**1.Distribution**

LINUX: Redhat Centos Fedora Suse Opensuse Debian Ubuntu Gentoo Archlinux slackware

UNIX: FreeBSD OpenBSD Solaris

**2.device file**

*terminal*: /dev/ttyn /dev/vt/n (:m) /dev/pts/n (:m)

*disk/partition*: /dev/hdxy /dev/sdxy /dev/srx /dev/mdxpy /dev/vg\_name/lv\_namepx /dev/dsk/c#t#d#p#(controller target disk partition) rpool/path (ZFS)

**3.access system**

①identiry/permission

owner group others - r4 w2 x1

regular - ①read-only: r ②read and write: rw | execute: x

directory - ①list files only: r ②access files: rx ③create and delete files: rwx

②SELinux

domain type

③architecture

system process:identity/domain

file system: permission/type

**4.process tree**

init(root) -> daemon (stand\_alone, xinetd\_based) -> dependency

daemon type: listen by self or by xinetd, listen function configured in conf file

*init adopt orphan process automatically*

*init reap zombie(address space release, process table left) child process automatically*

*process system call:*

*fork()&exec() - fork child process*

*exit()&SIGCLD - release address space, send signal*

*wait() - destroy zombie data structure*

*shell – fork(),exec(),wait() shell & - fork(),exec() system() – fork(),exec(),wait()*

**5.X window system**

X client – xdm(gdm/kdm) -> xwm(gnome/kde) -> app(vmware)

X server – X / xming

Soft: xorg-x11, xorg-x11-server, gnome

**6. inode/block**

Inode table - inode num, access permission, uid, gid, access time, modify time, change time, size, link num, handler

Block - regular file: binary directory: list(name <-> inode) symbolic link: path

Hard link - different name -> one inode

Soft link - different name -> different inode, symbolic link record path

Mount/nfs - name -> another inode

**7. process & thread**

Thread creating: PID/TID=X, TGID=X --> PID/TID=Y, TGID=X

Process creating: PID/TID=X, TGID=X --> PID/TID=Z, TGID=Z

**8. UNIX-like system**

Application <- System lib <- System call | Kernel

System call trigger soft interruption to send parameters to kernel by registers, then kernel start corresponding threads service.