

Topic 101: System Architecture

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Topic 101: (8) System Architecture

101.1 (2) Determine and configure hardware settings

101.2 (3) Boot the system

101.3 (3) Change runlevels / boot targets and shutdown or reboot system

101.1 (2) Determine and configure hardware settings

Question: 4

101.1 Determine and configure hardware settings

Which of the following statements is correct when talking about /proc/?

- A. All changes to files in /proc/ are stored in /etc/proc.d/ and restored on reboot.
- B. All files within /proc/ are read-only and their contents cannot be changed.
- C. All changes to files in /proc/ are immediately recognized by the kernel.
- D. All files within /proc/ are only readable by the root user.

Answer: C

Question: 5

101.1 Determine and configure hardware settings

What of the following statements are true regarding /dev/ when using udev? (Choose TWO correct answers.)

- A. Entries for all possible devices get created on boot even if those devices are not connected.
- B. Additional rules for udev can be created by adding them to /etc/udev/rules.d/.
- C. When using udev, it is not possible to create block or character devices in /dev/ using mknod.
- D. The /dev/ directory is a filesystem of type tmpfs and is mounted by udev during system startup.
- E. The content of /dev/ is stored in /etc/udev/dev and is restored during system startup.

Answer: B,D

Question: 9

101.1 Determine and configure hardware settings

FILL IN THE BLANK

Which file in the /proc filesystem lists parameters passed from the bootloader to the kernel? (Specify the file name only without any path.)

Answer: cmdline, /proc/cmdline

Question: 10

101.1 Determine and configure hardware settings

What information can the lspci command display about the system hardware? (Choose THREE

correct answers.)

- A. Device IRQ settings
- B . P C I bus speed
- C. System battery type
- D. Device vendor identification
- E. Ethernet MAC address

Answer: A,B,D

Question: 20

101.1 Determine and configure hardware settings

You suspect that a new ethernet card might be conflicting with another device. Which file should you check within the /proc tree to learn which IRQs are being used by which kernel drivers?

Answer: interrupts, /proc/interrupts

Question: 22

101.1 Determine and configure hardware settings

The USB device filesystem can be found under /proc/_____/usb/. (Please fill in the blank with the single word only)

Answer: bus

Question: 194

101.1 Determine and configure hardware settings

Which of the following commands will load a kernel module along with any required dependency modules?

- A. depmod
- B. insmod
- C. modprobe
- D. module_install
- E . loadmod

Answer: C

Question: 199

101.1 Determine and configure hardware settings

Which file in /proc describes the IRQs that are used by various kernel drivers? (Specify the file name only without any path.)

Answer: interrupts

Question: 214

101.1 Determine and configure hardware settings

A faulty kernel module is causing issues with a network interface card. Which of the following actions ensures that this module is not loaded automatically when the system boots?

- A. Using `lsmod --remove --autoclean` without specifying the name of a specific module
- B. Using `modinfo -k` followed by the name of the offending module
- C. Using `modprobe -r` followed by the name of the offending module
- D. Adding a blacklist line including the name of the offending module to the file `/etc/modprobe.d/blacklist.conf`
- E. Deleting the kernel module's directory from the file system and recompiling the kernel, including its modules

Answer: D

101.2 (3) Boot the system

Question: 2

101.2 Boot the system

During a system boot cycle, what program is executed after the BIOS completes its tasks?

- A. The bootloader
- B. The inetd program
- C. The init program
- D. The kernel

Answer: A

Question: 6

101.2 Boot the system

Which of the following information is stored within the BIOS? (Choose TWO correct answers.)

- A. Boot device order
- B. Linux kernel version
- C. Timezone
- D. Hardware configuration
- E. The system's hostname

Answer: A,D

Question: 8

101.2 Boot the system

Which of the following are init systems used within Linux systems? (Choose THREE correct answers.)

- A. startd
- B. systemd
- C. Upstart
- D. SysInit
- E. SysV init

Answer: B,C,E

Question: 12

101.2 Boot the system

What is the first program that is usually started, at boot time, by the Linux kernel when using SysV init?

- A. /lib/init.so
- B. /sbin/init
- C. /etc/rc.d/rcinit
- D. /proc/sys/kernel/init
- E. /boot/init

Answer: B

Question: 13

[101.2 Boot the system](#)

Which command will display messages from the kernel that were output during the normal boot sequence?

Answer: dmesg, /bin/dmesg

Question: 15

[101.2 Boot the system](#)

Which of the following kernel parameters instructs the kernel to suppress most boot messages?

- A . silent
- B . verbose = 0
- C . nomsg
- D. quiet

Answer: D

Question: 17

[101.2 Boot the system](#)

The message "Hard Disk Error" is displayed on the screen during Stage 1 of the GRUB boot process. What does this indicate?

- A. The kernel was unable to execute /bin/init
- B. The next Stage cannot be read from the hard disk because GRUB was unable to determine the size and geometry of the disk
- C. One or more of the filesystems on the hard disk has errors and a filesystem check should be run
- D. The BIOS was unable to read the necessary data from the Master Boot Record to begin the boot process

Answer: B

Question: 18

101.2 Boot the system

During a system boot cycle, what is the program that is run after the BIOS completes its tasks?

- A. The bootloader
- B. The inetd program
- C. The init program
- D. The kernel

Answer: A

Question: 21

101.2 Boot the system

The system is having trouble and the engineer wants to bypass the usual /sbin/init start up and run /bin/sh. What is the usual way to pass this change to the kernel from your boot loader?

- A. Start in runlevel 1.
- B. Pass init=/bin/sh on the kernel parameter line.
- C. Pass /bin/sh on the kernel parameter line.
- D. Pass start=/bin/sh on the kernel parameter line.

Answer: B

Question: 23

101.2 Boot the system

Which command displays the contents of the Kernel Ring Buffer on the command line? (Provide only the command name without any options or path information)

Answer: dmesg, /bin/dmesg

Question: 196

101.2 Boot the system

Which of the following describes the correct order in which the components of the system boot process are started?

- A. BIOS, kernel, bootloader, init system
- B. BIOS, bootloader, kernel, init system
- C. Bootloader, BIOS, kernel, init system
- D. BIOS, bootloader, init system, kernel
- E. Bootloader, BIOS, init system, kernel

Answer: B

Question: 197

101.2 Boot the system

Where does the BIOS search for a bootloader?

- A. On all connected storage media regardless of the boot device order.
- B. On all connected storage media in the defined boot device order.
- C. Only on hard disk drives in the defined boot device order.
- D. Only on the last added storage media.
- E. The BIOS is not responsible to search for a valid bootloader.

Answer: B

Question: 198

101.2 Boot the system

Which command reads and displays the current contents of the Kernel Ring Buffer on the command line? (Specify ONLY the command without any path or parameters.)

Answer: dmesg

Question: 212

101.2 Boot the system

Which of the following statements are true about the boot sequence of a PC using a BIOS? (Choose two.)

- A. Some parts of the boot process can be configured from the BIOS
- B. Linux does not require the assistance of the BIOS to boot a computer
- C. The BIOS boot process starts only if secondary storage, such as the hard disk, is functional
- D. The BIOS initiates the boot process after turning the computer on
- E. The BIOS is started by loading hardware drivers from secondary storage, such as the hard disk

Answer: A,D

Question: 213

101.2 Boot the system

What is true regarding UEFI firmware? (Choose two.)

- A. It can read and interpret partition tables
- B. It can use and read certain file systems
- C. It stores its entire configuration on the /boot/ partition
- D. It is stored in a special area within the GPT metadata
- E. It is loaded from a fixed boot disk position

Answer: B,D

Question: 215

101.2 Boot the system

When is the content of the kernel ring buffer reset? (Choose two.)

- A. When the ring buffer is explicitly reset using the command `dmesg --clear`
- B. When the ring buffer is read using `dmesg` without any additional parameters
- C. When a configurable amount of time, 15 minutes by default, has passed
- D. When the kernel loads a previously unloaded kernel module
- E. When the system is shut down or rebooted

Answer: A,E

101.3 (3) Change runlevels / boot targets and shutdown or reboot system

Question: 1

101.3 Change runlevels / boot targets and shutdown or reboot system

Which SysV init configuration file should be modified to disable the ctrl-alt-delete key combination?

- A. /etc/keys
- B. /proc/keys
- C. /etc/inittab
- D. /proc/inittab
- E. /etc/reboot

Answer: C

Question: 3

101.3 Change runlevels / boot targets and shutdown or reboot system

Which run levels should never be declared as the default run level when using SysV init? (Choose TWO correct answers.)

- A. 0
- B. 1
- C. 3
- D. 5
- E. 6

Answer: A,E

Question: 7

101.3 Change runlevels / boot targets and shutdown or reboot system

Which of the following commands reboots the system when using SysV init? (Choose TWO correct answers.)

- A. shutdown -r now
- B. shutdown -r "rebooting"
- C. telinit 6
- D. telinit 0
- E. shutdown -k now "rebooting"

Answer: A,C

Question: 11

[101.3 Change runlevels / boot targets and shutdown or reboot system](#)

Which of the following commands brings a system running SysV init into a state in which it is safe to perform maintenance tasks? (Choose TWO correct answers.)

- A. shutdown -R 1 now
- B. shutdown -single now
- C. init 1
- D. telinit 1
- E. runlevel 1

Answer: C,D

Question: 14

[101.3 Change runlevels / boot targets and shutdown or reboot system](#)

Which of the following commands will write a message to the terminals of all logged in users?

- A. bcast
- B. mesg
- C. print
- D. wall
- E. yell

Answer: D

Question: 16

[101.3 Change runlevels / boot targets and shutdown or reboot system](#)

Which of the following options for the kernel's command line changes the systemd boot target to rescue.target instead of the default target?

- A. systemd.target=rescue.target
- B. systemd.runlevel=rescue.target
- C. systemd.service=rescue.target
- D. systemd.default=rescue.target
- E. systemd.unit=rescue.target

Answer: E

Question: 19

[101.3 Change runlevels / boot targets and shutdown or reboot system](#)

You are having some trouble with a disk partition and you need to do maintenance on this partition but your users home directories are on it and several are logged in. Which command would

disconnect the users and allow you to safely execute maintenance tasks?

- A. telinit 1
- B. shutdown -r now
- C. killall -9 inetd
- D. /bin/netstop --maint
- E. /etc/rc.d/init.d/network stop

Answer: A

Question: 195

[101.3 Change runlevels / boot targets and shutdown or reboot system](#)

Which of the following commands instructs SysVinit to reload its configuration file?

- A. reinit
- B. initreload
- C. telinit 7
- D. telinit q
- E. init reinit

Answer: D

Question: 200

[101.3 Change runlevels / boot targets and shutdown or reboot system](#)

Which SysV init configuration file is commonly used to set the default run level? (Specify the full name of the file, including path.)

Answer: inittab

Question: 201

[101.3 Change runlevels / boot targets and shutdown or reboot system](#)

What is the process ID number of the init process on a SysV init based system?

- A. -1
- B. 0
- C. 1
- D. It is different with each reboot.
- E. It is set to the current run level.

Answer: C

Question: 202

[101.3 Change runlevels / boot targets and shutdown or reboot system](#)

The system configuration file named _____ is commonly used to set the default runlevel. (Please provide the file name with full path information)

Answer: /etc/inittab

Question: 211

101.3 Change runlevels / boot targets and shutdown or reboot system

Which daemon handles power management events on a Linux system?

- A. acpid
- B. batteryd
- C. pwrmgntd
- D. psd
- E. inetd

Answer: A

Question: 216

101.3 Change runlevels / boot targets and shutdown or reboot system

What is the first program the Linux kernel starts at boot time when using System V init?

- A. /lib/init.so
- B. /proc/sys/kernel/init
- C. /etc/rc.d/rcinit
- D. /sbin/init
- E. /boot/init

Answer: D

Question: 227

102.5 Use RPM and YUM package management

What is true regarding the configuration of yum? (Choose two.)

- A. Changes to the repository configuration become active after running yum confupdate
- B. Changes to the yum configuration become active after restarting the yum service
- C. The configuration of package repositories can be divided into multiple files
- D. Repository configurations can include variables such as \$basearch or \$releasever
- E. In case /etc/yum.repos.d/ contains files, /etc/yum.conf is ignored

Answer: D,E

Question: 228

102.4 Use Debian package management

Which of the following apt-get subcommands installs the newest versions of all currently installed packages?

- A. auto-update
- B. dist-upgrade
- C. full-upgrade
- D. install
- E. update

Answer: E

Question: 229

[102.4 Use Debian package management](#)

Which command uninstalls a package but keeps its configuration files in case the package is re-installed?

- A. `dpkg -s pkgname`
- B. `dpkg -L pkgname`
- C. `dpkg -P pkgname`
- D. `dpkg -v pkgname`
- E. `dpkg -r pkgname`

Answer: E

Question: 230

[102.5 Use RPM and YUM package management](#)

Which of the following commands lists the dependencies of the RPM package file foo.rpm?

- A. `rpm -qpR foo.rpm`
- B. `rpm -dep foo`
- C. `rpm -ld foo.rpm`
- D. `rpm -R foo.rpm`
- E. `rpm -pD foo`

Answer: A