



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

2018/09/07 05:04 · prokushev · [0 Comments](#)

# Int 21H, AH=3DH

## Version

2 and higher

## Brief

“OPEN” - OPEN EXISTING FILE

## Family API

[DosOpen](#)

## Input

```
AH = 3Dh
AL = access and sharing modes (see #01402)
DS:DX -> ASCIZ filename
CL = attribute mask of files to look for (server call only)
```

## Return

```
CF clear if successful
  AX = file handle
CF set on error
  AX = error code (01h,02h,03h,04h,05h,0Ch,56h) (see #01680 at
AH=59h)
```

## Notes

file pointer is set to start of file

if SHARE or a network is loaded, the file open may fail if the file is already open, depending on the combination of sharing modes (see #01403,#01404)

file handles which are inherited from a parent also inherit sharing and access restrictions

```
files may be opened even if given the hidden or system attributes
under the FlashTek X-32 DOS extender, the pointer is in DS:EDX
DR DOS checks the system password or explicitly supplied password at
the end of the filename (following a semicolon) against the reserved
field in the directory entry before allowing access
sharing modes are only effective on local drives if SHARE is loaded
```

Novell DOS 7 SHARE v1.00 would refuse file access in the cases in #01403 marked with [1] (read-only open of a read-only file which had previously been opened in compatibility mode); this was fixed in SHARE v1.01 of 09/29/94

Bitfields for access and sharing modes:

Bit(s)	Description
2-0	access mode
	000 read only
	001 write only
	010 read/write
	011 (DOS 5+ internal) passed to redirector on EXEC to allow case-sensitive filenames
3	reserved (0)
6-4	sharing mode (DOS 3.0+) (see #01403)
	000 compatibility mode
	001 "DENYALL" prohibit both read and write access by others
	010 "DENYWRITE" prohibit write access by others
	011 "DENYREAD" prohibit read access by others
	100 "DENYNONE" allow full access by others
	111 network FCB (only available during server call)
7	inheritance
	if set, file is private to current process and will not be inherited by child processes

(Table 01403) Values of DOS 2-6.22 file sharing behavior:

	Second and subsequent Opens
First	Compat Deny Deny Deny Deny Open   All Write Read None
	R W RW R W RW R W RW R W RW R W RW
-----	----- Compat R   Y Y Y N N N 1 N N N N N 1 N N
	W   Y Y Y N N N N N N N N N N N N N
	RW   Y Y Y N N N N N N N N N N N N N
-----	Deny R   C C C N N N N N N N N N N N N N All W   C C C N N N N N N N N N N N N

RW|C C C N N N N N N N N N N

-----| Deny R |2 C C N N N Y N N N N N Y N N Write W |C C C N N N N N N Y N N Y N N

RW|C C C N N N N N N N N N N Y N N

-----| Deny R |C C C N N N N Y N N N N N Y N Read W |C C C N N N N N N Y N N Y N

RW|C C C N N N N N N N N N N Y N N

-----| Deny R |2 C C N N N Y Y Y N N N Y Y Y None W |C C C N N N N N N Y Y Y Y Y Y

RW|C C C N N N N N N N N N N Y Y Y

Legend: Y = open succeeds, N = open fails with error code 05h

- C = open fails, INT 24 generated
- 1 = open succeeds if file read-only, else fails with error code
- 2 = open succeeds if file read-only, else fails with INT 24

(Table 01404) Values for DOS 7.x file sharing behavior:

| Second and subsequent Opens

First |Compat Deny Deny Deny Deny Open | All Write Read None

|R W RW A R W RW A R W RW A R W RW A R W RW A

-----|----- Compat R |Y Y Y Y N N N N Y N N Y N N N Y Y N N Y

W		Y	Y	Y	C	N	N	N	N	N	N	N	N	Y	Y	N	N	Y
RW		Y	Y	Y	C	N	N	N	N	N	N	N	N	Y	Y	N	N	Y
NA		Y	C	C	Y	N	N	N	N	Y	N	N	Y	N	N	Y	Y	N

-----| Deny R |C C C C N N N N N N N N N N N N N N All W |C C C C N N N N N N N N N N N N N N N N

RW		C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N
NA		C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N

-----| Deny R |Y C C Y N N N N Y N N Y N N N Y Y N N Y Write W |C C C C N N N N N N N N N N Y N N Y N N

RW		C	C	C	C	N	N	N	N	N	N	N	N	Y	Y	N	N	Y
NA		Y	C	C	Y	N	N	N	N	Y	N	N	Y	N	N	Y	Y	N

-----| Deny R |C C C C N N N N N Y N N N N N N N N Y N N Read W |C C C C N N N N N N N N N N Y N N N N

RW	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	
NA	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	N	N	N	Y	Y	Y	Y

-----| Deny R |Y Y Y Y N N N N Y Y Y Y N N N Y Y Y Y Y None W |C C C C N N N N N N N N Y Y Y Y Y Y Y

RW	C	C	C	C	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	
NA	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	N	N	N	Y	Y	Y	Y

Legend: R → reading, W → writing, RW → both reading & writing,

A/NA -> reading without access time update  
 Y = open succeeds, N = open fails with error code 05h  
 C = open fails, INT 24 generated

## See also

AH=0Fh,AH=3Ch,AX=4301h,AX=5D00h,INT 2F/AX=1116h,INT 2F/AX=1226h

## Note

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

DOS API	
Process manager	INT 20H, <b>INT 21H</b> : 00H, 25H, 26H, 31H, 34H, 35H, 4BH, 4CH, 4DH, 50H, 51H, 52H, 55H, 62H, INT 22H, INT 27H, INT 28H
File manager	INT 25H, INT 26H, <b>INT 21H</b> : 0DH, 0EH, 0FH, 10H, 11H, 12H, 13H, 14H, 15H, 16H, 17H, 19H, 1AH, 1BH, 1CH, 21H, 22H, 23H, 24H, 27H, 28H, 29H, 2EH, 2FH, 32H, 3305H, 36H, 39H, 3AH, 3BH, 3CH, 3DH, 3EH, 3FH, 40H, 41H, 42H, 4300H, 4301H, 45H, 45H, 46H, 4EH, 4FH, 54H, 56H, 5700H, 5701H, 5AH, 5BH, 5c00H, 5c01H, 60H, 67H, 68H, 6900H, 6901H, 6AH, 6CH
Character Device I/O	INT 29H, <b>INT 21H</b> : 01H, 02H, 03H, 04H, 05H, 06H, 07H, 08H, 09H, 0AH, 0BH, 0AH, 0CH, 5D07H, 5D08H, 5D09H, 5D0AH
Signals	INT 23H, INT 24H, <b>INT 21H</b> : 3300H, 3301H, 3302H
Memory manager	<b>INT 21H</b> : 48H, 49H, 4AH, 5800H, 5801H, 5802H, 5803H
Date and Time	<b>INT 21H</b> : 2AH, 2BH, 2CH, 2DH
Misc	<b>INT 21H</b> : 30H, 3306H, 3700H, 3701H, 3702H, 3703H, 59H
NLS	<b>INT 21H</b> : 3303H, 3304H, 3800H, 3801H, 6300H, 6301H, 6301H, 6500H, 6501H, 6502H, 6503H, 6504H, 6505H, 6506H, 6507H, 6520H, 6521H, 6522H, 6523H, 65A0H, 65A1H, 65A2H, 6601H, 6602H
Devices	<b>INT 21H</b> : 4400H, 4401H, 4402H, 4403H, 4404H, 4405H, 4406H, 4407H, 4408H, 4409H, 440AH, 440BH, 440CH, 440DH, 440EH, 440FH, 4410H, 4411H, 53H
Network	<b>INT 21H</b> : 5E00H, 5E01H, 5E02H, 5E03H, 5E04H, 5E05H, 5F00H, 5F01H, 5F02H, 5F03H, 5F04H, 5F05H, 5F07H, 5F08H

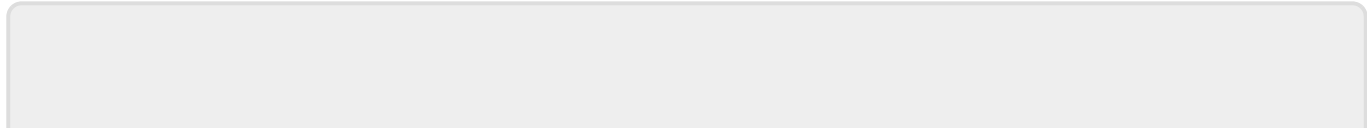
<b>osFree Macro Library</b>	
Video I/O	<a href="#">@SetMode</a> <a href="#">@SetCurSz</a> <a href="#">@SetCurPos</a> <a href="#">@GetCur</a> <a href="#">@SetPage</a> <a href="#">@ScrollUp</a> <a href="#">@ScrollDn</a> <a href="#">@Scroll</a> <a href="#">@GetChAtr</a> <a href="#">@PutChAtr</a> <a href="#">@PutCh</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>
Printer I/O	<a href="#">@PrnPrint</a> <a href="#">@PrnInit</a> <a href="#">@PrnStatus</a>
Disk I/O	<a href="#">@DskReset</a> <a href="#">@DskStatus</a> <a href="#">@DskRead</a> <a href="#">@DskWrite</a> <a href="#">@DskVerify</a> <a href="#">@DskFormat</a>
Date and Time	<a href="#">@SetTime</a> <a href="#">@GetTime</a>
Mouse	<a href="#">@MouInit</a> <a href="#">@MouShowPointer</a> <a href="#">@MouStatus</a> <a href="#">@MouSetPos</a> <a href="#">@MouSetMickey</a> <a href="#">@MouRegion</a>
Memory manager	<a href="#">@ModBlok</a> <a href="#">SET_BLOCK</a>

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

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