**Linux Networking**

**Linux Essentials**

Use the list of commands and explore their usage.

* **ls**

This command is used to list all of the files and directories in the current working directory.

* **cd**

This command is used to change the current working directory.

* **pwd**

This command is used to show the complete path of the current working directory.

* **mkdir**

This command is used to create a new directory.

* **rm**

This command is used to remove a directory or a file.

* **cp**

This command is used to copy a file from one directory to another.

* **mv**

This command is used to move file from one directory to another.

* **touch**

This command is used to create a new file.

* **top**

This command is used to check the status of a running process on the system.

* **chmod**

This command is used to change the mode of a file or all files inside a directory. If you want to make a file executable, this is the command, you will have to use.

* **ifconfig**

This command is used to check the IP address configuration including subnet mask, default gateway, and other information about network interface card.

* **ping**

This command is used to verify the connectivity with the remote node on the network.

* **traceroute/tracert**

This command can also be used to find out the connectivity with the remote destination but it provides complete information about the route, the packet took to reach the destination. If the packet got dropped, the command tells, which nodes the packet successfully passed.

* **ss**

This command is used to list all of the socket connections currently active on a host.

* **nslookup**

This command is used to find out the IP address against the domain name.

**Task 1:**

* Login to the your linux or windows machine and open linux terminal/Cygwin terminal.
* Create a new directory named ‘Lab1’by typing **mkdir lab1**
* Change current working directory to new directory by typing **cd lab1**
* Create a new text file named test.txt by typing **touch test.txt**
* Create another file named test2.txt by typing **touch .test2.txt**
* Type **pwd** and write down the output below.

|  |
| --- |
|  |

* Type **ls** and write down the output below.

|  |
| --- |
|  |

* Type **ls -a** and write down the output below.

|  |
| --- |
|  |

* What is the difference between the results of last two commands?

|  |
| --- |
|  |

* What is the reason behind this difference?

|  |
| --- |
|  |

**Task 2:**

* Clear the command terminal by typing **clear.** *(install ncurses package under utils category for cygwin)*
* Type **ifconfig** *(****ipconfig*** *in windows command prompt, not Cygwin)* and write down the names of network interfaces below.

|  |
| --- |
|  |

* Type **ifconfig eth0 up** *(will work in Linux if connected with Ethernet otherwise use wlan0)*
* Type **ping www.google.com** and check if the network connection is working.
* What is the purpose of **ping** command in your opinion?

|  |
| --- |
|  |

* Type **ifconfig eth0 down** *(will work in Linux. For Windows, disconnect the internet connection).*
* Type **ping www.google.com** and check if the network connection is working?
* Type **ifconfig etho up**
* Type **host www.google.com** and write down the output. *(For Linux only)*

|  |
| --- |
|  |

* What do you think **host** command is used for?

|  |
| --- |
|  |

* Close all open internet connections and type **ss** and write down the output below. *(For linux only)*

|  |
| --- |
|  |

* Open another terminal and type **wget https://download.fedoraproject.org/pub/fedora/linux/releases/22/Workstation/x86\_64/iso/Fedora-Live-Workstation-x86\_64-22-3.iso**
* Minimize this terminal and type **ss** in the previous terminal. Write down the output below.

|  |
| --- |
|  |

* What is the difference between the output of last two outputs and what is the reason?

|  |
| --- |
|  |