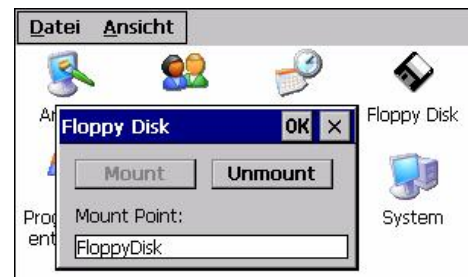


## Floppy Disk Driver for Windows CE .NET

Windows CE .NET does not provide the ability to access floppy disks. We fill this gap by providing a driver that supports 1.44MB disks in a single floppy drive. Floppy drives are installed in almost every personal computer and therefore provide an easy and common way to exchange smaller amounts of data between a WindowsCE device and a PC. Many existing WindowsCE solutions offer a PCMCIA slot which you can use to mount ATA cards. These ATA cards are much more expensive than floppy disks and furthermore lot of PC's don't have a builtin PCMCIA slot.

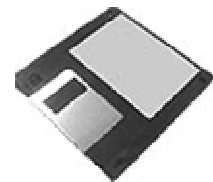
The driver supports hot-swapping of floppy disks. To switch between different disks the user can also mount / unmount floppies with a special control panel.



## Performance Values

Read-/write performance of 10KB test file:

Write:	4,302 sec	2,325 KB/sec
Read:	1,708 sec	5,855 KB/sec



Read-/write performance of 100KB test file:

Write:	50,039 sec	1,998 KB/sec
Read:	4,448 sec	22,480 KB/sec

## Restrictions

- The driver supports only one floppy drive configured as master.
- The driver only supports 1.44" floppy disks.
- The driver does not support low-level formatting of floppy disks.
- In case no floppy disk is inserted, the driver needs to access the drive every 5 seconds to determine a new disk.

## Floppy Disk Driver FAQ

### **Why is the write performance much slower than the read performance?**

The driver will always read one complete track and buffer its data. There is no significant difference between reading one sector or one complete track. With buffering read performance could be improved significantly. When writing files to a floppy disk the fat file system of Windows CE writes single sectors and this will take some time.

### **Why do you need to access the drive every 5 seconds when no disk is inserted?**

A floppy controller does not provide a register that shows whether a disk is inserted or not. It only provides a register that indicates that either a new disk has been inserted or there is no disk in the drive. To determine if a disk is inserted, you have to access the drive first.

In WindowsCE all disk drives are buffered and cached. Since you have to access the drive first to determine a disk change, polling the drive is the only possible method to determine disk changes.

### **Is it possible to turn off disk polling?**

Yes, you must set the registry key PollInterval to 0. In this mode you have to mount/unmount the drive each time you change the disk.

### **Why do you support only one floppy drive?**

Windows CE has been designed to be used on embedded systems. Even typical today's PC's only support one floppy drive. In the past, say the early 80ths, floppy disks have been the only devices attached to a PC. In that situation, having two floppy drives allowed the user to copy floppy disks between two different floppy drives. With the upcoming harddisks, this is no longer a commonly used configuration.

### **Why do you only support 1.44" floppy disks?**

Eventhough most BIOS versions offer support for different floppy disk types, only 1.44" MB floppies have become common and are effectively used.

### **Do you provide an interface specification to your driver?**

No. The floppy disk driver is a so called block device driver and will be integrated and managed by the storage manager. All drivers managed by the storage manager must follow the same format. They provide read- and write access through I/O control codes. From the point of view of a user, a new directory "FloppyDisk" is provided. User programs can access files on the floppy disk by using standard I/O functions (e.g. open, close, read, write, seek) in that directory.

### **Can I mount/dismount floppy disks within my application?**

Yes. The console application "fdcmount" is delivered in source and provides an example how to do that.

### **It takes about 4 seconds to unmount a floppy disk. Why does it take so long?**

This is a problem of the Windows CE operating system. The driver itself deinitializes immediately.

### **Does your driver support the real time concept of Windows CE?**

Yes. Whenever the driver has to wait for the floppy controller, it calls the "Sleep()" function, which allows other tasks to do something.