

# Computer Hard Drives

Chesapeake PC User's Group  
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# History of Computer Hard Drives

- Original Drives
  - Mainframe Drives
  - 5MB



Presenting the world's first hard drive, first introduced in 1956 -- IBM's 5MB Random Access Memory Accounting: RAMAC®, magnetic-disk memory storage. It stored information on fifty disks, which spun at 1,200 rpm.

# History of Computer Hard Drives (continued)

## First PC Hard Drives

- MFM (Modified Frequency Modulation)
- 10 MB

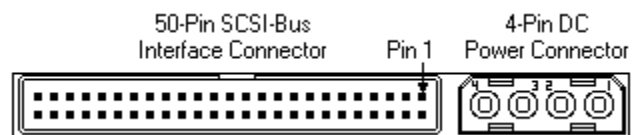


The IBM Personal Computer XT, often shortened to the IBM XT, PC XT, or simply XT, was IBM's successor to the original IBM PC. It was released as IBM product number 5160 on March 8, 1983, and came standard with a hard drive. It was based on essentially the same architecture as the original PC, with only incremental improvements; a new 16-bit bus architecture would follow in the AT.



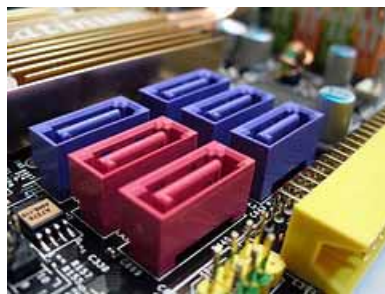
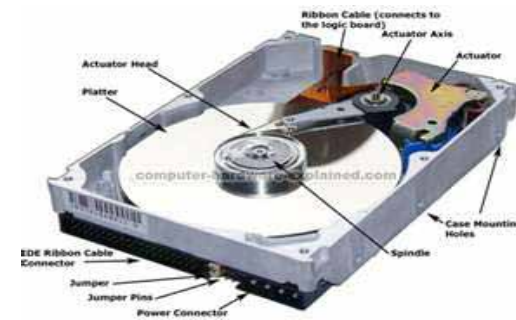
# History of Computer Hard Drives (continued)

- Progression of the Personal Computer (PC)
  - Seagate 40 MG
  - RLL (Run Length Limited) Encoding
  - SCSE (Small Computer System Interface)



# History of Computer Hard Drives (continued)

- IDE (Intelligent Drive Electronics or Integrated Drive Electronics)
- Today's Stand-Alone PCs
  - SATA (Serial Advanced Technology Attachment)





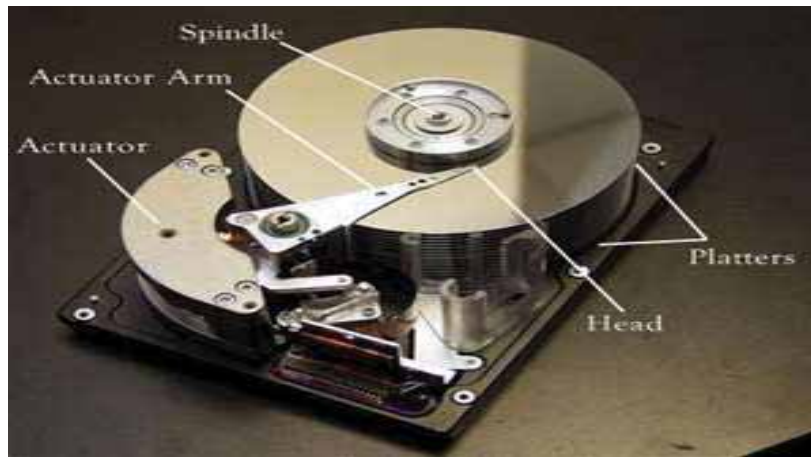
# Function of a Drive in Your PC



The drive in your personal computer is the primary storage area and is the computer's long term memory. It contains your operating system, programs (software), documents, photos and data. Today's hard drives are measured in gigabytes (GB).

# Types of Drives in Today's PCs

- Hard Drives (HDD) – Disks/Platters



- Advantages
  - Readily available, inexpensive, greater selection
- Disadvantages
  - Mechanical device
- Cost/Size
  - Less than \$0.10 per gigabyte \*

\*Christopher Johnson, Premium USB Blog, 11/11/2010

# Types of Drives in Today' PCs (continued)

- Solid State Drives (SSD)



A solid state drive is a non-volatile computer storage device. They use microchips which retain data in non-volatile memory chips and contain no moving parts. Examples of solid state drives, other than inside a PC are; memory cards, USB flash drives and MP3 players.

- Advantages
  - Speed, no noise, less power consumption and reliability
- Disadvantages
  - Cost – approximately \$2 per gigabyte



# Internal and External Drives

## Internal Drives

- Number that can be installed in a PC
- New drives on the market/capacity
- What the future holds



## External Drives

- Usage
- Considerations
- Capacity



# How to Select What Drive is Best

When buying a new computer

- Considerations
  - Size
  - Type



???    ???    ???    ???  
?? Hard Drive ??  
? Solid State Drive ?  
???    ???  
???  
1TB    2TB    3TB    MORE

# Maintenance of Hard Drive

Reformat of hard drive

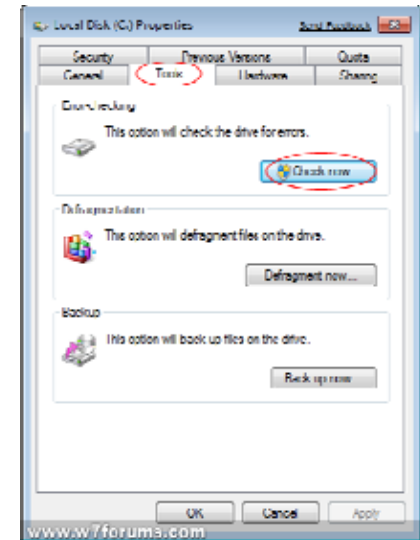
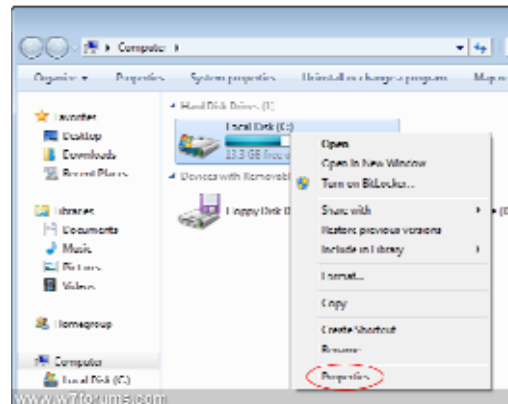
- When to reformat a drive
  - Virus
  - PC running slow



# Maintenance of Hard Drive (continued)

## Routine Maintenance

- Scandisk/CHKDSK
  - Check for bad clusters
- Defragmentation
  - File cluster rearrangement



# Maintenance of Hard Drive (continued)

## Routine Maintenance (continued)

- Disk Cleanup
- How often should routine maintenance be run?



To start Disk Cleanup type the program's name into the Start Menu search field. Disk Cleanup offers a number of options regarding which files to keep or delete from your hard drive.

No matter whether you're a casual user or an enthusiast, your daily computing takes a toll on your hard drive. Unfortunately as you use your computer more and more it gets full of clutter in the form of misplaced data, bad programs, or simply overload. This clutter slows down your computer and starts can cause crashes and errors.

Routine maintenance should be run on your hard drive at least weekly. The suggested maintenance will free up space on your hard drive and is well worth the effort.

The four suggested maintenance items are free and come with your Microsoft Operating System.



# Maintenance of Hard Drive (continued)

## Routine Maintenance (continued)

- Maintenance software from various vendors
  - PC Decrapifer – eliminates bloatware or crapware
    - [www.pcdecrapifier.com](http://www.pcdecrapifier.com) - free for personal use
  - CCleaner – cleans and optimizes your computer
    - [www.piriform.com/ccleaner](http://www.piriform.com/ccleaner) – free for personal use

# The Impact Cloud Computing Will Have on PC Drives

Cloud computing is location-independent computing, whereby shared servers provide resources, software, and data to computers and other devices on demand, as with the electricity grid. Cloud computing is a natural evolution of the widespread adoption of virtualization, service-oriented architecture and utility computing. Details are abstracted from consumers, who no longer have need for expertise in, or control over, the technology infrastructure "in the cloud" that supports them.

