Experiment 2 - Exporting Display On To Other Systems

Aim: Accessing Graphical Desktop of Raspberry Pi Using SSH and VNC and displaying on to other systems.

Requirements:

- Raspberry Pi with an SD card running Raspbian operating system (OS) and connected with Ethernet cable or WiFi.
- Laptop running Linux OS—I prefer Ubuntu 16.04

Steps to be followed:

1. Connect all the required interfaces to the raspberry kit and start the system. After system has opened follow the following steps.
2. Accessing Graphical Desktop Of Raspberry Pi Using SSH And VNC Installing required packages on Raspberry Pi

Internet access is available on Raspberry Pi since Ubuntu connected to a Wi-Fi network has shared its connection over Ethernet. Run the following command to update the packages list from the repositories:

- *$ sudo apt-get update*
  Graphical desktop of Raspberry Pi can be shared using tightvncserver package. For that, run the following command:
- *$ sudo apt-get install tightvncserver*
  Run the following command to perform the initial set up of tightvncserver:
- *$ tightvncserver*
  Enter a suitable password for future connections.
  Run the following command to copy and paste from VNC server:
- *$ sudo apt-get install autocutsel*
  Add autocutsel -fork in /home/pi/.vnc/xstartup using the following command:
- *$ sudo nano /home/pi/.vnc/xstartup*
  Save it using Ctrl + x.
  Contents of the modified xstartup file can be viewed using the following command:
- *$ cat .vnc/xstartup*
  Restart VNC server for autocutsel to take effect, using the following command:
- *$ vncserver -kill :1 then command $ vncserver :1*

3. Accessing Raspberry Pi using VNC Viewer
   Although Raspberry Pi has the required packages installed to stream its graphical desktop, VNC Viewer is needed to access it. Since we are using an Ubuntu system to access Raspberry Pi, install VNC Viewer using the following command:

- *$ sudo apt-get install ssvnc*
  You may need to install xtightvncviewer using the following command:
- *$ sudo apt-get install xtightvncviewer*
  It is now possible to access the graphical desktop of Raspberry Pi using the following command:
- *$ xtightvncviewer 192.168.0.193:1*

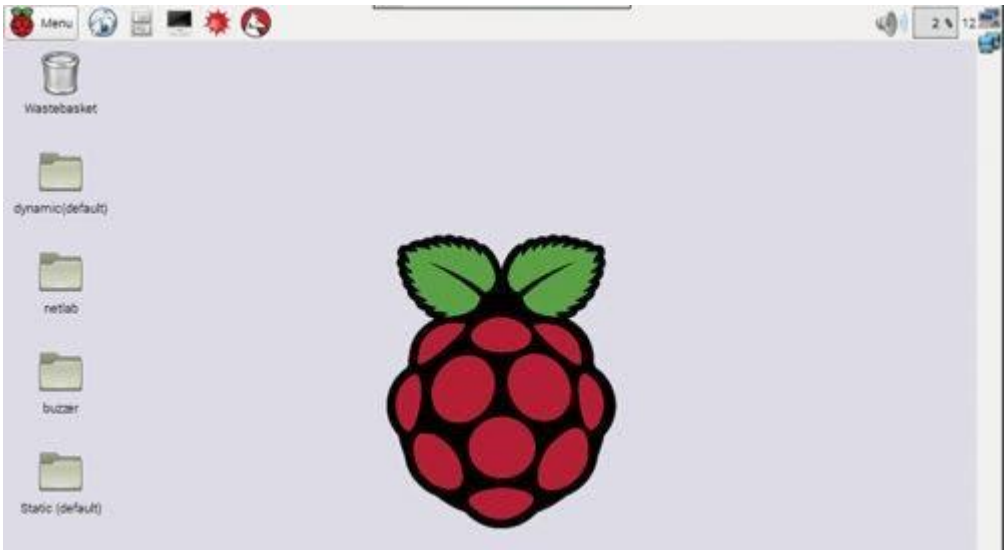
Replace 192.168.0.193 with the IP address of your Raspberry Pi. Enter the password to access it. Alternatively, the same results can be obtained using RealVNC Viewer package available on www.realvnc.com

Raspberry Pi can be logged on over SSH using an Ethernet network with Ubuntu system. Graphical desktop of Raspberry Pi running VNC server can be accessed using VNC Viewer. Internet can be accessed on Raspberry Pi by sharing the Wi-Fi connection of Ubuntu system. This configuration lets you access Raspberry Pi from any remote location using a laptop and a regular Ethernet cable.

Output:

- viewing contents of modified xstartup file

- Raspbian OS home screen



Result:

In this way we access a graphical desktop of Raspberry Pi Using SSH And VNC Installing required packages on Raspberry Pi.