

## Chapter 2 Review: The Filesystem

file – the basic component for data storage

file system – Unix's way of organizing files (uses a tree structure)

journaling – a method of logging file changes to help prevent corruption and make a system more resilient and able to recover from failures

extent – used to reduce disk fragmentation

UNIX file system – the original native Unix file system format

File Systems: FAT16, FAT32, exFAT, ext3, ext4, ufs, vfat, xfs, nft, ntfs, swap, iso,

parent directory – the directory in which another directory is contained

child directory – a directory contained within another directory

subdirectory – a directory within another directory

root file system - /, the base of the file system

SCSI and IDE – ways of connecting peripheral storage devices to a computer

partition – a logical division on a physical drive that allows a single physical device to behave as two separate devices from the perspective of data storage

virtual memory – a location on a hard drive where a running process is stored when it cannot all fit into main memory (RAM)

swap partition – the partition on the hard drive on which virtual memory is stored

boot partition – a partition on a hard drive where the kernel is stored

mount – to attach one file system to the node of another file system

/bin – the place where binary programs are stored on a Unix-like system

/boot – the place where the kernel is stored on a Unix-like system

/dev – the place where physical devices are represented as files for the os to interact with

/etc – the place where configuration files for programs are stored

/home – the place where users' personal files are stored

/lib – houses shared libraries that programs have in common

/mnt and /media – the place where media devices are attached to the file system (media is the new one)

/proc – the place where running programs are represented on the file system

/root – a home folder for the root user

/sbin – system admin binaries are stored here

/tmp – a place to put files that are only needed for a brief moment to maintain the business logic of a running program

/usr - applications for users to use are put here

/var – a place where files that rapidly change in size are placed, such as log files

. - a hidden file that represents the current directory

.. - a hidden file that represents the parent directory

.filename – any file with a dot preceding it is treated as a hidden file by the os

path – the sequence of folders that must be traversed to reach a file /home/batman/top-secret/joker.txt

### File Permissions

Files belong to a user and a group

Files can be read, written to, or executed

File operations can be limited by user, group, or others using the command chmod

The ownership of a file can be changed using the command chown

file permissions are represented by a string rwxrwxrwx

r – read, 4

w – write, 2

x – execute, 1