

2

ANSWERS TO EXERCISES

1. Briefly, what does the process of installing an operating system such as Linux involve?

When you install an operating system such as Linux, you copy operating system files from an installation medium to hard disk(s) on a system and set up configuration files so that Linux runs properly on the hardware.

2. What is an installer? What is the name of the Fedora/RHEL installer?

The installer is a tool that automates the process of installing Linux and makes the installation process easier and friendlier. Fedora/RHEL uses the Anaconda installer.

3. Would you set up a GUI on a server system? Why or why not?

Servers do not generally have GUIs. Typically you want to dedicate as many resources to the server as possible and few resources to anything not required by the server. A GUI consumes a lot of system resources and is not required by the server. Also, the presence of additional software on a server makes a system more vulnerable to attack.

4. A system boots from the hard disk. To install Linux, you need it to boot from a DVD. How can you make the system boot from a DVD?

As the system boots, go into the BIOS setup and change the order of the devices the system tries to boot from. Revise the order so that the system first tries to boot from the DVD and then tries to boot from the hard disk.

5. What is free space on a hard disk? What is a filesystem?

Free space on a hard disk is space that you can use for partitions. A filesystem is a data structure that resides in a partition.

6. What is an ISO image? How do you burn an ISO image to a DVD?

An ISO image is an exact copy of what is on a DVD. When you burn an ISO image to a DVD, you must use a special command that is part of most DVD-writing software; you cannot copy an ISO image to a DVD the same way you copy other files. The special command has a label similar to **Record CD from CD Image** or **Burn CD Image**.

7. Give two reasons why RAID cannot replace backups.

If the system experiences a catastrophic failure and the hard disks are destroyed or missing, RAID will be useless.

You cannot use RAID to replace a file when it is deleted by accident.

8. What are RAM disks? How are they used during installation?

A RAM disk is random access (system) memory that is made to look like a hard disk. Tools used during the installation process are copied to RAM disks. RAM disks allow the installation process to run through the specification and design phases without writing to the hard disk. Thus RAM disks enable you to quit installing the system and, unless the installer initialized the hard disk, leave the hard disk as it was at any point before the system warns it is going to write to the hard disk.

9. What is SHA2? How does it work to ensure that an ISO image file you download is correct?

SHA2 (Secure Hash Algorithm 2) is a one-way hash function. A one-way function takes a variable-length message and produces a fixed-length hash (string of characters). When you run SHA2 against a file, it always produces the same hash. If the file is changed, SHA2 produces a different hash.

When Fedora/RHEL creates an ISO image file, it runs SHA2 against the file and publishes the resulting hash. After you download the file and run SHA2 against the downloaded copy of the file, if the resulting hash is the same as the one Fedora/RHEL published, the file is correct.