**Lab 9**

**Total Points: 100**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**Objectives**

This lab includes the following tasks:

* Install and run Mininet
* Perform some mininet commands for understanding the simulation environment.

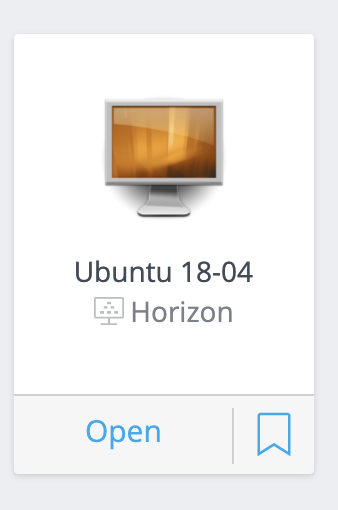
**Due Date and Submission Procedure**

* Due Date: Sunday, November 6th, 11:30 pm
* Submit your report to D2L in the assignment Assignment5-Submission

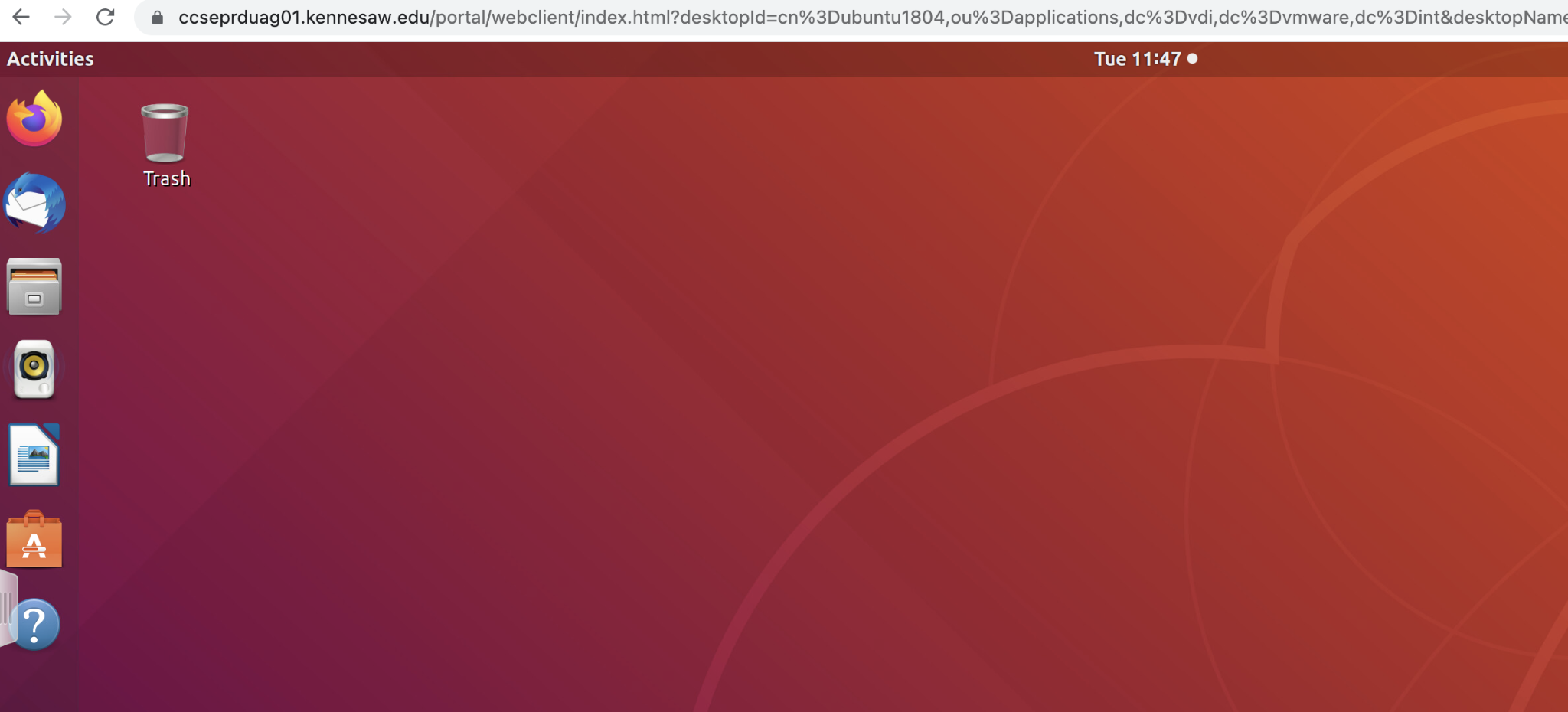
**Instructions**

We are going to use CSE Lab Ubuntu Virtual Machine for this lab.

* To access, please go to: <https://cseview.kennesaw.edu/>
  + You can download the VMware Horizon Client or use the HTML version
* Launch the VMware
* Select Ubuntu Virtual Machine and Launch it.



* You will see Ubuntu. Username: Administrator / Password: linuxadmin
* The interface will look like this

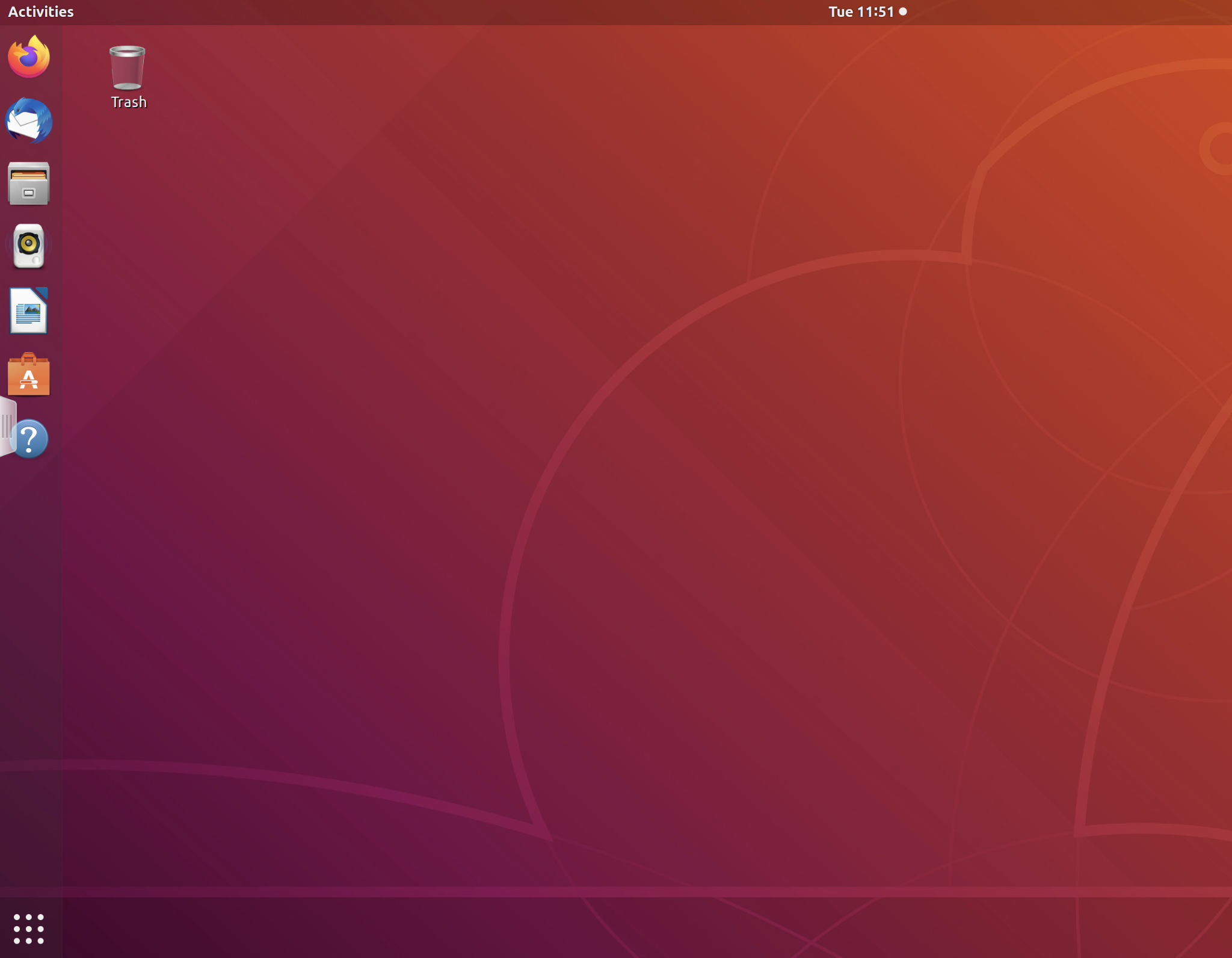


To conduct this lab, we need to install Mininet

* Mininet( is a network emulator which creates a network of virtual hosts, switches, controllers, and links). To install Mininet, follow these steps;
  + Open a browser (Firefox, on the left top menu)
  + Type the following address <https://tinyurl.com/4333-mininet> (This will download an script to install Mininet)
  + Keep the file there

After you download all the require files, you must

* Open a terminal by clicking in the bottom left of the screen and searching “terminal” word





* On the terminal, using cd, go to the folder where the previous file (mininet-install) were downloaded (typically Download folder)
* Once there, type the following command
  + sudo chmod +x mininet-install
  + ./mininet-install
    - Note that this can take some time. Please check the screen for any questions. Always reply Yes for installation. If the password is requested, please use linuxadmin

NOTE: Mininet installation will be permanent in your VM. You can log out and log in later and you do not need to start over. You must continue again in the following step.

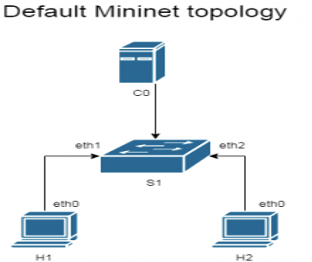
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**Step 1. Testing Installation**

1. **Open a terminal**
2. **Type the following command**
   1. **sudo mn --test pingall**
   2. **Provide and screenshot of the result (20 points)**
   3. **What do you think that the result means? (20 points)**

**Step 2. Mininet CLI**

We will be using CLI to manage our virtual network. The default topology includes two hosts (h1,h2), OpenFlow Switch(s1) and OpenFlow controller(c0).

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1. **Run -> sudo mn (to enter in CLI mode. Commands net and nodes give us information about our nodes and their interconnections)**
   1. **Provide a screenshot with the result of the following commands (20 points)**
      1. **mininet > nodes**
      2. **mininet > net**
   2. **What are those commands providing? (10 points)**
2. **We can find IP address of either host** 
   1. **Run commands**
      1. **mininet > h1 ifconfig -a**
      2. **mininet > h2 ifconfig -a**
   2. **Provide a screenshot of the commands in step 2a. (10 points)**
3. **Check connectivity between hosts**
   1. **Run commands**
      1. **mininet > h1 ping h2**
      2. **mininet > dump**
   2. **Provide a screenshot of the commands in step 3a. (10 points)**
   3. **Provide an explanation of the results of the commands in step 3a (10 points)**