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Product Overview

Hex Workshop, the Professional Hex Editor, is a file and disk editor which runs on Windows 3.1, Windows 95, and Windows NT. Hex Workshop was designed by programmers for programmers and does not double as a text editor. Both the 16 bit and 32 bit version are available for only \$20.

With Hex Workshop you can:

- Edit multiple files of unlimited size.
- Edit Floppy and Hard Disks on Windows 3.1, 95, and NT.
- Hex Edit files directly from the File Manager or Windows 95 Desktop.
- Cut, Copy, Paste, Insert, Delete, and Undo.
- Find and Replace Hex or ASCII values.
- Goto from the start, end, or cursor position within a file or disk.
- Use the Compare Tool to find differences in files.
- Calculate Checksums for all or part of a file.
- Search across multiple sectors on a Disk.
- Print high quality hex dumps.
- Get File/Disk properties with the click of the mouse.
- View File/Disk attributes in the Status Bar.
- Use Keycuts to access most features with function keys.
- Use Online help including an ASCII table and list of data types.
- And you get two additional applets:
 1. A Base Converter to convert between hex/decimal/binary.
 2. A Hex/Decimal Calculator (supporting +, -, *, /, &, ^, >>, <<, ~).

Hex Workshop is a shareware product, so feel free to try out all of the applications and distribute any or all of them freely. If you find Hex Workshop valuable please register the product. The \$20 registration fee qualifies you for both the 16 bit and 32 bit versions, free minor upgrades, and first notice of and discounts on major upgrades.

As a programmer you realize the amount of work that goes into designing, coding, and testing an application. We have made our best effort to provide you with a product of the highest quality, therefore if you plan to use Hex Workshop, please register.

If you have any questions, comments, or problems, regarding Hex Workshop operation, registration, or ordering, please feel free to [contact the authors](#).

This program is produced by a member of the Association of Shareware Professionals (ASP). ASP wants to make sure that the shareware principle works for you. If you are unable to resolve a shareware-related problem with an ASP member by contacting the member directly, ASP may be able to help. The ASP Ombudsman can help you resolve a dispute or problem with an ASP member, but does not provide technical support for members' products. Please write to the ASP Ombudsman at 545 Grover Road, Muskegon, MI 49442 or send a CompuServe message to the ASP Ombudsman at 70007,3536.



How To Register

The registration fee for Hex Workshop is \$20. For this you will receive a Serial Number valid for both the 16 bit and 32 bit versions of Hex Workshop, free minor upgrades, and first notice of and discounts on major upgrades. For your convenience, you may register Hex Workshop in a number of ways. You may pay by check or credit card, via 800 number, online (Internet or CompuServe), U.S. Mail, or FAX.

See the appropriate topic below for specific information:

[Online Ordering \(Internet and CompuServe\)](#)

[Credit Card Ordering via 800 number](#)

[Order Form for Sending Checks](#)

[How to Contact the Authors](#)

Or for the latest information on Hex Workshop, check out our web page:

<http://ourworld.compuserve.com/homepages/breakpoint>

Online Ordering (Internet and CompuServe)

Hex Workshop can be ordered over the Internet or from CompuServe.

To order over the Internet, first go to the Hex Workshop web page in your Browser. The Hex Workshop web page is at <http://ourworld.compuServe.com/homepages/breakpoint>. Follow the directions in the How To Order section, and click on the link to order over the Internet from the Public Software Library (PsL). This will take you to the Public Software Library web site where you can order Hex Workshop with your credit card.

To order from CompuServe follow the steps below and CompuServe will automatically add the Hex Workshop registration fee (\$20) to your next bill.

1. Go to the Shareware Registration Service (GO SWREG).
2. Choose "Register Shareware".
3. Enter the appropriate responses.
4. When prompted with the search window, use Reg ID: 7813 and/or Keyword: HEXWORKS.
5. Now choose "Register".

After you register, you will receive an acknowledgment by U.S. Mail in approximately 1 week with your Serial Number.

Any questions about the status of the shipment of an order, refunds, registration options, product details, technical support, volume discounts, dealer pricing, site licenses, etc., must be directed to BreakPoint Software (see [Contacting the Authors](#)).

Credit Card Ordering

You may order Hex Workshop (item # 11823) from the Public Software Library (PsL) using MasterCard, Visa, American Express, or Discover Card by:

Phone at 1-800-2424-PSL or 713-524-6394.

FAX at 1-713-524-6398.

CompuServe Mail at 71355,470.

Internet Mail at 71355.470@compuserve.com.

U.S. Mail at PsL, P.O. Box 35705, Houston, TX 77235-5705.

To order over the Internet, see [Online Ordering \(Internet and CompuServe\)](#)

After you register, you will receive an acknowledgment by U.S. Mail in approximately 1 week with your Serial Number.

THE ABOVE NUMBERS ARE FOR ORDERS ONLY.

BreakPoint Software cannot be reached at the numbers above. These numbers are for PsL, a credit card order taking service only.

Please be sure to include your credit card number and expiration date on all credit card orders. Any questions about the status of the shipment of an order, refunds, registration options, product details, technical support, volume discounts, dealer pricing, site licenses, etc., must be directed to BreakPoint Software (see [Contacting the Authors](#)).

Order Form

By Check: To order by check send this order form and a check to:

BreakPoint Software
P.O. Box 4629
Stamford, CT 06907-0629

Payments must be in U.S. dollars drawn on a U.S. bank, or with an international postal money orders in U.S. dollars.

By Credit Card: To order by MasterCard, Visa, American Express, or Discover, see Credit Card Ordering.

To order over the Internet or CompuServe: see Online Ordering.

Site licenses: a site license for Hex Workshop entitles an organization to receive one copy of the distribution package and duplicate the distribution disk for the specified number of copies. Prices are listed below:

Please fill in the information below:

Single Copy: _____ copies at \$20 each _____

Site License:
2 to 9 machines: _____ machines at \$17 each _____
10 to 24 machines: _____ machines at \$14 each _____
25 to 49 machines: _____ machines at \$10 each _____
50 to 99 machines: _____ machines at \$8 each _____
over 100 machines: please Contact the Authors.

Connecticut residents add 6% sales tax _____

Total payment _____

Prices guaranteed through 1996 and apply to Hex Workshop version 2.2 or lower.

Name: _____

Organization: _____

Address: _____

Address: _____

City, State, Zip: _____

Country: _____

Phone(s): _____

E-Mail Address(es): _____

Where did you hear about Hex Workshop? _____

Comments:

WWW Page - Latest Downloads Available

The BreakPoint Software home page is at:

<http://ourworld.compuserve.com/homepages/breakpoint>

From our home page you can download the latest 16 and 32 bit versions of Hex Workshop, download betas of upcoming versions, and find out the latest information on improvements and plans for future releases. We also have links to other development resources, other shareware products and shareware sites, and general hex editing information on our web site.

From our web site you can find links to Internet ordering service to order Hex Workshop over the Internet ([Online Ordering](#))

Note: The WWW home page is subject to change. If possible we will provide the new URL if this one changes for any reason.

License Agreement

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All Rights Reserved.

License Agreement

You should carefully read the following terms and conditions before using this software.

DEFINITION OF SHAREWARE

Shareware distribution gives users a chance to try software before buying it. If you try a Shareware program and continue using it, you are expected to register. Individual programs differ on details -- some request registration while others require it, some specify a maximum trial period. With registration, you get anything from the simple right to continue using the software to an updated program with printed manual.

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Shareware is a distribution method, not a type of software. You should find software that suits your needs and pocketbook, whether it's commercial or Shareware. The Shareware system makes fitting your needs easier, because you can try before you buy. And because the overhead is low, prices are low also. Shareware has the ultimate money-back guarantee -- if you don't use the product, you don't pay for it.

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Users of Hex Workshop must accept this disclaimer of warranty: "Hex Workshop is supplied as is. The author disclaims all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The author assumes no liability for damages, direct or consequential, which may result from the use of Hex Workshop."

Hex Workshop is a "shareware program" and is provided at no charge to the user for evaluation. Feel free to share it with your friends, but please do not give it away altered or as part of another system. The essence of "user-supported" software is to provide personal computer users with quality software without high prices, and yet to provide incentive for programmers to continue to develop new products. If you find this program useful and find that you are using Hex Workshop and continue to use Hex Workshop after a reasonable trial period, you must make a registration payment of \$20 to BreakPoint Software. The \$20 registration fee will license one copy for use on any one computer at any one time. You must treat this software just like a book. An example is that this software may be used by any number of people and may be freely moved from one computer location to another, so long as there is no possibility of it being used at one location while it's being used at another. Just as a book cannot be read by two different persons at the same time.

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Anyone distributing Hex Workshop for any kind of remuneration must first contact BreakPoint Software at the address below for authorization. This authorization will be automatically granted to distributors recognized by the (ASP) as adhering to its guidelines for shareware distributors, and such distributors may begin offering Hex Workshop immediately (However BreakPoint Software must still be advised so that the distributor can be kept up-to-date with the latest version of Hex Workshop.).

You are encouraged to pass a copy of Hex Workshop along to your friends for evaluation. Please encourage them to register their copy if they find that they can use it. All registered users will receive a copy of the latest version of the Hex Workshop system.

Technical Support and Questions

Technical Support for Hex Workshop will be provided to registered users only. If you require technical support or have found a problem with Hex Workshop please submit it as a CompuServe Mail Message to 75554,377 (or via Internet Mail to 75554.377@compuserve.com). Please be as descriptive as possible and title the message "Hex Workshop: Tech Support" or "Hex Workshop: Problem Reported" as applicable. We will make every effort possible to answer all inquiries (problems reported) in a timely manner.

If you have questions regarding Hex Workshop please do not hesitate to contact us via CompuServe Mail at 75554,377. Please title the message "Hex Workshop: Question(s)".

In either case please specify the version information located in the About Box (i.e.: ver 2.20, 32 bit) and the operating system (Win 3.1, 95, or NT) you are using.

If you are unable to access CompuServe, see [Contacting the Authors](#).

Comments and Suggestions

We are continually planning our next versions, in which we will be adding to the features available in the Hex Editor and including additional hex-related mini-applications.

If you have any comments or suggestions for the current version or future versions of Hex Workshop please do not hesitate to contact us via CompuServe Mail at 75554,377 (or Internet Mail at 75554.377@compuserve.com). Please title the message "Hex Workshop: Comments (or Suggestions)".

If you are unable to access CompuServe, see [Contacting the Authors](#).

How To Contact the Authors

The Authors can be contacted via online services or directly by mail.

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 Internet Mail at 75554.377@compuserve.com
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 Stamford, CT 06907-0629

Version History

Hex Workshop v 2.20 - July 1996 (current version):

NEW FEATURES

Added Installer.

- Creates Hex Workshop Program Group.
- Installs the Hex Workshop File Manager Extension.
- Installs the Hex Workshop Windows 95 Shell Extension.
- Adds Hex Workshop to Microsoft Visual C++ "Tools" Menu.

Added Uninstall capability to 32 bit version to remove product.

New Preferences

- Default path to open files from.
- Can set to open documents maximized.
- Can choose to highlight altered bytes with a different color.
- Added new character filters (EBCDIC/ASCII/none).

Added new keycuts for selecting bytes.

Added Command Line options.

BUG FIXES

Right Aligned Footer not working properly.

16-bit Checksum sign extension bug.

Able to handle unlimited size files although performance on very large files is poor.

Preferences were not being saved in some cases.

Base Converter always pasted into one window.

Hex Workshop v 2.10 - Feb 1996:

NEW FEATURES

Page Setup

- Margins, Headers, Footers, Printer Font.

Enhanced Disk Editing

- Support more drive types.
- Edit in drive or raw disk mode.

Context Menu Extension [Win 95]

- Can hex edit a file from the right mouse context menu.

Drag and Drop

- from shell/explorer [Win 95].
- from File Manager.

File Manager Extension

- Allows user to add a "hex edit" menu to file manager.

Checksum

- Added 16 bit checksum.
- Added one's and two's complement modifiers.

Enable paste into Find/Replace, Goto dialogs.

Added Tool Help Bubbles.

Added Dockable Toolbars (32 bit version).

Combined Hex Calculator and Bit Calculator into one.

BUG FIXES

Printing continued for infinite number of pages .

Editing disks with over 255 tracks didn't work.

Sector find wasn't working properly.

Compare failed when file comparing two files with the same file name.

Never performed input range checking for the compare and sector dialogs.

Dialog background colors where not being set correctly in Win 95.

Goto dialog was not always setting the initial focus properly.

Hex Workshop v 2.01 - Dec 1995

BUG FIXES

Signed short was not working properly in the 32-bit version.

Launching the calculators failed because of new naming convention.

Hex Workshop v 2.00 - Oct 1995

NEW FEATURES

32 bit version for Windows 95 and NT.

Sector Editor

- Supports BIOS floppy and hard disks.

Checksum calculations

- Checksum, CRC-16, CRC-16/CCITT, CRC-32 are calculated selection.

Right-Click menus

- Cut, Copy, Paste, Goto, Checksum, Insert for Files
- Copy, Next Sector, Previous Sector, Goto, Checksum for Disks.

Paste Special Command

- Allows you to paste any format on the clipboard into Hex Workshop.

New File Command

- Allows you to open a blank file (useful with paste special).

Copy Special Command

- Places the selected text on the Windows clipboard in a text format.

Select Block

- Allows you to select large amounts of data easily (by block size or ending offset).

BUG FIXES

Improved display

- Optimized the selection drawing routines.

Fixed crash when trying to open a help component that didn't exist.

Print/Print Preview was calculating the number of lines per page incorrectly.

Could not add (append) to the end of a file.

Find Again failed, when changing the cursor position between finds.

When saving documents, was not clearing undo stack.

Copy/Pasting selection over 32K causes random results.

Hex Workshop v 1.0 - May 1995

ORIGINAL VERSION

General Hex Editing

Hex Workshop includes a professional hex editor with the power and ease of a Word Processor allowing cut, copy, paste, insert, delete, undo, and more.

Hex/ASCII Editing:

A file can be edited from either the hex or ASCII display. The cursor can be toggled between hex and ASCII with the tab key or hex/ASCII can be chosen by clicking the mouse in the particular region.

Clipboard Functionality:

Cut (Ctrl+X), Copy (Ctrl+C), and Paste (Ctrl+V) operate in a similar manner to other editors. Paste Special allows you choose from and paste any of the standard Windows Clipboard formats currently available into a file.

Undo:

Undo (Ctrl+Z) allows you to reverse the most recent editing operation(s). The size of the undo buffer (which determines how many operations are saved) can be set in the [General Preferences](#).

Inserting/Deleting:

Automated Inserting (Ctrl+Ins) allows a specified number of bytes to be inserted at the cursor position with any hex value. Deleting (Del) simply deletes the highlighted bytes. Normal editing can be done in either insert (INS) or overwrite (OVR) mode. Insert mode will automatically insert hex values entered at the cursor position, while overwrite mode will overwrite existing bytes at the cursor position with hex values entered. The current mode is shown in the far right pane of the [status bar](#) and is toggled with the insert (Ins) key.

Select Block/Select All:

A block of hex can be automatically selected at the cursor position using the Select Block feature and specifying either the size of the block or the ending position. In either case the block starts at the cursor position. Select All (Ctrl+A) automatically selects the entire file.

File/Disk Properties:

File/Disk Properties (Alt+Enter or Right Mouse Button) display information on the current file or disk being edited.

Window Operations:

Open windows can be tiled Horizontally (F2), Vertically (Alt+F2), or Cascaded (Ctrl+F2) from the Window Menu or using keycuts.

The editing environment can be customized with [General Preferences](#) for font, colors, and hex display (bytes per column).

Keycuts

Below is a list of Keycuts available:

| | |
|--------------------------|---|
| F1 | Help (Contents) |
| F2 | Tile Windows Horizontally |
| Alt+F2 | Tile Windows Vertically |
| Ctrl+F2 | Cascade Windows |
| F3 | Find Again |
| Alt+F3 | Find |
| Alt+F4 | Exit |
| F5 | Goto Again |
| Alt+F5 | Goto |
| F6 | Compare Again |
| Alt+F6 | Compare |
| F12 | Generate Checksum |
| Alt+Enter | Properties of File/Sector |
| Tab | Toggles between Hex and ASCII in main edit window |
| Home | Beginning of File/Sector |
| End | End of File/Sector |
| Shift+Right Arrow | Selects +1 byte forward from cursor |
| Shift+Left Arrow | Selects -1 byte backward from cursor |
| Shift+Down Arrow | Selects 16 bytes forward from cursor |
| Shift+Up Arrow | Selects -16 bytes backward from cursor |
| Shift+Home | Selects from cursor position to begin of document |
| Shift+End | Selects from cursor position to end of document |
| Ctrl+Up | Previous Sector (Drive Editing Only) |
| Ctrl+Dn | Next Sector (Drive Editing Only) |
| Ctrl+PgUp | Back 10 Sectors (Drive Editing Only) |
| Ctrl+PgDn | Ahead 10 Sectors (Drive Editing Only) |
| Ctrl+Home | First Sector (Drive Editing Only) |
| Ctrl+End | Last Sector (Drive Editing Only) |

Command Line Usage

Hex Workshop allows users the ability to open files, logical drives, and raw fixed disks via the command line

Usage:

```
hworks32 [files...] [drives...] [/F:fixeddisk]

files      - Opens the listed file(s).
drives     - Opens a Logical Drive.  In the form 'X:', where X is
             the drive letter.
             A: for Drive A:
fixeddisk  - Open a "Raw Mode" Fixed Disk in the Form '/F:x',
             where x is the fixed disk number:
             /F:80 for the first fixed disk
             /F:81 for the second fixed disk
```

Examples:

```
c:\hexworks\hworks32 foobar1.bin foobar2.bin
```

This will start Hex Workshop with the files "foobar1.bin" and "foobar2.bin" loaded in the editor.

```
c:\hexworks\hworks32 C:
```

This will start Hex Workshop with the logical "C:" drive loaded in the sector editor.

```
c:\hexworks\hworks32 /F:80
```

This will start Hex Workshop with the physical first physical disk loaded in the sector editor.

Note: The above usage and examples are for the 32 bit version of Hex Workshop. For the 16 bit version the program name is `hworks16` (not `hworks32`).

Display Preferences

Hex Workshop provides the user with preferences to customize the appearance of their hex editing environment. Below are a list of these options:

Group By:

Hexadecimal data in rows of 16 bytes. Within these rows, data is broken up into columns to make viewing the data easier. The Group By preference lets the user choose how this data is grouped. For example, if data is grouped in 4 bytes (or longs), there would be four columns of 4 bytes in each row of hexadecimal data. The default is 2 bytes (or shorts).

Colors:

Different colors are used to display the File Offsets, Odd Columns (of data), Even Columns (of data), (ASCII) Characters, and Modified Bytes. These colors can be customized by the user. The defaults are black, light blue, dark blue, black, and red for the file offsets, odd columns, even columns, characters, and modified bytes, respectively.

Highlight Modified Bytes:

If this is set Hex Workshop will display modified bytes in the specific color selected (see Colors, above). The default is off.

Font:

The font which is used to display all data in the main editing window. This can be changed to any monospace font on the users system. The default is Courier 12 point.

Character Set:

On the right side of the main editing window is the character equivalent of the hexadecimal data. The characters are interpreted using a chosen character set. The user can choose between ASCII (0x20-0x7F), Windows ANSI (no filtering), and EBCDIC. The default is ASCII.

See also: [General Preferences](#), [Document Preferences](#), [Configuration Preferences](#)

General Preferences

Prompt for Backup when Saving:

When set Hex Workshop will ask if a backup should be created whenever an altered file is being saved. A backup file with the extension *.BAK will be created if requested. Default is on.

Warning on Insertion/Deletion:

When set Hex Workshop will post a warning message (dialog box) before allowing an insert or delete of bytes in an open file. Default is on.

Notification of Goto/Find/Compare Wrapping:

When set Hex Workshop will prompt the user whether or not to wrap the file (move from the end to the beginning or vice-versa) during the Goto, Find/Replace, or Compare Operations. Default is on.

Use ToolTips:

When set Hex Workshop displays tool tips for the toolbar buttons when the cursor is positioned over the buttons. This helps define the function of each toolbar button. Default is on.

Open Documents Maximized:

When set Hex Workshop will always open files or disks with their editing Window maximized. Default is off.

Size of Undo Buffer:

Specifies the size of the buffer used by Hex Workshop for maintaining a list of previous editing operations. This is used when the undo command is selected, the larger the buffer the more operations which can be saved and later undone if requested. Default is 4K.

Starting Directory:

This is the directory which Hex Workshop will use as a default when opening files. Default is blank (the application directory).

See also: [Display Preferences](#), [Document Preferences](#), [Configuration Preferences](#)

Document Preferences

Hex Workshop supports a variety of options which allow the user to customize the interpretation of data in their editing environment. Below are a description of those options:

File Offset:

The file offset (address) can be viewed in hex or decimal format. The file offset setting will change the view in three places; the offset addresses on the left side of the main edit window, the current cursor position (offset into the file) in the Status Bar, and the file size in the Status Bar. This setting can be quickly toggled from the Options-File Offset menu or the Toolbar (H, D buttons). Default is Hex.

Sign, Byte Ordering, and Data:

Data can be viewed (interpreted) in a number of formats. Hex Workshop interprets data at the current cursor position for the user in the Status Bar. Data can be interpreted as any combination of: Byte, Short, Long, Float (32), or Double (64); Signed or Unsigned; and Intel or Motorola (byte order). These settings can be quickly toggled from the Options-Data menu or the Toolbar (B, S, L, F, D, and S, U buttons). Default is Short, Signed, and Intel.

See also: [Display Preferences](#), [General Preferences](#), [Configuration Preferences](#)

Configuration Preferences

Hex Workshop provides the user with settings to integrate hex editing closely with the operating system to allow the quick and easy launching of Hex Workshop. These settings can be customized from the Options-Preferences menu in the Configuration tab. Below are a list of these options:

Add Hex Edit Item to Right Mouse Context Menu (Win 95 only):

When set Hex Workshop will install a Windows 95 Context Menu Shell Extension so whenever the right mouse button is clicked on a file, a Hex Edit menu item will be added. Clicking on the Hex Edit menu item will automatically launch Hex Workshop with the selected file(s) open. There is no default setting, the user is prompted for this option on first use of the product.

Add Hex Edit Menu to File Manager (Win 3.x, 95, NT):

When set Hex Workshop will install a File Manager Extension adding a Hex menu to the File Manager. Clicking on the Edit File(s) menu item under the Hex Menu will automatically launch Hex Workshop with the selected file(s) open. There is no default setting, the user is prompted for this option on first use of the product.

Allow Multiple Instances (Win 95 only):

When set Hex Workshop allow multiple instances to be running at once. If this is not set, then launching Hex Workshop from anywhere will result in the maximizing of the previous running instance with the selected files open if appropriate. Default is off.

See also: [Display Preferences](#), [General Preferences](#), [Document Preferences](#)

Status Bar

The Status Bar displays information on the current file (or disk sector) and editing environment.

The first pane of the status bar contains information on the current operation (or menu item).

The second pane of the status bar contains the cursor position, displayed in either hex or decimal (see [Document Preferences](#)).

The third pane contains information on the data at the cursor position or being highlighted. If no data is highlighted, Hex Workshop interprets the data at the cursor in the specified data format (see [Document Preferences](#)). If data is highlighted, Hex Workshop will interpret the data appropriately depending on the amount of bytes highlighted (i.e. 2 bytes as a Short). If an appropriate data type does not exist (an odd number of bytes is highlighted, i.e. 9), Hex Workshop will display the number of bytes being highlighted.

The contents of the fourth pane depends on whether a file or disk is being edited. If a file is being edited, the pane contains the file size in bytes, displayed in either hex or decimal (see [Document Preferences](#)). If a disk is being edited, the pane contains the size in bytes of the sector being edited.

The last pane displays whether Hex Workshop is currently in overwrite mode (OVR) or insertion mode ("blank").

Page Setup

Hex Workshop provides the ability to print customized printouts (hex dumps) with a Page Setup feature. Using the Page Setup users can use a custom header and/or footer, printer font, and margins.

Header/Footer:

The header and footer can consist of any valid text. Using special codes (listed in the Page Setup dialog) users can print the filename or full path, current page number, total pages, and time and date in a number of different formats. In addition, any portion or all of the headers and footers can be left, center, or right justified using these special codes.

Printer Font:

The font which is used to print all data. This can be changed to any monospace font on the users system. The default is Courier 12 point.

Margins:

The left, right, top, and bottom margin can be set for printouts. The default is 0.50 inches for all margins.

Find/Replace Utility

The Find Utility (Alt+F3), located under the Edit menu, allows the user to search for a hex or ASCII value within the file. The Find Utility searches from the cursor position either forward or backward throughout the file. If an ASCII value is the search target, the option to match or ignore the case is given. There is a toolbar button which can be used as a shortcut for the Find Utility.

The Find Again (F3) command, located under the Edit menu, searches for the next occurrence of the target hex or ASCII value within the file. This Find Again is in the same direction beginning at the (new) cursor position, having the same effect as setting up and executing another identical Find. If there are no existing Find parameters, the Find Again brings up the original Find Dialog. There is a toolbar button which can be used as a shortcut for Find Again.

The Replace Utility, located under the Edit menu, works in the same manner as the Find. The Replace Utility allows for different sized search and replace strings, and has a Replace All option.

Hex Workshop is set up to notify the user upon wrapping around the file during a Find, Find Again, or Replace execution (See [General Preferences](#)).

Goto Utility

The Goto Utility (Alt+F5), located under the Edit menu, allows the user to logically move throughout the file. The Goto Utility can be used to move from the beginning of the file, the cursor position, or the end of the file. The number of bytes to move can be specified in either hex or decimal (with hex values always positive). When moving from the cursor position a negative decimal value may be entered to move backwards (This is the only time a negative value is allowed.). In moving back from the end of the file, a positive number moves back into the file. There is a toolbar button which can be used as a shortcut for Goto.

The Goto Again (F5) command, located under the Edit menu, is used to re-execute the last Goto command. If the previous Goto was from the current position, then another Goto is executed moving the same amount of bytes in the same direction, having the same effect as setting up and executing another identical Goto. If the previous Goto was from the beginning or end of file, then the dialog is brought up again with the previous values loaded. If there are no existing Goto parameters, the Goto Again brings up the original Goto Dialog.

Hex Workshop is set up to notify the user upon wrapping around the file during a Goto or Goto Again execution (See [General Preferences](#)).

Compare Tool

The Compare Tool (Alt+F7), located under the Tools menu, allows the user to compare two open files beginning at a specified location in both files. The Compare Tool can be used to compare two different files or the same file beginning at different file offsets.

The Compare Again (F7) command, located under the Tools menu, is used to find the next difference in the two files being compared. If there are no existing Compare parameters, the Compare Again brings up the original Compare Dialog.

Hex Workshop is set up to notify the user upon wrapping around the file during a Compare or Compare Again execution (See [General Preferences](#)).

Checksum Generator

The Checksum Generator (F12), located under the Tools menu, allows the user to generate checksums for an entire file or a selection. The Checksum Generator currently calculates five types of checksums:

| | |
|----------------------|---|
| Checksum-8: | 8 bit count, adds all the bytes, initial value = 0x00 |
| Checksum-16: | 16 bit count, adds all the bytes, initial value = 0x00 |
| CRC-16: | 16 bit CRC, polynomial = 0x8005, initial value = 0x0000 |
| CRC-16/CCITT: | 16 bit CRC, polynomial = 0x1021, initial value = 0xFFFF |
| CRC-32: | 32 bit CRC, polynomial = 0x04C11DB7, initial value = 0xFFFFFFFF |

Hitting the generate button will perform these calculations, the user can then view the results in hex or decimal with the option for either 1's complement, 2's complement, or neither.

Drive (Sector) Editing

In addition to editing files, Hex Workshop can also edit Drive (Disk) Sectors. By selecting "Open Drive" from under the Disk menu both mounted drives and BIOS disks (INT 13 floppy or fixed disk) can be edited.

Disk Editing Modes:

In drive mode (default), PC drives mounted by the operating system can be edited. Drives of this type include, PC floppy disks, PC hard drives, or other external PC removable disks. CD-ROMs cannot be edited (currently), because the operating system mounts these in a different manner than other disks (more like network drives).

In raw mode (or disk mode), BIOS disks can be edited. BIOS disks include floppy disks and fixed disks. Floppy disks available are A: and B:, while fixed disks are listed as 0x80 (first fixed disk), 0x81 (second fixed disk), etc..

The difference between the two modes is drives are accessed as logical volumes through the operating system by letters assigned by the operating system, and can only be edited if the operating system understands the disk format (file system). Disks are accessed as physical media through the BIOS. Raw (disk) mode allows editing of disks not readable by the operating system as well as partition information stored on the disk but not residing in a logical volume.

Sector Editing:

Disk Editing information is supplied to the user including sector number currently being edited and total number of sectors on the disk in the title bar, and sector size, cursor position (within the sector), and hex data interpretation in the status bar. From the toolbar the current sector and buttons to move forward or backward sectors are displayed.

Drive Editing is accomplished in the same manner as file editing, with a few exceptions. Since the sector size is fixed, data cannot be inserted or deleted, only overwritten. The Goto utility becomes a Goto Sector Utility allowing movement forward or backward in sectors from the beginning, end, or current sector of the drive/disk. The Find Utility now operates on a range of sectors specified in the Find dialog, and Replace is disabled for sector editing. Finally the Compare Tool will compare (and wrap) within a sector not crossing sector boundaries.

Because of the slightly different nature of Drive Editing additional keycuts are available to help quickly move throughout the sectors of a disk.

Base Converter

Hex Workshop includes a Base Converter (BCONV16.EXE or BCONV32.EXE, in the 16 or 32 bit version, respectively). The Base Converter converts from hex to decimal and decimal to hex (while displaying binary). For a conversion the user can specify byte order (Intel, Motorola, or Raw Hex) and Data Type (byte, unsigned byte, short, unsigned short, long, unsigned long, float, or double).

The Base Converter includes an Always on Top (Ctrl+A) option accessible from the system menu.

Note: When entering hex values with the Byte Order set on Intel or Motorola, the Base Converter will only convert and display a decimal value when the number of digits is exactly the number appropriate for the selected Data Type. For example, if the Byte Order is set to Intel and the Data Type is set to unsigned short a decimal value will only be displayed when 4 hex digits are entered. This is necessary to avoid assumptions on zero padding (right or left) before byte flipping. When the Byte Order is set to Raw Hex, then a decimal value will be displayed when the number of digits is less than or equal to that for the selected Data Type (left padding of zeros is assumed).

Hex Calculator

Hex Workshop includes a Hex Calculator (CALC16.EXE or CALC32.EXE, in the 16 or 32 bit version, respectively). The Hex Calculator operates in two modes; arithmetic mode and bit manipulation mode. The arithmetic mode supports addition (+), subtraction (-), multiplication (*), and division (/) and the bit manipulation mode supports logical or (|), logical and (&), exclusive or (^), negation (~), left shift (<<), and right shift (>>). Both modes operate on hex or decimal unsigned long values and do not allow negative numbers or fractions.

The left shift (<<) and right shift (>>) operators require a second value specifying the amount of bytes to shift. For example to left shift 0xFF by 1 bit, enter FF << 1 =., by 4 bits enter FF << 4 =. Further it should be noted the left and right shift do not rotate the most significant and least significant bit (because that would be dependent on data type).

The mode can be toggled from the system menu or using the Ctrl+S keycut. The calculator can be toggled between hex and decimal by clicking on the "HEX" or "DEC" in the display or using the spacebar, and the calculator can be switched into hex or decimal mode using the keycuts, Ctrl+H and Ctrl+D, respectively.

The Calculator includes an Always on Top (Ctrl+A) option accessible from the system menu.

Windows ANSI (ASCII) Character Set

| <u>Dec</u> | <u>Hex</u> | <u>Char</u> | <u>Code</u> |
|------------|------------|-------------|-------------|
| 0 | 00 | € | NUL |
| 1 | 01 | € | SOH |
| 2 | 02 | € | STX |
| 3 | 03 | € | ETX |
| 4 | 04 | € | EOT |
| 5 | 05 | € | ENQ |
| 6 | 06 | € | ACK |
| 7 | 07 | € | BEL |
| 8 | 08 | € | BS |
| 9 | 09 | € | HT |
| 10 | 0A | € | LF |
| 11 | 0B | € | VT |
| 12 | 0C | € | FF |
| 13 | 0D | € | CR |
| 14 | 0E | € | SO |
| 15 | 0F | € | SI |
| 16 | 10 | € | SLE |
| 17 | 11 | € | CS1 |
| 18 | 12 | € | DC2 |
| 19 | 13 | € | DC3 |
| 20 | 14 | € | DC4 |
| 21 | 15 | € | NAK |
| 22 | 16 | € | SYN |
| 23 | 17 | € | ETB |
| 24 | 18 | € | CAN |
| 25 | 19 | € | EM |
| 26 | 1A | € | SIB |
| 27 | 1B | € | ESC |
| 28 | 1C | € | FS |
| 29 | 1D | € | GS |
| 30 | 1E | € | RS |
| 31 | 1F | € | US |
| 32 | 20 | (space) | |
| 33 | 21 | ! | |
| 34 | 22 | " | |
| 35 | 23 | # | |
| 36 | 24 | \$ | |
| 37 | 25 | % | |
| 38 | 26 | & | |
| 39 | 27 | ' | |
| 40 | 28 | (| |
| 41 | 29 |) | |
| 42 | 2A | * | |
| 43 | 2B | + | |
| 44 | 2C | , | |
| 45 | 2D | - | |
| 46 | 2E | . | |

| | | |
|-----|----|---|
| 47 | 2F | / |
| 48 | 30 | 0 |
| 49 | 31 | 1 |
| 50 | 32 | 2 |
| 51 | 33 | 3 |
| 52 | 34 | 4 |
| 53 | 35 | 5 |
| 54 | 36 | 6 |
| 55 | 37 | 7 |
| 56 | 38 | 8 |
| 57 | 39 | 9 |
| 58 | 3A | : |
| 59 | 3B | ; |
| 60 | 3C | < |
| 61 | 3D | = |
| 62 | 3E | > |
| 63 | 3F | ? |
| 64 | 40 | @ |
| 65 | 41 | A |
| 66 | 42 | B |
| 67 | 43 | C |
| 68 | 44 | D |
| 69 | 45 | E |
| 70 | 46 | F |
| 71 | 47 | G |
| 72 | 48 | H |
| 73 | 49 | I |
| 74 | 4A | J |
| 75 | 4B | K |
| 76 | 4C | L |
| 77 | 4D | M |
| 78 | 4E | N |
| 79 | 4F | O |
| 80 | 50 | P |
| 81 | 51 | Q |
| 82 | 52 | R |
| 83 | 53 | S |
| 84 | 54 | T |
| 85 | 55 | U |
| 86 | 56 | V |
| 87 | 57 | W |
| 88 | 58 | X |
| 89 | 59 | Y |
| 90 | 5A | Z |
| 91 | 5B | [|
| 92 | 5C | \ |
| 93 | 5D |] |
| 94 | 5E | ^ |
| 95 | 5F | ` |
| 96 | 60 | · |
| 97 | 61 | a |
| 98 | 62 | b |
| 99 | 63 | c |
| 100 | 64 | d |
| 101 | 65 | e |
| 102 | 66 | f |

| | | |
|------|----|-----|
| 103 | 67 | g |
| 104 | 68 | h |
| 105 | 69 | i |
| 106 | 6A | j |
| 107 | 6B | k |
| 108 | 6C | l |
| 109 | 6D | m |
| 110 | 6E | n |
| 111 | 6F | o |
| 112 | 70 | p |
| 113 | 72 | q |
| 114 | 72 | r |
| 115 | 73 | s |
| 116 | 74 | t |
| 117 | 75 | u |
| 118 | 76 | v |
| 119 | 77 | w |
| 120 | 78 | x |
| 121 | 79 | y |
| 122 | 7A | z |
| 123 | 7B | { |
| 124 | 7C | |
| 125 | 7D | } |
| 126 | 7E | ~ |
| 127 | 7F | DEL |
| 128 | 80 | € |
| 129 | 81 | □ |
| 130* | 82 | , |
| 131* | 83 | f |
| 132* | 84 | ” |
| 133* | 85 | ... |
| 134* | 86 | † |
| 135* | 87 | ‡ |
| 136* | 88 | ^ |
| 137* | 89 | %o |
| 138* | 8A | Š |
| 139* | 8B | < |
| 140* | 8C | Œ |
| 141 | 8D | □ |
| 142 | 8E | Ž |
| 143 | 8F | □ |
| 144 | 90 | □ |
| 145 | 91 | |
| 146 | 92 | |
| 147* | 93 | |
| 148* | 94 | |
| 149* | 95 | |
| 150* | 96 | |
| 151* | 97 | |
| 152* | 98 | ~ |
| 153* | 99 | ™ |
| 154* | 9A | š |
| 155* | 9B | > |
| 156* | 9C | œ |
| 157 | 9D | □ |
| 158 | 9E | ž |

| | | |
|------|----|---|
| 159* | 9F | ÿ |
| 160 | A0 | |
| 161 | A1 | ı |
| 162 | A2 | ø |
| 163 | A3 | £ |
| 164 | A4 | ¤ |
| 165 | A5 | ¥ |
| 166 | A6 | |
| 167 | A7 | § |
| 168 | A8 | ¨ |
| 169 | A9 | © |
| 170 | AA | ª |
| 171 | AB | « |
| 172 | AC | ¬ |
| 173 | AD | |
| 174 | AE | ® |
| 175 | AF | — |
| 176 | B0 | ° |
| 177 | B1 | ± |
| 178 | B2 | ² |
| 179 | B3 | ³ |
| 180 | B4 | ´ |
| 181 | B5 | µ |
| 182 | B6 | ¶ |
| 183 | B7 | · |
| 184 | B8 | ¸ |
| 185 | B9 | ¹ |
| 186 | BA | º |
| 187 | BB | » |
| 188 | BC | ¼ |
| 189 | BD | ½ |
| 190 | BE | ¾ |
| 191 | BF | ¿ |
| 192 | C0 | À |
| 193 | C1 | Á |
| 194 | C2 | Â |
| 195 | C3 | Ã |
| 196 | C4 | Ä |
| 197 | C5 | Å |
| 198 | C6 | Æ |
| 199 | C7 | Ç |
| 200 | C8 | È |
| 201 | C9 | É |
| 202 | CA | Ê |
| 203 | CB | Ë |
| 204 | CC | Ì |
| 205 | CD | Í |
| 206 | CE | Î |
| 207 | CF | Ï |
| 208 | D0 | Ð |
| 209 | D1 | Ñ |
| 210 | D2 | Ò |
| 211 | D3 | Ó |
| 212 | D4 | Ô |
| 213 | D5 | Õ |
| 214 | D6 | Ö |

| | | |
|-----|----|---|
| 215 | D7 | × |
| 216 | D8 | Ø |
| 217 | D9 | Ù |
| 218 | DA | Ú |
| 219 | DB | Û |
| 220 | DC | Ü |
| 221 | DD | Ý |
| 222 | DE | Þ |
| 223 | DF | Ë |
| 224 | E0 | à |
| 225 | E1 | á |
| 226 | E2 | â |
| 227 | E3 | ã |
| 228 | E4 | ä |
| 229 | E5 | å |
| 230 | E6 | æ |
| 231 | E7 | ç |
| 232 | E8 | è |
| 233 | E9 | é |
| 234 | EA | ê |
| 235 | EB | ë |
| 236 | EC | ì |
| 237 | ED | í |
| 238 | EE | î |
| 239 | EF | ï |
| 240 | F0 | ð |
| 241 | F1 | ñ |
| 242 | F2 | ò |
| 243 | F3 | ó |
| 244 | F4 | ô |
| 245 | F5 | õ |
| 246 | F6 | ö |
| 247 | F7 | ÷ |
| 248 | F8 | ø |
| 249 | F9 | ù |
| 250 | FA | ú |
| 251 | FB | û |
| 252 | FC | ü |
| 253 | FD | ý |
| 254 | FE | þ |
| 255 | FF | ÿ |

* Windows True Type Fonts Only

EBCDIC Character Set

| <u>Dec</u> | <u>Hex</u> | <u>Char</u> | <u>Code</u> |
|------------|------------|-------------|-------------|
| 0 | 00 | € | NUL |
| 1 | 01 | € | SOH |
| 2 | 02 | € | STX |
| 3 | 03 | € | ETX |
| 4 | 04 | € | PF |
| 5 | 05 | € | HT |
| 6 | 06 | € | LC |
| 7 | 07 | € | DEL |
| 8 | 08 | | |
| 9 | 09 | € | RLF |
| 10 | 0A | € | SMM |
| 11 | 0B | € | VT |
| 12 | 0C | € | FF |
| 13 | 0D | € | CR |
| 14 | 0E | € | S0 |
| 15 | 0F | € | S1 |
| 16 | 10 | € | DLE |
| 17 | 11 | € | DC1 |
| 18 | 12 | € | DC2 |
| 19 | 13 | € | DC3 |
| 20 | 14 | € | RES |
| 21 | 15 | € | NL |
| 22 | 16 | € | BS |
| 23 | 17 | € | IL |
| 24 | 18 | € | CAN |
| 25 | 19 | € | EM |
| 26 | 1A | € | CC |
| 27 | 1B | | |
| 28 | 1C | € | IFS |
| 29 | 1D | € | IGS |
| 30 | 1E | € | IRS |
| 31 | 1F | € | IUS |
| 32 | 20 | € | DS |
| 33 | 21 | € | SOS |
| 34 | 22 | € | FS |
| 35 | 23 | | |
| 36 | 24 | € | BYP |
| 37 | 25 | € | LF |
| 38 | 26 | € | ETB |
| 39 | 27 | € | ESC |
| 40 | 28 | | |
| 41 | 29 | | |
| 42 | 2A | € | SM |
| 43 | 2B | | |
| 44 | 2C | | |
| 45 | 2D | € | ENQ |
| 46 | 2E | € | ACK |

| | | | |
|-----|----|----|-----|
| 47 | 2F | € | BEL |
| 48 | 30 | | |
| 49 | 31 | | |
| 50 | 32 | € | SYN |
| 51 | 33 | | |
| 52 | 34 | € | PN |
| 53 | 35 | € | RS |
| 54 | 36 | € | UC |
| 55 | 37 | € | EOT |
| 56 | 38 | | |
| 57 | 39 | | |
| 58 | 3A | | |
| 59 | 3B | | |
| 60 | 3C | € | DC4 |
| 61 | 3D | € | NAK |
| 62 | 3E | | |
| 63 | 3F | € | SUB |
| 64 | 40 | € | SP |
| 65 | 41 | | |
| 66 | 42 | | |
| 67 | 43 | | |
| 68 | 44 | | |
| 69 | 45 | | |
| 70 | 46 | | |
| 71 | 47 | | |
| 72 | 48 | | |
| 73 | 49 | | |
| 74 | 4A | φ | |
| 75 | 4B | . | |
| 76 | 4C | < | |
| 77 | 4D | (| |
| 78 | 4E | + | |
| 79 | 4F | | |
| 80 | 50 | & | |
| 81 | 51 | | |
| 82 | 52 | | |
| 83 | 53 | | |
| 84 | 54 | | |
| 85 | 55 | | |
| 86 | 56 | | |
| 87 | 57 | | |
| 88 | 58 | | |
| 89 | 59 | | |
| 90 | 5A | ! | |
| 91 | 5B | \$ | |
| 92 | 5C | * | |
| 93 | 5D |) | |
| 94 | 5E | ; | |
| 95 | 5F | ¬ | |
| 96 | 60 | - | |
| 97 | 61 | | |
| 98 | 62 | | |
| 99 | 63 | | |
| 100 | 64 | | |
| 101 | 65 | | |
| 102 | 66 | | |

| | | |
|------|----|---|
| 103 | 67 | |
| 104 | 68 | |
| 105 | 69 | |
| 106 | 6A | |
| 107 | 6B | |
| 108 | 6C | % |
| 109 | 6D | - |
| 110 | 6E | > |
| 111 | 6F | ? |
| 112 | 70 | |
| 113 | 72 | |
| 114 | 72 | |
| 115 | 73 | |
| 116 | 74 | |
| 117 | 75 | |
| 118 | 76 | |
| 119 | 77 | |
| 120 | 78 | |
| 121 | 79 | \ |
| 122 | 7A | : |
| 123 | 7B | # |
| 124 | 7C | @ |
| 125 | 7D | |
| 126 | 7E | = |
| 127 | 7F | |
| 128 | 80 | |
| 129 | 81 | a |
| 130* | 82 | b |
| 131* | 83 | c |
| 132* | 84 | d |
| 133* | 85 | e |
| 134* | 86 | f |
| 135* | 87 | g |
| 136* | 88 | h |
| 137* | 89 | i |
| 138* | 8A | |
| 139* | 8B | |
| 140* | 8C | |
| 141 | 8D | |
| 142 | 8E | |
| 143 | 8F | |
| 144 | 90 | |
| 145 | 91 | j |
| 146 | 92 | k |
| 147* | 93 | l |
| 148* | 94 | m |
| 149* | 95 | n |
| 150* | 96 | o |
| 151* | 97 | p |
| 152* | 98 | q |
| 153* | 99 | r |
| 154* | 9A | |
| 155* | 9B | |
| 156* | 9C | |
| 157 | 9D | |
| 158 | 9E | |

| | | |
|------|----|---|
| 159* | 9F | |
| 160 | A0 | |
| 161 | A1 | ~ |
| 162 | A2 | s |
| 163 | A3 | t |
| 164 | A4 | u |
| 165 | A5 | v |
| 166 | A6 | w |
| 167 | A7 | x |
| 168 | A8 | y |
| 169 | A9 | z |
| 170 | AA | |
| 171 | AB | |
| 172 | AC | |
| 173 | AD | |
| 174 | AE | |
| 175 | AF | |
| 176 | B0 | |
| 177 | B1 | |
| 178 | B2 | |
| 179 | B3 | |
| 180 | B4 | |
| 181 | B5 | |
| 182 | B6 | |
| 183 | B7 | |
| 184 | B8 | |
| 185 | B9 | |
| 186 | BA | |
| 187 | BB | |
| 188 | BC | |
| 189 | BD | |
| 190 | BE | |
| 191 | BF | |
| 192 | C0 | { |
| 193 | C1 | A |
| 194 | C2 | B |
| 195 | C3 | C |
| 196 | C4 | D |
| 197 | C5 | E |
| 198 | C6 | F |
| 199 | C7 | G |
| 200 | C8 | H |
| 201 | C9 | I |
| 202 | CA | |
| 203 | CB | |
| 204 | CC | |
| 205 | CD | |
| 206 | CE | |
| 207 | CF | |
| 208 | D0 | } |
| 209 | D1 | J |
| 210 | D2 | K |
| 211 | D3 | L |
| 212 | D4 | M |
| 213 | D5 | N |
| 214 | D6 | O |

| | | |
|-----|----|---|
| 215 | D7 | P |
| 216 | D8 | Q |
| 217 | D9 | R |
| 218 | DA | |
| 219 | DB | |
| 220 | DC | |
| 221 | DD | |
| 222 | DE | |
| 223 | DF | |
| 224 | E0 | \ |
| 225 | E1 | |
| 226 | E2 | S |
| 227 | E3 | T |
| 228 | E4 | U |
| 229 | E5 | V |
| 230 | E6 | W |
| 231 | E7 | X |
| 232 | E8 | Y |
| 233 | E9 | Z |
| 234 | EA | |
| 235 | EB | |
| 236 | EC | |
| 237 | ED | |
| 238 | EE | |
| 239 | EF | |
| 240 | F0 | 0 |
| 241 | F1 | 1 |
| 242 | F2 | 2 |
| 243 | F3 | 3 |
| 244 | F4 | 4 |
| 245 | F5 | 5 |
| 246 | F6 | 6 |
| 247 | F7 | 7 |
| 248 | F8 | 8 |
| 249 | F9 | 9 |
| 250 | FA | |
| 251 | FB | |
| 252 | FC | |
| 253 | FD | |
| 254 | FE | |
| 255 | FF | |

Data Types

| <u>Type Name</u> | <u>Bytes</u> | <u>Range of Values</u> |
|------------------|--------------|---------------------------------|
| (signed) byte | 1 | -128 to 127 |
| unsigned byte | 1 | 0 to 255 |
| (signed) short | 2 | -32,768 to 32,767 |
| unsigned short | 2 | 0 to 65,535 |
| (signed) long | 4 | -2,147,483,648 to 2,147,483,647 |
| unsigned long | 4 | 0 to 4,294,967,295 |
| float | 4 | 3.4E +/- 38 |
| double | 8 | 1.7E +/- 308 |
| long double | 10 | 1.2E +/- 4932 |

Note: Integers are shorts with 16 bit processors and longs with 32 bit processors.

