

SECTION I - - Learning Soft-ICE

CHAPTER 2

Getting Started

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2.1 The Diskettes

Soft-ICE comes on either a 5 1/4" diskette or a 3 1/2" diskette.

When you run Soft-ICE, the name of the person that your copy of Soft-ICE is licensed to is displayed on the screen as a deterrent to software pirates. The Soft-ICE diskette is not physically copy-protected for your convenience. For our convenience, we appreciate your high regard for our licensing agreement. It is important to make a duplicate copy to be used only for backup in case the original diskette is damaged.

A directory of a Soft-ICE diskette will show the following files:

- S-ICE.EXE
- S-ICE.DAT
- LDR.EXE
- MSYM.EXE
- EMMSETUP.EXE
- UPTIME.EXE
- README.SI
- SAMPLE.EXE
- SAMPLE.ASM
- SAMPLE.SYM

S-ICE.EXE is the Soft-ICE program.

S-ICE.DAT is the Soft-ICE initialization file.

LDR.EXE is the Soft-ICE program and symbol file loader.

MSYM.EXE is the Soft-ICE symbol file creation program.

EMMSETUP.EXE is a program that allows you to customize the way your system will use expanded memory.

UPTIME.EXE sets the time to that of the real time clock.

README.SI is a text file containing information about Soft-ICE that did not make it into this manual.
 SAMPLE.EXE is a short demonstration program that is used with the tutorial.
 SAMPLE.ASM is the assembly language source file for the demonstration program.
 SAMPLE.SYM is the symbol file for the demonstration program.

2.2 Loading Soft-ICE

Before running Soft-ICE, copy all of the files on the distribution diskette to your hard disk.

These files should be placed in a directory that is accessible through your alternate path list.

S-ICE.EXE can be loaded as a device driver in CONFIG.SYS or can be run as a program from the command line. To use many of Soft-ICE's features, S-ICE.EXE must be loaded as a device driver in CONFIG.SYS.

Note :

If you do not have extended memory, Soft-ICE can NOT loaded as a device driver. Instead, it must be run from the DOS prompt.

2.2.1 Loading Without Extended Memory

When no extended memory is present, Soft-ICE loads it at the highest memory location possible. The memory used by Soft-ICE is then 'mapped out', making it invisible to DOS programs. Since the total memory visible to DOS its programs is less after Soft-ICE loads, it is recommended

that you load Soft-ICE before any TSR's or control programs.

If you do not have extended memory, simply enter:

S-ICE

2.2.2 Loading With Extended Memory

Loading Soft-ICE with extended memory can be done in one of two ways:

1. Install S-ICE.EXE as a driver in CONFIG.SYS,
 This method is necessary if you will be using one
 the following capabilities:
 - * Sharing memory with programs that use
 extended memory by using ROM BIOS calls
 (VDISK.SYS, RAMDRIVE.SYS,
 HIMEM.SYS, cache programs, etc.).
 - * Using Soft-ICE's EMM 4,0 capability,
 - * Using Soft-ICE for symbolic or source level

debugging.

- * Using back trace ranges.

- * Using Soft-ICE with other Nu-Mega products such as MagicCV,

When loaded as a driver, Soft-ICE allocates a portion of extended memory for itself and its associated components so there can be no memory conflicts. S-ICE.EXE must be loaded in CONFIG.SYS before any other driver that allocates extended memory is loaded (e.g., VDISK.SYS, RAMDRIVE.SYS). Generally Soft-ICE works best if it is the first loadable device driver installed in CONFIG.SYS.

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For users that are new to Soft-ICE it is advisable to load Soft-ICE as the first driver in CONFIG.SYS with the following statement:

```
device = drive: \path\S-ICE.EXE /SYM 50
```

Drive and path specify the directory where S-ICE.EXE is located. This statement will load Soft-ICE at system initialization and will be adequate for the tutorial. However, Soft-ICE will not be installed for some of its more powerful features such as EMM 4.0. You can reconfigure Soft-ICE with those features enabled after you have experimented a bit. If you already have experience with Soft-ICE or would like to set up Soft-ICE with those features immediately, please read chapter 6 (Soft-ICE Initialization Options).

Caution:

When installing any new device driver for the first time on your system, it is advisable to have a boot diskette available. This precautionary measure is for the unlikely event that the default setup of the device driver is not compatible with your system.

If you are not sure how to edit your CONFIG.SYS file, refer to your system user's guide or your text editor user's guide for instructions. After you have modified your CONFIG.SYS file, you must reboot your system to have the changes take effect.

2. Run Soft-ICE from the DOS Prompt by typing

S-ICE. Before actually loading, Soft-ICE will display a loading message and prompt. To prevent this prompt, place the word EXTENDED in the S-ICE.DAT file. See section 6.4 for more information on the S-ICE.DAT file. Using this

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method, S-ICE.EXE is automatically loaded into the top of extended memory, whether or not anything else is already there. If you know you will not have any other programs using extended memory, this method is acceptable. When loaded with this method, Soft-ICE occupies ZERO bytes of conventional memory. The command you use is:

S-ICE

Notes:

You can NOT enable all of Soft-ICE's features when Loading from the command line. If you will be using Soft-ICE as a stand-alone debugger, it is recommended to Load Soft-ICE from CONFIG.SYS.

If you want to load Soft-ICE as a device driver, but don't want Soft-ICE to be resident all of the time, you should use the /UN loading switch. Refer to section 6.3.1 for more information.

2.2.3 Configuring Soft-ICE for a Customized Installation

You can customize Soft-ICE with Soft-ICE loading switches in CONFIG.SYS and with the Soft-ICE initialization file S-ICE.DAT. The CONFIG.SYS loading switches allow you to customize how the extended memory will be reserved by Soft-ICE. The initialization file S-ICE.DAT allows you to specify configuration options, assign commands to function keys, and define an auto-start string. An auto-start string is used to execute a series of commands that you use every time you install Soft-ICE. for more information about customizing Soft-ICE, refer to chapter 6.

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2.3 Unloading Soft-ICE

Occasionally you may need to unload Soft-ICE. A typical reason for unloading Soft-ICE is to run a program that uses 80286 or 80386 protected mode instructions. To unload Soft-ICE, enter:

S-ICE /U

This command places the machine back in real address mode. If Soft-ICE was initially loaded from CONFIG.SYS When the memory is still reserved for Soft-ICE and can not be used by other software. If Soft-ICE was initially loaded from the command line, unloading frees up the memory

consumed by S-ICE.EXE.

Caution:

If you have any backfilled memory in your system, or if expanded memory is currently being used, unloading Soft-ICE could crash your system.

2.4 Reloading Soft-ICE

Soft-ICE can be re-loaded at any time even if it had initially been loaded in CONFIG.SYS. If Soft-ICE had initially been loaded in CONFIG.SYS then the original configuration options (EMM 4.0, symbols and source...) are still in effect. To reload Soft-ICE, enter:

S-ICE