Chapter 1

Overview of the ODS Graphics Designer

About the ODS Graphics Designer

What Is the ODS Graphics Designer?

The SAS/GRAPH ODS Graphics Designer is an interactive graphical application that you can use to create and design custom graphs. The designer creates graphs that are based on the Graph Template Language (GTL), the same system that is used by SAS analytical procedures and SAS/GRAPH statistical graphics procedures. The ODS Graphics Designer provides a graphical user interface for designing graphs easily without having to know the details of templates and the GTL.

Using point-and-click interaction, you can create simple or complex graphical views of data for analysis. The ODS Graphics Designer enables you to design sophisticated graphs by using a wide array of plot types. You can design multi-cell graphs, classification panels, and scatter plot matrices. Your graphs can have titles, footnotes, legends, and other graphics elements. You can save the results as an image for inclusion in a report or as an ODS Graphics Designer file (SGD) that you can later edit.

Who Uses the ODS Graphics Designer?

The ODS Graphics Designer is generally used by analysts, statisticians, managers, academics, and others who want to graphically explore data or present the results of their

analyses. Users do not need to know about SAS/GRAPH software or the GTL. However, users are often knowledgeable about the DATA step and SAS/STAT procedures.

About SGD Files

An SGD file is a SAS/GRAPH Designer file that has been created using the ODS Graphics Designer and that has an .sgd file extension. The file contains a description of the graph to be rendered. You can open this file in the designer and make changes to the graph. You can also render the graph to an ODS destination by using the SGDESIGN procedure.

About the SGDESIGN Procedure

The SGDESIGN procedure complements the ODS Graphics Designer and is used to render a graph that has been saved as an SGD file. The procedure enables you to run one or more graphs in batch mode and render the graphs to any ODS destination. You can run graphs using different variables against the same or different data.

The basic syntax of the procedure is as follows:

```
PROC SGDESIGN SGD='SGD-file-name' <options>;
```

Here is an example:

```
ods html file="CarsLattice.html";
   proc sgdesign sgd="C:\SGDFiles\CarsLattice.sgd";
   run;
ods html close;
```

You can specify a data set as an option to the procedure. By default, the procedure uses the data set that was used to create the SGD file.

For more information about the SGDESIGN procedure, see the *SAS/GRAPH: Statistical Graphics Procedures Guide*.

Supported Platforms

The ODS Graphics Designer runs in Windows and UNIX operating environments only.

Main Tasks You Can Perform in the ODS Graphics Designer

The following list highlights some of the tasks that you can perform using the ODS Graphics Designer:

- use a gallery of predefined graphs to quickly create a graph. You can also add your own graphs to the gallery.

- create multi-cell graphs, classification panels, and scatter plot matrices

- add plots and reference lines to a graph.

- add and format titles and footnotes.

- add and customize legends.

- change the visual appearance of the entire graph by changing the applied style. You can also develop your own style.

- change the appearance of individual plot elements such as markers and lines.

- change the appearance of the axes. You can also change an axis type and customize the range of values that are displayed on the axis.

- resize the graph.

- copy a graph (image) to the system clipboard to paste directly into other applications.

- create graphs that can be reused with different variables in the same or different data set. These graphs are called shared-variable graphs.

   Note: The shared-variable feature is new in the third maintenance release for SAS 9.2.

Accessibility Features of the ODS Graphics Designer

About the Accessibility Features

The ODS Graphics Designer includes accessibility and compatibility features that improve the usability of the product for users with disabilities, with exceptions noted below. These features are related to accessibility standards for electronic information technology that were adopted by the U.S. Government under Section 508 of the U.S. Rehabilitation Act of 1973, as amended.

If you have questions or concerns about the accessibility of SAS products, send e-mail to **accessibility@sas.com** or call SAS Technical Support.

Accessibility Exceptions

The following table describes accessibility compliance with Section 508. All known exceptions to accessibility standards are documented in the table.

Section 508 Accessibility Criteria	Support Status	Explanation
(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.	Supported with exceptions	Exceptions include the following: • The TAB key cannot access some controls in the Graph Properties dialog box. • Pressing ALT+SPACEBAR activates the system menu of the main application rather than the active window. • No mnemonics are assigned for the menu items. • No keyboard support has been provided to click and drag a plot.

Section 508 Accessibility Criteria	Support Status	Explanation
(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.	Supported	The software does not disrupt or disable any of the keyboard accessibility features incorporated within the operating system.
(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that Assistive Technology can track focus and focus changes.	Supported with an exception	Pressing the TAB key does not change the focus.
(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text.	Supported with exceptions	Where keyboard access is limited because focus cannot be moved via keyboard to some elements, their information is not read by the screen reader. See Criterion (a) for areas where keyboard access is limited. Additional exceptions include the following: • Most of the labels in the Graph Style Editor dialog box are not read by JAWS. • Labels for the edit boxes and frames in the Preferences dialog box are not read by JAWS. • JAWS cannot read the text in the About SAS/GRAPH ODS Graphics Designer dialog box.
(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.	Supported	Images are used consistently throughout the interface.

Section 508 Accessibility Criteria	Support Status	Explanation
(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.	Supported	The software uses standard operating system functions for displaying text.
(g) Applications shall not override user selected contrast and color selections and other individual display attributes.	Supported with exceptions	In a high-contrast large-font color scheme, exceptions include the following: • The icons on the buttons for minimize, maximize, and close on the child windows are not visible. • The text on the menu bar and the title bars of the dialog boxes is displayed in large font. All other text in various dialog boxes is displayed in the normal font.
(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.	Not applicable	The software contains no animation.
(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	Supported	Color alone is not used to convey meaning.
(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.	Supported	Graph properties, styles, and plot properties can be changed to ensure color contrast for a range of vision abilities.
(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.	Not applicable	The software uses no flashing or blinking elements beyond the system caret.
(l) When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	Not applicable	The software contains no electronic forms.

Starting the ODS Graphics Designer

Start the ODS Graphics Designer

In a SAS session, submit either of the following macro statements to start the ODS Graphics Designer:

```
%sgdesign;
```

```
%sgdesign()
```

The designer opens in a separate window. When the designer starts, the following events occur:

- A new internal SAS session is launched, and the designer connects to this session. The designer obtains pertinent information about all libraries, data sets, and formats that have been defined at the time of invocation. The designer can then access these items in the new SAS session.

- The SAS session creates sample data sets that the designer uses to create its sample graphs. The sample graphs appear in the Graph Gallery.

Optional Parameters

The designer macro has several optional parameters:

portNum = *integer*
    Default = 5310. This parameter indicates the port that the designer uses to communicate with the SAS server. If another application is using port 5310, you can specify a different port for the designer.

refresh = *Y* | *N*
    Default = N. If you add or modify any SAS libraries, data sets, or format options, setting this parameter to Y enables the designer to detect your changes without having to be restarted.

dataSets = *Y* | *N*
    Default = N. Some of the plots that are supplied with the designer depend on data sets that the designer creates in the WORK library. If you inadvertently delete some of these data sets, you can re-create them by setting this parameter to Y the next time you start the designer.

Multiple parameters can be used in any order.

To change the server port number to 5320 and re-create the data sets, you can submit the following statement:

```
%sgdesign( portnum=5320 , datasets=Y)
```

To force re-creation of the WORK data sets when you start the designer, submit the following statement:

```
%sgdesign(datasets=Y)
```

To pick up any new libraries, data sets, or format-related option changes in the SAS session while the designer is running, submit the following statement:

```
%sgdesign(refresh=Y)
```