10 Customization

This chapter describes various ways of customizing SciAn to work well in your environment.

Speeding SciAn up

SciAn is designed to work on workstations with a wide range of computational and graphics capabilities. Settings which work fine when using small datasets on very fast workstations may not be adequate for larger datasets on slower workstations. This section describes a variety of ways to speed up the performance of SciAn.

Interaction

If rotating and moving visualizations within spaces is too slow, you can switch to a faster scheme which draws objects in a simpler way while interacting. See “Setting preferences” later in this chapter.

If you hold down the Alt key while moving a control, changes will be limited to the window you have pressed in until you release the key. This can be useful if the control affects the appearance of an object in another window, such as the brightness control of a visualization object.

If a visualization in a space takes too long to redraw and the delay is annoying, you can temporarily turn off the visualization object by selecting its icon and choosing Turn Off from the Object menu. If you hold down the Alt key while pressing the Visualize button or dragging into a visualization window’s icon corral, the visualization object will be turned off by default. This allows you to set the controls and then turn the visualization object back on.

Scripts

Scripts typically contain a bunch of code to set up the visualization and then some recording commands. If the setup code is taking too long to run, you can speed it up by enclosing it in a setup block like this:

```
begin setup
        ...all the lines to set up the visualization go here
end setup
```

Within the `setup` block, most windows will not be redrawn. When the `end setup` command is read, all the windows will be redrawn. Because most visualization objects are not calculated until they need to be drawn, this will delay nearly all of the work until the end of the setup.

A `setup` block may not contain a `recording` block and vice-versa. This ensures that while you are recording, all windows will be redrawn.

Another way to speed up scripts is to include a `turn show controls off` line near the beginning of the script. This will prevent control panels from being shown in windows on the screen.

Setting preferences

There are several global preferences which can be used to customize your version of SciAn for your work. The preferences are set through a single window which is brought up by choosing the Preferences item from the main menu. Figure 10-1 shows a typical window; the window you see may not have all the items shown here.

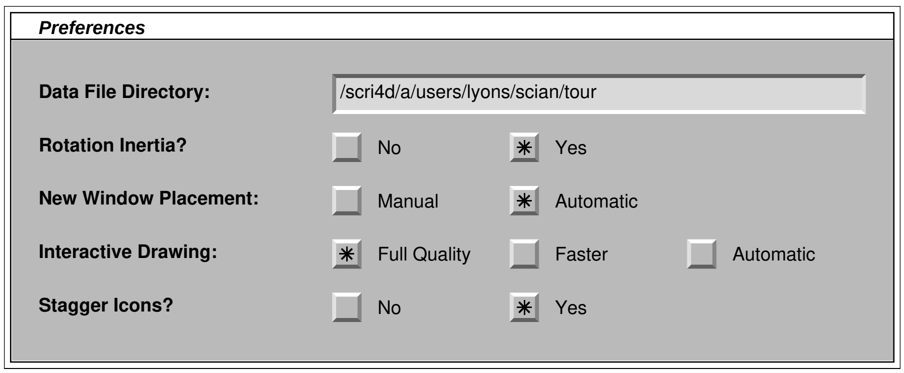

Figure 10-1. *Preferences window*

The Data File Directory text box contains the default directory to open when a new file browser is created. At first, this text box contains a single period (.) to indicate the current directory. You can change this to another directory to open by default. SciAn recognizes the tilde (~) to indicate your home directory. When the tilde is followed by a name, SciAn uses the home directory of the user given by the name.

The Rotation Inertia radio button group determines whether a space under rotation has inertia. If it is set to Yes, when you rotate a space and release the button while moving the mouse, the space will continue to rotate. If it is set to No, the space will stop when you release the button.

The New Window Placement radio group determines how windows are placed on the screen on the Silicon Graphics workstation. If Manual, you must click whenever a window is created to give it a location. If Automatic, the windows will automatically be placed on the screen in a staggered arrangement.

The Interactive Drawing radio button group determines how visualization objects are drawn when an interactive control is being used. If Full Quality is on, objects will always be drawn in full quality. If Faster is on, only the skeletons of objects will be drawn to speed up interaction. If Automatic is on, SciAn will determine whether to use full quality or faster drawing depending on the complexity of the scene.

The Stagger Icons radio button group controls whether icons are staggered in corrals. If the button is selected, icons will be staggered up and down instead of placed in line side by side. This helps keep long icon names from overlapping.

Saving preferences

Preferences are automatically saved in a file called `.scianprefs` in your home directory when you exit SciAn normally. If you exit SciAn abnormally, such as by pressing Control-C on the console, any changes you made to the preferences in that session will not be saved.

Environment variables

SciAn is designed to adapt itself to the workstation on which it is running when it starts up. There may be cases where it is desirable to override some of SciAn's default assumptions, such as when SciAn must share the color table with other programs. This is done by means of environment variables which are set before SciAn is run.

Environment variables are set in most shells using the `setenv` command, which works like this:

`setenv` *variableName value*

When a command like this has been issued, the environment variable *variableName* is set with a value of *value*. The *value* is optional, and if it is not included, the environment variable is set with a blank value. This is sufficient for all but a couple of the variables recognized by SciAn. To unset an environment variable, use the `unsetenv` command like this:

`unsetenv` *variableName*

Some shells have an `env` command which can be used to set environment variables temporarily while a program is running. With some shells, the `setenv` command with no arguments lists all variables set. If you have any question about how this works on your system, consult the documentation or enter `man setenv`.

The following is a list of all environment variables recognized by SciAn:

`SCIAN_SHOW_CONFIG`
: If this variable is set, SciAn will print all the decisions it makes about the configuration of the system to standard output. This is a good first step in troubleshooting a problem with color usage and graphics.

SCIAN_VETO_DOUBLE

Normally, SciAn will use double buffering if there are enough bit planes to do it. You can veto double buffering by setting this environment variable. Depending on what kind of workstation you are using, this may improve the quality of the images, but it will increase the amount of flashing on the screen.

SCIAN_VETO_RGB

Setting this variable vetoes the use of full color (RGB) mode, even if your workstation appears to have enough bitplanes to use it.

SCIAN_VETO_CMAP

Setting this variable vetoes the use of color map mode, even if your workstation appears to have enough bitplanes to use it. This is handy if you want SciAn to leave the color map entirely alone.

SCIAN_COLOR_BEG *colorBeg*

When running on a system in color map mode, SciAn must allocate colors from the system's color table. Normally, SciAn will start with color 256 on a system with nine or more color map bitplanes. This works well with most systems; however, if you are running a program which requires values within that range, you may want SciAn to leave a certain range of colors alone. To do this, set the environment variable SCIAN_COLOR_BEG to the number of the color with which you want SciAn to start.

SCIAN_N_COLORS *nColors*

Normally, SciAn allocates all colors from the beginning color (see SCIAN_COLOR_BEG) through the end of the color map. If you want SciAn to stop after a certain number of colors, you can set the SCIAN_N_COLORS variable to the number of colors to use.

SCIAN_VETO_RGB_GOOD_FOR_UI

SciAn will use RGB mode for user interface windows by default, unless the number of bits for red, green, and blue are different. You can force SciAn to use color map mode by setting this environment variable.

SCIAN_FORCE_RGB_GOOD_FOR_UI

If the number of bits for red, green, and blue are different, SciAn will not use RGB mode for user interface windows. This is because SciAn is not guaranteed to be able to use pure gray colors in this case. You can force SciAn to use RGB mode anyway by setting this variable.

SCIAN_RECORDER_DEV *portPath*

The value of this environment variable gives the path name of the default serial port to use for communicating with the videodisc recorder driver. Use the complete path name (e.g. /dev/ttyz7). The device can be changed within the recorder driver control panel. The default recorder device for the LVR-5000 is /dev/ttyd4 and for the TQ-2026F is /dev/ttyd2.

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