



**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

2022/03/13 05:41 · prokushev · [0 Comments](#)

# Int 13H, AH=04H

## Version

IBM 5150 and higher

## Brief

Verify sector

## Family API

none

## Input

- AH = 04h
- AL = number of sectors to verify (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 (PC,XT,AT with BIOS prior to 1985/11/15)

## Return

- CF set on error
- CF clear if successful
- AH = status (see [status](#))
- AL = number of sectors verified

# Macro

```
INCLUDE BIOS.INC

@DskVerify 0, 0, 0, 1, 1, offset buf
```

## Notes

- errors on a floppy may be due to the motor failing to spin up quickly enough (timeout error 80h); the write should be retried at least three times, resetting the disk with AH=00h between attempts
- on floppys, the operation should also be retried on media change (06h) detection.
- this function does not compare the disk with memory, it merely checks whether the sector's stored CRC matches the data's actual CRC
- 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
- some Epson ROM BIOSes sometimes have problems properly handling this function. The workaround is to reset the disk (INT 13/AH=00h) before the call.

## Note

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

| IBM PC BIOS API      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video I/O            | <a href="#">INT 10H</a> : <a href="#">00H</a> , <a href="#">01H</a> , <a href="#">02H</a> , <a href="#">03H</a> , <a href="#">05H</a> , <a href="#">06H</a> , <a href="#">07H</a> , <a href="#">08H</a> , <a href="#">09H</a> , <a href="#">0AH</a> , <a href="#">0BH</a> , <a href="#">0CH</a> , <a href="#">0DH</a> , <a href="#">0EH</a> , <a href="#">0FH</a>                                                                                                                                                                                                                  |
| Hardware info        | <a href="#">INT 11H</a> , <a href="#">INT 12H</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Serial I/O           | <a href="#">INT 14H</a> : <a href="#">00H</a> , <a href="#">01H</a> , <a href="#">02H</a> , <a href="#">03H</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Tape I/O             | <a href="#">INT 15H</a> : <a href="#">00H</a> , <a href="#">01H</a> , <a href="#">02H</a> , <a href="#">03H</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Keyboard I/O         | <a href="#">INT 16H</a> : <a href="#">00H</a> , <a href="#">01H</a> , <a href="#">02H</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Printer I/O          | <a href="#">INT 17H</a> : <a href="#">00H</a> , <a href="#">01H</a> , <a href="#">02H</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Disk I/O             | <a href="#">INT 13H</a> : <a href="#">00H</a> , <a href="#">01H</a> , <a href="#">02H</a> , <a href="#">03H</a> , <a href="#">04H</a> , <a href="#">05H</a>                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Date and Time        | <a href="#">INT 1AH</a> : <a href="#">00H</a> , <a href="#">01H</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| osFree Macro Library |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Video I/O            | <a href="#">@SetMode</a> <a href="#">@SetCurSz</a> <a href="#">@SetCurPos</a> <a href="#">@GetCur</a> <a href="#">@SetPage</a> <a href="#">@ScrollUp</a> <a href="#">@ScrollDn</a> <a href="#">@Scroll</a> <a href="#">@GetChAtr</a> <a href="#">@PutChAtr</a> <a href="#">@PutCh</a> <a href="#">@SetPalet</a> <a href="#">@SetColor</a> <a href="#">@SetDot</a> <a href="#">@GetDot</a> <a href="#">@WrtTTY</a> <a href="#">@VideoState</a> <a href="#">@GetMode</a> <a href="#">@GetDisplay</a> <a href="#">@GetVideoState</a> <a href="#">@GetEGAInfo</a> <a href="#">@Cls</a> |
| Hardware info        | <a href="#">@Equipment</a> <a href="#">@MemSize</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Serial I/O           | <a href="#">@AuxInit</a> <a href="#">@AuxSendChar</a> <a href="#">@AuxRecieveChar</a> <a href="#">@AuxStatus</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Tape I/O             | <a href="#">@TapeOn</a> <a href="#">@TapeOff</a> <a href="#">@TapeRead</a> <a href="#">@TapeWrite</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Keyboard I/O         | <a href="#">@KbdStatus</a> <a href="#">@CharIn</a> <a href="#">@CharPeek</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

**osFree Macro Library**

|                |                                                                            |
|----------------|----------------------------------------------------------------------------|
| 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                                                         |

2022/10/04 14:28 · prokushev · 0 Comments

2022/03/13 05:54 · prokushev · 0 Comments

**Family API**

|           |                 |                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DOS       | Process Manager | DosBeep DosExit DosSleep DosExecPgm                                                                                                                                                                                                                                                                                                                                                         |
|           | File Manager    | DosChDir DosChgFilePtr DosClose DosDelete DosDupHandle DosMkDir DosMove<br>DosQCurDir DosQCurDisk DosSetFileMode DosOpen DosQFileInfo DosRead<br>DosQFileMode DosQFSInfo DosQVerify DosRmdir DosSelectDisk DosFindClose<br>DosFindFirst DosFindNext DosSetFileInfo DosSetVerify 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 VIOCALLS.DLL KBDCALLS.DLL MSG.DLL                                                                                                                                                                                                                                                                                                                                              |
| Libraries |                 | API.LIB OS2386.LIB FAPI.LIB DOSCALLS.LIB SUBCALLS.LIB                                                                                                                                                                                                                                                                                                                                       |

2018/08/25 15:05 · prokushev · 0 Comments

From:

<https://osfree.su/doku/> - **osFree wiki**

Permanent link:

<https://osfree.su/doku/doku.php?id=en:docs:bios:api:int13:04>Last update: **2023/12/17 05:52**