

QBXIOL  
Input/Output Low-Level Library  
for  
QuickBASIC 4.x and BASIC 7.x

by  
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The QBXIOIOL software module is a DOS device input/output enhancement to Microsoft QuickBASIC 4.x and BASIC 7.x compilers. Its primary purpose is to provide fast I/O support for my QBXSBC SoundBlaster/AdLib music card software library but it can also be used separately.

Features of QBXIOIOL are:

- 1) Fast DOS I/O, written in fast and compact assembly code.
- 2) Critical error handling.
- 3) Unlimited file read/write size.
- 4) Read/write from any byte position within file or continue from last position.
- 5) Create files with specific file attributes.
- 6) Open files with specific access and sharing modes.

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- QBXSBC, the package . . . . . \$19.95  
- includes single-user licenses for:  
1) QBXIOIOL, fast I/O DOS file module  
2) QBXCTV, digitized voice I/O module for SoundBlaster  
3) QBXFMI, interface module to the resident FM driver for the SoundBlaster and AdLib music cards. Includes QBXFMI.BAS and resident driver SB-SOUND.COM for the SoundBlaster. - also includes:  
4) Useful sample programs in QB demonstrating how to access AdLib instrument BNK files, voice files, and card detection.  
5) Programmer documentation
- QBXSBC, assembly source . . . . . \$29.95  
- includes:  
1) QBXIOIOL.ASM, MASM 5.1 compatible source  
2) QBXCTV.ASM, MASM 5.1 compatible source  
3) Additional programmer documentation

To order see the ORDER.FRM file.

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#### FUNCTION LIST

FUNCTION CreateFile(pathname\$,BYVAL attribute)  
FUNCTION OpenDevice(pathname\$,BYVAL mode,handle,flen&)  
FUNCTION ReadDevice(BYVAL handle,BYVAL start&,BYVAL bytes&,\_  
BYVAL vseg,BYVAL voff)  
FUNCTION WriteDevice(BYVAL handle,BYVAL start&,BYVAL bytes&,\_  
BYVAL vseg,BYVAL voff)  
FUNCTION CloseDevice(BYVAL handle)

## CreateFile

Type	FUNCTION - INTEGER
Arguments	pathname\$ - STRING, VAR-LEN attribute - INTEGER (BYVAL)
Syntax	stat = CreateFile(pathname\$, attribute)
Use	Create a new file using DOS function 3Ch.
Example 1	pathname\$ = "C:\SND\MODINS.BNK" + CHR\$(0) attribute = 2 stat = CreateFile(pathname\$, attribute) IF stat THEN DoError stat
Rules	pathname\$ must not already exist. pathname\$ must be ASCIIIZ - end with a CHR\$(0). attribute values are: 0=normal, 1=read-only, 2=hidden, 4=system.
Notes	Critical errors such as open drive doors, unformatted disks, etc., are handled by QBXIOIOL.
Return	If stat = -1 then the pathname\$ either has zero length or is not ASCIIIZ. See DOS ERROR CODES below.

## OpenDevice

Type                   FUNCTION - INTEGER

Arguments            pathname\$ - STRING, VAR-LEN  
                       mode - INTEGER (BYVAL)  
                       handle - INTEGER (returned)  
                       flen& - LONG (returned)

Syntax                stat = OpenDevice(pathname\$,mode,handle,flen&)

Use                   Open a DOS file or device using DOS function 3Dh.

Example 1            pathname\$ = "C:\SND\MODINS.BNK" + CHR\$(0)  
                       mode = &H42   'full shared access, R/W open  
                       stat = OpenDevice(pathname\$, mode, handle, flen&)  
                       IF stat then DoError stat

Rules                 pathname\$ must exist. pathname\$ must be ASCIIZ -  
                       end with a CHR\$(0). mode values are (bit-mapped):

bit 7 = inheritance flag (DOS 3+)  
           4-6 = sharing mode (DOS 3+)  
           3 = reserved (should=0)

0-2 = access type

For read/write non-network access to a file use mode=2. For exact uses of mode consult a DOS programmer reference.

Notes Handle and file length (flen&) are valid only if stat is zero.

Critical errors such as open drive doors, unformatted disks, etc., are handled by QBXIOL.

Return If stat = -1 then the pathname\$ either has zero length or is not ASCIIIZ. See DOS ERROR CODES below.

## ReadDevice

Type FUNCTION - INTEGER

Arguments handle - INTEGER (BYVAL)  
start& - LONG (BYVAL)  
bytes& - LONG (BYVAL)  
vseg - INTEGER (BYVAL)  
voff - INTEGER (BYVAL)

Syntax stat = ReadDevice(handle, start&, bytes&, vseg, voff)

Use Read from a DOS file or device to RAM using DOS function 3Fh.

Example 1 'open file (see above)  
'allocate RAM buffer and point to it  
REDIM buffer(0 TO flen&\8) AS STRING \* 8

```
vseg = VARSEG(buffer(0))
voff = VARPTR(buffer(0))
'read 2016 bytes to buffer starting a byte
'32 (0-based, so the 33rd byte) in the file
stat = ReadDevice(handle,32&,2016&,vseg,voff)
IF stat THEN DoError stat
```

Rules none

Notes Don't read more bytes than space allocated to the buffer. To continue reading from the previous position use start& = -1.

Critical errors such as open drive doors, unformatted disks, etc., are handled by QBXIOL.

Return See DOS ERROR CODES below.

## WriteDevice

Type FUNCTION - INTEGER

Arguments handle - INTEGER (BYVAL)  
start& - LONG (BYVAL)  
bytes& - LONG (BYVAL)  
vseg - INTEGER (BYVAL)  
voff - INTEGER (BYVAL)

Syntax stat = WriteDevice(handle,start&,bytes&,vseg,voff)

Use Write to a DOS file or device from RAM using DOS function 40h.

Example 1 'open file (see above)  
'allocate RAM buffer and point to it  
REDIM buffer(0 TO 32000) AS STRING \* 8  
vseg = VARSEG(buffer(0))  
voff = VARPTR(buffer(0))  
'fill buffer with data  
FillBuffer buffer(), bytes&  
'initial write to file  
stat = WriteDevice(handle,0&,bytes&,vseg,voff)  
IF stat THEN DoError stat

Rules none

Notes To continue writing to the previous position use start& = -1.

Critical errors such as open drive doors, unformatted disks, etc., are handled by QBXIOL.

You can input/output to the predefined DOS handles without needing to open them.

Return See DOS ERROR CODES below.

CloseDevice

Type FUNCTION - INTEGER

Arguments handle - INTEGER (BYVAL)

Syntax            stat = CloseDevice(handle)

Use                Close a DOS file using DOS function 3Eh.

Example 1         'open file (see above)  
                   'perform work (see above)  
                   'and when done close file  
                   stat = CloseDevice(handle)  
                   IF stat THEN DoError stat

Rules             Handles 0-4 cannot be closed.

Notes             Critical errors such as open drive doors, unfor-  
                   matted disks, etc., are handled by QBXIOL.

Return            See DOS ERROR CODES below.

## DOS ERROR CODES

Possible stat return codes in decimal.

0	no error
1	function number invalid
2	file not found
3	path not found
4	too many open files
5	access denied
6	handle invalid
7	memory control blocks destroyed
8	insufficient memory
9	memory block address invalid
10	environment invalid
11	format invalid
12	access code invalid
13	data invalid
14	reserved
15	disk drive invalid
16	attempt to remove current directory
17	not same device
18	no more files
19	disk write-protected
20	unknown unit
21	drive not ready
22	unknown command
23	data error (CRC)
24	bad request structure length
25	seek error
26	unknown medium type
27	sector not found
28	printer out of paper
29	write fault
30	read fault
31	general failure
32	sharing violation
33	lock violation
34	disk change invalid
35	FCB unavailable
36-79	reserved
80	file already exists
81	reserved
82	cannot make directory
83	fail on INT24