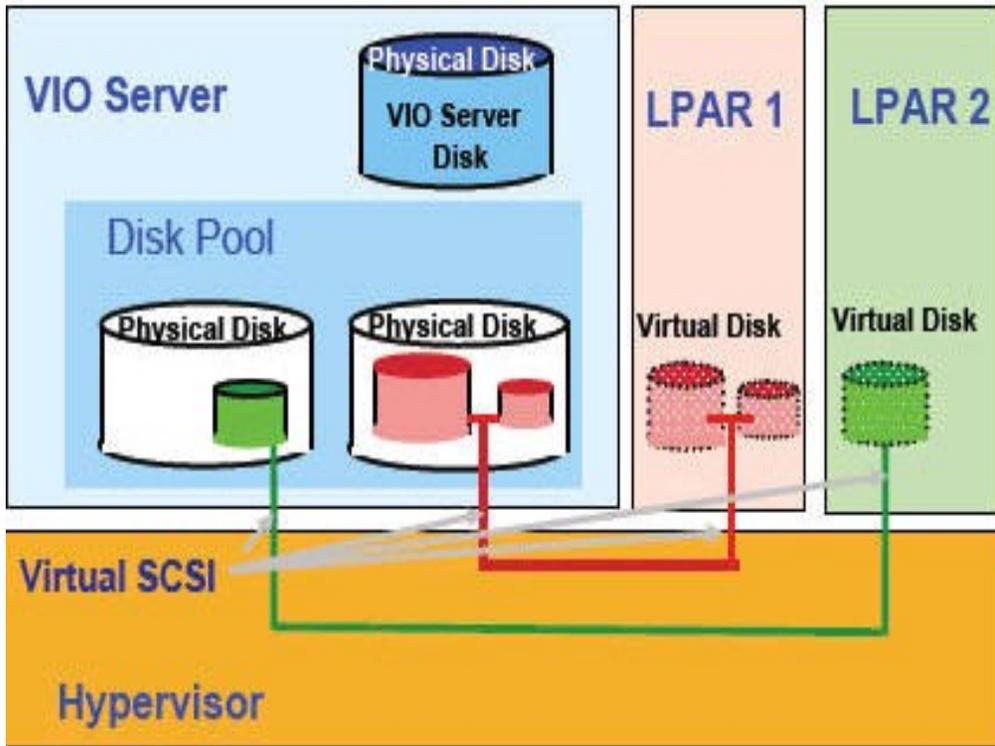


# Systemverwaltung 2009

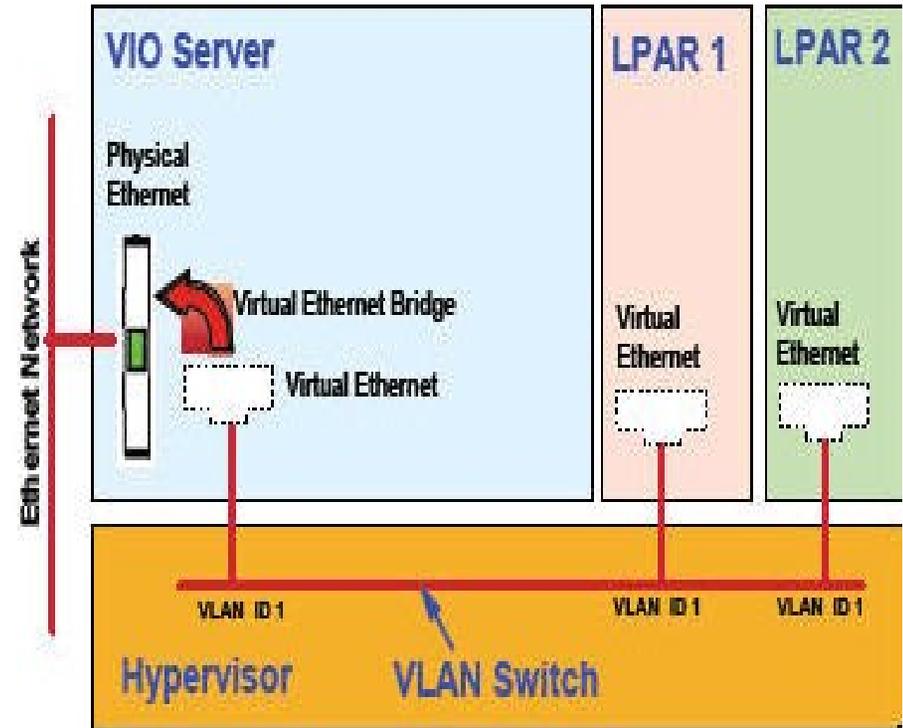
## AIX / SMIT



# Logical partition virtualization



Virtual Disk



Virtual Ethernet

# Role of the system administrator

---

- Pre-installation planning of:
  - User accounts/groups
  - Storage allocation/paging space
  - Subsystem (printing, networks, and so forth)
  - Standard naming conventions
  - Determine system policies
- Install and configure hardware
- Configure the software
- Configure the network
- System backup
- Create/manage user accounts
- Define and manage subsystems
- Manage system resources (for example, disk space)
- Performance monitoring
- Capacity planning
- Managing licenses for products
- Document system configuration and keep it current

# Who can perform administration tasks?

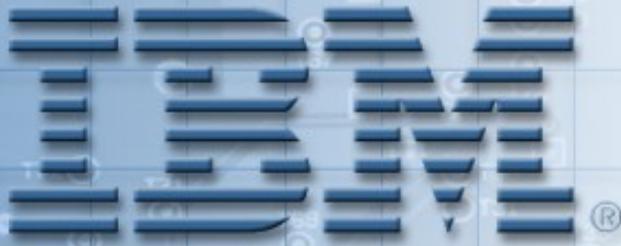
---

- Usually exclusive to the **root** user
  - Bypasses any file permissions
  - Very dangerous to login as **root**
  - Keep the **root** password secure
- Some tasks can be performed by other users in special groups such as **system**, **security**, **printq**, and **lp**
- The **su** command allows you to obtain **root**'s permissions or permissions of any user whose password you know

```
$ su root
```

or

```
$ su - root
```



Welcome to:

**Systemverwaltung 2009  
AIX  
System Management  
Interface Tool (SMIT)**



# ~~smit~~ command options

---

- General syntax:

```
smit [-options] [ FastPath ]
```

- Invoke ASCII version:

```
# smitty
```

*or*

```
# smit -C
```

- Log (but do not actually run) commands:

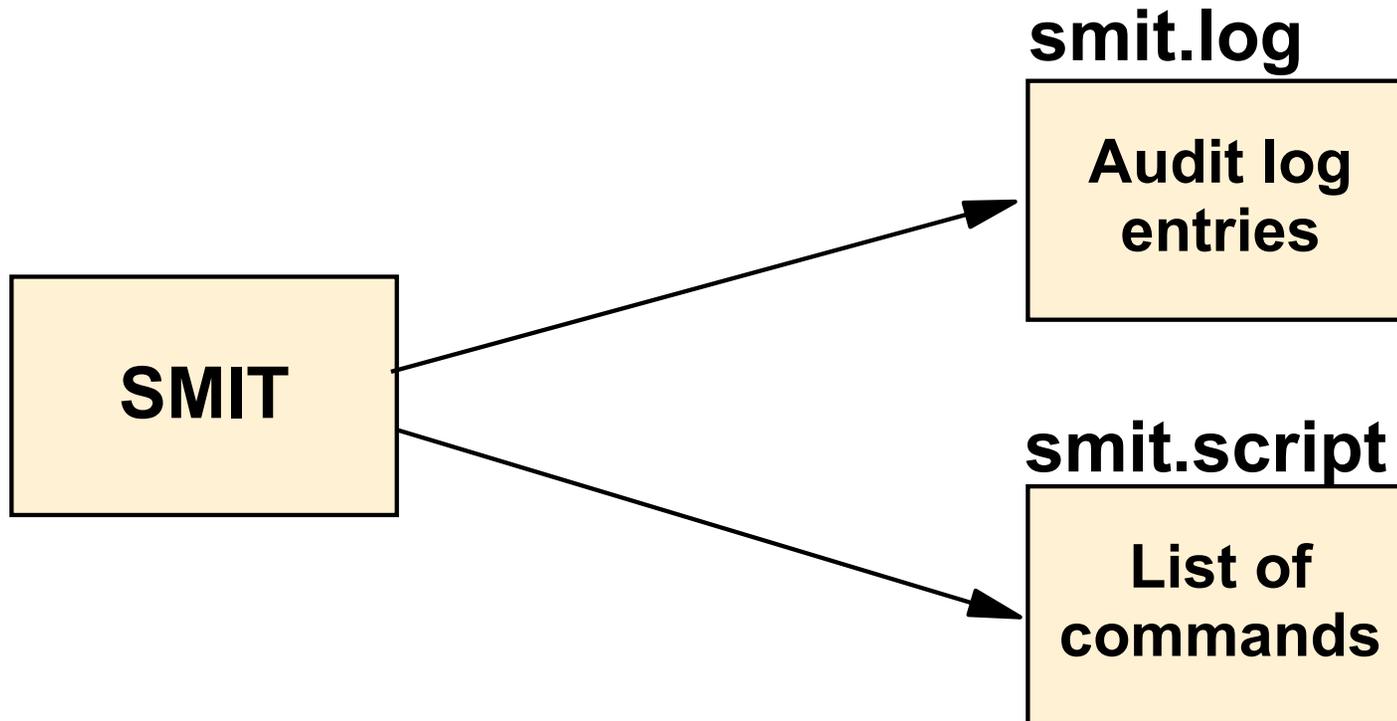
```
# smit -x
```

- Redirect the log file and script file:

```
# smit -s /u/team1/smit.script -l /u/team1/smit.log
```

```
# smit -s /dev/pts/1 -l /dev/pts/2
```

# SMIT log and script files



- **\$HOME/smit.log**

Keeps a log of all menu and dialog screens visited, all commands executed and their output. Also records any errors during the SMIT session.

- **\$HOME/smit.script**

Shell script containing all AIX commands executed by SMIT.

# Checkpoint

1. Specify the SMIT function keys that can be used for the following:

- a) List the command that will be run: \_\_\_\_\_
- b) List the screen name which can be used for the fastpath: \_\_\_\_\_
- c) Take a screen image: \_\_\_\_\_
- d) Break out into a shell: \_\_\_\_\_
- e) Return to the previous menu: \_\_\_\_\_

2. Specify two ways you can request the ASCII character version of SMIT from an X-windows environment command prompt:

- \_\_\_\_\_
- \_\_\_\_\_

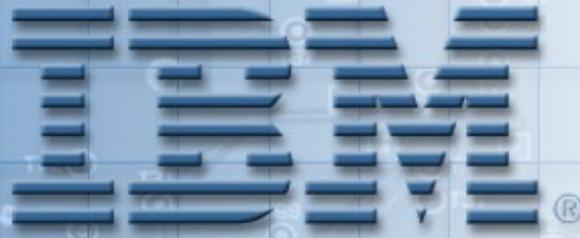
# Checkpoint solutions

1. Specify the SMIT function keys that can be used for the following:
  - List the command that will be run: F6
  - List the screen name which can be used for the fastpath: F8
  - Take a screen image: F8
  - Break out into a shell: F9
  - Return to the previous menu: F3
2. Specify two ways you can request the ASCII character version of SMIT from an X-windows environment command prompt:
  - smitty
  - smit -C

# Exercise 2: Using SMIT



- Using SMIT with the ASCII interface
- Using SMIT with the Motif interface (optional)



# AIX

## System startup and shutdown



# Startup modes

---

## Normal mode

- Login prompt
- All processes running
- Multi-user mode

## System Management Services

- Not AIX
- Runs from FIRMWARE
- Sets boot list

## Maintenance mode

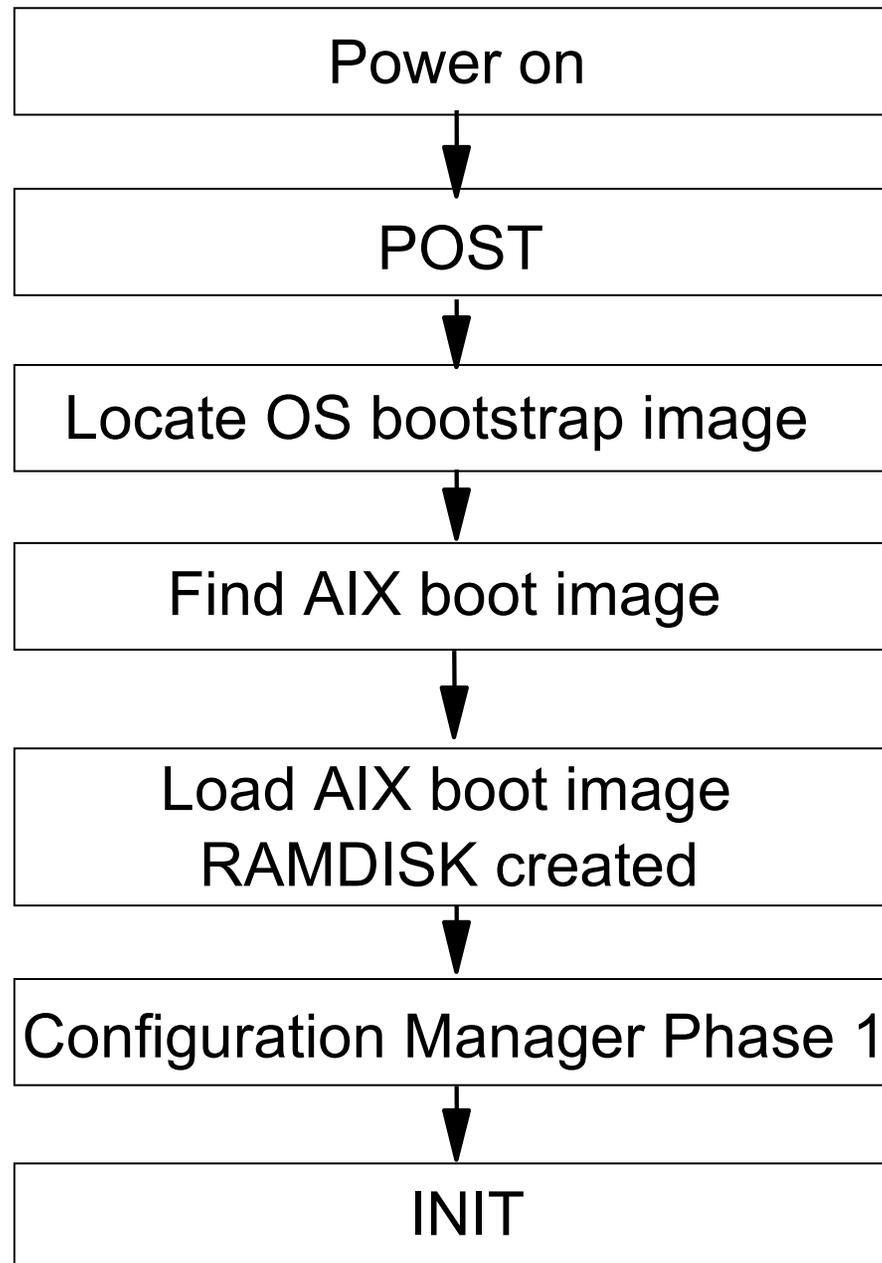
- Maintenance menu
- Recover **root** password
- Fix machine that won't boot

## Diagnostics

- AIX diagnostics

# System p server start up process overview

---



**Normal IPL**

# The `bootinfo` command

---

- To view the architecture type:

```
# bootinfo -p
```

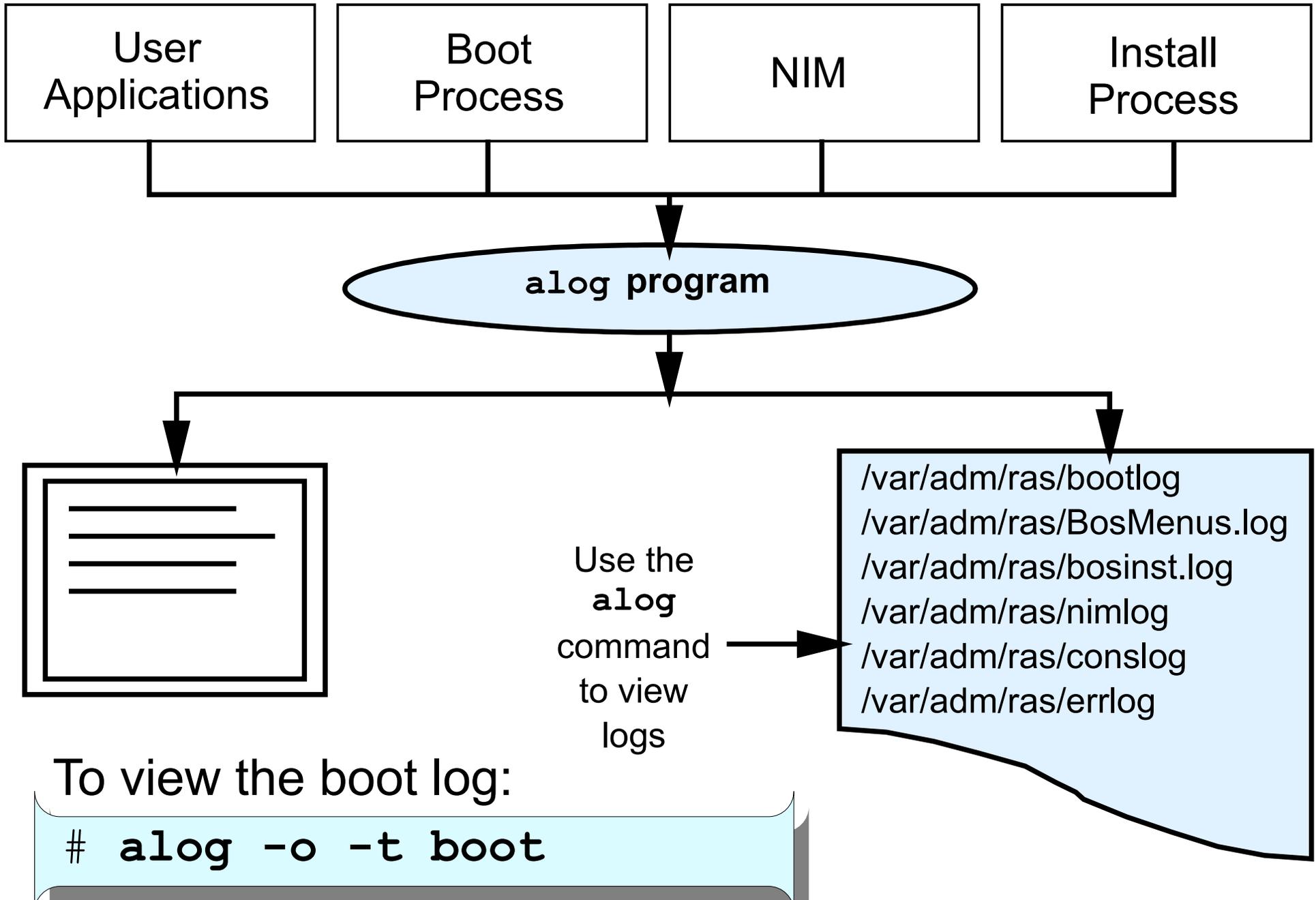
```
rs6k    MCA model  
rspc    PCI model (POWER Reference Platform)  
chrp    PCI model (Common Hardware Reference)
```

- To view the bit addressing:

```
# bootinfo -y
```

```
32      32-bit  
64      64-bit
```

# The alog command



# /etc/inittab

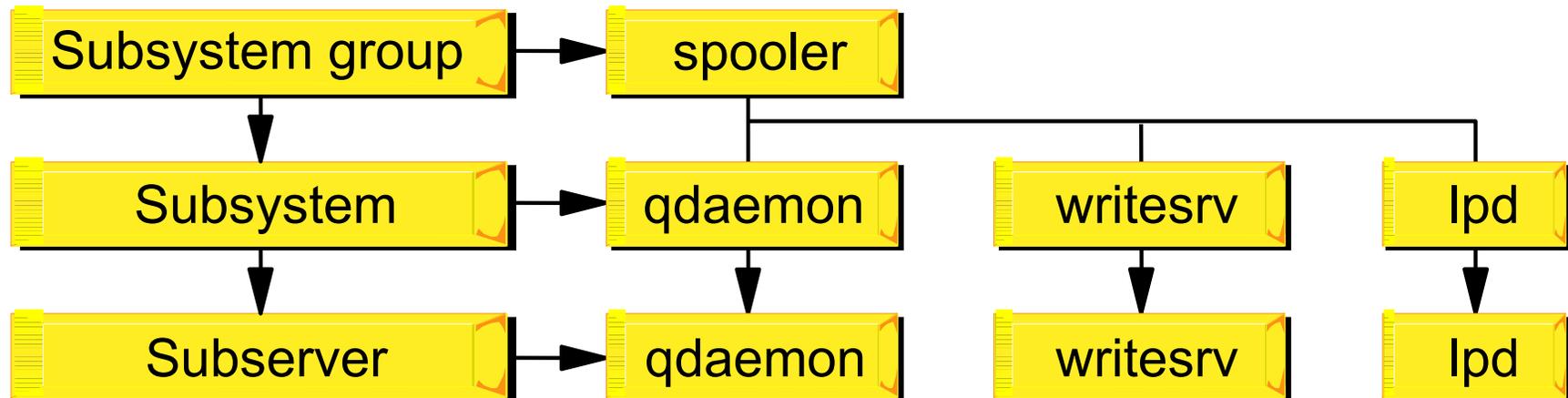
Format of the line: **id:runlevel:action:command**

```
init:2:initdefault:
brc::sysinit:/sbin/rc.boot 3 >/dev/console 2>&1 # Phase 3 of system boot
powerfail::powerfail:/etc/rc.powerfail 2>&1 | alog -tboot > /dev/console ...
mkatmpvc:2:once:/usr/sbin/mkatmpvc >/dev/console 2>&1
atmsvcd:2:once:/usr/sbin/atmsvcd >/dev/console 2>&1
load64bit:2:wait:/etc/methods/cfg64 >/dev/console 2>&1 # Enable 64-bit execs
tunables:23456789:wait:/usr/sbin/tunrestore -R > /dev/console 2>&1 ...
rc:23456789:wait:/etc/rc 2>&1 | alog -tboot > /dev/console # Multi-User checks
fbcheck:23456789:wait:/usr/sbin/fbcheck 2>&1 | alog -tboot > /dev/console ...
srcmstr:23456789:respawn:/usr/sbin/srcmstr # System Resource Controller
rctcpip:23456789:wait:/etc/rc.tcpip > /dev/console 2>&1 # Start TCP/IP daemons
rcnfs:23456789:wait:/etc/rc.nfs > /dev/console 2>&1 # Start NFS Daemons
cron:23456789:respawn:/usr/sbin/cron
piobe:2:wait:/usr/lib/lpd/pio/etc/piointit >/dev/null 2>&1 # pb cleanup
qdaemon:23456789:wait:/usr/bin/startsrc -sqdaemon
writesrv:23456789:wait:/usr/bin/startsrc -swritesrv
uprintfd:23456789:respawn:/usr/sbin/uprintfd
shdaemon:2:off:/usr/sbin/shdaemon >/dev/console 2>&1 # High availability daemon
12:2:wait:/etc/rc.d/rc 2
13:3:wait:/etc/rc.d/rc 3
14:4:wait:/etc/rc.d/rc 4
. . .
```

# System resource controller

---

- Provides a single interface to control subsystems
- Controls individual subsystems or groups of subsystems



# System resource controller syntax

---

- List SRC status:

```
# lssrc -g spooler
subsystem      Group      PID      Status
qdaemon        spooler    8022     active
writesrv       spooler    9558     active
lpd            spooler                    inoperative
```

- Start a subsystem:

```
# startsrc -s lpd
0513-059 The lpd Subsystem has been started. Subsystem PID is 12472.
```

- Refresh a subsystem:

```
# refresh -s lpd
0513-095 The request for subsystem refresh was completed successfully.
```

- Stop a subsystem:

```
# stopsrc -s lpd
0513-044 The lpd Subsystem was requested to stop.
```

# Stopping processes

- # ps -ef

```
UID      PID      PPID      C    STIME      TTY      TIME      CMD
root      1         0         0    May 04      -        0:11      /etc/init
root     2626      1         0    May 04      -        1:17      /usr/sbin/syncd 60
root     4136      1         0    May 04      -        0:00      /usr/sbin/srcmstr
root     4964      4136      0    May 04      -        0:00      /usr/sbin/inetd
root     6734      1         0    May 04      -        0:02      /usr/sbin/cron
root     8022      4136      0    May 04      -        0:00      /usr/sbin/qdaemon
root     9036      1         0    May 04      -        0:00      /usr/sbin/uprintfd
root     9345      1         0    May 04      -        0:02      /usr/bin/program
```

- For process not started by **srcmstr**:

```
# kill 9345
```

- For processes started by SRC:

```
# stopsrc -s qdaemon
```

# System shutdown

---

- The **shutdown** command:

- Gracefully stops all activity on the system and advises all logged on users
- Warns users of an impending shutdown

```
# shutdown +2 The system will be down until 3AM
```

```
Broadcast message from root@localhost (tty) at  
1:30:20...
```

```
The system will be down until 3AM
```

```
shutdown: PLEASE LOG OFF NOW!!!
```

```
All processes will be killed in 2 minutes
```

# Manage the system environment

```
# smit system
```

## System Environments

Move cursor to desired item and press Enter.

```
Stop the System
  AIX Security Expert
Assign the Console
Change / Show Date, Time, and Time Zone
Manage Language Environment
Change / Show Characteristics of Operating System
Change / Show Number of Licensed Users
Broadcast Message to all Users
Manage System Logs
Change / Show Characteristics of System Dump
Change/Show Documentation Services
Change System User Interface
Change/Show Default Browser
Change/Show Documentation Services
Web-based System Manager
Enable 64-bit Application Environment
Manage Remote Reboot Facility
Manage System Hang Detection
```

F1=Help  
F9=Shell

F2=Refresh  
F10=Exit

F3=Cancel  
Enter=Do

F8=Image

# Checkpoint

1. What is the first process that is created on the system and which file does it reference to initiate all the other processes that have to be started?

---

---

2. Which AIX feature can be used to stop and start groups of daemons or programs?

---

3. True or False? You can only execute the shutdown command from the console.

# Exercise 3: System startup and shutdown

---



- Multi-user mode
- Boot using System Management Services
- System Resource Controller (SRC)
- Resetting the run level (INIT)

