External Hard Drives

MLCUG
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Speeds and Feeds

- Internal Bus
- ATA (IDE)
- Serial ATA (SATA)
- SCSI
Speeds and Feeds

- External Bus
  - Firewire (IEEE 1394)
  - Universal Serial Bus (USB)
- SCSI
- Serial ATA
## AT Attachment

<table>
<thead>
<tr>
<th>ATA</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATA</td>
<td>16.7 MB/s</td>
</tr>
<tr>
<td>ATA-33</td>
<td>33 MB/s</td>
</tr>
<tr>
<td>ATA-66</td>
<td>66 MB/s</td>
</tr>
<tr>
<td>ATA-100</td>
<td>100 MB/s</td>
</tr>
<tr>
<td>ATA-133</td>
<td>133 MB/s</td>
</tr>
<tr>
<td>Serial ATA</td>
<td>150 MB/s</td>
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</tbody>
</table>
# Small Computer System Interface

<table>
<thead>
<tr>
<th>Type</th>
<th>Speed (MB/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCSI</td>
<td>5</td>
</tr>
<tr>
<td>SCSI-2</td>
<td>10</td>
</tr>
<tr>
<td>Fast Wide SCSI</td>
<td>20</td>
</tr>
<tr>
<td>Ultra Wide SCSI</td>
<td>40</td>
</tr>
<tr>
<td>SCSI-3</td>
<td>80</td>
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<tr>
<td>Ultra 2 Wide SCSI</td>
<td>160</td>
</tr>
<tr>
<td>Ultra 3 SCSI</td>
<td>160</td>
</tr>
<tr>
<td>Ultra 160</td>
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<tr>
<td>Ultra 320</td>
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</tbody>
</table>
IEEE 1394

- Apple calls it Firewire
- Sony calls it i-Link
- Two varieties:
  - IEEE 1394a - 400 Mb/s
  - IEEE 1394b - 800 Mb/s
Universal Serial Bus

- USB
  - 1.0 - 12 Mb/s
  - 1.1 - 12 Mb/s
  - 2.0 - 480 Mb/s
External Cases

- Connection
  - Firewire only
  - USB only
  - Firewire and USB combined

- Form Factor
  - 3.5” - supports HD and DVD/CD
  - 2.5” - supports laptop HD
External Cases

- Pricing
  - 3.5” Firewire - $35 - $80
  - 3.5” USB - $35 - $80
  - 3.5” Combo - $45 - $100
  - 2.5” Combo - $35 - $100
Drive Capacity

- Windows 9x (95C, 98, 98SE, Millenium)
  - 120 GB maximum recommended
- Windows NT, 2000, XP, 2003
  - up to 300 GB and higher
Formatting

- Win 9x
  - FAT32 only
  - 127.8 GB maximum logical drive
- W2K, XP
  - FAT32 or NTFS
  - 2 TB maximum logical drive (NTFS)
Demo

- External Combo Firewire/USB - $45
- Maxtor 160GB 7200 RPM ATA-133 - $89
- Cables - included with case
- Total Cost - $134 + tax + shipping
- Total time - 10 to 20 minutes