Software Lab 1 (SWLAB1B, N4-01a-02)

General Guidelines for **CE2005/CZ2005/CPE205/CSC205** - Operating Systems

Lab sessions overview

1. **Sign on the attendance sheet**
2. **Free Sitting**
3. **Please backup your work regularly to external drive/ email etc.**

Basically you need to remote access to 1 of the 40 Linux machines to compile/run your code

There are a total of 4 lab sessions :
Lab 1 : lab work
Lab 2 : lab work
Lab 3 : oral assessment base on lab1 and lab2
Lab 4 : lab work

Software needed

1	**putty**	command line remote access
2	**ultravnc viewer** (This is optional if you can do all the editing using putty command mode)	GUI remote access *If you are comfortable with command line mode, you can do all your labs using command mode, it will be much faster and you do not need VNC*
3	**winscp**	For file transfer between PC and remote Linux machine

Submit Lab report to the pigeon hole in :
Software-Projects Lab (N4-B1b-11)

Account

Username : **your NTU email account** (if your email address is alfred123@e.ntu.edu.sg, than your username is **ALFRED123**
!! Take Note (The username is in **ALL CAPITAL** letter)
Password : **Welcome2SWL** (Password is case sensitive)

To change password
Issue "**yppasswd**" command

To reset your password (If you forget your password)

1. Send an email to askgchia@ntu.edu.sg stating your group number; you must use your **NTU email account** to send so that we could verify your identity.
2. Or approach the technician with your matrix card during Lab

Your password will be reset to "**Welcome2SWL**"

Free Access

Other than the free access slots allocated, please proceed to **Software-Projects Lab (N4-B1b-11)** for free access.

Lab1

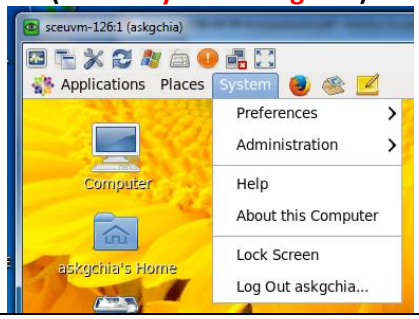
1. **Open the files "CE-CZ2005 PC IP Assignment" on desktop and copy the corresponding IP address**
   You need to use the IP address corresponding to the PC number which you are using to connect to the remote Linux machine.
2. **Run "putty" (on desktop)**
3. **Paste the IP address** into **putty** and **click open, select "Yes"** when prompted
4. Login using
   Username : **your NTU email account** (if your email address is alfred123@e.ntu.edu.sg, than your username is **ALFRED123**
   !! Take Note (The username is in **ALL CAPITAL** letter)
   Password : **Welcome2SWL** (Password is case sensitive)
5. Once login, **change your password immediately** using
   yppasswd
6. Copy your nachos file to your home folder by typing
   cp -r /usr/local/nachos-3.4 ~

   To compile and run your code,
   cd ~/nachos-3.4
   cd lab1
   make
   ./nachos -d
   ./nachos -d > test.txt (To save the output to a file)

   If you are comfortable with command line mode, you can do all your labs using command mode, it will be much faster and you do not need VNC (You do not need step 7 onwards)

Step 7 onwards allows you to connect to the remote Linux machine in graphical mode.

7. Type the following command in **putty** to start vncserver for GUI connection
   vncserver -geometry 1600x900
8. **!!Take note** on the display number that appear after issuing vncserver command (eg sceuvm-121**:1**, you will need it later in step 10, the **:1** is the display number)
9. **Choose a VNC password**, you need to retype password again to confirm, if you need to change your VNC password later, you could issue "vncpasswd" command
10. **Run "UltraVNC viewer"** (on desktop)
    Use the IP address from **step 1** and display number from **step 8** to connect **Eg. 172.21.147.125:1**
11. Use the password in **step 9** when prompted
12. Continue your lab, you can only compile/run your code in "Terminal" (To open Terminal : select Applications, System Tools and finally Terminal)
13. **IMPORTANT !!**
    You need to **logout** your remote GUI session when you finish your lab **(Select System – Log out)**



Lab2, Lab3, Lab4	1. **Open the files "CE-CZ2005 PC IP Assignment" on desktop and copy the corresponding IP address** You need to use the IP address corresponding to the PC number which you are using to connect to the remote Linux machine. 2. **Run "putty" (on desktop)** 3. **Paste the IP address** into **putty** and click **open, select "Yes"** when prompted and **login** using your username/password **If you are comfortable with command line mode, you can do all your labs using command mode. (You do not need step 4 onwards)** 4. Type the following in **putty** to start vncserver for GUI connection **vncserver -geometry 1600x900** 5. **!!Take note** on the display number (eg sceuvm-121**:1**, you will need it later in Step 6, the **:1** is the display number) 6. **Run "UltraVNC viewer"** (on desktop) 7. Use the IP address from **step 1** and display number from **step 5** to connect **Eg. 172.21.147.125:1** 8. When prompted, use the VNC password which you have created in Lab1 Step 9 **!! IMPORTANT** : You need to **logout your remote GUI session** when you finish your lab Please remember to **back up** your data/code to external drive/email/etc. regularly
Remote Access at home	To remote access from home, you need to 1. use **VPN** to connect to NTU first (**only If you are outside NTU**) http://www.ntu.edu.sg/cits/itnetworking/remoteaccess/Pages/quickstartguide.aspx 2. Run **putty** 3. You could use any of the 40 IP address from 172.21.147.121 to 172.21.147.160. **For load balancing purpose**, please use a random IP, preferably to use your Lab attendance number as reference. 4. Continue your work (similar to lab)
Common error	Cut and paste command often result in extra characters, it is advisable to "type" the command
common command	make ---------- to compile your code make clean ----- to delete all the already compiled object files ./nachos --------- to run your compiled nachos code ./nachos -d ----- to run your compiled nachos code with detail output ./nachos -d > file.txt --- to run your compiled code and output the result to a file name file.txt yppasswd ------ to change your account password vncpasswd ------ to change your VNC password vncserver -geometry 1600x900 --- to start a VNC session with display size of 1600x900 vncserver -list ---- to list currently running VNC session

CE-CZ2005 PC IP Assignment

Please choose the IP address corresponding to the PC which you are using

PC Number	IP address to use		PC Number	IP address to use
PC1	172.21.147.121		PC21	172.21.147.141
PC2	172.21.147.122		PC22	172.21.147.142
PC3	172.21.147.123		PC23	172.21.147.143
PC4	172.21.147.124		PC24	172.21.147.144
PC5	172.21.147.125		PC25	172.21.147.145
PC6	172.21.147.126		PC26	172.21.147.146
PC7	172.21.147.127		PC27	172.21.147.147
PC8	172.21.147.128		PC28	172.21.147.148
PC9	172.21.147.129		PC29	172.21.147.149
PC10	172.21.147.130		PC30	172.21.147.150
PC11	172.21.147.131		PC31	172.21.147.151
PC12	172.21.147.132		PC32	172.21.147.152
PC13	172.21.147.133		PC33	172.21.147.153
PC14	172.21.147.134		PC34	172.21.147.154
PC15	172.21.147.135		PC35	172.21.147.155
PC16	172.21.147.136		PC36	172.21.147.156
PC17	172.21.147.137		PC37	172.21.147.157
PC18	172.21.147.138		PC38	172.21.147.158
PC19	172.21.147.139		PC39	172.21.147.159
PC20	172.21.147.140		PC40	172.21.147.160