DOSUSB 3.0 Life CD
Usage Notes

This LifeCD has been compiled to simplify testing of the USB 3.0 support implemented in DOSUSB 3.0. This version supports USB 3.0 ports only and will not work on a PC without these. However, it will also run with USB 2.0 devices connected to these 3.0 ports.

Most PCs with USB 3.0 ports will have Windows installed and have formated the hard disk using the NTFS file system. Running real mode DOS on these systems is almost impossible.

However, you can boot such a PC with this LifeCD and then you can test DOSUSB by copying from the USB device to the RAMdisk which will be installed by the LifeCD. You do not have to access your hard disk for the test and this will thus not be modified.

However, if you wish can also access FAT16/FAT32 formatted hard disks or partitions which are build into the PC.

On this LifeCD there is a simple FreeDOS installation together with DOSUSB. Windows does not support the file format of this CD and therefore will just display a README.TXT file in Explorer.

1. Installation

Burn the enclosed ISO image on a CD using Nero or some other CD burning software. You will have a bootable ElTorito formatted CD then. This emulates a 20 MB hard disk when booting from it.

Now put the CD into the PC and boot from it. The BIOS is usually set to check first if it can boot from the CD. If not, change the boot order setting in the BIOS to be able to boot from the CD.

2. Running and testing

During the start up process the LifeCD will start DOSUSB and USBDISKX.SYS. It will also set up a RAMdisk of about 2GB size if that much memory is available, otherwise the RAMdisk will be smaller.

The LifeCD is configured so that you can run DOSUSB together with a mass storage device such as a USB 3.0 flash disk or external hard disk. It will also work with a USB 2.0 device but that will be much slower.

If you go into the USB directory, you can run unpack.bat to put a 500 MB testfile onto the RAMdisk. The batch files testwrit.bat (no e!) and testread.bat will write and read that testfile to/from the USB device and display the time at the start of the copy operation and the time at the end of the copy operation. This way you can see how much time it has taken.

The best performance could be observed with an external USB 3.0 Buffalo hard disk.

DOSUSB took 9 seconds to write 500 MB to the disk while it took 8 seconds to read from it. The NEC driver on Windows took 8 seconds to write 500 MB to disk while 7 seconds to read from it. I assume the Buffalo hard disk has a large internal buffer which helps DOSUSB with its small DOS buffer.

The test with the UDATA 3.0 flash disk showed longer access times. It took 30 seconds to write the 500 MB file to the USB flash disk and 10 seconds to read it again.
The NEC 3.0 driver on Windows needed 20 seconds to write and 9 seconds to read the 500 MB file.
If you repeat the tests on Windows it will result in a significant speed increase since almost the entire file is still buffered by Windows.

Windows will use a buffer of several hundred megabytes as a disk buffer and being multitasking can simultaneously read and write the data. DOS has only a disk buffer of a few KB and will alternately read and write the data. Therefore DOS will be slower than Windows here.

In the USB directory on the LifeCD there are several utility programs. The program Listdevs.exe displays the connected devices and their addresses. USBView.exe will list the descriptors of the USB device. Diskspy.exe can read single sectors from a USB mass storage device.

DOSUSB 3.0 has been developed based on the NEC chipset which is currently used almost exclusively in new motherboards and PCI cards.

I found that USB 3.0 hard disk enclosures for installing a standard hard disk in them did not work well. You have to turn them on after the PC has booted and before loading DOSUSB (same problem with Windows too).
On some PCs DOSUSB will run slow if no EMM386.EXE driver is loaded in the CONFIG.SYS file.
Make sure the USB disk is not formatted with the NTFS file system.

In a nutshell:
        - boot the PC with the CD inserted - check that DOSUSB identifies your device
        - go into the USB directory
        - run unpack.bat
        - run testread.bat and/or testwrit.bat to measure the speed/time for reads/writes

21.4.2011 Georg Potthast

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DOSUSB driver by Georg Potthast - Rel. 3.0 - Copyright 2011
Scanning USB ports ...

xHCI controller installed:
Bus Dev Func I/O      Devices
02/0000/0000 FDDFE000 Port00: device at superspeed Port01: device at superspeed
                      Port02: no device            Port03: no device

FDDFE000 1 S ADATA - ADATA USB Device 2 S BUFFALO - HD-HXU3

DOSUSB driver Rel. 3.0 installed at int  0x65
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