High Performance Sort / Merge / Record Selection Utility

Specially Designed for the IBM-PC, XT, AT and Compatible MS-DOS Systems

Now Featuring: **Record Selection Options**

Output Record Reformatting

More support for Btrieve Files

OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT
OPT-TECH SORT

Opt-Tech Sort Features/Specifications

Opt-Tech Sort is a **high performance** sort/merge/record selection utility specially designed for the IBM-PC,XT,AT and compatible MS-DOS systems. It is an extremely powerful program capable of processing fixed and variable length records on a wide variety of data types. Opt-Tech Sort can be used as a DOS command or called as a subroutine from most languages. Opt-Tech Sort includes many advanced features to make your work easier!

Whether you need to sort 100 or 100,000 records, Opt-Tech Sort is the fastest, most flexible program available. Thousands of end users and program developers rely on Opt-Tech Sort to increase their productivity.

PERFORMANCE

- For higher performance Opt-Tech Sort is written in assembly language.
- "State of the Art" sorting algorithms are used.
- Input and Output is extremely fast. Very large files can be processed easily.
- Opt-Tech Sort allocates sort work space from ALL available memory. If the file to be sorted is too large to fit in the work space, sort work files are automatically allocated on disk and erased when the sort is complete.
- Opt-Tech Sort is up to 50 times faster and has far more capability than the DOS sort filter command.
- Sample Opt-Tech Sort timings are shown on page 3 of this product information.

RECORD SELECTION

- Records can be Included or Omitted from the output file based upon criteria you specify.
- Record selection provides logical comparisons on up to 10 fields with Boolean operators.

USING WITH BTRIEVE*

- Opt-Tech Sort can directly read Btrieve files and produce sorted sequential output files. These output files can contain: full records, record positions or any combination of fields from your Btrieve file.
- Using Opt-Tech Sort with Btrieve files gives you the ability to access your data in sequences that are not Btrieve keys. This gives you added flexability when working with btrieve files.

*Btrieve is an indexed record manager available from: Softcraft, Inc.

P.O. Box 9802 #917/Austin, TX 78766 (512)346-8380

USING WITH dBASEII AND dBASEIII

- Opt-Tech Sort can sort dBaseII and dBaseIII database files. Opt-Tech Sort can be called directly from dBASE command files. Up to ten sort fields (or subfields) can be specified. Tremendous performance improvements can be gained over the dBASE sort facilities.

SYSTEM REQUIREMENTS

- Minimum requirements: An IBM-PC, XT, AT or compatible system, one disk drive, 64K of memory and PC-DOS/MS-DOS (Version 2.0 or higher).

EASE OF USE

- Opt-Tech Sort is designed to be very easy to use!

When using as a DOS Command:
- Opt-Tech Sort is easily used from within the DOS Batch Command Facility (.BAT files).
- All prompting is designed to be consistent with the existing IBM-PC system programs (e.g. LINK, ASM, PASCAL, etc.). Thus you do not have to learn a special command format when you use Opt-Tech Sort.
- An ON-LINE 'HELP' feature is included, that provides you with additional information if you respond with a "?" to any prompt for ease of use.
- Filenames and sort control specifications can be specified on the command line to prevent prompting.
- Error messages produced by Opt-Tech Sort are displayed in "plain english".
- Opt-Tech Sort sets the DOS Errorlevel value for batch file evaluation and processing control.
- A sample DOS session is shown on page 4.

When calling as a subroutine:
- Opt-Tech Sort is invoked via a Call statement (or the equivalent). See page 4 for a sample program.
- If an error should occur a status-code is returned to your program indicating the cause of the error.
- The number of records output is also returned to your program for evaluation and controls.
- Opt-Tech Sort is currently callable from:
  - IBM BASIC, BASICA, GWBASIC
  - Better BASIC
  - IBM Compiled BASIC (ver. 1 & 2)
  - Microsoft Quick BASIC
  - True Basic
  - CBASIC86
  - Computer Innovations C86
  - Lattice C
  - Mark Williams C
  - Microsoft C (ver. 2 & 3)
  - IBM (Microsoft) Cobol
  - mbp Cobol
  - Microfocus Cobol
  - Realia Cobol
  - Ryan McFarland Cobol
  - IBM Professional Fortran
  - Lahey Fortran
  - Microsoft/IBM Fortran
  - Ryan McFarland Fortran
  - Borland Turbo Pascal
  - IBM (Microsoft) Pascal
  - D/R Pascal/MT+
  - D/R PL/I
  - dBASEII, dBASEIII
  New language interfaces are being developed continuously. Please call if yours is not listed.
- Sample Interpreted and compiled BASIC programs are shown on page 4 of this product information.

INPUT

- Unlimited number of input files can be specified.
- The maximum number of records that can be sorted is limited only by available disk space.
- The maximum record length that can be sorted is greater than 5,000 characters.
- Opt-Tech Sort supports the following filetypes:
  - ASCII TEXT files - fixed or variable length records
  - Any fixed length record file (e.g. a BASIC random file)
  - Btrieve files
  - IBM Cobol files
  - mbp Cobol files
  - dBaseII & dBaseIII database files
  - IBM Fortran files
  - PC Bus files (compressed Tabs)
  - Delimited fields (comma, etc.)
- Sort control specifications have a simple format and can be contained in a file, typed in at the keyboard or passed as a parameter.
- Up to ten Sort/Merge control fields can be requested. Control fields are specified by their starting position and length or relative field number. They can be different data types and ascending or descending sequence can be requested for each control field.
- Data types supported include:
  - Alpha (Lower-case sorted like Upper-case)
  - Binary (signed binary high-low)
  - Borland Turbo Pascal Reals
  - Character (ASCII)
  - Decimal Floating Point
  - IEEE (8087) Floating Point
  - Integer (signed binary low-high)
  - Microsoft Floating Point
  - Numeric ASCII
  - Packed Decimal
  - Trailing sign ASCII
  - Word (unsigned binary low-high)
  - Zoned Decimal
  - Alternate collating sequences
- Full pathnames are supported.
- Options are available for bypassing file header data (with options to replace the data on the output file or not) as well as limiting the number of records sorted.

OUTPUT

- The standard output file types produced by Opt-Tech Sort can contain full records, record pointers and keys or just record pointers.
- Input records can be reformatted on output including insertion of literal fields, record lengths, CR/LF delimiters, and record addresses.
- Btrieve Save/Load record formats can be produced.
- The sorted or merged data that Opt-Tech Sort produces can be directed to a diskette file or to a reserved filename (e.g. LPT1:, CON:etc), this increases your flexibility.
- Your output filename can be the same as your input filename, thus you can sort in place.
- A "PAUSE" facility is provided to allow you to change diskettes before writing the output file.
- The number of output records is displayed on the screen or returned to your program.

MISCELLANEOUS

- Opt-Tech Sort is compatible with most networks.
- Opt-Tech Sort is supplied on a 5 1/4 inch floppy disk in MS-DOS format. It is not copy protected.
- Each copy of Opt-Tech Sort has a unique serial number embedded in several places.
- The Sort manual consists of over 100 pages of clearly written material and examples. Sample programs are included for each language.
- Enhanced versions of Opt-Tech Sort are offered to all owners at substantial discounts.

HOW TO ORDER

- Opt-Tech Sort can be ordered directly from Opt-Tech Data Processing. Retail price is $149. VISA, Mastercard, AmEx, Check, Money Order, COD and Purchase Orders are accepted.
- Orders are normally processed and shipped the same day as the order is received.
- Quantity discounts, OEM and Site Licenses available.

SAMPLE OPT-TECH SORT TIMINGS

NUMBER OF RECORDS	FILE SIZE	IBM PC OR XT TIMINGS FLOPPY DISK	IBM PC OR XT TIMINGS HARD DISK	IBM AT HARD DISK
100	8K	6 sec	3 sec	2 sec
500	40K	14 sec	6 sec	3 sec
1,000	80K	24 sec	9 sec	5 sec
5,000	400K	*	1 min 2 sec	24 sec
10,000	800K	*	2 min 6 sec	49 sec
50,000	4 MB	*	14 min 2 sec	5 min 8 sec

Notes: 1) Timings include reading input file, sorting data, and writing output file.
2) Sorted files consisted of 80 bytes records sorted on 10 byte random key.
3) * = Input file too large to be held on a floppy diskette.

USING FROM DOS

- Opt-Tech Sort's prompting is consistent with other IBM system utility programs.
- On-Line Help is available if you respond to any prompt with a "?".
- In the sample on the right your input is in Bold.
- Filenames and control statement information can be specified on the command line to prevent prompting.
- Opt-tech Sort can be easily used from within the DOS Batch Command facility (.BAT files) and sets the DOS Errorlevel.

```
A> SORT
OPT-TECH SORT Version 3.0
Copyright Opt-Tech Data Processing 1983,1986

Input filename(s):SAMP.DAT
Output filename:SORTED.DAT
Control filename [Keyboard]:   (enter pressed)
Enter control statement:
SORT(64, 5, C, A)         <- sort parameters
Total Records Sorted =   50
A>
```

USING WITH INTERPRETED BASIC

- You can call Opt-Tech Sort from IBM BASIC, BASICA or GWBASIC.
- No complicated DEF SEG calculations are required with Opt-Tech Sort!
- The memory address where Opt-Tech Sort is loaded is obtained in lines 110-130.
- You invoke Opt-Tech Sort via a Call statement (see line 190).
- The number of records sorted and the status code are returned to your BASIC program.

```
100 REM  Sample BASIC program that calls Opt-Tech Sort
110 Open "SORTIBAS.SEG" FOR INPUT AS #1
120 INPUT #1, SEGADDR
130 DEF SEG  = SEGADDR
140 INFILE$  = "SAMP.DAT"
150 OUTFILE$ = "SORTED.DAT"
160 CTLSTMT$ = "S(1, 10, C, A)"
170 SORTIBAS = 0
180 PRINT "CALLING OPT-TECH SORT ..."
190 CALL SORTIBAS(INFILE$, OUTFILE$,
            CTLSTMT$, NUMRECS%, STATUS%)
200 PRINT "RETURNING FROM OPT-TECH SORT"
210 PRINT "NUMBER OF RECORDS = ", NUMRECS%
220 PRINT "SORT STATUS      = ", STATUS%
230 END
```

USING FROM COMPILED LANGUAGES

- You link Opt-Tech Sort with your application program by using the DOS LINK program.
- You invoke Opt-Tech Sort via a CALL statement (see line 150).
- The number of records sorted and the status code are returned to your program.
- The sample shown on the right is a compiled BASIC program, procedures for calling from other languages are very similar.

```
100 REM Sample COMPILED BASIC call to OPT-TECH SORT
110 INFILE$  = "SAMP.DAT"
120 OUTFILE$ = "SORTED.DAT"
130 CTLSTMT$ = "S(1, 10, C, A)"
140 PRINT "CALLING OPT-TECH SORT...."
150 CALL SORTIBMB(INFILE$, OUTFILE$,
            CTLSTMT$, NUMRECS%, STATUS%)
160 PRINT "BACK FROM OPT-TECH SORT"
170 PRINT "NUMBER OF RECORDS = ", NUMRECS%
180 PRINT "SORT STATUS      = ", STATUS%
```