

## Lab2: Use RF notes

### *Download and install the VMware*

To install the Windows VMware Player, go to the web address found [here](#) and register for the product. Agree to the end user license agreement and then select to install the binary installer seen below:

VMware Player for Window 32-bit and 64-bit (.exe)  
MD5SUM: 780b2c4e2b1610dea3090b1cd81d5ad7  
SHA1SUM: f6c451a11a4fe66e5a465de960de1358e83b8314

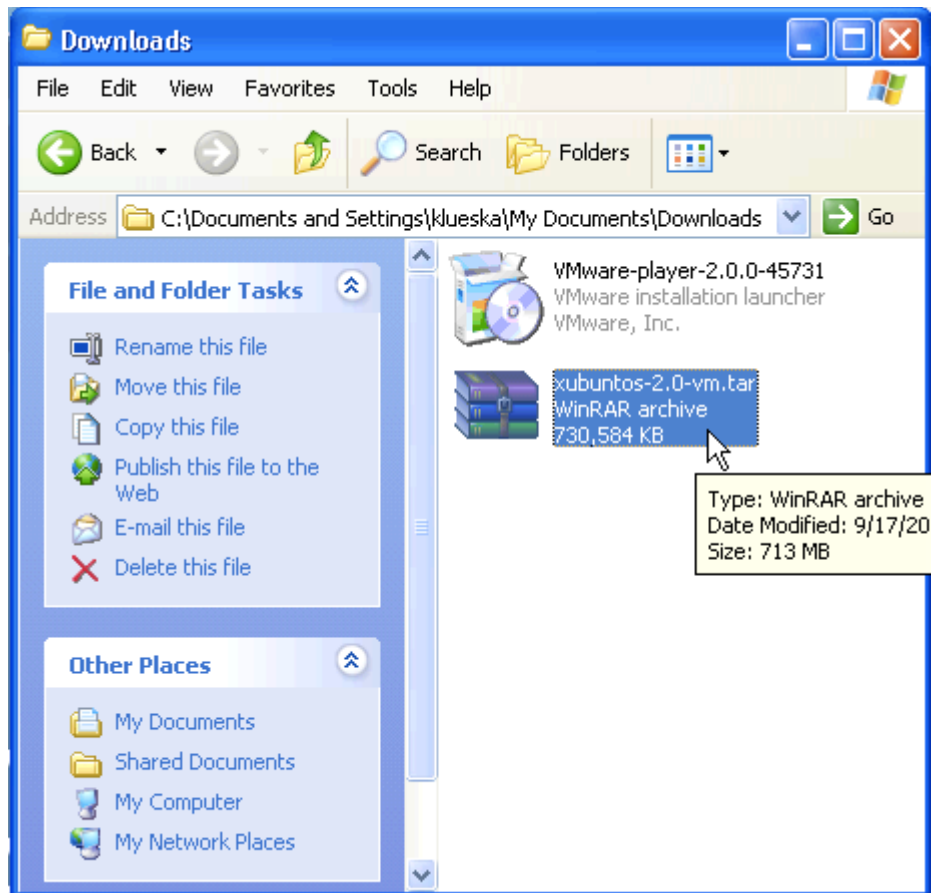


### *Running XubunTOS in Windows System VMware Player*

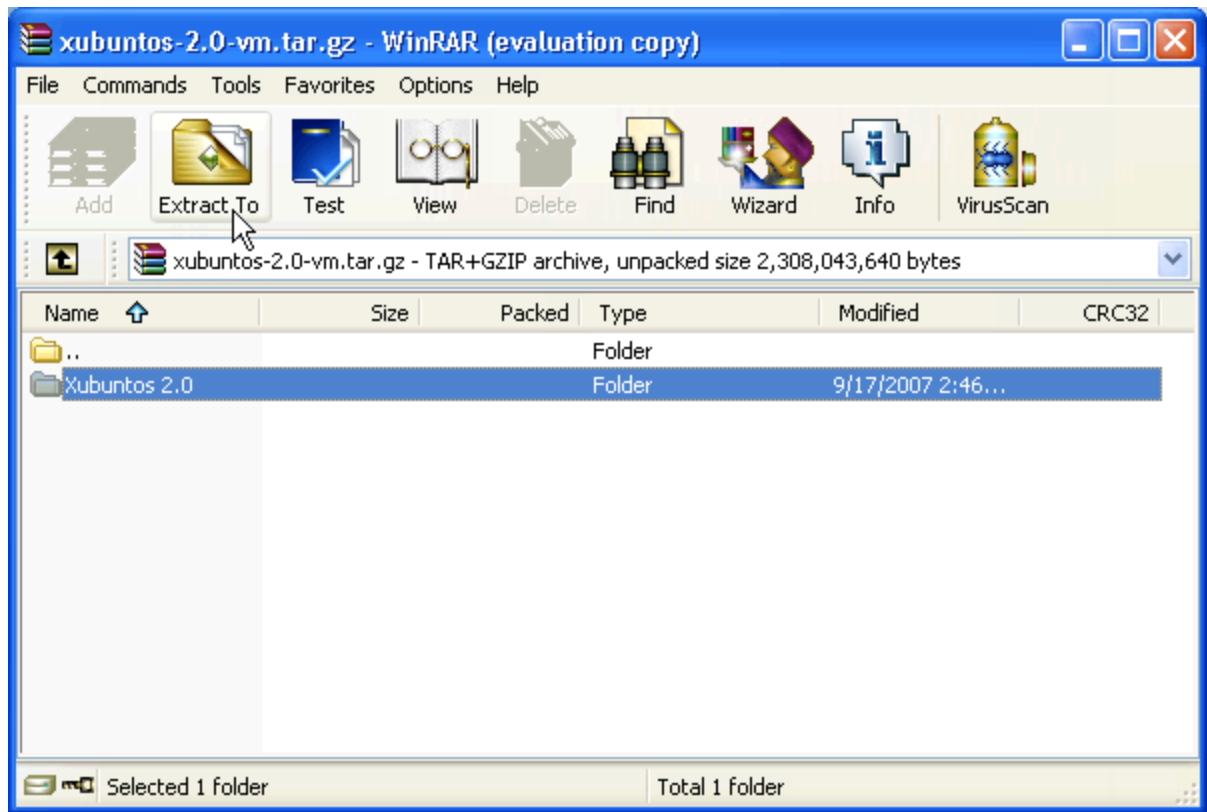
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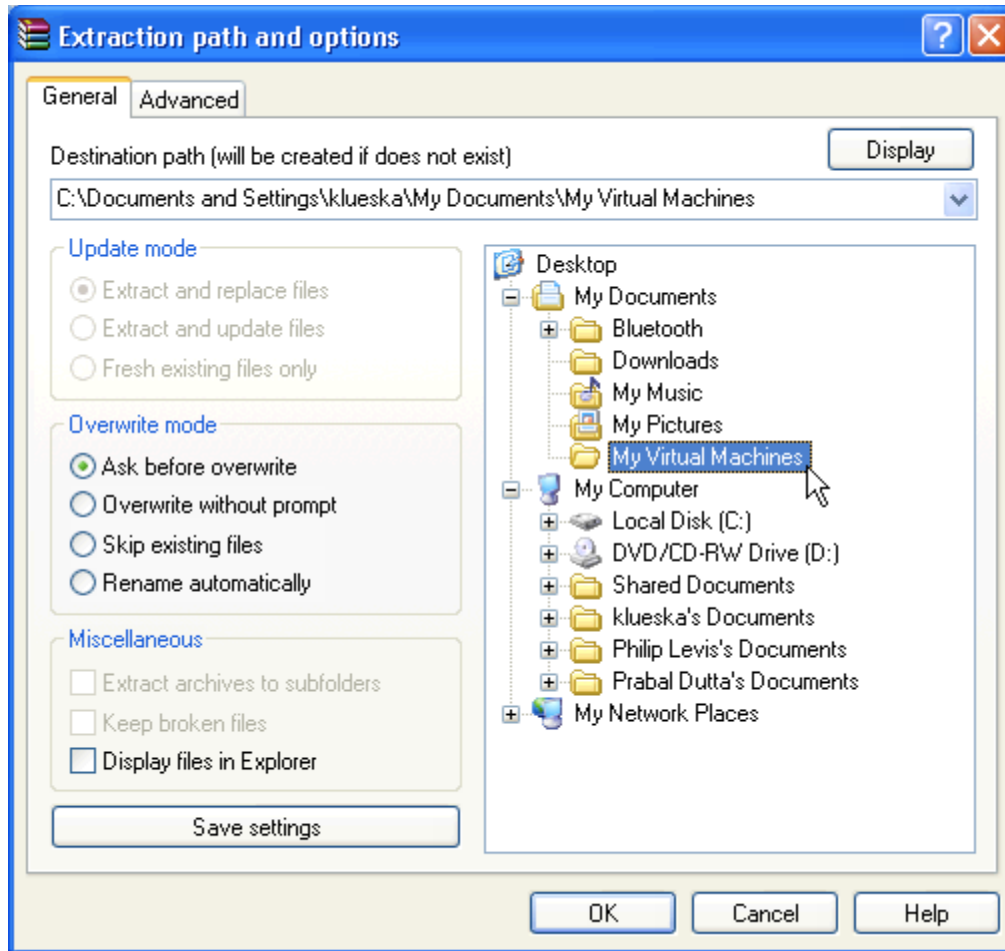
To start running the XubunTOS virtual machine, you first need get a copy of the XubunTOS virtual machine image from [here](#). It is stored as a zip file that you will need to extract with your favorite Archive Utility. In my case, I'm using WinRAR, and the instructions below are based on this.

First, double click on the 'xubuntos-2.1-vm.tar.gz' file you just downloaded.



And extract it to the 'My Virtual Machines' directory created for you during the VMware Player installation process. For me this was located in 'C:\Documents and Settings\klueska\My Documents\My Virtual Machines'

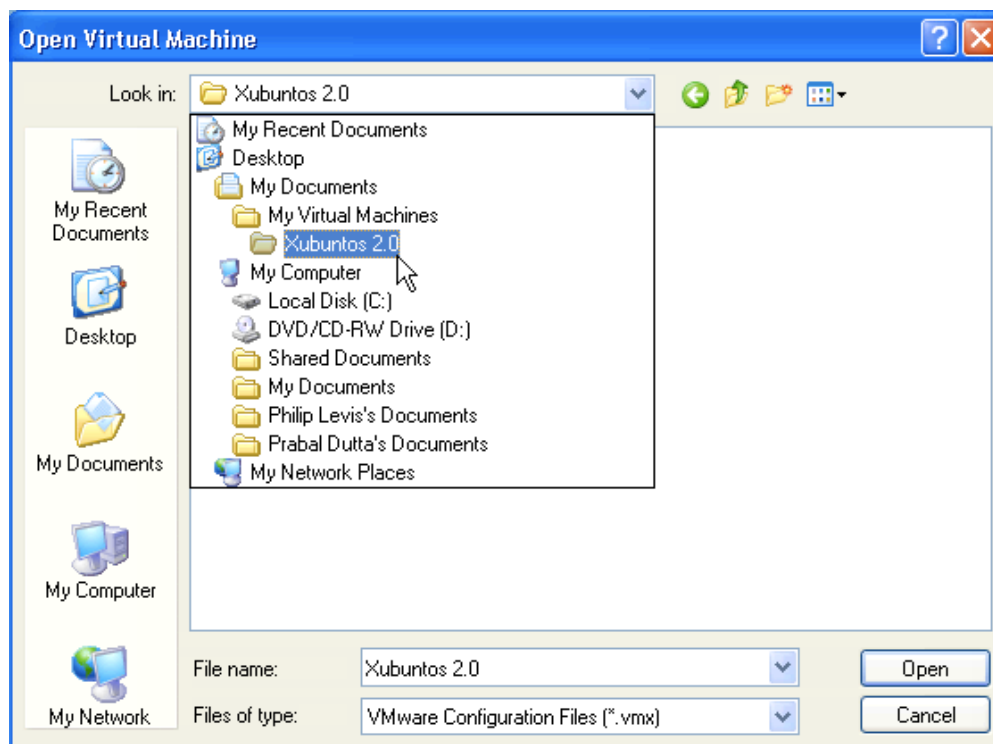




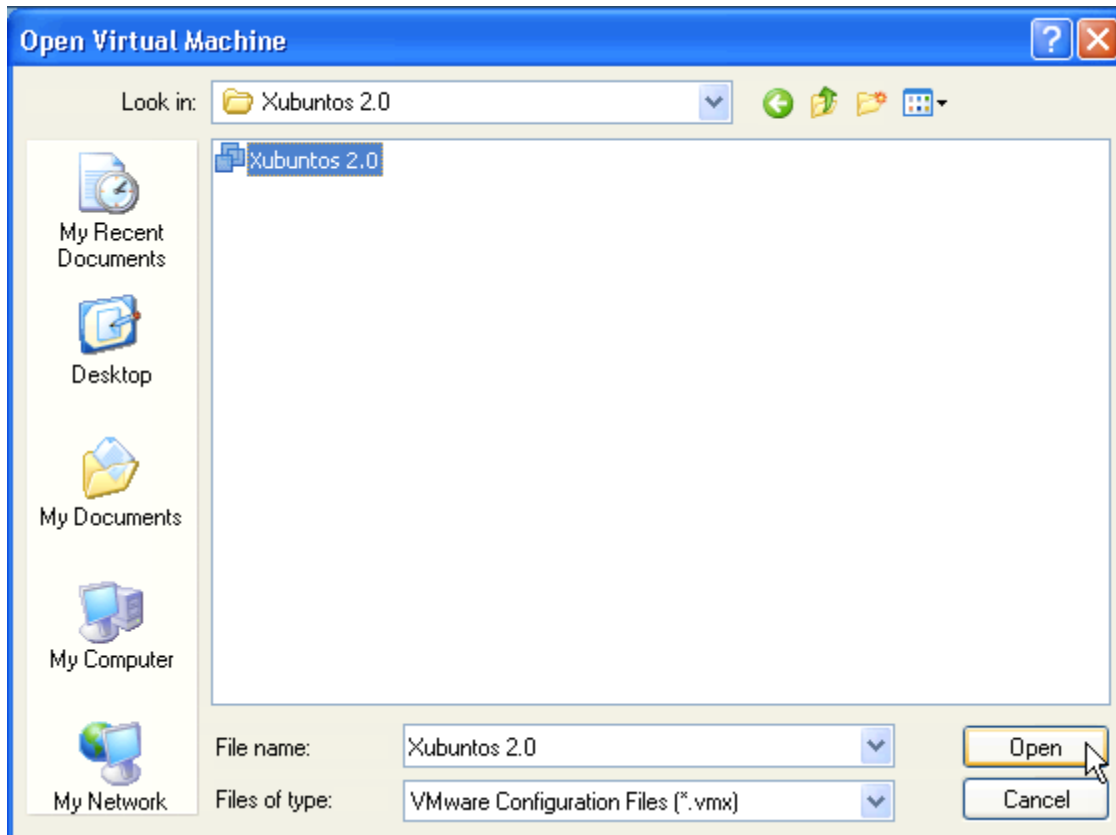
Once you have extracted the XubuntuTOS virtual machine, you can now open the VMware Player from the Windows Start menu and click 'Open'.



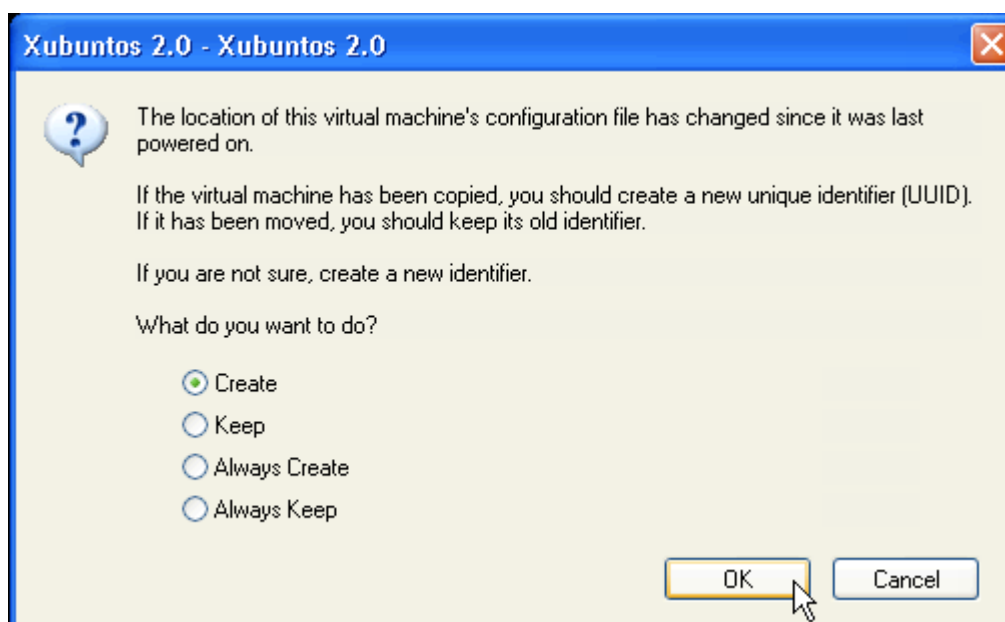
Browse to the location where you extracted it to.....



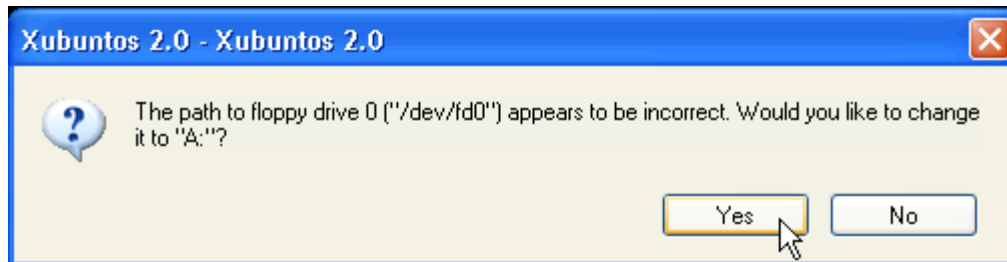
And click on 'Open'



After opening the XubuntuTOS virtual machine, the following question will be asked. This question will only be asked of you once. Since the virtual machine was created somewhere other than where you have now stored it, it will ask if you want to create a unique ID for it on your machine. Just select 'Create' and click 'OK'.



It will now tell you that the path to your floppy drive is incorrect, and will ask if you would like it to be changed to 'A:'. The reason it is incorrect is that the XubunTOS virtual machine image was originally created on a linux machine and you are now about to run it under windows. Changing the floppy location to 'A:' will allow your virtual machine to read and write from the floppy drive on your desktop. If you don't have a floppy drive, then this value is not important. Either way, go ahead and select 'Yes'.



Now the virtual machine will begin booting and eventually you will be presented with the xubuntu login screen. The username is 'xubuntos' and the password is 'tinyos'.



Once you log in, you are working with a full blown version of xubuntu linux that has all the tools necessary for TinyOS development pre-installed. You

can treat it like any other debian-based linux machine and add users, change passwords, download software via apt-get, etc.

To connect to motes, you will have to tell the virtual machine that you would like it to recognize them. Once you have your motes connected and you have started XubuntuTOS, you can select which ones you would like to connect to. They should be listed at the top of the screen, with depressed buttons indicating a connection, and undepressed buttons indicating that no connection has been made. You may connect or disconnect them as you wish.

## **Hardware Lab 1 – TinyOS Setup**

### **Laboratory Report requirements**

#### **Instructions**

The questions are to be answered based on your lab experience and are due 1 week after the scheduled lab time. The report questions must be accurately answered, typed, diagrams computer generated and this template used. Include the questions on your report.

- 1. What is the IEEE standard that defines the MAC and physical layer for wireless sensor networks?**
- 2. What is the manufacturer, model number and operating frequency of the equipment that will be used through this course? (list all)**
- 3. What sort of information can one obtain when accessing the following file?**

`C:\tinyos\cygwin\opt\tinyos-1.x\doc\index.html`

**Obtain a screenshot of the above and paste it in your report.**

- 4. What is the purpose of the `toscheck` command? Provide a screenshot of the results of the executing this action.**
- 5. Were there any errors reported when the above command was executed? If so, what were they and what did you do to resolve them?**



**6. While the above procedure provides one kind of check of the operating environment, what other check(s) can one perform to ensure proper operation and what applications are associated with these?**

**7. Find a command that will display the version of Cygwin you are using and provide both the command and the result below.**

**8. What is the Windows directory that corresponds to the root directory of Cygwin?**