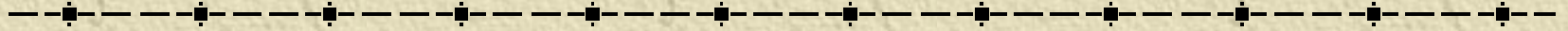


Performance Test for the USB Drive

By

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→ Hardware specifications

→ Test

→ Test result

Hardware Specifications for the USB Drive Being Tested

Features:

- Plug-and-play; no setup, software, cables, batteries or external power required
- Supports all file formats
- Built-in LED indicator
- Fast data transfer rates up to 4MB/sec.
- Write-protect switch for security
- PC and Mac compatible
- USB extension cable and lanyard included

Additional Specifications:

- Type: 512MB USB 2.0 flash drive
- Write Speed: 4MB per second
- Read Speed: 5MB per second
- Interface Slot/Connection Port: USB 2.0

Source: <http://www.tigerdirect.ca/applications/SearchTools/item-details.asp?EdpNo=161659&Sku=P56-9100&CatId=379>

Survey on Data Transfer Rate of Other Products

Faster (mbps)

- Kingston 1 GB Data Traveler USB 2.0 Hi-Speed Flash Memory: 480 mbps (\$295.95)
- KINGSTON - 256 MB DataTraveler USB Flash Memory: 12 mpbs
- Kingston 512 MB Data Traveler USB 2.0 Hi-Speed Flash Memory: 480 mbps
- Kingston 128 MB Data Traveler Flash Memory: 12 mbps
- Lexar Media 1 GB USB JumpDrive 2.0 Pro: 4.5/6.0 mbps
- Lexar Media 512 MB USB JumpDrive 2.0 Pro: 4.5/6.0 mbps
- Lexar Media 256 MB USB JumpDrive 2.0 Pro: 4.5/6.0 mbps
- Sony Corporation 256 MB Micro Vault USB Storage Media: 5.5 mbps
- Sony Corporation 128 MB Micro Vault USB Storage Media: 5.5 mbps

Slower (kbps)

- CD Cyclone 128 MB Flash Key: 800 kbps
- CD Cyclone 256 MB Flash Key: 800/500 kbps
- CD Cyclone 512 MB Flash Key: 800/500 kbps
- EasyDisk 128 MB USB Drive: 710 kbps
- Sonnet Technologies 256 MB Piccolo USB Flash Drive: 350/700 kbps
- Sonnet Technologies 256 MB Piccolo USB Flash Drive: 350/700 kbps
- Linksys 32 MB Instant USB Disk: 800 kbps
- Linksys 64 MB Instant USB Disk: 800 kbps
- Linksys 128 MB Instant USB Disk: 800 kbps

Source: http://accessories.us.dell.com/sna/productlisting.aspx?c=us&l=en&cs=RC968571&category_id=5949&first=true

Test and Test Result

What to test

- ➔ Write speed
- ➔ Read speed
- ➔ Compare the write speed to the local drive
- ➔ Compare the read speed to the local drive

Performance Test for the USB Stick (cont'd)

Test write speed:

→ Write buffer size = 1024

→ write 100,000 times

→ Output file size = 98MB

Five Tests executed.

Elapsed time:

1) 95 s.

2) 130 s.

3) 99 s.

4) 85 s.

5) 136s.

On average: 109 s., 0.896MB/sec

Performance Test for the USB Stick (cont'd)

Test write speed on local drive:

- Write buffer size = 1024**
- write 100,000 times**
- Output file size = 98 MB**

Five Tests executed.

Elapsed time:

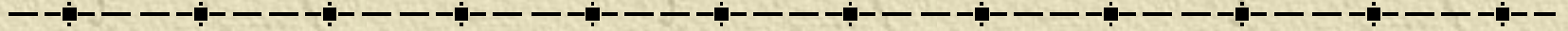
- 1) 6 s**
- 2) 11 s**
- 3) 9 s**
- 4) 11 s**
- 5) 10 s**

On average: 9.4 s, 10.394MB/s

Compare to 109 s., 0.896MB/sec for the USB drive

→ 11 times faster

Performance Test for the USB Stick (cont'd)



Test write speed:

- ➔ Write buffer size = 128
- ➔ write 1,000,000 times
- ➔ Output file size = 122.1 MB

Five Tests executed.

Elapsed time:

- 1) 167 s.
- 2) Halted.

Performance Test for the USB Stick (cont'd)

Test read speed:

→ Read buffer size = 1024

→ Input file size = 98 MB

Five Tests executed.

Elapsed time:

1) 152 s.

2) 150 s.

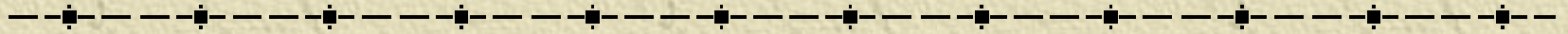
3) 151 s.

4) 120 s.

5) 147 s.

On average: 144 s., 0.681MB/sec

Performance Test for the USB Stick (cont'd)



Test read speed on local drive:

→ Read buffer size = 1024

→ Input file size = 98 MB

Five Tests executed.

Elapsed time:

1) 5 s.

2) 5 s.

3) 5 s.

4) 5 s.

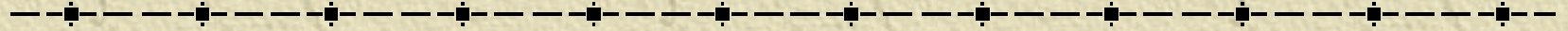
5) 5 s.

On average: 5 s, 19.54MB/s

Compare to 144s., 0.681MB/sec for the USB drive

→ 28.8 times faster

Performance Test for the USB Stick (cont'd)



Test read speed:

→ Read buffer size = 128

→ Input file size = 98 MB

Five Tests executed.

Elapsed time:

1) 148 s.

2) 150 s.

References

“Linux and USB 2.0”. By David Brownell. Retrieved from <http://www.linux-usb.org/usb2.html#current>, on 3/1/04.

[http://www.tigerdirect.ca/applications/SeachTools/
item-details.asp?EdpNo=161659&Sku=P56-
9100&CatId=379](http://www.tigerdirect.ca/applications/SeachTools/item-details.asp?EdpNo=161659&Sku=P56-9100&CatId=379)

[http://accessories.us.dell.com/sna/productlisting.aspx?c=us
&l=en&cs=RC968571&category_id=5949&first=true](http://accessories.us.dell.com/sna/productlisting.aspx?c=us&l=en&cs=RC968571&category_id=5949&first=true)