

chapter 5



Network Operating Systems

CHAPTER OBJECTIVES

- Identify common features of network operating systems.
- Discuss the historical development of network operating systems.
- Describe the four major network operating systems and provide a brief discussion of their histories.
- Describe other network management tools.

NETWORK OPERATING SYSTEMS

– AN INTRODUCTION

- A **network operating system** is:
 - (=NOS)
 - **software** that **interfaces between server hardware and the network** to which the server is attached.
 - software that runs on a server computer and which provides users with controlled access to shared services on a network.

NOS – COMMON FEATURES

- Common features of modern NOSs include:
 - File system services
 - Printing services
 - Application services
 - Web folder sharing
 - Web-based management (web service 총칭)
 - Server clustering (Server 분산)
 - Directory services
Database의 개변 버전, 빠른 탐색 목적
 - Advanced security services
 - Internet and Web services

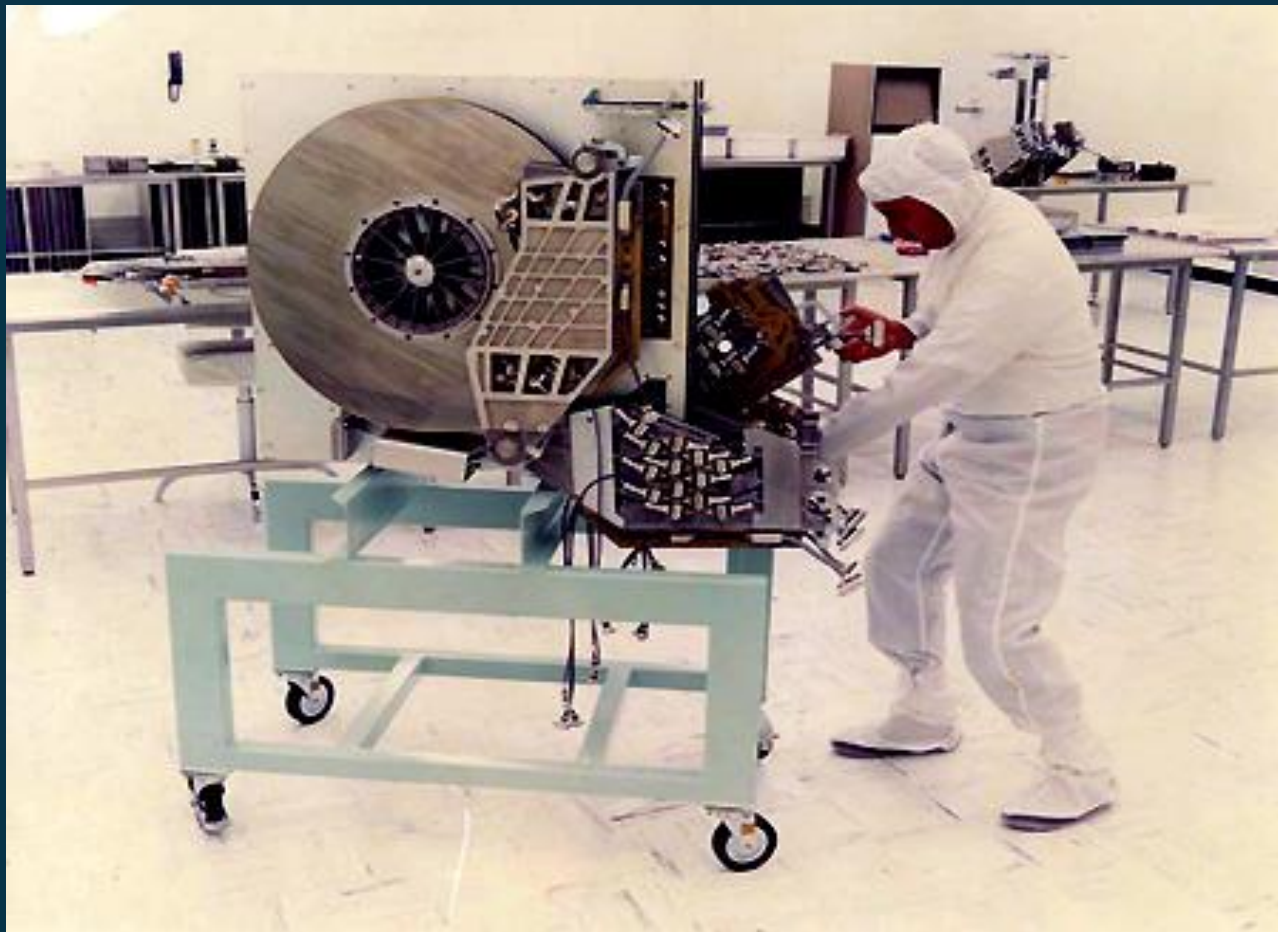
NOS – RECENT HISTORY



- NOSs evolved for business reasons.
 - In the early 1980s, hard drives were expensive to install in each individual PC. 비싼 주변장비를 개인적으로 사용하기에 부담을 느껴 NOS 발전사각
 - Users were developing growing needs to store increasing numbers of files.
 - With the implementation of PCs, organizations had need to easily and cost effectively share files between departments.
 - Distributed processing could be cheaper for a department than accessing a mainframe or developing an application for a corporate mainframe.

What is this?

↓ HDD



Is this real?



ex)

NOS – Novell NetWare

NOS 시장 강자였다.

- Novell history dates back to 1979.
- Company went public in 1983. = 823
상장했다
- Track record of innovative operating systems that met business needs.
- Missed the boat with the public launch of the Internet in the mid-1990s – slow to migrate from IPX protocol to IP.
기술적 흐름을 놓쳤다 (TCP/IP 기술 채택 느렸음)
- Introduced Directory Services with NetWare 4.0.
- Over time has launched NetWare 2.x, 3.x, 4.x, 5.x, and 6.x versions of their NetWare NOS.
- Today, much of their NOS functionality is based on Linux and open source technologies.

현재는 Linux로 연명중



NOS – Microsoft Windows

(원래는 DOS로 알려짐)

Disk operating system

- Microsoft didn't get into the NOS game until the late 1980s with the introduction of Windows NT.
- Windows NT went through several iterations including versions 3.1, 3.5, and 4.0.
- Windows NT was initially adopted for application services in a networked environment.
- Windows NT introduced the concept of domains.
- Microsoft incorporated IP into Windows NT early on.
- Windows 2000 Server introduced Active Directory as Microsoft's new directory service.
- Windows 2000 Server fully integrated Internet services and Internet access.

Mac ,
IBM ,

90년대 초부터 TCP/IP 편승
→ network os라 함께 window explorer 지원하기 커
NetWare 시장배분

2000년대 중반부터
NOS 품 몰라오다

NOS - Linux

- Linux has its roots in UNIX.
- Linux as a separate operating system dates back to 1991 with development work performed by Linus Torvalds.
- Linux version 1.0 was released in 1994.
- It is based on open source technology. → 무료!
- It provides most of the services of Novell's NetWare or Microsoft's Windows Servers.
- Large percentage of Internet Web servers are powered by Linux.
- Fewer trained and skilled technicians than are available for Novell or Microsoft networks.
- IBM, HP, and Novell are big supports of Linux.

- UNIX

안정적인 networking

but, 고용량이였다

미시버전 성공 : Linux

Window 불안정하면 시절거

점유를 높았다.

but 어렵다.

NOS - UNIX

- UNIX history dates back to the 1960s with work performed at MIT, General Electric, and AT&T Bell Labs.
- Ultimately the first version of UNIX was released by AT&T Bell Labs in 1971.
- Several updated versions were released throughout the 1970s, and AT&T gave it away for free.
- Another popular version, known as BSD UNIX was developed using AT&T source code. The BSD version was the first to include a word processing/text editing program.
- Other versions of UNIX were released in the 1980s, namely SCO UNIX, Sun Microsystem's Solaris, HP-UX, and IBM's AIX.

