

WSOPTION USERS GUIDE

VER. 4.1

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INTRODUCTION

WSOPTION is designed to make your current WordStar 3.0 or 3.3 faster, more productive and more convenient to use. By selecting various options from its' menus you can create a WordStar that "feels" more responsive, allows you to select any printer on your system for output and lets you edit one document and print another while maintaining good response both for your typing speed and the printer output.

Some of the most frequent questions on WSOPTION are noted next:

Q - Does WSOPTION increase the size of WordStar?

A - It adds 384 bytes to the end of WS but after start up this space is recovered by WS so there is no loss of work space.

Q - Does WSOPTION use any space inside WS that conflicts with special options or drivers installed in my WS?

A - No. WSOPTION installs itself into an "unused" area of WS.

Q - Do I have to know technical details about my printers or ports in order to select a given printer for output?

A - No. WSOPTION allows WS to select printers from the user via a number input at print time. For CP/M a number from 0 to 3 gives you selection of 4 printers, while under MP/M numbers 0 to 7 allows support of 8 printers. Under CP/M WSOPTION changes the IOBYTE to re-direct printer output, under MP/M WSOPTION sets and conditionally attaches the selected printer.

Q - How can I tell which selection number activates a given printer on my CP/M system ?

A - WSOPTION includes a printer test that checks all four possible printer routines in CP/M for valid operation. It can report the status of any printer connected to your system plus send a test pattern to any printer for functional checks.

Q - Will I be sure to notice an improvement in concurrent print and edit?

A - Provided your printer checks out O.K. on the printer status test you should notice a great improvement in this area. Note however that the operation of reading from your disk during editing may still interfere somewhat with your editing.

FILE REQUIREMENTS

In order to operate WSOPTION requires that your WordStar disk contains an INSTALLED version of WordStar plus the overlay file WSOVLY1.OVR. If you are currently using WordStar you have an installed version. If you have just purchased a generic WordStar read your installation guide and prepare a version of WordStar for your system.

OPERATING SYSTEM REQUIREMENTS

WSOPTION is designed to operate on CP/M 2.2 and MP/M 2.1. Once installed in WordStar it works with either operating system.

WSOPTION STRATEGY

The WSOPTION program is designed to assist you in analysing your current working version of WordStar for the purpose of installing options that improve its performance and flexibility. When you use WSOPTION you will be prompted to select those options which provide you with increased speed and flexibility. However with WSOPTION you may create and test other versions of WordStar offering wide variations from the basic high performance version.

Your goal in using WSOPTION is to create a WordStar that offers you...

- 1- faster response when changing text on the screen
- 2- more productivity by providing practical concurrent printing and editing of files
- 3- flexibility by providing selection of available printers connected to your system

To this end you will use WSOPTION to read your your current working version of WordStar and select options from a series of menus that control various characteristics of WordStar. These characteristics include the speed at which WordStar updates information on your screen, the method used to send information to your printer, some of the default parameters in WordStar that determine which screen and help menu features are enabled and lastly features for your particular terminal that may not be handled easily by the WordStar install (especially ver. 3.0).

You should read this manual before using WSOPTION, but if you prefer to get right into the program keep the following in mind..

- 1- To get immediate speed improvements select option E from the Performance Feature Menu.
- 2- For additional speed set help level to 0 and directory display to off from the WordStar Feature Menu.
- 3- If your printer type checks out as CP/M LIST and it passes the printer status check you can select option A from the Printer Driver Menu and get improved print flexibility plus good print-while-edit performance.
- 4- Read the section "Adding More Speed" for proper placement of your WordStar overlay files.
- 5- Once you get your new WordStar running remember to execute the CDISK program from the WordStar Run command if you have to change disks while still in WordStar.

Throughout this manual WS may be used in place of the name WordStar for brevity.

WSOPTION MENUS IN BRIEF

The menus in the WSOPTION program are used to select features based on your requirements plus the results of tests WSOPTION allows you to perform on your particular CP/M and/or MP/M system.

START UP MENU

This lets you select WordStar mode or Monitor mode.
WordStar mode loads your current WordStar for subsequent modification.
Monitor mode allows you to load and examine or modify any file.

MAIN MENU

Used to select the following five "action" menus.

PERFORMANCE FEATURE MENU

Used to set the response rates of various WordStar functions such as screen update speed, overlay response speed etc., check your printer status and selection of your printer driver.

TERMINAL FEATURE MENU

Used to set features peculiar to various consoles which most often affect the speed of WordStar and the appearance of the WordStar overlay menus.

WORDSTAR FEATURE MENU

Allows you to set 18 WordStar features such as margin settings, help level etc.

MONITOR MENU

Allows you to further modify or examine you WordStar program as well as load and modify any other file from your disk.

WSOPTION EXIT MENU

Lets you save your new version of WordStar, restart the program or just quit and return to the operating system.

USING WSOPTION

There are three files on your WSOPTION disk and they are 1) WSOPTION.COM 2) CDISK.COM & 3) CHART. You only require WSOPTION.COM to modify your current version of WS. If you change diskettes when in WordStar you will have to run CDISK from your WS disk before changing. CHART is just a text file you can print with WSOPTION (more about this later).

Probably the easiest way to use WSOPTION is as follows:

1) Put one of your working WordStar diskettes in drive A: or the first drive on your system. This is usually the WordStar drive while drive B: is often the drive used for storing WordStar text files.

2) Check that you have at least 60K bytes of space remaining on your A: disk. You will need this space in order to save a new version of WS plus a new version of the WSOVLY1.OVR file. You can use the CP/M or MP/M STAT program to check available disk space by typing...

```
A>STAT A:<CR>
```

STAT will then print the amount of space remaining on your A: diskette. Note that the program STAT.COM must be on your A: disk to check for usable space as shown above.

3) If you have enough space on your A: disk go to step (4) next. If you do not have enough space you may create a new A: disk by using a new diskette and doing as follows...

a) Insert a new diskette in drive B:. Be sure it has been formatted.

b) Use PIP to copy over all the WordStar modules, these are WSOVLY1.OVR, WSMSG.S.OVR and the WordStar program itself, usually named WS.COM.

c) Next copy over PIP.COM.

d) SYSGEN your new disk to be sure it can "Boot" from drive A:.

e) Remove your current A: diskette and insert the new diskette from drive B:. You may type <control-C> to warm boot the system or reset the system to start it up from the new diskette.

4) Put the WSOPTION diskette in drive B: or your floppy drive if you have a winchester system.

5) From the drive A prompt (your screen should prompt with A>) type the following line...

```
A>B:WSOPTION<CR>
```

6) WSOPTION will load, sign on and ask you to select (A) WordStar Modification mode, (B) Monitor Mode or (X) Exit Options.

7) Type an A then a <CR> and WSOPTION will prompt you for the name of the WS file to be modified.

8) Type in the name of your working version of WordStar.

9) You will then go to the Main Menu. From there you can select further menus to assist in creating a new version of WordStar.

WSOPTION MENUS IN DETAIL

WSOPTION VER. 4.1 START UP MENU

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A- Do WordStar Modifications

B- Go to Monitor Mode to read/dump/modify/write any file

X- To go to Exit Options

Your selections...

A - Gets you to the Introduction. You are there informed as to the files that must be present on your disk and prompted for the name of the WordStar program you wish to modify.

B - Gets you to the Monitor Menu. From there you may load any file and examine and modify it then write it back to disk.

X - Gets to to the Exit Option Menu. If you have not loaded any file you will actually skip that menu and return to CP/M or MP/M.

WSOPTION VER. 4.1 MAIN MENU

- A- Set Performance Parameters
 - B- Set WordStar Features
 - C- Set Terminal Features
 - D- Go to Monitor Mode
 - E- Print Decimal, Hex, Octal, ASCII and 8080 Guide
- X- Exit and Return to System

Your selections...

A - Gets you to the Performance Feature Menu. There you can set the speed of various WordStar operations. Also you may test your printers and determine which selection numbers are associated with each printer. The status of each printer can be tested in order to determine if an improved "print-while-edit" feature can be used.

B - Gets you to the WordStar Feature Menu where you can set any of 8 WS features such as margins, insertion, hyphenation etc.

C - Gets you to the terminal feature menu. There you can add or change your high-lighting, set your console start up and exit functions etc.

D - Gets you to the Monitor Menu.

E - Lets you print a chart containing 8080 op-codes, a list of ASCII characters plus octal, decimal and hexadecimal values for same. You may use it to assist with patching in the Monitor Mode.

X - Gets you to the Exit Menu.

Printer Status Test Under CP/M

Why do I need a printer status test?

Whether you have one or more printers on your system you should test each printer for availability of a busy status test. The reason is as follows. A printer can accept characters from the computer only until the printer buffer is full. A printer buffer is a small memory inside the printer that holds the information sent to it from the computer. (Even if you have a special buffer option in the form of an external buffer or an extended internal buffer the following still applies) In general the printer can accept from 80 to 132 characters (for paper allowing 80 to 132 columns) and then it must take each character from its' memory and print it on the current line. During the time it prints a line the printer typically tells the computer that it is busy printing and therefore no more characters should be sent to it. (Or your special buffer cannot accept the next character) If the computer could not test for a busy signal from the printer it would continuously send characters to the printer until it reached the end of the text file it was transmitting. In this case the printer would miss any characters sent to it when it was tied up in the actual printing task. Since your own system does not miss characters you may conclude that you have an adequate busy test for your printer operations. However your current busy test may NOT be adequate for WSOPTION. The reason for a possible deficiency in your printer status test for WSOPTION is that a CP/M system has two possible busy tests for each printer. The primary test is contained in your systems' printer program (part of the BIOS) right at the point a character is to be sent to the printer. A second test may or may not be implemented in a routine used to check only the printer status and return the result to a printing program. It is this second routine that WSOPTION requires and checks for in the F selection of the Performance Feature Menu.

How do I know which printers work on my system?

With selection F under CP/M you can select and test up to 4 printers just as you would with WSOPTION installed in your WS. This test should never "hang up" so you are free to experiment. You may simply run the test 4 times starting with printer 0 and testing up to printer 3. Each time selection F will check for a ready status from the selected printer. If it finds a ready status you may run a test to print a pattern on the selected printer and thus verify operation of the device. If no ready condition is available you will be informed of this also. CP/M itself can support up to 4 printers determined by the implementation of CP/M for your system. WSOPTION takes advantage of the fact that printer information may be sent to a particular printer under CP/M by information in the IOBYTE. The IOBYTE is a data character in CP/M memory that controls the source and destination of characters to and from consoles, printers and other peripheral devices. The printer in CP/M is referred to as the LST: device of the IOBYTE. For the printer CP/M allows information to be sent to the following printer devices...device 0 or TTY: device 1 or CRT: device 2 or LPT: device 3 or UL1: The number (0 to 3) above is that used by WSOPTION to select the corresponding output device such as TTY: etc. You can actually change the output device for printing by using a command with STAT as follows...

```
STAT LST:=XXX:<CR>
```

Where XXX is TTY, CRT, LPT or UL1.

You can also use STAT to determine which device is used in your system by typing...

```
STAT DEV:<CR>
```

STAT will then print a list on your screen similar to the following;

```
CON:=CRT:
RDR:=UR1:
PUN:=PTP:
LST:=TTY:
```

In the above case printer information is sent to the TTY: device. The User Manual for your particular system may contain information relating the various LST: values to peripheral options connected to your system.

Once you have determined which printer number activates a particular printer record the information on the printer output chart at the end of this manual.

What if I never get a ready status during the printer tests?

First make sure that your printer is ready, contains paper and is properly connected to the system. If you know it works O.K. then you may not have a proper status test routine in your version of CP/M. In that case you may not take advantage of good print-while-edit operation.

Printer Status Test under MP/M

You will test for a ready status on all printers connected to your system for the reasons outlined under CP/M printer tests. Under MP/M you simply select a printer from 0 to 7 just as MP/M supports. The test first checks for the number of printers supported by your system and will not let you select an unsupported printer. Make sure you note that the status test works for all printers you would use with WS.

G - Set Printer Cycle for MP/M

This selection lets you set the rate at which characters are sent to the printer under MP/M. The higher the number selected, the more characters are sent to the printer in a given time segment. The advantage of slowing the printer down is that more time is made available for other programs to execute on the system. This reduces considerably the compute-bound effect of WS under MP/M while printing.

H - Select Printer Driver

PRINTER DRIVER OPTIONS

- A- selectable printer type with improved print & edit option
- B- Selectible printer type with standard print & edit option
- C- Keep your present printer drivers

NOTE you should have run the printer test (option F) to determine if your system can check printer status information

Current WordStar printer type is set as CP/M LIST

Enter printer type selection

POINTS TO NOTE ON PRINTER DRIVER SELECTION

If your system was able to check for printer ready status then use option (A) even if you have only one printer on your system. With this option you will be able to print one file and edit another file with good performance.

If your system cannot test printer status but you have more than one printer on the system select option (B). With this option you will print as usual plus be able to select your printer at print time.

If you cannot test printer status and have just one printer use option C.

NOTES on Current WS Printer Type. This menu tells you which printer option is currently set in your original version of WS. As shown above it is CP/M LIST, but it can also report any of the following;

PORT DRIVER, USER SUBROUTINES, O.E.M. DAISY, ALTERNATE CON. or some UNKNOWN DRIVER.

The important points to note on your printer type are;

- If your current WS is CP/M LIST you can use driver option A-C.
- If your current WS is PORT DRIVER, USER SUBROUTINES or O.E.M DAISY but you use the printer O.K. with other programs (accounting, spread sheets etc.) you should be able to use A-C. If it only works under WS you can only use C.

Note that option A is the most desirable as it gives you the best performance and flexibility.

In general you should create more than one version of WS to check the performance of the various options.

DO NOT SAVE A NEW VERSION OF WS USING THE SAME NAME AS YOUR ORIGINAL. THIS WAY YOU CAN USE YOUR ORIGINAL EACH TIME AS THE BASIS FOR ANY NEW VERSIONS AND ALSO RETAIN ANY UNIQUE DRIVER ROUTINES THAT MAY BE USED BY YOUR PRINTER.

USING THE PRINTER SELECT OPTION

When the printer select option is installed you will note the following changes in WordStar.

1) Your new WordStar will use a new version of the WSOVLY1.OVR file called WSOVLY10.OVR. This is automatically created by WSOPTION when you select a multi-printer version from WSOPTION.

2) At print time you will instruct WS as usual about any print options and just prior to the actual printing of the file you will get a BELL and a message on the left side of your screen as follows...

#

At this point enter 0, 1, 2 or 3 for the correct CP/M list device, or a number from 0 to 7 for MP/M printer operation.

3) If the improved print-while-edit mode was installed a check will be made on the printers' status. If it shows ready your printing will continue as in the past. If the printer looks busy (or is in use by another program under MP/M) you will get a

BELL and a message on the left side of the screen as follows...

*

At this point you may press any key and WS will be ready for you to quit the print operation by next typing the letter P. WS will then ask if you wish to stop the print operation or continue with it. Type a Y to stop printing. You may now select another printer or determine why the current printer is busy. If your printer should hang up during a print operation you can now type a P to stop the print operation. After 5 to 15 seconds WS will ask you to confirm the stop command.

TERMINAL FEATURE MENU

A- Set Terminal Startup Function	ACTIVE
B- Set Terminal Exit Function	INACTIVE
C- Set Highlight Mode	ACTIVE
D- Turn off Highlight Mode	ACTIVE
E- Set Erase to End of Line	ACTIVE
F- Set Delete Line	ACTIVE
G- Set Insert Line	ACTIVE
H- Set Last Character Handling	INACTIVE

X- Exit to Main Menu

You will require proper documentation on your particular terminal type in order to make use of this menu. If options E to G are ACTIVE you will realize maximum speed when WS updates your screen. Your terminal may have these options set as INACTIVE. If this is so check any documentation for your terminal and determine whether or not it supports these features. If it does you should use this menu to activate the functions. Following the selection summary you will find details on activating and deactivating a terminal feature option.

Your Selections...

A - Lets you enter up to 8 HEX characters to be sent to the terminal when WS starts up. A HEX character is made up of two nibbles eg: 01, or 1B etc.

B - Lets you enter up to 8 HEX characters to be sent to the terminal just before WS returns to CP/M or MP/M.

C - Lets you enter up to 8 HEX characters used to turn on the high-light mode of your terminal for menus etc. (Check your terminal manual for attributes to enable half-intensity, reverse video etc.)

D - Lets you enter up to 8 HEX characters to turn off the mode set in C above.

E - Lets you enter up to 8 HEX characters used to execute an erase to end of line function. ACTIVATE THIS FUNCTION FOR BETTER SPEED.

F - Lets you enter up to 8 HEX characters used to execute a line insert function. ACTIVATE THIS FUNCTION FOR BETTER SPEED.

G - Lets you enter up to 8 characters used to execute a line delete function. ACTIVATE THIS FUNCTION FOR BETTER SPEED.

H - Is used for screen update control in WS. If your console automatically scrolls when you type the last character on the last line of your screen WS cannot and will not use the last line on your screen, in which case this function will be noted as INACTIVE which is O.K.

ACTIVATING AND DEACTIVATING TERMINAL FEATURES

To deactivate a terminal feature simply select the option from the menu and in response to the prompt line asking for a string of HEX characters for that function just enter a - (minus sign) and a <CR>.

To activate a terminal feature you must know the character sequence used by your terminal for that feature and in response to the prompt line for the string of HEX characters enter them (or it) and a <CR>. For instance the line insert string for a KAYPRO II would be entered as...

1B45<CR>

WORDSTAR FEATURE MENU

A- Set Initial Help Level	0	K- Set Left Margin	8
B- Set Decimal Point Character	.	L- Set Right Margin	64
C- Set Non-Document Mode	OFF	M- Set Number of Lines/Page	66
D- Set Initial Directory Display	OFF	N- Set Page Offset	8
E- Set Initial Insertion Toggle	ON	O- Set Form Feeds	OFF
F- Set Justification Toggle	ON	P- Set Data Field separator	.
G- Set Hyphen Toggle	ON	Q- Set Variable Name Symbol	&
H- Omit Page Number Toggle	ON	R- Set Default Disk Drive	A
I- Set Top of Page Margin	8		
J- Set Bottom of Page Margin	8		

X- Exit to Main Menu

The WS Feature Menu shows the current state of 18 options you may change to suit your needs. When you make a change in any of these and save the modified version of WS your new WS will start up with the newly selected values as defaults.

To improve speed note the following;

- a) set the help level as low as you require (0 is really fast)
- b) set the initial directory display to OFF

LIMITATIONS ON SOME FEATURES

L - The maximum default left margin setting seems to be 74

O - Form feeds can be sent to the printer before a new document is printed under WS 3.3 with this option but not WS 3.0.

Other Features

B, P and Q are important for MAILMERGE. Check your MailMerge guide when changing these items.

MONITOR MENU

Memory Operations:

D- Dump Memory
 E- Examine Memory
 M- Modify Memory (after examine)

Port Operations:

O- Output to a Port
 I- Input from a Port

X- Exit to Start

System Operations:

R- Read a File from Disk
 W- Write a File to Disk

General Functions

.- Stop Current Operation
 ^S- Freeze Screen Display
 ^Q- Resume Screen Display

The monitor may be useful if you must make additional modifications to your WS. You should have a good understanding about the internal patch areas of WS as well as some experience in creating machine language routines in hex.

The following functions are supported by the monitor.

D 0100 2000

Dump hex data from start address 0100 to end address 2000 in hex with ascii decodes to right. After you type 0100 the monitor spaces to right and waits for you to type 2000.

E 0100

Examine a memory location in hex at 0100. By hitting the space bar the monitor will increment to the next location.

M - Modify memory locations set by Examine command. You must enter 2 hex nibbles then the monitor will increment to the next location and wait for the next modification to be entered.

NOTE ON ADDRESS TRANSLATION BY THE MONITOR

When you examine, modify or dump memory the monitor considers the start of the file input buffer to be 100H. In this way you can load any file and examine it as if it we loaded and examined by DDT. The translation is transparent to you.

I 02

Input from hex port 02 and show the data input in hex.

O 02 41

Output to port 02 the data 41 in hex.

R - Supply the name of a file to be read from disk.

W - Supply the name of a file to be written to disk. A file must have been read from disk first. A check will be made for duplicate file names.

HEXADECIMAL ENTRY REQUIREMENTS

A valid port is from 00H to FFH

A valid data byte is from 00H to FFH

A a valid address is from 0000H to FFFFH.

You must enter the full address, port number or data bye as the monitor does not allow suppressed leading zeros.

WSOPTION EXIT MENU

- A- Save new version of WordStar and return to operating system
- B- Go back to start of WSOPTION
- C- Skip saving new version and return to operating system,

Enter selection

Your selections;

A - Asks you to supply a name for the new version of WS to save on disk. If you have previously selected printer driver options A or B an new version of WSOVLY1.OVR will be created and named WSOVLY10.OVR. This new overlay will only be used by the new WS programs with the A or B printer drivers.

B - Gets you to the start of WSOPTION

C - Goes right to CP/M or MP/M without saving a new WS version.

```
*****  
                          ADDING MORE SPEED  
*****
```

You may improve WS operation further by making a new WS diskette as follows...

- 1) Format a new diskette.
- 2) Copy to it the WordStar overlay files first, say by typing...

A>PIP B:=WS*.OVR

In the above case the new diskette is in drive B:

- 3) Now copy over the rest of your programs and files.

By keeping the overlay files at the start of the disk you reduce the time consumed by WS each time it gets a new menu or executes a new function.

If you have a WS that uses the new WSOVLY10.OVR file you may create a diskette with just the new version on it by PIPing as follows...

A>P<CR> load PIP

*B:=A:WSOVLY10.OVR<CR>

*B:=A:WSMSG.S.OVR<CR>

*B:=A:WSNEW.COM<CR> (the name of your new WS.COM program)

*^C return to CP/M

CHANGING DISKETTES WITH YOUR NEW WORDSTAR

WSOPTION modifies WS so that disk resets are suppressed under CP/M and MP/M. If you must change a diskette while in WordStar you should select the R option from the Main Menu in WordStar and in response to its request for a command to execute type...

CDISK<CR>

In a few seconds you will be asked to type any key to return to WordStar and from that point you may change any diskette before you log on to it or try to read a file or directory on it. Usually this occurs on floppy systems when you change the B: diskette.

```
*****  
FOR THESE INSTANCES BE SURE A COPY OF CDISK.COM IS ON YOUR A: DRIVE  
*****
```

PRINTING THE CHART FILE

CHART contains a list of all 8080 op-codes plus the representation of all numbers from 0 to 255 in decimal, hexadecimal and octal format as well as standard ASCII and control codes. Simply ready your printer and select option E from the Main Menu in WSOPTION to print the chart. If you add new Terminal Features you may need this chart for number system conversions with any control or character codes found in the terminal reference manual supplied with your system or terminal.

PRINTER SELECT CHART

A WordStar with WSOPTION installed is now able to select any system printer for output. In addition it is free from hang ups as it makes a check on the printer status before printing. In this way it can inform the operator about an off line condition for local or remote printers. Under CP/M 1 to 4 printers may be selected. Under MP/M 1 to 8 printers may be selected. It is now impossible to select a wrong printer and hang up as a check is made to ensure that the selected printer is supported by the system. Whenever a printer is found to be off line a message on the left side of the screen will print as follows...

*

If this happens type any key and WordStar will continue to "think" it is printing the file but you may stop it by then typing a P to stop print.

SELECTING THE PRINTER

Once you have instructed WordStar to begin printing, a message will appear on the left side of your screen as follows...

#

At this point you will enter the number of the printer for WordStar to use. This number depends upon how your system software accesses the printer. Refer to your system user guide or your dealer to determine which printer is selected on the chart below and fill in the details.

PRINTER CHART FOR CP/M

printer number	device	printer on your system
0	TTY:	_____
1	CRT:	_____
2	LPT:	_____
3	UL1:	_____

PRINTER CHART FOR MP/M

printer number	printer on your system
0	_____
1	_____
2	_____
3	_____
4	_____
5	_____
6	_____
7	_____