Changes and Enhancements

Introduction

This chapter summarizes the features of SAS/GRAPH software that have been implemented or enhanced for all operating environments since Release 6.12.

General Changes

Producing Graphics Output for the Web

SAS/GRAPH software provides several methods for generating graphics output that can be displayed on the World Wide Web. Most of these methods enable you to create graphs in which the user clicks on areas of the graph to "drill down" to additional graphs or reports.

- The ODS HTML statement enables several SAS/GRAPH procedures to produce GIF graphics and a variety of HTML files for creating Web pages with tables of contents, multiple frames, and drill-down functionality.
- New device drivers automatically generate various combinations of HTML and GIF files.
- The GCHART, GMAP, and GPLOT have new options that provide drill-down functionality with Web output. (See the individual procedures for details.) In addition, these procedures can generate a special data set that contains area and link information for creating custom HTML files with drill-down graphs.

Device Drivers

New device drivers automatically generate one or more HTML and GIF files that can be viewed with a Web browser. These drivers provide a quick and easy way to produce output for use on the Web:

- The GIF driver generates GIF graphics files from SAS/GRAPH procedures. These files can be referenced in an HTML file and viewed with a Web browser.
Changes and Enhancements

The HTML driver creates a series of graphs in GIF format and an HTML file that displays them.

The WEBFRAME driver also creates graphs in GIF format and HTML files, but it produces a Web page whose table of contents contains thumbnail depictions of each graph, plus links to the full-sized versions of the graphs.

The GIFANIM driver enables you to use SAS/GRAPH procedures to create GIF animations for your Web pages.

Output Delivery System

SAS/GRAPH procedures that generate graphics output support the Output Delivery System (ODS). You can use the ODS HTML statement or special SAS/GRAPH device drivers to produce ODS output. When used with SAS/GRAPH procedures, either method uses a default ODS template to produce HTML files and graphics output that can be viewed with a Web browser.

Long Variable Names

SAS/GRAPH supports long variable names in data sets. Catalog entry names are still limited to 8 characters. If longer names are specified, they are truncated.

SAS/GRAPH Fonts

SAS/GRAPH has added support for specifying long font names that appear in the Charrec window of the GDEVICE procedure.

SAS/GRAPH Colors

SAS/GRAPH has added support for CMYK and HSB (or HSV) color types.

Features That Are No Longer Supported

A few SAS/GRAPH windows are not supplied in Version 7:

- PATTERN, AXIS, LEGEND, and SYMBOL windows
- GRAPH manager window

A new file requestor window is provided for the Graphics Editor and the Graph window.

SAS/GRAPH Procedures

GANNO Procedure

The NAME= option accepts a long variable name. However, when a variable name is longer than 8 characters, the resulting entry name is truncated to 8 characters.

GCHART Procedure

The GCHART procedure includes the following new features:
The HBAR3D, VBAR3D, and PIE3D statements generate 3-dimensional horizontal bar charts, vertical bar charts, and pie charts.

- The WOUTLINE= option controls the thickness of the outlines of chart elements (pie slices, bars, blocks, etc.).
- The HTML= and HTML_LEGEND= options use HTML functionality to create graphics output with "drill-down" capability.
- The IMAGE_MAP= option creates a data set that contains information about a graph and about areas in the graph. This information includes the shape and coordinates of the areas, and it is used to build an HTML file that links the graph areas to other files or images.

Additional enhancements enable you to:

- format statistics and specify the label for statistic column heads in the table of statistics that is displayed with horizontal bar charts
- display statistic values inside bars in vertical bar charts
- draw a frame around the axis area by default. The V6COMP graphics option enables you to request Version 6 behavior instead of the new Version 7 defaults.

Changes in the default behavior of the PATTERN statement may affect GCHART procedure output.

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GCONTOUR Procedure

Changes in the default behavior of the PATTERN statement may affect GCONTOUR procedure output.

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GDEVICE Procedure

You can specify a color map for a device using either

- the new GDEVICE window, Colortable
- the CMAP= option in the ADD or MODIFY statement in the GDEVICE procedure. CMAP= can also be specified in the GOPTIONS statement.

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GMAP Procedure

- The map data sets that are supplied by SAS Institute have more consistent structure and variables.
- The HTML= and HTML_LEGEND= options use HTML functionality to create graphics output with "drill-down" capability.
- Changes in the default behavior of the PATTERN statement may affect GMAP procedure output.

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GOPTIONS Procedure

The OPTION= option requests information about the specified option only.
GPLOT Procedure

- The FRAME | NOFRAME option draws a frame around the axis area by default. The V6COMP graphics option enables you to request Version 6 behavior instead of the new Version 7 defaults. (V6COMP also affects the default behavior of the PATTERN statement.)
- The HTML= and HTML_LEGEND= options use HTML functionality to create graphics output with "drill-down" capability.
- Changes in the default behavior of the PATTERN statement may affect GPLOT procedure output.

SAS/GRAPH Statements

Points as Units of Size

    The height of text can be specified using points as the unit. These statements have options that can use points as the unit:
    - AXIS
    - GOPTIONS
    - LEGEND
    - TITLE, FOOTNOTE and NOTE

AXIS Statement

- The SPLIT= option defines a split character so that axis tables automatically break to a new line when that character is encountered.
- Date handling has been improved so that default intervals are more logical.

LEGEND Statement

    The ORDER=() option orders, includes, or excludes legend entries.

PATTERN Statement

    The default pattern for all types of graphs changed from hatch patterns to solid fills. As a result, some default outlines and colors also changed. The V6COMP graphics option enables you to request Version 6 behavior instead of the new Version 7 defaults.
SYMBOL Statement

The BWIDTH= option controls the width of the box in box plots and the width of the bar in HILOB plots. Both types of plots are produced with the GPLOT procedure and are controlled by the INTERPOL= option of the SYMBOL statement.

GOPTIONS Statement

- These new options specify graphics commands:
  - PREGEPLOG
  - PREGPROLOG
  - POSTGEPLOG
  - POSTGPROLOG

- These new options affect printing:
  - BINDING
  - COLLATE
  - DUPLEX
  - PAPERSOURCE
  - PAPERDEST
  - PAPERSIZE
  - PAPERTYPE
  - PPDFILE
  - REVERSE

- These options affect device drivers or host commands used during graph production:
  - CMAP
  - DRVINIT
  - DRVTERM
  - FILECLOSE
  - PREGRAPH
  - POSTGRAPH
  - UCC

- These new options affect GIF animation:
  - DELAY
  - DISPOSAL
  - ITERATION
  - INTERLACED
  - TRANSPARENCY

- These enhanced options control the size of images used for Web output:
  - AUTOSIZE
  - XMAX
  - XPIXELS
- YMAX
- YPIXELS
- The FILEONLY option specifies whether a file or a storage location is the default destination for graphics output.
- The V6COMP option enables programs that were developed in Version 6 to run under Version 7 and to maintain certain Version 6 behaviors. V6COMP affects the default behavior of the PATTERN statement and of axis area frames.

## The Annotate Facility

The CBOX and CBORDER variables blank out a box behind text that is specified with the LABEL function. They also color the box and the border of the box.