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## CHAPTER 2

# Installing and Using MASM

This chapter describes the MASM version 6.1 installation. It includes detailed information about:

- Using SETUP
- Reviewing Installation Settings
- Running MASM
- Getting More Information

Before running SETUP, back up the distribution disks and make sure you have enough disk space (see “System Requirements,” page 1). For information on configuring your system after you have installed MASM, see Chapter 3 of this book.

## Using Setup

To install Microsoft MASM version 6.1, run the SETUP.EXE program (located on Disk 1 of your installation set). The SETUP program performs all tasks necessary for installing the MASM components. You must run SETUP to install MASM, as the files on the distribution disks are compressed. SETUP decompresses the files and copies them to your hard disk. SETUP runs under MS-DOS and under the Windows operating system version 3.x.

You can use SETUP to perform the following:

- View the documentation notes, README.TXT, packing list, and information for users of MASM version 5.10.
- Preview the installation prompts and their defaults before installing any files.

- Install the Macro Assembler using the defaults or while modifying the loading options.
- Copy individual files from the distribution disks.

You can use the interactive installation, which is the default, to set the following options:

- Load utilities for use with the Windows operating system (default = yes).
- Load the Programmer's WorkBench (default = yes).
- Configure PWB with BRIEF-compatible environment commands (default = no).
- Load MASM.EXE for MASM version 5.10 compatibility (default = yes).
- Copy Help files, README.TXT, and other documentation files (default = yes).
- Copy the sample programs (default = no).

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**Note** If you plan on using the Tutorials in the *Programmer's Guide*, you should load the sample programs.

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- Copy a mouse driver (default = yes).
- Select the drive where you want the MASM files to reside (default = highest drive letter).
- Select the directories for the MASM component files you choose to install. These include:
  - Executable files (default = C:\MASM61\BIN)
  - Library files (default = C:\MASM61\LIB)
  - Include files (default = C:\MASM61\INCLUDE)
  - Initialization files (default = C:\MASM61\INIT)
  - Help files (default = C:\MASM61\HELP)
  - Sample files (default = C:\MASM61\SAMPLES)

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**Note** If you are using more than one Microsoft programming language, you may want to direct the files to other than the default directories to avoid duplicating utilities. For more information on installing MASM in a multi-language environment, see "Installing MASM for Use With Other Programming Languages" on page 11.

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- Check your TMP environment variable and available disk space installing any files. If the TMP environment variable is not set when you run SETUP, SETUP will propose C:\MASM61\TMP as the temporary directory on your hard disk to use during installation. This directory will not be deleted when installation is complete. SETUP will place the line

```
SET TMP=C: \MASM61\TMP
```

in the NEW-VARS.BAT file if a TMP environment variable is not defined.

If there is a problem during installation, SETUP will report the error and terminate without loading MASM. For information on how SETUP uses your system's TMP environment variable, see page 21.

You can run SETUP from either the MS-DOS command line or within the Windows operating system version 3.x.

#### □ Running SETUP from the MS-DOS Command Line

1. Insert the disk labeled Disk 1 in the appropriate disk drive.
2. At the MS-DOS command prompt, type

```
DRIVE: \ENTER
```

where *DRIVE* is the disk drive into which you just put Disk 1.

3. Type SETUP and press ENTER to begin installation.
4. Press ENTER again to display the Main Menu screen in Figure 2.1.

#### □ Running SETUP from the Windows operating system

1. Insert the disk labeled Disk 1 in the appropriate disk drive.
2. Open the File Manager and view the contents of Disk 1.
3. Run the SETUP.EXE file by double-clicking on it with the mouse, or by selecting it and pressing ENTER.
4. Press ENTER to display the main menu.

## Reviewing Installation Settings

After SETUP is complete, the SETUP Main Menu screen, shown in Figure 2.1, appears.

To review the default settings for installing MASM, choose Run SETUP Without Installing Any Files from the SETUP Main Menu. SETUP will go through the prompting screens and then return to the Main Menu screen.

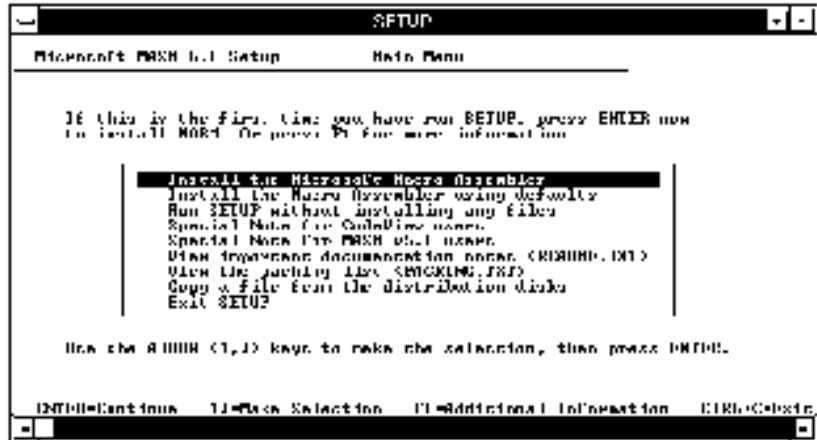


Figure 2.1 SETUP Main Menu screen.

Follow the instructions on the screen. Press ENTER to proceed with a selection you have made. Use ARROW KEYS to make a selection. Press F1 for information on a selection. Press CTRL+C to quit SETUP.

If you are running SETUP interactively, the Confirm Your Choices screen shown in Figure 2.2 appears when you have viewed all the prompts. This screen allows you to change any of the installation selections you made.

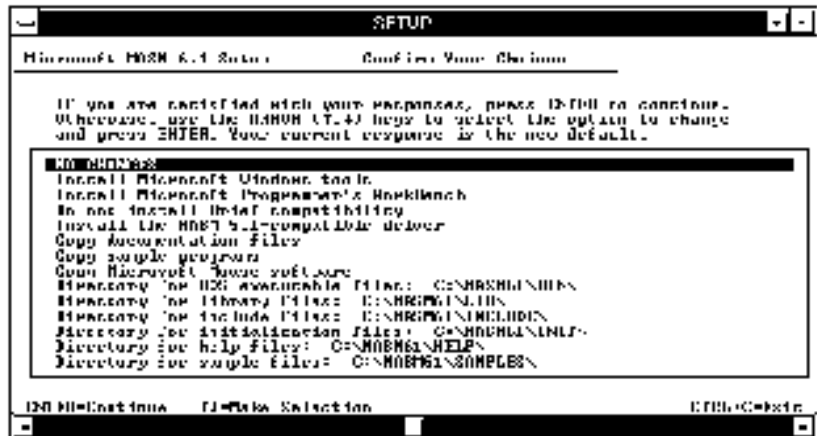


Figure 2.2 SETUP Confirm Your Choices Screen

To change a setting or to access more information on each menu item, use the ARROW KEYS to make the selection, then press ENTER. To accept all the settings, select No Changes and press ENTER.

After SETUP is complete, the Environment Settings screen shown in Figure 2.3 appears.

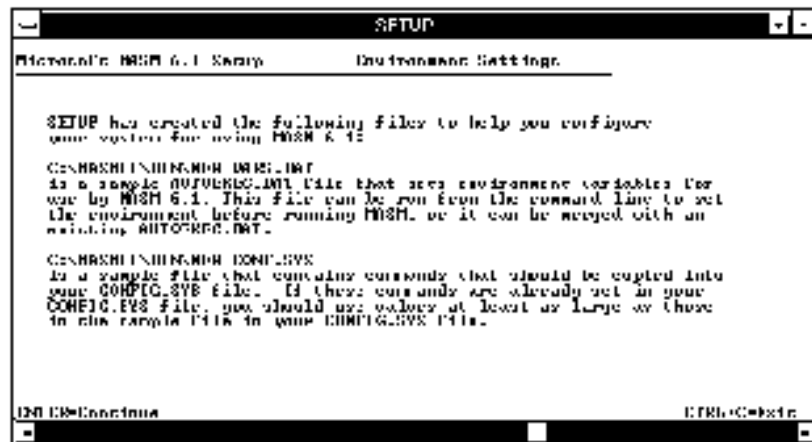


Figure 2.3 SETUP Environment Settings screen

## System Files

SETUP does not modify your system files. Instead, SETUP copies recommended updates that are named NEW-VARS.BAT, NEW-CONF.SYS, and NEW-SYS.INI to your \MASM61\BIN subdirectory. Depending on your system configuration, some of the settings in these files are necessary for MASM to run on your system.

NEW-CONF.SYS is a sample CONFIG.SYS file containing system commands for your CONFIG.SYS file. If your CONFIG.SYS file has the same commands, then make sure they are set to the same or greater values as in NEW-CONF.SYS.

NEW-VARS.BAT is a batch file that sets the MASM environment variables. You can run NEW-VARS.BAT from the command line or merge it with your existing AUTOEXEC.BAT file.

If you chose to install the Windows operating system utilities during SETUP, the SYSTEM.INI Setting screen shown in Figure 2.4 will be displayed.

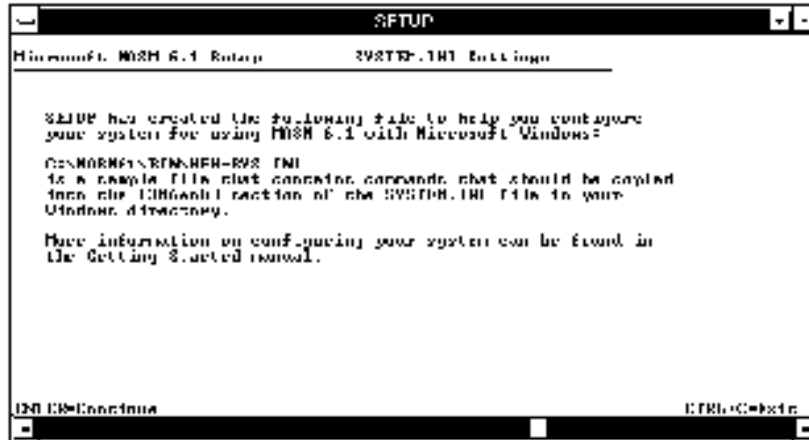


Figure 2.4 EM.INI Settings screen

NEW-SYS.INI contains commands that should exist in the [386.enh] section of your Microsoft Windows SYSTEM.INI file. It also lists any [386.enh] section lines you should delete to complete the update.

The Sample PWB Settings screen shown in Figure 2.5 is displayed next. It tells you the location of the TOOLS.PRE file that contains the default PWB setting. You can rename this file TOOLS.INI, or merge the information in it with your existing TOOLS.INI file.

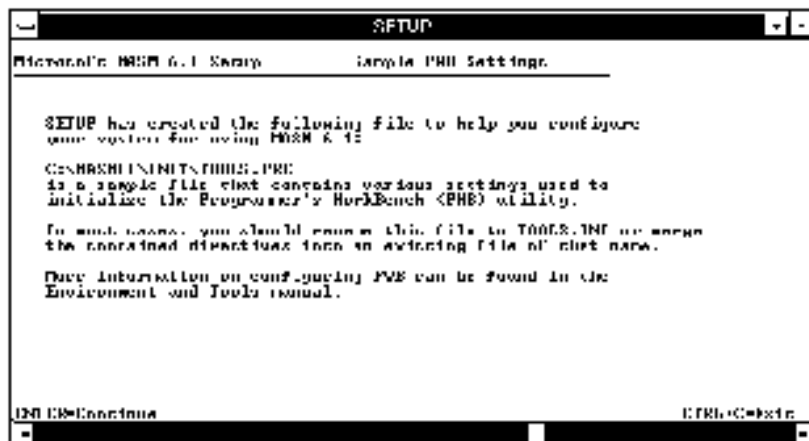


Figure 2.5 Sample PWB Settings screen

The Memory Utilities screen shown in Figure 2.6 is displayed next. It tells you the location of HIMEM.SYS, RAMDRIVE.SYS and SMARTDRV.EXE. For more information about these memory utilities, see Chapter 3 of this book.

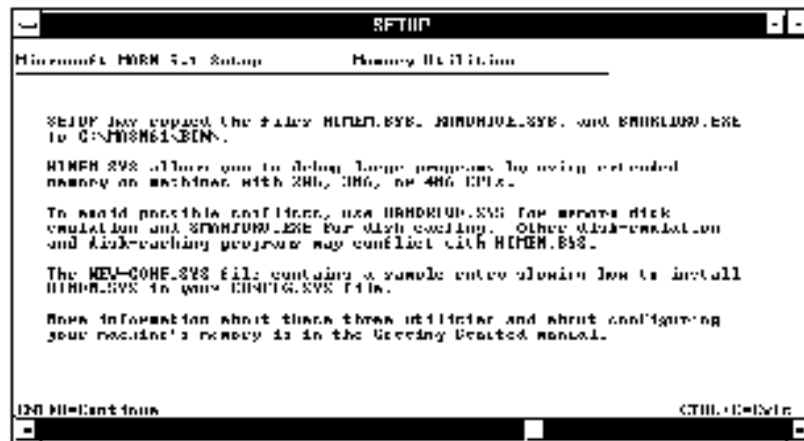


Figure 2.6 Memory Utilities screen

Pressing ENTER displays SETUP's Main Menu screen again. From here you may exit SETUP, view documentation files, or run the installation process again. You may run SETUP again at any time to load any files you chose to exclude during this installation.

## Installing MASM for Use With Other Programming Languages

If you will be using MASM with other Microsoft programming languages, such as Microsoft C/C++, you may already have versions of PWB, CV and the other programming utilities loaded. You can install MASM in one of three ways, depending on your working requirements and available hard disk space:

- 1. Install MASM in your existing MASM tree structure, if one exists. This will update all identically named and placed files in the MASM tree. The SETUP program defaults to this option. If a copy of MASM version 5.10 is located in the \MASM directory, it will be renamed to OLDMASM.EXE.
- 2. Install MASM in your high-level language tree structure. This will also update identically named and placed files in the high-level language tree. For example,

if you have Microsoft C/C++ version 7.0 on drive D:, the root of your C/C++ tree is \C700. If you wanted to install MASM in your \C700 tree, you would:

- ☛ Select Install the Microsoft Macro Assembler from the Main Menu.
- ☛ Specify C700 instead of MASM in each of the target directory prompts.
- ☛ Install MASM in an independent tree. MASM will have its own complete tree structure, so any identically named utilities or files that exist between the new MASM tree and your high-level language (or previous MASM version) trees will be preserved.

If you select this option and want to use the newest versions of the Programmer's Work Bench, CodeView, and other programming utilities loaded during MASM setup, you will need to make sure the directory that contains your executable MASM files (default \MASM61\BIN) comes before other language \BIN directories in your MS-DOS PATH statement.

If SETUP detects files that are named and located identically to files it is about to install, it checks the time/date stamps of those files. If the files are newer than the files SETUP is about to install, and the file is supplied by another Microsoft language product (other than MASM), you are warned and given three options:

- ☛ Copy new files over old files. This deletes the old files from your hard disk.
- ☛ Do not copy new files, and keep the older versions. The new versions are not copied to your hard disk.
- ☛ Exit SETUP. If you exit SETUP you can save your old files in another location.

There are two exceptions:

- ☛ If you choose to install the new MASM.EXE utility, your old MASM.EXE is renamed OLDMAASM.EXE and left in the same directory.
- ☛ You are warned if SETUP is about to overwrite any version of LINK.EXE that is different from the one SETUP is about to install.

If you will be using Microsoft FORTRAN, BASIC, or C/C++ with MASM, you need to activate the appropriate PWB extensions (PWBFORT.XXT for FORTRAN, PWBBASIC.XXT for BASIC, and PWBC.XXT for C/C++). These are located in the C:\MASM61\BIN directory. To activate an extension, change the .XXT extension to .MXT. Language extensions provided with earlier versions of PWB are not compatible with PWB version 2.0, so you must use the new .XXT files if you want to use a language extension.



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**Note** Any extensions you wrote for a previous version of PWB must be rebuilt for PWB version 2.0. Building custom PWB extensions for MASM 6.1 requires the Microsoft C/C++ Version 7 programming set. For more information on PWB extensions, see *Programmer's Guide*.

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## Running MASM

You can run MASM from the MS-DOS command line, or in an MS-DOS application window within the Windows operating system version 3.x. The configuration procedure for MASM to run under the two platforms is slightly different. (For information on using MASM after it is running, see *Programmer's Guide*.)

## Running MASM from the MS-DOS Command Line

If you plan to run MASM from the MS-DOS command line, make sure of three things:

- Your computer has booted with a CONFIG.SYS file that includes the commands listed in NEW-CONF.SYS.
- The environment variables listed in NEW-VARS.BAT are set.
- The MS-DOS extender file DOSXNT.EXE is in the path or current directory.

During SETUP, NEW-CONF.SYS, NEW-VARS.BAT, and DOSXNT.EXE are copied in the directory you specify for executable files (default \MASM61\BIN).

## Running MASM Within the Windows Operating System

If you plan to run MASM within the Windows operating system version 3.x, you may want to add some of the MASM utilities to a program group in the Program Manager. MASM.GRP is copied to the \BIN directory you specify during SETUP for your executable files.

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**Note** Make sure the MASM61\BIN directory is in the current path before you

add MASM.GRP to your Program Manager. You may need to exit the Windows operating system to verify the current path. If the directory MASM61\BIN is not part of the current path, you will have to add the MASM.GRP program items and icons individually.

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#### Adding the MASM Program Group

1. Open the Program Manager.
2. From the File menu, choose New.
3. Select Program Group.
4. Choose the OK button.
5. Type *DRIVE:* \MASM61\BIN\MASM.GRP and press ENTER

*DRIVE* is the MASM-resident drive. (If you specified a different directory for your executable files during the SETUP program, type that as the path for MASM.GRP instead.)

The Program Manager adds a new MASM Program Group. It has five program items: Programmer's WorkBench, MASM 6.1 Reference, CodeView, MS-DOS CodeView, and WXServer.

Once you have added your MASM program group and included the statements from NEW-SYS.INI to your SYSTEM.INI file, you must exit the Windows operating system to save your changes. Restart the Windows operating system to use the items in your new MASM program group.

For more information on adding program items and groups to your Windows operating system, see your Windows operating system *User's Guide*. For information on using PWB, CV or WX Server, see *Environment and Tools*.

## Getting More Information

While SETUP is running, press F1 during any screen to access more information on the highlighted option.

For information on particular components, commonly asked questions, or information not available at the time of printing, use SETUP's Main Menu to view the README.TXT file.

If you have checked these sources as well as information found elsewhere in the documentation set, and you need to contact Microsoft Product Support

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Services, see the information on contacting Microsoft located in the front of *Environment and Tools*.