# Week 4 Linux Projects - Chapter 3 Exploring Linux Filesystems

Activities

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## Update Kali Linux

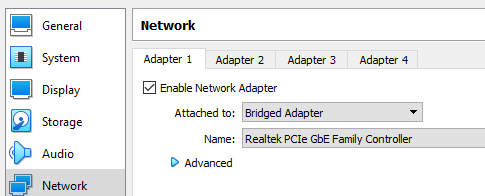
In Kali Linux in the terminal.

|  |
| --- |
| sudo apt update  sudo apt dist-upgrade -y |

## VirtualBox Local Network Access

The labs in this class require our VirtualBox virtual machines to directly access our local network. The default network access is NAT (Network Address Translation). This is a bit like a firewall and does not allow direct access to your local network.

1. **Right Click** your virtual machine 🡪 Click **Settings**.
2. Click **Network**. Change **NAT** to **Bridged Adapter**. Pick the adapter that connects to your local network. Click **OK**.



# Project 3-1: Navigate the File Structure

Time required: 20 minutes

In this hands-on project, you log in to the computer and navigate the file structure.

1. Log in to Kali with user. Open a terminal.
2. At the command prompt, type **pwd** and press **Enter** to view the current working directory.
3. What is your current working directory?

Click or tap here to enter text.

1. At the command prompt, type **cd** and press **Enter**
2. At the command prompt, type **pwd** and press **Enter** to view the current working directory.
3. Did your current working directory change? Why or why not?

Click or tap here to enter text.

1. At the command prompt, type  
   **cd** **.**and press **Enter**.
2. At the command prompt, type **pwd** and press **Enter** to view the current working directory.
3. Did your current working directory change? Why or why not?

Click or tap here to enter text.

1. At the command prompt, type   
   **cd ..**and press **Enter**. At the command prompt, type **pwd** and press **Enter** to view the current working directory.
2. Did your current working directory change? Why or why not?

Click or tap here to enter text.

1. At the command prompt, type **cd user** and press **Enter** At the command prompt, type **pwd** and press Enter to view the current working directory.
2. Did your current working directory change? Where are you now?

Click or tap here to enter text.

1. Did you specify a relative or absolute pathname to your home directory when you used the cd root command?

Click or tap here to enter text.

1. At the command prompt, type **cd etc** and press **Enter**.
2. What error message did you receive and why?

Click or tap here to enter text.

1. At the command prompt, type **cd /etc** and press **Enter**.
2. At the command prompt, type **pwd** and press **Enter** to view the current working directory.
3. Did your current working directory change?

Click or tap here to enter text.

1. Did you specify a relative or absolute pathname to the /etc directory when you used the cd /etc command?

Click or tap here to enter text.

1. At the command prompt, type **cd /** and press **Enter**.
2. At the command prompt, type **pwd** and press **Enter** to view the current working directory.
3. Did your current working directory change?

Click or tap here to enter text.

1. Did you specify a relative or absolute pathname to the / directory when you used the cd / command?

Click or tap here to enter text.

1. At the command prompt, type **cd ~user** and then press **Enter**.
2. At the command prompt, type **pwd** and press **Enter** to view the current working directory.
3. Did your current working directory change?

Click or tap here to enter text.

1. Which command discussed earlier performs the same function as the cd ~ command?

Click or tap here to enter text.

1. At the command prompt, type **cd Desktop** and press **Enter** (be certain to use a capital D).
2. At the command prompt, type **pwd** and press **Enter** to view the current working directory.
3. Did your current working directory change? Where are you now?

Click or tap here to enter text.

1. What kind of pathname did you use here (absolute or relative)?

Click or tap here to enter text.

1. Currently, you are in a subdirectory of user1’s home folder, three levels below the root. To go up three parent directories to the / directory, type **cd ../../..** and press **Enter** at the command prompt.
2. Type **pwd** 🡪 press **Enter** to ensure that you are in the / directory.
3. At the command prompt, type **cd /etc/samba** and press **Enter** to change the current working directory using an absolute pathname.
4. Type **pwd** and press **Enter** at the command prompt to ensure that you have changed to the /etc/samba directory.

Click or tap here to enter text.

1. At the command prompt, type **cd /home/user/Desktop** and press **Enter** to change your current working directory to the Desktop directory underneath user’s home directory.
2. Verify that you are in the target directory by typing the **pwd** command at a command prompt and press **Enter**.

Click or tap here to enter text.

1. Type **poweroff** to shutdown Linux.

# Project 3-2: BASH Tab-completion

Time required: 10 minutes

In this hands-on project, you navigate the Linux filesystem using the Tab-completion feature of the BASH shell.

1. Log in to Kali with user. Open a terminal.
2. Type **cd ~** to make sure you are in your home directory.
3. At the command prompt, type **cd ..** and press **Enter**.
4. Type **cd ho** at the command prompt 🡪 press **Tab** three times**.**
5. What is displayed on the screen and why?

Click or tap here to enter text.

1. Press the **Ctrl** and **c** keys simultaneously to cancel the command and return to an empty command prompt.
2. At the command prompt, type **cd b** and press **Tab**.
3. Did the display change?

Click or tap here to enter text.

1. Press the **Tab** key again.
2. How many subdirectories under the root begin with “b”?

Click or tap here to enter text.

1. Type the letter **i**. Notice that the command now reads “cd bi.” Press the **Tab** key again.
2. Which directory did it expand to? Why?

Click or tap here to enter text.

1. Press the **Ctrl** and **c** keys simultaneously to cancel the command and return to an empty command prompt.
2. At the command prompt, type **cd m** and press **Tab**. Press **Tab** once again after hearing the beep.
3. How many subdirectories under the root begin with “m”?

Click or tap here to enter text.

1. Type the letter **e**. Notice that the command now reads “cd me.” Press **Tab**.
2. Press **Enter** to execute the command at the command prompt. Next, type the **pwd** command and press **Enter** to verify that you are in the /media directory.

# Project 3-3: ls Wildcard Metacharacters

Time required: 15 minutes

In this hands-on project, you use the **ls** command alongside wildcard metacharacters in your shell to explore the contents of your home directory.

1. Log in to Kali with user. Open a terminal.
2. Type **cd ~** to make sure you are in your home directory.
3. Type **touch sample** to create a blank text document.
4. Type **touch sample2** to create a blank text document.
5. Type **touch sample33** to create a blank text document.
6. Type **touch sample3** to create a blank text document.
7. At the command prompt, type **pwd** press **Enter**, and ensure **/user** is displayed showing that you are in the user’s home folder. At the command prompt, type **ls** (Lower case l)
8. How many files with a name beginning with the word “sample” exist in **/user**?

Click or tap here to enter text.

1. At the command prompt, type **ls \*** and press **Enter**. What is listed and why?

Click or tap here to enter text.

1. At the command prompt, type **ls sample** and press **Enter**. What is listed and why?

Click or tap here to enter text.

1. At the command prompt, type **ls sample?** and press **Enter**. What is listed and why?

Click or tap here to enter text.

1. At the command prompt, type **ls sample??** and press **Enter**. What is listed and why?

Click or tap here to enter text.

1. At the command prompt, type **ls sample[13]** and press **Enter**. What is listed and why?

Click or tap here to enter text.

1. Type **poweroff** to shut down Kali.

## Assignment Submission

Submit this completed document in Blackboard.