



**Note:** This IBM PC BIOS API call is for DOS/Win16 personality only. Use [Family API](#) for portability.

**Note:** [osFree Macro Library](#) provides macros for most of functions

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# Int 13H, AH=03H

## Version

IBM 5150 and higher

## Brief

Write sector

## Family API

[DosWrite](#)

## Input

- AH = 03h
- AL = number of sectors to write (must be nonzero)
- CH = low eight bits of cylinder number
- CL = sector number 1-63 (bits 0-5) high two bits of cylinder (bits 6-7, hard disk only)
- DH = head number
- DL = drive number (bit 7 set for hard disk)
- ES:BX → data buffer

## Return

- CF set on error
- CF clear if successful
- AH = status (see [status](#))
- AL = number of sectors transferred (only valid if CF set for some BIOSes)

## Macro

```
INCLUDE BIOS.INC
```

```
@DskWrite 0, 0, 0, 1, 1, offset buf
```

## Notes

- errors on a floppy may be due to the motor failing to spin up quickly enough; the write should be retried at least three times, resetting the disk with AH=00h between attempts
- most BIOSes support “multitrack” writes, where the value in AL exceeds the number of sectors remaining on the track, in which case any additional sectors are written beginning at sector 1 on the following head in the same cylinder; the CONFIG.SYS command MULTITRACK can be used to force DOS to split disk accesses which would wrap across a track boundary into two separate calls
- the IBM AT BIOS and many other BIOSes use only the low four bits of DH (head number) since the WD-1003 controller which is the standard AT controller (and the controller that IDE emulates) only supports 16 heads
- AWARD AT BIOS and AMI 386sx BIOS have been extended to handle more than 1024 cylinders by placing bits 10 and 11 of the cylinder number into bits 6 and 7 of DH
- under Windows95, an application must issue a physical volume lock on the drive via INT 21/AX=440Dh before it can successfully write to the disk with this function

## Note

Text based on [Ralf Brown Interrupt List Release 61](#)

| <b>IBM PC BIOS API</b> |   |
|------------------------|---|
| Video I/O              | <b>INT 10H:</b> 00H, 01H, 02H, 03H, 05H, 06H, 07H, 08H, 09H, 0AH, 0BH, 0CH, 0DH, 0EH, 0FH |
| Hardware info          | <b>INT 11H, INT 12H</b>   |
| Serial I/O             | <b>INT 14H:</b> 00H, 01H, 02H, 03H  |
| Tape I/O               | <b>INT 15H:</b> 00H, 01H, 02H, 03H  |
| Keyboard I/O           | <b>INT 16H:</b> 00H, 01H, 02H   |
| Printer I/O            | <b>INT 17H:</b> 00H, 01H, 02H   |
| Disk I/O               | <b>INT 13H:</b> 00H, 01H, 02H, 03H, 04H, 05H  |
| Date and Time          | <b>INT 1AH:</b> 00H, 01H  |

| <b>osFree Macro Library</b> |   |
|-----------------------------|---|
| Video I/O                   | @SetMode @SetCurSz @SetCurPos @GetCur @SetPage @ScrollUp @ScrollDn @Scroll @GetChAtr @PutChAtr @PutCh @SetPalet @SetColor @SetDot @GetDot @WrtTTY @VideoState @GetMode @GetDisplay @GetVideoState @GetEGALinfo @Cls |
| Hardware info               | @Equipment @MemSize   |
| Serial I/O                  | @AuxInit @AuxSendChar @AuxRecieveChar @AuxStatus  |
| Tape I/O                    | @TapeOn @TapeOff @TapeRead @TapeWrite   |

## osFree Macro Library

|                |  |
|----------------|--|
| Keyboard I/O   | @KbdStatus @CharIn @CharPeek   |
| Printer I/O    | @PrnPrint @PrnInit @PrnStatus  |
| Disk I/O       | @DskReset @DskStatus @DskRead @DskWrite @DskVerify @DskFormat              |
| Date and Time  | @SetTime @GetTime  |
| Mouse          | @MouInit @MouShowPointer @MouStatus @MouSetPos @MouSetMickey<br>@MouRegion |
| Memory manager | @ModBlok SET_BLOCK   |

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## Family API

|           |                 |   |
|-----------|-----------------|---|
| DOS       | Process Manager | DosBeep DosExit DosSleep DosExecPgm   |
|           | File Manager    | DosChDir DosChgFilePtr DosClose DosDelete DosDupHandle DosMkDir DosMove<br>DosQCurDir DosQCurDisk DosSet FileMode DosOpen DosQFileInfo DosRead<br>DosQ FileMode DosQFSInfo DosQVerify DosRmDir DosSelectDisk DosFindClose<br>DosFindFirst DosFindNext DosSet FileInfo DosSet Verify DosWrite DosFileLocks<br>DosSetFHandState DosNewSize DosBufReset DosQFHandState DosSetFSinfo<br>DosShutdown |
|           | Memory Manager  | DosFreeSeg DosSubAlloc DosSubFree DosSubSet DosAllocHuge DosAllocSeg<br>DosReallocHuge DosReallocSeg DosGetHugeShift DosCreateCSAlias   |
|           | NLS             | DosCaseMap DosGetCtryInfo DosGetDBCSEv DosSetCtryCode DosGetCollate<br>DosGetMessage DosInsMessage DosPutMessage  |
|           | Date and Time   | DosSetDateTime DosGetDateTime   |
|           | Devices         | DosDevConfig DosDevIOCtl DosDevIOCtl2   |
|           | Signals         | DosHoldSignal DosSetSigHandler  |
|           | Misc            | BadDynLink DosGetEnv DosGetMachineMode DosGetVersion DosError DosErrClass<br>DosSetVec  |
| KBD       |                 | KbdCharIn KbdFlushBuffer KbdGetStatus KbdSetStatus KbdStringIn KbdPeek  |
| VIO       |                 | VioGetBuf VioGetConfig VioGetCurPos VioGetCurType VioGetPhysBuf<br>VioReadCellStr VioReadCharStr VioScrollUp VioScrollDn VioScrollLf VioScrollRt<br>VioScrUnLock VioSetCurPos VioSetCurType VioSetMode VioGetMode VioShowBuf<br>VioWrtCellStr VioWrtCharStr VioWrtCharStrAtt VioWrtNAttr VioWrtNCell<br>VioWrtNChar VioWrtTTY VioScrLock VioPopUp   |
| Tools     |                 | BIND  |
| Modules   |                 | DOSCALLS.DLL VIOCALS.DLL KBDCALLS.DLL MSG.DLL   |
| Libraries |                 | API.LIB OS2386.LIB FAPI.LIB DOSCALLS.LIB SUBCALLS.LIB   |

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