

Assign-04 : The “Can We Talk” System [TESTS]

Introduction

Your upcoming submission has you (and your partner(s)) being asked to follow an A-04 Test Plan and create/complete an accompanying Test Report for submission along with your TAR'd source code.

This document serves as a preliminary glimpse at the tests that you will be executing on your **Can We Talk** system. If you can run these tests on your system and nothing bad or unforeseen happens (i.e. system crash or hang) – then this might be a good indication that your system is in good shape and actually operates as required. If you do experience problems, then you will know where to concentrate your efforts in debugging and correcting your solution.

In light of the COVID-19 situation, partners are not being encouraged to physically get together in order to run through this sample test plan. Instead – I would recommend that each partner runs through the test plan themselves and compares notes on successes and failures and works together to correct any issues. But in end only **one partner needs to submit** the completed Test Report

Go ahead and read on – and run some tests ...

Overall Instructions

The following test cases come complete with unique test identifiers as well as set of testing steps that need to be followed.

1. This set of tests assumes that the *Can We Talk* client (i.e. the chat-client application) is running on 2 different Linux VM's
2. It also assumes that the *Can We Talk* server (i.e. the chat-server application) is running on one of these Linux VM's.
3. For the purposes of the tests, **User-1** is the person running on client on the VM where the server application is also running. **User-2 is the person who should be running the client on the VM not running the server application – but in our configuration, User-2 is allowed to be running on the same VM as the server as well.**
4. In order to properly run the CHAT system, we need to ensure that the network adapters on the Linux VM's are configure properly – please see the Setting Up Bridged Network section below.
5. Messages to be entered are **bolded** and **highlighted in yellow** in the testing steps below. Linux command that need to be entered are **highlighted in green** in the testing steps below.
6. **It is important that you read the entire set of testing steps before starting to execute the test. Some of the tests require activity to happen simultaneously between the two users.**
7. When a test asks for “ ... a screen capture to be taken and recorded ...” – it simply means that the user required to do so, takes a screen capture and inserts it as a labeled diagram in their Test Report. Please see the Taking Screen Captures section below.

Assign-04 : The “Can We Talk” System [TESTS]

Who Is Doing the Testing?

User-1 Name and Linux VM IP Address	Name: _____ IP Address: _____
User-2 Name and Linux VM IP Address	Name: _____ IP Address: _____

Functional Tests

Test ID	FT-01
Steps	<ol style="list-style-type: none">User-1 send a 57 character message as follows: The quick brown fox jumped over the crazy lazy orange cowEach user takes and records a screen capture of their client application after the message is sent and received

Test ID	FT-02
Steps	<ol style="list-style-type: none">This test can be completed immediately following FT-01User-1 begins to enter a 57 character message as follows: The quick brown fox jumped over the crazy lazy orange cowWhile User-1 is entering the message (and before pressing send on the message), User-2 enters the message Hello and presses send.User-1 takes and records a screen capture as soon as the Hello message arrives from User-2Each user exits the client application and the chat-server application is to be terminated

Test ID	FT-03
Steps	<ol style="list-style-type: none">The chat-server application and both chat-client applications need to be restartedUser-1 and User-2 will take turns entering and sending messages (back and forth). The message contents will simply be in the format message-## where ## starts at 01 for each user and ends at 05.After each user has entered their next message – each user takes and records a screen capture of their client application

Assign-04 : The “Can We Talk” System [TESTS]

Test ID	FT-04
Steps	<ol style="list-style-type: none">1. This test is to be completed after FT-03 without restarting any application2. User-1 enters the message message-06 and presses send3. Each user takes and records a screen capture of their client application

Boundary Tests

Test ID	BT-01
Steps	<ol style="list-style-type: none">1. This test is to be completed after FT-04 without restarting any application2. <u>Synchronizing the sending of the message in this test is critical!</u> So please ensure that both users press send at the same time on their keyboards3. Each user enters the message Let's see if this works and waits to press enter to send ...<ul style="list-style-type: none">• Since you are potentially testing on one VM – then ensure that you have entered the text (without pressing send) in your two <i>client</i> windows• Prepare your two client windows so that you can switch between them and press enter as quickly as possible ... clearly you will not be able to press enter at the same time in both windows – but press enter (in the following step) as quickly as you can in both client windows4. Each user presses enter (in order to send the message) <u>at approximately the same time</u>5. After receiving the messages, each user takes and records a screen capture of their client application

Assign-04 : The “Can We Talk” System [TESTS]

Exception Tests

Test ID	ET-01
Steps	<ol style="list-style-type: none"> 1. This test is to be completed after BT-01 without restarting any application 2. User-1 needs to determine the PID of the chat-server process 3. Synchronizing the sending of the message in this test is critical! So please ensure that both users press send at the same time on their keyboards 3. Each user enters the message Let's see if this works and waits to press enter to send ... <ul style="list-style-type: none"> • Since you are potentially testing on one VM – then ensure that you have entered the text (without pressing send) in your two <i>client</i> windows • As well in this test case, you need a third window (perhaps the window that the server is running in) – enter the kill command in the following step into this window and do not press enter • Prepare your two client windows as well as the third window (with the kill command) so that you can switch between them and press enter as quickly as possible ... clearly you will not be able to press enter at the same time in both windows – but press enter (in the following step) as quickly as you can in both client windows 4. User-1 enters the command kill -9 <PID> (where PID was determined in step 2 above) in a terminal on their machine <ul style="list-style-type: none"> • execute the kill command in the third window and then switch to the two client windows and (as quickly as possible) execute steps 5 below 5. Each user then presses enter (in order to send the message) at approximately the same time 6. Each user takes and records a screen capture of the terminal window where their client application was running after pressing send <ul style="list-style-type: none"> - ensure that each client is closed

Test ID	ET-02
Steps	<ol style="list-style-type: none"> 1. The chat-server application and both chat-client applications need to be restarted 2. User-1 enters the message >>bye<< and sends it. After the message is sent, ensure that each user takes and records a screen capture of their client application 3. User-2 enters the message >>bye<< and sends it. After the message is sent, ensure that each user takes and records a screen capture of their client application 4. On the Linux VM where the chat-server application is running, launch a new terminal and enter the command: ps -eaf grep chat Take and record a screen capture of the results.

Assign-04 : The “Can We Talk” System [TESTS]

Setting Up Bridged Network

By default, VMPlayer configures the network adapter of the Linux installation to network address translation (NAT) mode when it installs and configures the system.

If you remember from OSF in first year, NAT is really what your router does on your network at home. That is, the router has an IP address which can be used on the internet and all devices on your network behind the router are assigned a 192.168.xxx.xxx format IP. In this case, your HOST computer (i.e. the Windows OS) acts as the router and has such an internet ready IP address. The VM has been assigned a 192.168.xxx.xxx format address. You can see this on your VM if you launch a terminal and enter the command `ifconfig` (equivalent to an `ipconfig` command on Windows). You will see an ethernet adapter in the `ifconfig` output with a 192.168-type of address.

What we need to do is to configure each VM used for your clients and server to use a BRIDGED type of network adapter. The BRIDGED adapter will give each VM a unique IP address on the Conestoga network – so that you can connect from one VM to another VM (on the 2 different Windows HOST computers).

To do so, simply follow the instructions in the following screen captures ...

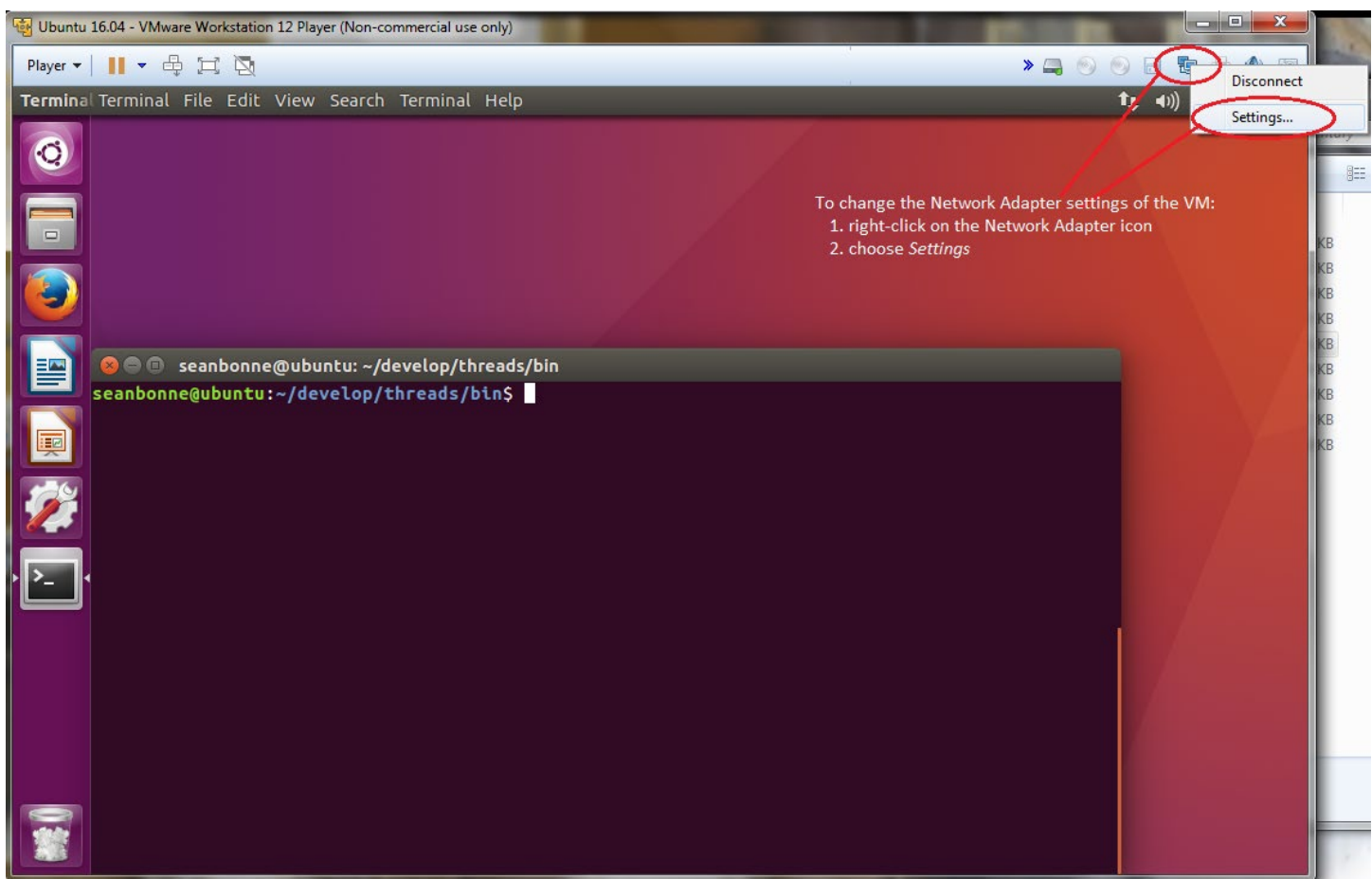


Figure 1: Getting Into Network Adapter Settings

Assign-04 : The “Can We Talk” System [TESTS]

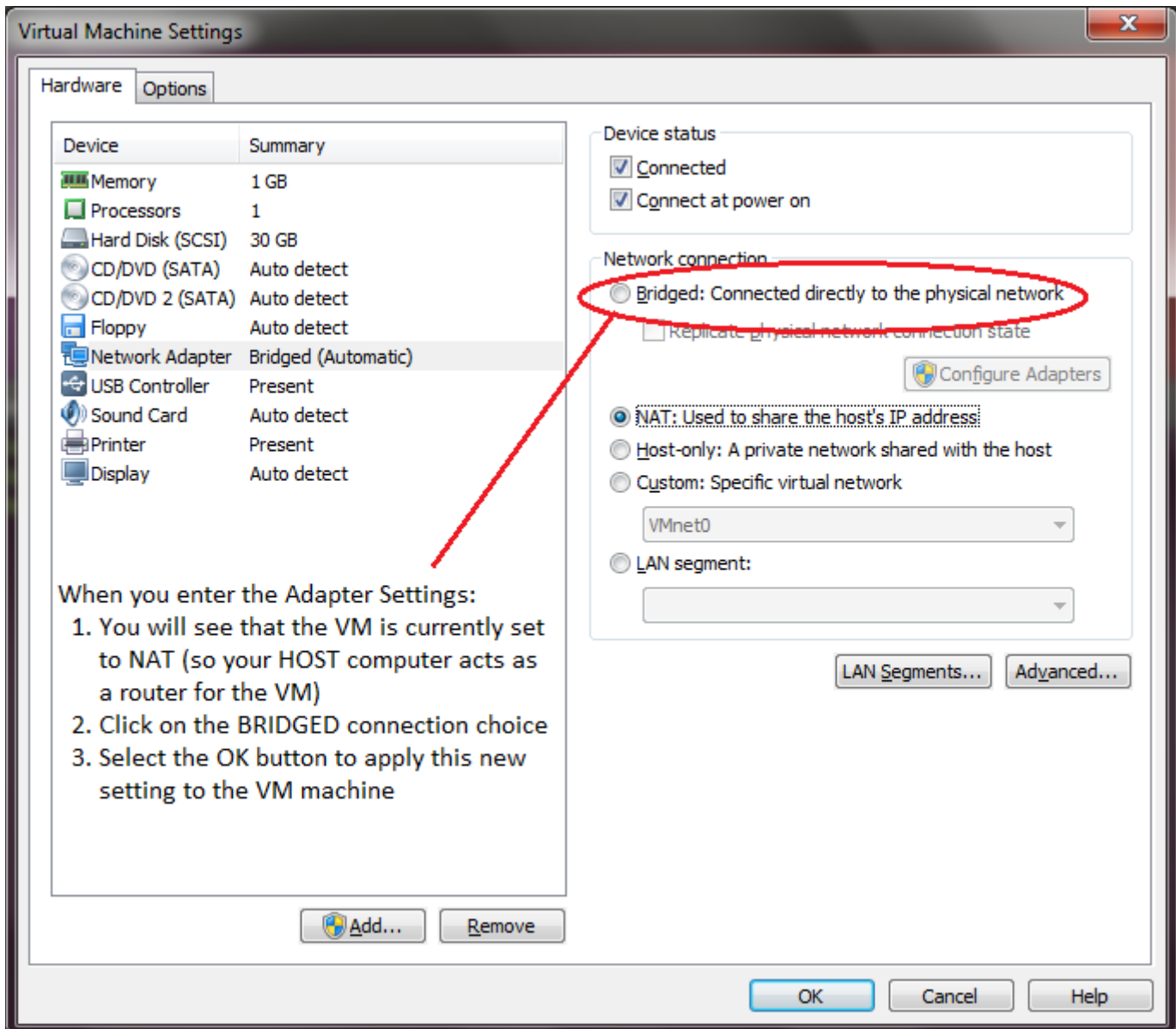


Figure 2: Selecting BRIDGE mode

Assign-04 : The “Can We Talk” System [TESTS]

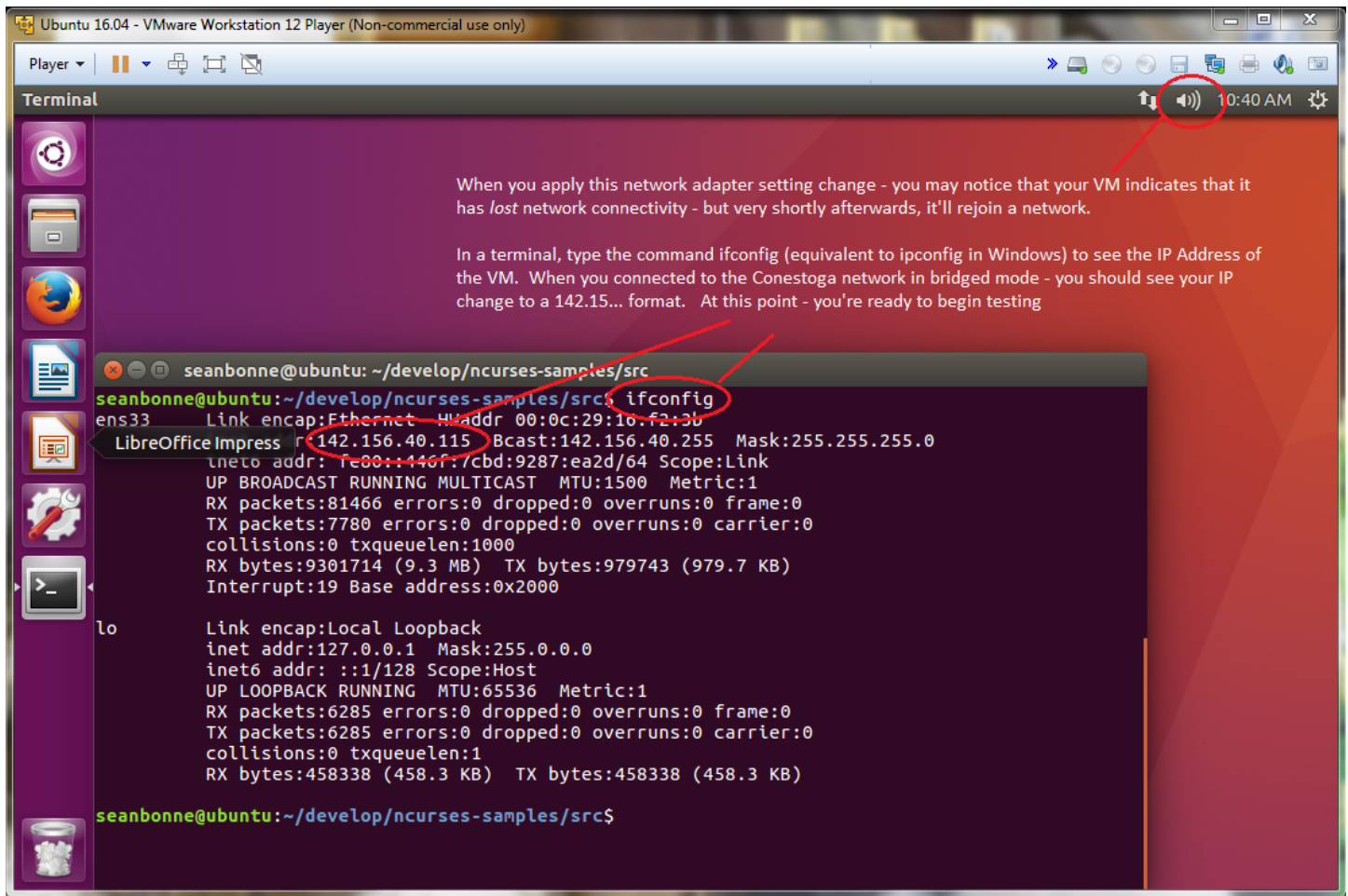


Figure 3: Verifying new IP Address

Taking Screen Captures

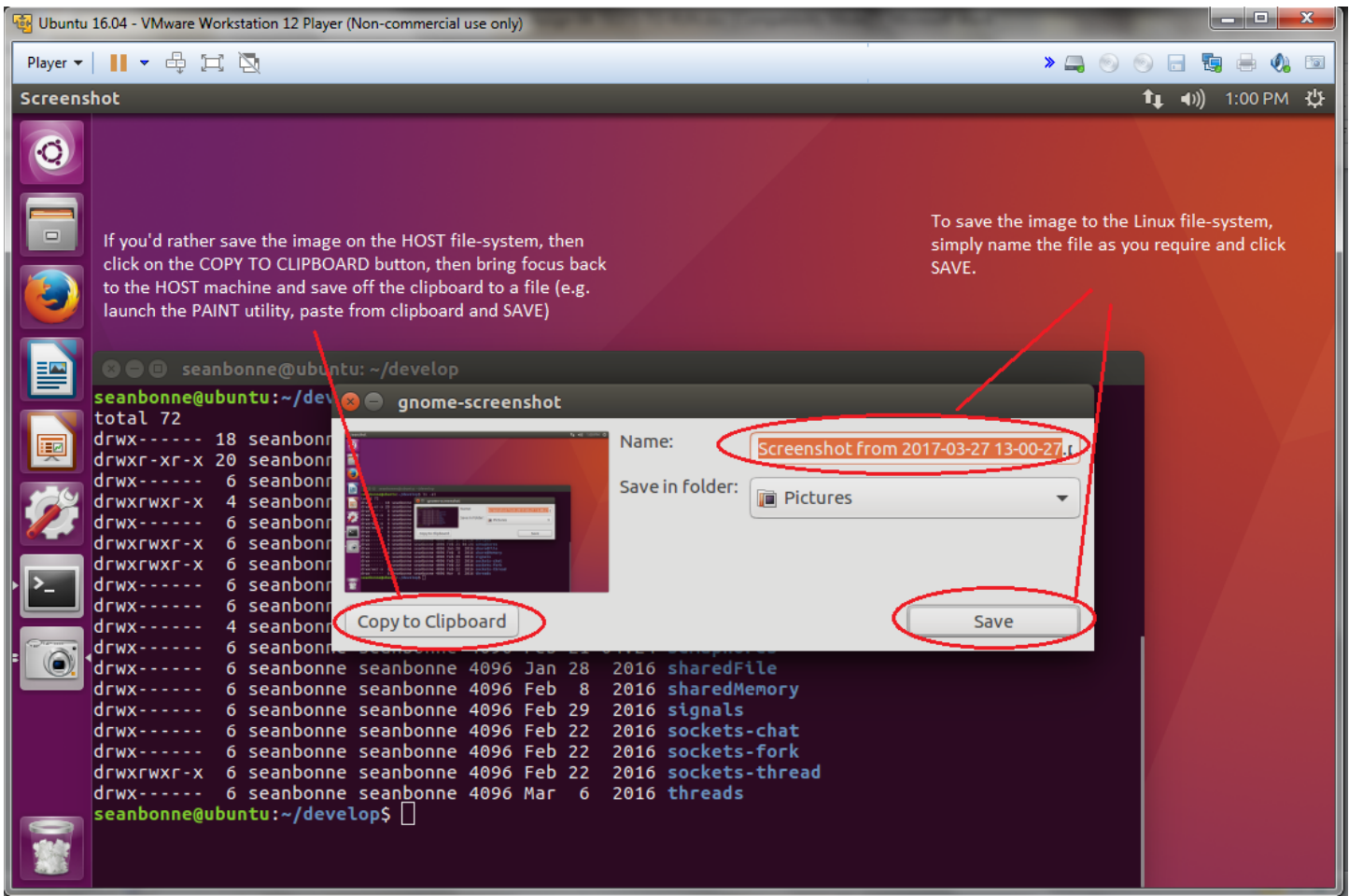
If you are using the VM's installed on the lab computers – you can follow these instructions for taking and saving the screen captures required for the tests.

VMPlayer allows you to take screen captures and also allows you to (1) save them (by default) to the `/home/student/Pictures` directory in PNG format or (2) save to clipboard and return to the HOST computer where you can save them to a file yourself.

Taking a screen shot is easy – simply follow these instructions:

1. Focus on the terminal or application that you want a screen capture of
2. Simultaneously press ALT-PRNTSCR and you will see a window like below pop-up. NOTE: If you do this on a virtual machine that has speakers attached you'll also hear the classic camera snapshot

Assign-04 : The “Can We Talk” System [TESTS]



3. As noted in the text overlaid in the image above – you are now able to save the image to the Linux file-system or the HOST computer’s file-system. The choice is yours ...