

Computer Network Administration

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國立陽明交通大學資工系資訊中心

Computer Center, Department of Computer Science, NYCU

Online Course Announcement

- The live course will be available online
 - Using Google Meet
 - Available at <https://nasa.cs.nctu.edu.tw/na/2022/>
- We will **record the meeting** during the class
 - For reference only
 - Will not release to public
- **DO NOT** record this meeting by yourself without approval from the lecturers & classmates!

Syllabus

- Website:
 - <https://nasa.cs.nctu.edu.tw/na/2022/>
- Instructors:
 - 曾亮齊 lctseng@cs.nctu.edu.tw
 - 王則涵 wangth@cs.nctu.edu.tw
 - 林瑞男 jnlin@cs.nctu.edu.tw
 - 許立文 lwhsu@cs.nctu.edu.tw
- Time:
 - Thu. abc (18:30 ~ 21:20)
- Place:
 - Live streaming + EC114 (only if announced)

Syllabus

- Discussion Forum

- <https://groups.google.com/g/nctunasa>
- We suggest you to join - TAs might give homework hints there
- Request join and tell us your student ID
- Ask **course-related/technical questions** there
- Everyone in the group can answer/vote
- **But DON'T post direct answer/configuration there!**
 - You will be banned

電子郵件傳送偏好設定：有新訊息時通知我 (每天最多 1 封) ▾

當我針對某個主題留言時，自動為我訂閱該主題的電子郵件更新

這個群組的其他成員可查看你的電子郵件地址，甚至也可以查看你的 Google 個人資料。加入這個群組後，你就能存取群組的共用資源。[瞭解詳情](#)。

您可以在下面的文字方塊中填入說明，將詳細資訊傳送給管理員。

我是108下學期NA的修課生曾亮齊，學號0116057

申請加入這個群組 取消

Syllabus

- Lecture/Exam in Chinese
 - Not recommend for those do not speak Chinese
- TAs:
 - We might have about 6 TAs.
 - Email to TAs: ta@nasa.cs.nctu.edu.tw
 - Also received by all lecturers
 - Office hour
 - Wed, 15:30 ~ 17:20, by appointment, @[CSIT](#)

Syllabus

- Email Policy (**IMPORTANT**)
 - Don't send course-related/technical questions to TAs
 - TAs won't answer you
 - Please ask them on course forum instead
 - Only ask TAs for personal/non-technical questions
 - Course registration/dropping
 - Grading
 - Office hour appointment
 - Demo appointment

Syllabus - Registration & Dropping Policy

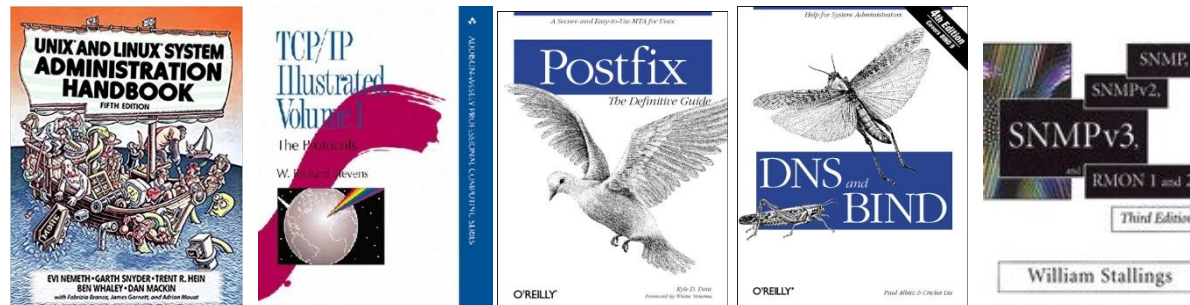
- Registration (if you are not able to register on web)
 - Fill the registration form and email to ta@nasa.cs.nctu.edu.tw
- Dropping (after midterm)
 - Contact CS Department Office if you cannot find lecturers near the deadline
 - Or email to ta@nasa.cs.nctu.edu.tw

Syllabus – Course Overview

- Main topics
 - Networking
 - TCP/IP Networking Environment
 - NAT, DHCP, Firewall, VPN, Load Balancer, ...
 - DNS – BIND (Berkeley Internet Name Domain)
 - Mail System - Postfix
 - SPF (Sender Policy Framework)
 - DKIM (Domain Keys Identified Mail)
 - DMARC (Domain-based Message Authentication, Reporting & Conformance)
 - Network Management/Authentication/Authorization
 - LDAP, SNMP
 - Configuration Management (Ansible, Puppet)

Syllabus – Course Textbook and Reference

- Textbook
 - Unix and Linux System Administration Handbook (5th Edition)
 - Course slides
- Reference book
 - TCP/IP Illustrated Volume 1
 - Postfix
 - DNS and BIND
 - SNMP, SNMPv2, SNMPv3 and RMON 1, 2



Syllabus – Text book outline

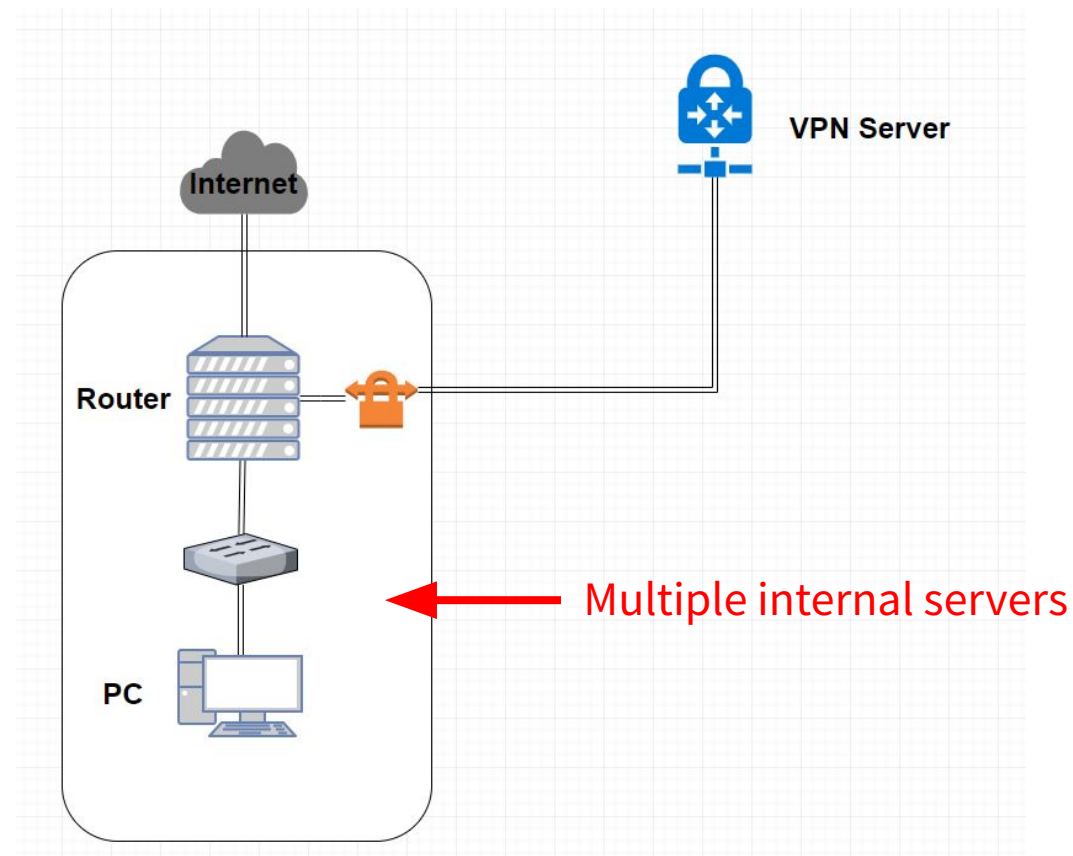
- Part II. Networking
 - Chap 16 – TCP/IP
 - Chap 17 – Routing
 - Chap 18 – DNS: Domain Name System
 - Chap 21 – SMTP: Simple Mail Transfer Protocol
 - Chap 22 – Directory Services
 - Chap 23 – Electronic Mail
 - Chap 25 – Network Management and Debugging
- Operations
 - Chap 30 – Monitoring

Syllabus – Grade Policy

- Mid
 - 15 ~ 20%
- Final
 - 15 ~ 20%
- Homework
 - 60 ~ 70%
 - **No Delay Work**
 - 4 homework + 1 term project (might be a group project)

Syllabus – Homework Outline

- Building an intranet with DHCP, NAT, VPN, DNS, LDAP, Mail, WWW... services
- Understanding and managing all these services



Syllabus – Homework Outline

- Every homework is based on previous one
- Homework 1
 - Setup Intranet
 - DHCP, NAT, VPN
- Homework 2
 - + DNS Service
- Homework 3
 - + Mail Service
- Homework 4
 - Authorization, Authentication, Monitoring, Management
 - + LDAP, SNMP
- Term project: TBA

Syllabus – Prerequisite

- Background Knowledge
 - We recommend that you should take these first
 - "Computer System Administration" (計算機系統管理)
 - "Introduction to Networking" (計算機網路概論)
- About OS
 - You can use any POSIX-compliant Unix-like OS for homework
 - FreeBSD is used for lecturing
- Environment
 - A dedicate(powerful?) PC that can run **multiple** VMs
 - VirtualBox, VMWare
 - 2~3 Unix-like system running at the same time

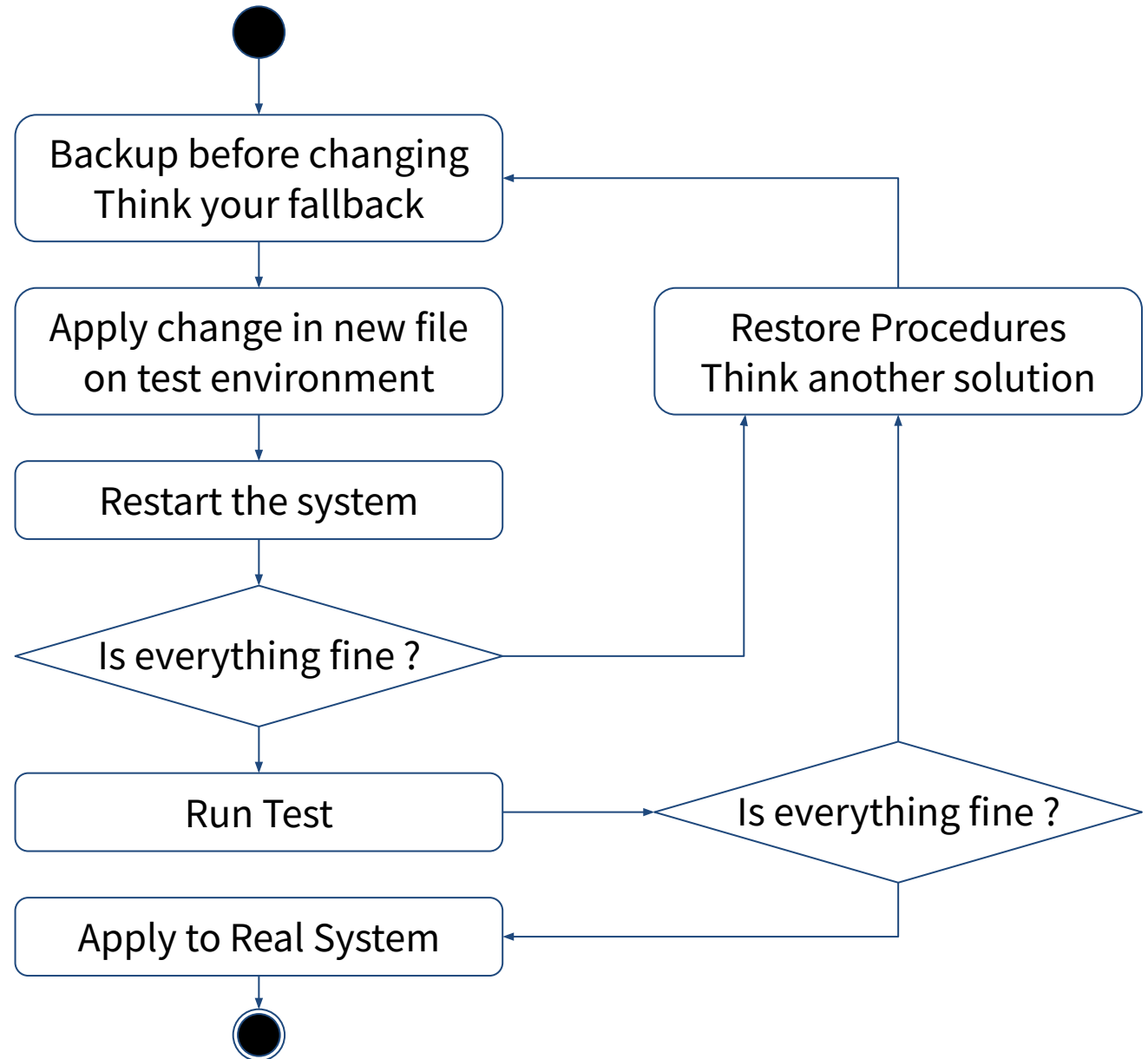
Attitude

- Attend every class
- Do every exercise
 - As early as possible
 - **On your own**
- Collect information on the Internet
 - The newer, the better.
- **Not recommended for those have more than 3 major courses in this semester**
 - Sometimes you may spend the whole weekend to just figure out what to do in the homework
 - Loading of this course **roughly equals to 2~3 major courses**
- **You will learn a lot if you study hard!**



When You Perform Any Changes...

- Flow of Change



SA-NA Junction

- FreeBSD
 - 13.0-RELEASE
- Self-study for the SA course
 - <https://nasa.cs.nctu.edu.tw/sa/2021/>

Q & A

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