Brief Introduction of Well-Known Operating Systems

Cheng-Han Du

December 1, 2010
Most people uses Windows as their computer OS for working and entertainment.

Most people get used to “convenient” (?) graphical user interface (GUI).

Students should learn some basic knowledge of well-known OS.

This may be quite helpful in some situations.

Smart phones may contain non-M$ OS.
Introduction

- Microsoft (M$) Windows
- Unix
- GNU and Linux
- Berkeley Software Distribution (BSD)
- Mac OS X
M$ Windows

- Before Windows: MS-DOS
- Windows 3.1
- Windows 95, 98, ME
- Windows NT, 2000
- Windows XP
- Windows Vista, 7
- Windows CE
M$ Windows

- Proprietary, close-source
- Convenient GUI
- Stability issue (Blue screen of death . . .)
- Security problem
- Computation performance
Proprietary

Text-base UI (GUI with X Window System)

BSD and SunOS are developed from Unix.
GNU and Linux

- Unix-like operating systems. They are not Unix!
- GNU project (Richard Stallman)
  - Original GNU project: without kernel, only applications and libraries
  - “Hurd” kernel has been developed later, but it is far less robust than Linux kernel.
  - “make”, “gcc”, “R project”, ...
- Linux kernel (Linux Torvalds)
GNU and Linux

- Far more secure than Windows when under proper management.
- Linux system can be extremely simple.
  - Simplified system is a critical factor in high-performance computing.
  - Without unnecessary programs, the computation resource can be almost fully dedicated to computing.
- Linux can be fully customized by user.
- Linux is extremely suitable for network processing and workstation.
- GUI in modern Linux systems is very user-friendly.
- Huge online user support network (Google!)
- Lots of distribution to choose (Ubuntu, Fedora, Mandriva, ... )
Outline

1. Introduction
2. M$ Windows
3. Unix
4. GNU and Linux
5. Other Software and Techniques
6. Conclusion
Berkeley Software Distribution (BSD)

- Developed from Unix
- Many network protocols and communications are first implemented on BSD platform.
- BSD is still a popular testing platform in academic research.
- FreeBSD, NetBSD, OpenBSD, …
Berkeley Software Distribution (BSD)
Mac OS X

- Developed from Unix
  - Classic Apple Mac OS is not!
- Proprietary, close-source
- Beautiful GUI
- Most focus on improved UI
Other Notable Concerns

- Operating systems for mobile devices
- Google’s idea: Android
- Some terminology explanation