updates can be installed immediately.
0 of these updates are security updates.


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

tryhackme@ip-10-10-234-200:~$
```

⤢ + ⏻ − i **linuxfundpt1**   1h 58m 03s

Answer the questions below

I've deployed my first Linux machine!

No answer needed	Correct Answer

echo	Output any text that we provide
whoami	Find out what user we're currently logged in as!

❚ *See the snippets below for an example of each command being used...*

```
● ● ●                          Using echo

tryhackme@linux1:~$ echo "Hello Friend!"
```

```
● ● ●    Using whoami to find out the username of who we're logged in as

tryhackme@linux1:~$ whoami
```

Try this on your Linux machine now!

Answer the questions below

If we wanted to output the text "**TryHackMe**", what would our command be?

echo TryHackMe	Correct Answer	💡 Hint

What is the username of who you're logged in as on your deployed Linux machine?

tryhackme	Correct Answer	💡 Hint

```
/home/ubuntu/Documents
tryhackme@linux1:~/Documents$
```

Let's break this down:

1. We already know we're in "Documents" thanks to our terminal, but at this point in time, we have no idea where "Documents" is stored so that we can get back to it easily in the future.
2. I have used the "**pwd**" (print working directory) command to find the full file path of this "Documents" folder.
3. We're helpfully told by Linux that this "Documents" directory is stored at "/home/ubuntu/Documents" on the machine — great to know!
4. Now in the future, if we find ourselves in a different location, we can just use `cd /home/ubuntu/Documents` to change our working directory to this "Documents" directory.

Answer the questions below

On the Linux machine that you deploy, how many folders are there?

4	Correct Answer

Which directory contains a file?

folder4	Correct Answer	💡Hint

What is the contents of this file?

Hello World!	Correct Answer

Use the cd command to navigate to this file and find out the new current working directory. What is the path?

home/tryhackme/folder4	Correct Answer

```
tryhackme@linux1:~$ wc -l access.log
244 access.log
tryhackme@linux1:~$
```

Using a command like `cat` isn't going to cut it too well here. Let's say for example if we wanted to search this log file to see the things that a certain user/IP address visited? Looking through 244 entries isn't all that efficient considering we want to find a specific value.

We can use `grep` to search the entire contents of this file for any entries of the value that we are searching for. Going with the example of a web server's access log, we want to see everything that the IP address "81.143.211.90" has visited (note that this is fictional)

```
●  ●  ●           Using "grep" to find any entries with the IP address of "81.143.211.90" in "access.log"

tryhackme@linux1:~$ grep "81.143.211.90" access.log
81.143.211.90 - - [25/Mar/2021:11:17 + 0000] "GET / HTTP/1.1" 200 417 "-" "Mozilla/5.0 (Linux; Android 7.0; Moto G(4))"
tryhackme@linux1:~$
```

"Grep" has searched through this file and has shown us any entries of what we've provided and that is contained within this log file for the IP.

Answer the questions below

Use grep on "access.log" to find the flag that has a prefix of "THM". What is the flag?

THM{ACCESS}	Correct Answer	💡Hint

And I still haven't found what I'm looking for!

No answer needed	Correct Answer

The `>>` operator allows to append the output to the bottom of the file — rather than replacing the contents like so.

```
                            Using the >> Operator

  tryhackme@linux1:~$ echo hello >> welcome
```

```
                     Using cat to output the "welcome" file

  tryhackme@linux1:~$ cat welcome
  hey
  hello
```

Answer the questions below

If we wanted to run a command in the background, what operator would we want to use?

&	Correct Answer

If I wanted to replace the contents of a file named "passwords" with the word "password123", what would my command be?

echo password123>passwords	Correct Answer	💡 Hint

Now if I wanted to add "tryhackme" to this file named "passwords" but also keep "passwords123", what would my command be

echo tryhackme >>paswords	Correct Answer	💡 Hint

Now use the deployed Linux machine to put these into practice

No answer needed	Correct Answer

Task 8 ✅ Conclusions & Summaries   ⌄

Nice work on getting to this stage! We covered quite a bit for your first interactions with Linux. However, these are the most essential/functions you're going to be using whenever you interact with a Linux machine.

I hope this room hasn't been too daunting for you to power-on through with. It's as I previously mentioned, you're going to become familiar with these things very quickly because of how often you're going to be using them.

To quickly recap, we've covered the following:

- Understanding why Linux is so commonplace today
- Interacting with your first-ever Linux machine!
- Ran some of the most fundamental commands
- Had an introduction to navigating around the filesystem & how we can use commands like find and grep to make finding data even more efficient!
- Power up your commands by learning about some of the important shell operators.

Take some time to have a play around in this room. When you feel a little bit more comfortable, progress onto Linux Fundamentals Part 2

Answer the questions below

I'll have a play around!

No answer needed	Correct Answer

Task 9 ✅ Linux Fundamentals Part 2   ⌄

Created by 🐍 tryhackme and 👤 cmnatic

Task 9 ✅ Linux Fundamentals Part 2 ⌄

Visit part two of the Linux fundamentals series here! https://tryhackme.com/room/linuxfundamentalspart2

Answer the questions below

Terminate the machine deployed in this room from task 3.

No answer needed	Correct Answer

Join Linux Fundamentals Part 2!

No answer needed	Correct Answer

Created by 🌐 tryhackme and 👹 cmnatic

This is a free room, which means anyone can deploy virtual machines in the room (without being subscribed)! 433826 users are in here and this room is 908 days old.

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👎

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