# Objectives

* Perform disk maintenance that includes defragmenting, relocating files and folders, running disk and file repair utilities.
* Explain the types of backups and develop a backup plan.
* Tune virtual memory for optimal performance.

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# Maintaining Disks

* Important **disk maintenance** tasks include:
  + Defragmenting disks
  + Using disk utilities to find and repair damaged files.

# Tuning Virtual Memory

* **Virtual memory** – disk storage that is used when there is not enough RAM for a particular operation, or for all processes currently in use.
* When the CPU and OS need to access information on disk, they swap something else to disk – this process is called paging.
* **Page file** or **swap file** – specially allocated disk area where information is swapped back and forth from RAM to disk.
* Called swap file system in UNIX/Linux.

# Tuning Virtual Memory

* Virtual memory (in Windows) is adjusted to set an initial starting size and a maximum size to which it can grow.
* The general rule for sizing the page file is to set the initial size to equal 1.5 times the amount of RAM.
* In UNIX/Linux – use the *vmstat* command-line utility to monitor paging.
* In Mac OS X there is no option for turning on or configuring virtual memory because it is always enabled and monitored by the OS.