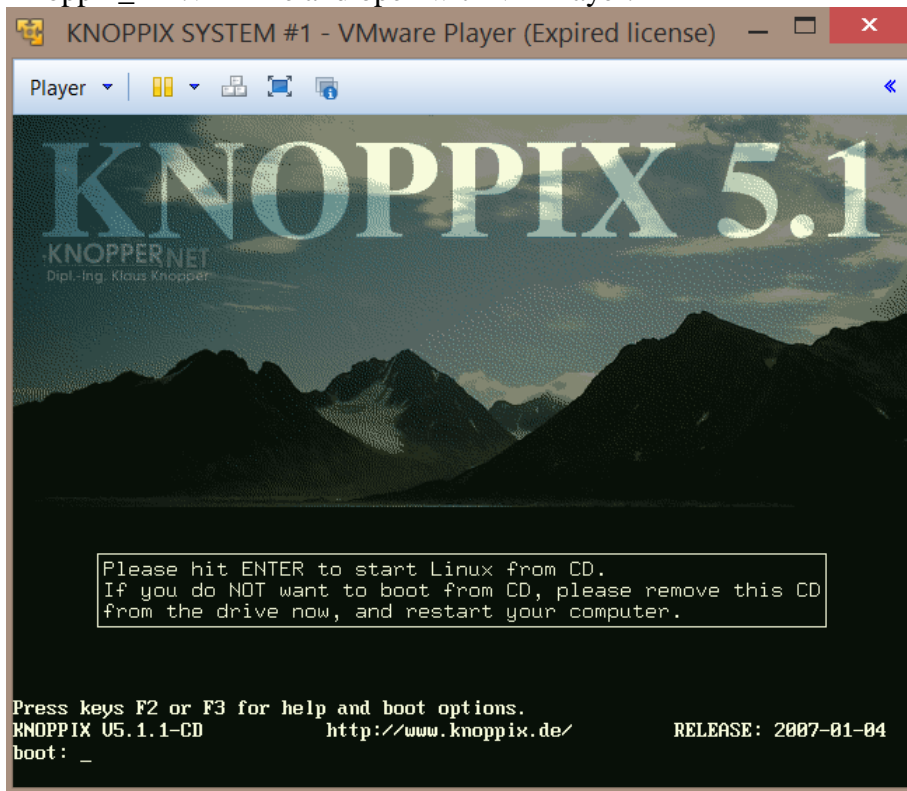# FIT3031 Lab01

Section A: Hands-on – Introduction to Network Lab

Aims: To allow student to explore network Lab equipment and Knoppix Linux O.S software and to be able to:

- Boot the desktop PCs in Knoppix Linux O.S
- Familiarize Linux commands
- Setup and configure network settings.

STEPS:
1. Download the knoppix O.S from the following link:
   https://drive.google.com/a/monash.edu/uc?export=download&confirm=iNEz&id=1qEbdXTcNR3bOgZ_ITlPknOS07ZSzJAFr
2. Save the file in C:\DATA folder.
3. Unzip the files in C:\Data\
4. Then go to C:\DATA\Knoppix5.1\Knoppix5.1.1\Knoppix_HD_01 folder and right-click on Knoppix_HD.vmx file and open with VMPlayer.

5.
6. The operating system should load. Note: the windows with capture the mouse and the keyboard. To release it press **Ctrl**+**Alt** together.

If you have any questions, please ask your tutor.

FIT3031 Lab01
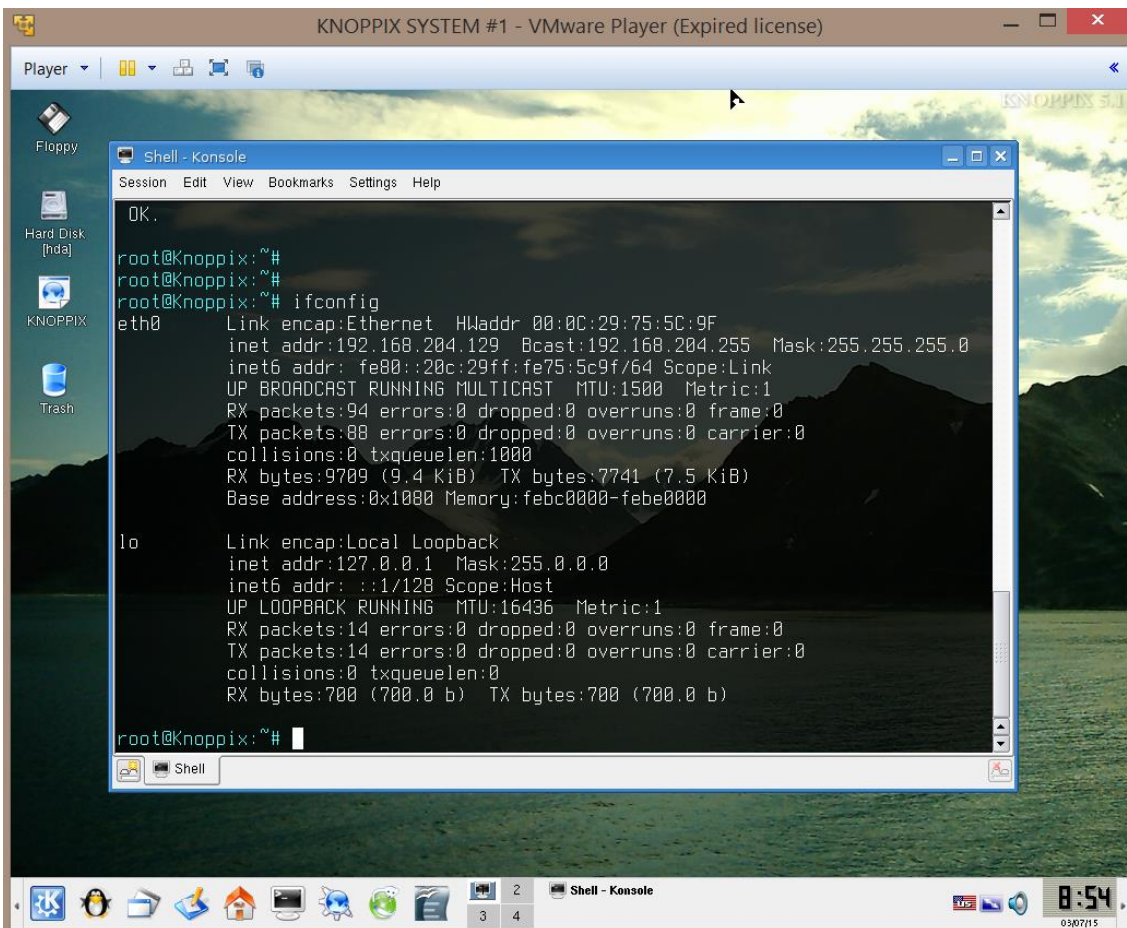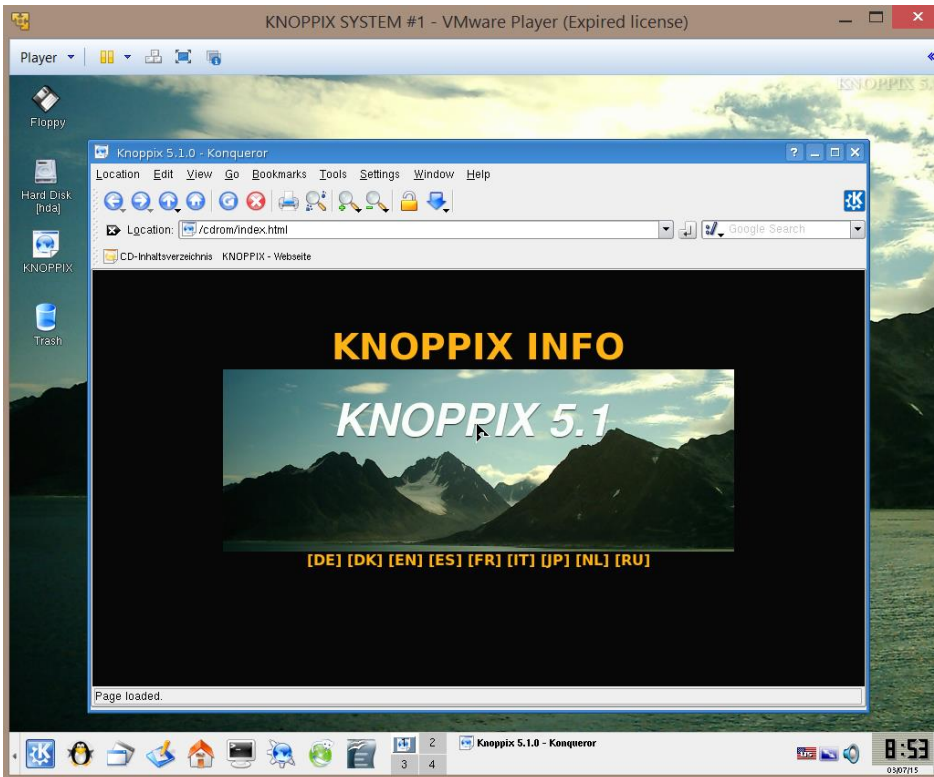
FIT3031 Lab01

Tasks

Some of the steps described below require the student to make written notes. You will be asked to show these notes to your Tutor before the end of the tutorial. While these are not assessable, it is strongly recommended that students take detailed notes for later revision and reference.

HOST MANAGEMENT

Aims:

- To review Host Management.
- To explore the practical aspects of name services and IP address resolution in the Lab
- To further develop knowledge in how to setup Knoppix in the Lab

Resources:

The Knoppix system has a lot of on-line documentation. Use the **man** or **info** commands to read paged text, or **xman** to read manuals in a scrolling X11 window. The KDE Help Centre also has lots of useful information (the HELP option in the KDE menu - with the icon that looks like a nautical life preserver!)

Exercises:

1. Basic System Configuration

On each PC:

1. Open a shell window and change to root user mode (ie use the **su - root** command).
2. Set a new password for the root user and knoppix user (ie use the **passwd** command).
3. Referring to your network plan, set the IP number and hostname for the PC using the **netcardconfig** and **hostname** commands.
4. Check that the date and time are set correctly using the **date** command.

3. Name Resolution Services

1. Now get information on and read about the following (eg using **man** or **info**):

   - hosts (static table lookup file for hostnames)
   - host (DNS lookup utility)
   - resolv.conf (host name sequence resolver configuration file)
   - nslookup (another DNS lookup utility)

4. Check to see if the hostnames or IP numbers you have used for your desktop PC hosts can be used in a **ping** command.

1. Open a Command windows on your screen and use the PING command to test IP connectivity for
   a. your own machine, (e.g. ping your PC)
   b. 192.168.YY.zz (the m/c gateway) (hint: use **route –n or netstat –rn** command)
   c. Now use PING and **tracert or traceroute** to130.194.1.48 (sng-1.its.monash.edu.au) or any other pc
2. Configure your network interface card to use DHCP server using (**Knoppix → network/internet → network card configuration**) menu. Set your NIC to get IP address automatically from DHCP server

What does this indicate about internet packet routing into and out of the Network Lab?

3. Note: keep the network detailed records for future reference.

Section A: Hands-on - Basic Linux User Environment

This is the hands-on section. The students are expected to research the information and try the mini-tasks in the lab before answering the questions. In this section the following areas will be covered with the aid of reference site: http://www.linux.org/lessons/beginner/toc.html

Help

1. Which text-based command provides information on the use of other Linux commands and utilities? List at least two.

2. List the command-line for finding help on the usage of 'ssh'?

3. How do you access Linux manual pages? List the full command line for accessing a particular section.

4. Where would you generally look for help on the Web? List 3 major sites.

File and Directory Manipulation

5. List the command-lines for creating and deleting sub-directories.

6. List the command-line for creating a zero-length file.

7. Create a text file using Vi editior. List the command for saving a file under Vi.

Users and access control

8. Create a user account for yourself and assign it to a group unique to your tutorial group. List the command-lines.

FIT3031 Lab01

9. Set the permissions for your home directory such that everyone in your group can read your home directory's contents. List the command line.

10. What does 'chmod 4775 filename' do?

11. How do you set the executable permission on a file? List the command-line.

12 List the command-line for inspecting the permissions assigned to a file

13. List the command line for inspecting the permissions assigned to a directory

Linux Shell

14. What is your default Linux shell? Read the manual pages on your shell and then answer the following questions.

15. How do you get the last command-line re-displayed?

16. Which key-stroke invokes filename completion

17. Which file in your home directory contains the PATH variable, what does it to, and how do you inspect its value?

18. What does the shell function 'alias' do? Add an alias to your shell configuration file and test that it works. List the command-lines.

19. How does 'which' command work? List a command-line demonstrating its function.

FIT3031 Lab01

20. How do you execute a program file in the shell? List the command-line.

21. Why it's sometime necessary to prefix './' to run an executable file?

22. How are the contents of a text file displayed? List the command-line.

23. List the command-line for search all files with an extension '.html' on the system.

24. Create a simple shell script for listing the contents of your directory and make it executable. List the script and the command-line for changing it into an executable file.

Finish up the Tutorial

1. That completes the Knoppix lab-1 exercises.
2. Go to Player menu you can "shutdown guest or Suspend guest Knoppix" and if any
3. Report any problems immediately to your tutor.

This laboratory-1 exercise can be completed in 3 weeks.

****