Accessing RCS IBM Console in Windows Using Linux Virtual Machine

For Graphics Simulation Experiment, Real Time Applications, ECSE 4760

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1 Introduction

The Graphics Simulation Experiment asks the students to log onto the RCS UNIX workstations to access the PDF.NET file. Theoretically, it is possible to log onto an RCS IBM console remotely from any X Window terminal, but this does not always work well for Windows users. If you do not want to format your hard disk to install another operating system, this instruction will introduce a simple method to access RCS IBM console in Windows.

2 Installing a Virtual Machine

A virtual machine (VM) is a "completely isolated operating system installation within your normal operating system". Thus with a virtual machine one can install other operating systems under the original system, without formatting hard disk. (The VM will create a virtual hard disk)

The most widely used two VMs are VMware Workstation by VMware and VirtualBox by Oracle. Among them, VirtualBox is a free software, and can be downloaded from: http://www.virtualbox.org/wiki/Downloads

After you have downloaded VirtualBox, install it on your computer. Then you will be able to install other operating systems like Linux. Since you are installing Linux within your running Windows and Virtual Machine, it will be much slower than running real Linux.

3 Installing Linux in Virtual Machine

If you have installed a Virtual Machine, say, VirtualBox, you can now run it on your windows. To install Linux on your virtual machine, you will need the Disc Image file (ISO file) of Linux. There are lots of free Linux systems such as Ubuntu, OpenSUSE, Red Hat and so on. For example, you can download the ISO file of Ubuntu from: http://www.ubuntu.com/desktop

Run your VirtualBox and click on "New" to create a new Virtual Machine. Be sure to choose the correct OS Type that you wish to install.
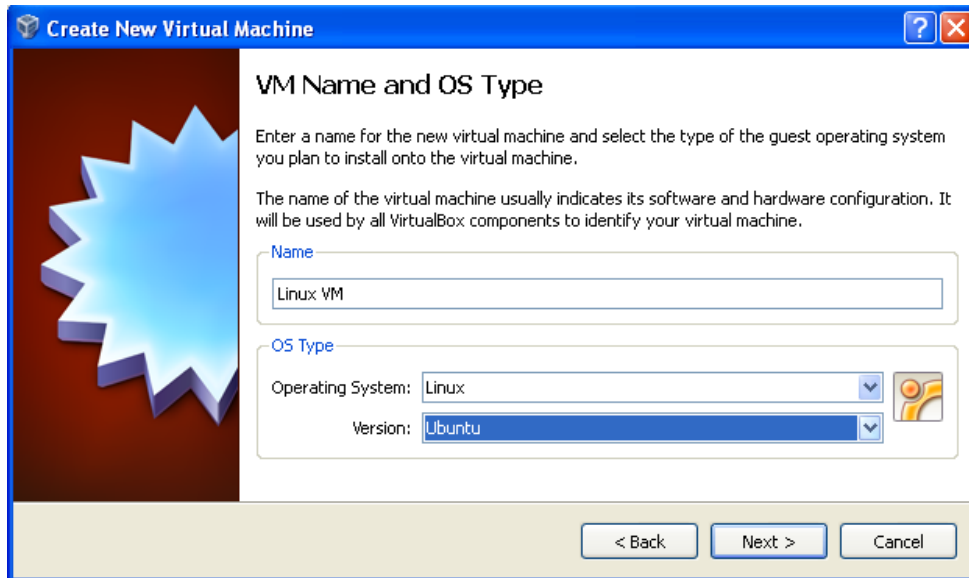
1

Figure 3.1 Configure the VM OS Type.

Then allocate a proper memory size for your virtual OS (512MB would be good if you are installing Linux on your laptop). Create a new virtual hard disk in a proper path, and finish creating this virtual machine. Then click on "Settings" to set up your virtual machine, then click on "Network". Enable your Network Adapter and attach to "Bridged Adapter" or "NAT". Click "Storage", click CD/DVD driver icon, and choose you Linux ISO file. Click on "OK" button and then start your machine. Now you can begin installing Linux on your virtual machine.
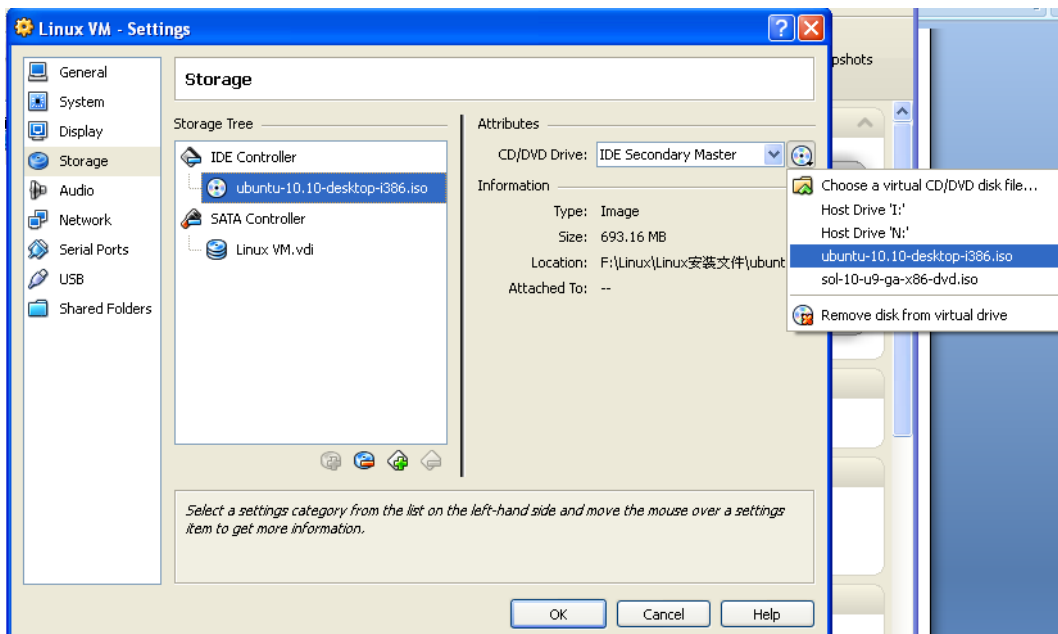

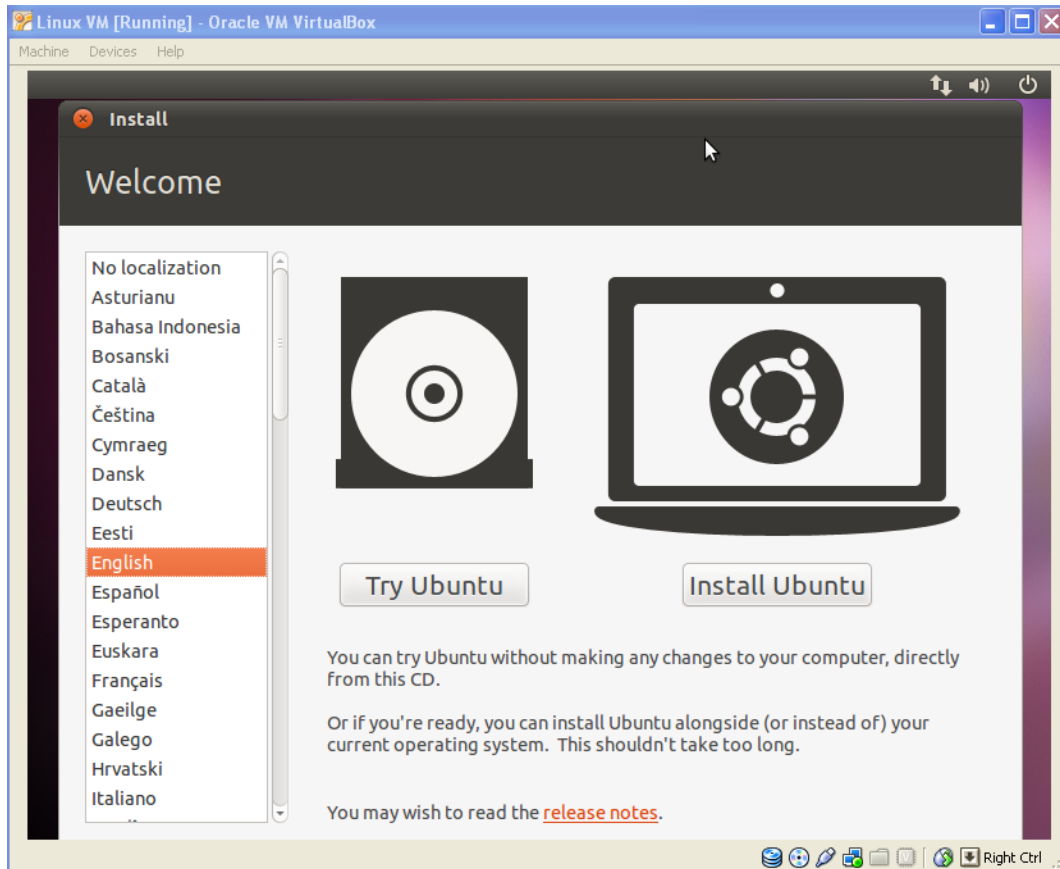Figure 3.2 Set up your virtual machine.

2

Figure 3.3 Begin to install Linux on your virtual machine.

4 Accessing RCS IBM Console in Virtual Machine

After you have installed Linux (e.g., Ubuntu) on your virtual machine, you can run it in a window or with fullscreen. Click "Applications", "Accessories", "Terminals" to use the command lines.

Now you can access RCS IBM console by typing:

ssh *username*@**rcs-ibm.rpi.edu**

If it asks you "Are you sure you want to continue connecting (yes/no)? " Just type in yes and press enter. You will also be asked to type in your password, but there will be no echo. After you successfully log in, you will see the welcome words. Now you can type your commands to begin execution of the DX program:

setenv DXMACROS /dept/ecse/rta/pdf
setup dx
dx &

After entering these commands, you should see the graphical interface of the program as in Figure 4.3. If it says "Error: Can't open display: unix: 0", you can type in

exit

to log out. Then use

ssh -X *username***@rcs-ibm.rpi.edu**

to log in again.

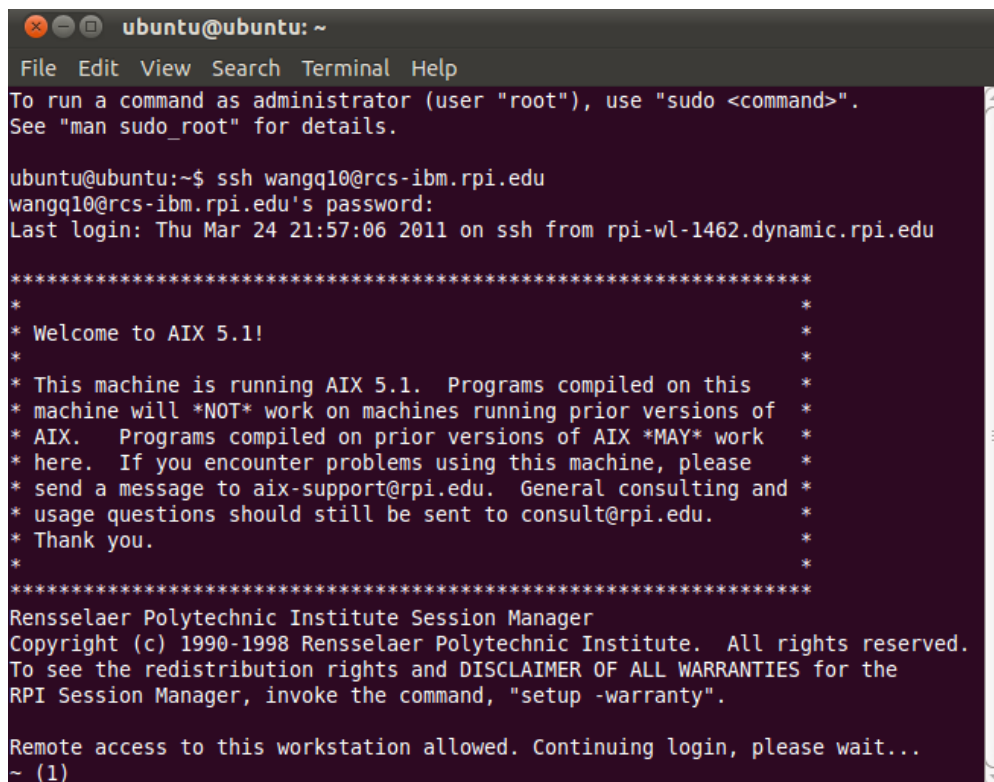Figure 4.1 Opening the terminal.

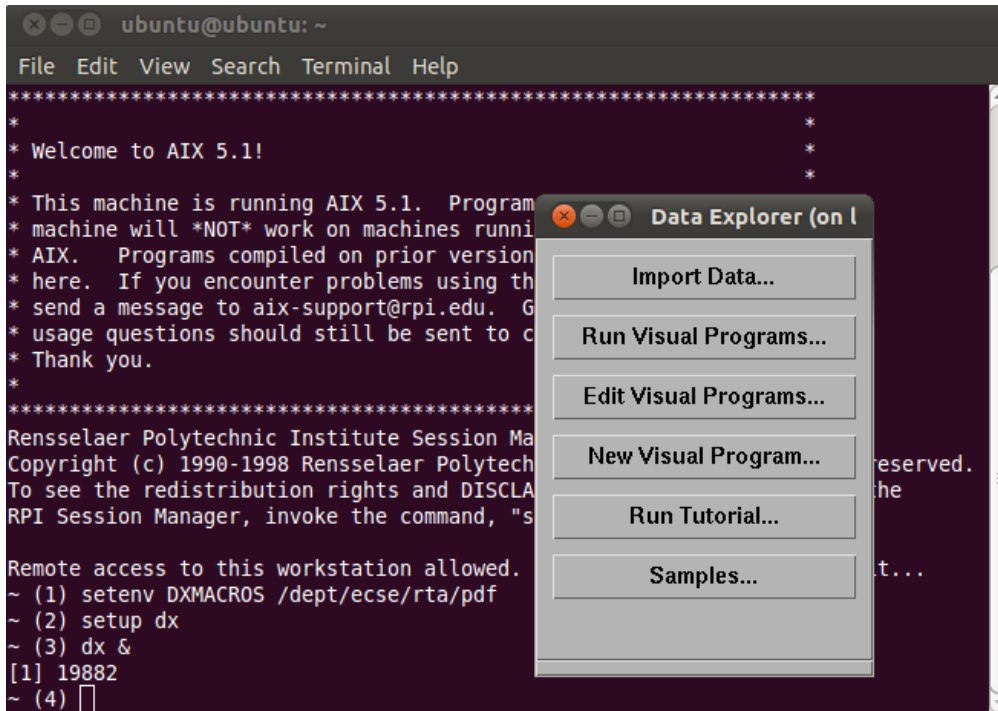Figure 4.2 Accessing the RCS IBM console.

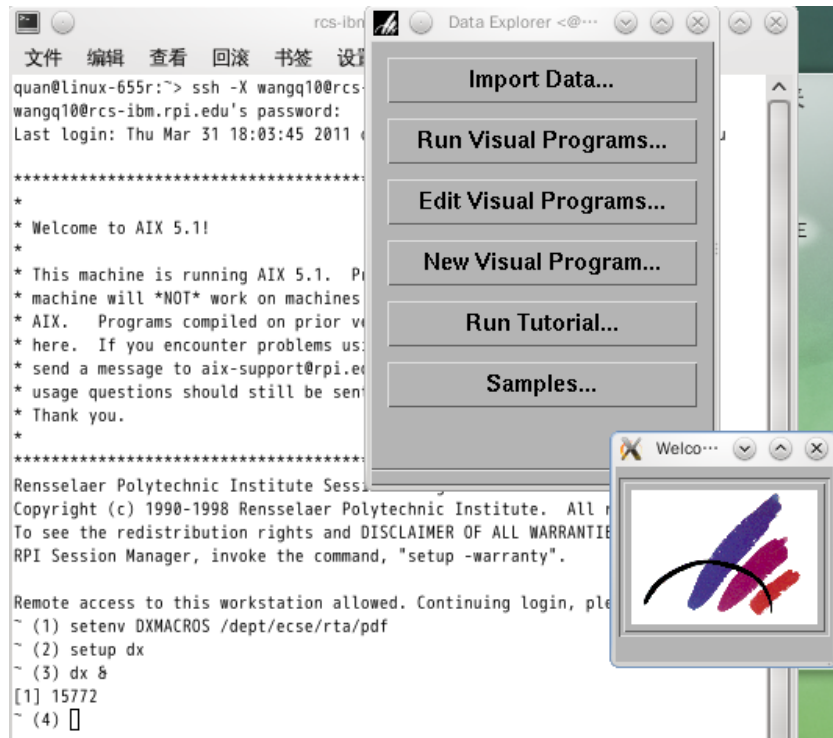Figure 4.3 Graphical interface of the DX program.

Figure 4.4 Graphical interface of the DX program in OpenSUSE.

5 Other Approaches

Virtual machine is not your only choice. There are other approaches with which you can run Linux without formatting your hard disk.

- ❖ Ubuntu provides Windows users a special function named *wubi*. If you load your ISO file to your virtual drive, you will see a *wubi.exe* file in your CD/DVD directory. Double click it and it will install Ubuntu in your Windows just like other Windows softwares. You can also uninstall Ubuntu very easily. Using *wubi*, you will not be able to shift between Linux and Windows just like when using virtual machine, but *wubi* should be much faster than virtual machine, while still slower than real Linux. Besides, your will be able to access your whole hard disk in *wubi*. (In virtual machine, you only have access to your virtual hard disk)

- ❖ If you even do not want to install virtual machine or *wubi*, Ubuntu allows you to try it without installing anything on your computer. Just burn the ISO file to a CD or DVD, and boot from CD/DVD (You can also make a USB boot disk, but it is a little more complex). Ubuntu will ask you whether you want to install it or just try it. Trying Ubuntu without installing it also allows you to have access to your whole hard disk and network.