

Chapter

1

# System Management (Domain 1.0)

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1. Which command is used to load a module and its dependencies automatically?
  - A. modprobe
  - B. lsmod
  - C. insmod
  - D. rmmod
2. Which option given at boot time within the GRUB2 boot entry configuration will boot the system into single-user mode?
  - A. single-user
  - B. su
  - C. single
  - D. root
3. What is the command to display the default target on a computer running systemd?
  - A. systemctl defaults
  - B. update-rc.d defaults
  - C. systemctl runlevel
  - D. systemctl get-default
4. Which command is used to obtain a list of USB devices?
  - A. usb-list
  - B. lsusb
  - C. ls-usb
  - D. ls --usb
5. Which command can be used to obtain a list of currently loaded kernel modules?
  - A. insmod
  - B. modlist
  - C. ls --modules
  - D. lsmod
6. When running with a Unified Extensible Firmware Interface (UEFI) system, to which partition will the EFI system partition typically be mounted?
  - A. /etc/efi
  - B. /efi
  - C. /sys/efi
  - D. /boot/efi

7. Assuming that a USB disk contains a single partition and is made available on `/dev/sdb`, which command mounts the disk in `/media/usb`?
  - A. `mount /dev/sdb1 /media/usb`
  - B. `usbconnect /dev/sdb0 /media/usb`
  - C. `mount /dev/sdb0 /media/usb`
  - D. `usbmount /dev/sdb1 /media/usb`
8. What is one reason a device driver does not appear in the output of `lsmod`, even though the device is loaded and working properly?
  - A. The use of `systemd` means drivers are not required for most devices.
  - B. The use of an `initrd.img` means support is enabled by default.
  - C. The system does not need a driver for the device.
  - D. Support for the device has been compiled directly into the kernel.
9. Which option to `rmmmod` will cause the module to wait until it's no longer in use to unload the module?
  - A. `-test`
  - B. `-b`
  - C. `-w`
  - D. `-unload`
10. Which command will output a new GRUB configuration file and send the output to the correct location for booting?
  - A. `update-grub`
  - B. `update-grub boot > /boot/grub.cfg`
  - C. `grub-rc.d`
  - D. `grub-boot`
11. What is the maximum number of primary partitions available on an MBR partitioning system?
  - A. Two
  - B. Four
  - C. One
  - D. Five
12. When working with disk partitions through a tool like `fdisk`, you see the type `0x82`. Which type of partition is this?
  - A. Linux
  - B. Linux swap
  - C. NTFS
  - D. FAT

13. Which file should you edit when using GRUB2 in order to define or set options like the timeout?
  - A. /etc/default/grub
  - B. /etc/grub/boot
  - C. /etc/boot/grub.d
  - D. /grub.d/boot
14. Which option for the `grub2-mkconfig` command sends output to a file instead of STDOUT?
  - A. `-stdout`
  - B. `--fileout`
  - C. `-o`
  - D. `-f`
15. Of the following choices, which size would be most appropriate for the `/boot` partition of a Linux system?
  - A. At least 1 GB.
  - B. Between 100 MB and 200 MB.
  - C. `/boot` should not be partitioned separately.
  - D. Less than 5 MB.
16. Which of the following commands initializes a physical disk partition for use with LVM?
  - A. `lvmcreate`
  - B. `pvcreate`
  - C. `vgextend`
  - D. `pvs`
17. Which of the following commands installs GRUB into the MBR of the second SATA disk?
  - A. `grub2-install /dev/hdb2`
  - B. `grub2-install /dev/sda2`
  - C. `grub2-config /dev/sda`
  - D. `grub2-install /dev/sdb`
18. Which command is used to create a logical volume with LVM?
  - A. `pvcreate`
  - B. `lvmcreate`
  - C. `lvcreate`
  - D. `volcreate`
19. What is the logical order for creation of an LVM logical volume?
  - A. Physical volume creation, volume group creation, logical volume creation
  - B. Physical volume creation, logical volume creation, volume group creation
  - C. Logical volume creation, physical volume creation, volume group creation
  - D. LVM creation, format, partition

20. Which command should be run after making a change to the `/etc/default/grub` file?
- A. `grub`
  - B. `grub-mkconfig`
  - C. `grub-inst`
  - D. `reboot`
21. Which command is used to change details of a logical volume?
- A. `lvmcreate`
  - B. `pvcreate`
  - C. `lvchange`
  - D. `lvmscan`
22. A hard drive is reported as `hd(0,0)` by the GRUB Legacy configuration file. To which of the following disks and partitions does this correspond?
- A. `/dev/hdb2`
  - B. `/dev/hda0`
  - C. `/dev/disk1`
  - D. `/dev/sda1`
23. Which of the following commands installs GRUB into the master boot record (MBR) of the first SATA drive?
- A. `grub-install /dev/hda`
  - B. `grub-install /dev/sda`
  - C. `grub-install /dev/hd0,0`
  - D. `grub -i /dev/hda`
24. Which option given to a `yum` command will install a given package?
- A. `update`
  - B. `configure`
  - C. `install`
  - D. `get`
25. After a new hard drive is inserted into the system, what is the correct order to make the drive ready for use within Linux?
- A. Use `fdisk` to create partitions, and then mount the partitions.
  - B. Mount the partitions.
  - C. Use `fdisk` to create partitions and mount `-a` to mount all the newly created partitions.
  - D. Use `fdisk` to create partitions, then format the partitions using a command such as `mkfs`, and then mount the partitions.

26. When working with an `rpm` package file and using `rpm2cpio`, by default the output is sent to which location?
- A. `STDOUT`
  - B. The file `cpio.out`
  - C. The file `a.out`
  - D. The file `/tmp/cpio.out`
27. Which of the following describes a primary difference between `ext2` and `ext3` filesystems?
- A. `ext3` was primarily a bug-fix update to `ext2`.
  - B. `ext3` includes journaling for the filesystem.
  - C. `ext3` completely changed the tools needed for management of the disks.
  - D. `ext3` has no significant differences.
28. According to the Filesystem Hierarchy Standard (FHS), what is the correct location for add-on application software packages?
- A. `/etc`
  - B. `/var`
  - C. `/tmp`
  - D. `/opt`
29. Which option to the `mount` command will mount all filesystems that are currently available in `/etc/fstab`?
- A. `-f`
  - B. `-d`
  - C. `-a`
  - D. `-m`
30. Which option of the `systemctl` command will change a service so that it runs on the next boot of the system?
- A. `enable`
  - B. `startonboot`
  - C. `loadonboot`
  - D. `start`
31. Which option to `xfstool` displays a progress indicator?
- A. `-g`
  - B. `-p`
  - C. `-f`
  - D. `-v`

32. The system is running out of disk space within the home directory partition, and quotas have not been enabled. Which command can you use to determine the directories that might contain large files?
- A. `du`
  - B. `df`
  - C. `ls`
  - D. `locate`
33. Which file contains information about the filesystems to mount, their partitions, and the options that should be used to mount them?
- A. `/etc/filesystems`
  - B. `/etc/mounts`
  - C. `/etc/fstab`
  - D. `systemd.mount`
34. According to the FHS, what is the proper mount point for removable media?
- A. `/etc`
  - B. `/srv`
  - C. `/tmp`
  - D. `/media`
35. How many SCSI devices are supported per bus?
- A. 7 to 15
  - B. 2 to 4
  - C. 12
  - D. 4
36. Which option to `umount` will cause the command to attempt to remount the filesystem in read-only mode if the unmounting process fails?
- A. `-o`
  - B. `-r`
  - C. `-f`
  - D. `-v`
37. Which of the following represents the correct format for the `/etc/fstab` file?
- A. `<directory> <device> <type> <options>`
  - B. `<device> <type> <options>`
  - C. `<device> <type> <options> <directory> <dump> <fsck>`
  - D. `<device> <directory> <type> <options> <dump> <fsck>`

38. Which of the following commands is used to identify the UUID for partitions?
- A. blkid
  - B. partprobe
  - C. find
  - D. cat
39. The `xfs_info` command is functionally equivalent to which command and option?
- A. `xfs_test -n`
  - B. `xfs_list`
  - C. `tunexfs -i`
  - D. `xfs_growfs -n`
40. Which of the following commands will create a `btrfs` filesystem on the first SATA drive?
- A. `mkfs /dev/sda1`
  - B. `mkfs.btrfs /dev/sda`
  - C. `mkfs.btrfs /dev/sda1`
  - D. `mkfs -b /dev/sda`
41. Which command and option can be used to determine whether a given service is currently loaded?
- A. `systemctl --ls`
  - B. `telinit`
  - C. `systemctl status`
  - D. `sysctl -a`
42. Which command can be used to change the partitioning scheme for a disk, such as to change the size of existing partitions without deleting them?
- A. `resize2fs`
  - B. `parted`
  - C. `mkfs`
  - D. `rfdisk`
43. Which of the following commands will mount a USB device at `/dev/sdb1` into the `/mnt/usb` directory, assuming a VFAT filesystem for the USB drive?
- A. `mount -t vfat /dev/sdb1 /mnt`
  - B. `usbmount /dev/sdb1 /mnt/usb`
  - C. `mount -t vfat /dev/sdb1 /mnt/usb`
  - D. `mount -t usb /dev/sdb1 /mnt/usb`

44. Which option within `gdisk` will change the partition name?
- A. `n`
  - B. `b`
  - C. `v`
  - D. `c`
45. Which command on a `systemd`-controlled system would place the system into single-user mode?
- A. `systemctl stop`
  - B. `systemctl isolate rescue.target`
  - C. `systemctl single-user`
  - D. `systemctl runlevel one`
46. Which options to `fsck` can be used to check all filesystems listed in `/etc/fstab` while excluding the root partition?
- A. `-NR`
  - B. `-AR`
  - C. `-X`
  - D. `-C`
47. Which option in `/etc/fstab` sets the order in which the device is checked at boot time?
- A. `options`
  - B. `dump`
  - C. `fsck`
  - D. `checkorder`
48. Which file is used to indicate the local time zone on a Linux server?
- A. `/etc/timez`
  - B. `/etc/timezoneconfig`
  - C. `/etc/timezone`
  - D. `/etc/localtz`
49. Within which directory will you find files related to the time zone for various regions?
- A. `/etc/timezoneinfo`
  - B. `/etc/zoneinfo`
  - C. `/var/zoneinfo`
  - D. `/usr/share/zoneinfo`

50. Which option best describes the following, gathered with the `ls -la` command?
- ```
lrwxrwxrwx. 1 root root 35 Jul 8 2014
.fetchmailrc -> .configs/fetchmail/.fetchmailrc
```
- A. It is a file called `.fetchmailrc` that is linked using a symbolic link.
  - B. It is a file called `.configs/fetchmail/.fetchmailrc` that is owned by `lrwxrwxrwx`.
  - C. It is a directory called `.fetchmailrc` that is owned by user `Jul`.
  - D. It is a local directory called `.configs/fetchmail/.fetchmailrc`.
51. Which environment variable controls the format of dates and times, such as a 12-hour or 24-hour formatted clock?
- A. `LOCALE_DATE`
  - B. `DATE_FORMAT`
  - C. `LC_TIME`
  - D. `LC_DATE`
52. Which of the following encodings provides a multibyte representation of characters?
- A. ISO-8859
  - B. UTF-8
  - C. ISO-L
  - D. UTFMulti
53. Which command can be used to view the available time zones on a system?
- A. `tzd`
  - B. `/etc/locale`
  - C. `timedatectl`
  - D. `tzsel`
54. Which option to `lspci` is used to display both numeric codes and device names?
- A. `-numdev`
  - B. `-n`
  - C. `-nn`
  - D. `-devnum`
55. Which of the following values for the `LANG` variable will configure the system to bypass locale translations where possible?
- A. `LANG=COMPAT`
  - B. `LANG=NONE`
  - C. `LANG=C`
  - D. `LANG=END`

56. If you need to temporarily reconfigure all locale variables and settings for a given session, which environment variable can be used?
- A. LC\_LIST
  - B. LC\_GLOBAL
  - C. LC\_ALL
  - D. ALL\_LOCALE
57. Which of the following commands will set the systemwide time zone to 'America/Los\_Angeles'?
- A. `ln -sf /usr/share/zoneinfo/America/Los_Angeles /etc/localtime`
  - B. `ln -sf America/Los_Angeles ; /etc/localtime`
  - C. `ln -sd /etc/localtime /usr/share/timezone/America/Los_Angeles`
  - D. `ln -sf /etc/localtime /usr/share/zoneinfo/America/Los_Angeles`
58. Which locale-related variable is used for currency-related localization?
- A. LC\_MONE
  - B. LC\_CURRENCY
  - C. LC\_MONETARY
  - D. LC\_CURR
59. Which command is used to query and work with the hardware clock on the system?
- A. hwc
  - B. ntpdate
  - C. systime
  - D. hwclock
60. Which option to the date command can be used to set the date and time?
- A. `date -f`
  - B. `date -t`
  - C. `date --change`
  - D. `date -s`
61. Which function of the hwclock command will set the hardware or BIOS clock to the current system time?
- A. `-w`
  - B. `-s`
  - C. `-a`
  - D. `-m`

62. Which of the following commands sets the hardware or BIOS clock to UTC based on the current system time?
- A. `hwclock --systohc --utc`
  - B. `hwclock --systohc --localtime`
  - C. `hwclock --systohc`
  - D. `hwclock --systoutc`
63. Which of the following commands shows the current default route without performing DNS lookups on the IP address(es) involved?
- A. `netstat -rn`
  - B. `netstat -n`
  - C. `netstat -r`
  - D. `netstat -f`
64. A Serial ATA (SATA) disk will use which of the following identifiers?
- A. `/dev/hdX`
  - B. `/dev/sataX`
  - C. `/dev/sdX`
  - D. `/disk/sataX`
65. Which of the following commands adds a default gateway of 192.168.1.1 for interface `eth0`?
- A. `route add default gateway 192.168.1.1 eth0`
  - B. `eth0 --dg 192.168.1.1`
  - C. `route add default gw 192.168.1.1 eth0`
  - D. `route define eth0 192.168.1.1`
66. Which option for the `host` command will query for the authoritative name servers for a given domain?
- A. `-t ns`
  - B. `-t all`
  - C. `-ns`
  - D. `-named`
67. Which option for the `ping` command enables you to choose the interface from which the ICMP packets will be generated?
- A. `-i`
  - B. `-I`
  - C. `-t`
  - D. `-a`

68. Which of the following commands queries for the mail servers for the domain `example.com`?
- A. `dig example.com mx`
  - B. `dig example.com`
  - C. `host -t smtp example.com`
  - D. `dig example.com smtp`
69. Which of the following addresses represents the localhost in IPv6, such as you might find in `/etc/hosts`?
- A. `0:1`
  - B. `::1`
  - C. `127:0:1`
  - D. `:127:0:0:1`
70. Which command can be used to listen for netlink messages on a network?
- A. `ip monitor`
  - B. `netlink -a`
  - C. `ip netlink`
  - D. `route`
71. Which of the following configuration lines in `/etc/nsswitch.conf` causes a lookup for group information to first use local files and then use LDAP?
- A. `group: files ldap`
  - B. `lookup: group [local ldap]`
  - C. `group: [local ldap]`
  - D. `group: localfiles ldap`
72. Which of the following `dig` commands sends the query for `example.com` directly to the server at `192.168.2.5` rather than to a locally configured resolver?
- A. `dig example.com @192.168.2.5`
  - B. `dig -t 192.168.2.5 example.com`
  - C. `dig -s 192.168.2.5 example.com`
  - D. `dig server=192.168.2.5 example.com`
73. Which of the following commands will enumerate the hosts database?
- A. `getent hosts`
  - B. `gethosts`
  - C. `nslookup`
  - D. `host`

74. Which of the following configuration lines will set the DNS server to 192.168.1.4 using `/etc/resolv.conf`?
- A. `dns 192.168.1.4`
  - B. `dns-server 192.168.1.4`
  - C. `nameserver 192.168.1.4`
  - D. `name-server 192.168.1.4`
75. Which of the following commands adds a route to the server for the network 192.168.51.0/24 through its gateway 192.168.22.1?
- A. `route add -net 192.168.51.0 netmask 255.255.255.0 gw 192.168.22.1`
  - B. `route add -net 192.168.51/24 gw 192.168.22.51`
  - C. `route -net 192.168.51.0/24 192.168.22.1`
  - D. `route add 192.168.51.1 -n 192.168.22.0//255.255.255.0`
76. Which of the following commands shows network services or sockets that are currently listening along with sockets that are not listening?
- A. `netstat -a`
  - B. `netlink -a`
  - C. `sockets -f`
  - D. `opensock -l`
77. When partitioning a disk for a mail server running Postfix, which partition/mounted directory should be the largest in order to allow for mail storage?
- A. `/etc`
  - B. `/usr/bin`
  - C. `/mail`
  - D. `/var`
78. Which of the following commands will change the default gateway to 192.168.1.1 using `eth0`?
- A. `ip route default gw 192.168.1.1`
  - B. `ip route change default via 192.168.1.1 dev eth0`
  - C. `ip route default gw update 192.168.1.1`
  - D. `ip route update default 192.168.1.1 eth0`
79. Which of the following commands displays the Start of Authority information for the domain `example.com`?
- A. `dig example.com soa`
  - B. `dig example.com authority`
  - C. `dig example.com -auth`
  - D. `dig -t auth example.com`

80. Assume that you want to enable local client services to go to hosts on the network without needing to fully qualify the name by adding the domain for either `example.com` or `example.org`. Which option in `/etc/resolv.conf` will provide this functionality?
- A. `search`
  - B. `domain`
  - C. `local-domain`
  - D. `local-order`
81. Which of the following commands prevents traffic from reaching the host `192.168.1.3`?
- A. `route add -host 192.168.1.3 reject`
  - B. `route -nullroute 192.168.1.3`
  - C. `route add -null 192.168.1.3`
  - D. `route add -block 192.168.1.3`
82. Which of the following commands will emulate the `ping` command in Microsoft Windows, where the ping is sent for four packets and then the command exits?
- A. `ping -n 4`
  - B. `ping -t 4`
  - C. `ping -p 4`
  - D. `ping -c 4`
83. You need to prevent local clients from going to a certain host, `www.example.com`, and instead redirect them to `localhost`. Which of the following is a method to override DNS lookups for the specified host?
- A. Add a firewall entry for the IP address of `www.example.com` to prevent traffic from passing through it.
  - B. Delete `www.example.com` from the route table using the `route` command.
  - C. Add a null route to prevent access to the IP address for `www.example.com`.
  - D. Add an entry for `www.example.com` in `/etc/hosts` to point to `127.0.0.1`.
84. Which of the following commands should be executed after running `ip route change`?
- A. `ip route flush cache`
  - B. `ip route reload`
  - C. `ip route cache reload`
  - D. `ip route restart`
85. Which option should be used to send a DNS query for an SPF record with `dig`?
- A. `-t txt`
  - B. `-t spf`
  - C. `-t mx`
  - D. `-t mailspf`

86. When you're viewing the available routes using the `route` command, one route contains flags UG while the others contain U. What does the letter G signify in the route table?
- A. The G signifies that the route is good.
  - B. The G signifies that the route is unavailable.
  - C. The G signifies that this is a gateway.
  - D. The G signifies that the route is an aggregate.
87. Which of the following commands requests a zone transfer of `example.org` from the server at `192.168.1.4`?
- A. `dig example.org @192.168.1.4 axfr`
  - B. `dig example.org @192.168.1.4`
  - C. `dig example.org @192.168.1.4 xfer`
  - D. `dig example.org #192.168.1.4 xfer`
88. Which yum option displays the dependencies for the package specified?
- A. `list`
  - B. `deplist`
  - C. `dependencies`
  - D. `listdeps`
89. Which of the following commands can be used to display the current disk utilization?
- A. `df`
  - B. `du`
  - C. `diskutil`
  - D. `diskuse`
90. You are working with a legacy CentOS 5 system and need to re-create the initial RAM disk. Which of the following commands is used for this purpose?
- A. `mkinitrd`
  - B. `mkramdisk`
  - C. `mkdisk --init`
  - D. `mkfs.init`
91. Which of the following commands is used to display the currently loaded modules on a running system?
- A. `ls -mod`
  - B. `lsmod`
  - C. `tree`
  - D. `mod --list`

92. Which of the following commands creates a list of modules and their dependencies?
- A. `lsmod`
  - B. `depmod`
  - C. `modlist`
  - D. `listmod`
93. Which option to `sysctl` displays all values and their current settings?
- A. `-a`
  - B. `-b`
  - C. `-d`
  - D. `-c`
94. Which of the following commands installs a kernel module, including dependencies?
- A. `lsmod`
  - B. `modprobe`
  - C. `modinst`
  - D. `instmod`
95. Which command is used to determine the modules on which another module depends?
- A. `modinfo`
  - B. `modlist`
  - C. `modprobe`
  - D. `tracemod`
96. Which of the following commands inserts a module into the running kernel but does not resolve dependencies?
- A. `lsmod`
  - B. `modinstall`
  - C. `insmod`
  - D. `moduleinst`
97. Which option to `modprobe` will remove a module and attempt to remove any unused modules on which it depends?
- A. `-v`
  - B. `-r`
  - C. `-d`
  - D. `-f`

98. Within which of the following directories will you find blacklist information for modules loaded with `modprobe`?
- A. `/etc/blacklist`
  - B. `/etc/modprobe.d`
  - C. `/etc/blacklist.mod`
  - D. `/etc/modprobe`
99. When working with a CentOS 6 system, which command is used to create the initial RAM disk?
- A. `mkinit`
  - B. `dracut`
  - C. `mkraminit`
  - D. `mkinitfs`
100. If you'd like a value set with the `sysctl` command to take effect on boot, within which file should you place the variable and its value?
- A. `/etc/sysctl.cfg`
  - B. `/etc/sysctl.conf`
  - C. `/lib/sysctl`
  - D. `/var/sysctl.conf`
101. Which of the following options to `modprobe` will show the dependencies for a module?
- A. `--show-deps`
  - B. `--show-depend`s
  - C. `--deps`
  - D. `--list-depend`s
102. Which options for the `rpm` command will display verbose output for an installation along with progress of the installation?
- A. `-ivh`
  - B. `-wvh`
  - C. `--avh`
  - D. `--ins-verbose`
103. When working with UEFI, which of the following commands changes the boot order for the next boot?
- A. `efibootmgr -c`
  - B. `efibootmgr -b -B`
  - C. `efibootmgr -o`
  - D. `efibootmgr -n`

- 104.** Which bootloader can be used to boot from ISO with ISO9660 CD-ROMs?
- A. ISOLINUX
  - B. EFIBOOT
  - C. ISOFS
  - D. BOOTISO
- 105.** When using UEFI, which of the following files can be used as a bootloader?
- A. shim.uefi
  - B. shim.efi
  - C. shim.fx
  - D. efi.shim
- 106.** Which of the following commands, executed from within the UEFI shell, controls the boot configuration?
- A. bootcfg
  - B. bcfg
  - C. grub-install
  - D. grcfg
- 107.** Which of the following can be identified as an initial sector on a disk that stores information about the disk partitioning and operating system location?
- A. Minimal boot record (MBR)
  - B. Master boot record (MBR)
  - C. Init sector
  - D. Master partition table (MPT)
- 108.** When using PXE boot, which file must exist within /tftpboot on the TFTP server for the system that will use PXELINUX for its bootloader?
- A. pxelinux.tftp
  - B. pxelinux.boot
  - C. pxelinux.conf
  - D. pxelinux.0
- 109.** Which option to grub-install will place the GRUB images into an alternate directory?
- A. --boot-dir
  - B. -b
  - C. -boot
  - D. --boot-directory

110. When using a shim for booting a UEFI-based system, which of the following files is loaded after `shim.efi`?
- A. `grubx64.cfg`
  - B. `grub.conf`
  - C. `grubx64.efi`
  - D. `efi.boot`
111. Part of the EXT tools, which option to the `mke2fs` command sets the type of filesystem to be created?
- A. `-f`
  - B. `-a`
  - C. `-t`
  - D. `-e`
112. Which file is used to store a list of encrypted devices that are to be mounted at boot?
- A. `/etc/cryptdev`
  - B. `/etc/crypttab`
  - C. `/etc/encrtab`
  - D. `/etc/fsencrypt`
113. Which command will search for a package named `zsh` on a Debian system?
- A. `apt-cache search zsh`
  - B. `apt-get search zsh`
  - C. `apt-cache locate zsh`
  - D. `apt-search zsh`
114. Within which directory will you find the repositories used by `yum`?
- A. `/etc/yum.conf`
  - B. `/etc/repos`
  - C. `/etc/yum.conf.d`
  - D. `/etc/yum.repos.d`
115. You are performing an `xfsrestore`. The `xfsdump` was executed with a block size of 4M. Which option do you need to invoke on `xfsrestore` in order for it to successfully use this dump?
- A. `-b 4M`
  - B. `-g 1M`
  - C. `-i 1M`
  - D. `-k 1028K`

116. You see the word `defaults` within `/etc/fstab`. Which options are encompassed within the defaults?
- A. `ro, exec, auto`
  - B. `rw, suid, dev, exec, auto, nouser, async`
  - C. `rw, exec, auto, nouser, async`
  - D. `rw, exec, nouser, async, noauto, suid`
117. Which of the following options to `xfsdump` sets the maximum size for files to be included in the dump?
- A. `-p`
  - B. `-s`
  - C. `-z`
  - D. `-b`
118. Which partition type is used to indicate a software RAID array, such as an array built with `mdadm`?
- A. `0xmd`
  - B. `-x-`
  - C. `0xRD`
  - D. `0xFD`
119. When working with World Wide Identifiers (WWIDs), within which directory on a Red Hat server will you find symlinks to the current `/dev/sd` device names?
- A. `/dev/disk/wwid`
  - B. `/dev/wwid`
  - C. `/dev/disk/by-id`
  - D. `/dev/sd.wwid`
120. Which of the following commands displays information about a given physical volume in an LVM setup?
- A. `pvdisk`
  - B. `pvlst`
  - C. `pvdiskdisplay`
  - D. `pvl`
121. When viewing information in `/dev/disk/by-path` using the command `ls -l`, which of the following filenames represents a LUN from Fibre Channel?
- A. `/dev/fc0`
  - B. `pci-0000:1a:00.0-fc-0x500601653ee0025f:0x0000000000000000`
  - C. `pci-0000:1a:00.0-scsi-0x500601653ee0025f:0x0000000000000000`
  - D. `/dev/fibre0`

122. Which of the following commands displays path information for LUNs?
- A. `luninfo -a`
  - B. `ls -lun`
  - C. `multipath -l`
  - D. `dm-multi`
123. Which command is used to remove unused filesystem blocks from thinly provisioned storage?
- A. `thintrim`
  - B. `thtrim`
  - C. `fstrim`
  - D. `fsclean`
124. When using `tune2fs` to set an extended option such as `stripe_width`, which command-line option is needed to signify that an extended option follows?
- A. `-extend`
  - B. `-E`
  - C. `-e`
  - D. `-f`
125. Which option to `mdadm` is used to create a new array?
- A. `--create`
  - B. `--start`
  - C. `--begin`
  - D. `--construct`
126. Information about logical volumes can be found in which of the following directories?
- A. `/dev/lvinfo`
  - B. `/dev/map`
  - C. `/dev/mapper`
  - D. `/dev/lvmap`
127. Which option to `mdadm` watches a RAID array for anomalies?
- A. `--mon`
  - B. `--watch`
  - C. `--monitor`
  - D. `--examine`
128. When running `mdadm` in monitor mode, which option within `/etc/mdadm.conf` sets the destination for email if an issue is discovered?
- A. `MAILTO`
  - B. `MAILADDR`
  - C. `MAILFROM`
  - D. `MAILDEST`

- 129.** When using the `ip` command, which protocol family is used as the default if not otherwise specified?
- A. `tcpip`
  - B. `ip`
  - C. `inet`
  - D. `arp`
- 130.** Which command is used for setting parameters such as the `ssid`, `channel`, and other related options for a wireless device?
- A. `ifconfig`
  - B. `iwconfig`
  - C. `wlancfg`
  - D. `ifcfg`
- 131.** Which of the following commands shows network sockets and their allocated memory?
- A. `ss -m`
  - B. `mpas`
  - C. `mem`
  - D. `free`
- 132.** Which option to the `ss` command shows the process IDs associated with the socket?
- A. `-l`
  - B. `-a`
  - C. `-p`
  - D. `-f`
- 133.** On a Debian system, within which directory hierarchy will you find configuration information and directories to hold scripts to be run when an interface is brought up or taken down?
- A. `/etc/netconf`
  - B. `/etc/netconfig`
  - C. `/etc/net.conf.d`
  - D. `/etc/network`
- 134.** Which of the following characters are valid for hostnames in `/etc/hosts`?
- A. Alphanumerics, minus, underscore, and dot
  - B. Alphanumerics, minus, and dot
  - C. Alphanumerics and dot
  - D. Alphanumerics

135. Which of the following configuration lines in `/etc/resolv.conf` enables debugging?
- A. `debug`
  - B. `options debug`
  - C. `option debug`
  - D. `enable-debug`
136. The system contains an NFS mounted filesystem that has become unreachable. Which option should be passed to `umount` in order to force the unmounting of the filesystem?
- A. `-nfs`
  - B. `--fake`
  - C. `-f`
  - D. `-n`
137. Which of the following commands will send the output of the `grub2-mkconfig` command to the correct location for booting?
- A. `grub2-mkconfig --output=/boot/grub2/grub.cfg`
  - B. `grub2-mkconfig --file=/boot/grub2.menu`
  - C. `grub2-mkconfig --file=/boot/grub.lst`
  - D. `grub2-mkconfig --output=/boot/menu.lst`
138. Which PXE Linux binary file is required for booting from HTTP or FTP?
- A. `lpxlinux.0`
  - B. `pxlinux.http`
  - C. `netpxlinux.0`
  - D. `netpxe.0`
139. The file `/etc/grub2.cfg` is typically a symbolic link to which file?
- A. `/boot/grub.conf`
  - B. `/boot/grub2/grub.cfg`
  - C. `/boot/grub2.conf`
  - D. `/etc/sysconfig/grub2.cfg`
140. Which of the following describes a difference between `vmlinuz` and `vmlinux`?
- A. `vmlinuz` is used for zOS systems, and `vmlinux` is used for x86 architecture.
  - B. `vmlinuz` is used for 64-bit systems, and `vmlinux` is used for 32-bit systems.
  - C. `vmlinuz` is compressed, whereas `vmlinux` is not.
  - D. `vmlinuz` contains additional binary code for certain systems.
141. Which of the following is the location in which kernel modules are stored?
- A. `/usr/modules`
  - B. `/modules`
  - C. `/usr/lib/modules/{kernel-version}`
  - D. `/usr/modules/{kernel-version}`

142. Which rpm option can be used to verify that no files have been altered since installation?
- A. -V
  - B. -v
  - C. --verbose
  - D. --files
143. Which of the following is not typically used to store shared libraries?
- A. /lib
  - B. /etc/lib
  - C. /usr/lib
  - D. /usr/local/lib
144. Which of the following commands updates the package cache for a Debian system?
- A. apt-get cache-update
  - B. apt-cache update
  - C. apt-get update
  - D. apt-get upgrade
145. You need to update the configuration files for package repositories. Within which directory are details of the current package repositories stored on a Debian system?
- A. /etc/apt.list
  - B. /etc/sources.list
  - C. /etc/apt/sources.list.d/
  - D. /etc/apt.d/sources.list
146. Which of the following commands is used to change the keyboard layout settings?
- A. keybrdctl
  - B. keyctl
  - C. localectl
  - D. localemap
147. Which of the following directories contains configuration files related to networking?
- A. /etc/netdevices/
  - B. /etc/netcfg/
  - C. /etc/config/network/
  - D. /etc/sysconfig/network-scripts/
148. You need to change the label that has been applied to a filesystem. The filesystem is formatted as EXT4. Which EXT tool can be used to change the label?
- A. e2label
  - B. e4label
  - C. fslabel.ext4
  - D. fslabel

149. Which command should be used to make changes to the choices made when a Debian package was installed?
- A. `dpkg-reconfigure`
  - B. `dpkg -r`
  - C. `dpkg --reconf`
  - D. `apt-get reinstall`
150. Which option for `yum` performs a search of the package cache?
- A. `seek`
  - B. `query`
  - C. `--search`
  - D. `search`
151. Assume you need to add a kernel module with a custom command, such as to specify options at load time. Within which file could you add this configuration?
- A. `/etc/modprobe-cfg`
  - B. `/etc/modprobe.conf`
  - C. `/etc/modprobe.cf`
  - D. `/etc/modprobe.cfg`
152. Which command option for `rpm` can be used to show the version of the kernel?
- A. `rpm kernel`
  - B. `rpm -q kernel`
  - C. `rpm search kernel`
  - D. `rpm --list kern`
153. Which command is used to install a kernel into the `/boot` directory, using the files from `/usr/lib/kernel`?
- A. `kernel-ins`
  - B. `ins-kernel`
  - C. `install-kernel`
  - D. `kernel-install`
154. Which option in `/etc/yum.conf` is used to ensure that the kernel is not updated when the system is updated?
- A. `exclude=kernel*`
  - B. `exclude-kernel`
  - C. `updatekernel=false`
  - D. `include-except=kernel`

155. When using `fdisk` to partition a disk, you have two partitions created for the system but still have leftover space, also called unallocated space, on the drive. What is another name used to refer to unallocated space?
- A. Highly available
  - B. Redundant
  - C. Raw device
  - D. Partition forward
156. Which command searches for and provides information on a given package on a Debian system, including whether the package is currently installed?
- A. `dpkg -i`
  - B. `dpkg -s`
  - C. `apt-cache`
  - D. `apt-info`
157. Which of the following installs a previously downloaded Debian package?
- A. `dpkg -i <package name>`
  - B. `apt-install <package name>`
  - C. `apt-slash <package name>`
  - D. `dpkg -U <package name>`
158. You need to obtain information about a package installed on an OpenSUSE system that uses the `zypper` command. Which of the following options to the `zypper` command displays information about the package?
- A. `inf`
  - B. `getInfo`
  - C. `info`
  - D. `i`
159. Which type of storage would be the most appropriate format to store a large object as a single file in a cloud environment?
- A. File
  - B. `ext2`
  - C. `cifs`
  - D. Blob
160. You need to find available packages on a Fedora system managed by the `dnf` package system. Which option to the `dnf` command looks for a given package?
- A. `search`
  - B. `info`
  - C. `find`
  - D. `locate`

161. Which of the following real filesystems can be resized using `resize2fs`?
- A. `nfs`
  - B. `xf`s
  - C. `ext3`
  - D. `cifs`
162. Which subcommand to the `virsh` command is used to connect to the hypervisor?
- A. `plug`
  - B. `hypervisorconnect`
  - C. `conhyper`
  - D. `connect`
163. You need to determine if ASCII and Unicode are supported on the system. Which option to the `iconv` command shows the available character sets on a given system?
- A. `--showchar`
  - B. `--show`
  - C. `--list`
  - D. `--all`
164. Which of the following best describes the `/dev/` filesystem?
- A. The `/dev/` filesystem is used for storing device information for connected devices.
  - B. The `/dev/` filesystem is used for configuration files.
  - C. The `/dev/` filesystem is used for development.
  - D. The `/dev/` filesystem is used to list devices for compilation into the kernel.
165. Which of the following files shows the currently mounted filesystems?
- A. `/etc/fstab`
  - B. `/proc/mounts`
  - C. `/fs`
  - D. `/root/mounts`
166. When working with a Microsoft Windows–based filesystem, you see that it is mounted as a CIFS mount. What does CIFS stand for?
- A. Common Information File Sharing
  - B. Common Internet File System
  - C. Cloned Internet File Sharing
  - D. Created In Five Seconds

167. When using `sed` for a substitution operation, which option must be included so that the substitution applies to the entire line rather than just the first instance?
- A. `g`
  - B. `a`
  - C. `r`
  - D. `y`
168. Which option to the `blkid` command purges the cache to remove devices that do not exist?
- A. `-p`
  - B. `-a`
  - C. `-g`
  - D. `-m`
169. While you can use `blkid` to obtain the UUIDs for filesystems in order to facilitate storage space monitoring and disk usage, which location on the filesystem also shows this information?
- A. `/dev/diskbyuuid`
  - B. `/dev/uuid`
  - C. `/dev/fs/uuid`
  - D. `/dev/disk/by-uuid`
170. In a scripting scenario, you need to enable legacy locations for things like networking. Which file can be used for storing network configuration?
- A. `/etc/netdev`
  - B. `/etc/networking`
  - C. `/etc/sysconfig/network`
  - D. `/etc/sysconfig/netdev`
171. You are attempting to use `rmdir` to remove a directory, but there are still multiple files and other directories contained within it. Assuming that you're sure you want to remove the directory and all of its contents, what are the command and arguments to do so?
- A. `rm -f`
  - B. `rm -rf`
  - C. `rmdir -a`
  - D. `rmdir -m`
172. Which of the following commands will provide the usernames in a sorted list gathered from the `/etc/passwd` file?
- A. `cat /etc/passwd | awk -F : '{print $1}' | sort`
  - B. `sort /etc/passwd | cut`
  - C. `echo /etc/passwd`
  - D. `cat /etc/passwd | awk '{print $1}' | sort`

173. What will be the result if the `touch` command is executed on a file that already exists?
- A. The access timestamp of the file will change to the current time when the `touch` command was executed.
  - B. The file will be overwritten.
  - C. There will be no change.
  - D. The file will be appended to.
174. Which option to both `mv` and `cp` will cause the command to prompt before overwriting files that already exist?
- A. `-f`
  - B. `-Z`
  - C. `-r`
  - D. `-i`
175. Which file contains the current list of partitions along with their major and minor numbers and the number of blocks?
- A. `/dev/disk`
  - B. `/dev/partitions`
  - C. `/proc/disk`
  - D. `/proc/partitions`
176. Assuming a block storage device used for virtualization of `sda`, which file can be used to view the number of read I/O requests for the device?
- A. `/proc/sys/sda`
  - B. `/proc/sys/sda/stat`
  - C. `/sys/block/sda/stat`
  - D. `/sys/disk/sda/stat`
177. The current hierarchy on the server contains a directory called `/usr/local`. You need to create an additional directory below that called `/usr/local/test/october`. Which command will accomplish this task?
- A. `mkdir -p /usr/local/test/october`
  - B. `mkdir /usr/local/test/october`
  - C. `mkdir -r /usr/local/test/october`
  - D. `mkdir -f /usr/local/test/october`
178. What command is used to bring a command to foreground processing after it has been backgrounded with an `&`?
- A. `bg`
  - B. `fore`
  - C. `4g`
  - D. `fg`

- 179.** You are using the Vi editor to change a file, and you need to exit. You receive a notice indicating “No write since last change.” Assuming you want to save your work, which of the following commands will save your work and exit Vi?
- A. :wq
  - B. :q!
  - C. dd
  - D. x
- 180.** When using a multipath device managed by `multipathd` and found in `/dev/disk/by-multipath`, what is the name given to the identifier for that device that is globally unique?
- A. UUID
  - B. WWID
  - C. GUID
  - D. DISKID
- 181.** You have attempted to stop a process using its `service` command and also using the `kill` command. Which signal can be sent to the process using the `kill` command in order to force the process to end?
- A. -15
  - B. -f
  - C. -9
  - D. -stop
- 182.** When editing with Vi, which command changes into insert mode and opens a new line below the current cursor location?
- A. f
  - B. a
  - C. o
  - D. i
- 183.** While recovering from a kernel panic and using the console, you are having difficulty working with the console due to continual messages being displayed on the console itself. Which option to `dmesg` can be used to disable logging to the console?
- A. -o "no logging console"
  - B. -D
  - C. -Q
  - D. -F
- 184.** Which option to `rmmmod` forces the module to be unloaded?
- A. -f
  - B. -a
  - C. -w
  - D. -h

- 185.** Which command-line option modifies the behavior of `depmod` such that only newer modules are added when comparing `modules.dep`?
- A. `-A`
  - B. `-B`
  - C. `-C`
  - D. `-D`
- 186.** Which command prints device and partition information in a tree-like structure, including partition size and current mount status?
- A. `fsck`
  - B. `lsblk`
  - C. `blkshow`
  - D. `shblk`
- 187.** You need to create a script for use with the `parted` command. When using the `parted` command to obtain a list of partitions, which additional option formats the output such that it can be more easily parsed by a script?
- A. `-p`
  - B. `-S`
  - C. `-m`
  - D. `-v`
- 188.** Which command is used to create an Ethernet bridge?
- A. `bridgecon`
  - B. `brctl`
  - C. `bridgeman`
  - D. `BridgeManager`
- 189.** Which kill signal can be sent in order to restart a process?
- A. `-HUP`
  - B. `-RESTART`
  - C. `-9`
  - D. `-SIG`
- 190.** Which command will move all files with a `.txt` extension to the `/tmp` directory?
- A. `mv txt* tmp`
  - B. `move *txt /temp`
  - C. `mv *.txt /tmp`
  - D. `mv *.txt tmp`

- 191.** When using `nslookup` interactively, which of the following commands changes the destination to which queries will be sent?
- A. `dest`
  - B. `server`
  - C. `queryhost`
  - D. `destination`
- 192.** Another administrator made a change to one of the local scripts stored in `/usr/local/bin` and used for administrative purposes. The change was also immediately reflected in the copy of the script in your home directory. However, when you examine the file with `ls`, it appears to be a normal file. What is the likely cause of such a scenario?
- A. The file was executed after edit.
  - B. The administrator copied the file to yours.
  - C. Your file is a hard link to the original.
  - D. The file has been restored from backup.
- 193.** Which option to `ln` creates a symlink to another file?
- A. `-sl`
  - B. `-s`
  - C. `-l`
  - D. `--ln`
- 194.** When using `ls -la` to obtain a directory listing, you see an object with permissions of `lrwxrwxrwx`. What type of object is this?
- A. It is a directory.
  - B. It is a symlink.
  - C. It is a temporary file.
  - D. It is a local file.
- 195.** On a system using SysVinit as part of the basic boot process, in which directory are startup and shutdown scripts for services stored?
- A. `/etc/init-d`
  - B. `/etc/init`
  - C. `/etc/sysv`
  - D. `/etc/init.d`
- 196.** Which option to the `cp` command will copy directories in a recursive manner?
- A. `-v`
  - B. `-R`
  - C. `-Z`
  - D. `-i`

197. Which option to `df` displays the output in human-readable format?
- A. `-h`
  - B. `-m`
  - C. `-j`
  - D. `-s`
198. Which command creates a TCP connection to the server `www.example.com` on port 80?
- A. `nc www.example.com 80`
  - B. `nc www.example.com`
  - C. `nc www.example.com:80`
  - D. `nc:80 www.example.com`
199. Which option to the `file` command specifies that `file` should examine compressed files?
- A. `-a`
  - B. `-z`
  - C. `-w`
  - D. `-b`
200. Which option to Vim enables editing of binary or executable files?
- A. `-a`
  - B. `-b`
  - C. `-c`
  - D. `-d`
201. When using the `rmdir` command, which option also removes child directories?
- A. `-c`
  - B. `-p`
  - C. `-m`
  - D. `-a`
202. Emptying or clearing a block device is sometimes accomplished by writing zeroes to the device. Which file is used for this purpose?
- A. `/dev/format`
  - B. `/dev/go`
  - C. `/dev/zero`
  - D. `/tmp`
203. Which option to `zip` updates files within the archive but does not add files?
- A. `-a`
  - B. `-f`
  - C. `-d`
  - D. `-e`

- 204.** Which of the following will execute a job through `cron` at 12:15 a.m. and 12:15 p.m. every day?
- A. `0,12 15 * * *`
  - B. `15 0,12 * * *`
  - C. `15 * * * 0/12`
  - D. `*/12 * * * 15`
- 205.** Which file is used to provide a list of users that can add and delete `cron` jobs?
- A. `/etc/cron.job`
  - B. `/etc/cron.allow`
  - C. `/etc/cron.users`
  - D. `/etc/crontab`
- 206.** Which of the following commands schedules a series of commands to execute one hour from now?
- A. `atq +1hr`
  - B. `at now + 1 hour`
  - C. `atq`
  - D. `at -1`
- 207.** Which of the following best describes the `/proc` filesystem?
- A. `/proc` contains information about files to be processed.
  - B. `/proc` contains configuration files for processes.
  - C. `/proc` contains information on currently running processes, including the kernel.
  - D. `/proc` contains variable data such as mail and web files.
- 208.** Which option to `fdisk` provides a list of partitions on a given device?
- A. `-s`
  - B. `-l`
  - C. `-e`
  - D. `-d`
- 209.** Within which directory would you find a list of files corresponding to the users who have current `cron` jobs on the system?
- A. `/var/spool/cron/crontabs`
  - B. `/var/spool/jobs`
  - C. `/etc/cron`
  - D. `/etc/cron.users`
- 210.** Which command deletes an `at` job with an ID of 3?
- A. `atq`
  - B. `at -l`
  - C. `atrm 3`
  - D. `rmat 3`

211. Which of the following is used as a system-wide cron file?
- A. `/etc/cron.d`
  - B. `/etc/cron.sys`
  - C. `/etc/crontab`
  - D. `/etc/cron.tab`
212. Within which directory will you find scripts that are scheduled to run through cron every 24 hours?
- A. `/etc/cron.daily`
  - B. `/etc/cron.weekly`
  - C. `/etc/cron.hourly24`
  - D. `/etc/crontab`
213. The system that you're working with recently had a hard drive failure, resulting in degraded storage. A new hard drive has been installed and Linux has been restored from backup to the drive. However, the system will not boot and instead shows a `grub >` prompt. Within the `grub >` prompt, which command will show the current partitions as seen by GRUB?
- A. `ls`
  - B. `showPart`
  - C. `partitionlist`
  - D. `ps`
214. A legacy PATA disk is used to boot the system. You recently added an internal DVD drive to the computer, and now the system will no longer boot. What is the most likely cause?
- A. The BIOS has identified the DVD drive as the first disk, and therefore the system can no longer find the Linux partition(s).
  - B. The hard drive became corrupt when the DVD drive was installed.
  - C. The hot swap option has not been enabled in the BIOS.
  - D. The DVD drive is not detected by the computer and needs to be enabled first in the BIOS and then in Linux prior to installation.
215. Which of the following will run a command called `/usr/local/bin/changehome.sh` as the `www-data` user when placed in `/etc/crontab`?
- A. `1 1 * * * www-data /usr/local/bin/changehome.sh`
  - B. `www-data changehome.sh`
  - C. `*/1 www-data changehome.sh`
  - D. `* * */www-data /usr/local/bin/changehome.sh`
216. Which command and option are used to update a Debian system to the latest software?
- A. `apt-update`
  - B. `apt-get upgrade`
  - C. `dpkg -U`
  - D. `apt-cache clean`

- 217.** You need to write a script that gathers all the process IDs for all instances of Apache running on the system. Which of the following commands will accomplish this task?
- A. `ps aux | grep apache`
  - B. `pgrep apache`
  - C. `processlist apache`
  - D. `ls -p apache`
- 218.** Which command can be run to determine the default priority for processes spawned by the current user?
- A. `prio`
  - B. `nice`
  - C. `renice`
  - D. `defpriority`
- 219.** Which of the following commands shows the usage of inodes across all filesystems?
- A. `df -i`
  - B. `ls -i`
  - C. `du -i`
  - D. `dm -i`
- 220.** Which command will list the cron entries for a given user as denoted by <username>?
- A. `crontab -l -u <username>`
  - B. `crontab -u <username>`
  - C. `cron -u <username>`
  - D. `cronent -u <username>`
- 221.** You are having difficulty with an interface on the server, and it is currently down. Assuming that there is not a hardware failure on the device itself, which command and option can you use to display information about the interface?
- A. `ifconfig -a`
  - B. `ifup`
  - C. `netstat -n`
  - D. `ifconfig`
- 222.** Which option to the `traceroute` command will use TCP SYN packets for the path trace?
- A. `-T`
  - B. `-t`
  - C. `-s`
  - D. `-i`

- 223.** When troubleshooting an issue where SSH connections are timing out, you think the firewall is blocking SSH connections. Which of the following ports is used for Secure Shell communication?
- A. TCP/23
  - B. TCP/25
  - C. TCP/22
  - D. TCP/2200
- 224.** Which options for netcat will create a server listening on port 8080?
- A. netcat -p 8080
  - B. nc -l -p 8080
  - C. nc -p 8080
  - D. nc -s 8080
- 225.** Which of the following commands displays the Start of Authority information for the domain example.com?
- A. dig example.com soa
  - B. dig example.com authority
  - C. dig example.com -auth
  - D. dig -t auth example.com
- 226.** When configuring a local NTP server role, to what server address can you set the server's NTP client?
- A. 127.0.0.1
  - B. 192.168.1.100
  - C. ntp.example.com
  - D. pool.ntp.org
- 227.** A developer has created an application and wants to take advantage of syslog for logging to a custom log file. Which facility should be used for an application such as this?
- A. syslog
  - B. kern
  - C. local#
  - D. user
- 228.** You are troubleshooting a DNS problem using the dig command and receive a “status: NXDOMAIN” message. Which of the following best describes what NXDOMAIN means?
- A. NXDOMAIN means you have received a non-authoritative answer for the query.
  - B. NXDOMAIN means the domain or host is not found.
  - C. NXDOMAIN indicates a successful query.
  - D. NXDOMAIN signifies that a new domain record has been added.

- 229.** Which of the following commands can be used to restart the CUPS service after a configuration change on a server running systemd?
- A. `systemctl restart cups.service`
  - B. `systemctl restart cups`
  - C. `systemctl reboot cups.target`
  - D. `systemctl restart cups.target`
- 230.** You need to temporarily prevent users from logging in to the system using SSH or other means. Which of the following describes one method for accomplishing this task?
- A. Run `touch /etc/nologin`.
  - B. Disable `sshd`.
  - C. Remove `/etc/login`.
  - D. Add a shadow file.
- 231.** When expiring a user account with `usermod -e`, which of the following represents the correct date format?
- A. `YYYY-MM-DD`
  - B. `MM/DD/YYYY`
  - C. `DD/MM/YY`
  - D. `MM/DD/YY HH:MM:SS`
- 232.** Which of the following commands can be used to stop a given service, such as `httpd.service`, from starting on boot with a `systemd`-based system?
- A. `systemctl disable httpd.service`
  - B. `systemctl stop httpd.service`
  - C. `systemd disable httpd.service`
  - D. `systemd enable httpd.service boot=no`
- 233.** Which of the following commands searches the entire filesystem for files with the `setuid` bit set?
- A. `find ./ -perm suid`
  - B. `find / -perm 4000`
  - C. `find / -type suid`
  - D. `find / -type f -perm setuid`
- 234.** You are upgrading the kernel that has been previously compiled on the same server. Which of the following commands incorporates the contents of the existing kernel configuration into the new kernel?
- A. `config --merge`
  - B. `make oldconfig`
  - C. `merge config`
  - D. `int configs`

- 235.** Which of the following commands should you execute after making changes to `systemd` service configurations in order for those changes to take effect?
- A. `systemd reload`
  - B. `reboot`
  - C. `systemctl daemon-reload`
  - D. `systemctl reboot`
- 236.** As a system administrator, you need to change options for `automount`. Which of the following files is the default configuration file for the `autofs` automounter?
- A. `/etc/autofs`
  - B. `/etc/auto.master`
  - C. `/etc/autofs.conf`
  - D. `/etc/automounter.conf`
- 237.** Which of the following directory hierarchies contains information such as the WWN for Fibre Channel?
- A. `/sys/class/wwn`
  - B. `/sys/class/fc_host`
  - C. `/sys/class/fclist`
  - D. `/sys/class/fc/wwn`
- 238.** Which option to the `rsync` command provides archive mode?
- A. `-r`
  - B. `-o`
  - C. `-a`
  - D. `-f`
- 239.** When compiling software such as with the `gcc` compiler, which of the following is the recommended name for a file containing commands and relationships used with the `make` command?
- A. `Makefile`
  - B. `makefile`
  - C. `make.file`
  - D. `Makefile.txt`
- 240.** You have downloaded a source file with the extension `.gz`. Which of the following commands will uncompress the file?
- A. `unzip`
  - B. `gunzip`
  - C. `dezip`
  - D. `uncomp`

- 241.** Which target for `make`, typically included in the `makefile` for most projects, will place compiled files into their final destination and perform other operations such as making the appropriate files executable?
- A. `list`
  - B. `distclean`
  - C. `run`
  - D. `install`
- 242.** When creating a local package repository, which option within the `.repo` file in `/etc/yum.repos.d/` is used to set the URL for the repository?
- A. `url`
  - B. `repourl`
  - C. `httpurl`
  - D. `baseurl`
- 243.** When running the `lsblk` command, there is no separate partition listed for `/boot`. From which partition is the system likely booted?
- A. There is a `/boot` partition under the `/` partition.
  - B. The `/boot` partition is hidden.
  - C. The system has not yet built the `/boot` partition.
  - D. The `/boot` partition does not show up with `lsblk`.
- 244.** Which of the following commands displays the currently open ports and the process that is using the port?
- A. `netstat -a`
  - B. `lsof -i`
  - C. `ps auwx`
  - D. `netlist`
- 245.** Which option to the `wget` command logs output?
- A. `-r`
  - B. `-o`
  - C. `-b`
  - D. `-k`
- 246.** When executed on a `systemd`-enabled server, the `service status` command is equivalent to which command?
- A. `systemd status`
  - B. `journalctl status`
  - C. `service-systemd status`
  - D. `systemctl status`

- 247.** Which signal to the `kill` command can be used to signal that BIND should reload, including its configuration?
- A. -15
  - B. -1
  - C. -9
  - D. -2
- 248.** You are troubleshooting a daemon process and have started the daemon manually from the command line so that it does not fork into the background. Which key combination can be used to terminate the daemon?
- A. Ctrl+A
  - B. Ctrl+B
  - C. Ctrl+C
  - D. Ctrl+D
- 249.** Which service command is used to shut down a service?
- A. shutdown
  - B. stop
  - C. norun
  - D. runstop
- 250.** Which subcommand with `hostnamectl` can be used to set the type of machine on which it is running?
- A. set-machine
  - B. machine-type
  - C. set-type
  - D. chassis
- 251.** Which option to the `curl` command sets the local filename to which the output will be saved?
- A. -f
  - B. -o
  - C. -O
  - D. -l
- 252.** Which of the following commands searches a server for files with the `setgid` bit enabled?
- A. `find / -perm 4000`
  - B. `find ./ -perm setgid`
  - C. `grep setgid *`
  - D. `find / -perm 2000`

- 253.** You need to redirect output for a long-running process but do not need to see or capture the output. To which location can you redirect output so that it does not consume disk space?
- A. A regular file
  - B. `/dev/null`
  - C. `/dev/random`
  - D. A network interface
- 254.** Which target for the `service` command will cause a daemon to reread its configuration files without restarting the daemon itself?
- A. `read`
  - B. `load`
  - C. `start`
  - D. `reload`
- 255.** You have executed a daemon process manually from the command line and now need to suspend the process. Which key combination can be used for this purpose?
- A. `Ctrl+S`
  - B. `Ctrl+C`
  - C. `Ctrl+Z`
  - D. `Ctrl+B`
- 256.** You have been asked to recommend a simple command-line-based text editor for a beginning user. Which of the following should you recommend?
- A. `Vi`
  - B. `Nano`
  - C. `nc`
  - D. `ShellRedirect`
- 257.** You need to ensure that a service does not start on a `systemd` system. Which `systemctl` command should be used for this purpose?
- A. `disable`
  - B. `delete`
  - C. `mask`
  - D. `norun`
- 258.** Which command can be used to print using a specially formatted string?
- A. `printf`
  - B. `echo`
  - C. `print`
  - D. `here`

- 259.** You need to copy a file to a remote system, but that remote system does not have FTP or any other file-sharing services running. You have the ability to SSH into the server. Which of the following commands can be used for this purpose?
- A. `scp`
  - B. `ncftp`
  - C. `go`
  - D. `xfer`
- 260.** Which of the following describes a method for changing the sort order when using the `top` command such that the highest memory utilizers will be shown at the top of the list?
- A. Within `top`, type `o` and then select `mem`.
  - B. Within `top`, press `Shift+F`, scroll to `%MEM`, press `s` to select, and then press `Q` to quit.
  - C. Within `top`, press `S` and then select `%MEM`.
  - D. Within `top`, press `Shift+S`, select `%MEM`, then press `Q` to quit.
- 261.** Which option to the `fsck` command causes it to run the check even if the filesystem is apparently marked as clean?
- A. `-f`
  - B. `-m`
  - C. `-a`
  - D. `-c`
- 262.** One of your customers needs to transfer a large file and is asking for FTP to be enabled on the server. Thinking of security, what options can you offer that are more secure?
- A. USB
  - B. Email (SMTP)
  - C. SSL
  - D. SFTP
- 263.** You need to extract files from a backup created with an older version of HP-UX. The `tar` command does not seem to work for these files. Which of the following may be able to extract from this backup?
- A. `gzip`
  - B. `bzip2`
  - C. `cpio`
  - D. `hpb`
- 264.** You believe that the system has been broken into and files may have been changed. After taking the system offline and unmounting one of the affected partitions, what could you do next?
- A. Use `dd` to make an image of the partition to preserve it.
  - B. Create a backup using `tar`.
  - C. Examine the partition with `fdisk`.
  - D. Use `mkfs` to reformat the partition.

- 265.** Which option to the `zip` command causes the command to traverse directories?
- A. `-g`
  - B. `-m`
  - C. `-r`
  - D. `-a`
- 266.** You are working on a Debian system and need to set ownership on a file such that the user used to execute Apache can write to the file. What command can you use to determine which user Apache is running as?
- A. `ps auwx | grep apache`
  - B. `ls -a`
  - C. `free | grep httpd`
  - D. `monapache`
- 267.** When scripting for build automation, you need to run a configure script prior to running the `make` command. Which of the following will execute the configure script, assuming that it's in the same directory as the script invoking it?
- A. `configure`
  - B. `./configure`
  - C. `../configure`
  - D. `/configure`
- 268.** Which command can be used to change the size of a logical volume when using Logical Volume Manager?
- A. `vgs`
  - B. `lvresize`
  - C. `vgcreate`
  - D. `lvs`
- 269.** Which file contains information about RAID arrays on a Linux system?
- A. `/proc/mdstat`
  - B. `/raidstat`
  - C. `/var/raidinfo`
  - D. `/etc/raid.txt`
- 270.** When working with `mdadm`, which command-line argument is used to specify things like striping and parity?
- A. `--layout`
  - B. `-R`
  - C. `--level`
  - D. `-x`

- 271.** Which command displays Desktop Management Interface information?
- A. `dmidump`
  - B. `dlad`
  - C. `dmid`
  - D. `dmidecode`
- 272.** SSHFS is an example of which type of filesystem use?
- A. Attachment
  - B. Disk
  - C. RAID
  - D. FUSE
- 273.** Which of the following best describes `.rpmnew` and `.rpmsave` files?
- A. The `.rpmnew` file contains RPM files and their hashes while `.rpmsave` contains a list of saved hashes.
  - B. The `.rpmnew` file contains new RPM files available for download while `.rpmsave` contains a list of files that have been saved locally.
  - C. The `.rpmnew` file contains a list of RPM files that have changed since the last save while `.rpmsave` is a backup of the last `.rpmnew` file.
  - D. The `.rpmnew` file contains a new configuration file for a package when local changes exist to the configuration file while `.rpmsave` contains the local configuration file when a new file is included in the package.
- 274.** You are using the `top` command to monitor processes and you notice that the `nc` command is consuming a lot of CPU cycles. Which command can be used to change the priority of the command?
- A. `renice`
  - B. `nice`
  - C. `ps`
  - D. `top`
- 275.** Which command is used to create a packaged application to be distributed with Flatpak?
- A. `flatpak-builder`
  - B. `flatpak-create`
  - C. `flatpak-pack`
  - D. `flatpak-compile`
- 276.** Which background process runs to maintain the list of snap packages available on an Ubuntu system?
- A. `snapper`
  - B. `snapperd`
  - C. `snapdaemon`
  - D. `snapt`

- 277.** Which tool is used to create a sandboxed AppImage package?
- A. `appimagetool`
  - B. `apptool`
  - C. `ocon`
  - D. `app-ocon`
- 278.** Which network-related tool combines elements of both ping and traceroute?
- A. `tcpdump`
  - B. `wireshark`
  - C. `mtr`
  - D. `nmcli`
- 279.** Which option to `resolvectl` specifies the protocol?
- A. `-f`
  - B. `-x`
  - C. `-p`
  - D. `-m`
- 280.** Which command shows the background processes related to the current shell?
- A. `jobs`
  - B. `htop`
  - C. `pidof`
  - D. `-m`
- 281.** Which of the following commands displays Media Access Control (MAC) to IP address association?
- A. `arp`
  - B. `-x`
  - C. `-p`
  - D. `-m`
- 282.** As root, you run the command `cd ~` followed by `pwd` to print the working directory. What is the expected output?
- A. `/home`
  - B. `/root`
  - C. `/sbin`
  - D. `/bin`
- 283.** Which command can be used to determine a file type?
- A. `file`
  - B. `xz`
  - C. `lsof`
  - D. `prep`

- 284.** When running the `ps` command you notice that a process has a Z in the state field. What does Z represent?
- A.** Sleeping
  - B.** Running
  - C.** Stopped
  - D.** Zombie
- 285.** You need to kill a process using its name rather than its process id. Which command can be used for this purpose?
- A.** `pkill`
  - B.** `pend`
  - C.** `ptermminate`
  - D.** `kp`
- 286.** You need to change directory one level up from the current directory. Which command accomplishes this task?
- A.** `cd .`
  - B.** `cd ~`
  - C.** `mv ~`
  - D.** `cd ..`