

Installing/Troubleshooting SIMION 7.0

Introduction

SIMION 7.0 is distributed on two diskettes. These diskettes contain SIMION, the Walk-About GUI file manager, and the EDY editor along with a collection of examples to help you get started with SIMION.

Installation of SIMION 7.0

Installation Steps

To install SIMION, put the SIMION CD in an appropriate drive, click **Start**, and select **Run**. Select **setup.exe** in the root directory of the CD and click **OK**.

The SIMION programs will be installed into the **c:\sim7** program directory by default (*you can select another drive and/or directory name*). The demonstration files will be loaded into subdirectories created below the program directory (*e.g. c:\sim7*) by the installation program.

The installation program will ask you if you want the EDY editor and its personality files installed in the windows directory so that both SIMION and Walk-About can always find them. It is suggested that you answer **yes** unless you want to use another editor (*see Appendix H for alternate editor selection details*).

You will also be asked if you want a shortcut to SIMION created on your desktop. It is suggested that you answer **yes** (*you can always delete the shortcut later*).

At this point the installation program will now install SIMION, the Walk-About GUI file manager, the EDY editor, and a collection of demonstration file directories into the designated installation directory (*e.g. c:\sim7*). The installation program will add a SIMION 7.0 program group in the Start - Programs area that you can use to access SIMION, Walk-About, and EDY as you wish.

Uninstall Steps

The SIMION 7.0 program group contains an Uninstall program that can be used to remove SIMION from your computer. The installation directory (*e.g. c:\sim7*) may remain after the uninstall process completes, because you may have created files in these directories (*e.g. by refining .PA# files to run some demos*). Feel free to delete these extra files manually and remove the remaining directories.

At the time of its first use, SIMION's GUI automatically creates the **C:\Files.Gui** directory for its own files. This directory and its files will **not** be removed by uninstall. If you no longer plan to use either SIMION or Walk-About on the computer you may delete these files and the **C:\Files.Gui** directory too.

Program Checkout

Double click on the SIMION desktop shortcut to start (*or select SIMION from the SIMION 7.0 program group in the Start - Programs area*). The program will install its required files, and a Program Banner should appear. Be sure to read the GUI introduction banner and take the time to

Installing/Troubleshooting SIMION 7.0

Program Banner should appear. Be sure to read the GUI introduction banner and take the time to learn about help (**F1 key**) and object help. After a few button clicks you should be looking at the Main Menu screen.

If you have launching problems check the troubleshooting section at the end of this appendix.

Accessing SIMION Via Mouse and Keyboard

Access to SIMION by mouse and keyboard *requires* that its window have input focus (*it is the foreground window*) **and** that the cursor is within the **client** area of the window (*a GUI cursor is visible – e.g. a German cross like object*). Move the mouse cursor into SIMION's client area (*GUI screen area*). If the cursor doesn't automatically change from a Window's cursor to a GUI cursor, click the left mouse button to establish input focus. Now the cursor will be the GUI cursor.

Notice that many buttons have their first character underlined. This means you may access them directly from the keyboard (*when the cursor is in the window's client area*). When you move the cursor out of the window's **client** area the GUI cursor will be changed back to the Window's cursor and the button underlines will be removed to tell you that the buttons are no longer keyboard accessible. *For more information on SIMION's GUI see Appendix F.*

Remember: *Keyboard access requires that SIMION's window has **both** input focus and that the cursor is in the client area (GUI cursor visible).*

Screen Sizing Test

SIMION always comes up as a **full screen adjustable** window (*not maximized*). You can resize the window if you like by normal Windows *methods* (*by dragging the edges or clicking the maximize button*). SIMION will automatically adjust its objects to fit the currently defined window size. Scroll bars will appear if you resize the window's client area below its minimum limits (*640 in x by 480 in y*). Try sizing and moving SIMION's window.

XORed Rectangle Video Test

Many (*dare I say **most***) windows video drivers do not draw XORed rectangles properly (*they grow hair and other odd features*). This test will confirm whether you are the proud owner of one of these contraptions and allow you to compensate for it.

From the Main Menu screen click the **Adjust** button. Now click the **Video Options** button. The lowest button on the Video Options screen has a small black rectangle. Depress the button. Does the rectangle look better now (*and SIMION's cursor as well?*). Congratulations! You have a defective video driver. SIMION is now compensating for it (*and will from now on*).

Setting the Directory Rescan Flag

SIMION 7.0 uses different initialization files than 6.0 (*see the Appendix D supplement*). This means that all preferences have assumed their default values (*colors, sounds, delays, and etc.*). You might want to take the time now to establish your preferences.

Remember if you want to disable initial rescans of each drive's directory, click the **Adjust** button, then the **Other Options** button, and then switch the **Scan On** button to **Scan Off**.

Exiting From SIMION

You can exit from SIMION in the Normal GUI manner (*Esc or Exit button*) **or** by using any Windows close option (*e.g. the close button*).

Program Command Line Options

When starting SIMION you have the option of specifying the default size allocated to new arrays, the default maximum number of ions (*for .ION definitions*), and where ion trajectory image files are to be stored via the program command line. The following example serves to illustrate the use of these command line options:

SIMION 1000000 #2000 !

- The first number (1,000,000) specifies that the default array memory allocation should be a million points (default is 100,000). A simple number is used to define default array memory.
- The second number (#2000) specifies that memory for 2,000 ions (default is 500) should initially be allocated. The # character is used to designate ions.
- SIMION normally stores its ion trajectory image files (temporary files) in the current project directory. However, this will not work if the current project directory is on a CD (read-only media). The '!' character (space separated), tells SIMION to use the designated TMP, TEMP, or Windows directory (in that order). This allows SIMION demos to be stored and run on a CD (no file saving to CD is allowed).

The command line options can appear in any order. The easiest way to use these features is to modify the command line in SIMION's shortcut to specify the options you desire.

NOTE: When Using an Editor Other than EDY

SIMION 7.0 uses the EDY editor as its default editing tool. This is a MSDOS based editor. **Appendix H** has all the information required to access the alternate editor of your choice.

The Various Demo Directories

The installation program creates a collection of demo subdirectories below the program installation directory (e.g. C:\SIM7). Each of these directories contains one or possibly more SIMION demos or projects. These should serve to get you started and help demonstrate some of SIMION's power.

Appendix C contains a few step-by-step examples to start learning SIMION by using some of these demos. This is a good way to get a little cockpit experience before wading through the rest of the manual.

*Note: Many of the demo directory names begin with a leading underscore (e.g. _DRAG). In order to maximize the compression of the demo files (to facilitate distribution) the potential arrays in these directories were not refined (all non-electrode points were set to zero). **This means that you must perform certain actions on the files in these directories before their demos can be run successfully.** Each directory contains a **README.DOC** file that explains what actions you must take to prepare their demos. **Be sure to read this file and perform the required actions before trying to run any demos in a leading underscore directory.***

What is Walk-About?

Walk-About is a separate functioning version of the GUI File Manager used in SIMION. It is provided because users may want to make use of the GUI File Manager outside of SIMION. To execute Walk-About, *either* click on its shortcut in the SIMION 7.0 program group *or* create a copy of its shortcut and drag it to your desktop.

Installing/Troubleshooting SIMION 7.0

Virtual Memory

Virtual memory is no substitute for RAM. *It only allows what flat wouldn't fit before, to now proceed at a infuriatingly slow pace.* Virtual memory isn't free either. It requires hard disk space. The 2 Gigs of virtual memory available in Win32 is stolen from your free disk space as needed. Thus if there is not enough memory for SIMION to create a legal sized array ($\leq 50,000,000$ points), chances are good that either there is not enough free disk space available (*typically Windows 95 or 98*) or the disk space requirement is currently above that currently allocated for virtual memory (*Windows NT*).

Virtual Memory in Windows 95 and 98

Virtual memory is allocated automatically (*by default*) and is only limited by the available free disk space (*usually on the C: drive*). You do have the option via the System icon on the Control panel to designate: An alternate drive, Maximum virtual memory, and minimum virtual memory (*space to reserve*). If you plan to use very large arrays it is often prudent to select another drive that has more than 2 Gigs free.

Virtual Memory in Windows NT

Windows NT allocates virtual memory based on preset limits of space reserved on one or more drives (*volumes*). If you are going to make full use of virtual memory you must allocate a total of 2 Gigs across your available volumes. This can be done using the Performance tab via the System icon on the Control panel. If you plan to use very large arrays it is often prudent to select a drive that has more than 2 Gigs free and allocate only from it.

General Troubleshooting

The following is provided to assist you in troubleshooting:

Some General Questions

How can I get the fastest SIMION performance on my machine?

Close all other active programs to maximize SIMION's CPU and Memory resources.

What is the quickest way to see what something does or learn how to use it?

Point to the object or area and hit the <F1> key.

*If the help screen has an **Object Help** button click it if you want to learn how to use that class of objects properly.*

If all else fails, read the manual!

The number panel values change too quickly for my taste when I try to adjust them using the mouse buttons. Can I adjust the mouse button repeat rates?

*Yes! Access the Delays Adjust Screen: Adjust Delays (from Main Menu Screen). Click the **Repeat Delays** button and move slider more to the **right**. Check by hitting the letter **t**. Click **OK** to return.*

Installing/Troubleshooting SIMION 7.0

The GUI File Manager seems to always scan each drive I select at least one time in a SIMION session. This takes time (*I have a very large disk*). Can I turn this off?

Yes! Access the Other Options Adjust Screen: Adjust Other (from Main Menu Screen). Click the Scan ON button so it reads Scan OFF. Click OK to return.

Users of SIMION Versions 2.0 - 5.0 Problems

I marked an area in Modify, clicked the right mouse button and the screen zoomed. I was expecting the area to be filled.

*SIMION 7.0 uses the **right** mouse button for 2D view zooming. The equivalent function in **Modify** is now the <Ctrl> **right** mouse button, clicking the **Replace** button, or just hitting the <R> key.*

What happened to the RPA program? How do I create my fast adjust files?

*If you **Refine** a .PA# file, SIMION will automatically invoke the equivalent of RPA in **Refine**.*

Startup Problems

If you had trouble getting off the ground the following may be of help:

I get a message about not enough RAM. I have 32 Megs what is wrong?

Your disk may be almost full and there is not enough room for the virtual file increases needed to run SIMION. You can either quit running your other programs or increase the virtual memory (e.g. delete trash files and/or increase virtual memory as discussed above).

For whatever reason I just cannot seem to get SIMION to start running properly.

The best suggestion is probably back to the basics. First Uninstall SIMION. Now reinstall it from the distribution diskettes. If that doesn't work consider cleaning your diskette drive or maybe the distribution diskette is defective.

Kick-out or Lockup While Running Problems

I was in the GUI File Manager, clicked the Edit button, the screen flashed, but no editor appeared.

*SIMION's editor **EDY.EXE** and its personality file **EDYSET.EDY** must be on the current search path (e.g. **C:\Windows**) to be found and used by SIMION. Adjust your search path or copy these files into a directory that is on the current search path (e.g. **C:\Windows**). You could also reinstall SIMION and let the installation program automatically place a copy of EDY in the Windows directory.*

I did something in SIMION and suddenly I get a Windows terminating program message.

*This **should** be a rare event. Try getting out of all programs except SIMION and see if you can induce termination again. If not, it is likely that Windows is having problems keeping the currently active horde of programs in resources.*

If on the other hand you can reproduce the error repeatably using a fixed set of steps, I want to know about it. E-mail a description of what happens and how to induce it to:

Installing/Troubleshooting SIMION 7.0

dhl@inel.gov. I will probably want to contact you for more information so include your phone number too!

Strange or Erratic Behaviors

SIMION seemed to work OK then I started having trouble saving files or scanning for directories or things just seem broken.

You may be out of disk space. Check this first! You should have at least 100 megabytes free at all times.

*SIMION stores temporary files in the current drive (for ion trajectories and etc.). It is possible that you have filled up your disk with ion trajectories. This can be avoided by either depressing the **Rerun** button or raising the **R** button when flying ions (ion trajectory images are then not saved in a temporary file). This trick is very useful for watching ions stranded in an ion trap for extended periods of time.*

If you are on a network there is a chance that for some reason (unrelated to SIMION) your network has starting saving files as read-only (YES this has happened). Use SIMION's file manager (or Walk-About) to determine and reset any read-only file attributes. Be sure to check the GUI's private directory too, C:\FILES.GUI. If you find read-only files, make sure network support finds and fixes your problem.

If all else fails, erase all the files in the C:\FILES.GUI directory and/or re-install SIMION from the distribution diskettes.

Video Display Problems

I only see part of the SIMION screen and its Window has scroll bars. What is Wrong.

SIMION requires that the client area of the Window be a minimum of 640 x 480 in size. This means that your screen resolution must be 800 x 600 or higher. Otherwise, scroll bars will be used so that you can hug and chalk around the 640 x 480 minimum SIMION required display area.

When I switch between SIMION and other applications its colors or some other application's colors go strange. However, when SIMION has focus (is top window) its colors return to normal.

Check your display settings. Chances are that you are running in 256 colors. To avoid this problem (caused by automatic reallocation of palette colors) select 16K, 32K, 64K, or pure RGB (16 million) colors. These drivers use rgb colors and not palette colors.

Potential Array Problems

Some of my potential arrays take a long time to refine. The problem appears to be worse with long skinny arrays.

As array dimensions deviate more from being equal (square), SIMION cannot skip as many points for preliminary refining. In the limit for very long and thin arrays skipped point refining will not be possible, or will not give significant time savings. To avoid this problem increase the size of your minimum dimensions. You will require more memory, but the refine times can be dramatically reduced.

Installing/Troubleshooting SIMION 7.0

SIMION refuses to allow me to adjust the array dimensions to create a large 100 x 100 x 100 potential array in the New function.

You have to increase the size in the Max PA Size panel (on NEW screen) to at least 1,000,000 points. Then the desired size can be set. SIMION may still balk because it is out of virtual space (see discussion of virtual memory above).

SIMION refuses to load a potential array - gives out of memory error.

If you are loading into an existing PA (not into an empty PA) the memory required for the PA file to be loaded exceeds the memory allocated to the existing PA. You will either have to load the PA into the empty PA region or remove all PA's from RAM and then load the PA into the empty PA region.

If you are loading into an empty PA region, you have reached a virtual limit. See discussion on virtual memory above for more information.

SIMION refuses to allow the Double function to resize an array or the nx, ny, or nz adjust panels within the Modify function don't allow me to increase PA dimension to those I desire.

When a potential array is created or loaded into an empty PA, SIMION allocates a fixed amount of memory (thus max size) for the potential array. Your resizing efforts were blocked because they would have exceeded the memory allocated for the PA's region.

*The best way to deal with this is to save the current potential array (if it has not already been saved). Now click the **Remove All PAs From RAM** button (on the Main Menu Screen). Compute desired final size for the expanded array (maximum number of points). Enter this size in the **Max PA Size** panel object (Main Menu Screen). Now reload the desired PA into the empty PA region. SIMION will allocate the amount of expansion memory you desire and you can proceed with expanding the size of the potential array.*

Printing Issues and Problems (Read Appendix G)

I want the highest quality printed output. What should I use?

*The highest quality output (smooth and accurate lines) is obtained with SIMION's printer language drivers (e.g. **PostScript, PCL5, HPGL2, or HPGL**). This is because they (unlike Windows integer printer drivers) output floating point numbers to the printer (more accurate). **Note: Your printer must support the selected language if used.***

However, if you are more interested the quality of the printed annotations, then use a Windows printer driver, because it supports TrueType fonts.

I can't get SIMION to output in color to my color printer or plotter.

*The Print Control Screen has a **B/W** button. Click this button to toggle to **Color**. Now your output should be in color.*

Can I change the width of lines output in B/W?

*Yes! SIMION translates each color into a line width. Use the **Options** or **Opt** button on the Print Control Screen and adjust the desired colors' width control panels (at the bottom of the screen). **Note: Line widths are adjustable for Windows printers and printer languages except HPGL.***

Installing/Troubleshooting SIMION 7.0

Can I change the width of lines output in color?

Yes! SIMION uses the width of the color white (color 15 - lower right corner) for all colors in colored vector printing. Adjusting this width can have positive or negative impacts on what you get.

How do I send printer output to a file?

*If you are sending your output to a Windows printer use the **Options** button on the Print Control Screen, depress the Use File button and enter the destination file's name in the ioline object to the left. SIMION replaces the existing contents of Windows printer files.*

*If you are using a SIMION printer language driver (PostScript) click the **Options** button on the Print Control Screen and change the device/file name to the file name you want (e.g. C:\PRN to TEST.prn). Note: SIMION appends (adds) all printer output to the designated device or file for a printer language driver. Normally you will only want to output a single frame to a print file. Thus, you should change file names before each print to file.*

How do I output to a Windows Clipboard or Metafile?

*If you are currently sending your output to a Windows printer use the **Options** button on the Print Control Screen, click the **right** button on the **Output Destination** selector object. The clipboard will now be selected. Click the **right** button again and Metafile will be selected. OR click the **right** button once more for Extended Metafile. Note: You will need to enter/edit the filename to use with Metafiles (either type). Now, click the **left** button to work your way one step per click back up the selection list. Thus in SIMION you select an output destination (e.g. clipboard) and then you print to it.*

Remember Output Destinations are remembered between SIMION sessions.

I am having trouble importing SIMION clipboard images and metafiles into my word processor or graphics program.

First, for best results use Paste Special for SIMION's clipboard images because they are metafiles.

*Second, SIMION's clipboard or metafile images may appear enormous in some graphics programs. This is because a scale factor of 10 is normally applied to improve the quality of the image due to the limitations of Windows integer graphics model. You can either live with the issue (drag them to smaller sizes) or use the **Options** button on the Print Control Screen, and change the value on the **Scaling Value** panel object from 10 to 1 (image size will decrease and image quality will probably suffer).*