

The graphical user interface (GUI) is made up of four main components: a console, control panels, dialog boxes, and graphics windows. When you use the GUI, you will be interacting with one of these components at all times.

This chapter describes the GUI components and explains the procedure to customize the attributes of the GUI (including colors and text fonts) on UNIX systems, to better match your platform environment. It also explains the procedure to use the help system in TGrid.

The following sections are described in this chapter:

- [Section 3.1: Console](#)
- [Section 3.2: Dialog Boxes](#)
- [Section 3.3: Panels](#)
- [Section 3.4: Graphics Display Windows](#)
- [Section 3.5: Customizing the GUI \(UNIX Systems\)](#)
- [Section 3.6: Using the GUI Help System](#)

## 3.1 Console

The TGrid Console is the main window that controls the execution of the program.

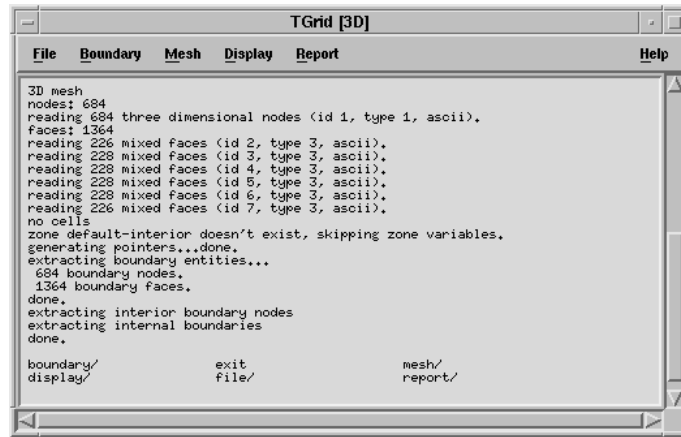


Figure 3.1.1: The Console

You can interact with TGrid through the Console in either of the following ways:

- graphical user interface (GUI)
- text user interface (TUI)

The Console contains a terminal emulator for the TUI and a menu bar for the GUI.

### 3.1.1 Terminal Emulator

The terminal emulator behaves in a similar manner as the “xterm” or other UNIX command shell tools, or to the MS-DOS Command Prompt window (on the Windows system). It allows you to interact with the TUI menu. For more information on the TUI, see Chapter 5: [Text User Interface](#).

All textual output from the program is printed in the terminal emulator, and all typing is displayed on the bottom line. As the number of text lines grows, the lines will be scrolled off the top of the window. The scroll bar on the right allows you to go back and look at the preceding text.

Use <Control-C> to interrupt the program while it is working. You can also copy and paste operations between the Console and other X Window (or Windows) applications (that support copy and paste).

To perform the copy and paste operation on a UNIX system, do the following:

1. Select the text by highlighting it.
2. Release the left mouse button.
3. Move the pointer to the target window.
4. Press the middle mouse button to paste the text.

To copy the text to the clipboard on a Windows system, do the following:

1. Select the text by highlighting it.
2. Release the left mouse button.
3. Press the <Ctrl> and <Insert> keys together.

### 3.1.2 Menu Bar

The menu bar organizes the GUI menu hierarchy using a set of pull-down menus (see Figure 3.1.2). Menu items are arranged in a logical order to correspond to the sequence of actions that you perform in TGrid.



Figure 3.1.2: The TGrid Menu Bar

A pull-down menu contains items that perform commonly executed actions. Figure 3.1.3 shows the (UNIX) Report pull-down menu.

#### Using the Mouse

To select any item from the pull-down menu, do the following:

1. Click the pull-down menu using the left mouse button.
2. Move the pointer to the item you want to select and click it.
3. Release the left mouse button.



Figure 3.1.3: The Report Pull-down Menu

### Using the Mnemonic (Windows Systems Only)

You can also select a pull-down menu item using the keyboard. Each pull-down menu label or menu item contains one underlined character, known as the *mnemonic*.

1. Press the <Alt> key and the mnemonic character of the pull-down menu to display a menu.
2. When the pull-down menu is displayed, type the mnemonic character associated with an item to select that item. If at any time you want to cancel a menu selection while the pull-down menu is displayed, press the <ESC> key.

## 3.2 Dialog Boxes

A dialog box is a separate, temporary window that is displayed to perform the dialog. The dialog boxes are used to perform simple input/output tasks, such as issuing warning and error messages, or asking a question requiring a yes or no answer. When a dialog box appears on your screen, you should take care of it before moving on to other tasks.

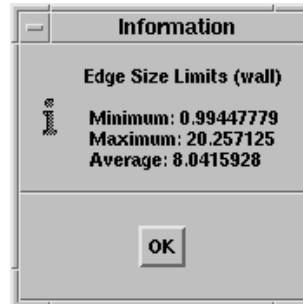
Different types of dialog boxes are described in the following sections.

### 3.2.1 Error Dialog Box



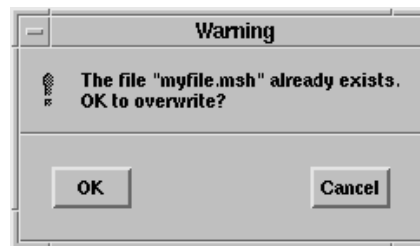
The **Error** dialog box is used to alert you of an error that has occurred. After reading the error information, click **OK** to close the dialog box.

### 3.2.2 Information Dialog Box



The **Information** dialog box is used to report some information to you. After reading the information, click **OK** to close the dialog box.

### 3.2.3 Warning Dialog Box



The **Warning** dialog box is used to alert you of a potential problem and ask you whether or not you want to proceed with the current operation. Click **OK** to proceed with the operation. Click **Cancel** to cancel the operation.

### 3.2.4 Working Dialog Box



The **Working** dialog box is displayed when TGrid is busy performing a task. When the task is done, the dialog box will close automatically.

This is a special dialog box, because it requires no action by you. However, you can abort the task that is being performed by clicking the Cancel button.

### 3.2.5 Question Dialog Box



The Question dialog box is used to ask you a question that requires an answer (Yes or No). Click on the appropriate button to answer the question.

### 3.2.6 Select File Dialog Box

The Select File dialog box allows you to select a file (or multiple files) for reading or writing. You can use it to look at your system directories and to select a file. The appearance of the Select File dialog box will not always be the same.

- When you select the File/Read/Mesh... or File/Read/Boundary Mesh... menu item to read a mesh file, the Select File dialog box will look as shown in Figure 3.2.1(A).
- If you are writing a case file, the dialog box will look as shown in Figure 3.2.1(B).
- If you are reading or writing any other type of file, the dialog box will be similar to that in Figure 3.2.1(B), except that the Write Binary Files and Write As Polyhedra buttons will not appear.

To select files on UNIX systems, do the following:

1. Go to the appropriate directory. You can do this in two different ways:
  - Enter the path to the desired directory in the Filter text entry box and press the <RETURN> key or click the Filter button.  
**Note:** *Include the final “ / ” character in the pathname, before the optional search pattern.*
  - Double-click a directory, and then a subdirectory, etc. in the Directories list until you reach the directory you want. You can also click once on a directory and then click Filter instead of double-clicking.

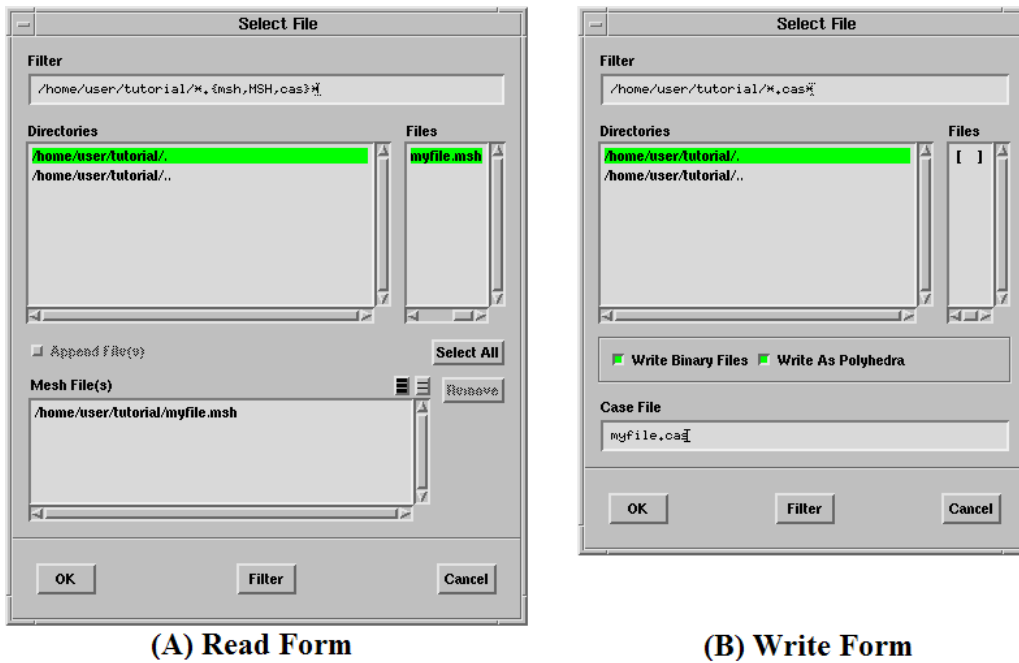


Figure 3.2.1: The Select File Dialog Box

**Note:** In the Directories list, the dot “.” represents the current directory and the double dots “..” represents the parent directory.

- Specify the file name by selecting it from the Files list or entering the file name in the File text entry box (if available) at the bottom of the dialog box. The name of this text entry box will change depending on the type of file you are selecting (Mesh File, Journal File, etc.).

If you are searching for an existing file with a non-standard extension, you may have to modify the search pattern at the end of the path in the Filter text entry box.

- If you are reading a mesh file, the default extension in the search path will be `*.{msh,MSH,cas}*, and only those files that have one of these extensions will appear in the Files list.`
- If you want files with a `.grd` extension to appear in the Files list, change the search pattern to `*.grd*`.
- If you want all the files in the directory to be listed in the Files list, enter `*` as the search pattern.

3. Read multiple boundary mesh or volume mesh files.
  - If you are reading multiple boundary mesh or volume mesh files, the selected file will be added to the list of **Mesh File(s)**. You can then select another file, which will also be added to this list.
  - If you have put only the required files in the working directory and want to read all of them, click the **Select All** button. All the files available in the directory will be added to the list of **Mesh File(s)**.
  - If you accidentally select the wrong file, select it in the **Mesh File(s)** list and click the **Remove** button to remove it from the list of files to be read. Repeat until only the required files are in the **Mesh File(s)** list.
  - You can also read multiple boundary mesh or volume mesh files using the **Append File(s)** option. Open the **Select File** dialog box and read the first mesh file in TGrid. Open the **Select File** dialog box again, enable the **Append File(s)** check button and read the remaining mesh files one after the other.



The **Append File(s)** option will not be accessible while reading the first mesh file. It will be accessible only after reading the first mesh file.

4. To write a mesh file, enter the file name in the **Mesh File** text entry box and click **OK**.



The **Write Binary Files** check button is enabled by default. Binary files take up less space and can be read and written by TGrid more quickly. The binary files are written in double-precision.

You can disable the **Write Binary Files** option to write the file in text format. You can read and edit the text file, but it will require more storage space than the corresponding binary file.

You can also use the following TUI command to toggle the **Write Binary Files** option:

```
/file/file-format
```

5. To write a hexcore mesh, enable **Write As Polyhedra** check button in the **Select File** panel to allow TGrid to handle polyhedral cells. Polyhedral cells are created when hex and tet cells are merged with each other. Enabling this option allows TGrid to export these cells instead of nonconformal meshes.



This option is available only for hexcore meshes.

6. Click **OK** to read or write the specified file(s). Shortcuts for this step are as follows:
  - If the file appears in the **Files** list *and* you are *not* reading a mesh, double-click on it instead of just selecting it. This will automatically activate the **OK** button.



- If you are reading a mesh, you will always have to click OK. Clicking or double-clicking will just add the selected file to the **Mesh File(s)** list.
- If you entered the name of the file in the **File** text entry box, press the <RETURN> key instead of clicking OK.

File selection on Windows systems can be done using the standard Windows **Select File** dialog box. For further instructions, see documentation regarding your Windows system.

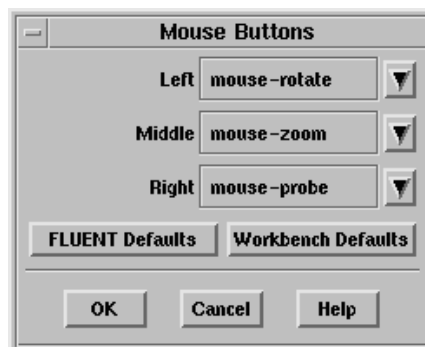
## 3.3 Panels

A panel is similar to a dialog box, but working with a panel is like filling out a form. Panels are used to perform more complicated input tasks. Each panel is unique and employs various types of input controls that make up the form. The various types of controls you will see are described in the following sections.

### 3.3.1 Categories of Panels

After entering the data using the controls of a panel, you can either apply the changes you have made, or abort the changes. Each panel falls into one of two behavioral categories, depending on how it was designed (for applying or aborting the changes).

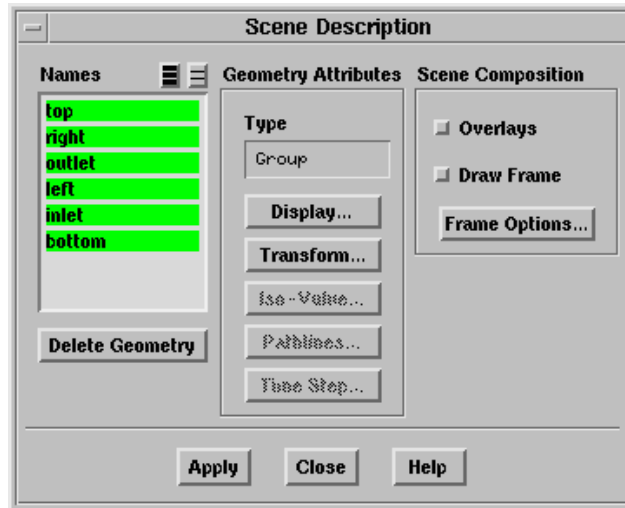
- Some panels are used in situations where you have to apply the changes and immediately close the panel.



This type of panel includes two push button controls:

- OK** applies any changes you have made to the panel and closes the panel.
- Cancel** ignores the changes you have made and closes the panel.

- Some panels are used in situations where you have to keep the panel displayed on the screen after changes have been applied. This helps to quickly go back to that panel and make more changes. Panels used for mesh generation and display often fall into this category.



This type of panel includes two push button controls:

**Apply** applies any changes you have made to the panel, but does not close the panel. The name of this button is often changed to something more descriptive (for example, Sort for the sorting panels).

**Close** closes the panel.

All panels include the **Help** push button used to access on-line help. It displays information about the controls in the panel. The help information will appear in the web browser.

### 3.3.2 Controls of a Panel

Different types of controls in the panels are described in the following sections.

#### Tab



Tabs in the panel are used to mark the different sections into which the panel is divided. The panel may be divided into different sections to reduce the amount of screen space it occupies. Click on a tab to access that particular section of the panel.

#### Button



A button is used to perform a function indicated by the button label. Click on the button to perform the action associated with it.

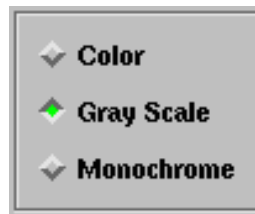
### Check Box



A check box, also referred to as check button is a dialog element that is used to select or deselect an option.

It is located on forms and can appear alone or in groups of two or more and is used to enable/disable an item or action indicated by the label of the check box. Click the left mouse button on the check box to toggle the state.

### Radio Buttons



Radio buttons are a set of check buttons that allow only one to be set in the on position at a time. When you click the left mouse button on a radio button, it will turn on, and all others will be turned off.

### Text Entry



A text entry lets you type the text input. It will often have a label associated with it to indicate what the entry is for.

### Integer Number Entry

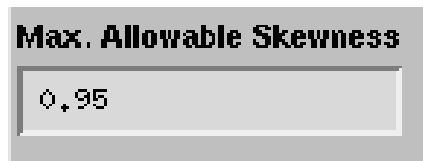


An integer number entry is similar to a text entry except it allows only integer numbers to be entered (e.g., 10, -10, 50000, and 5e4). The integer number entry also has arrow buttons that allow you to increase or decrease its value.

Click on the up (or down) arrow button to increase (or decrease) the value by one. You can increase the size of the increment by holding down a keyboard key while clicking the arrow button. The keys used are:

Key	Factor of Increase
Shift	10
Ctrl	100

### Real Number Entry



A real number entry is similar to a text entry except it allows only real numbers to be entered (e.g., 10, -10.538, 50000.45, and 5.e-4). In most cases, the label will show the units associated with the real number entry.

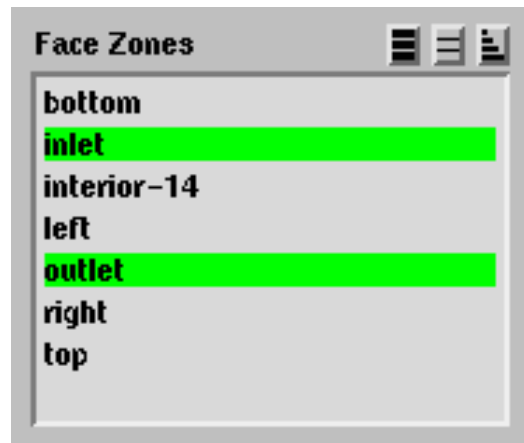
### Single-Selection List



A single-selection list contains two or more items. Each item is printed on a separate line in the list. You can select an item by placing the pointer over the item line and clicking with the left mouse button. The selected item will be highlighted. Selecting another item will deselect the previously selected item in the list.

Many panels will also accept a double-click in order to invoke the panel action that is associated with the list selection.




### Multiple-Selection List



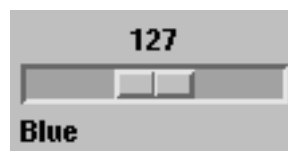
A multiple-selection list is similar to a single-selection list, but allows you to select more than one item at a time.

Click on an item, to toggle its selection state. Click on an unselected item to select it and click on a selected item to deselect it.

There are three small push buttons in the upper right corner of the multiple selection list, which accelerate the task of selecting or deselecting items from the selection list.

- Click  to select all the items in the selection list.
- Click  to deselect all the items in the selection list.
- Click  to invert the selection of items in the selection list.

### Scale



The scale is used to select a value from a predefined range by moving a slider. The number shows the current value. To change the value, do the following:

1. Place the pointer over the slider.
2. Press and hold down the left mouse button.
3. Move the pointer along the slider bar to change the value.
4. Release the left mouse button.

**OR**

1. Place the pointer over the slider and click the left mouse button.
2. Using the arrow keys on the keyboard, move the slider bar left or right to change the value.

### Drop-Down List



A drop-down list is a hidden single-selection list that shows only the current selection to save space.

To change the selection, do the following:

1. Click on the arrow button to display the list.
2. Place the pointer over the new list item.
3. Click the left mouse button on the item to make the selection and close the list.

To abort the selection operation while the list is displayed, move the pointer anywhere outside the list and click the left mouse button.

## 3.4 Graphics Display Windows

Graphics display windows (e.g., Figure 3.4.1) are separate windows that display the graphical output of the program.

- Use the **Display Options** panel to change the attributes of the graphics display or to open another display window.
- Use the **Mouse Buttons** panel to set the action taken when a mouse button is pressed in the display window.

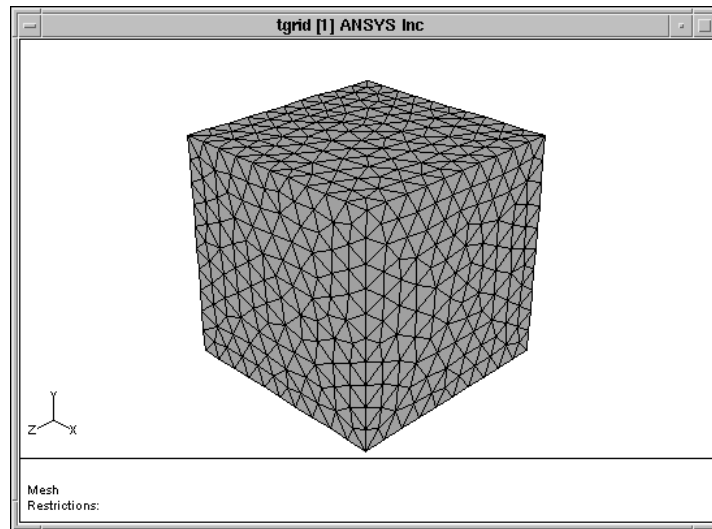


Figure 3.4.1: Graphics Display Window

- To cancel a display operation, press **<Control-C>** while the data is being processed in preparation for graphical display.



You cannot cancel the operation after the program begins to draw in the graphics window.

For **Windows** systems, there are special features for printing the contents of the graphics window directly. These features are not available on **UNIX** systems.

### 3.4.1 Printing the Contents of the Graphics Display Window (Windows Systems Only)

If you are using the Windows version of TGrid, the system menu of the graphics window displayed by clicking in the upper-left corner of the graphics window, contains the usual system commands (move, size, and close). Along with the system commands, TGrid adds three more commands to the menu for printer and clipboard support.

**Copy to Clipboard** places a copy of the current picture into the Windows clipboard. Some attributes of the copied picture can be changed using the **Page Setup** panel.

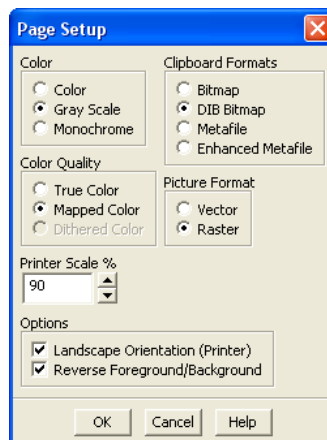
The size of your graphics window affects the size of the text fonts used in the picture. For best results, experiment with the graphics window size and examine the resulting clipboard picture using the Windows clipboard viewer.

**Print...** opens the Windows Print dialog box, which enables you to send a copy of the picture to a printer. Some attributes of the copied picture can be changed using the **Page Setup** panel. More attributes of the final print can be specified within the Microsoft Windows Print and Print Setup dialog boxes (see documentation for Windows and your printer for details).

**Page Setup...** opens the **Page Setup** panel, which allows you to change attributes of the picture copied to the clipboard, or to a printer.

### 3.4.2 The Page Setup Panel

To open the **Page Setup** panel, select the **Page Setup...** menu item in the system menu of the graphics display window.





### Controls

**Color** allows you to specify a color or non-color picture.

**Color** selects a color picture.

**Gray Scale** selects a gray-scale picture.

**Monochrome** selects a black-and-white picture.

**Color Quality** allows you to specify the color mode used for the picture.

**True Color** creates a picture defined by RGB values. This assumes that your printer (or display) has at least 65536 colors, or unlimited colors.

**Mapped Color** creates a picture that uses a colormap. This is the right choice for devices that have 256 colors.

**Dithered Color** creates a dithered picture that uses 20 colors or less.

**Clipboard Formats** allows you to choose the desired format copied to the clipboard.

The size of your graphics window can affect the size of the clipboard picture. For best results, experiment with the graphics window size and examine the resulting clipboard picture using the Windows clipboard viewer.

**Bitmap** is a bitmap copy of the graphics window.

**DIB Bitmap** is a device-independent bitmap copy of the graphics window.

**Metafile** is a Windows Metafile.

**Enhanced Metafile** is a Windows Enhanced Metafile.

**Picture Format** allows you to specify a raster or a vector picture.

**Vector** creates a vector picture. This format will have a higher resolution when printed, but some large 3D pictures may take a long time to print.

**Raster** creates a raster picture. This format will have a lower resolution when printed, but large 3D pictures may take much less time to print.

**Printer Scale %** controls the amount of the page that the printed picture will cover.

Decreasing the scaling will effectively increase the margin between the picture and the edge of the paper.

**Options** contains options that control other attributes of the picture.

**Landscape Orientation (Printer)** specifies the orientation of the picture. If selected, the picture is made in landscape mode. Otherwise, it is made in portrait mode. This option is applicable only when printing.

**Reverse Foreground/Background** specifies that the foreground and background colors of the picture will be swapped. This feature allows you to make a copy of the picture with a white background and a black foreground, while the graphics window is displayed with a black background and white foreground respectively.

### 3.5 Customizing the GUI (UNIX Systems)

On UNIX systems, you can customize the GUI by changing the attributes such as text color, background color, and text fonts. The program will try to provide default text fonts that are satisfactory for the display size of your platform. In some cases, customization may be necessary if the default text fonts make the GUI too small or too large on your display, or if the default colors are undesirable.

The GUI in TGrid is based on the X Window System Toolkit and OSF/Motif. The attributes of the GUI are represented by X Window “resources”. If you are unfamiliar with the X Window System Resource Database, please refer to any documentation you may have that describes how to use the X Window System or OSF/Motif applications. The default X Window resource values for a medium resolution display are as follows:

```
!  
! General resources  
!  
Fluent*geometry:                +0-0  
Fluent*fontList:                *-helvetica-bold-r-normal--12-*  
Fluent*MenuBar*fontList:       *-helvetica-bold-r-normal--12-*  
Fluent*XmText*fontList:        *-fixed-medium-r-normal--13-*  
Fluent*XmTextField*fontList:   *-fixed-medium-r-normal--13-*  
Fluent*foreground:              black  
Fluent*background:              gray75  
Fluent*activeForeground:        black  
Fluent*activeBackground:       gray85  
Fluent*disabledTextColor:      gray55  
Fluent*XmToggleButton.selectColor: green  
Fluent*XmToggleButtonGadget.selectColor: green  
Fluent*XmText.translations:\n    #override<Key>Delete: delete-previous-character()  
Fluent*XmTextField.translations:\n    #override<Key>Delete: delete-previous-character()  
!  
! Console resources  
!  
Fluent*ConsoleText.rows:        24  
Fluent*ConsoleText.columns:     80  
Fluent*ConsoleText.background:  linen  
!  
! Help Viewer resources  
!  
  
Fluent*Hyper.foreground:        black
```

```

Fluent*Hyper.background:          linen
Fluent*Hyper.hyperColor:          SlateBlue3
Fluent*Hyper*normalFont:\
    *-new century schoolbook-medium-r-normal--12-*
Fluent*Hyper*hyperFont:\
    *-new century schoolbook-bold-r-normal--12-*
Fluent*Hyper*texLargeFont:\
    *-new century schoolbook-bold-r-normal--14-*
Fluent*Hyper*texBoldFont:\
    *-new century schoolbook-bold-r-normal--12-*
Fluent*Hyper*texFixedFont:\
    *-courier-bold-r-normal--12-*
Fluent*Hyper*texItalicFont:\
    *-new century schoolbook-medium-i-normal--12-*
Fluent*Hyper*texMathFont:\
    *-symbol-medium-r-normal--14-*
Fluent*Hyper*texSansFont:\
    *-helvetica-bold-r-normal--12-*

```

To customize one or more of the resources for a particular user, place appropriate resource specification lines in that user's file `$HOME/.Xdefaults` or whatever resource file is loaded by the X Window System on the user's platform.

To customize one or more of the resources for several users at a site, place the resource specification lines in an application defaults resource file called `Fluent`. This file should then be installed in a directory such as `/usr/lib/X11/app-defaults`, or on SUN workstations, the directory may be `/usr/openwin/lib/app-defaults`. See documentation regarding your platform for more information.

## 3.6 Using the GUI Help System

TGrid includes an integrated HTML-based on-line help system that provides an easy access to the documentation. Using the graphical user interface, you can access the entire User's Guide and other documentation. The User's Guide and other manuals are displayed in your web browser, and you can use the hypertext links and the browser's search and navigation tools to find the information you need.

There are many ways to access the information contained in the on-line help.

- You can get reference information from within a panel (on UNIX machines).
- You can also request context-sensitive help for a particular menu item or panel.
- You can go to the User's Guide contents page or index, and use the hypertext links there to find the information you are looking for.

- You can also access the other TGrid documentation (e.g., the Tutorial Guide).

TGrid's help system is HTML-based, so you need to have access to a web browser. Install the HTML files from the documentation CD-ROM. See the separate installation instructions for your platform type for information about installing the files from the documentation CD-ROM

This section focuses on the **Help** menu in TGrid and how you can use it (and the **Help** button in each panel) to access the HTML-based on-line help from within TGrid.

### 3.6.1 Opening the User's Guide Table of Contents

To see a list of the chapters in the User's Guide, select the **User's Guide Contents...** menu item in the **Help** pull-down menu.

**Help** → **User's Guide Contents...**

Selecting this item will open the web browser to the contents page of the User's Guide (Figure 3.6.1). Each chapter in the list is a hypertext link that you can click to view that chapter. There is also an **Expanded Contents** link, which will display a list of contents including all section titles in addition to the chapter titles. Each of these is a link to the corresponding chapter or section of the manual.

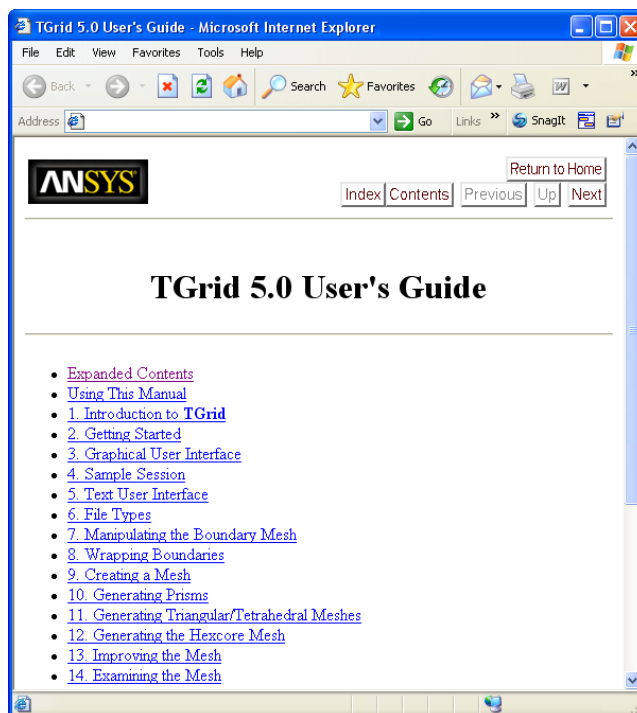


Figure 3.6.1: User's Guide Contents



When you select this item, the web browser will open to the TGrid documentation home page.

### 3.6.4 Using Help

You can obtain information about using on-line help by selecting the **Using Help...** menu item in the **Help** pull-down menu.

**Help** → Using Help...

When you select this item, the web browser will open to the beginning of this section.

### 3.6.5 Accessing the User Service Center Web Site

You can access the Fluent Users Service Center (USC) web site by selecting the **User Services Center...** menu item in the **Help** pull-down menu.

**Help** → User Services Center...

TGrid will direct your web browser to the USC web address.

**Note:** *To link to the USC on UNIX platforms, first install the contents of the TGrid Documentation CD, which contains the files necessary to launch the browser so that you can automatically view the appropriate web pages.*

### 3.6.6 Accessing the Online Technical Support Web Site

You can access the Online Technical Support web site by selecting the **Online Technical Support...** menu item in the **Help** pull-down menu.

**Help** → Online Technical Support...

TGrid will direct your web browser to the appropriate web address.

### 3.6.7 Obtaining a Listing of Other TGrid License Users

You can obtain a listing of current TGrid users when you select the **License Usage...** menu item in the **Help** pull-down menu.

**Help** → License Usage...

TGrid will display a list the current users of the TGrid license feature in the console window.