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:

First Open		Second and subsequent Opens														
		Compat			Deny All			Deny Write			Deny Read			Deny 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
	RW	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N

First Open		Second and subsequent Opens														
		Compat			Deny All			Deny Write			Deny Read			Deny None		
		R	W	RW	R	W	RW	R	W	RW	R	W	RW	R	W	RW
Deny All	R	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N
	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	N	N
Deny Write	R	2	C	C	N	N	N	Y	N	N	N	N	N	Y	N	N
	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	Y	N	N
Deny Read	R	C	C	C	N	N	N	N	Y	N	N	N	N	N	Y	N
	W	C	C	C	N	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
Deny None	R	2	C	C	N	N	N	Y	Y	Y	N	N	N	Y	Y	Y
	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	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   N N N Y   Y N N Y
       RW|Y Y Y C   N N N 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 N Y   Y N N Y
```

- - - - -| 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 N N N
       NA|C C C C   N N N 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 Y N N Y Y N N N Y

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

- - - - -| Deny R |C C C C N N N N N Y 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 Y N N N Y N N

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

```
      RW|C C C C   N N N N   N N N N   N N N 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 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, **INT 21H**: 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, **INT 21H**: 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, **INT 21H**: 01H, 02H, 03H, 04H, 05H, 06H, 07H, 08H, 09H, 0AH, 0BH, 0AH, 0CH, 5D07H, 5D08H, 5D09H, 5D0AH
Signals	INT 23H, INT 24H, **INT 21H**: 3300H, 3301H, 3302H
Memory manager	**INT 21H**: 48H, 49H, 4AH, 5800H, 5801H, 5802H, 5803H
Date and Time	**INT 21H**: 2AH, 2BH, 2CH, 2DH
Misc	**INT 21H**: 30H, 3306H, 3700H, 3701H, 3702H, 3703H, 59H
NLS	**INT 21H**: 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	**INT 21H**: 4400H, 4401H, 4402H, 4403H, 4404H, 4405H, 4406H, 4407H, 4408H, 4409H, 440AH, 440BH, 440CH, 440DH, 440EH, 440FH, 4410H, 4411H, 53H
Network	**INT 21H**: 5E00H, 5E01H, 5E02H, 5E03H, 5E04H, 5E05H, 5F00H, 5F01H, 5F02H, 5F03H, 5F04H, 5F05H, 5F07H, 5F08H

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Hardware info	@Equipment @MemSize
Serial I/O	@AuxInit @AuxSendChar @AuxRecieveChar @AuxStatus
Tape I/O	@TapeOn @TapeOff @TapeRead @TapeWrite
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 @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 DosQCurDir DosQCurDisk DosSetFileMode DosOpen DosQFileInfo DosRead DosQFileMode DosQFSInfo DosQVerify DosRmDir DosSelectDisk DosFindClose DosFindFirst DosFindNext DosSetFileInfo DosSetVerify DosWrite DosFileLocks DosSetFHandState DosNewSize DosBufReset DosQFHandState DosSetFSinfo DosShutdown
	Memory Manager	DosFreeSeg DosSubAlloc DosSubFree DosSubSet DosAllocHuge DosAllocSeg DosReallocHuge DosReallocSeg DosGetHugeShift DosCreateCSAlias
	NLS	DosCaseMap DosGetCtryInfo DosGetDBCSEv DosSetCtryCode DosGetCollate DosGetMessage DosInsMessage DosPutMessage
	Date and Time	DosSetDateTime DosGetDateTime
	Devices	DosDevConfig DosDevIOCtl DosDevIOCtl2
	Signals	DosHoldSignal DosSetSigHandler
	Misc	BadDynLink DosGetEnv DosGetMachineMode DosGetVersion DosError DosErrClass DosSetVec
KBD		KbdCharIn KbdFlushBuffer KbdGetStatus KbdSetStatus KbdStringIn KbdPeek
VIO		VioGetBuf VioGetConfig VioGetCurPos VioGetCurType VioGetPhysBuf VioReadCellStr VioReadCharStr VioScrollUp VioScrollDn VioScrollLf VioScrollRt VioScrUnLock VioSetCurPos VioSetCurType VioSetMode VioGetMode VioShowBuf VioWrtCellStr VioWrtCharStr VioWrtCharStrAtt VioWrtNAttr VioWrtNCell 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

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