

System Administration

計算機系統管理課程

pml

- gsin要來SA與大家分享管理實務(1hr)
- 若有外籍生同學 – [提醒] 英文投影片授課、中文考卷
- 作業作業作業~~~

What System Administrator Should do? (1)

□ Ordinary list

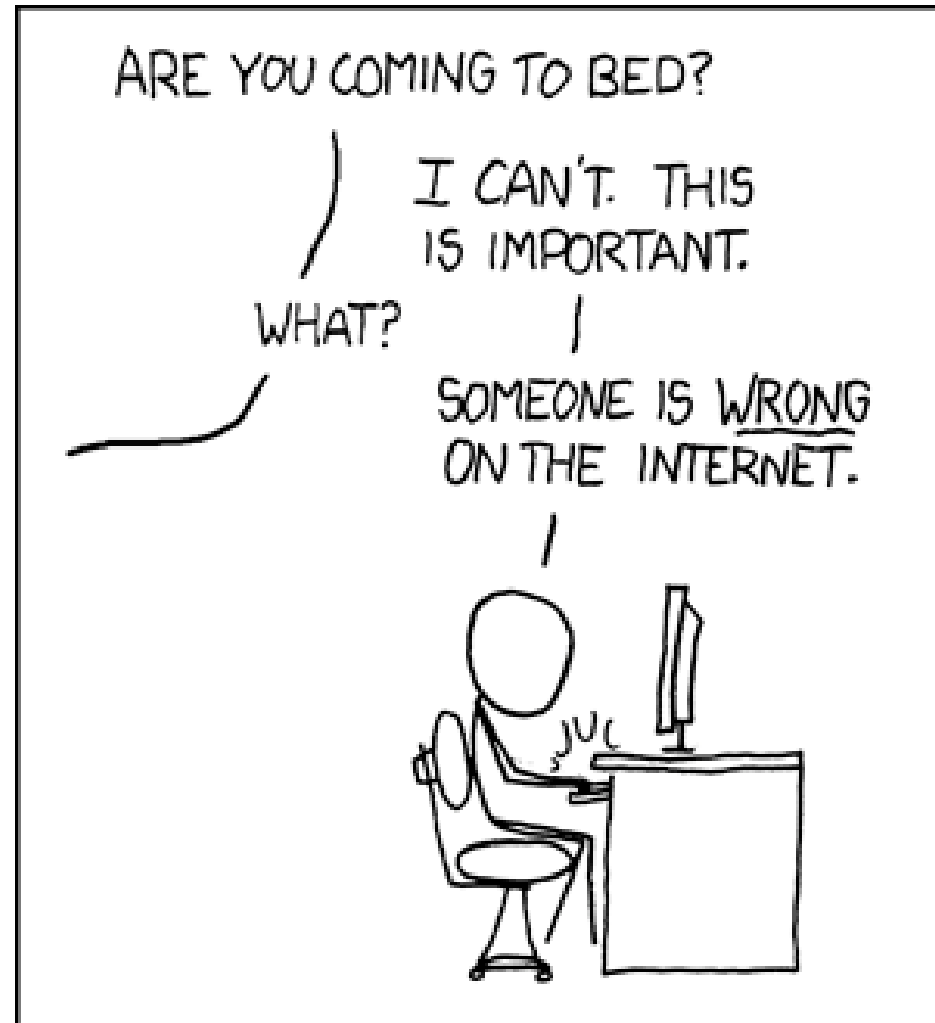
- Install new system, programs and OS updates
- Monitoring system and trying to Tune performance
- Adding and removing users
- Adding and removing hardware
- Backup and Restore
- Security



What System Administrator Should do? (2)

❑ Non-technique list

- Helping users
- Maintaining documentation
- Moving furniture
- Burning your liver
- Good communication and memorization



What System Administrator Should do? (3)

❑ The best words to describe the job

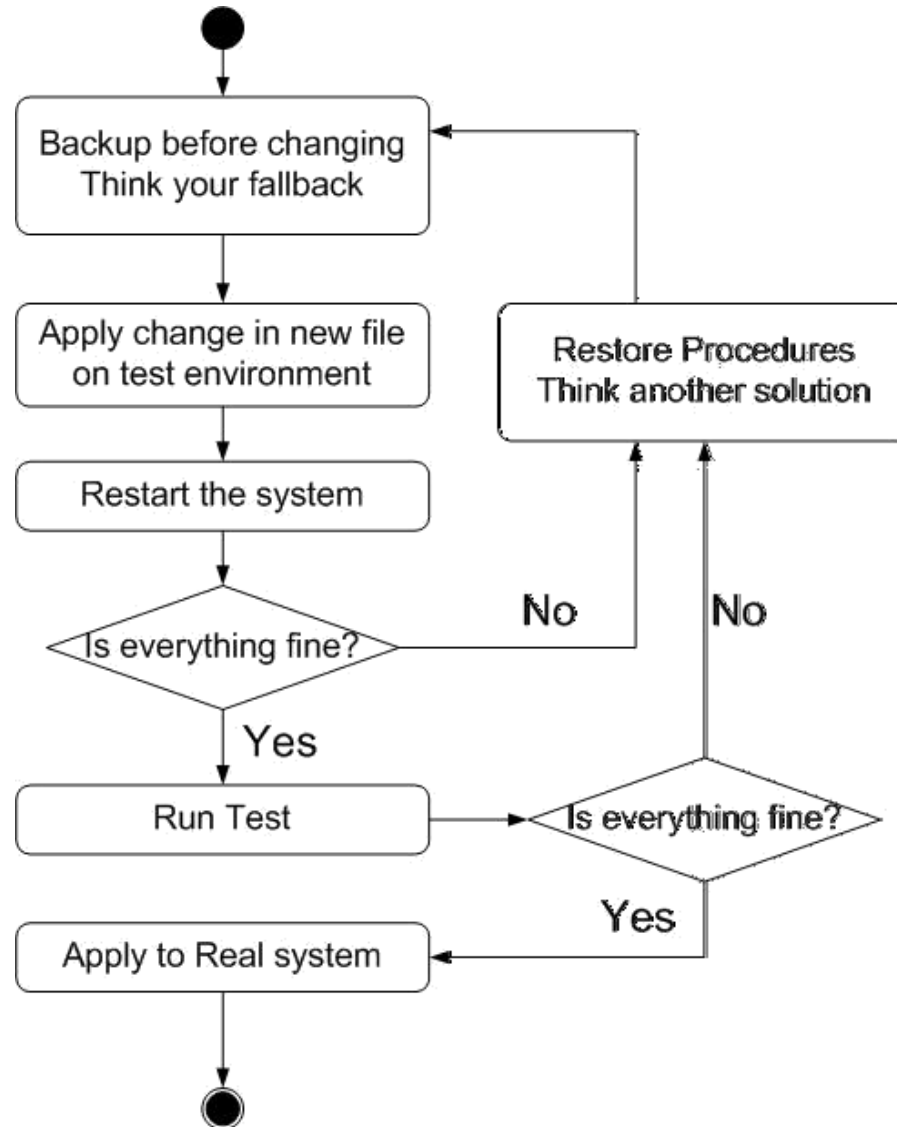
- Thankless job.
 - <http://www.sysadminday.com/>
- System administration is like keeping the trains on time; no one notices except when they're late.
- 氣象局：「我們對的時候，沒人記得；我們錯的時候，沒人忘記。」

❑ Philosophy of system administration

- Know how things really work.
- Plan it before you do it.
- Make it reversible
- Make changes incrementally.
- Test before you unleash it .

What System Administrator Should do? (4)

□ Flow of Change



What you can learn in this course?

- ❑ The skill to be a candidate of system administrator
- ❑ Information about CS computer center

- ❑ System Admin / Network Admin ?
 - Play with computers

- ❑ What FreeBSD can do.

- ❑ 資安學程 <http://isc.cs.nctu.edu.tw/>
- ❑ 大學部雲端系統學分學程 <http://delta.nctu.edu.tw/>

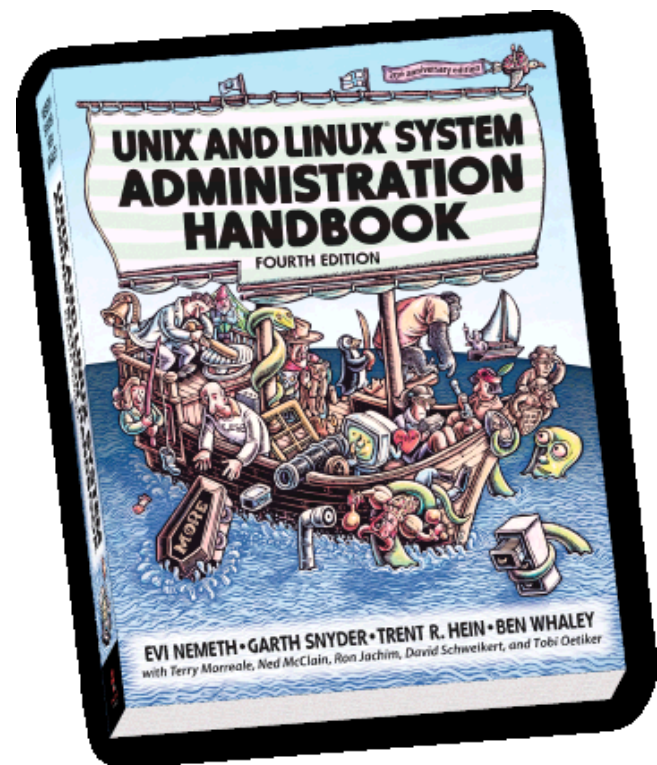
Attitude

- Attend every class
- Do every exercise
 - As early as possible
 - **On your own**
- Read book and practice at least 6 hours every week
 - Use unix-like environment
 - Recommend: more than 1.5 hours/day averagely.
- Collect information on the internet
 - The newer, the better.



Syllabus

- Website:
 - @e3
- Instructors:
 - 黃懷陞 huanghs@cs.nctu.edu.tw
 - 李柏明 pml@cs.nctu.edu.tw
- Time:
 - Wed. IJK (PM 6:30 ~ 9:20)
- Place:
 - EC022
- TAs:
 - 4 TAs.
 - Email to TAs: (ta@nasa.cs.nctu.edu.tw)
- Textbook:
 - **Unix and Linux System Administration Handbook (4th Edition)**



Syllabus – Content

- ❑ We will cover the following chapters in this semester (SysAdm):
 - Chapter 1 ~ 13
 - Chapter 14, 18, 19, 22, 23
 - Chapter 25, 26, 29 ~ 32
- ❑ The following chapters is covered in the next semester (NetAdm):
 - Chapter 14 ~ 17, 20 ~ 22
 - NAT, DHCP, VPN, Proxy, ...
 - Perl Programming
 - News Server

Syllabus – Text book outline

- ❑ Chap 1 – Where to start.
- ❑ Chap 2 – Scripting and the shell
- ❑ Chap 3 – Booting and shutting down
- ❑ Chap 4 – Access control and rootly powers
- ❑ Chap 5 – Controlling processes
- ❑ Chap 6 – The Filesystem
- ❑ Chap 7 – Adding new users
- ❑ Chap 8 – Storage
- ❑ Chap 9 – Periodic processes
- ❑ Chap 10 – Backups
- ❑ Chap 11 – Syslog and log files
- ❑ Chap 12 – Software installation and management
- ❑ Chap 13 – Drivers and the kernel
- ❑ Chap 14 – TCP/IP Networking
- ❑ Chap 15 – Routing
- ❑ Chap 16 – Network hardware
- ❑ Chap 17 – DNS: The domain name system
- ❑ Chap 18 – The network file system
- ❑ Chap 19 – Sharing system files
- ❑ Chap 20 – Electronic mail
- ❑ Chap 21 – Network management and debugging
- ❑ Chap 22 – security
- ❑ Chap 23 – Web hosting
- ❑ Chap 24 – Virtualization
- ❑ Chap 25 – The X Window system
- ❑ Chap 26 – Printing
- ❑ Chap 27 – Data center basics
- ❑ Chap 28 – Green it
- ❑ Chap 29 – Performance analysis
- ❑ Chap 30 – Cooperating with Windows
- ❑ Chap 31 – Serial devices and terminals
- ❑ Chap 32 – Management, policy, and politics

Syllabus – Grade Policy

- ❑ Mid
 - 15 ~ 20%
- ❑ Final
 - 15 ~ 20%
- ❑ Exercise (Homeworks)
 - 60 ~ 70%
 - No Delay Work
 - 4 exercises
 - 1 term project

What you should prepare?

❑ Background knowledge

- UNIX commands
- Basic of TCP/IP Networking (not required)

❑ Environment

- One dedicated PC
 - Or dual OS in your PC.
 - (New!) Or Virtual PC

❑ Yourself

- Your hard study

Finally, Am I OK to take this course?

- Are you willing to devote yourself to exercise?
 - Yes! Please come
- Are you newbie in this area?
 - Yes!? It's ok, Please come
- Do you take more than 3 major courses?
 - Yes!??? It is quite dangerous, but I can not stop u

Q&A

Break time.