

Introduction to Computer Administration

System Administration

System Administration

- System Administration
- Duties of System Administrator
- Types of Administrators/Users
- Operating Systems Supporting Administration
 - Windows
 - Unix

System Administration

- What is System Administration
 - Management of the System
 - System Comprise of
 - Computers
 - Hardware (CPU , Printer , Scanner etc)
 - Software
 - Operating System
 - Application Software (Business Software, Office Automation, Peach Tree etc)
 - Management Software (Database / Web / Email etc)
 - Networks
 - Users
 - Any thing else?
 - What do you understand by Management?

System Administration

- The subject matter of systems administration includes computer systems and the ways people use them in an organization. This entails a knowledge of **operating systems** and **applications**, as well as **hardware and software** troubleshooting, but also knowledge of the purposes for which people in the organization use the computers.

Duties of a System Administrator

A system administrator's responsibilities might include:

- Applying operating system updates, patches, and configuration changes.
- Installing and configuring new hardware and software.
- Adding, removing, or updating user account information, resetting passwords, etc.
- System performance tuning.

Duties of a System Administrator

- Responsibility for documenting the configuration of the system.
- Responsibility for security.
- Performing routine audits of systems and software.
- Performing backups.
- Analyzing system logs and identifying potential issues with computer systems.
- Troubleshooting any reported problems.

Duties of a System Administrator

- Introducing and integrating new technologies into existing data center environments.
- Answering technical queries.
- Insuring that the network infrastructure is up and running

System Architecture

Planning/Deployment

Domain Model Design

Active Directory Design

Site Planning/Deployment

... and more

OS Maintenance

OS and Network Monitoring

Performance Tuning

Script Development

Troubleshooting

... and more

User Support

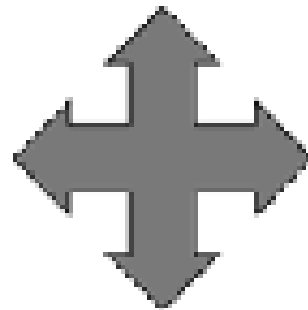
User Account Management

Group Policies Management

Security/Logon Enforcement

Education and Support

... and more



Hardware and Devices

Server and Client Systems

Device Driver Support

File/Printer/Application Servers

Physical Network

... and more

Types of Administrators/Users

In a larger company, following may all be separate positions within a computer support or Information Services (IS) department. In a smaller group they may be shared by a few sysadmins, or even a single person.

- Database Administrator
- Network Administrator
- Security Administrator
- Web Administrator
- Technical support
- computer operator

Types of Administrators/Users

- A **database administrator** (DBA) maintains a database system, and is responsible for the integrity of the data and the efficiency and performance of the system.
- A **network administrator** maintains network infrastructure such as switches and routers, and diagnoses problems with these or with the behavior of network-attached computers.
- A **security administrator** is a specialist in computer and network security, including the administration of security devices such as firewalls, as well as consulting on general security measures.

Types of Administrators/Users

- A **web administrator** maintains web server services (such as IIS or Apache) that allow for internal or external access to web sites. Tasks include managing multiple sites, administering security, and configuring necessary components and software. Responsibilities may also include software change management.
- **Technical support** staff respond to individual users' difficulties with computer systems, provide instructions and sometimes training, and diagnose and solve common problems.
- A **computer operator** performs routine maintenance and upkeep, such as changing backup tapes or replacing failed drives in a RAID array. Such tasks usually require physical presence in the room with the computer; and while less skilled than sysadmin tasks require a similar level of trust, since the operator has access to possibly sensitive data.

Operating Systems

Supporting Administration

- Microsoft Windows

- **History:**

<http://www.worldowindows.com/wintime.html>

- 1975 - Microsoft Formed
- 1980 - Xenix released by Microsoft
- 1981 - MS-DOS 1.0 released with new IBM PC
- 1985 - Windows 1.0 released
- 1992 - Windows 3.1 released
- 1993 - Windows NT 3.1 released (over 6 million lines of code)

Operating Systems

Supporting Administration

- **1995** - Windows NT 3.5.1 released
- Windows 95 released
- **1996** - Windows NT 4.0 released
- **1998** - Windows 98 released
- **1998** - Microsoft announces Windows NT 5.0 will be renamed Windows 2000
- **2000** - release of windows 2000 (aka NT 5.0)
- **2001** - release of windows XP (aka NT 5.1)
- **2003** - release of windows 2003 server

Operating Systems

Supporting Administration

- UNIX

- Early 70s --> AT&T System V Unix (and C developed)--> BSD Unix (U. Cal-Berkley)

- Today - many variants. Portable and Scalable.

HP - HP/UX

IBM - AIX

Silicon Graphics - Irix

Sun Microsystems - SunOS/Solaris

- For history see:

<http://www.sun.com/aboutsun/coinfo/history.html>

Operating Systems

Supporting Administration

- 1982 - Sun Microsystems founded.
- PC Based Unix - solaris, SCO Unix, FreeBSD, NetBSD
- Linux - Linus Torvalds (Finland) 1991. Free/Open.
 - (Red Hat Linux – Commercial Version)
 - Debian, another popular version of Linux (freeware)