

NTUEE DCLab

DCLab Workstation & Linux Basics

Presenter: Jeng-Bang Wang

Advisor: Prof. Chia-Hsiang Yang

Graduate Institute of Electronics Engineering, National Taiwan University



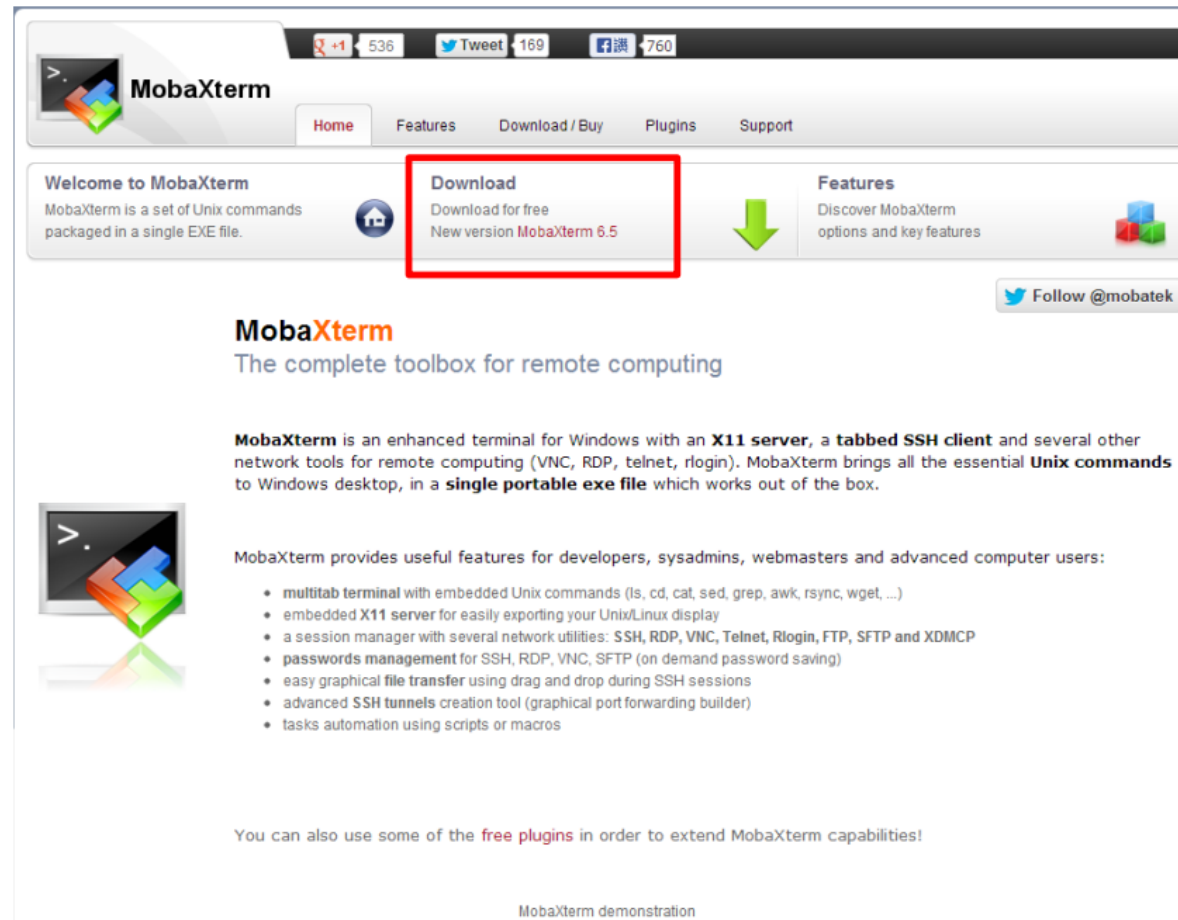
DOSL

Outline

- Connect to workstation
 - MobaXterm
- Basics commands in Unix/Linux
- File Editors

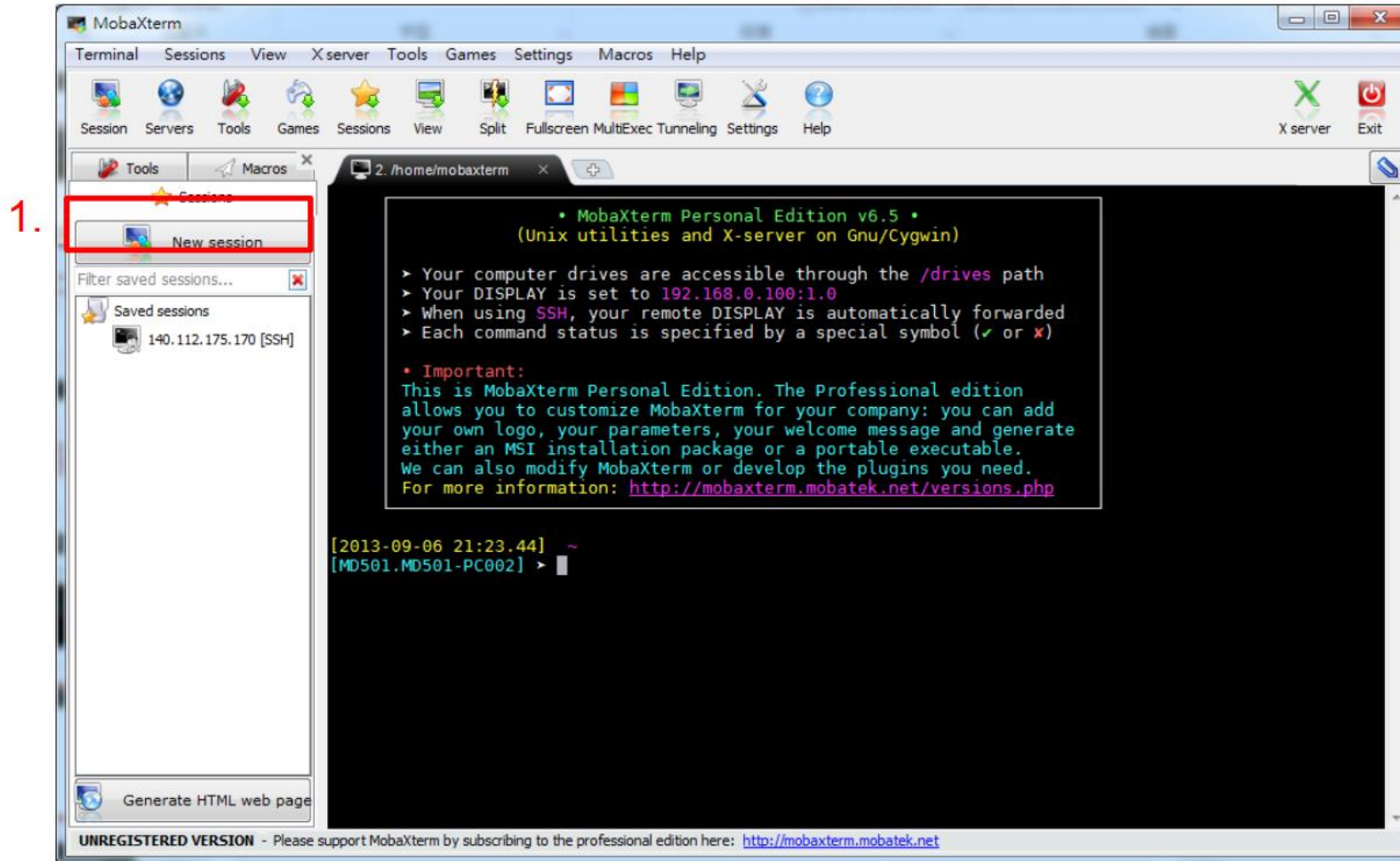
MobaXterm (1/4)

- MobaXterm = SFTP + SSH + X-Server
- Download: <https://mobaxterm.mobatek.net/>



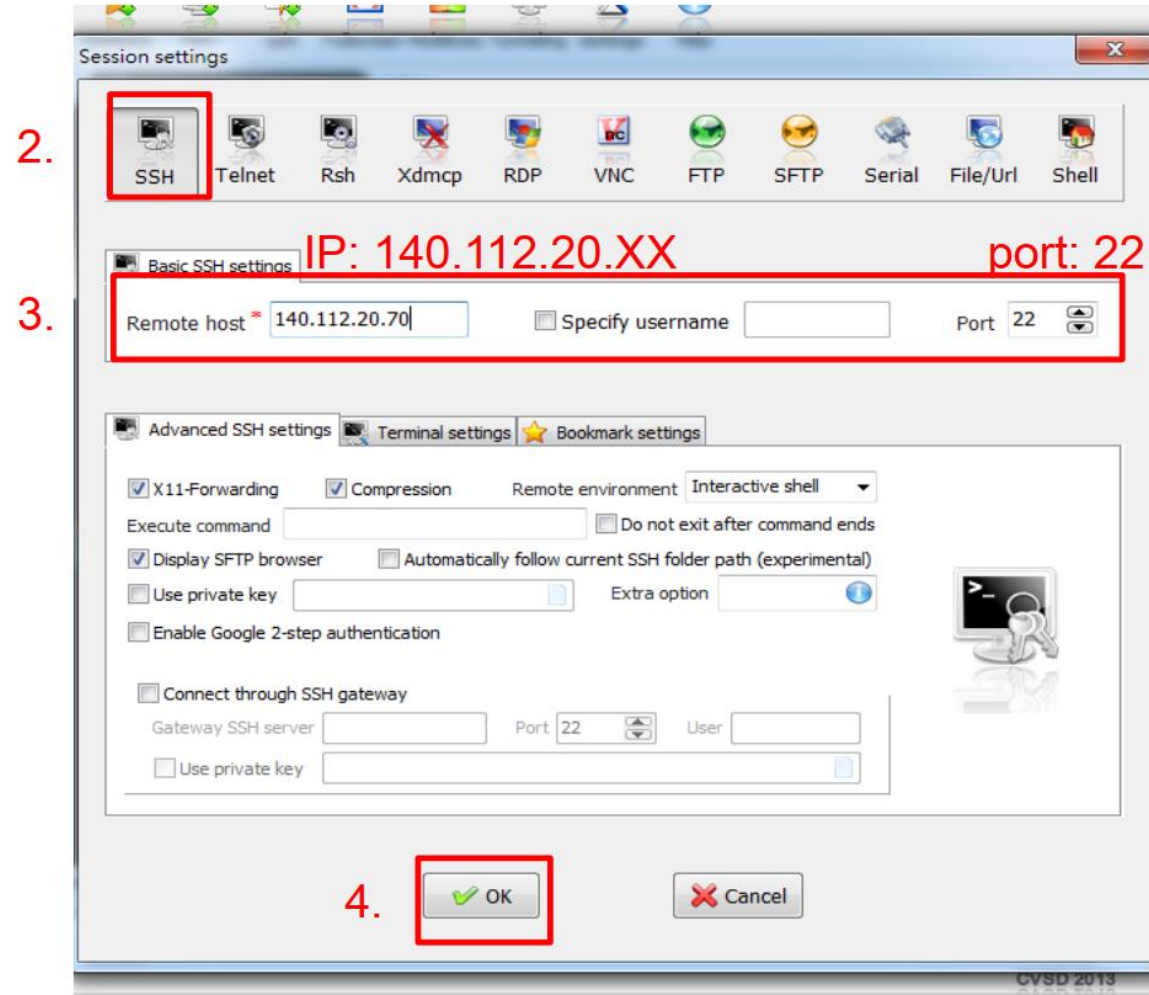
MobaXterm (2/4)

- New Session



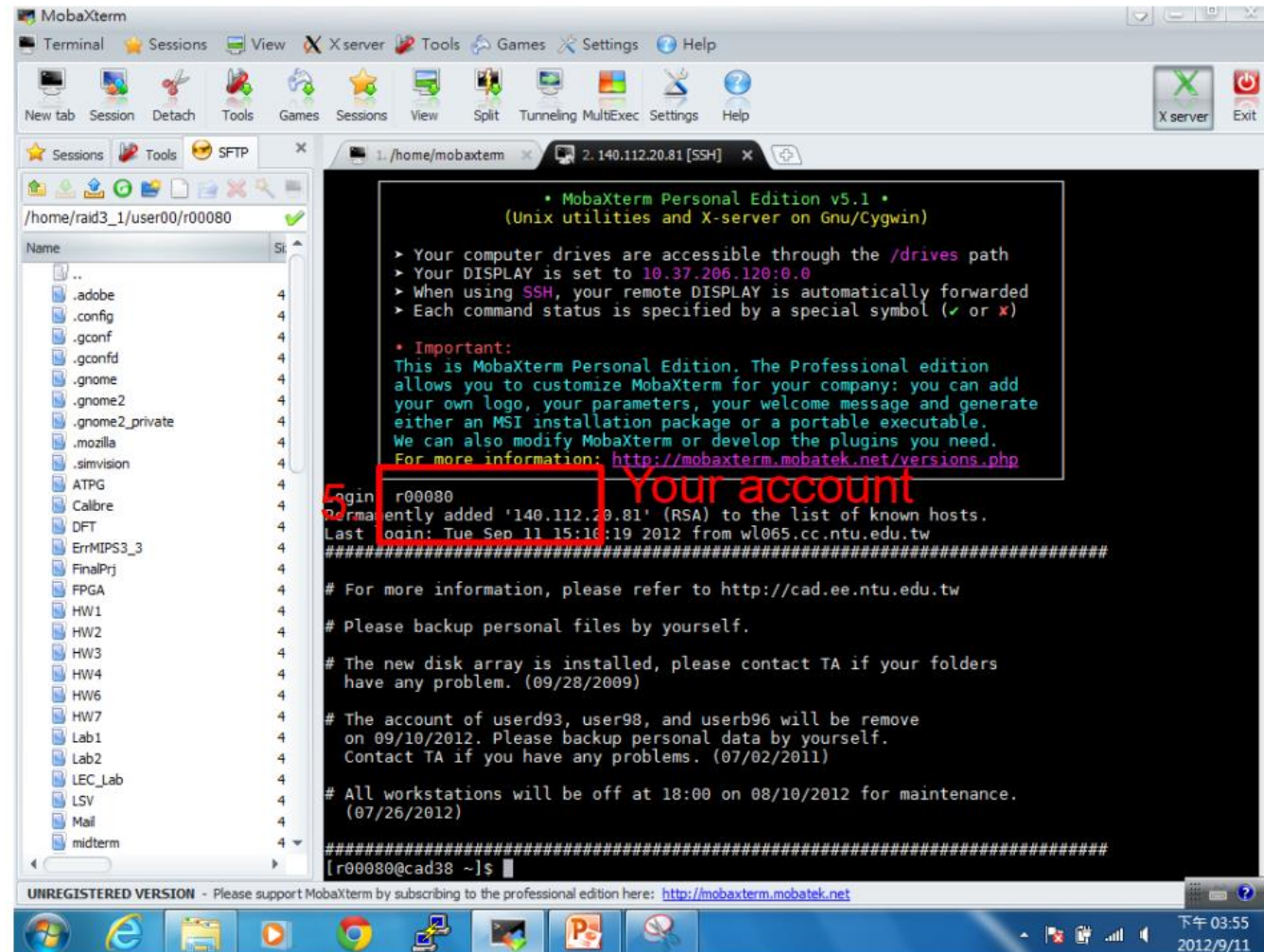
MobaXterm (3/4)

- 工作站 IP 與 port 請看 IC設計實驗室網頁（可連線主機一覽表）
<http://cad.ee.ntu.edu.tw/>



MobaXterm (4/4)

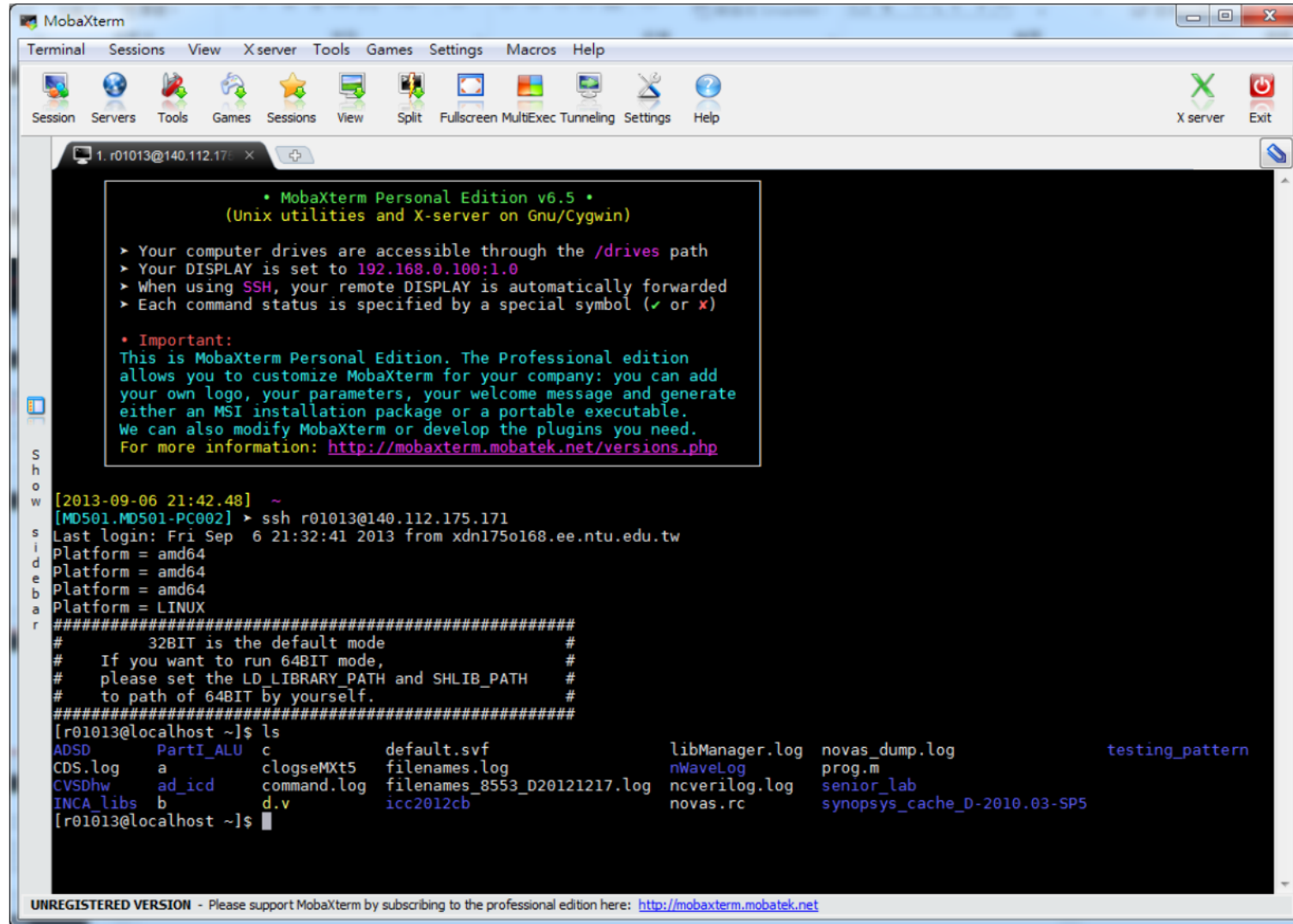
- Or type “ssh <your_account>@<workstation IP> -p <port>”



Outline

- Connect to DCLab workstation
 - FileZilla
 - MobaXterm
- Basics commands in Unix/Linux
- File Editors

Environment



The screenshot shows the MobaXterm application window. The title bar reads 'MobaXterm'. The menu bar includes 'Terminal', 'Sessions', 'View', 'Xserver', 'Tools', 'Games', 'Settings', 'Macros', and 'Help'. The toolbar contains icons for Session, Servers, Tools, Games, Sessions, View, Split, Fullscreen, MultiExec, Tunneling, Settings, Help, X server, and Exit. The terminal window has a tab labeled '1. r01013@140.112.171: ~'. The terminal output displays the MobaXterm v6.5 welcome message, followed by system information and a file listing.

```
• MobaXterm Personal Edition v6.5 •
(Unix utilities and X-server on Gnu/Cygwin)

> Your computer drives are accessible through the /drives path
> Your DISPLAY is set to 192.168.0.100:1.0
> When using SSH, your remote DISPLAY is automatically forwarded
> Each command status is specified by a special symbol (✓ or ✗)

• Important:
This is MobaXterm Personal Edition. The Professional edition
allows you to customize MobaXterm for your company: you can add
your own logo, your parameters, your welcome message and generate
either an MSI installation package or a portable executable.
We can also modify MobaXterm or develop the plugins you need.
For more information: http://mobaxterm.mobatek.net/versions.php

[2013-09-06 21:42:48] ~
[MD501.MD501-PC002] > ssh r01013@140.112.175.171
Last login: Fri Sep 6 21:32:41 2013 from xdn175o168.ee.ntu.edu.tw
Platform = amd64
Platform = amd64
Platform = amd64
Platform = LINUX
#####
# 32BIT is the default mode #
# If you want to run 64BIT mode, #
# please set the LD_LIBRARY_PATH and SHLIB_PATH #
# to path of 64BIT by yourself. #
#####
[r01013@localhost ~]$ ls
ADSD      PartI_ALU  c          default.svf      libManager.log  novas_dump.log  testing_pattern
CDS.log   a          clogseMxT5  filenames.log    nWaveLog        prog.m
CVSDhw    ad_icd     command.log  filenames_8553_D20121217.log  ncverilog.log   senior_lab
INCA_libs b          d.v         icc2012cb        novas.rc         synopsys_cache_D-2010.03-SP5
[r01013@localhost ~]$
```

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <http://mobaxterm.mobatek.net>

Basic Commands (1/4)

- Files

<i>ls</i>	Lists your files
<i>ls -l</i>	Lists yours files in long format
<i>ls -a</i>	Lists all files, including those with filename beginning in a dot
<i>cp <src-filename> <dest-filename></i>	Copy files
<i>mv <src-filename> <dest-filename></i>	Move/remove files
<i>rm <filename></i>	Delete this file
<i>more <filename></i>	Show the content of the file
<i>less <filename></i>	Show the content of the file

Basic Commands (2/4)

- Directories

mkdir <dirname>

Make a new directory

cd <dirname>

Change directory

cd ..

Go up on directory level
from here

cd ~

Go to user's home directory

rm -rf <dirname>

Remove a directory

mv <src-dirname> <dest-dirname>

Move/rename directories

Basic Commands (3/4)

- Compress
 - *tar cvf <filename.tar> <dirname/filename>*
 - *tar czvf <filename.tar.gz> <dirname/filename>*
- Decompress
 - *tar xvf <filename.tar>*
 - *tar xzvf <filename.tar.gz>*

Basic Commands (4/4)

- Process

ctrl + c

Kill foreground process

ps

Report process and their pid#

kill <pid#>

Kill the process with the pid#

- Logout

– *exit*

- More options about command

man <command-name>

Display online manual pages

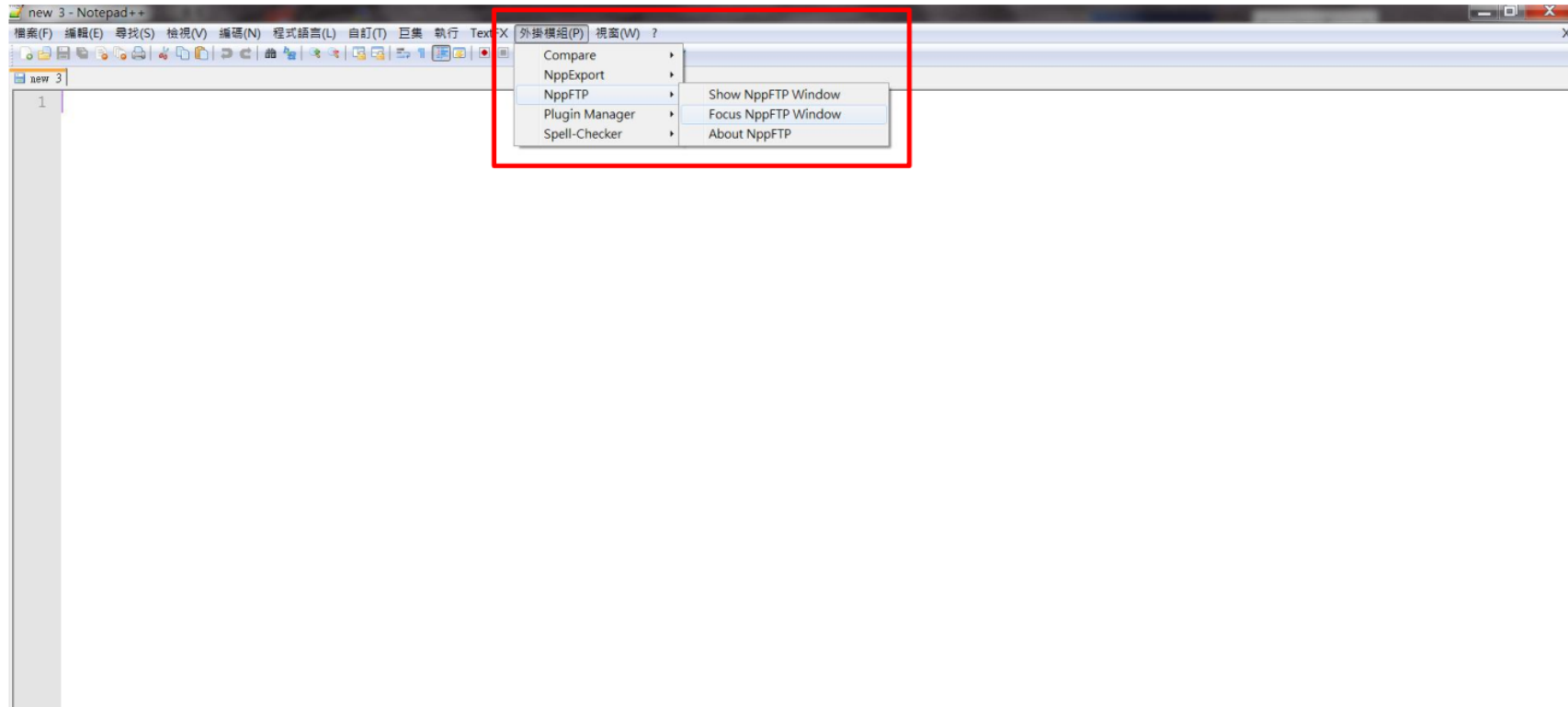
References

- Some resources on Unix/Linux commands
- Chinese
 - http://boson4.phys.tku.edu.tw/UNIX/Unix%20Command/index_basic.htm
 - <http://www.lib.cgu.edu.tw/instruction/basiccmd.html>
- English
 - <http://mally.stanford.edu/~sr/computing/basic-unix.html>
 - <http://www.math.utah.edu/lab/unix/unix-commands.html>
 - <https://www.computerhope.com/unix/overview.htm>

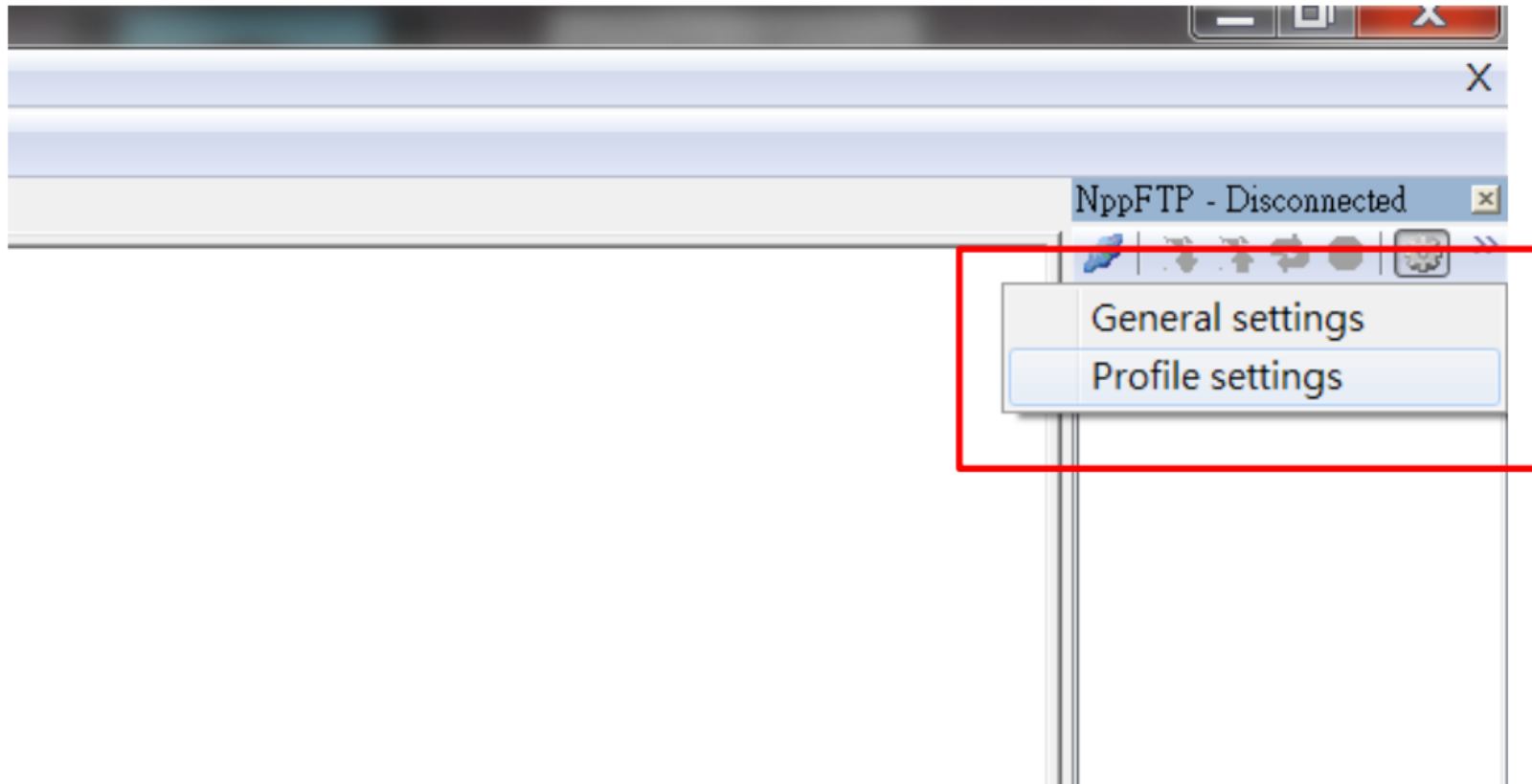
Outline

- Connect to DCLab workstation
 - FileZilla
 - MobaXterm
- Basics commands in Unix/Linux
- **File Editors**

Notepad++ (1/4)

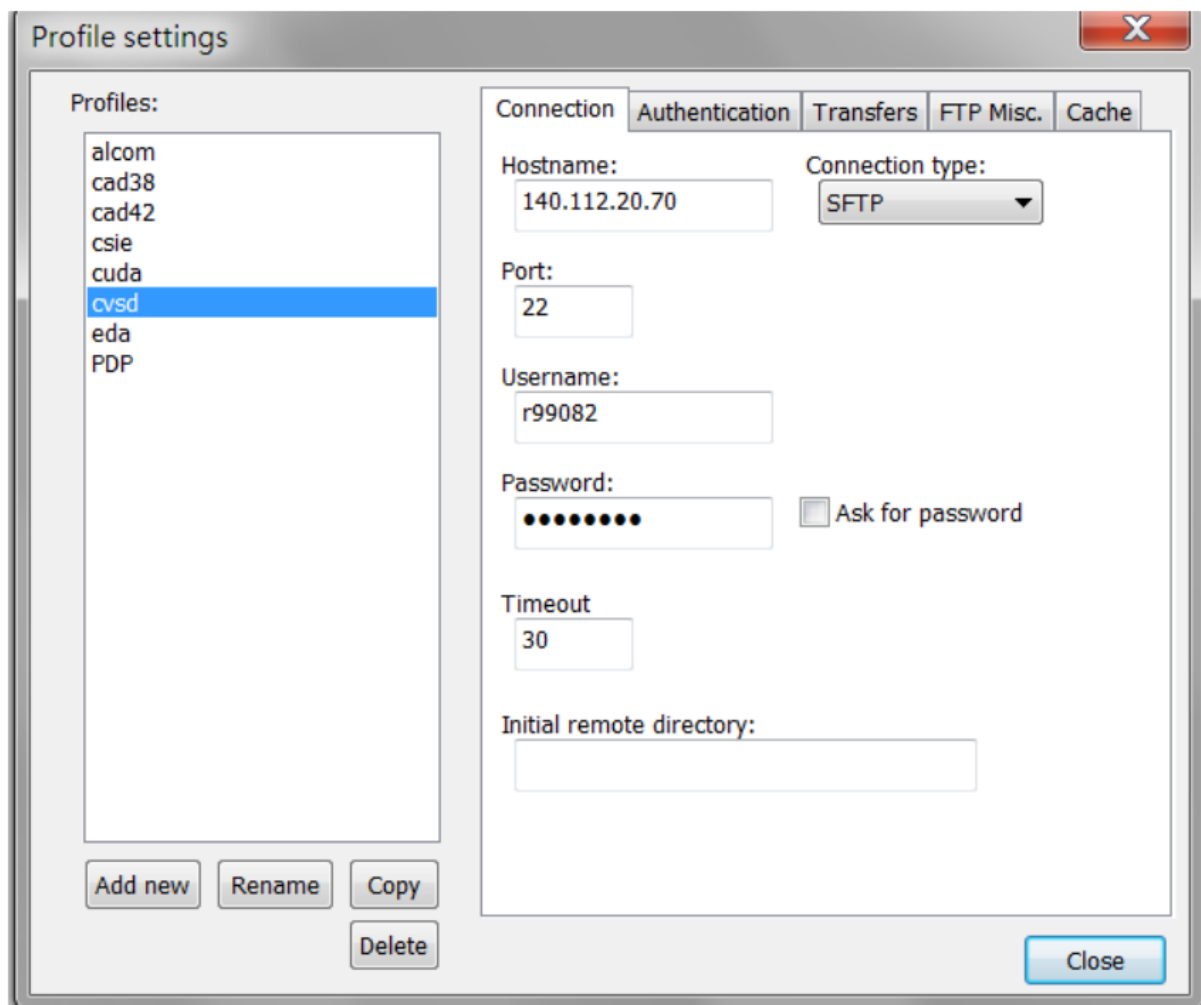


Nodepad++ (2/4)

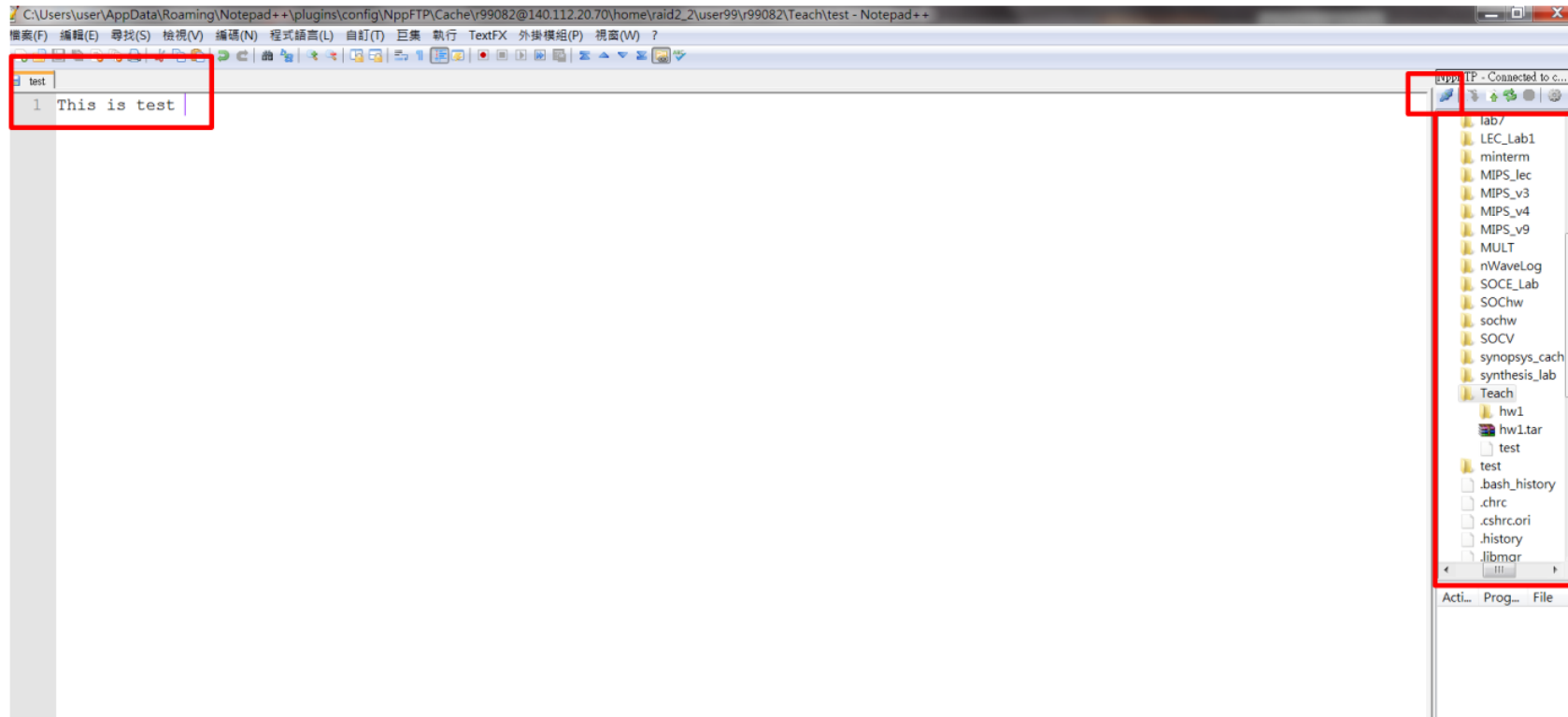


Nodepad++ (3/4)

- 工作站 IP 與 port 請看 IC設計實驗室網頁



Notepad++ (4/4)



Vim (1/5)

- Vim (Vi IMproved)
 - An extended version of vi editor
 - Additional features designed to be helpful in editing program source code
 - Free and open source software

Vim (2/5)

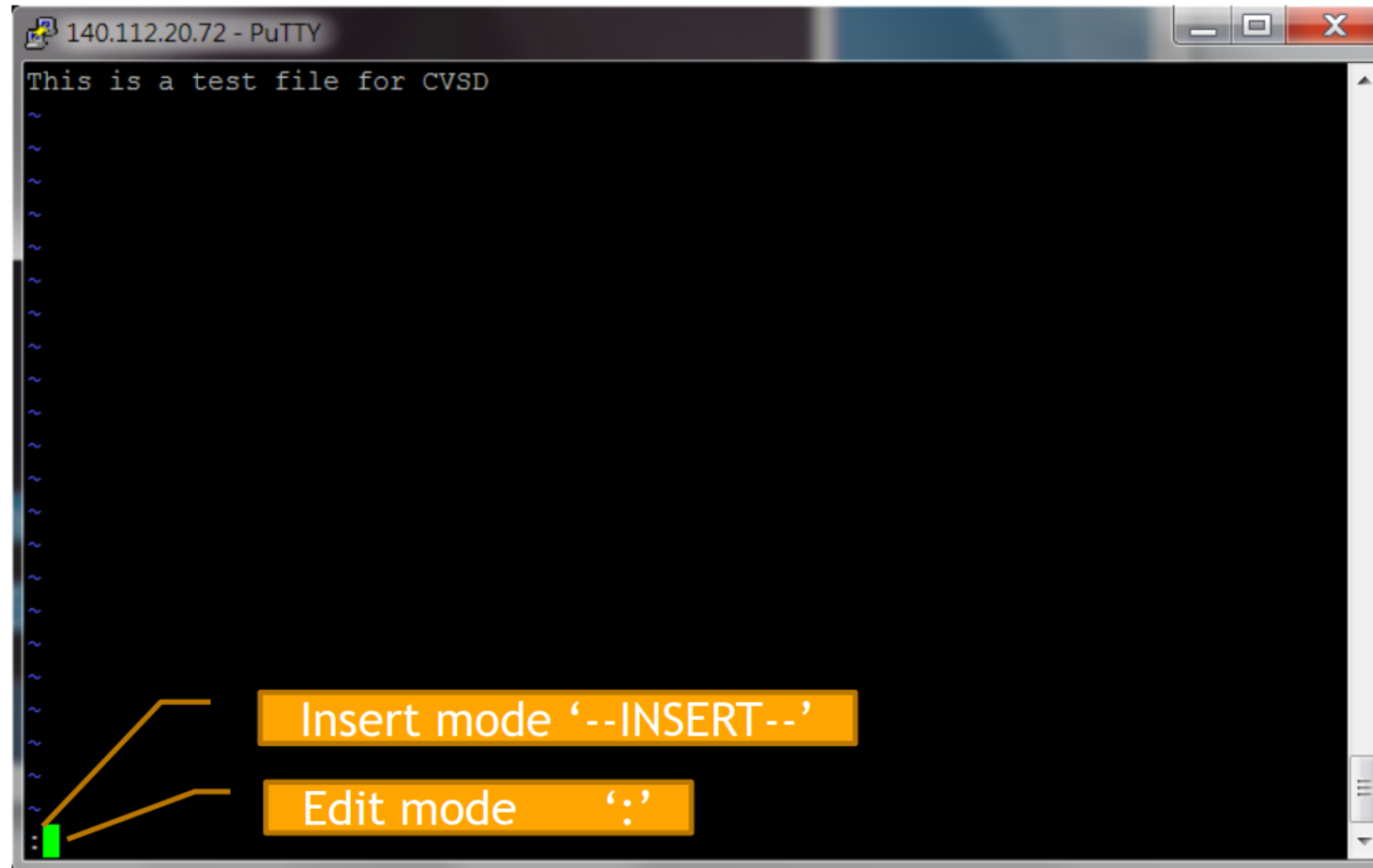
- Three major modes
 - Common mode (c-mode)
 - Insert mode (i-mode)
 - Edit mode (e-mode)
- Changing modes
 - i-mode <----- c-mode -----> e-mode

*i**:*
 - i-mode -----> c-mode <----- e-mode

*esc**esc*

Vim (3/5)

- vim test.txt



Vim (4/5)

- Some basic commands in c-mode

<i>dd</i>	Delete the whole line
<i>u</i>	Undo
<i>i</i>	Enter insert-mode
<i>:w + enter</i>	Save a document
<i>:q + enter</i>	Quit without saving
<i>:wq + enter</i>	Save and quit at the same time
<i>:q!</i>	Discard changes and quit
<i>:w <new-filename> + enter</i>	Save as <new-filename>

Vim (5/5)

vim命令圖解

```

6 private boolean foo;
  private boolean ReallyLongName;
  private boolean aReallyShortName;
  private int bar1, bar2;

  private boolean isFooAndBar(){
    foo = false;
  }

  public void main(String args[]){
    foo = true;
    if(foo){
      bar1 = bar2 + 1 + fooClass.invokeRandomMethod();
      bar1 = bar2 + 2;
      bar1++;
      bar2++;
      if(aReallyLongName
        aReallyLongName
        aReallyShortName
      )
    }
  }

```

游標移動/範圍單位

字元(character)

h j k l

← ↓ ↑ →

單字(word)

w b 前/後個單字

W B 前/後個單字(跳過符號)

e 單字尾端

行(line)

O 行頭 \$ 行尾

^ 行頭(非空白字元)

段落(paragraph)、區塊(block)

{ } 上一段 下一段

[] 區塊頭 區塊尾

% 對應括號

螢幕(screen)、檔案(file)

H 螢幕頂端 zt 捲至頂端

M 螢幕中間 zz 捲至中間

L 螢幕底部 zb 捲至底部

C-B 上一頁 C-F 下一頁

gg 檔頭 G 檔尾

mx 標記x 'x 跳至標記x

搜尋(search)

* # 向後/向前搜尋目前單字

fx 向後搜尋字元x

gd 跳至目前單字的定義位置

/xxx 搜尋xxx

n N 下/上一個搜尋結果

模式切換指令

(ESC) C-[] 進入normal mode

v 進入visual mode

V 進入visual line mode

C-v 進入visual block mode

i 進入insert mode

R 進入replace mode

a 在游標後附加

A 在行末附加

動作指令

y 複製(範圍)

d 刪除/剪下(範圍)

c 修改(範圍)

x 刪除/剪下(字元)

D 刪除至行末

C 修改至行末

p 貼上

J 和下一行合併

r 替換(字元)

> 縮排

< 反縮排

.

u 重複上一命令

回復上一命令

EX指令

:w 儲存(:wq 儲存並退出)

:q 退出(:q!強制退出)

:e x 編輯檔案x

:n 開新文件

:h 呼叫vim help

:xx 跳至xx行

自動補齊 [insert mode]

C-N C-P 自動補齊下/上個可能字

C-X C-F 自動補齊可能檔名

分割視窗(split window)

:vsp :sp 垂直/水平分割視窗

:diffs 分割視窗並比較(diff)檔案

C-W p (來回)跳至前一個分割視窗

C-W w 跳至下個分割視窗

Created by vgod, Dec. 2009

<http://blog.vgod.tw/2009/12/08/vim-cheat-sheet-for-programmers/>