# BC SAP Graphics: User's Guide

HELP.BCFESGRA1

**Release 4.6C**

SAP™

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# Icons

| Icon | Meaning |
|---|---|
| | Caution |
| | Example |
| | Note |
| | Recommendation |
| | Syntax |

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BC SAP Graphics: User's Guide

# BC SAP Graphics: User's Guide

BC SAP Graphics: User's Guide

# BC SAP Graphics: User's Guide

SAP Graphics is a series of graphics programs that run on frontend systems with an SAP graphical user interface (SAPGUI).

You can call up these graphics programs from an R/3 System or an R/2 System (via SAP's CUA Interface) using ABAP function modules. For more information, see the following documentation: SAP Graphics: Programming Interfaces [Ext.]

For details on how to use SAP Graphics, choose one of the following topics.

SAP-Business Graphic [Page 13]

**SAP-Hierarchy Graphics [Page 142]**

**SAP-Pushbutton Graphics [Page 168]**

**SAP-Statistical Graphics [Page 172]**

**SAP-Gantt-Chart Graphics [Page 206]**

**SAP-HPGL Display [Page 238]**

**SAP-Network Graphics [Page 245]**

**SAP-Portfolio Graphics [Page 270]**

**SAP-Bar Chart Graphics [Page 281]**

**SAP-Struktural Graphics [Page 296]**

# SAP Business Graphics

SAP Business Graphics is a graphics program for generating two- and three-dimensional graphs.

Overview [Page 14]

Inputting Data: Capturing SAP Screen Data [Page 16]

Understanding the Data Displays [Page 26]

Getting Started [Page 38]

Changing Values in Graphs [Page 53]

Switching Between Views [Page 56]

Formatting Graphs [Page 71]

Displaying Self-Defined Pushbuttons [Page 141]

# Overview

## What is SAP Business Graphics?

SAP Business Graphics is a graphics program for generating two- and three-dimensional graphs.

The program offers you a variety of graphing options, data interfaces and various file manipulation commands.

### Data input

You can input data to the program in either of the following ways:

- **Data input by means of an ABAP program**

  You create input data in an ABAP program.

  The input data must have a tabular format:

  - Simple list (for 2D graphs only)
  - Table consisting of various rows and columns
  - Various tables consisting of various rows and columns each

  An ABAP function module calls up the SAP Business Graphics (or another graphics program). The ABAP program sends the input data to the graphics program.

  The required ABAP tools and interfaces are described in the following documentation:

  *SAP Graphics: Programming Interfaces*

- **Data input by means of an SAP screen capture**

  You capture an SAP transaction window containing tabular data. Then you mark the data you want graphed.

  You can call up the SAP screen capture program from any SAP transaction window via menu (also from an R/2 transaction window of SAP's CUA Interface).

  The input data must have a tabular format:

  - Simple list (for 2D graphs only)
  - Table consisting of various rows and columns

  You cannot capture input data contained in various SAP tables. Only an ABAP program can send such data to SAP Business Graphics.

  If the input data do not meet the format requirements, you can edit them on the captured screen.

### Graphing Options

A number of display options are provided.

You can:

- display two- or three-dimensional graphs
- display single graphs or group views

- choose graph types (bars, columns, etc.)
- set colors

  (You can also apply consistent coloring to your various graphs by using self-defined coloring schemes.)

# Inputting Data: Capturing SAP Screen Data

The screen capture facility allows you to pick up table data from any screen in the SAP system and display it using SAP Business Graphics.

You can start one or more versions of the screen capture program from any SAP screen. You then call SAP Business Graphics from the screen capture program. Multiple calls to the graphics program are also possible.

You can also edit the data before sending it, if you want to change values or add text labels to your graph. Changes you make to data while using the screen capture program have no effect on the original SAP data from which the screen was copied.

For more information, see the following topics:

**Table Formats [Page 17]**

**Calling the Screen Capture Program [Page 18]**

**Highlighting a Screen Capture Area [Page 20]**

**Editing a Screen Capture Area [Page 21]**

**Format Rules for Screen Capture Input [Page 23]**

**Starting SAP Business Graphics [Page 25]**

# Table Formats

Screen data must be available in one of the following table formats:

- Simple list

  A simple list is a table with various rows and one single column. You can only obtain a two-dimensional graph from such data.

- Table consisting of various rows and columns

  You can create two and three-dimensional graphs from such data.

You cannot use the screen capture facility to input data in multiple tables. If you want to graph data occurring in multiple tables, you must write the input values to a file using ABAP programming tools. See *SAP Graphics: Programming Interfaces* for more information.

For further information on the various data input tables and how they are interpreted by SAP Business Graphics, see the section Understanding the Data Displays [Page 26].

# Calling the Screen Capture Program

To capture screen data from an SAP transaction window on your frontend, call the screen capture program as follows:

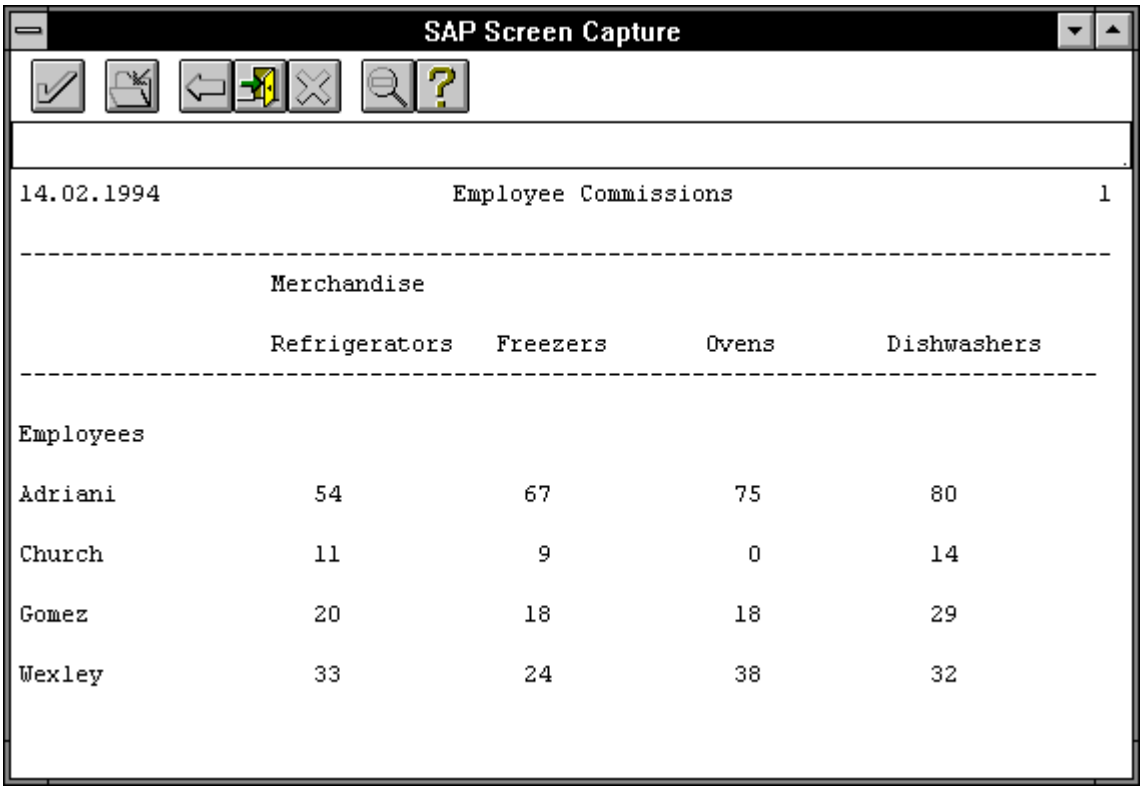
- **On all frontends:**

  R/3 System: *System* → *Services* → *Business Graphics*
  CUA Interface to R/2: *System* → *Graphics*

- **Additionally on Windows(NT) frontends:**
  → *Business Graphics* ( is the right-most item in the menu bar.)

Data are loaded into a buffer. You see an SAP screen capture window [Page 19] which is identical to the SAP transaction window except for the title, *SAP Screen Capture*.

# SAP screen capture window



# Highlighting a Screen Capture Area

To highlight an area in the screen, move the mouse cursor to the upper left corner of the region you want to select. Holding the left mouse button down, move the cursor down and to the right until you reach the lower right corner of region. Release the mouse button. The hightlighted region is displayed in reverse-video.

The screen capture program interprets the region you highlight to determine what values and other information the region contains. (See the following figure.) Interpreted text is displayed in particular colors, depending on what the screen capture program thinks each piece of text is. These colors, which are used regardless of the user's setup, are as follows:

- numerals in green, white lettering
- text in grey:
  - dimension element (row and column) names: white lettering
  - dimension names: blue lettering
  - main title: black lettering

You can highlight only one continuous region at a time. However, if you want to capture two separate regions, you can highlight both regions together and use the editor to delete everything in between.

It is not possible to capture (or highlight) data from more than one screen at a time.

# Editing a Screen Capture Area

To edit a screen capture area, highlight the desired part of the area, and click on the *Edit* button or press `F6`.

You are placed in the screen capture editor, where the text you highlighted is displayed in reverse-video. You can edit anywhere inside this region.

See the section Format Rules for Screen Capture Input [Page 23]for detailed formatting information.

The following editing functions are available, using either keyboard keys or the mouse.

## Positioning the Cursor

- **Arrow keys:** move the cursor one character in any direction.
- **Ctrl+Left-Arrow, Ctrl+Right-Arrow:** move the cursor one word to the left or right in the current line.
- **POS1, END:** position the cursor at the very beginning or very end of the current line.
- **PageUp, PageDown:** move the cursor to the top or bottom line (within the same column) of the highlighted area.
- **Positioning using the mouse:** Position the cursor anywhere in the highlighted area by clicking on this position with the mouse.

## Deleting Text

- **Backspace:** deletes the character to the left of the cursor position.
- **Del:** deletes the character at the cursor position.
- **Deleting a block of text using the mouse:** Position the mouse cursor on a particular text character and click. Holding the mouse button down, move the mouse either down and to the right or up and to the left. The block of text between the starting and ending position of the mouse is deleted.

## Inserting Text

- **Ins:** switches between insert-mode and replace-mode. If you press this key and enter text, the existing text moves to the right. If you press the key a second time, you return to replace mode. Text you enter in replace-mode replaces the existing text.

  Note that to use insert-mode, you must have space at the end of the line, within the editing region. If the text already extends to the far right side of the highlighted area, you cannot insert more. In this case, re-highlight the text region, leaving more space to the right and re-edit.

## Using Functions Keys and Pushbuttons

The following function keys and pushbuttons are available:

- F1

  Calls up a help window.

- F15

Leaves the screen capture program and returns you to the SAP transaction.

- *Highlight*

  Returns you to highlighting-mode.

- *Edit*

  Allows you to edit the highlighted area.

- *Draw*

  Starts SAP Business Graphics with the graph of your data.

If you are in editing mode, two more pushbuttons are available in addition to the *Highlight* pushbutton:

- *Restore*

  Undoes all editing changes you have made within this call to the editor. The Restore operation does not return you from the editor.

- *Continue*

  Exits from the screen capture editor.

# Format Rules for Screen Capture Input

Screen capture input to SAP Business Graphics must adhere to certain format rules in order to be recognized correctly.

SAP Business Graphics assumes that your screen data resembles the basic SAP table structure. This structure is somewhat flexible, but the table must obey the format rules listed in this section.

## Restrictions on the Format of the Data

If you use the screen capture facility to input graphics data, the input table can contain either a single list of values, or rows and columns. If the data is a single list, you can include the values themselves and labels for each value. If the data has rows and columns, you can include a label for each row, a label for each column, and the table values themselves.

You cannot use the screen capture facility to input data in multiple tables. If you want to graph data occurring in multiple tables, you must write the input values to a file using ABAP programming tools. See *SAP Graphics: Programming Interfaces* for more information.

## Format Rules for Numerical Values

Numerical values must obey the following rules:

- Within a numerical value, the screen capture recognizes only the minus sign (hyphen), the comma, and the decimal point (period) as legitimate punctuation. Exponential notation and other variations are not recognized.

  Note that the functions of the period and the comma in the English system are exactly opposite to their functions in some European systems. If your numbers are not being interpreted correctly, check with the system administrator to determine how these characters should be used.
- The minus sign must occur after the number, with no intervening spaces.
- All numbers in a row must be separated by spaces.
- A column of numbers is right-justified and identified by the position of its right-most character. Each number belonging to this column must have its right-most character in the correct position.

  If you have values partially or entirely out of alignment with the given right-most character position, they will not be interpreted as belonging to the proper column. In most cases, the screen capture program assumes these are values for an entirely new column.
- You may leave out values for a given row or column.

## Format Rules for Text Strings

You can include labels in the table to name the rows and columns. You can also provide a title for the set of rows, for the set of columns, and for the graph as a whole.

- SAP Business Graphics does not accept more than 32 elements per dimension. As a result, you cannot have more than 32 rows or 32 columns in your table.
- Any string of characters not identifiable as a number is assumed to be a label. Labels may occur at the beginnings of a row, at the head of a column, as a title for the rows or columns, or as the graph main title. A non-numeric item placed in among the data values is ignored by the graphics program.

**Format Rules for Screen Capture Input**

- A legitimate number occurring where a label should be is interpreted as a number. If you want to use labels that look like numbers, you must modify them to contain at least one non-numeric character.
- Placement of labels for row-names or column-names:
  - Row-names can occur only at the beginning (left side) of a row.
  - Column-names should line up above the columns they are heading, but do not necessarily need to begin in the same column. They should be separated by at least two spaces.

  If you don't adhere to these requirements, the screen capture program attempts to pick out the labels anyway. However, the results may not be what you expect. (Check the selection bars in the *Selection* view to see if your headers were correctly identified.)
- Placement of titles for rows or columns as a set:

  The title for the rows as a set should be placed directly above the column of row-names.

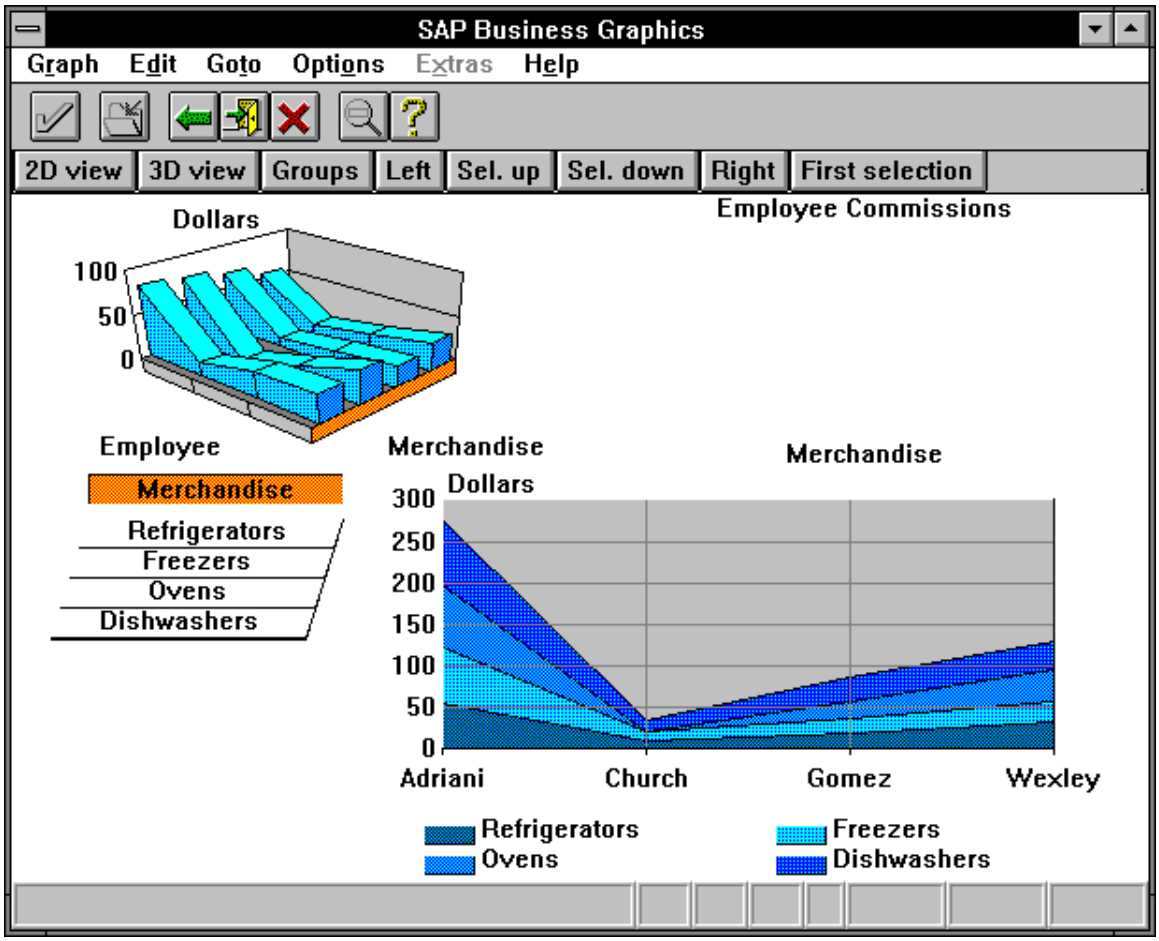
  The title for the columns as a set should occur directly above the first of the column-names, and begin in exactly the same position.
- The main title for the graph should occur in the very first line of the highlighted area. If you have more text there than just the title, the screen capture program attempts to pick out the string in the center of the line. The longest string in the center of the line separated from other text by double spaces is assumed to be the title.
- The maximum length for a text string cannot be specified exactly since this depends on the size of your window, the resolution of your monitor, and other factors.

  Many strings too long for a small window are displayed correctly when you enlarge the window to full-screen size. In general, you must experiment to find the optimal length for text strings.

# Starting SAP Business Graphics

To display the selected data in a graph, click on *Draw*.

This action starts SAP Business Graphics, which displays the selected data in a graph.



# Understanding the Data Displays

The data you input to SAP Business Graphics is interpreted by the program and used to generate 2D and 3D graphs. This section describes the different forms your input data can take, and the different forms a graph can take.

It contains the following topics:

- Data Input Tables and How They Are Interpreted [Page 27]

  Describes the data input tables you can input, and how SAP Business Graphics interprets them to create graphs.

- Possible Graph Configurations [Page 32]

  Describes some special graph configurations, and then summarizes all configurations possible for given forms of data input.

Click on a topic for more information.

The 2D and 3D graphs described in this section can occur in any of the four views (*Selection*, *3D*, *2D*, and *Groups*) listed in the *Goto* menu. You use the menus and buttons in these views to display all or parts of the input in more detail.

For more information on *selecting parts of the input data* for display, see the section Switching Between Views [Page 56].

For information on *formatting the graph*, once the data has been selected, see the sectionFormatting Graphs [Page 71]

# Data Input Tables and How They Are Interpreted

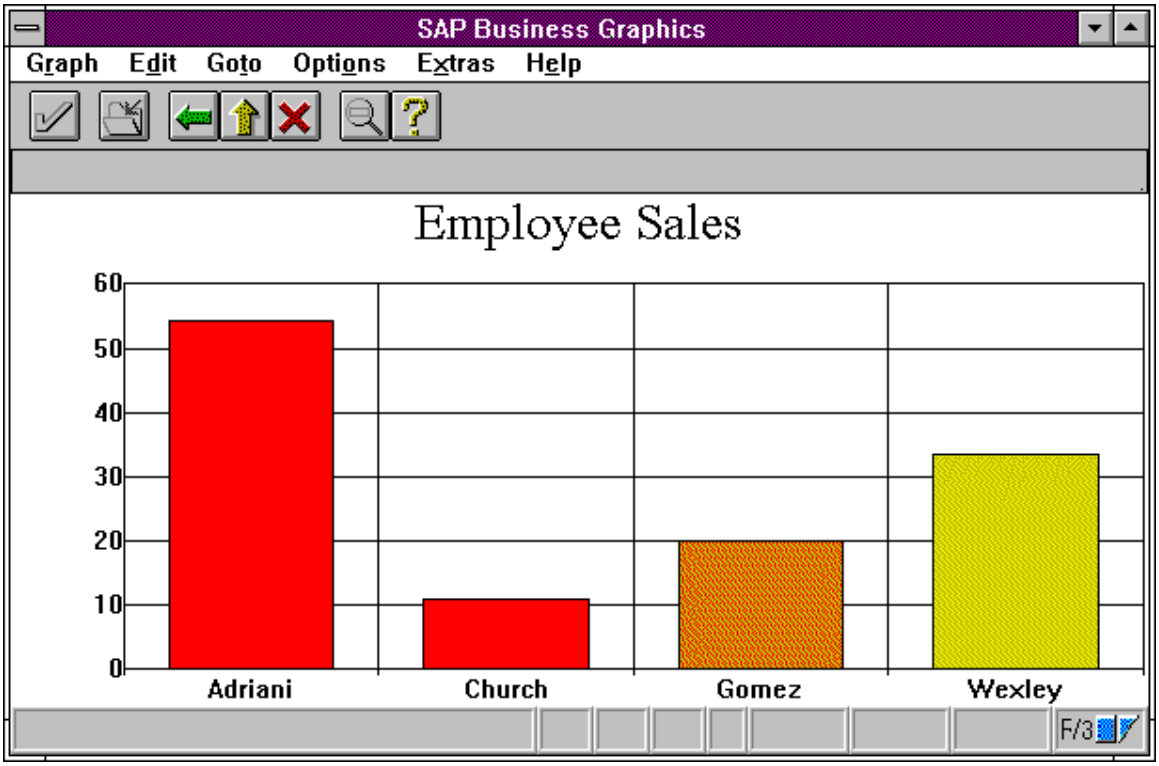
SAP Business Graphics accepts input in the form of tables. A table can contain a single list of numbers, or a set of rows and columns. You can also input multiple tables, each of which has rows and columns. This section illustrates how these data tables are graphed.

## Data Values in a Simple List

When the data occurs in a simple list, SAP Business Graphics creates a 2D graph (see figure). The list items are laid out along the horizontal axis of the graph. You cannot generate a 3D graph for data that contains only a simple list of values.

### Employee Sales: Freezers

| | | Column 1 |
|---|---|---|
| row1 | Adriani | 54 |
| row2 | Church | 11 |
| row3 | Gomez | 20 |
| row4 | Wexley | 33 |




A list of values can be viewed as a table with only rows, or only columns. In either case, the set of rows (or columns) is sometimes referred to as the row dimension.

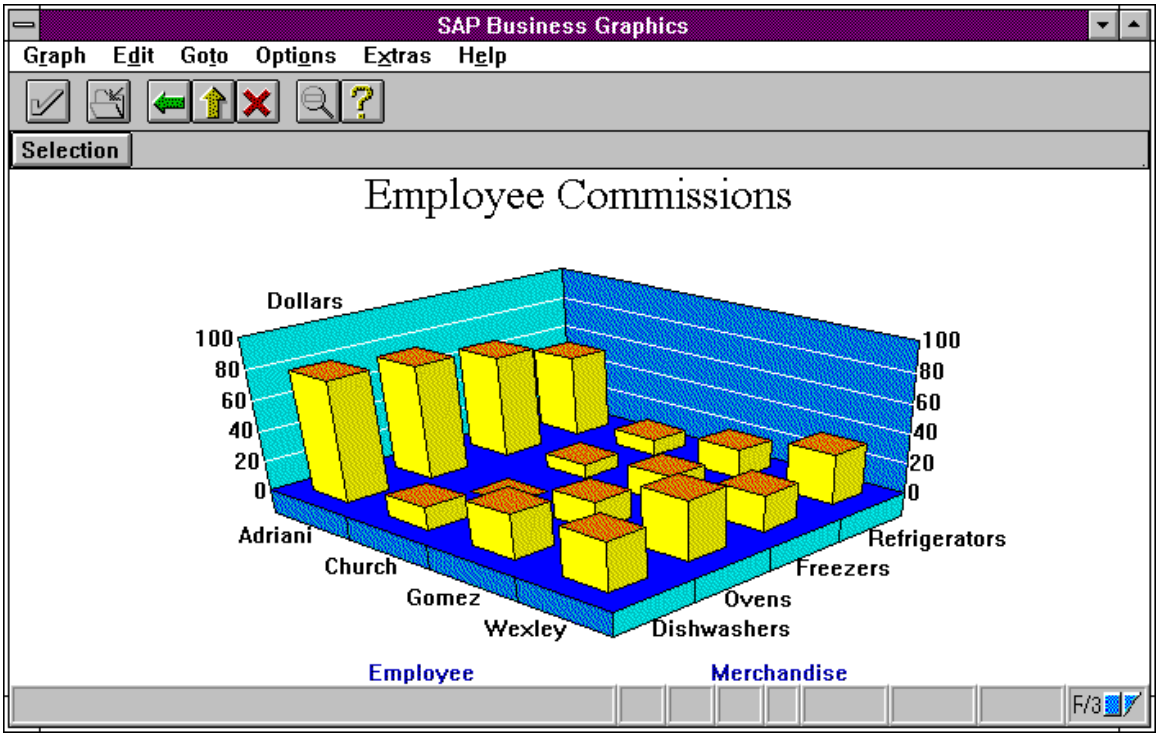
## Data Values in a Table

When data is input in a table with rows and columns, SAP Business Graphics creates a 3D graph. This is illustrated by the following figure, which contains data input as a table of values (left) and a 3D graph of the data (right). The rows appear along the left side of the graph floor, and the columns along the right. The actual data values are depicted vertically in the graph.

The set of rows and set of columns are sometimes referred to as the "row" and "column dimensions." Individual rows or columns are referred to as "dimension elements."

### Employee Sales: First Quarter

| | | column 1 | column 2 | column 3 | column 4 |
|---|---|---|---|---|---|
| | | refigerators | freezers | ovens | dishwashers |
| R1 | Adriani | 107 | 148 | 165 | 178 |
| R2 | Church | 41 | 36 | 55 | 76 |
| R3 | Gomez | 50 | 57 | 64 | 83 |
| R4 | Wexley | 68 | 54 | 73 | 73 |




You can also create 2D graphs for input data with the form described here. The section Using the Selection View [Page 57]describes how to select part or all of your data for display in a 2D graph.

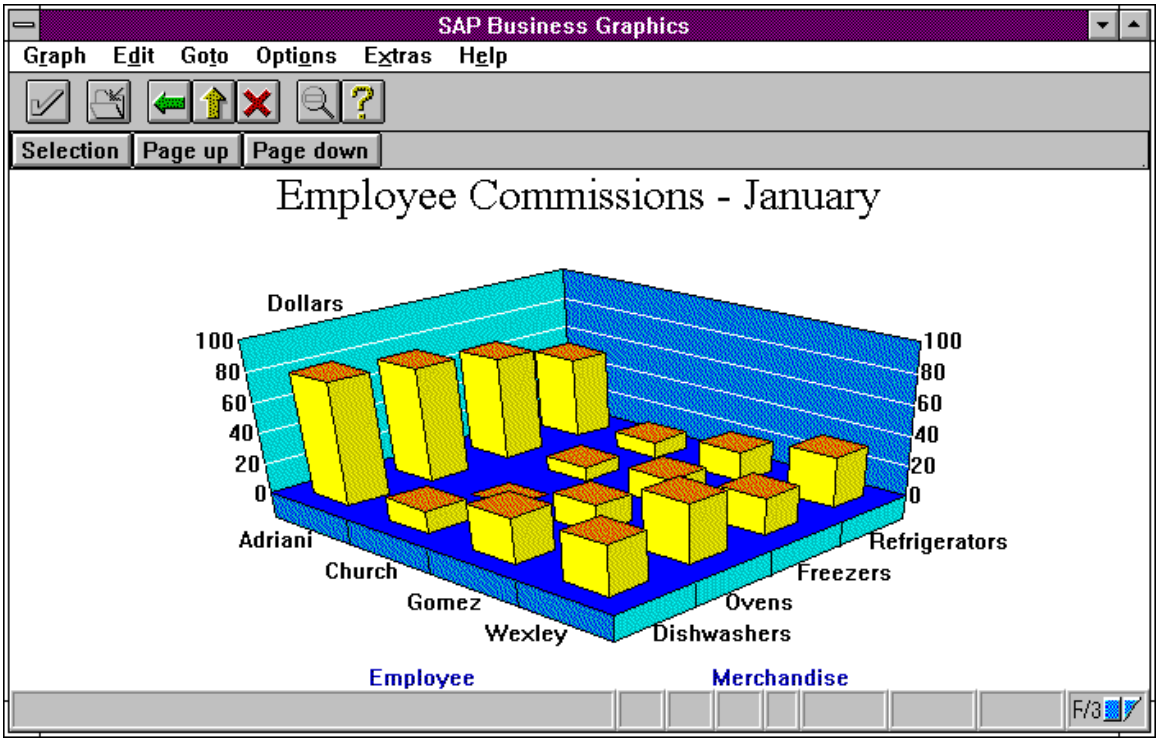
## Data Values in Multiple Tables

Your data can also include multiple tables, each of which contains rows and columns. The number of rows and columns must be the same from table to table: the table never changes size.

For data in this format, SAP Business Graphics creates a 3D graph for each one of your tables. This is illustrated by the following figure, which contains data input in multiple tables (each with rows and columns). The rows and columns remain the same from graph to graph; only the data values change.

Employee Commissions: January

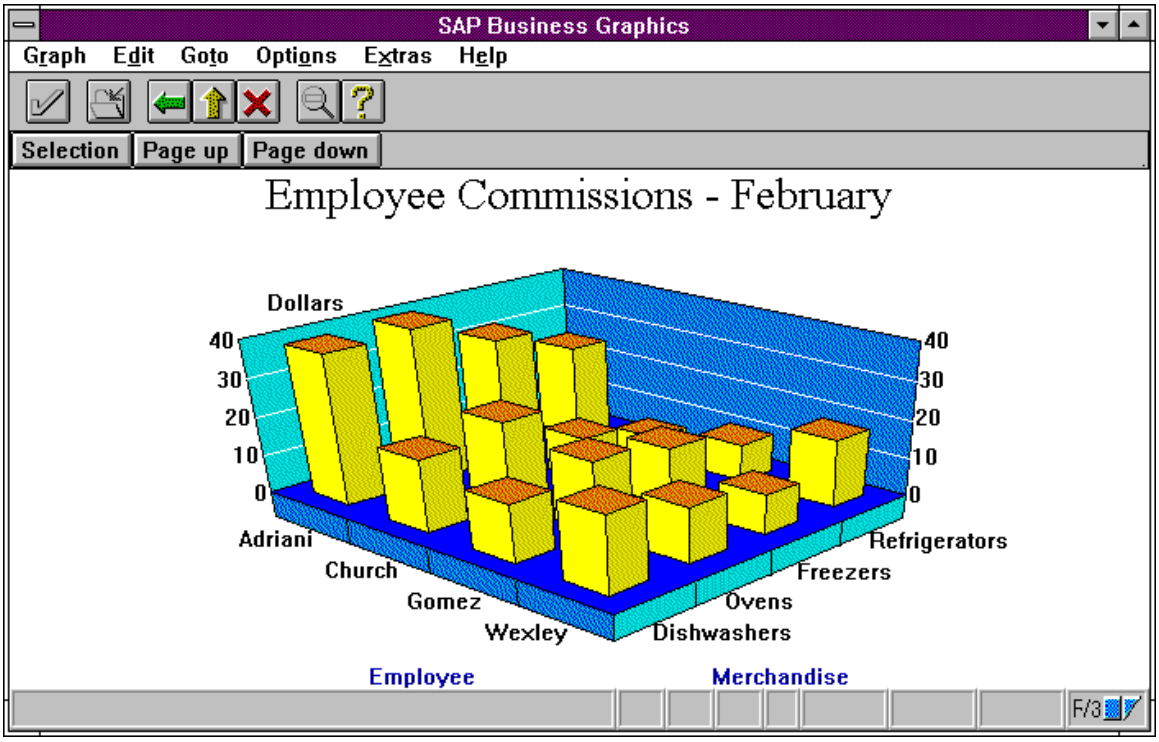
| | | column 1 | column 2 | column 3 | column 4 |
|---|---|---|---|---|---|
| | | refrigerators | freezers | ovens | dishwashers |
| row 1 | Adriani | 54 | 67 | 75 | 80 |
| row 2 | Church | 11 | 9 | 0 | 14 |
| row 3 | Gomez | 20 | 18 | 18 | 29 |
| row 4 | Wexley | 33 | 24 | 38 | 32 |




Employee Commissions: February

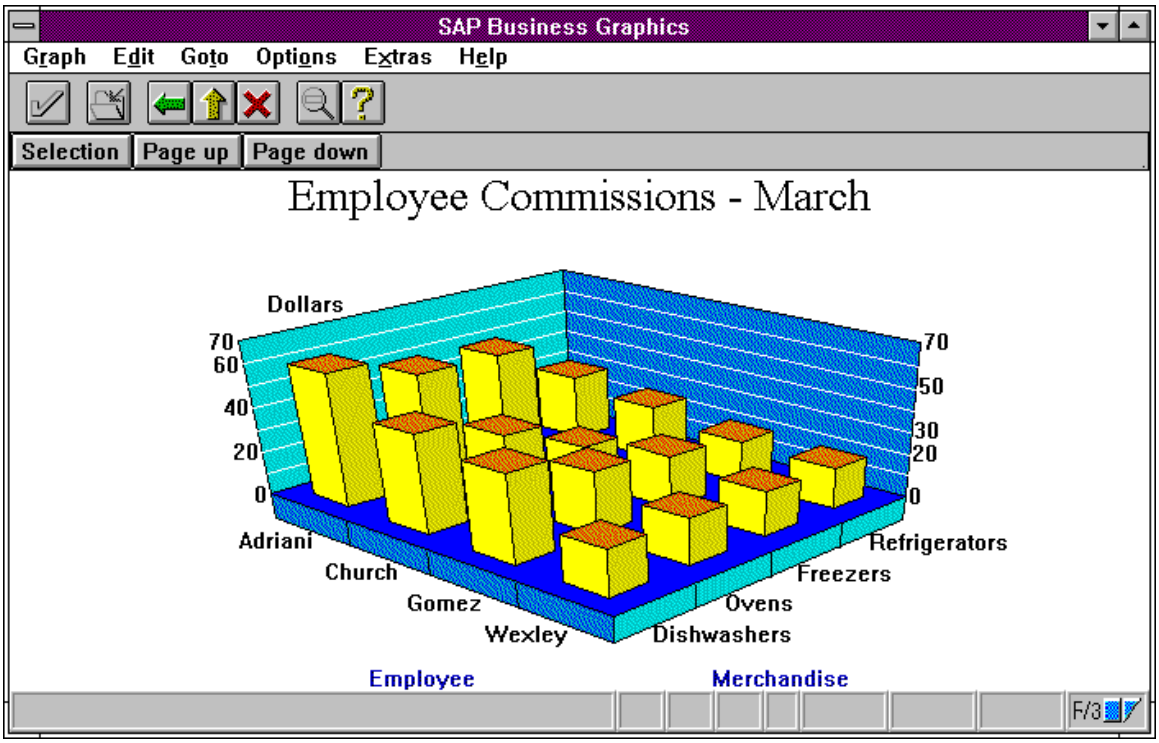
## Data Input Tables and How They Are Interpreted

| | | column 1 | column 2 | column 3 | column 4 |
|---|---|---|---|---|---|
| | | refrigerators | freezers | ovens | dishwashers |
| row 1 | Adriani | 24 | 32 | 40 | 38 |
| row 2 | Church | 5 | 11 | 22 | 18 |
| row 3 | Gomez | 10 | 15 | 18 | 15 |
| row 4 | Wexley | 17 | 10 | 14 | 20 |




| Employee Commissions: March | | | | | |
|---|---|---|---|---|---|
| | | column 11 | column 12 | column 13 | column 14 |
| | | refrigerators | freezers | ovens | dishwashers |
| row 1 | Adriani | 29 | 49 | 50 | 60 |
| row 2 | Church | 25 | 16 | 33 | 44 |
| row 3 | Gomez | 20 | 24 | 28 | 39 |

| | | | | | |
|---|---|---|---|---|---|
| row 4 | Wexley | 18 | 20 | 21 | 21 |




Because you can page through these 3D graphs, the set of table-names is referred to as the "pages" or "page dimension." Each page, like each row or column, has a name, and this name appears as part of the title of the graph.

Data input may contain a maximum of 32 items per dimension, that is, 32 rows, 32 columns or 32 pages. However, the total number of input values may not exceed 1024. Hence the product of the number of rows, number of columns, and number of pages, in respecting this limit, must always be less than or equal to 1024.

# Possible Graph Configurations

This section summarizes all the graph configurations you can request for input values occurring as a single list, in a table, or in multiple tables. The terms *stacked graph* and *side-by-side graph* are also defined here.

You can skip this section unless you want clarification on these issues.

The 2D and 3D graphs in the section Data Input Tables and How They Are Interpreted [Page 27] are shown in their normal configurations. For each row (or column), there is a single data value displayed.

There are two alternatives to the normal graph configurations, which allow you to display more than one value for each item in a row (or column):

- Stacked Graphs [Page 33]

  (both 2D and 3D)

- Side-by-Side Graphs [Page 35]

  (2D only)

The following topic provides an overview of what types of 2D and 3D graphs you can create based on the various data input tables:

- Summary of Graphing Capabilities [Page 37]

# Stacked Graphs

Both 2D and 3D graphs can be stacked. A stacked graph displays several values for each item in a row (or column), one value on top of another. Each stack segment gives the values for elements of a dimension (row, column or page) not laid out along the graph's axes.

- 3D graph

  In a 3D graph, you can stack values only if the input contains multiple tables (pages). In this case, stacked segments allow you to display values for successive pages simultaneously.

  For stacked 3D graphs, use the *Stack On/Off* button in the *Selection* view.

- 2D graph

  In a 2D graph, you can stack values when there is only a single input table, but it must contain both rows and columns. The stacked segments allow you to display values for all rows (and hence all columns) at once.

  Stacked 2D graphs can be requested using the *2D Options* menu or the selection bars in the *Selection* view.

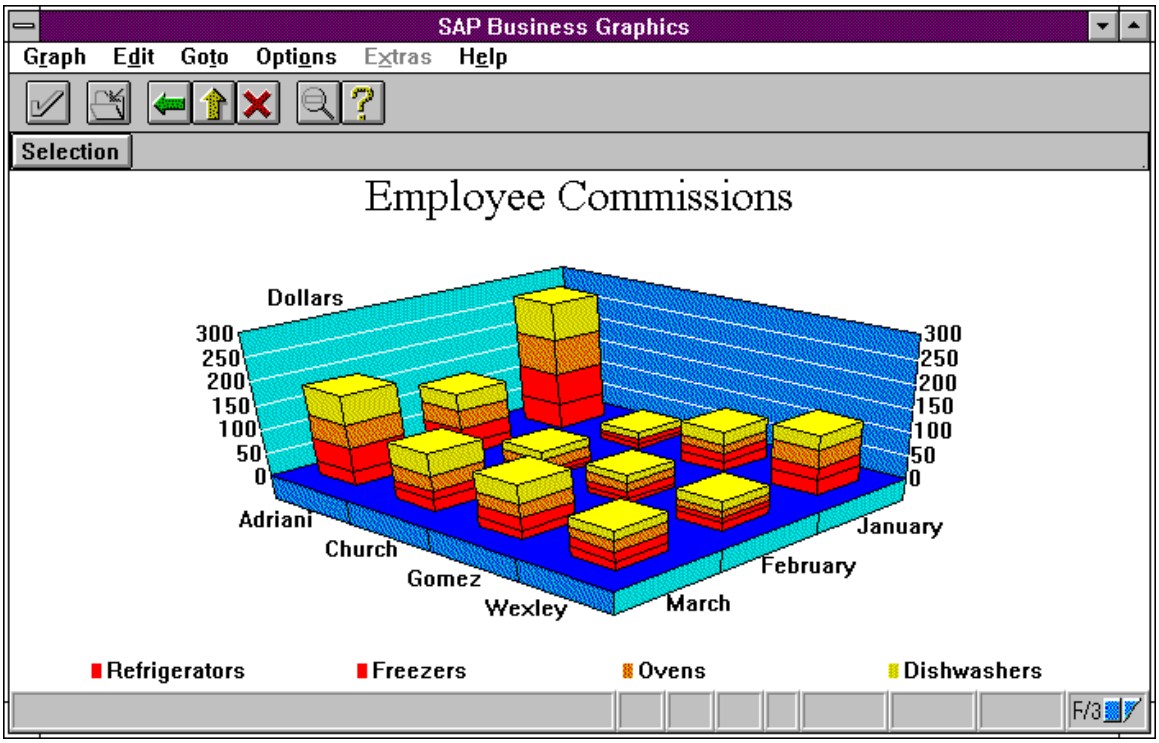
No stack can contain more than six stack segments. If there are more than six items in the row or column you are stacking, the rest will not appear in the stack.

Note that you cannot generate stacked graph images for any data containing negative values.

For more information, see Setting 2D Options [Page 86] and Using the Selection View [Page 57]).

The following figure contains a Stacked 3D Graph [Page 34].

# Stacked 3D Graph



# Side-by-Side Graphs

Only 2D graphs can be presented in side-by-side format. A side-by-side graph displays several values side-by-side for each item in the horizontal axis. If the rows are displayed along this axis, each row item contains as many values as there are columns.

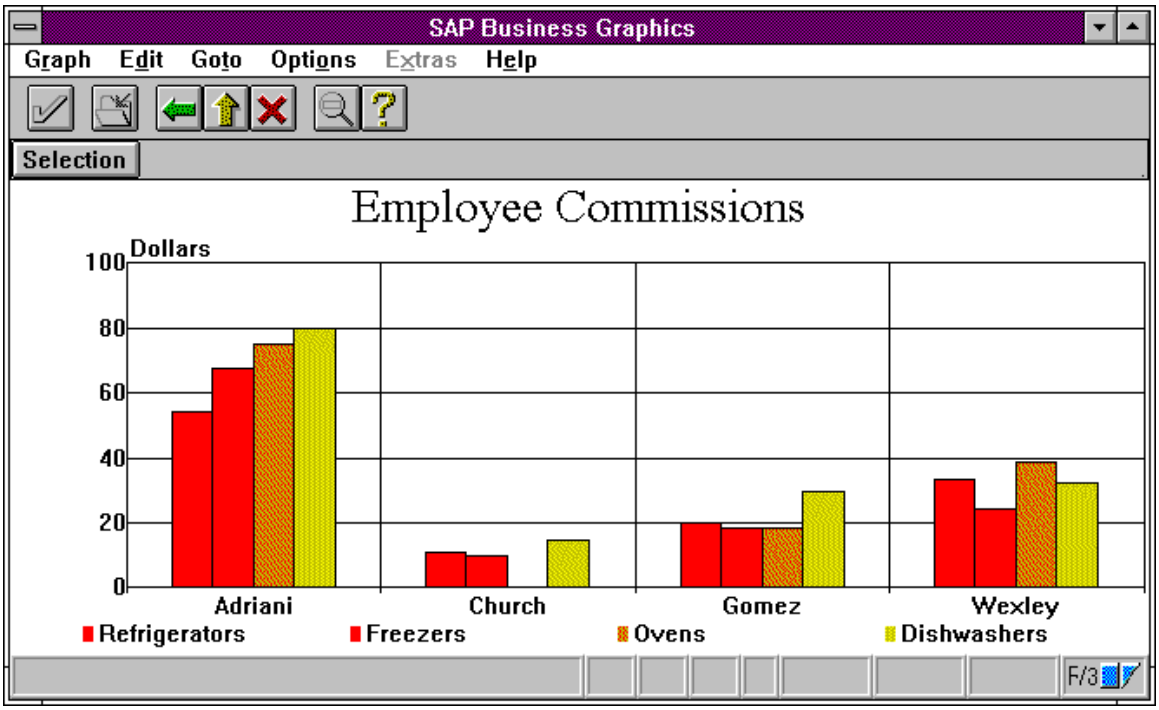
There can be no more than sixteen side-by-side values for a single item. If the row or column being presented side-by-side has more than sixteen items, the rest will not appear.

Side-by-side graphs are generated automatically when you request a 3D display for a 2D graph. You do this by highlighting the topmost selection bar in the *Selection* view. (See the section Using the Selection View [Page 57]) for information on using the selection bars.)

In contrast to stacked graphs, side-by-side graphs can contain negative values.

The following figure contains a Side-by-Side 2D Graph [Page 36].

# Side-by-Side 2D Graph



# Summary of Graphing Capabilities

This section summarizes what graph images are possible with input data formatted as described in the section Data Input Tables and How They Are Interpreted [Page 27].

**For data in multiple tables (multiple pages):**

- In a 3D graph:

  You can represent all the data at once (for all pages) by using a stacked graph.

  You can display all values for a particular page. The name of that page is appended to the main title for the graph.

  You cannot represent less than a full page of values in a 3D graph.

- In a 2D graph:

  You cannot represent all the data at once (all pages) in a 2D graph.

  You can represent all values from a particular page; the page name appears as part of the main title of the graph. This graph must be either a stacked or side-by-side graph.

  You can represent all values in a given row or column, when they all occur on the same page. The name of the page occurs in the main title. The name of the row or column appears as a sub-title.

**For data in a single table (with rows and columns):**

- In a 3D graph:

  You can represent all rows and columns simultaneously. You cannot use a stacked graph, since the data contains only a single page.

- In a 2D graph:

  You can represent all rows and columns at once by using a stacked or side-by-side graph type.

  You can represent values from a single row or column. The name of the row or column appears in the title for the graph.

**For data in a single list (a table with only rows):**

- In a 3D graph:

  You cannot generate a 3D graph for data values occurring in a list.

- In a 2D graph:

  You can represent the entire list of numbers.

# Getting Started

This section provides a quick introduction to using SAP Business Graphics so you can enter the program and start exploring the system for yourself.

It contains the following topics:

Switching Between Graphics Views [Page 39]
From the *Goto* menu, you can choose one of the following views: *Selection view, 2D View, 3D View,* and *Groups view*.

Selecting Parts of the Input Data for Display [Page 44]
In the selection view, you can use the Selection Bars [Page 43] to choose the part of the 3D graph you want to display in a 2D graph.

Formatting Graphs [Page 45]
The *Options* menu provides you with four different functions for formatting your graphs: *Global options, 2D options, 3D options* and *Color assignment*.

Mailing a Graphic [Page 170]

Printing a Graphic [Page 292]

Exiting from SAP Graphics [Page 295]

On Apple frontends, a number of alternative and additional options are available for SAP Graphics. For more information, see the following topic:
Special Features on Apple Frontends [Page 51]

# Switching Between Graphics Views

SAP Business Graphics provides you with four possible *views*, formatted windows, for displaying the data. You can move around between these views using the *Goto* menu.

You are placed in one of these views as soon as you enter SAP Business Graphics. The starting view depends on the input data you use. For data in a single table with rows and columns, you are placed by default in the *Selection* view. This view contains three parts:

- A 3D graph [Page 42] in the upper left
- A 2D graph [Page 41] 2D graph in the lower right
- A set of Selection Bars [Page 43] in the lower left, below the 3D graph. Selecting Parts of the Input Data for Display [Page 44] later in this section explains how to use these bars.

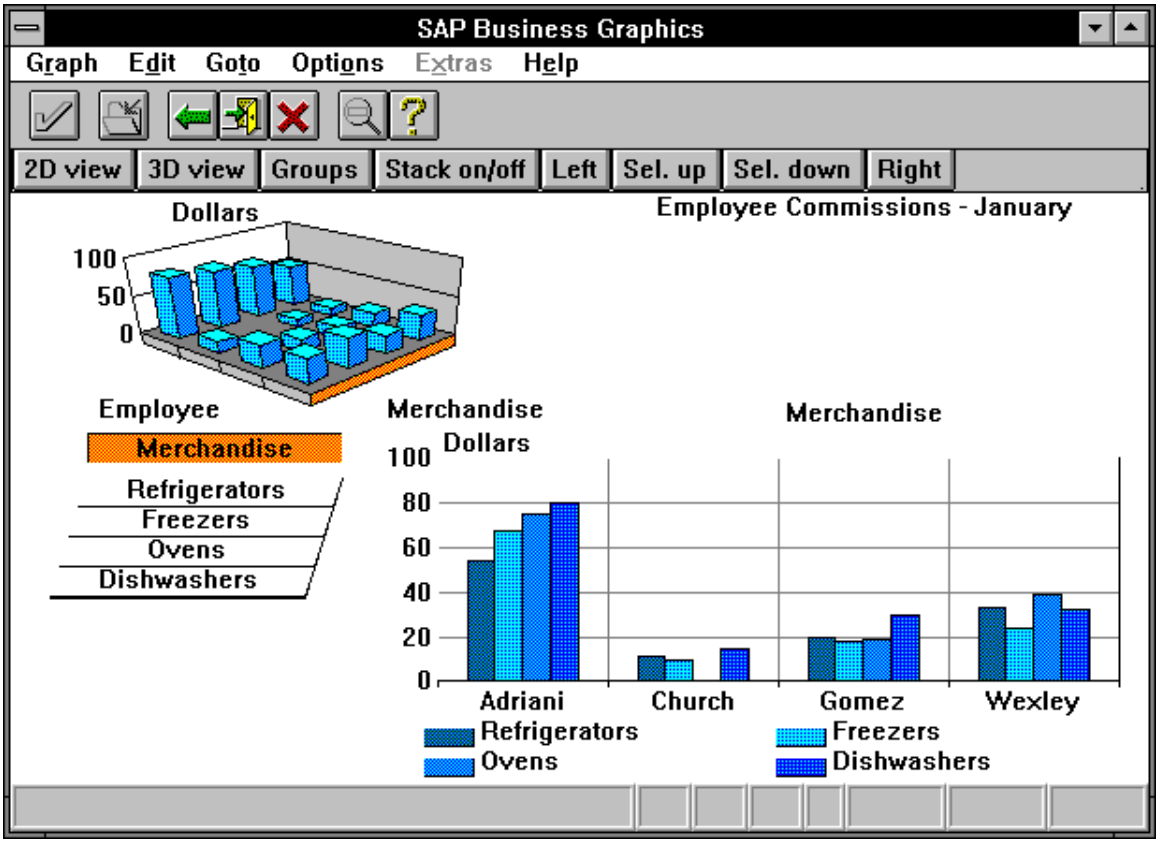
To switch from the Selection View [Page 40] to another view, (for example the *3D view*), proceed as follows:

1. Select *3D view* by clicking on the pushbutton or choose *Goto* → *3D view*.

   The *Selection* view goes away, and is replaced by the *3D view*. This view contains a single 3D graph.

2. Try the above steps to call up the *2D view* and *Groups view*, to see what these views look like.

# Selection View



# 2D graph

Graph with two-dimensional represention of data

Most common 2D graph types have two axes, one horizontal and one vertical. One axis contains numeric values (normally the vertical axis), while the other axis contains labels for the values.

In SAP Business Graphics, you can display 2D graphs using the 2D view, the selection view and the groups view.

# 3D graph

Graph with two-dimensional represention of data

A 3D graph has three axes, two horizontal ones and one vertical one. The vertical axis contains numeric values. The two horizontal axes, located on the left and the right of the graph bottom, contain labels (row and column titles), for the values. Each numeric value is identified by a pair of labels, a row (left horizontal axis) and a column title (right horizontal axis).

In SAP Business Graphics, you can display 3D graphs using the 3D view and the selection view.

# Selection Bars

Text fields below the 3D graph in the selection view of SAP Business Graphics

Clicking on a selection bar selects the corresponding input data for display in a 2D or 3D graph. The topmost bar contains the dimenstion title (row or column header). The bars below it contain the relevant elements (row titles, column titles or page titles).

# Selecting Parts of the Input Data for Display

If you are in the *Selection* view, you can use the selection bars to decide what part of the 3D graph you want to display in the 2D graph.

The selection bars are the bars of text located below the 3D graph portion of the *Selection* view. The text in these bars lists either the names of rows or the names of columns in the 3D graph. The topmost bar gives the title for the rows (or columns) as a set. Compare the text in the selection bars with the labels in the 3D graph portion of the view.

1. Experiment with the selection bars: click on the various bars and observe the effects: The bar you click on is highlighted and new data is displayed in the 2D graph portion of the view.

   a) When you click on the topmost bar, all the values in the 3D graph are displayed in the 2D graph.

   b) When you click on one of the lower bars, you are selecting a particular row (or column) of the 3D graph for display in the 2D graph. The values for that row (or column) appear in the 2D graph.

2. If the selection bars contain the names of rows, try reading the column-names into the selection bars. (Or do the opposite, if the columns are already there).

   The floor of the 3D graph has side panels. To read the column-names into the selection bars, click anywhere on the side panel on the right side of the 3D graph floor. (To read in the rows, click anywhere on the left-hand side panel.)

# Formatting Graphs

SAP Business Graphics provides you with four options menus for formatting the graphs. These four options menus are available through the *Options* main menu (in the menu bar) and they all work in the same way.

As an example, follow the steps below to try out the *3D Options* menu. To begin, return to the *Selection* view, if you are not already there.

1. Click on *Options* in the menu bar and further select *3D Options*.
2. Re-position the *Selection* view and the menu (by clicking on each window's title bar and dragging) so you can see both at the same time.
3. In the *3D Options* menu, the current graph type (the default) is *Towers*. Select the graph type *Pyramids*. (If there is no immediate change in the 3D graph, click on the Apply button below).

   The objects in the 3D graph change to pyramids, while the 2D graph remains the same.
4. Click on the various *3D Colors* entries to observe how the coloring pattern changes in the 3D graph.

Try out several combinations of options to observe the effects. Bear in mind that not all options can be used with all graph types. The section Formatting Graphs [Page 71] provides more details on individual options menus.

### Setting Options and Indicators

To set a menu option, click on the option. If no change is visible in the relevant graph (the 2D or 3D graph to which the option applies), click on the *Apply* button as well.

The results of your changes appear in the graph.

Menu indicators work slightly differently. If they have up- and down-arrows attached, you can click on the arrows to add or subtract one to the indicator's value.

You can also just type new values in. Click on the box where the indicator's current value is displayed, delete the value and type in a new one. If you type a value that is too large or too small, the indicator's maximum or minimum value is automatically used.

# Pushbuttons in Dialog Windows

Each dialog window has four or five buttons at the bottom. These buttons are:

- *Continue*

  Use this button to save the current menu settings and exit the Options menu.

  If you have selected an option, but have not activated it with the *Apply* button, Continue saves it anyway.

- *Apply*

  Use this button to activate an option you have selected.

  You may not need the *Apply* button to activate selected options. This depends on how your System Administrator has installed the graphics program.

  If the related graph changes as soon as you select an option, you do not need the *Apply* button. If the graph does not change on selection, you must click on *Apply* to see the option in effect.

  An exception to this rule is the *Dimension Order* option (in the *3D Options* menu). You must click on the *Apply* button to activate this change, regardless of what the system default is.

- *Default*

  Use this button to set all options in the menu back to their default (system-defined) values. Your current settings are lost. (Only the *Color Assignment* menu contains this button.)

- *Cancel*

  Use this button to leave the *Options* menu without saving the option settings. The 3D graph returns to the state it had before you opened the menu.

- *Help*

  Use this button to display information about the options available in the menu.

# Printing a Graphic

Selecting *Graphic* → *Print* sends the current graphics view to the printer.

You can set the following options in the dialog window *Printer setup*:

- Destination

  You can choose one of the following options:

  - *Local:* prints your graph on your local printer (not available for Motif)
  - *R/3 Spool*: sends your graph to the R/3 printer queue (PostScript printers only)
  - *File:* creates a print file
  - *Clipboard:* copies your graph to the clipboard

- Additional options provided for the *R/3 Spool* and *File* options*:*

  If you choose *R/3 Spool* oder *File*, additional options are available in the dialog window:

  – *Format*

  You can choose from various formats (Postscript, Graneda (format of Netronic), WMF, etc.).

  – *Paper format*

  You can choose from various paper formats from a list (DIN, Legal, Letter, etc.). The print format (portrait or landscape) must be identical with the paper format of your printer.

  – *Portrait* / *Landscape*

  You can print your graph in portrait format on a landscape paper format, and vice versa.

  – *Standard character height*

  (not available for SAP Network Graphics and SAP Bar Chart Graphics)

  – *Printer name* (available with the *R/3 Spool* option)

  – *File name* (available with the *File* option)

- Additional options for SAP Network Graphics and SAP Bar Chart Graphics:

  If you are working with SAP Network Graphics and SAP Bar Chart Graphics, the following additional options are provided:

  – *Pages*: Choose the page range you want to print by double-clicking in the raster.

  – *Fit to page(s)*: The various views are fit the paper format size and printed.

  – *Default size*: The various views are printed in their default size.

  – *Cutting marks*: The cutting marks around the various print sections of a default size view will appear in the printout.

  – *Color print*

Option menus or popup windows that obscure the view, or that merely exist somewhere on the monitor screen, are not sent to the printer and have no effect on the printing of the view itself.

**Printing a Graphic**

When you print a graphics view from SAP Business Graphics, one of the following color schemes (*Options* → *Global Options*) should be active:

- Color Scheme E: for Matrix printers and plotters
- Color Scheme F: for Postscript printers

### How the System Sizes Output for the Printer

Your SAP Graphics program prints the largest possible image allowed by the output format currently specified in the printer.

If your window is a horizontal rectangle (that is, wider than it is high), the width of the window is expanded to match the output format width. The window's height is then scaled accordingly.

If your window is a vertical rectangle (higher than it is wide), the height of the window is expanded to match the output format height. The window's width is then scaled accordingly.

In either case, the height-width ratio of the original window is maintained. Whether your graphics window is small or full-screen, what you see on the screen is what you get on paper.

Note the special features of SAP Network Graphics and SAP Bar Chart Graphics described above.

### Printer Requirements

In order to print graphics views, the printer attached to your system must be able to print graphics as well as text. It must also have a suitable resolution.

Printing through R/3 Spool requires a PostScript printer.

Printer output depends in part on the capabilities of the printer drivers supported by your operating system. For example, in the OS/2 operating system, you can specify the various output format options in the Print Manager.

# Mailing a Graphic

To mail a graphic, select *Graphic* → *Send*. A popup window appears containing three fields:

- *Title*

  Specify a title for the graphic in this field.

- *Description*

  Use this field to type in a short accompanying text for the graphic.

- *Recipient*

  Provide the user name that should receive the mail in this field.

Click on *Continue* when you have entered the necessary information. The graphic is sent as a mail message.

# Exiting from SAP Graphics

If you want to exit from your SAP Graphics application, choose *Graph* → *Exit* or press F15. Your current settings are saved.

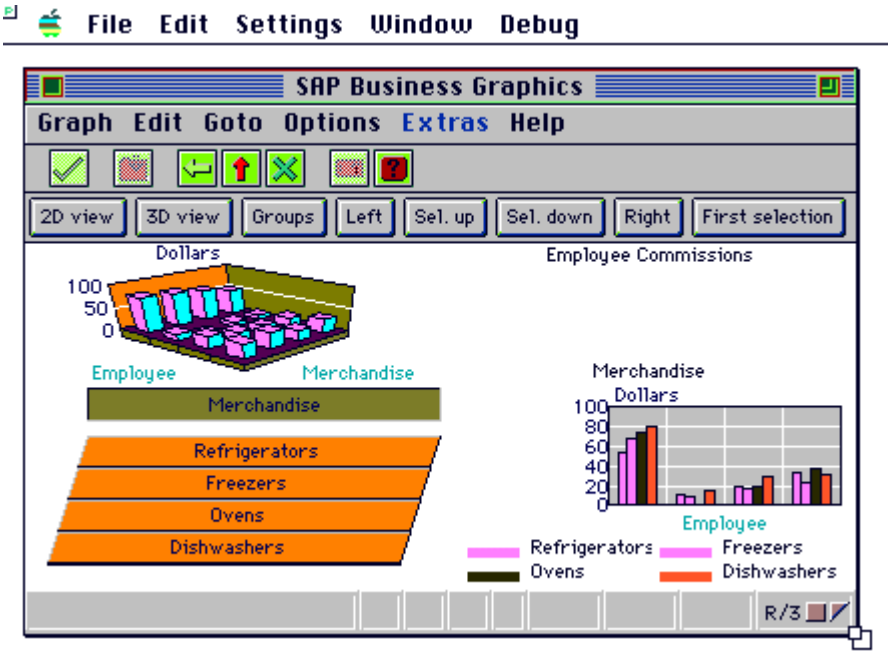
If you want to cancel your SAP Graphics application without saving your current settings, choose one of the following alternatives:

- *Edit* → *Cancel*, F12 or the cancel icon.
- *Goto* → *Back*, F3, or the back or exit icon.
- Click twice on the upper left corner of your SAP Graphics window.

# Special Features on Apple Frontends

A number of special features are available on Apple frontends. The following figure depicts the Apple menu bar with an SAP Graphics window.

The menus in the Apple menu bar provide additional and alternative options for your SAP Graphics application.




Additional options:

- Copying the SAP Graphics work area to the clipboard

  Select *Edit* → *Copy* to copy the work area to the clipboard.

- Changing font, font size and style in the SAP Graphics work area

  To change the font, select *Settings* → *Font*. To change the style (bold, italics, etc.), select *Settings* → *Style*. To change the font size, select *Settings* → *Font* → *Minimal Size*.

- Displaying open SAP Graphics windows

  Click on the Window menu in the Apple menu bar to display a list of open SAP Graphics windows. You can make any window your active window by clicking on the corresponding list item.

Alternative options:

- Printing a graph

  You can print a graph as follows:

  1. Set your print parameters by selecting *File* → *Page Setup*.
  2. Print your graph by selecting *File* → *Print*.

- Canceling an SAP Graphics application

  You can close SAP Graphics windows as follows:

  – To close the currently active window, select *File* → *Close* or click on the close icon.

– To close all windows, select *File* → *Quit*.

Other special features are as follows:

- Resizing windows

  Position the mouse pointer to the bottom right corner of your SAP Graphics window. The mouse pointer changes into the resize symbol. Drag the mouse to resize the window.

- Displaying hidden menus

  If your SAP Graphics window is too small to display all menus contained in its menu bar, the menu symbol is displayed in the menu bar. Click on it to display the hidden menus and options.

- Activating the alternative mouse button

  Keep the mouse button pressed while pressing the command key.

  For example, the alternative mouse button function is required to display the function keys of your current SAP Graphics application.

# Changing Values in Graphs

With the *Edit* menu, you can view your graphs in either of the following modes:

- Display mode

  The display mode (*Edit* → *Display*) is active by default when you start SAP Business Graphics. The display mode is no longer active as soon as you choose another menu item in the *Edit* menu.

- Edit mode

  You activate the edit mode by selecting *Edit* → *Modify (analog)* or *Edit* →*Modify (digital)* wählen.

  You can only use the edit mode in the following cases:

  - You start SAP Business Graphics from an ABAP program that allows edit mode.
  - You can only use the modify options in a 2D graph. This 2D graph may not be a stacked or side-by-side graph.

    If you want to modify a value in a 3D table, you must switch to the 2D graph for the row or column where that value is found.

The two types of edit mode are explained in the following topics:

Modifying Objects in Analog Mode [Page 54]

You click on an object in the graph and drag the mouse to set a new value for the object.

Modify Objects in Digital Mode [Page 55]

You enter an exact numerical value for an object in a dialog window.

# Modifying Objects in Analog Mode

Selecting *Edit → Modify (analog)* lets you use the mouse to edit values: you click and drag a graph object until it is the proper size.

(Dragging is the process of clicking on an object in the graph, and then moving the mouse while holding the mouse button down. The object you clicked on follows the mouse movement.)

How you use *Modify objects (analog)* depends on the 2D graph type you are using:

- *Vertical bars*,
  *Horizontal bars*,
  *Perspective bars*,
  *Vertical triangles*,
  *Stepped areas*

  To change values in these graphs, click anywhere inside the graph object, and drag the mouse in the desired direction. The object grows in the direction you drag.

- *Lines*,
  *Stacked areas*,
  *Shaded areas*

  To change these values, the markers must be turned on for the graph. Markers are small circles that mark individual data values, and they are turned off by default.

  1. To turn them on, select *Options → 2D Options* and click on *Markers*.
  2. Change a value by clicking on the desired marker and dragging it in the direction of the new value.

- *Stepped lines*

  To change a value in a *Stepped lines* graph, click on the horizontal edge for the desired column and drag it up or down until the edge lies on the desired value.

- *Polar diagram*,
  *Relative polar*,
  *Pie chart*,
  *Perspective pie chart*

  You cannot change these values using the *Modify objects (analog)* option.

# Modify Objects in Digital Mode

Selecting *Edit → Modify (digital)* lets you change graph values by typing in new values in a *Change value* window.

In general, to change an object's value, click twice on it. The *Change value* window appears showing the current value. Here, you can enter the new value exactly.

How you use *Modify objects (digital)* depends on the 2D graph type you are using:

- *Vertical bars,*
  *Horizontal bars,*
  *Perspective bars,*
  *Vertical triangles,*
  *Stepped areas*

  Click twice anywhere inside the graph object, and the *Change value* window appears.

- *Lines*,
  *Stacked areas*,
  *Shaded areas*

  The markers must be turned on for the graph. Markers are small circles that mark individual data values, and they are turned off by default.

  1. To turn them on, select *Options → 2D Options* and click on *Markers*.
  2. Click twice on the marker for the desired object and the *Change value* window appears.

- *Stepped lines*

  Click twice on the horizontal edge for the desired column and the *Change value* window appears.

- *Polar diagram*,
  *Relative polar*,
  *Pie chart*,
  *Perspective pie chart*

  You cannot change these values using the *Modify objects (digital)* option.

# Switching Between Views

The *Goto* menu lets you switch between the different graphics views in SAP Business Graphics.

A graphics *view* is a pre-formatted window containing one or more graphs. SAP Business Graphics offers four different views, in which various 2D and 3D graphs are automatically displayed. You can use the views to inspect existing graphs and generate new ones.

This section does not discuss how to format graphs. You can find formatting options explained in Setting Global Options [Page 72].

The following topics are available in this section.

- Using the Selection View [Page 57]

  The *Selection* view displays a 2D and a 3D graph together in the same window. This view lets you select which parts of the data you want to see in the 2D and 3D graph.

- Using the 2D View [Page 62]

  The *2D view* displays a 2D graph of the data in a full window. This 2D graph is an enlarged version of the 2D graph in the Selection view.

- Using the 3D View [Page 64]

  The *3D view* displays a 3D graph of the data in a full window. This 3D graph is an enlarged version of the 3D graph in the Selection view.

- Using the Groups View [Page 66]

  The *Groups* view displays several 2D graphs of the data in a single window.

# Using the Selection View

You can use the *Selection* view to select the parts of the input data you want displayed in a 3D or 2D graph. When you have the display you want, you can switch to the *3D view* or *2D view* for an enlarged picture. The following figure contains the *Selection* view (with 2D graph type *Stacked Areas* and 3D graph type *Walls*).

The *Selection* view contains the following parts:

- A 3D graph of the input data (upper left of the window)
- A 2D graph of the input data (lower right of the window)

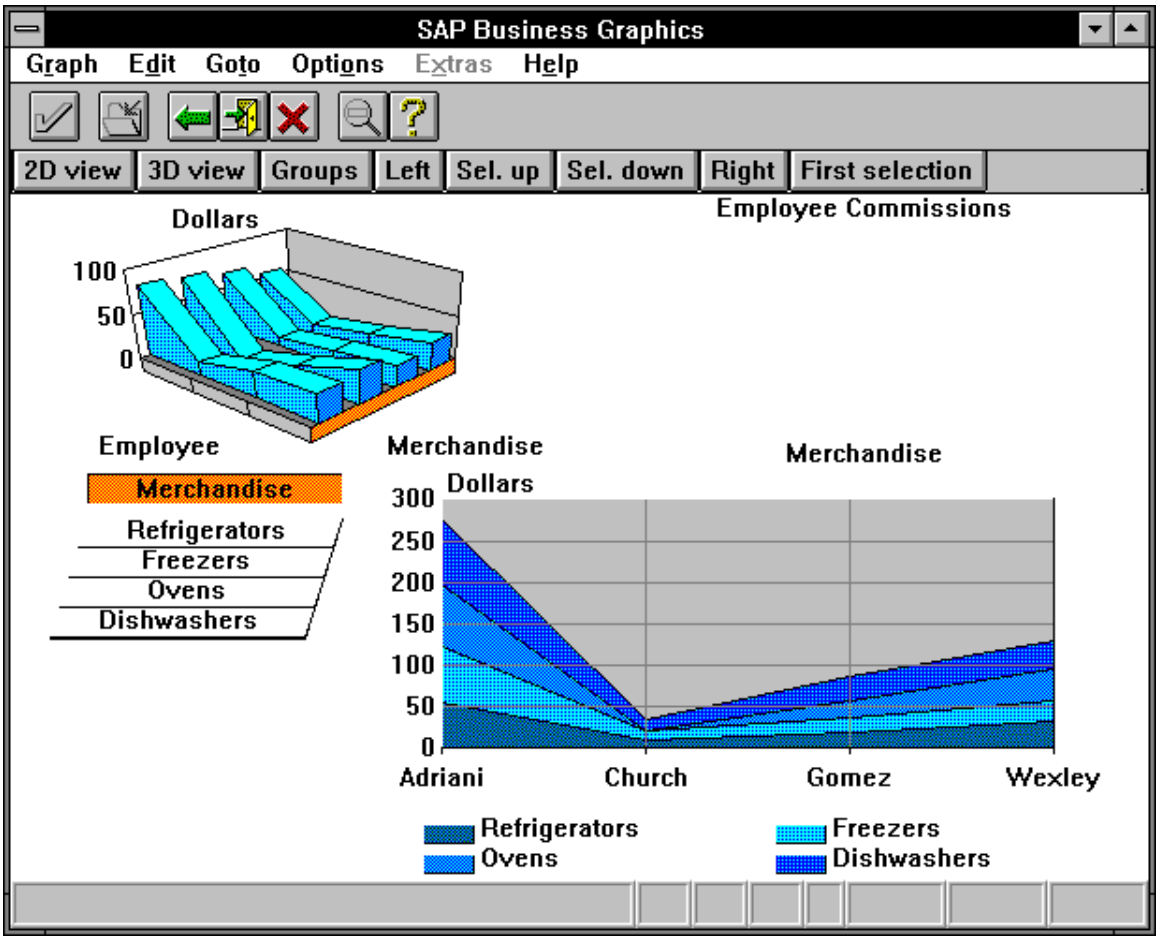
  You can set up the 2D graph to display part or all of the values shown in the 3D graph. The 2D graph can never show values not simultaneously displayed in the 3D graph.
- Selection bars (the horizontal bars below the 3D image)

  The selection bars allow you to select which parts of the 3D graph image to represent in the 2D image. You can read row names, column names or page names into the selection bars at any time.
- Pushbuttons

  The pushbuttons provide a selection of important menu options. To use a pushbutton, click on it.

If the input data is a simple list of values (a table with only rows), the *Selection* view cannot be generated.

Using the Selection View




## Using the Selection Bars

The selection bars are the horizontal bars below the 3D graph. Use the selection bars to choose which parts of the input data you want displayed in the 2D and 3D graphs.

The topmost selection bar contains the title of a graph dimension: the rows or columns. The lower bars list individual rows or columns. The selection bars always contain either the rows or columns, unless you turn on the *Stack on/off* button. This button fills the selection bars with the names of individual pages (if your input data extends over several pages).

At any given time, one of the selection bars is highlighted.

- If the top selection bar is highlighted, the 2D graph contains all the values contained in the 3D graph. In this case, values in the 2D graph are displayed in a side-by-side format.
- If a lower selection bar is highlighted, the 2D graph represents only a slice of the 3D graph. This slice is the row or column named by the highlighted bar.

The highlighted selection bar is also reflected in the base of the 3D graph frame: If the top selection bar is highlighted, the whole border is lit up on the corresponding side of the frame base. If a lower selection bar is highlighted, only the square representing that row or column is lit up.

Each time you highlight a new row or column, a new 2D graph is generated for those values. If the input data contains multiple pages, and you read the pages into the selection bars (using the *Stack on/off* button), the 3D graph is also regenerated. This action aligns the page names along the row or column axis. Values for the labels (rows or columns) previously aligned along that axis are now stacked vertically.

### How to highlight a selection bar

Each time you highlight a new selection bar, you change the contents of the 2D graph. There are 4 ways to highlight a selection bar:

- Click directly on the selection bar with the mouse.
- Click on one of the squares in the 3D frame border. This has differing effects, depending on whether the top or a lower selection bar is already lit up.

  If the top bar is already lit up, it remains lit up. The contents of the selection bars may change, depending on which side of the graph you click on, but the topmost bar remains highlighted.

  If a lower bar is already lit up, clicking can only highlight another lower bar. In this case, it matters where in the frame border you click: the bar corresponding to the square you click on gets lit up. If the clicked square belongs to the side of the graph not currently in the selection bars, that side will be read in and the correct bar lit up.

  You cannot always click on individual squares to highlight a selection bar. Some graph types (*Walls*, *Wedges*, *Surface*) may not depict as many segments in the frame border as there are rows or columns for a given side. When this is true, clicking on a segment has no meaning, since the segments do not correspond to particular rows or columns.
- Press the directional keys (up-arrow and down-arrow).
- Press F18 or F19 to cycle through the bars. You can also click with the mouse on the corresponding pushbuttons in the graphics window.

Note that you cannot highlight the topmost selection bar (the dimension title) if the selection bars currently contain the names of pages.

### How to change the contents of the selection bars

There are 3 ways to read a dimension (the rows, columns or pages) into the selection bars:

- To read in the rows, click with the mouse anywhere on the left side border of the 3D frame. To read in the columns, click anywhere on the right side.
- To toggle between rows and columns, you can press either right or left arrow-keys repeatedly.
- To read the names of pages into the selection bars, click with the mouse on the *Stack on/off* button. The input data must of course extend over several pages to use this function

## Using the Selection View Pushbuttons

The *Selection* view contains the following pushbuttons:

- *2D view*

  Go to the *2D view*.
- *3D view*

Go to the *3D view*.

- *Groups*

  Go to *Groups* view.

- *Stack on/off*

  The *Stack on/off* button reads the names of pages into the selection bars. This button is a toggle: click once to read page-names in; click again to replace page-names with the previous contents.

  When this button is turned on, both the 3D and 2D graphs are regenerated. In the 3D graph, names of pages replace either row-names or column-names along the left or right axis of the graph. The 3D graph floor now displays either rows-by-pages or pages-by-columns. Values for the dimension replaced (rows or columns) are stacked vertically.

  A new 2D graph is also generated for the currently active page. The currently active page is the page highlighted in the selection bars when you turn the *Stack on/off* button on.

  The *Stack on/off* button always gives you a stacked 3D graph. If you want to reassign rows, columns, and pages to various axes in the graph, but don't necessarily want a stacked graph, use the *Dimension Order* option (*3D Options* menu).

  This button does not appear in the graphics window if the input data does not include multiple pages.

- *Left*

  Reads into the selection bars the dimension currently laid out along the rows axis (the left side border of the 3D graph floor).

- *Sel. up*

  Highlight the next selection bar in the series.

- *Sel. down*

  Highlight the previous selection bar in the series.

- *Right*

  Reads into the selection bars the dimension currently laid out along the columns axis (the right side border of the 3D graph floor).

- *First selection*

  Switch between the current selection bar and the top-most selection bar. If the top-most selection bar is the current selection bar, then First selection automatically switches between the top-most (first) selection bar and the next (second) selection bar.

  This button is a toggle: the first click makes a switch, and the next click switches back.

- *Page up*

  Scroll forward through the different pages of the data. This button does not appear if the input data does not contain multiple pages.

- *Page down*

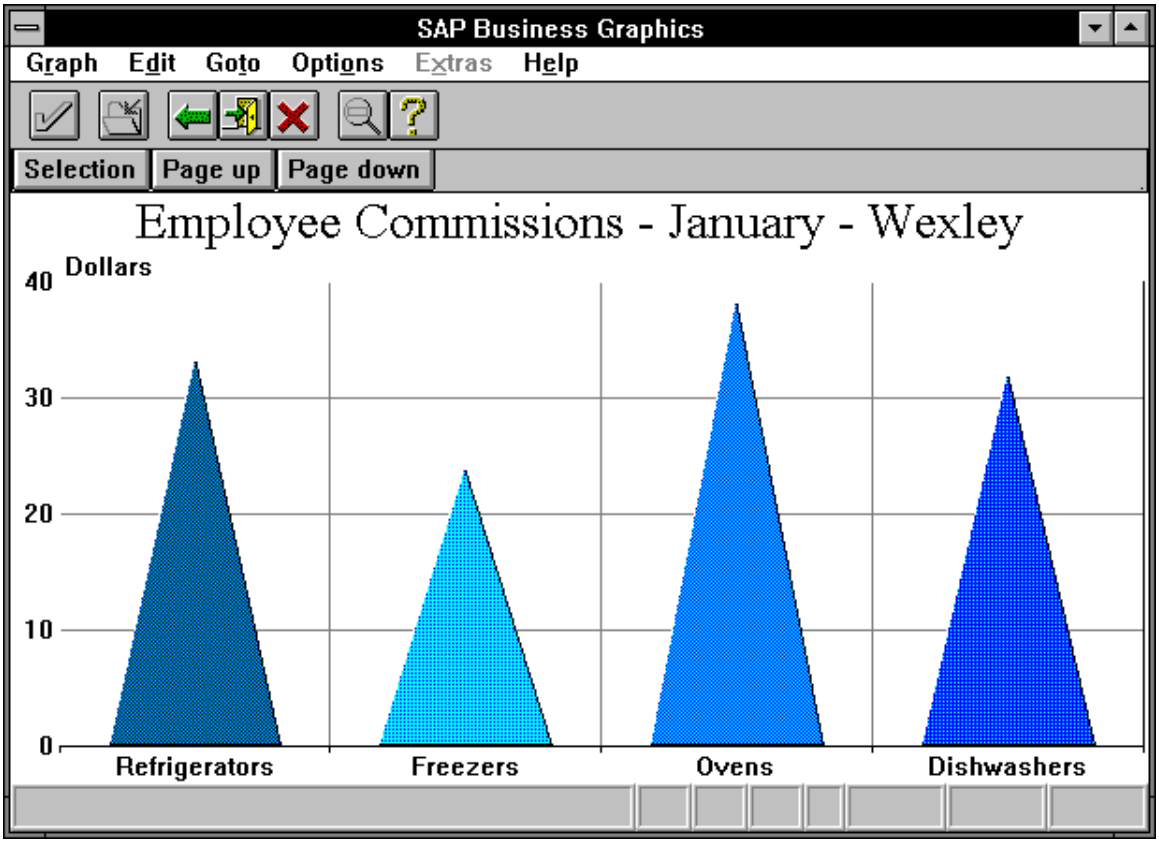
  Scroll backward through the different pages of the data. This button does not appear if the input data does not contain multiple pages.

# Using the 2D View

Use the *2D view* to get a 2D graph of your data in a full window. This graph is an enlarged version of the 2D graph in the *Selection* view. You can select a row or column from the *Selection* view's 3D image and use the *2D view* to inspect the relative sizes of graph objects more closely.

The enlarged 2D image also provides more space for displaying text labels. This is particularly useful when you want to use the *Alternative Text* option (in the *2D Options* menu) to place labels inside the graph rather than outside it.

For information on 2D graph types and other 2D formatting options, see the section Setting 2D Options [Page 86]. The following figure contains a *2D* view (with graph type *Triangles*).




## Creating a 2D Graph for Particular Input Values

When you want to display part, but not all, of your data in a 2D graph, you must tell the system which values you want to see. You do this by specifying the row or column (and page, if there is more than one) of the desired values. Perform the following steps:

1. Switch to the *Selection* view, using the *Goto* menu in the menu bar.
2. If the input data contains multiple pages, you may need to change to a new page. (The current page is displayed as part of the graph's title.) To do this, use the Page up and

Page down buttons to flip through the graphs for successive pages. As you do this, the graph's title changes for each page.

3. To specify a given row for example, click on the selection bar containing the relevant row name. If the selection bars contain the names of columns at the moment, you must read in the rows before you can select one. To do this, click on the left side border of the 3D graph floor. (Click on the right side, of course, if you need to read column names into the selection bars.) A 2D graph is generated for the row (or column) you have requested.

## Using the 2D View Pushbuttons

The *2D view* contains the following pushbuttons:

- *Selection*

  Go to *Selection* view.

- *Page up*

  Scroll forward through the items (rows or columns) in the selection bars. A new 2D graph is generated for each selection bar change.

  This button does not appear unless the input data contains multiple pages.

- *Page down*

  Scroll backward through the items (rows or columns) in the selection bars. A new 2D graph is generated for each selection bar change.

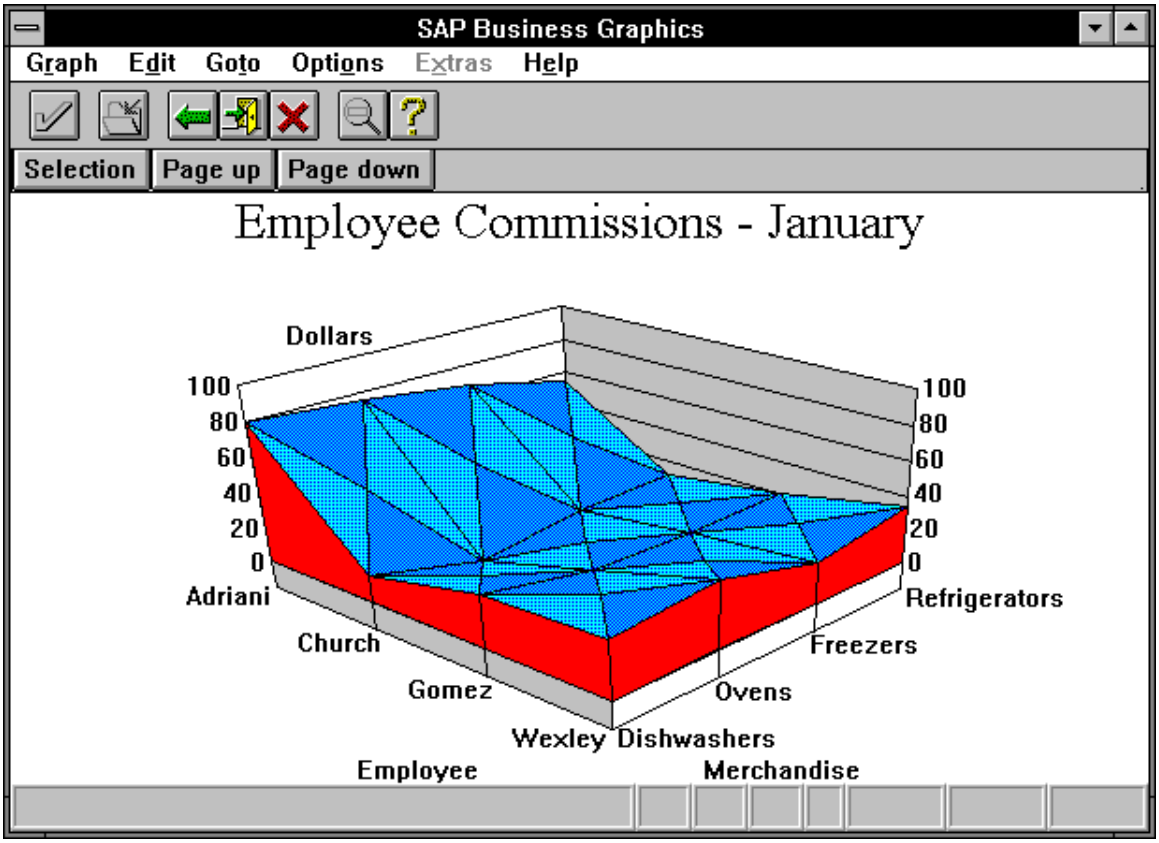
  This button does not appear unless the input data contains multiple pages.

# Using the 3D View

Use the *3D view* to get a 3D graph of your data in a full window. This graph is an enlarged version of the 3D graph in the *Selection* view and allows you to inspect the relative sizes of graph objects more closely.

If the input data is a simple list of values (contains only rows, or only columns), the *3D view* cannot be generated.

For information on 3D graph types and other 3D formatting options, see Setting 3D Options [Page 111]. The following figure contains a *3D* view (with graph type *Surface*).




## Using the 3D View Pushbuttons

The *3D view* contains the following pushbuttons:

- *Selection*

  Go to *Selection* view.

- *Page up*

  Scroll forward through the different pages of the data. This button does not appear if the input data does not contain multiple pages.

- *Page down*

  Scroll backward through the different pages of the data. This button does not appear if the input data does not contain multiple pages.

# Using the Groups View

The *Groups* view provides three specific data groupings (summarized below) for comparing several 2D graphs at a time. The first two groupings consist of single screens, and the third grouping of multiple screens.

If your input data spans multiple pages, all three groupings are available. If the data contains only a single page, only the first screen of the third grouping is available.

You can scroll through the groupings using the Change button. Use Page up and Page down buttons to cycle through the separate screens of the third grouping.

## Data Groupings and How to Get Them

The steps below list the data groupings generated (see the following figures) when data is assigned to graph axes as follows:

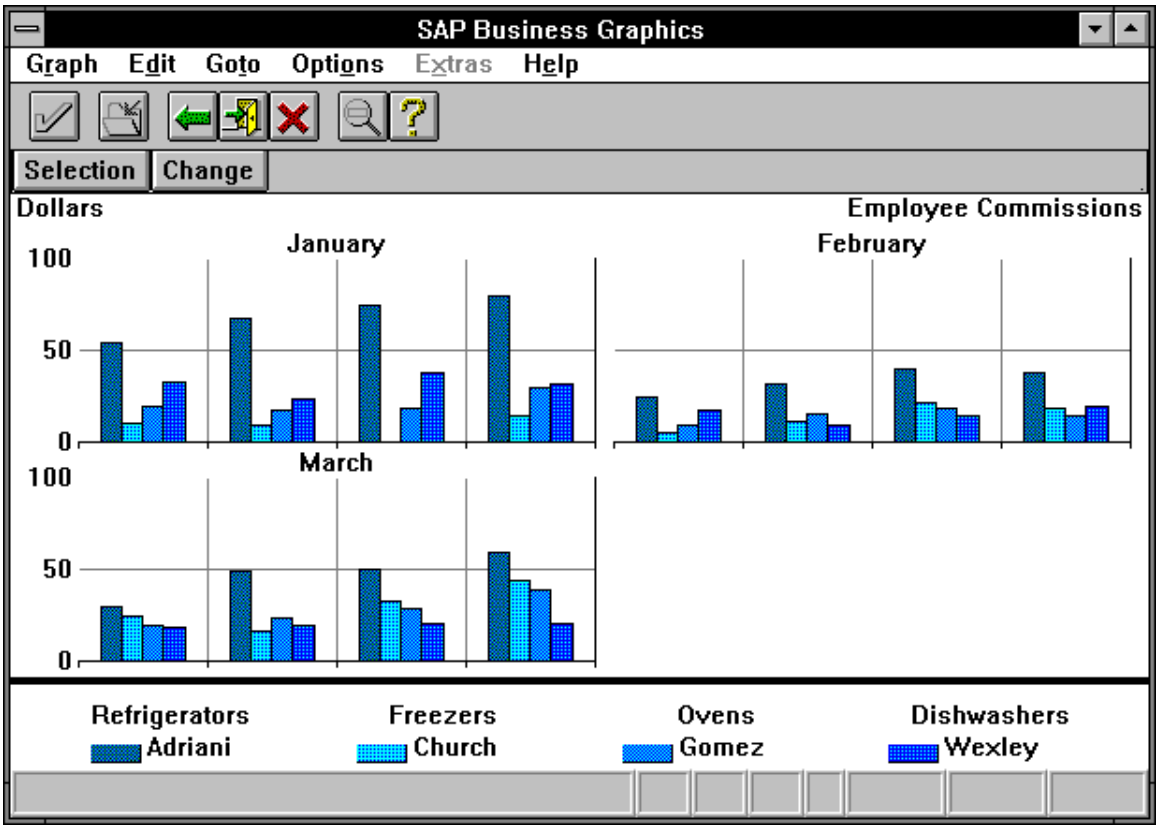
- The rows contain Employees
- The columns contain Merchandise
- The pages contain Months

For this discussion, *imagine that the rows are currently in the selection bars*. (Of course, simply interchange the rows and columns, if you have the columns in the selection bars.) The following steps describe the three data groupings while walking you through them.

1. Invoke the *Groups* view. (Either select *Goto* → *Groups*, or press Groups from the *Selection* view.) You get the grouping shown in the first of the following figures, which contains the *Groups* view of first data grouping.

   The first grouping includes one side-by-side graph for each page. Within each graph, values for the rows (Employees) are broken out side-by-side for each column (Merchandise). Since there are three pages, three graphs appear.

   The following figure contains the *Groups* view of the first data grouping.




2. While in the first data grouping, press Change. You get the second grouping, shown in the second figure.

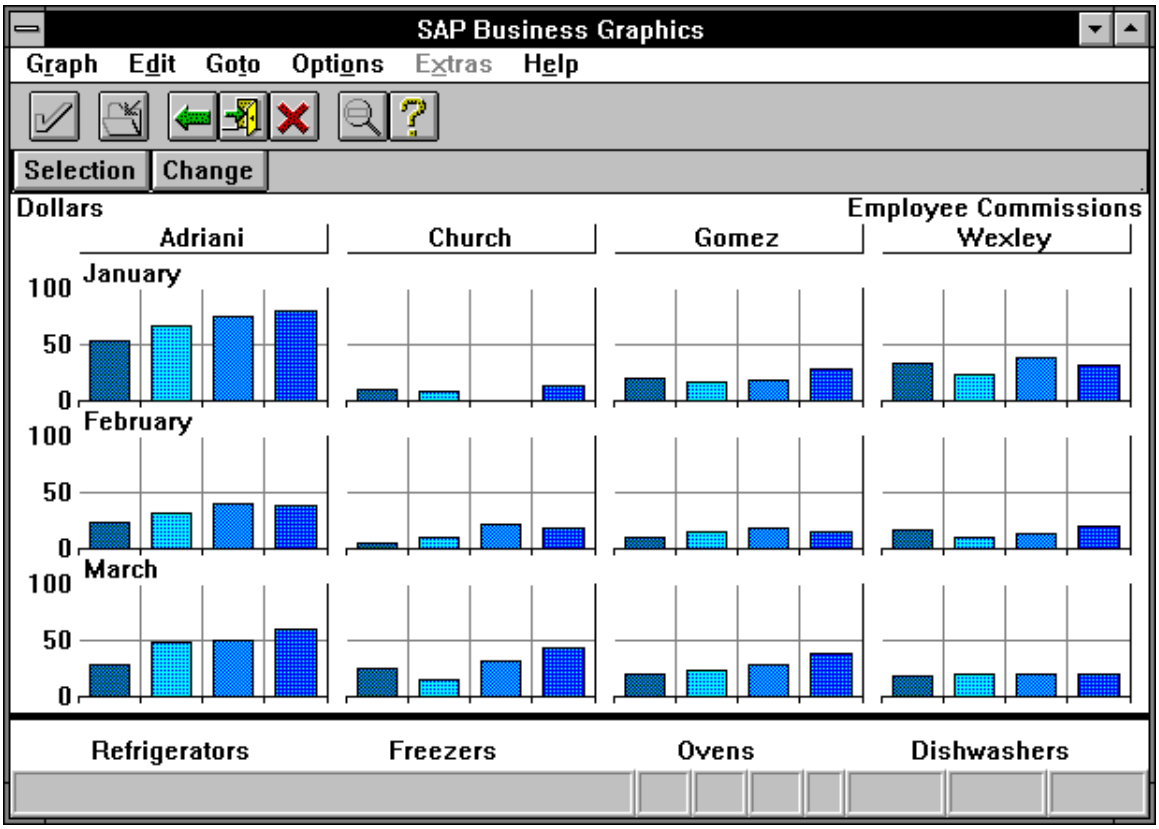
   The second grouping is really the same as the first, except broken down further. The single side-by-side graph given for each page (in the first grouping) is now shown as a series of non-side-by-side graphs, all in a row

   There is one non-side-by-side graph given here for each row (Employee) in the data. Within each graph, four values are given, one for each column (type of Merchandise).

   Since there are three pages in the data, three rows of graphs appear on the screen. Since there are four rows in each table of data, four graphs appear in each row on the screen.

   The following figure contains the *Groups* view of the second data grouping.

## Using the Groups View




3. While in the second data grouping, press Change. You get the third data grouping, which is shown in the third figure

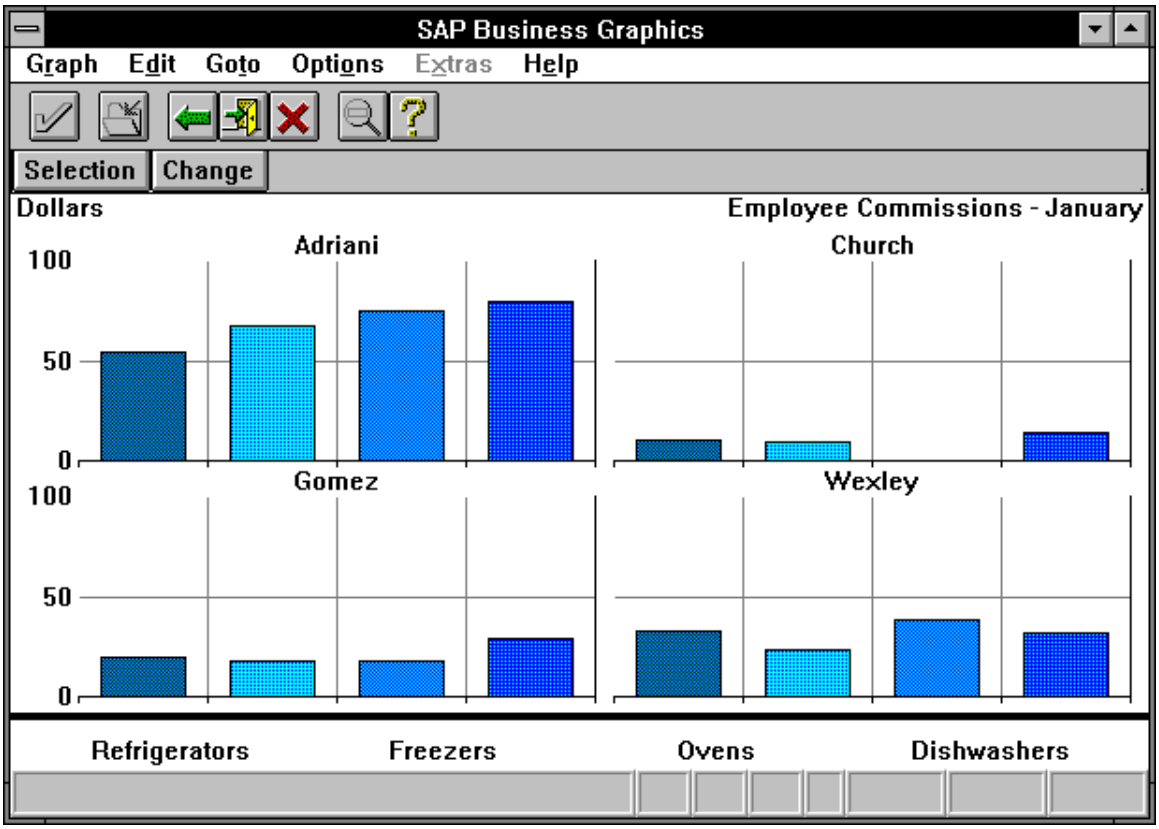
   If your input data contains only a single table, this grouping is first to appear, and the only one possible. In this case, the grouping contains only a single screen.

   However, if the input data spans multiple tables, the third data grouping includes multiple screens (one for each page in the data). Use the Page up and Page down buttons to page through the screens. The name of the current page is found in the title of the screen

   Within a single screen, there is one graph for every row (Employee) in the data. Each graph contains four values, one for each column (type of Merchandise) in the data. Since there are four rows in the data, four graphs appear.

   Since there are three pages in the input data, you can click on Page up or Page down two more times to see the graphs for the other months. The Page up and Page down buttons are circular: on the third click, you are returned to the first screen in this grouping.

   The following figure contains the *Groups* view of the third data grouping with the first set of graphs.




4. Click on Change anytime while in the third grouping to return to the first data grouping. (You can press Change anytime, regardless of where you are in the page-up/page-down cycle).

   In reading the above description, as already noted, you should substitute columns for rows, if you have the columns in the selection bars instead of rows.

   However, if you have pages in the selection bars, you cannot substitute pages for rows in reading the description. Pages are always used as described in the steps above, regardless of whether they are in the selection bars or not.

   When you have pages in the selection bars, the system notices this and checks what you had there (rows or columns) before you turned on the *Stack on/off* button.

   If the rows were there, then the system uses rows and columns exactly as described here. If the columns were there, the system interchanges columns for rows in implementing the described steps.

## Using the Groups View Pushbuttons

The *Groups* view contains the following pushbuttons:

- *Selection*

  Go to *Selection* view.

- *Change*

  Display the next data grouping. See the preceding section, ("Data Groupings and How to Get Them") for more information on data groupings.

# Formatting Graphs

You can use the Options menu to change your graphic display.

Setting Global Options [Page 72]

Setting 2D Options [Page 86]

Setting 3D Options [Page 111]

Selecting Colors [Page 133]

# Setting Global Options

Select *Options* → *Global options* to call up the *Global Options* dialog box. This dialog box contains options for formatting both 2D and 3D graphs.

You can use it to set the following options:

Activating a Color Scheme [Page 74]

Zooming Peak Values [Page 75]

Reordering a Stack [Page 76]

Suppressing Zeros [Page 77]

Interpolating Values [Page 79]

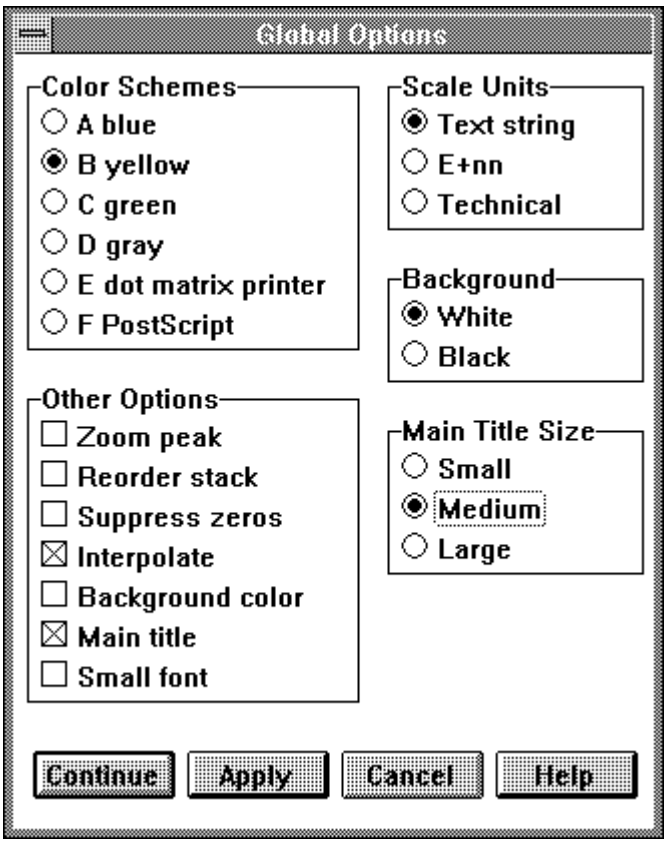
Activating the Display Area Background Color [Page 80]

Displaying or Hiding the Main Title [Page 82]

Decreasing the Font Size [Page 83]

Choosing Scale Units [Page 84]

Choosing The Main Title Size [Page 85]


Global Options
Color Schemes
A blue
B yellow
C green
D gray
E dot matrix printer
F PostScript
Scale Units
Text string
E+nn
Technical
Background
White
Black
Other Options
Zoom peak
Reorder stack
Suppress zeros
Interpolate
Background color
Main title
Small font
Main Title Size
Small
Medium
Large
Continue
Apply
Cancel
Help

# Activating a Color Scheme

Select *Options* → *Global options* to call up the *Global Options* dialog window.

The *Color Schemes* option allows you to activate one of the possible color schemes for the graph you are displaying. There are six color schemes available.

A color scheme is a collection of variables telling SAP Business Graphics which colors to use for which parts of the graph. These variables are found in the *Color Assignment* menu. You can set the variables to particular colors using the accompanying color palette.

To activate a given scheme, simply click on it, and then click on the *Apply* or *Continue* button. Your graph takes on the new color scheme. Thereafter, any colors you assign using the *Color Assignment* menu are stored as part of the new color scheme.

You cannot assign colors to a particular color scheme without first activating it.

# Zooming Peak Values

Select *Options* → *Global options* to call up the *Global Options* dialog window.

The *Zoom peak* option allows you to generate a close-up view of graph objects if they all have values within a narrow range. If you select this option, SAP Business Graphics regenerates the graph scaled to this narrower range.

Thus if all values in the graph fall between 1400 and 1600, the scale for the new graph will begin at 1400 rather than at 0, and extend through 1600. With the *Zoom peak* option, you get a more exact comparison of relative values.

# Reordering a Stack

Select *Options* → *Global options* to call up the *Global Options* dialog window.

The *Reorder stack* option allows you to reverse the order of stack segments in a stacked graph.

This option can be used with all 2D graph types, and with the *Towers*, *Pyramids* and *Walls* 3D graph types.

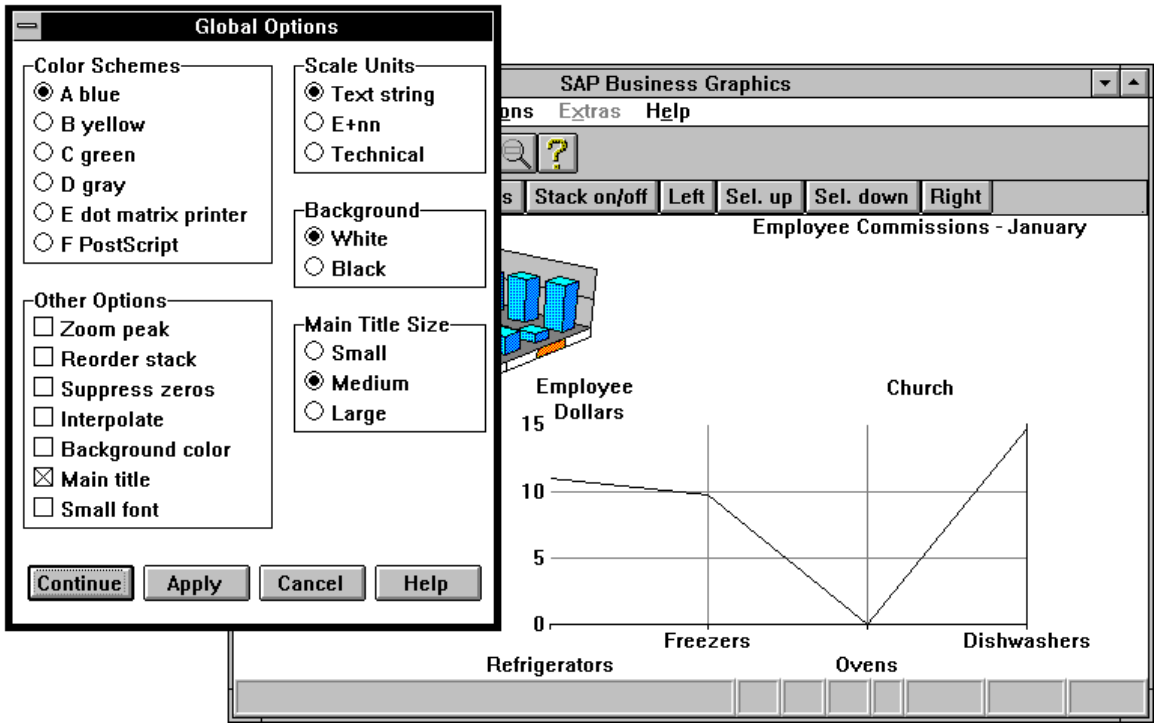
# Suppressing Zeros

Select *Options* → *Global options* to call up the *Global Options* dialog window.

The *Suppress zeros* option applies only to the *Lines* graph type (for 2D graphs) and all 3D graph types.

If the *Suppress zeros* option is off, and a zero value occurs in the data, the *Lines* graph (2D) dips to zero for that value. For a 3D graph, a flat surface indicates where the graph object should be.

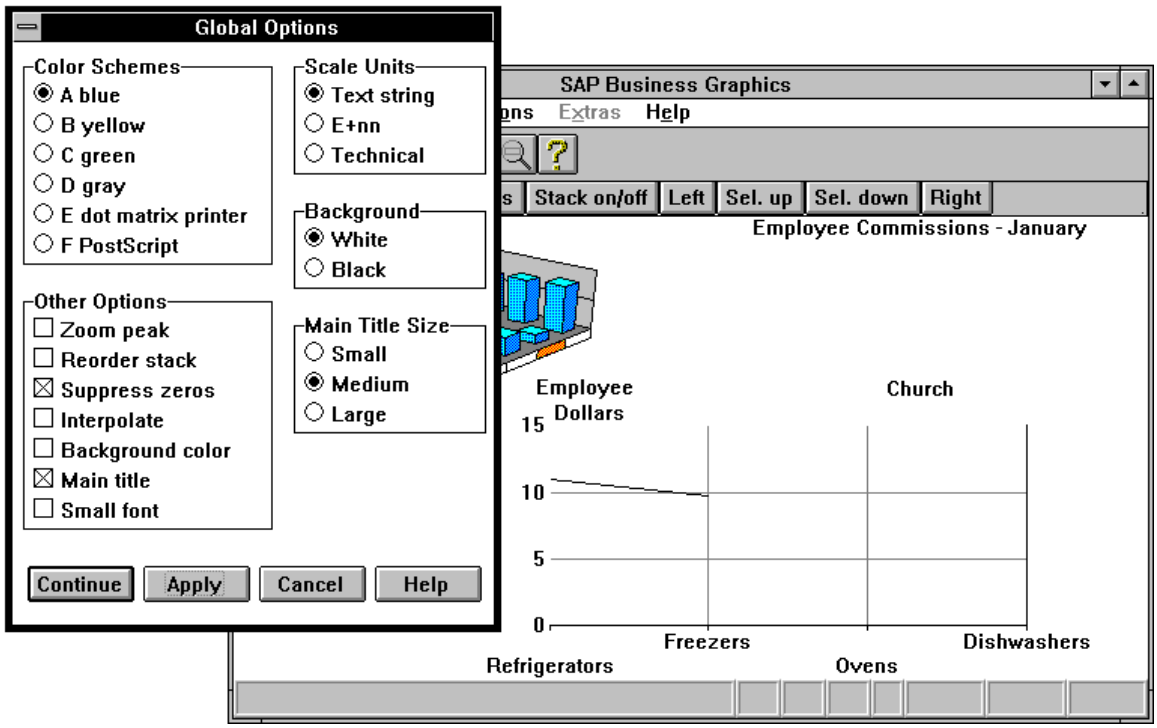
The following figure contains a *Lines* 2D graph with no suppression of zeros.




Turning on the option (see the following figure) allows you to display nothing for zero values in a graph. In a *Lines* 2D graph, the line becomes discontinuous around the zero-value: its neighbors do not connect with each other. In a 3D graph, no object appears at all.

The following figure contains a *Lines* 2D graph with suppression of zeros.

## Suppressing Zeros




There is some interplay between the *Suppress zeros* and *Interpolate* options. If the *Suppress zeros* option is on, a discontinuity appears in the graph. However, if the *Interpolate* option is simultaneously on, no hole occurs in the graph. The line directly connects the two neighbors of the zero value. It does not dip to zero, as it would if you were not suppressing the zeros.

# Interpolating Values

Select *Options* → *Global options* to call up the *Global Options* dialog window.

The *Interpolate* option causes SAP Business Graphics to generate and display values for rows or columns where values are missing from the data.

Data values are also interpolated for zero values if you have simultaneously turned on the *Suppress zeros* option (see the above figure).

The interpolation takes the average of the two neighboring values. If a missing (or zero) value has no neighbor on one side, the graph simply stops with the existing neighbor.

There is some interplay between the *Interpolate* and the *Suppress zeros* options. See "Suppress Zeros," earlier in this section for more information.

This option applies only to the *Lines* graph type (for 2D graphs) and the *Walls*, *Wedges*, *Strips*, and *Surface* graph types (for 3D graphs).

# Activating the Display Area Background Color

Select *Options* → *Global options* to call up the *Global Options* dialog window.

The *Background color* option allows you to turn the background color on or off for the Display Area [Page 81]. If you turn it off, SAP Business Graphics uses the *Background* indicator (found on the right side of the menu, and described in the section "Background Indicator") to color the background black or white. Using this function, you can heighten the visual contrast in a view without having to change any values in the Color Scheme [Page 134].

If you turn the *Background color* option on, then the *Background* indicator is not used at all. The indicator's *Black* and *White* values become inactive (cannot be set). Turning the *Background color* option back off reactivates the indicator's *Black* and *White* values.

Note that this option has no effect on the color of the *frame* background within the 3D or 2D graph frames. To color these aspects of the graphs, you must set either the *2D background*, *3D frame base right*, or *3D frame base left* color variables. These variables are described in the section Assigning Colors to Parts of a Graph [Page 135].

# Display Area

Area for displaying a graph located below the menu, symbol and pushbutton bars in the SAP Graphics window.

# Displaying or Hiding the Main Title

Select *Options* → *Global options* to call up the *Global Options* dialog window.

The *Main title* option allows you to display or not display the main title for the graph.

The term *main title* refers to the overall title for the graph. This title is provided explicitly with the screen capture data or other input. Input data need not include a main title, but if it does, the *Main title* option can turn it on and off.

The term *main title* does not include sub-titles appended to the main title during generation of the graph. These sub-titles give the names of rows, columns or pages for which the current graph is valid. Sub-titles cannot be turned off, since they explain the accompanying graph's meaning.

Thus, when you turn the *Main title* option off, the main title does not appear, but all sub-titles belonging to current graph do. As a result, this option has varying effects, depending on what view you are in:

- In the *2D view* and *3D view*, the main title and all sub-titles occur in a single line. The text in these views is always affected by the *Main title* option if a main title exists.
- The *Selection view* can have its titles on two separate lines. For the view as a whole, a main title with sub-title (the name of the relevant page) appears at the top of the view. A second sub-title (name of appropriate row or column) appears alone on the second line (directly above the 2D graph).

  Thus, when you turn the *Main title* option on and off, the text in the first line is affected (if a main title exists), but never in the second line.

You can set the font size for the main title using the *Main Title Size* indicator. In fact, turning the *Main title* option on and off can affect the size of sub-titles, regardless of whether a main title exists or not. See Choosing The Main Title Size [Page 85] later in this section for more information.

# Decreasing the Font Size

Select *Options* → *Global options* to call up the *Global Options* dialog window.

If you turn the *Small font* option on, the row and column labels in the graph appear with smaller lettering.

# Choosing Scale Units

Select *Options* → *Global options* to call up the *Global Options* dialog window.

The *Scale Units* option allows you to determine how the scale numbering along the vertical axis of the graph is described by the scale units key at the top.

Normally, for example, if your data values are all in the thousands, the scale numbering is displayed without the three rightmost places. A key appears above the numbers giving scale units (thousands, millions, and so on). You can use the *Scale Units* option to determine how this key is displayed.

One of the scale unit types *Text string*, *E+nn* or *Technical* must be active at any given time. The following table gives the display value for each type, when a data value has (is greater than or equal to) the scale given in the left-hand column.

| Scale | Text String | E+nn | Technical |
|---|---|---|---|
| $10^{-15}$ | E-15 | E-15 | E-15 |
| $10^{-12}$ | E-12 | E-12 | pico |
| $10^{-9}$ | E-09 | E-09 | nano |
| $10^{-6}$ | E-06 | E-06 | mikro |
| $10^{-3}$ | E-03 | E-03 | milli |
| 10 | -- | -- | -- |
| $10^{+3}$ | Thousands | E+03 | kilo |
| $10^{+6}$ | Millions | E+06 | mega |
| $10^{+9}$ | Billions | E+09 | giga |
| $10^{+12}$ | E+12 | E+12 | tetra |
| $10^{+15}$ | E+15 | E+15 | E+15 |

The three possible *Scale Units* options only affect scale units for fractional values between $10^{-12}$ and $10^{+12}$. For numbers outside this range, the scale units key automatically changes to exponential format. You cannot turn this off.

# Choosing The Main Title Size

Select *Options* → *Global options* to call up the *Global Options* dialog window.

The *Main Title Size* indicator governs the size of all graph titles, not just the main title. As a result, you can set this indicator even if the *Main title* option has been turned off.

The effectiveness of the *Main Title Size* indicator depends in part on the length of the text strings to be printed. If the total text string (main and sub-titles) is too long, you may not be able to enlarge the print, even if you set the value to *Large*.

It is also possible, if the title text is too long, that the *Main Title Size* indicator works only when the *Main title* option is turned off. This is because when you turn the option off, you reduce the displayable title to a sub-title only. This shortened string can then be made larger or smaller at will.

# Setting 2D Options

Select *Options* → *2D options* to call up the *2D Options* dialog window.

The *2D Options* dialog window contains options for modifying 2D graph images. You can generate 2D graph images using the *Selection view*, *2D view*, and the *Groups view*. Choosing options in this dialog window has no impact on any 3D graph image.

You can use the following sets of options:

- Choosing 2D Graph Types [Page 87]

  This topic describes the types of 2D charts you can use to display your data.

- Selecting Options for 2D Graph Types [Page 103]

  Some of the options apply to all graph types, others to certain graph types only.

Two-dimensional graphs take a slice (row or column) of the given data and display all relevant values for that slice. If the input data contains multiple rows or columns, then more than one 2D graph image of the data is possible. There are even more possible 2D images if you request stacked or side-by-side graphs. For more information, see the section Understanding the Data Displays [Page 26]

You can select or scroll through the possible 2D images while in the *2D view*, the *Selection view* or the *Groups view*. See the section Using the Selection View [Page 57] for information about how to perform these operations.

# Choosing 2D Graph Types

Select *Options* → *2D options* to call up the *2D Options* dialog window. It contains a number of 2D graph types.

A graph type is the type of chart (bar chart, pie chart, and so on) used in a graph to display data values. The default graph type for a 2D graph is *Vertical bars*.

The choice of graph type has no effect on which of your data values you are displaying or how the rows and columns are laid out along the graph axes. For information on making these latter choices, see Using the Selection View [Page 57] (in the section "The Goto Menu") and Setting 3D Options [Page 111] (in this section).

Note that some graph types cannot be used if your input data contains negative values.

For information on how to apply contrasting colors to a 2D graph, see the section Displaying Contrasting Colors [Page 107].

Vertical Bars Graph [Page 88]

Stacked Vertical Bars Graph [Page 89]

Horizontal Bars Graph [Page 90]

Stacked Horizontal Bars Graph [Page 91]

Perspective Bars Graph [Page 92]

Vertical Triangles Graph [Page 93]

Stepped Lines Graph [Page 94]

Stepped Areas Graph [Page 95]

Lines Graph [Page 96]

Stacked Areas [Page 97]

Shaded Areas Graph [Page 98]

Pie Chart [Page 99]

Perspective Pie Chart [Page 100]

Polar Diagram [Page 101]

Relative Polar Diagram [Page 102]

# Vertical Bars Graph

This graph type represents data in vertical rectangles.

*Vertical bars* are possible for 2D graphs in side-by-side format. Negative values are also allowed, except for graphs in stacked mode.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type. You can set the width of the bars using the *Bar/column width* indicator.

# Stacked Vertical Bars Graph

*Stacked vertical bars* are an alternative to plain *Vertical bars* when a 2D graph is already in side-by-side format. Values normally presented side-by-side are stacked on top of one another.

If a 2D graph is not already in a stacked or side-by-side formation, there is no difference between this graph type and *Vertical bars*.

The stacks are not cumulative: each section represents a completely separate value. Thus, sections higher in the stack should not be viewed as including lower ones.

Negative values are not allowed for this graph type.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type. You can set the width of the bars using the *Bar/column width* indicator.

# Horizontal Bars Graph

*Horizontal bars* are the same as *Vertical bars*, except that the bars extend horizontally across the display, instead of vertically.

Just as for the *Vertical bars* option, side-by-side values are allowed. Negative values are also allowed, except for graphs in stacked mode.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type. You can set the width of the bars using the *Bar/column width* indicator.

# Stacked Horizontal Bars Graph

The *Stacked horiz. bars* option (stacked horizontal bars) is the same as *Stacked vertical bars*, except that the bars extend horizontally across the display, instead of vertically.

The stacks are not cumulative: each section represents a completely separate value. Thus, sections farther right in the stack should not be viewed as including sections to the left.

The *Stacked horiz. bars* option is an alternative to plain *Horizontal bars* when a 2D graph is already in side-by-side format. Values normally presented side-by-side are stacked next to one another (left to right).

If a 2D graph is not already in a stacked or side-by-side formation, there is no difference between this graph type and *Horizontal bars*.

Just as for the *Stacked vertical bars*, negative values not are allowed.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type. You can set the width of the bars using the *Bar/column width* indicator.

# Perspective Bars Graph

*Perspective bars* are the same as *Vertical bars*, except that side and top panels are added to the bars to give the illusion of depth.

You can only display *Perspective bars* vertically. If the graph is in side-by-side format, it is converted automatically to a stacked format. That is, *Perspective bars* are always stacked, never side-by-side.

The stacks are not cumulative: each section represents a completely separate value. Thus, sections higher in the stack should not be viewed as including lower ones.

Negative values are possible, except when the graph is stacked.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type. You can set the width of the bars using the *Bar/column width* indicator.

# Vertical Triangles Graph

*Vertical triangles* are the same as *Vertical bars*, except that the figures are triangles instead of bars.

Stacked triangles are not possible, but negative values are.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type. You can set the width of the base of the triangles using the *Bar/column width* indicator.

# Stepped Lines Graph

The *Stepped lines* option draws a stepped line connecting all the values displayed. "Stepped" means that all parts of the line are either horizontal (to represent values) or vertical (to connect neighboring values).

When the 2D graph is in stacked or side-by-side format, multiple *Stepped lines* are created, and these overlay each other. In this case, the line segments above one another in a vertical column are similar to a stacked object in a stacked graph. Unlike values for ordinary stacked graphs, however, all values in a *Stepped lines* graph, regardless of height, are based at zero.

Negative values are allowed for this graph type.

A maximum of six simultaneous lines are allowed.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type. The *Bar/column width* indicator has no effect on the width of the steps for this graph type.

# Stepped Areas Graph

The *Stepped areas* option is like the *Stepped lines* option, except that the area below a given line is shaded.

When the 2D graph is in stacked or side-by-side format, multiple *Stepped line* boundaries are created. The areas underneath these boundaries overlay each other. As a result, all values in a *Stepped areas* graph, regardless of height, are based at zero. Regions for lower values are shaded both by their own colors and by the colors shading higher values.

Negative values are allowed for this graph type.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type. The *Bar/column width* indicator has no effect on the width of the steps for this graph type.

# Lines Graph

The *Lines* option resembles the *Stepped lines* option in that it draws a line connecting all the values displayed. The difference is, however, that data values are represented as points, rather than line segments. As a result, the lines connecting these points are diagonal rather than strictly vertical.

Negative values are allowed for this graph type.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type.

You can mark these data points with small circular markers using the *Markers* options. See "The Markers Options" later in this section (Setting 2D Options [Page 86]).

You can use the *Zero suppression* and *Interpolate* options described in the sections "Suppress Zeros" and "Interpolate" in the section "The Global Options Menu" to modify the display of zero-values and missing values for this graph type.

# Stacked Areas

The *Stacked areas* option resembles the *Lines* option in that numerical values are represented as points, and the lines connecting them are diagonals.

The difference between the two options is apparent when the graph is in stacked or side-by-side format. In this case, multiple *Stacked areas* are created and the areas are stacked on top of each other, not overlaid. Thus, stack sections are exclusive of one another, and each is based at its lower boundary, not at zero.

Negative values are not possible for this graph type.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type.

You can mark the data points with small circular markers using the *Markers* options. See "The Markers Options" later in this section (Setting 2D Options [Page 86]).

# Shaded Areas Graph

The *Shaded areas* option draws exactly the same display as the *Lines* option, except that the region under a line is shaded.

When the 2D graph is in stacked or side-by-side format, multiple *Shaded areas* are created. These areas are overlaid: the region under a given line is based at zero. Thus regions for lower values are shaded both by their own colors and by the colors shading higher values.

Negative values are allowed for this graph type.

When the 2D graph is neither stacked nor side-by-side, the *Shaded areas* graph is exactly the same as the *Stacked areas* graph.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type.

You can mark the data points with small circular markers using the *Markers* options und *Other Options*.

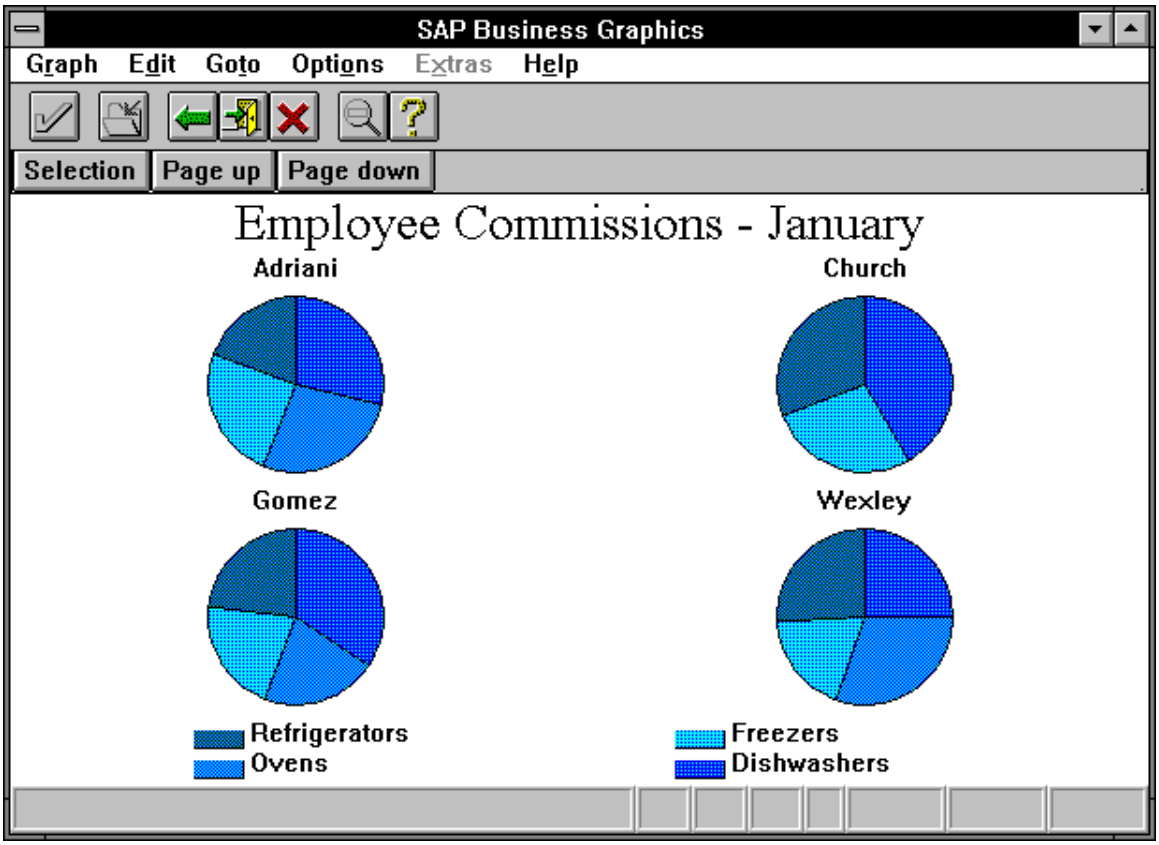
# Pie Chart

The *Pie chart* option draws all values for a single row (or column) as fractions of a whole. The fractions are calculated as a percentage of the sum total of all values for the row (or column). The whole is represented as a circle.

When the 2D graph is stacked or side-by-side, multiple pies are displayed. For example, there may be a separate pie for each row. Within a single pie, each fraction represents the values for a particular column.

A single pie can contain a maximum of 32 sections. Negative values are not possible for this graph type.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type.



# Perspective Pie Chart

The *Perspective pie chart* option is exactly like the *Pie chart* option, except that the pies are drawn with side panels to give the illusion of depth.

A single pie can contain a maximum of 32 sections. Negative values are not possible for this graph type.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type.

# Polar Diagram

The *Polar diagram* option displays a circle divided evenly into segments. Each spoke (edge) between two segments represents a row or column value. Each value is given as the distance from the center of the circle to a point along the spoke. The largest value extends all the way to the circumference, and lesser values are calculated as fractions of the largest.

The points from spoke to spoke are connected, and the areas thus created are color-filled.

If you turn on the *Percentages* option (described in "Percentages," in the section "Other Options"), the *Polar diagram* graph type is identical to the *Relative Polar* graph type (see the following figure).

A single circle can contain a maximum of 32 values. Negative values are not possible for this graph type.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type.

# Relative Polar Diagram

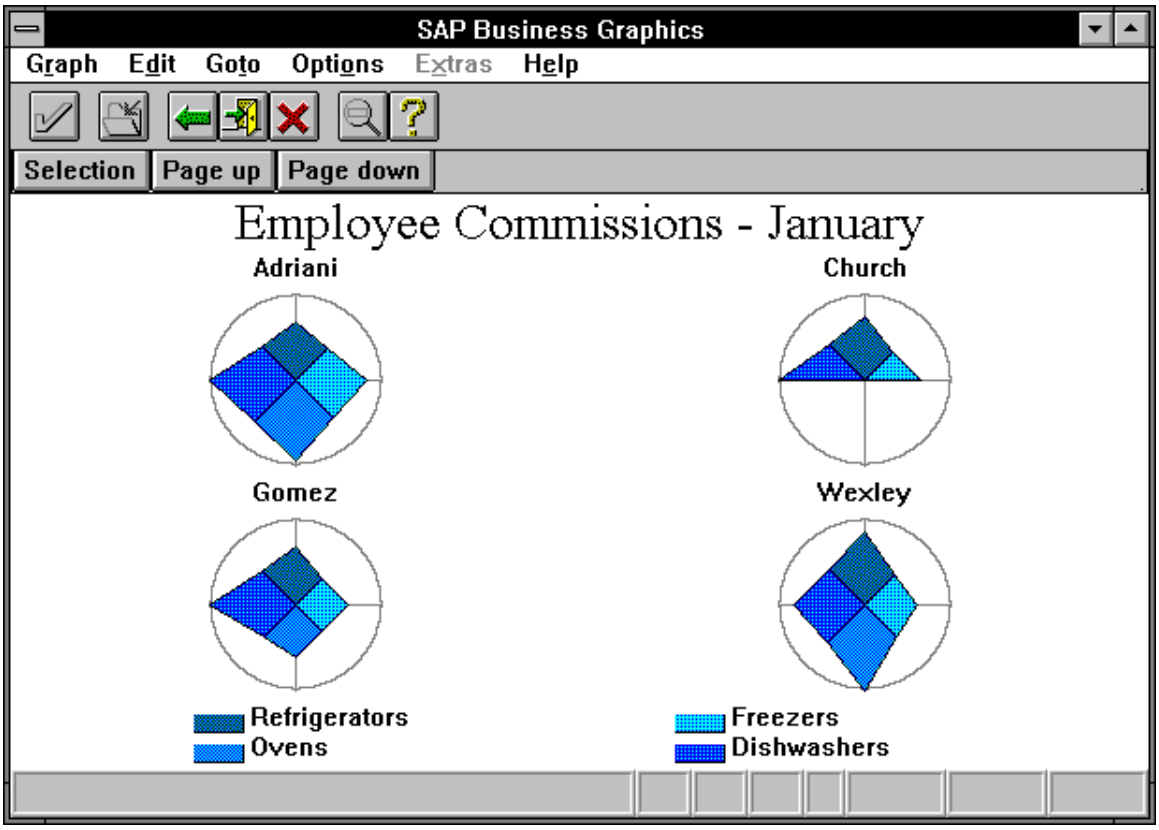
The *Relative polar* option is exactly like the *Polar diagram* option when a single polar diagram is displayed. (This is the case when the 2D graph is neither stacked nor side-by-side.)

The difference arises when multiple diagrams are displayed (for stacked or side-by-side graphs). In this case, smaller values are scaled to the largest value within each circle, instead of to the largest overall value. As a result, each circle has at least one value that reaches to the circumference. (In normal polar diagrams, only one of the circles need have such a value.)

The *Relative polar* graph type is identical to the *Polar diagram* graph type with the *Percentages* option turned on.

A single circle can contain a maximum of 32 values. Negative values are not possible for this graph type.

Select *Options* → *2D options* to call up the *2D Options* dialog window and choose the graph type.



# Selecting Options for 2D Graph Types

Select *Options* → *2D options* to call up the *2D Options* dialog window. In addition to the 2D graph types, it contains further options for formatting the various graph types.

Some of the following options apply to all graph types, others to certain graph types only.

Choosing The Percentages Representation [Page 104]

Displaying the Background Grid [Page 105]

Displaying Alternative Texts [Page 106]

Displaying Contrasting Colors [Page 107]

Activating the Graph Background Color [Page 108]

Displaying Markers at Data Points [Page 109]

Changing The Bar/Column Width [Page 110]

# Choosing The Percentages Representation

Select *Options* → *2D options* to call up the *2D Options* dialog window.

Setting the *Percentages* option allows you to display row (or column) values as percentages of the sum total of all values for that row (or column). The scaling text on the side of the frame changes to percentages, and graph objects are sized accordingly. (See the following figure.)

# Displaying the Background Grid

Select *Options* → *2D options* to call up the *2D Options* dialog window.

The *Background grid* option turns on the grid lines in the background of the 2D graph. The grid lines make numeric values in the graph easier to read.

# Displaying Alternative Texts

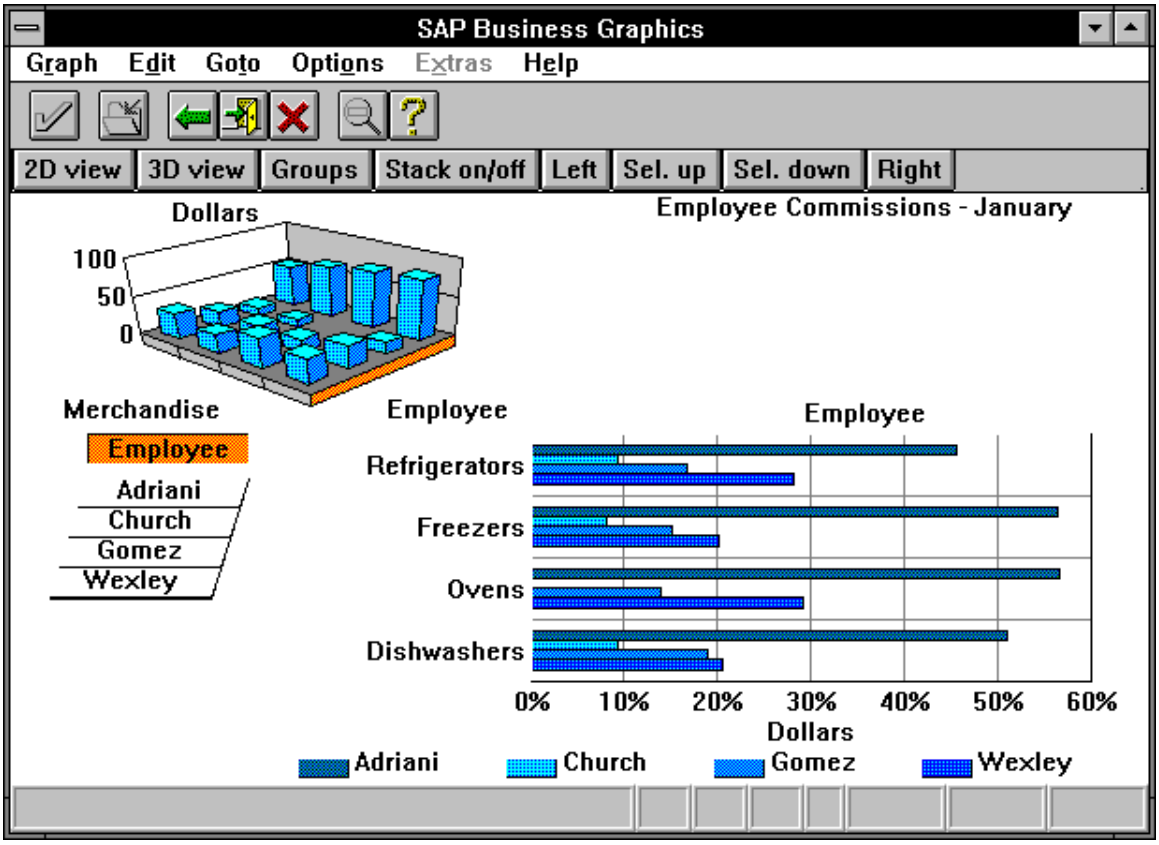
Select *Options* → *2D options* to call up the *2D Options* dialog window.

The *Alternative texts* option (see the following figure) causes the labels for individual row and column names to occur inside the graph frame, rather than outside.

The 2D image must be large enough to allow the text to fit inside the frame. If you turn this option on while displaying the *Selection view*, you may see no change. On calling up the *2D view*, however, the change is visible.

You can use this option with any of the bars or *Vertical triangles* graph type.

The following figure contains a *Horizontal bars* graph (with *Alternative texts* and *Percentages* turned on).



# Displaying Contrasting Colors

Select *Options* → *2D options* to call up the *2D Options* dialog window.

Setting the *Alternative colors* option causes objects in the graph (bars, triangles, and so on) to be colored with contrasting colors. The contrasting colors used are taken from the six contrast variables (*Contrast 1* to *Contrast 6*) in the *Color Assignment* menu.

If the *Alternative colors* option is not set, all objects in the graph are colored a single color. You can choose this color by setting the *2D object* variable in the *Color Assignment* menu.

Note that the system provides six possible color schemes (in the *Global Options* menu) and each contains a set of six alternative-contrast variables. If you turn on the *Alternative colors* option in the *2D Options* menu and don't get the colors you expect, check that you have the correct color scheme set in the *Global Options* menu.

Setting the *Alternative colors* option has no effect on the following graph types. They remain either all one color (for non-stacked, non-side-by-side 2D graphs), or colored with contrasting colors (for a stacked or side-by-side 2D graph), regardless of how you set the option.

- *Stepped lines*
- *Stepped areas*
- *Lines*
- *Stacked areas*
- *Shaded areas*

The following graph types are always colored with contrasting colors. You cannot use the *Alternative colors* option to turn this off.

- *Pie chart*
- *Perspective pie chart*
- *Polar diagram*
- *Relative polar*

For further information about how alternative coloring is implemented, see the section "Contrast 1 through Contrast 6" in the section Assigning Colors to Parts of a Graph [Page 135].

# Activating the Graph Background Color

Select *Options* → *2D options* to call up the *2D Options* dialog window.

Setting the *Background color* option causes the background for the 2D frame to be colored a particular color. You can specify this color by setting the *2D background* variable (in the *Color Assignment* menu).

If you turn this option off, the background for the 2D frame takes the color of the background for the entire view. The sections "The Background Option" and "The Background Indicator," in the section "The Global Options Menu" provide more information on how the view background is set.

# Displaying Markers at Data Points

Select *Options* → *2D options* to call up the *2D Options* dialog window.

The *Markers* option lets you display marker points (small circles) at each data point in the graph. You can then use these markers to select individual data points and edit them.

You can only use this option with graph types *Lines*, *Stacked areas*, and *Shaded areas*.

For more information, see the section Changing Values in Graphs [Page 53]

# Changing The Bar/Column Width

Select *Options* → *2D options* to call up the *2D Options* dialog window.

Setting the *Bar/column width* indicator allows you to determine how wide the bars or triangles in your graph are to be.

The *Bar/column width* indicator has settings from 1 to 5. You can increase the block width by clicking on the up-arrow until you reach the width you like. The down-arrow decreases block width.

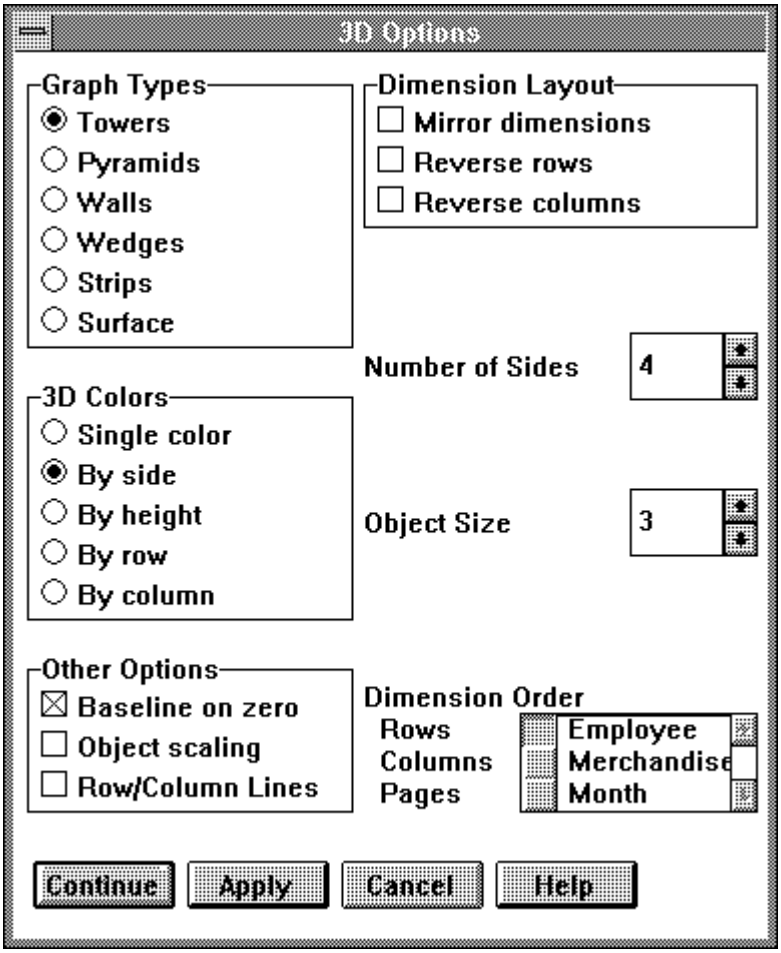
The largest setting (5) causes the bars to span the entire edge of the frame, without intervening spaces. The same applies to triangles: the largest setting increases the width of a triangles' bases to fill up the relevant edge of the frame.

The *Bar/column width* indicator can be used with the Bar graph types (Horizontal, Vertical, Stacked or plain, and Perspective) and *Vertical triangles*.

# Setting 3D Options

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The *3D Options* menu contains options for modifying 3D images. You can generate 3D images using the *3D view* and the 3D portion of the *Selection view*.




Choosing options on this menu can also affect 2D images of the data, since the 2D images are generated by selecting parts of the 3D image for display.

You can use the following sets of options:

- Choosing 3D Graph Types [Page 113]

  The types of 3D charts you can use to display your data

- Selecting Options for 3D Graph Types [Page 121]

  Some of the options apply to all 3D graph types, others to certain graph types only.

For background information, see the section Understanding the Data Displays [Page 26].

# Choosing 3D Graph Types

A graph type is the type of chart (bar chart, pie chart, and so on) used in a graph to display data values.

The choice of graph type has no effect on which of your data values you are displaying or how the rows and columns are laid out along the graph axes. For information on making these latter choices, see the section Using the Selection View [Page 57].

The default graph type for a 3D graph is the *Towers* graph type.

For information on how a 3D graph is colored, see Assigning Colors to 3D Objects [Page 122] later in this section.

Towers Graph [Page 114]

Pyramids Graph [Page 115]

Walls Graph [Page 116]

Wedges Graph [Page 117]

Strips Graph [Page 119]

Surface Graph [Page 120]

# Towers Graph

This graph type represents data in vertical columns.

This graph type can depict negative values.

Select *Options* → *3D options* to call up the *3D Options* dialog window.

You can set the width of the towers' bases using the *Object size* indicator. The *Number of sides* indicator changes the shape of the base and top surface of the towers.

# Pyramids Graph

This graph type represents data in pyramids. If you request a stacked graph with pyramids, the graph type changes to *Towers* that are stacked.

This graph type can depict negative values.

Select *Options* → *3D options* to call up the *3D Options* dialog window.

You can set the width of the pyramids' bases using the *Object size* indicator. The *Number of sides* indicator changes the shape of the base of the pyramids.

# Walls Graph

This graph type represents data values as a set of walls, one wall for each column.

Each wall is divided into segments, and the edge between wall segments corresponds to a given row value. As a result, the number of segments in a wall is one less than the number of rows in the table of input values.

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The contents of the selection bars (in the *Selection view*) has no effect on whether the walls are displayed for rows or columns. To get walls for each row, instead of each column, do the following:

1. Use the *Mirror dimensions* option to change the direction of the walls.
2. Use the *Dimension order* option to swap the rows and the columns on the graph axes.

The *Mirror dimensions* option and the *Dimension order* option are described later in this section.

This graph type can depict negative values. You can set the width of the walls using the *Object size* indicator (in the *3D Options* menu). The *Number of sides* indicator has no effect on the Walls graph type.

With the *Walls* graph type, you cannot always click on the 3D frame border (around the base of the graph) to request particular 2D graphs. (See "Using the Selection Bars" in Using the Selection View [Page 57] for more information.)

# Wedges Graph

The *Wedges* graph type is exactly like the *Walls* graph type except that the upper surface of each wall segment has been narrowed to a single edge. Each point along this edge (between wedge segments) corresponds to a given data value.

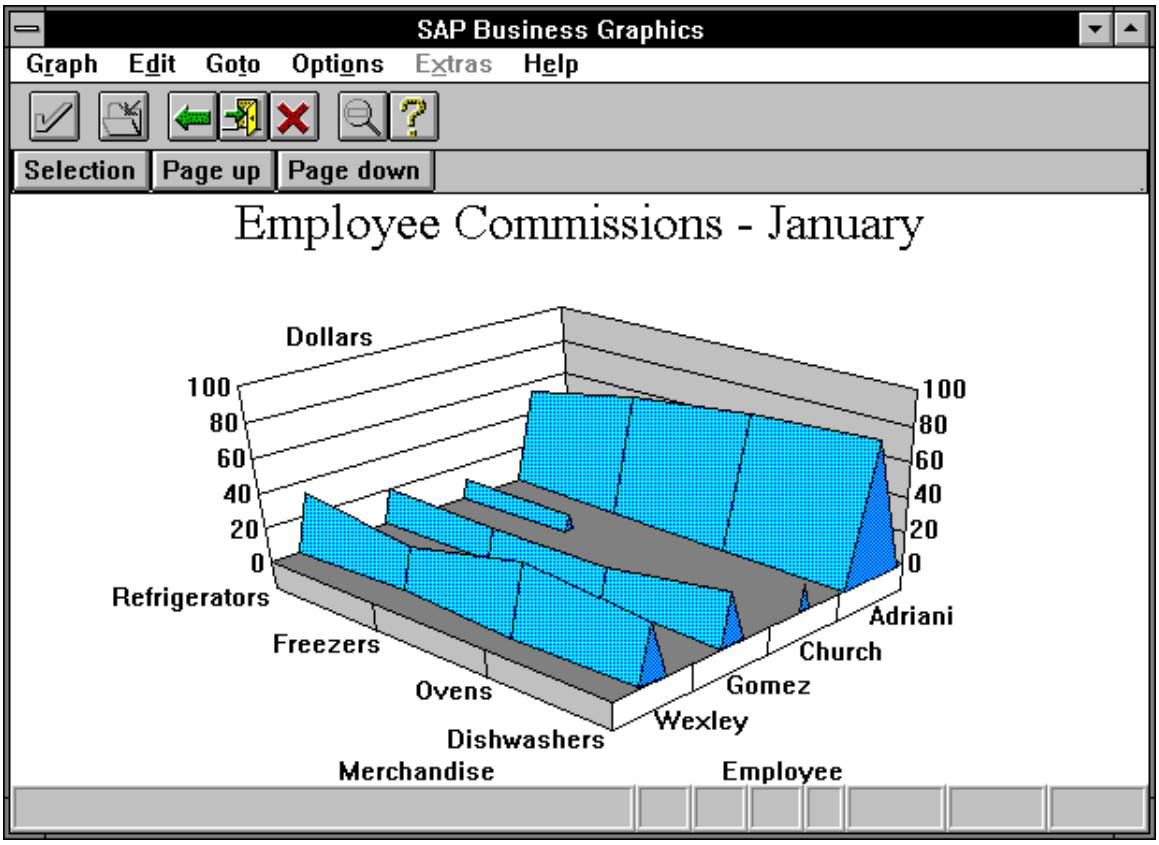
As with the *Walls* graph type, the number of segments in a wedge is one less than the number of rows in the input.

Select *Options* → *3D options* to call up the *3D Options* dialog window.

If you request a stacked graph with wedges, the graph type changes to *Walls* that are stacked.

This graph type can depict negative values. The *Object size* and *Number of sides* indicators have no effect on the *Wedges* graph type.

The following figure contains the *Wedges* graph type.




With the *Wedges* graph type, you cannot always click on the 3D frame border (around the base of the graph) to request particular 2D graphs. (See "Using the Selection Bars" in the section Using the Selection View [Page 57] for more information.)

# Strips Graph

This graph type is the same as the *Walls* graph type, except that only the top surface of each wall appears.

Select *Options* → *3D options* to call up the *3D Options* dialog window.

# Surface Graph

This graph type represents a set of data values as a surface. Both rows and columns are represented as edges, rather than separate objects. Data values are represented as the junctions of a row edge and a column edge.

The *Surface* graph type does more than represent data values as junctions of row or column edges. Data values are also connected diagonally to the neighbors of their neighbors in a row or column. These diagonal connections are not row or column edges, however, and the junctions of diagonal connections should not be confused with data value points.

This graph type can depict negative values. However, there are no visible color changes to help you differentiate negative from positive values. (With other graph types, the top surface of the object changes color, depending on whether the value is negative or positive.) You can only recognize negative values by looking for parts of the surface that dip below the zero-level scale line (as drawn on the back walls of the graph).

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The *Object size* and *Number of sides* indicators have no effect on the *Surface* graph type.

With the *Surface* graph type, you cannot always click on the 3D frame border (around the base of the graph) to request particular 2D graphs. (See "Using the Selection Bars" in the section Using the Selection View [Page 57] for more information.)

# Selecting Options for 3D Graph Types

Select *Options* → *3D options* to call up the *3D Options* dialog window. In addition to the 3D graph types, it contains further options for formatting the various graph types.

Some of the following options apply to all graph types, others to certain graph types only.

Assigning Colors to 3D Objects [Page 122]

Mirroring 3D Graphs [Page 124]

Reversing Rows in 3D Graphs [Page 125]

Reversing Columns in 3D Graphs [Page 126]

Setting the Baseline at Zero [Page 127]

Displaying the 3D Graph Scale Lines [Page 128]

Displaying Row/Column Lines [Page 129]

Choosing the Number of 3D Sides [Page 130]

Setting the Object Size [Page 131]

Changing the Dimension Order [Page 132]

# Assigning Colors to 3D Objects

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The *3D Colors* options allow you to choose how you want the items in a 3D graph colored. These options govern the use of the *3D Object...* variables in the *Color Assignment* menu. Various parts of a graph object, or particular objects in a graph, are colored as specified by these *3D Object...* color variables.

The following options are available. Only one of them can be set at a time. Note that these options only apply to the sides of objects. Regardless of which option you choose, the tops of an object are colored with the *3D object top* color.

### Single Color

If you choose this option, all side panels of 3D graph objects are colored with a single solid color.

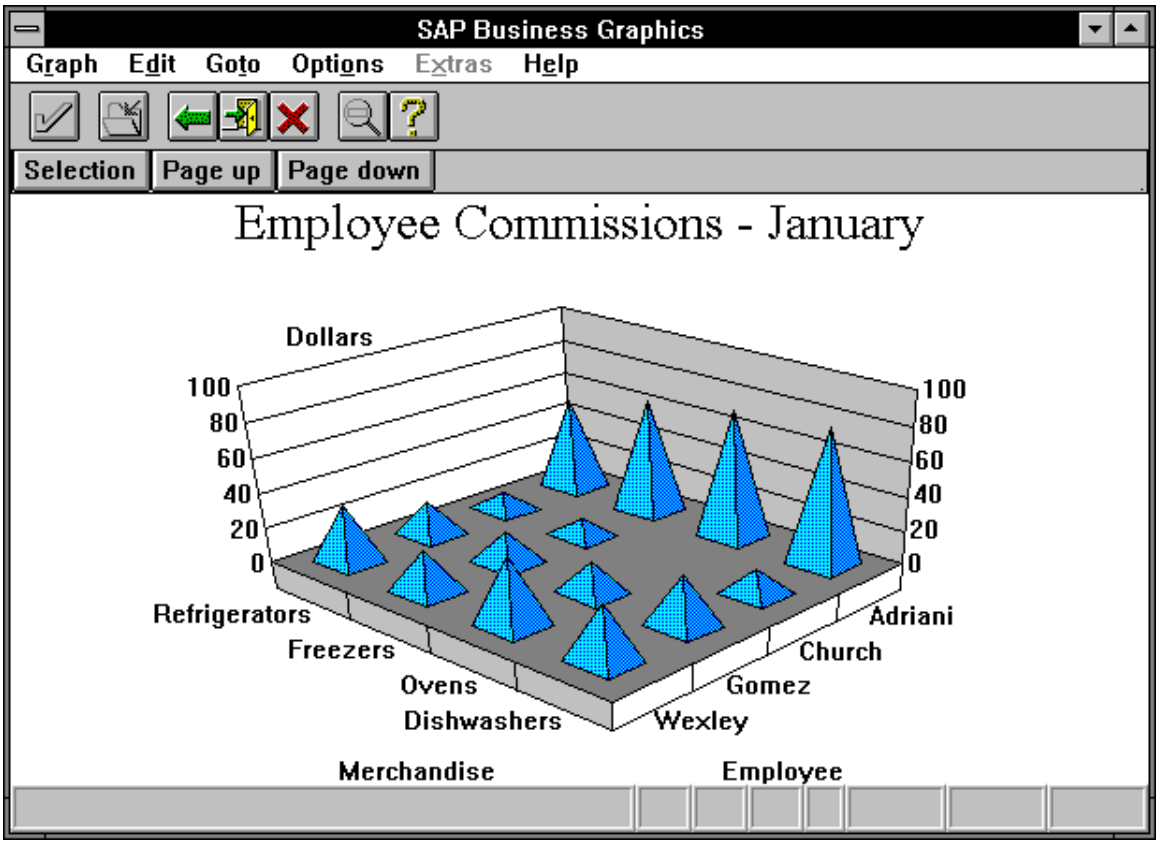
The color used for the side panels is specified by the *3D object side* variable in the *Color Assignment* menu. For this option, the 3D Object Panel color variables are ignored.

### By Side

If you choose this option, successive side panels of each 3D graph object are colored using the four 3D Object Panel colors (*3D Object Panel 1* to *3D Object Panel 4*).

SAP Business Graphics does not always use the full range of 3D Object Panel colors. You see the full range only for 4- or 5-sided objects, and then only when all sides are visible. (Normally, the user sees only the sides facing front.) All sides are visible when the graph type is *Pyramids* and the objects are flat enough (due to low data values) to see over the top.

The following figure contains the *Pyramids* graph type with *3D Colors* → *By side* requested.




## By Height

(This option will be available in later versions.)

## By Column

If you choose this option, all objects in a given column of a 3D graph are colored using one of the Contrast (*Contrast 1* to *Contrast 6*) colors. You can set the Contrast variables in the *Color Assignment* menu.

This option applies only to coloring the sides of objects.

## By Row

If you choose this option, all objects in a given row of a 3D graph are colored using one of the Contrast (*Contrast 1* to *Contrast 6*) colors. You can set the Contrast color variables in the *Color Assignment* menu.

This option applies only to coloring the sides of objects.

# Mirroring 3D Graphs

Select *Options* → *3D options* to call up the *3D Options* dialog window.

If you choose the *Mirror dimensions* option, all objects in a 3D graph are moved to their mirror image position.

The mirror image is created by reflecting all objects around a diagonal running across the base of the 3D frame. This diagonal splits the base between the row axis and the column axis.

Thus, the first object in the first row becomes the first object in the first column; the first object in the second row becomes the first object in the second column; and so on.

# Reversing Rows in 3D Graphs

Select *Options* → *3D options* to call up the *3D Options* dialog window.

This option allows you to reverse the order of the rows. The rows are on the left side of the 3D frame base.

# Reversing Columns in 3D Graphs

Select *Options* → *3D options* to call up the *3D Options* dialog window.

This option allows you to reverse the order of the columns. The columns are on the right side of the 3D frame base.

# Setting the Baseline at Zero

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The *Baseline at zero* option causes the floor of the graph to represent the lowest data value, instead of the zero point. All graph objects rise horizontally from the floor: negative values rise only as high as the zero line, and positive values higher. Graph objects for zero values are displayed by empty space.

By default, this option is turned off. In this case, all graph objects are based at the zero line: negative values hang downward, and positive values rise upward. Zero values appear as flat surfaces on the floor of the graph. (These surfaces are colored according to the *3D object top* variable in the *Color Assignment* menu.)

# Displaying the 3D Graph Scale Lines

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The *Object scaling* option displays horizontal grid ("height") lines on an object in a 3D graph. These lines are the projection of the 3D graph scale lines onto the actual object. Turning this option on helps the viewer see how tall an object in a 3D graph is.

The scale lines along the back walls of a 3D graph are always displayed. You cannot turn them on and off.

You can set the color for these scale lines by setting the *3D object scaling lines* variable in the *Color Assignment* menu. This variable affects the color of the scale lines on the object as well as the scale lines on the back walls of the 3D frame.

This option fully applies to the *Towers* and *Pyramids* graph types. However, for the *Walls* and *Wedges* graph types, you can turn on scale lines only for the side and front panels. You cannot use this option with the *Surface* graph type at all.

# Displaying Row/Column Lines

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The *Row/column lines* option displays grid lines separating the rows and columns in a 3D graph. These lines appear on the base of the graph and extend vertically up the back walls.

The *Row/column lines* option has no effect on scale lines extending horizontally across the back walls of the 3D frame.

You can set the color for the row/column lines by setting the *3D Row/column lines* variable in the *Color Assignment* menu.

This option only applies fully to the *Towers* and *Pyramids* graph types. For *Walls* and *Wedges*, row/column lines appear on the floor of the 3D frame, but not on the back walls.

# Choosing the Number of 3D Sides

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The *Number of sides* indicator allows you to choose how many sides the base of a graph object should have. SAP Business Graphics then displays the objects with as many of these sides visible as reasonable, given the vantage point of the viewer.

This option only affects the *Towers* and *Pyramids* graph types.

The number of sides possible is 3 to 8.

# Setting the Object Size

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The *Object size* indicator allows you to choose how wide the base of a graph object should be. The sizes range from 1 to 5, with 5, the largest, causing the elements in a row or column to take up all available floor space.

This option only affects the *Towers*, *Pyramids*, *Walls*, and *Strips* graph types.

# Changing the Dimension Order

Select *Options* → *3D options* to call up the *3D Options* dialog window.

The *Dimension order* option allows you to reassign the dimensions in your data to new positions in the graph. These positions are:

- **Rows**: the axis to the left side of the 3D frame floor
- **Columns**: the axis to the right side of the 3D frame floor
- **Pages**: the "invisible" axis. The page currently displayed appears as the last item in the graph title.

This means, for example, that you could assign the objects normally laid out along the left axis (the *Rows* position) to the right axis (the *Columns* position). If your input data contains multiple pages, you could also assign the items in the *Pages* position to the right or left axis.

You use this option by re-ordering the entries in the *Dimension order* entry-list. That is, you move the dimension listed in one position to a different position.

For example, to swap the rows and the pages, perform the following steps:

1. Click on the entry in the *Rows* position and hold the mouse button down. (This action does not highlight the entry, as you might expect.)
2. Drag the mouse cursor over to the *Pages* position. When you begin to drag, the cursor changes to the hourglass icon, and moves with you.
3. Release the mouse button. The hourglass icon returns to a cursor shape, and the rows and pages have swapped positions: both in the option entry-list and in the 3D graph.

As a result of using the *Dimension order* option:

- The 3D image has either reversed the position of the row and column labels, or one axis contains a different set of labels altogether (as shown by the text displayed along the right and left axis).
- The 2D image may also be rearranged, since the contents of the 2D image depends on the contents of the 3D image at any given time.
- If you swap the *Columns* entry in the list with any other, subtitles in the graph's main title also change.

# Selecting Colors

SAP Business Graphics provides you with a variety of color-related facilities:

- Assigning Colors to Parts of a Graph [Page 135]

  Graphs are composed of many different parts: object contours, object faces, background, title text, scale numbering, and so on. You can color these parts as you wish. You can use your color assignments for other graphs in a color scheme.

- Activating a Color Scheme [Page 74]

  You can use your color assignments for various graphs. Activate a Color Scheme [Page 134] and change the preset color assignments. You can apply your self-defined color scheme to other graphs.

- Automatic Coloring [Page 140]

  SAP Business Graphics colors some graphs for you automatically. Within these graphs, every graph object has a color different from that of its neighbors.

- Activating the Display Area Background Color [Page 80]

  If the background color of the Display Area [Page 81] is not activated, the background color is black or white, in contrast to the foreground color.

  You can choose a color for the display area background. For information on how to set the graph background color, see the top topic, “Assigning Colors to Parts of a Graph”.

- Assigning Colors to 3D Objects [Page 122].

  You can assign different colors to 3D graph objects.

- Displaying Contrasting Colors [Page 107]

  You can display 2D objects in contrasting colors.

# Color Scheme

Preset color specifications for all colorable parts of the graph

You can achieve color consistency from graph to graph by using the same color scheme for each graph.

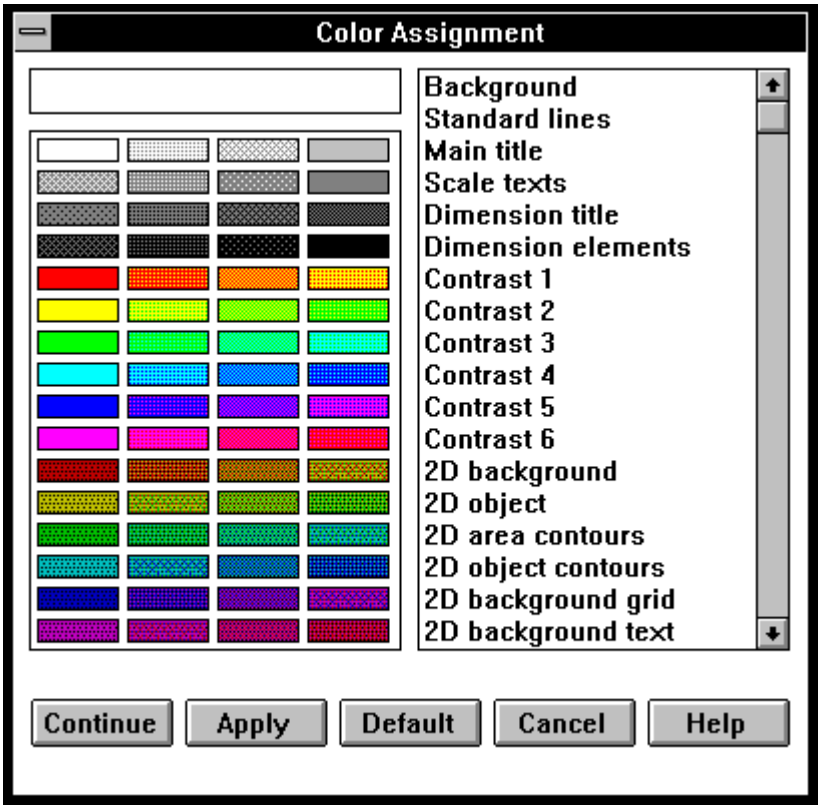
Select *Options* → *Global options* to choose a color scheme.

In the *Color Assignment* dialog window, you can assign different colors to the color variables of a color scheme. You can use your color scheme for other graphs.

# Assigning Colors to Parts of a Graph

To color a graph, select *Options* → *Color assignment*.

The *Color Assignment* dialog box presents you with a list of variables representing all colorable aspects of a graph. You color the graph by setting these variables to particular colors.




A large color stripe at the top of the palette also shows the current color of each color variable you highlight.

To assign a new color to a color variable, perform these steps:

1. Click on the color variable whose value you want to set. (If the variable is not immediately visible when you open the menu, use the scroll bars to find it.) When you have selected the variable, its current value appears in the large color stripe at the top of the menu.
2. Assign a new color to the variable by clicking on one of the palette colors with the mouse. The large color stripe changes to the requested color. Click on the *Apply* button (if necessary) to apply the new color to the graph.

The variables of the *Color Assignment* dialog box are described in the following.

### Background

This variable determines the color of the background of the view's window.

To see the background color in the view window, you must also turn on the *Background color* option (in the *Global Options* menu). If you don't, the view background is colored black or white (depending on the setting of the *Background* indicator, also found in the *Global Options* menu).

## Assigning Colors to Parts of a Graph

The *Background* variable described here should not be confused with background variables used to color the graphs themselves (inside the graph frames). These latter colors are specified by the *2D background*, *3D frame base*, *3D frame base right*, and *3D frame base left* variables.

### Standard Lines

The *Standard lines* part of a graph occurs only in the *Groups view*. This part is the line separating the group of graphs from the labelling key below them. The labelling text itself is not covered by the *Standard lines* variable.

### Main Title

This variable specifies the color of the main title and all sub-titles in all four views.

If the *Main title* option (in the *Global Options* menu) is not set, then no main title appears in the view. However, sub-titles still appear, and these are colored according to the *Main title* color variable.

### Scale Texts

This variable determines the color of both the scale numbering and scale units for 2D and 3D graphs.

The scale numbering is usually displayed along the vertical axis of a graph. (The exceptions are the *Horizontal bars* and *Stacked Horiz. Bars* graph types, in which the scale numbering occurs horizontally). The scale units gives the units (thousands, millions, for example) at the top of the graph.

### Dimension Title

This variable contains the color of the title for the set of rows or columns. Dimension titles occur directly below the names of rows and columns (along the right or left axis of the 3D graph).

The names of the rows or columns themselves are colored according to the *Dimension elements* color variable.

### Dimension Elements

This variable contains the color of the text of row or column names. This text occurs along the right or left axis of the 3D graph.

The titles of the rows or columns as sets (the dimension titles) are colored according to the *Dimension title* color variable.

### Contrast 1 through Contrast 6

These six variables provide the colors to be used when coloring graph objects with alternating colors.

For 2D graphs, the *Alternative colors* option must be set in the *2D Options* menu. Otherwise, only a single color is used, and the six Contrast variables are ignored. (The single color used in this case is specified in the *2D object* color variable.)

For 3D graphs, any of the *3D Colors* options (except the *By side* option) can be set. (These are set in the *3D Options* menu.) Otherwise, the Contrast variables are ignored and a single color is used. (This single color is specified in the *3D object side* color variable.)

The alternating-colors mechanism does not necessarily use all six Contrast colors, even if the data contains six or more objects for display.

SAP Business Graphics attempts to spread the alternating colors evenly over the objects. It therefore checks whether the number of objects for display is an multiple of any number less than seven. If so, then the largest such number less than seven is the number of alternative colors used. Thus, if 15 vertical bars are to be displayed, they are colored with the first five of the Contrast colors.

If the number of objects for display is not a multiple of any number less than seven, then all six colors are used.

If you turn on the *Alternative colors* option in the *2D Options* menu and don't get the colors you expect, check that you have the correct color scheme set in the *Global Options* menu.

### 2D Background

This variable determines the color of the background for the 2D frame.

In order for this color to appear, the *Background* option in the *2D Options* menu must be set. If this option is not set, the background for the 2D frame takes the same color as the background for the containing view.

### 2D Object

This variable specifies the color of 2D graph objects when the *Alternative colors* option (in the *2D Options* menu) is turned off.

### 2D Area Contours

This variable determines the color of the outline of the 2D frame.

### 2D Object Contours

This variable determines the color of the outlines of 2D objects.

### 2D Background Grid

This variable determines the color of the horizontal gridlines appearing in the background of the 2D frame. These lines measure distance (scale units) along the vertical axis.

You can turn the *2D background grid* lines on and off using the *Background grid* option (in the *2D Options* menu).

### 2D Background Text

This variable determines the color of text (row and column names) appearing in the background of the 2D graph. Text for these names appears in the frame background (that is, within the frame, next to the graph objects) only when the *Alternative texts* option (in the *2D Options* menu) is turned on.

### 3D Frame Base

This variable determines the color of the floor of the 3D frame.

### 3D Frame Base Right

This variable determines the color of the right back wall of the 3D frame.

### 3D Frame Base Left

This variable determines the color of the left back wall of the 3D frame.

### 3D Object Top

This variable determines the color of the top surface of objects in a 3D graph.

### 3D Object Negative

This variable is the same as *3D object top*, except that it is used to color the tops of objects with negative values. The top surface of a negative-value object thus marks the zero point in the vertical axis.

Coloring these top surfaces differently than those for positive-value objects helps the viewer see quickly that the negative-value objects count downward from the zero line.

### 3D Object Side

This variable determines the color of 3D objects (all sides except the top surface) when you select the *3D Colors* → *Single color* option (in the *3D Options* menu).

### 3D Object Panels 1 through 4

These variables specify colors for the sides of 3D objects when you select the *3D Colors* → *By side* option (in the *3D Options* menu). See the section *By side* in Assigning Colors to 3D Objects [Page 122].

### 3D Menu Background

This variable gives the background color for the selection bar (in the *Selection view*) that is currently highlighted.

The background color for non-highlighted selection bars depends on whether the selection bars currently contain rows or columns. If they contain the rows (left side of the 3D frame), the non-highlighted background color is given by the *3D frame base right* variable. If they contain the columns (right side of the 3D frame), the non-highlighted background color is given by the *3D frame base left* variable.

### 3D Area Contours

This variable determines the color of the outline of the 3D frame.

### 3D Object Scaling Lines

This variable provides the color for the horizontal gridlines on the back walls of the 3D frame. These lines measure distance (scale units) along the vertical axis.

Unlike the horizontal gridlines in 2D graphs, the scale lines in 3D graphs are not optional: they are always there. If you don't want them in your graph, you can set their color to the same color as *3D frame base right* and *3D frame base left* variables. The scale lines are then invisible.

The *3D object scaling lines* variable also provides the color for the gridlines on actual 3D objects. These lines only appear when the *Object scaling* option (in the *3D Options* menu) is turned on.

### 3D Row/Column Lines

This variable determines the color for:

- gridlines on the base of the 3D frame

- vertical gridlines on the back walls of the 3D frame

These lines only appear when the *Row/column lines* option (in the *3D Options* menu) is turned on.

### 3D Object Contours

This variable determines the color of the outline of objects in the 3D graph.

### 3D Menu Text

This variable determines the color of the text appearing in the selection bars (in the *Selection view*).

# Automatic Coloring

SAP Business Graphics colors some graphs for you automatically. Within these graphs, every graph object has a color different from that of its neighbors. The alternating colors are supplied by two sets of color variables (*Contrast 1-Contrast 6* and *3D Object Panel 1-3D Object Panel 4*) in the *Color Assignment* menu.

Graphs colored automatically include:

- All stacked or side-by-side graphs. Objects in these graphs are colored with alternating colors whether you request it or not.
- All 2D graphs using the *Pie chart*, *Perspective pie chart*, *Polar diagram* and *Relative polar* graph types. These are colored with alternating colors whether you request it or not.
- All other 2D graphs, when you turn on the *Alternative colors* option (in the *2D Options* menu).
- Most 3D graphs, when you request any *3D Colors* option (in the *3D Options* menu) except the *Single color* option. Notable exceptions:

  The graph type *Surface* is only colored automatically for the *By side* value of the Colors option.

  The *Walls*, *Strips*, and *Wedges* graph types cause objects along one axis of the graph (for example, the rows) to be represented as edges between segments. Along the other axis (the columns) the objects are represented as separate walls or wedges.

  For these graph types (using the current example), you cannot color automatically *By row* since each row is represented as an edge. You can however color *By column*. (The reverse is true if you switch the direction of the walls, strips, or wedges, using the *Mirror dimension* option.)

The sets of color variables used for automatic coloring are the six *Contrast* colors and the four 3D Object Panel colors.

The Contrast colors are used for all alternating coloring except the *3D Colors* → *By side* option. In this case, alternating colors are taken from the *3D Object Panel* colors.

# Displaying Self-Defined Pushbuttons

The *Extras* menu provides you with a *Toolbox*. The *Toolbox* lets you manipulate any extra pushbuttons that may appear in the business graphic.

These buttons appear in the graphic window only if provided by the ABAP program you used to call SAP Business Graphics. Such buttons offer extended functions relevant to the graphic, as determined by the ABAP program. For example, with a performance-analysis graphic, pressing a button may produce various performance statistics.

You can manipulate the size and placement of these additional buttons.

The following options are available:

## Displaying the Pushbuttons

When you select *Extras* → *Toolbox* → *Display*, the pushbuttons for calling sub-programs appear or disappear. (This option is a toggle.)

The size of the pushbuttons depend on the font size and the length of the longest title. They occupy part of the border area.

## Autoaligning the Pushbuttons

You can autoalign the pushbuttons by selecting *Extras* → *Toolbox* → *Autoalign*.

The *Autoalign* option lets you decide how much space the buttons should take up. *Autoalign* toggles between the following two possibilities:

- The buttons are enlarged to spread out over the entire edge (right, left, top, or bottom) of the window.
- The buttons take on a fixed size. If they are at the right or left edges, each button is as high as a single text character. If they are at the top or bottom edges, each button is only as wide as the text.

  In this case, the buttons usually take up much less than the entire edge of the window.

## Positioning the Pushbuttons

You can place the pushbuttons to the right, left, top or bottom of the window border.

To do this, select *Extras* → *Toolbox* → *Right, Left, Top* or *Bottom*.

# SAP Hierarchy Graphics

The SAP Hierarchy system displays data in hierarchical structures.

Overview [Page 143]

Editing Graphics [Page 145]

Changing Settings [Page 148]

Setting Threshold Values [Page 161]

Selecting Hierarchy Nodes [Page 162]

Control Key Combinations [Page 163]

Mailing a Graphic [Page 170]

Printing a Graphic [Page 292]

Exiting from SAP Graphics [Page 295]

# Overview

The SAP Hierarchy system displays data in hierarchical structures. The system offers you options such as displaying the hierarchy at various distances and angles, re-sizing the hierarchy, recoloring the nodes according to different display attributes, modifying the structure of the hierarchy or the numerical values of individual nodes, and so on.

The following figure contains a sample SAP Hierarchy Chart [Page 144] SAP Hierarchy chart.

When you use SAP Hierarchy, you may be offered further options that are not strictly part of the SAP Hierarchy system. These options usually consist of additional menus or displays that appear when you select a hierarchy node with the mouse. These options are provided by the ABAP program you are using to display data.

The *Layout* button lets you call up the *Layout* dialog box without going through the the *Options* menu.

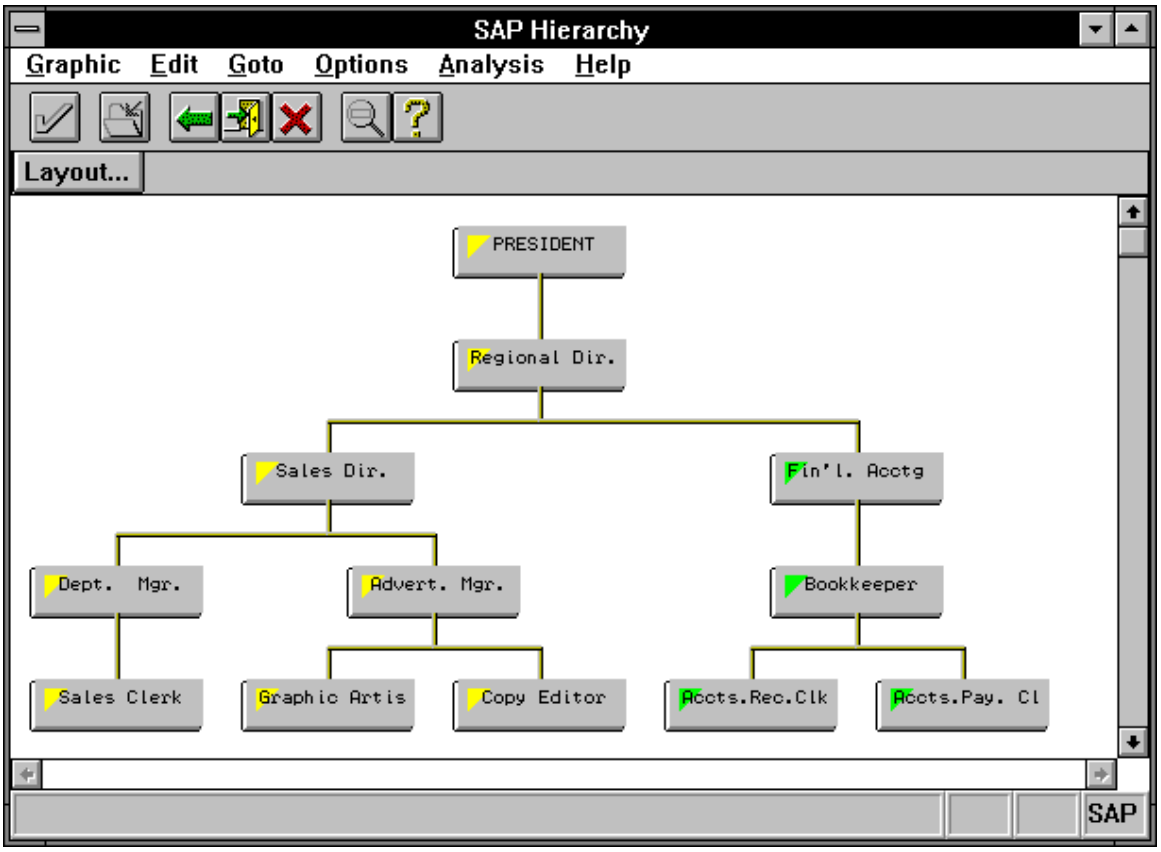
You will learn how to use menus and options always available with the SAP Hierarchy system. The extended functions provided by the particular ABAP program are not discussed.

Some of the facilities described in this section are part of SAP Hierarchy, but are only available if the underlying ABAP program allows them. The sections Selecting Hierarchy Nodes [Page 162] and Editing Graphics [Page 145] describe these facilities.

On Apple frontends, a number of alternative and additional options are available for SAP Graphics. For more information, see the following topic:

Special Features on Apple Frontends [Page 51]

# SAP Hierarchy Chart



# Editing Graphics

Modifying the shape of the hierarchy is sometimes possible. This depends on whether the ABAP program you used to call SAP Hierarchy allows you to modify the hierarchy. (When modifications are not allowed, the *Node* and *Subtree* entries in the *Edit* menu appear in faded text, and you cannot select them.)

## Accessing the Editing Functions

If modifications are allowed with your data, you can use the options in the *Edit* menu to edit a node or a subtree.

First, click once (left mouse button) on the desired hierarchy node to select a point of reference. Then proceed as follows:

- Select the *Node* or *Subtree* option from the *Edit* menu.
- Click again (*right* mouse button) on the selected node.

## Selecting Multiple Nodes

For some of the editing functions (the *Edit* → *Subtree* functions), you can apply the function to more than one node at a time. You can select multiple nodes if the ABAP program you used to call SAP Hierarchy allows it.

See the section Selecting Hierarchy Nodes [Page 162] for information on selecting multiple nodes at a time.

## The Node Editing Options

The following sections describe the node editing options available. You can access these options in by choosing *Edit* → *Node*.

### The Edit Node Option

This option calls up the *Edit Node* menu. This menu offers you the following information:

- *Old text name*

  The current text name for the node. This field is for your information only. You cannot change its value.

- *New text name*

  The text name you want to appear in the node. To edit this field, simply type in the new name.

- A list of display attributes for the hierarchy

  This list contains the node's numeric value for each attribute. To edit these numeric values, click on the up- or down-arrows until the number shown to the right is the value you want. You can also click on the number itself, delete it, and type in the desired value directly.

### The Insert Node Option

When you select the *Insert node* option, the system calls up the *Insert Node* menu.

**Editing Graphics**

This menu allows you to add new nodes to the hierarchy. You can either insert a node as the child of (underneath) an existing node, or you can start a whole new tree.

This menu offers the following fields:

- *Old ID* and *Old text name*

  The node ID and text name for the currently highlighted node. These values appear at the top of the window and cannot be changed. They are for your information only.

- *New ID*

  The node ID for the node to be added. Type in an identification name for this node. This name is required and must be unique.

- *New text name*

  The text name for the node to be added. Type in the new name. This name is required, but need not be unique.

- *New tree?*

  To create a new tree, click once on this option. If you are only inserting a node into the existing tree, don't click on this button at all. *New tree?* is inactive by default.

  If you have clicked on *New tree?* and want to turn it off again, click on one of the other options (*Left sibling?*, *Right sibling?* or *Leftmost child?*). *New tree?* becomes de-selected.

  If you activate *New tree?* and confirm it by clicking on *Continue*, the node you insert becomes a separate hierarchy of one node. It is not attached to the existing tree.

  If you don't activate *New tree?*, the new node becomes a sibling or child of the highlighted node (depending on which of the *Left sibling?*, *Right sibling?* or *Leftmost child?* options is on).

  Creating a new tree is useful when you actually want the new node to be the root (topmost node) of the old tree. You can first create the new tree, and then use the *Move subtree* option to move the main hierarchy over to be the descendants of the new node.

- *Left sibling?*

  This option inserts the new node to the left of and on the same hierarchy level as the selected node.

- *Leftmost child?*

  This option inserts the new node as leftmost child of as the selected node. (That is, the new node becomes the first node on the next lower level from the selected node.)

- *Right sibling?*

  This option inserts the new node to the right of and on the same hierarchy level as the selected node.

- A list of display attributes for the hierarchy

  This list contains the node's numeric value for each attribute. To edit these numeric values, click on the up- or down-arrows until the number shown to the right is the value you want. You can also click on the number itself, delete it, and type in the desired value directly.

### The Delete Node Option

This option allows you to delete a node from the hierarchy. The node deleted is the one highlighted at the time you select this option.

All nodes hanging from the node deleted are re-attached to the hierarchy as the children of the deleted node's parent.

For example, suppose the deleted node has three children, and the parent of the deleted node has two children (before deletion). After the deletion, the parent of the deleted node has four children.

Using the *Delete node* option produces a popup window asking you if you are really sure you want to delete the node and its subtree. You can confirm the request or cancel it.

### The Move Node Option

This option allows you to move a node or a subtree from one place to another.

With the *Move node* option, the currently highlighted node should be the node (or the top node of the subtree) you want to move. After clicking on the option, click on the *target* node: the node you want as the new parent for the node or subtree you are moving.

The position that your node or subtree takes amongst the children for the new parent depends on the value of the *Order of Child Nodes* option (in the *Display Attributes* menu).

## The Subtree Editing Options

The following sections describe the node editing options available. You can access these options by choosing *Edit* → *Subtree*.

### The Hide Subtree(s) Option

This option displays the hierarchy without the subtree hanging from the highlighted node.

### The Display Subtree(s) Only Option

This option displays the highlighted node and all its descendants (the subtree hanging from it).

### The Delete Subtree Option

This option allows you to delete a subtree from the hierarchy. The subtree includes the node highlighted at the time you select this option.

Using the *Delete subtree* option produces a popup window asking you if you are really sure you want to delete the node and its subtree. You can confirm the request or cancel it.

### The Split Tree Option

This option allows you to cut a subtree out of the hierarchy and create an independent tree with it. When you do this, you get two separate hierarchies at the same time. The node highlighted at the time you selected the *Split tree* option becomes the "root" (topmost node) in the new tree.

# Changing Settings

You can use the *Options* menu to change the display settings.

Setting the Node Size [Page 149]

Choosing Node Attributes [Page 151]

Changing the Overall Layout [Page 153]

Assigning Colors [Page 158]

Displaying the Navigation List [Page 160]

# Setting the Node Size

Select *Options* → *Node Size* to call up the *Node Size* dialog box. This dialog box lets you set the size of hierarchy nodes and the window "cells" in which they are displayed.

Window "cells" are sections of an imaginary grid laid over the hierarchy. Each cell contains one node. The cell size is the amount of space within which a node is displayed. Cell size is set using two options:

- Zoom factor
- Relative width

The node size variables determine how much (what percent) of the cell the hierarchy box actually occupies. These variables are:

- Node width
- Node height

### Setting Values

For each of the options in this dialog box, the number to the left of each option tells you the current value. You can click on the up-arrow to increase the value, or on the down-arrow to decrease it. As you click, you see the current value at left getting bigger or smaller.

You can also click on the number itself, delete the current value, and type in a new one. Each option has a minimum and maximum. If you type in a number outside this range, SAP Hierarchy assumes the highest or lowest possible legal value.

The *Node Size* menu has two extra buttons in addition to the normal *Continue*, Text, *Cancel* and *Help* buttons:

- The *Default* button sets all *Node Size* options to the default values specified by SAP Hierarchy.
- The *Adapt* button sets all *Node Size* options to values optimal for displaying the entire hierarchy in the window. This is the largest possible cell size at which the whole hierarchy can be displayed.

The following sections explain how to use the four options in the *Node Size* menu.

### How the Size of the Hierarchy Display is Determined

Window "cells" are sections of an imaginary grid laid over the hierarchy. Each cell contains one node. The dimensions of this grid (number of cells across and down) are determined by the hierarchy itself. If the widest hierarchy level is five nodes across, the grid must be five cells wide. If the hierarchy is nine levels deep, the grid is nine cells high.

Thus cell size, together with the dimensions of the hierarchy itself, determines the size (height and breadth) of the total hierarchy display. The node size (as a percentage of cell size) does *not* affect the total hierarchy size: it merely determines how much of the total display is space.

SAP Hierarchy specifies a default size (height and width) for cells. This default cell size is used to enhance readability and is completely independent of the number of nodes in the hierarchy. However, you can alter the cell size using the *Zoom factor* and *Relative width* options.

## Setting the Node Size

### Setting the Zoom Factor

The *zoom factor* is the enlargement factor used to determine the size of the hierarchy cells. The *Zoom factor* value is a percentage of the default size (height and width) of the cell.

Possible percentage values range from 10% to 500%. For example, if you choose a zoom factor of 500, hierarchy cells (and thus the hierarchy as a whole) are five times as large as the default size. As long as you don't change any other variables (*Relative width*, *Node width* or *Node Height*), the nodes in the cells will likewise appear five times larger: you see only one fifth as many (approximately) as the number visible at the default size.

Cell size has a default height/width ratio. You can vary this ratio using the *Relative width* option.

You can vary how much of the cell the node takes up by setting the *Node width* and *Node height* options.

### Setting the Relative Width

The *Relative width* option tells you how much wider the cell is than it is high.

This variable is a percentage: if its value is 200, the cell is twice as wide as it is high. If its value is 100, the cell is square. (This becomes apparent when the *Node Width* and *Node Height* values are equal to each other.)

When you set the *Relative width* option, you are essentially setting the cell width, where the cell height is assumed constant:

– Cell width = Relative Width x Cell height

You can see your changes to *Relative Width* in the display (the hierarchy boxes grow appropriately fatter or thinner) as long as you leave the other variables (*Zoom factor*, *Node Width* and *Node Height*) unchanged.

If you want to change the cell height in addition to cell width, you must adjust both the *Zoom factor* and *Relative width* options.

### Setting the Node Width

This option sets the node width to be a percentage of the calculated cell width.

Node width merely tells how much of the cell width the node takes up. Node width has no effect on how wide the cell itself is. (See "Setting the Zoom Factor" and "Setting the Relative Width".)

Legitimate values for the *Node width* option range from 10% to 90%.

### Setting the Node Height

This option sets the node height to be a percentage of the calculated cell height.

Node height merely tells how much of the cell height the node takes up. Node height has no effect on how high the cell itself is. (See "Setting the Zoom Factor" and "Setting the Relative Width".)

Legitimate values for the *Node height* option range from 10% to 95%.

# Choosing Node Attributes

Select *Options* → *Display Attributes*. Two sub-options are available:

- Select Next

  Use this sub-option when you just want to activate the next display attribute in the list. You get the same result by pressing the key combination <Ctrl-V>.

- Select One

  This sub-option calls up the *Display Attributes* menu. This menu lets you activate a display attribute (for coloring hierarchy nodes) and a node-ordering method.

  The options available are described below.

### Activating Attributes

This option allows you to activate the display attributes. These are the attributes according to which hierarchy nodes are colored. Each node takes on a different color, depending on what numerical value the node has for the active display attribute.

For example, if the nodes in the hierarchy represent employees, and three display attributes, Salary, Years of Employment, and Plant, have been defined, then each node (employee) has three numerical values: one for salary, one for length of employment, and one for the plant number where the employee works.

If you activate the Salary attribute, hierarchy nodes take on colors depending on each employee's salary. If you activate Years of Employment, the nodes are colored according to seniority. Activating the Plant attribute colors the nodes according to plant number.

To activate one of the display attributes, you can:

- Click on the desired attribute name in the *Display Attributes* menu.
- Press the key combination <CTRL-V> at the keyboard. This key combination activates the next display attribute in the list. You can press this combination repeatedly to cycle through all the display attributes defined.

### Changing the Order of Child Nodes

This option lets you adjust the order in which child nodes are shown under the parent. A child node is a node hanging one level below another and connected to it by a line. This other node is the parent.

If a parent node has more than one child, the children can be shown listed in different orders. You have two options:

- *Standard order*

  By default, the *Standard order* option displays child nodes in the order they occur in the input file.

  However, the ABAP program you used to start SAP Hierarchy can reset the *Standard order* to a different ordering. An ABAP program can specify that a given Display Attribute Order (see the next option below) be used as the *Standard order*.

  In this case, when you select *Standard Order*, child nodes are ordered (and colored) according to the specified display attribute, even if that attribute is not active.

**Choosing Node Attributes**

- *Display-attribute order*

  The child nodes appear in order of numerical size. (The child with the smallest numerical value appears leftmost.)

  The numerical value used depends on the display attribute currently active.

# Changing the Overall Layout

Select *Options* → *Layout* → *Change All.* This calls up the *Layout* dialog box. This dialog box lets you set the various options for how the hierarchy is laid out in the display window.

All the other sub-options just let you loop through all possible values for given options in the *Layout* dialog box. For example, if you select the *Next Rotation* sub-option repeatedly, you get all successive values for the *Tree Rotation* option: up, left, down, right.

You can also use control-key combinations [Page 163] for the *Layout* sub-options.

## Choosing the Tree Branching Type

The *Tree Branching* option determines how tree branching is drawn: that is, where under the parent the child nodes are listed. There are three options:

- *Balanced*

  This option centers the child nodes around the parent. The middle child appears directly beneath the parent, and the others are listed to either side. The hierarchy tree thus appears to have its "trunk" in the middle of the tree.

- *Unbalanced*

  The first child node appears directly under the parent. All other children are listed one cell to the right. This option thus causes the "trunk" of the tree to appear on the left, and all branches to expand in a rightwards direction from the trunk.

The following figure contains a hierarchy with an Unbalanced Tree Branching [Ext.].

- *Dictionary*

  This option is just like the *Unbalanced* option, except each level deeper in the hierarchy is indented one half node further to the right. This option thus causes the "trunk" of the tree to zigzag from upper left to lower right.

- *Mixed mode*

  This option not yet available.

## Choosing the Tree Rotation

The *Tree Rotation* option lets you rotate the hierarchy. The possible options are:

- *Up*

  The hierarchy is not turned at all.

- *Left*

  The hierarchy is turned on its side (counter-clockwise).

- *Down*

  The hierarchy is turned upside down.

- *Right*

  The hierarchy is turned on its side (clockwise).

## Changing the Overall Layout

### Choosing the Hierarchy Display Size

The *Tree Fit* option allows you to choose one of two display sizes for the hierarchy:

- *Default*

  The hierarchy is displayed at the default size specified by SAP Hierarchy. This is the same default size you get by clicking on the *Default* button in the *Node Size* menu.

  With this option, the entire hierarchy may not fit in the window. In this case, you have to scroll to see parts that don't fit.

- *All in one window*

  The hierarchy is re-sized to fit in one display window. This sub-option allows you to see the overall structure of the hierarchy, although node text may be unreadable at this size.

Both the *Tree Fit* option and the *Node Size* menu options alter the display size of the hierarchy. Whichever you set most recently is the one that takes effect.

### Choosing the Line Type

The *Line Type* option allows you to choose one of two ways to draw lines between the node boxes:

- *Diagonal*

  Lines between parent and child nodes are diagonals. With this option, there are several line segments leaving the parent: one for each child.

- *Rectangular*

  Lines between parent and child nodes are made up of vertical and horizontal segments. With this option, there is one vertical segment leaving the parent. This segment connects to a horizontal, from which there hangs one vertical segment for each child.

### Choosing the Coloring Method

The *Coloring Method* option allows you to choose how the hierarchy nodes are colored.

"Coloring method" refers to how colors fill the box, not to which color is used. The color actually used is determined by the display attribute currently active. See "Using the Display Attributes menu" earlier in this section for more information on display attributes.

The coloring methods available are the following:

- *Solid*

  The color fills the entire hierarchy node.

- *Lower half*

  The color fills only the lower half of each node.

- *Triangles*

  A colored triangle appears in the upper left corner of each node.

- *Circles*

  A colored circle appears on the left end of each node.

- *Reserved*

This option is reserved for later use.

- *Ellipses*

  A colored ellipse appears in each node.

- *Multi-stripes*

  Multiple colors are displayed in the node: one color for each display attribute defined. Each display attribute contributes the color associated with its value in the node.

  Thus, when three display attributes are defined, the node is colored as follows. The first value in the node dictates the color for the first display attribute. This color appears on the far left of the node. The second node value dictates the color from the second display attribute, and this color appears in the middle. The color from the third display attribute, as determined by the third value in the node, appears on the far right.

  This option allows you to see the hierarchy colored according to all display attributes at once.

- *Custom stripes*

  This is a variation of the *Multi-stripes* option. It is not available with all hierarchies. Your input data must define a customized display of stripes. This option is just like the Multi-Stripe option, except that the choice and ordering of display attributes colors is specified in the input file. (See the *Multi-stripes* option for more information.)

  The *Custom stripes* option, when turned on, activates the customized display. If you use this option but your input does not define this customized display, you automatically get the *Multi-stripes* option.

### Choosing the Node Depth

The *Node Depth* option allows you to display the nodes with an illusion of depth.

- *Without depth*

  This value causes the nodes to look flat.

- *With depth*

  This value displays the nodes with shading around the sides so the nodes look three-dimensional. SAP Hierarchy can represent varying heights for nodes. These heights are assigned according to the nodes' numerical values. The smallest values appear almost flat, and the largest values are the tallest.

### Choosing Node Naming Types

The *Node Identification* option allows you to choose how the name of the node is displayed. The following name types are possible:

- *By key*

  Hierarchy nodes have internal key names. These keys are the names used in the input to name the nodes to SAP Hierarchy. They do not necessarily have any explanatory meaning. The *By key* choice displays these internal names.

- *By text name*

  This choice displays the text names for the nodes.

- *By format*

## Changing the Overall Layout

This option not yet available.

# Documentation not Available in Release 4.6B

# Assigning Colors

Select *Options* → *Color Assignment* to call up the *Color Assignment* dialog box. This dialog box contains three parts:

- A color palette of 16 colors
- A list of color variables for the graph. A color variable is an aspect of the graph that is colorable.
- A large color stripe at the top of the palette. This stripe shows the current color of the color variable highlighted.

You can use these components to color various parts of the graph. Set the color variables to particular color values from the palette, as follows:

1. Click on the color variable whose value you want to set. When you have selected the variable, its current value appears in the large color stripe at the top of the menu.
2. Assign a new color to the variable by clicking on one of the palette colors with the mouse. The large color stripe changes to the requested color. Click on the *Apply* button (or the *Continue* button) to apply the new color to the graph.

The color variables themselves are the following:

- *Hierarchy background*

  The display background. This color should be different from the colors of the *Node background* or *Lines* variables.

- *Lines*

  The lines connecting the hierarchy nodes. This color should be different from the Background color.

- *Node background*

  The background color of the nodes. This color is only visible with suitable *Coloring Method* options. If the current coloring method colors the entire node, setting the *Node background* color variable has no effect.

  This color should be different from the colors of the *Hierarchy background* and *Node text* variables.

- *Highlighted node background*

  The background color of the selected (highlighted) node. This color should be different from the *Node background*, *Hierarchy background*, and *Highlighted node text* colors.

- *Node text*

  The node text. This color should be different from the color of the *Node background* variable.

  This color is only visible with suitable *Coloring Method* options. If the current coloring method colors the entire node, setting the *Highlighted node text* variable the same color has no effect.

- *Highlighted node text*

The text of the node that is highlighted. This color should be different from the color of the *Highlighted node background* variable.

This color is only visible with suitable *Coloring Method* options. If the current coloring method colors the entire node, setting the *Highlighted node text* variable the same color has no effect.

This color should be different from the colors of the *Node background* or *Node text* variables.

# Displaying the Navigation List

You can display a hierarchy path from the top of the hierarchy down to a selected node.

This path is a list of names of all "ancestor" nodes for the selected node.

To use this opton, first select *Options* → *Navigation Tool* and then click on any node. Each time you click on a new node in the hierarchy, a new list appears in the window.

You can also click on names in the list: this re-displays the hierarchy at the place where the node (for name you clicked on) is visible.

# Setting Threshold Values

This menu provides you with one choice: *Thresholds*. When you select this choice, you get the *Thresholds* menu.

The *Thresholds* menu displays information about the display attribute that is currently active. If you want to edit thresholds for a different display attribute, you must activate it first. To activate a display attribute, you have two options:

- Press <CTRL-V> repeatedly until you have activated the display attribute that you want. You must close the *Thresholds* menu to do this.
- Call up the *Display Attributes* menu (by using the *Options* menu in the window's menu bar). This menu contains a list of the existing display attributes: you can select the one you want by name. See "The Display Attributes menu" (this section) for more information.

The *Thresholds* menu presents you with the following information:

- The name of the display attribute. (This is the title of the menu.)
- One line for each numeric interval. Each line includes up- and down-arrows (for adjusting values), the threshold value itself, and the color used for nodes with values in that interval.

In this menu, you can edit only the threshold values. The colors assigned to the intervals are fixed.

To edit the threshold values, click on the up- or down-arrows until the number shown to the right is the threshold you want. You can also click on the number itself, delete it, and type in the desired threshold directly.

You cannot change the value of a threshold to be greater than the next higher value. Each threshold must be less than or equal to the next threshold value in the series.

# Selecting Hierarchy Nodes

With some hierarchies, you can select one or more hierarchy nodes. There are two reasons why you might want to select nodes:

- To see a special node-related result: a menu, a further display, or a special operation being carried out.
- To modify the hierarchy using the *Edit* menu.

The ability to perform either of these actions depends on whether the ABAP program you used to call SAP Hierarchy lets you.

## Selecting Single Nodes

In general, to select a node, click on it (with the left mouse button). Simple clicking is not be enough, however, if the calling ABAP program allows hierarchy modification (with the *Edit* menu). In this case, when you click on a node, SAP Hierarchy waits for you to select an *Edit* menu option.

## Selecting Multiple Nodes

If you want to modify the hierarchy with the *Edit* menu:

1. Press the SHIFT key and hold it down while clicking on each node.
2. Select the desired *Edit* menu function.

If you want a special menu or display from the ABAP program, you have two methods available:

- Select the nodes individually:
  1. Press the SHIFT key and hold it down while clicking on all nodes *except the last*.
  2. Release the SHIFT key and click on the last node you want.

  Releasing the SHIFT key on the last node closes the list so the ABAP program can respond with the desired menu or display.
- Use the mouse to mark off a region of the hierarchy display:
  1. Move the mouse pointer to one corner of the section you want.
  2. Press the mouse button, and holding it down, move the mouse.

     A moving rectangle follows your movements. Move the mouse until the rectangle completely contains the desired section.

  When you release the mouse button, all nodes inside the rectangle are selected.

# Control Key Combinations

The following control-key combinations are available.

| | |
|---|---|
| `CTRL-A` | Call up the *Display Attributes* menu |
| `CTRL-B` | Toggle between *Node Depth* modes (*Without depth*, *With depth*) |
| `CTRL-D` | Call up the *Color Assignment* menu |
| `CTRL-F` | Toggle between the *Tree fit* modes (*Default*, *All in one window* modes) |
| `CTRL-G` | Toggle between *Tree drawing* modes (*Balanced*, *Unbalanced Dictionary* modes) |
| `CTRL-I` | Toggle between *Order of Child Nodes* values (*Standard order*, *Display-attribute order*) |
| `CTRL-L` | Toggle between *Line Drawing* modes (*Rectangular*, *Diagonal*) |
| `CTRL-N` | Call up the *Node Size* menu |
| `CTRL-O` | Call up the *Layout* menu |
| `CTRL-P` | Call up the *Thresholds* menu |
| `CTRL-R` | Toggle between *Tree Rotation* values (*Up*, *Right*, *Left*, *Down*) |
| `CTRL-S` | Toggle between *Coloring Method* values |
| `CTRL-T` | Toggle between *Node ID* values (*By key*, *By text name, By format*) |
| `CTRL-V` | Cycle through all display attributes defined |

# Documentation not Available in Release 4.6B

# Printing a Graphic

Selecting *Graphic* → *Print* sends the current graphics view to the printer.

You can set the following options in the dialog window *Printer setup*:

- Destination

  You can choose one of the following options:

  - *Local:* prints your graph on your local printer (not available for Motif)
  - *R/3 Spool*: sends your graph to the R/3 printer queue (PostScript printers only)
  - *File:* creates a print file
  - *Clipboard:* copies your graph to the clipboard

- Additional options provided for the *R/3 Spool* and *File* options*:*

  If you choose *R/3 Spool* oder *File*, additional options are available in the dialog window:

  – *Format*

  You can choose from various formats (Postscript, Graneda (format of Netronic), WMF, etc.).

  – *Paper format*

  You can choose from various paper formats from a list (DIN, Legal, Letter, etc.). The print format (portrait or landscape) must be identical with the paper format of your printer.

  – *Portrait* / *Landscape*

  You can print your graph in portrait format on a landscape paper format, and vice versa.

  – *Standard character height*

  (not available for SAP Network Graphics and SAP Bar Chart Graphics)

  – *Printer name* (available with the *R/3 Spool* option)

  – *File name* (available with the *File* option)

- Additional options for SAP Network Graphics and SAP Bar Chart Graphics:

  If you are working with SAP Network Graphics and SAP Bar Chart Graphics, the following additional options are provided:

  – *Pages*: Choose the page range you want to print by double-clicking in the raster.

  – *Fit to page(s)*: The various views are fit the paper format size and printed.

  – *Default size*: The various views are printed in their default size.

  – *Cutting marks*: The cutting marks around the various print sections of a default size view will appear in the printout.

  – *Color print*

Option menus or popup windows that obscure the view, or that merely exist somewhere on the monitor screen, are not sent to the printer and have no effect on the printing of the view itself.

**Printing a Graphic**

When you print a graphics view from SAP Business Graphics, one of the following color schemes (*Options* → *Global Options*) should be active:

- Color Scheme E: for Matrix printers and plotters
- Color Scheme F: for Postscript printers

### How the System Sizes Output for the Printer

Your SAP Graphics program prints the largest possible image allowed by the output format currently specified in the printer.

If your window is a horizontal rectangle (that is, wider than it is high), the width of the window is expanded to match the output format width. The window's height is then scaled accordingly.

If your window is a vertical rectangle (higher than it is wide), the height of the window is expanded to match the output format height. The window's width is then scaled accordingly.

In either case, the height-width ratio of the original window is maintained. Whether your graphics window is small or full-screen, what you see on the screen is what you get on paper.

Note the special features of SAP Network Graphics and SAP Bar Chart Graphics described above.

### Printer Requirements

In order to print graphics views, the printer attached to your system must be able to print graphics as well as text. It must also have a suitable resolution.

Printing through R/3 Spool requires a PostScript printer.

Printer output depends in part on the capabilities of the printer drivers supported by your operating system. For example, in the OS/2 operating system, you can specify the various output format options in the Print Manager.

# Exiting from SAP Graphics

If you want to exit from your SAP Graphics application, choose *Graph* → *Exit* or press F15. Your current settings are saved.

If you want to cancel your SAP Graphics application without saving your current settings, choose one of the following alternatives:

- *Edit* → *Cancel*, F12 or the cancel icon.
- *Goto* → *Back*, F3, or the back or exit icon.
- Click twice on the upper left corner of your SAP Graphics window.

# SAP Pushbutton Graphics

The SAP Pushbutton Graphics system presents you with a pushbutton pad.

Overview [Page 169]

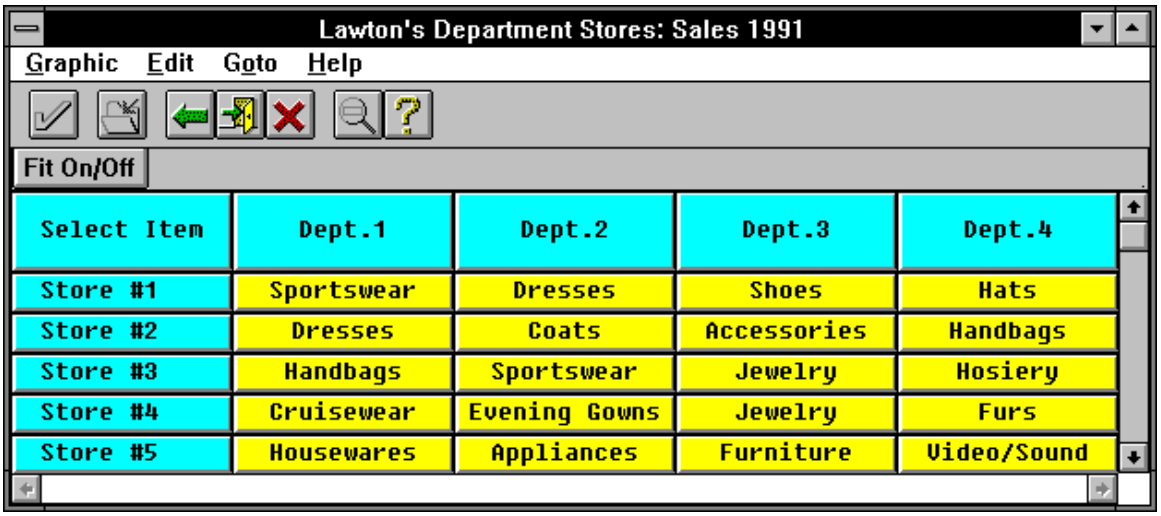
Mailing a Graphic [Page 170]

Exiting from SAP Graphics [Page 295]

# Overview

The SAP Pushbutton Graphics system presents you with a pushbutton pad. This pad contains buttons you can click on to request information, call up menus or execute specific programs.

The following figure shows an example of an SAP Pushbutton pad.




What the buttons say and what they do when you click on them depends on the ABAP program you are running.

For more information, see the ABAP documentation.

On Apple frontends, a number of alternative and additional options are available for SAP Graphics. For more information, see the following topic:

Special Features on Apple Frontends [Page 51]

# Mailing a Graphic

To mail a graphic, select *Graphic* → *Send*. A popup window appears containing three fields:

- *Title*

  Specify a title for the graphic in this field.

- *Description*

  Use this field to type in a short accompanying text for the graphic.

- *Recipient*

  Provide the user name that should receive the mail in this field.

Click on *Continue* when you have entered the necessary information. The graphic is sent as a mail message.

# Exiting from SAP Graphics

If you want to exit from your SAP Graphics application, choose *Graph* → *Exit* or press F15. Your current settings are saved.

If you want to cancel your SAP Graphics application without saving your current settings, choose one of the following alternatives:

- *Edit* → *Cancel*, F12 or the cancel icon.
- *Goto* → *Back*, F3, or the back or exit icon.
- Click twice on the upper left corner of your SAP Graphics window.

# SAP Statistical Graphics

The SAP Statistics system allows you to display statistical information in curves.

Overview [Page 173]

What are Reference and Non-reference Axes ? [Page 174]

Using Common, Separate or Difference Scaling [Page 176]

Setting Options [Page 178]

Displaying a Time Marker [Page 200]

Specifying What Curve is in the Foreground [Page 201]

Mailing a Graphic [Page 170]

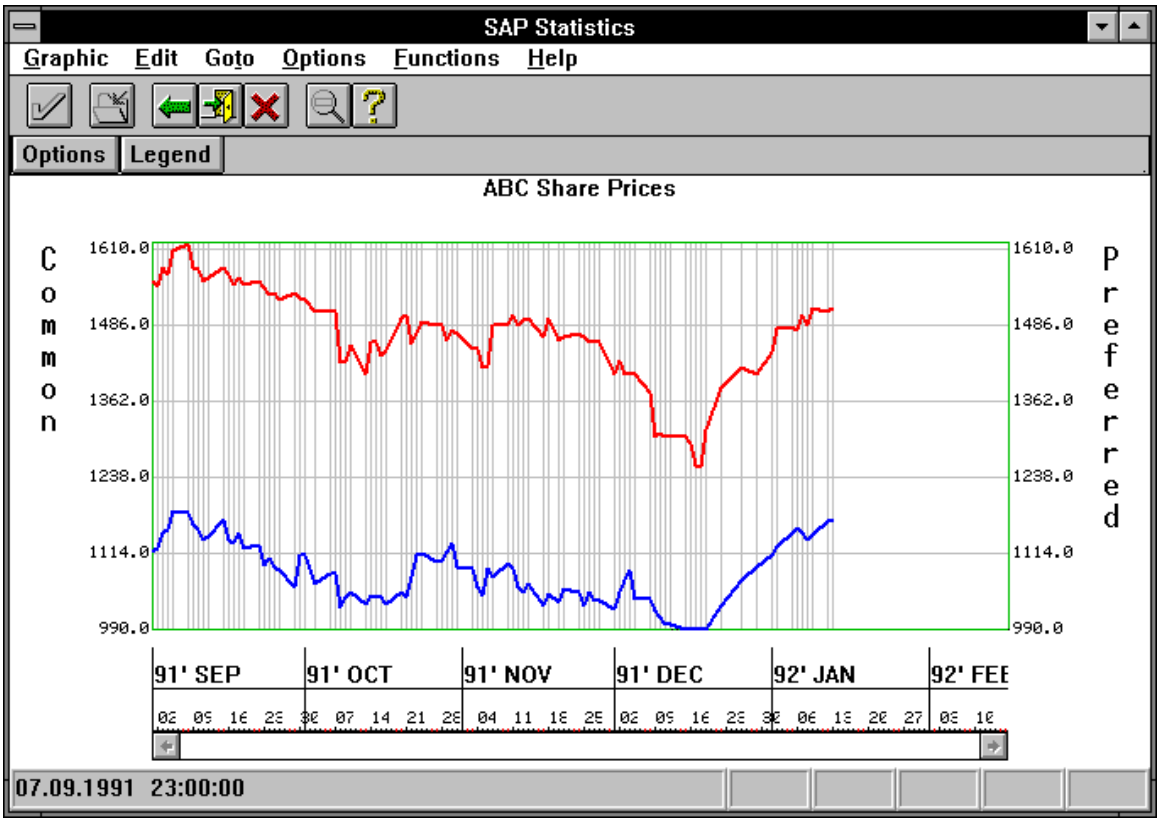
Printing a Graphic [Page 292]

Exiting from SAP Graphics [Page 295]

# Overview

The SAP Statistics system allows you to display statistical information in curves. Each graph in SAP Statistics can contain up to 16 curves, each containing up to 2000 points. Display options for the graphs include linear and logarithmic scaling, transposition of axes, diagram formatting (curve color, line width), and so on.

The following figure contains an SAP Statistics graph. (With reference axis along the x-axis. The y-axis illustrates *Common scaling mode*.)




On Apple frontends, a number of alternative and additional options are available for SAP Graphics. For more information, see the following topic:

Special Features on Apple Frontends [Page 51]

# What are Reference and Non-reference Axes ?

The input data for drawing curves with SAP Statistics is always a set of curve points. Each curve consists of a set of points, and each point has an x-value and a y-value.

Based on the curve points in the input, an SAP Statistics diagram may be one of two kinds:

- A diagram with a *reference* axis

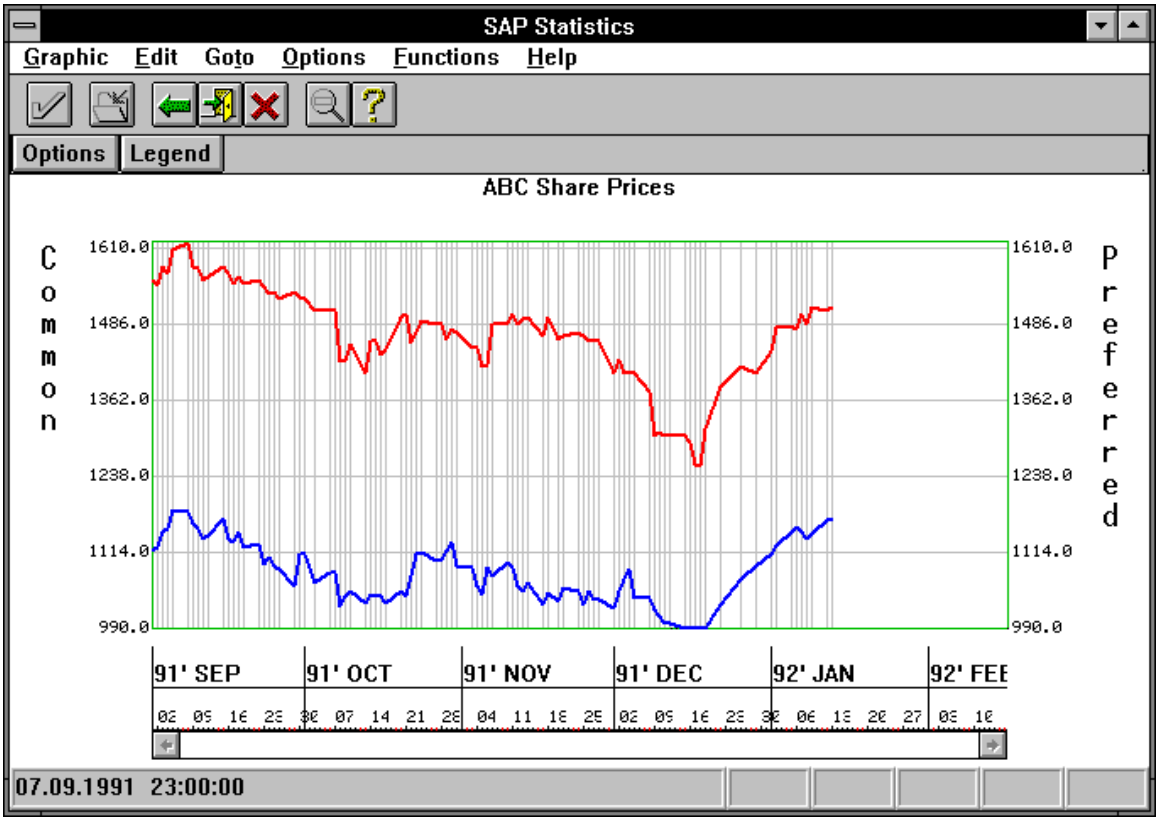
  A reference axis (normally the x-axis) is an axis for which the curve values must be a fixed set. That is, if the x-axis is a reference axis, each curve in the diagram must have the exact same set of x-values.

  Typically, the reference axis represents time. The curve values along this axis are specific dates.

  The non-reference axis is the axis along which any values can occur.

  The following figure contains an SAP Statistics graph. (With reference axis along the x-axis. The y-axis illustrates Common scaling mode.)

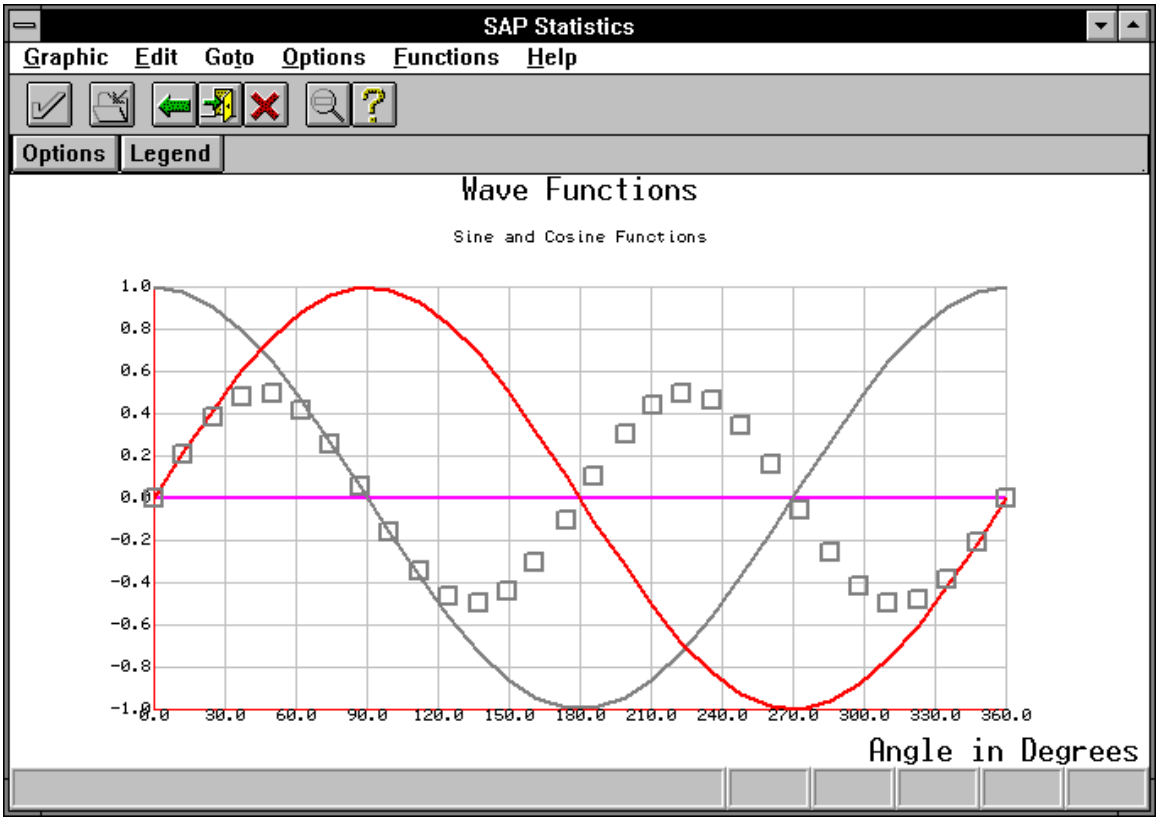
  The values along the y-axis are stock prices for the given dates. You can compare stock prices in the two curves, where all prices (marked by gridlines) are given for the same set of dates.




The difference between reference and non-reference axes is important because of how SAP Statistics draws the scale for each axis:

- For a reference axis, the fixed set of values (or a selection of them) is used as scale values (that is, labels for the gridlines). Or, in special cases, (if the input data specifies explicitly that the axis measures times or dates), SAP Statistics can provide a special time line for scaling the axis (as in the first figure).
- For non-reference axes, since there is no common set of values, SAP Statistics generates the scale values itself. These scale values are not necessarily the same as the curve values along that axis. The difference is also important because some menu options apply only to reference axes, or only to non-reference axes.

The following figure shows a graph with no reference axes.



# Using Common, Separate or Difference Scaling

To scale the non-reference axis of graphs that contain a reference axis, select *Goto* → *Display mode*.

The following options are provided:

- *Common scaling mode*
- *Separate scaling mode*
- *Difference scaling mode*

These scaling modes are important when you are displaying more than one curve in the graph.

If you have only a single curve in the graph, these options have no effect. If your data has no reference axis, the options in this menu are not usable.

The scaling modes described here only apply to the non-reference axis. If this axis is the vertical axis of the graph, then the scaling mode you choose appears vertically on the right and left sides. If the non-reference axis is the horizontal axis, then the scaling mode appears horizontally on the top and bottom sides.

In the following description, it is assumed that the non-reference axis is the vertical axis.

The following sections describe these options.

## Common Scaling Mode

This scaling mode scales both vertical axes of the graph the same. For multiple curves, an interval is found containing the lowest and highest point in all the curves. This is the interval used on both sides of the graph.

Visually, this process can have a flattening effect on most if not all of the curves. This is because the range of y-values for the graph as a whole is greater than or at least the same as the range for an individual curve.

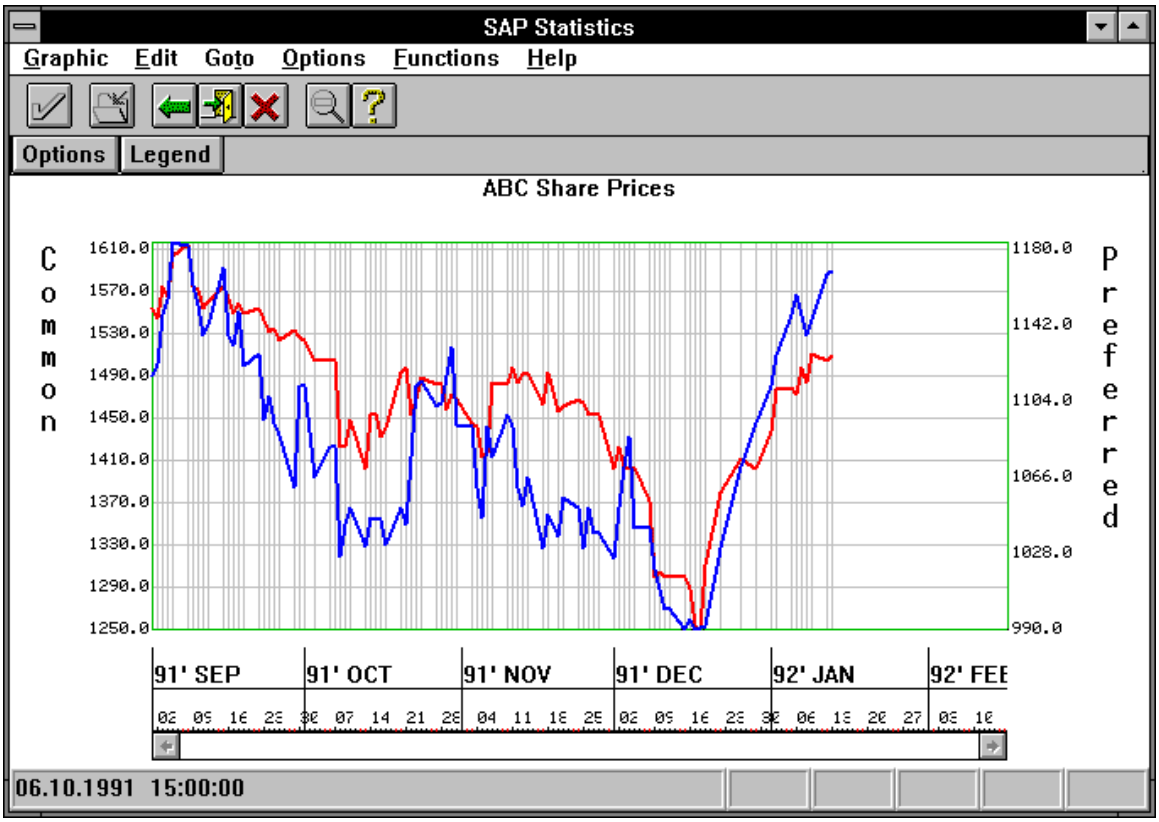
The figure in the Overview [Page 173] shows a statistical graph with *common scaling*. Compare this with the following figure, which shows the same curves with *separate scaling*.

Note that SAP Statistics performs common scaling without regard to the units attached to curve values. Using *Common scaling mode* to display curves measured in different units (for example, in American dollars and German marks) is not a sensible option.

## Separate Scaling Mode

Separate scaling only applies to graphs containing two curves. In this case, the scale range for each curve appears on either the right or left side of the graph.

The following figure shows an example of *Separate scaling mode*.




## Difference Scaling Mode

Difference scaling is exactly the same as *common* scaling, except that scale values are based at zero. Each curve is re-scaled by finding the lowest value for the curve (on the non-reference axis) and subtracting it from all other values (for that curve).

A scale range sufficient to show all the curves based at zero is then displayed on both sides of the graph.

As is true with common scaling, difference scaling should only be used with curves all measured in the same units.

# Setting Options

You can use the Options menu to change the appearance of your graph.

Assigning Colors [Page 179]

Setting Curve Attributes [Page 181]

Displaying the Curve Legend [Page 185]

Setting Global Options [Page 186]

Setting X/Y Intervals [Page 198]

# Assigning Colors

Select *Options* → *Color assignment* to call up the *Color Assignment* dialog box.

This dialog box contains three parts:

- A color palette of 64 colors
- A list of color variables for the graph. A color variable is an aspect of the graph that is colorable.
- A large color stripe at the top of the palette. This stripe shows the current color of the color variable highlighted.

You can use these components to color various parts of the graph. Set the color variables to particular color values from the palette, as follows:

1. Click on the color variable whose value you want to set. When you have selected the variable, its current value appears in the large color stripe at the top of the menu.
2. Assign a new color to the variable by clicking on one of the palette colors with the mouse. The large color stripe changes to the requested color. Click on the *Apply* button (or the *Continue* button) to apply the new color to the graph.

The color variables themselves are the following:

- *Graph background*

  The background inside the scaled graph. For this variable, choose a color different from the colors of the curves themselves. Otherwise, the curves will disappear.

- *Display background*

  The background outside the scaled graph. For this variable, choose a color different from the color in the *Text* variable. Otherwise, the title of the graph will not be visible.

- *X/Y axis*

  This is the cross-shaped axis that appears when the data contains negative x- and y-values. For this variable, choose a color different from that in the *Graph background* variable. Otherwise, the X/Y axis will not appear.

- *Text*

  This variable colors the graph title, scaling text, axis labels, and so on. The color you choose should be different from the color in the *Display background* variable.

- *Graph frame*

  This is the frame around the scaled graph area. This color should be different from both the *Graph background* and the *Display background* colors.

- *Gridlines*

  These are the scaling lines in the background of the scaled graph area. This color should be different from the *Graph background* color.

- *Legend frame*

  This is the border of the legend popup. This color should be different from the *Legend background* color.

## Assigning Colors

- *Legend background*

  This is the background of the legend. This color should be different from colors used for the *Legend frame*, *Legend text*, or any of the curves.

- *Legend text*

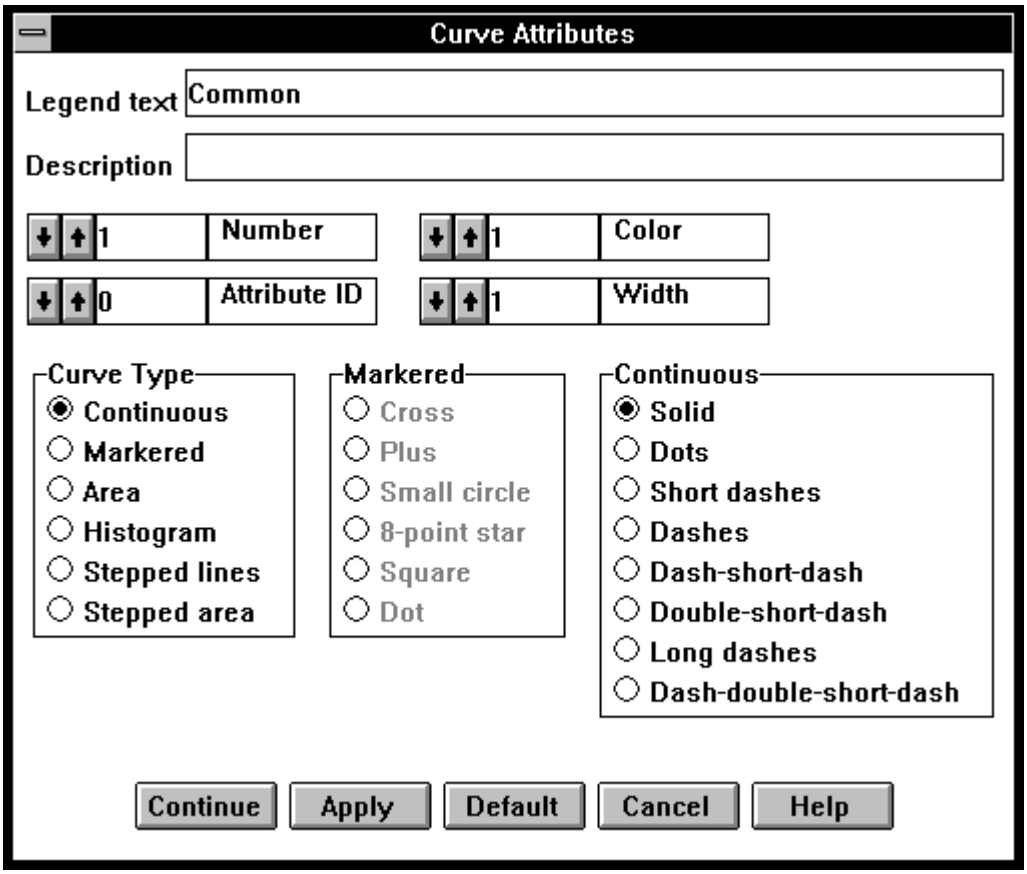
  This is the lettering that appears in the legend to explain each curve. This color should be different from the *Legend background* color.

# Setting Curve Attributes

Select *Options* → *Curve attributes* to call up the *Curve Attributes* dialog box.

This dialog box lets you set the appearance of the curve in the graph.

The *Default* button at the bottom of the dialog box lets you reset all *Curve Attributes* options to their system defaults.




The options provided in the *Curve Attributes* dialog box are described below.

### The Legend Text Option

The *Legend text* option allows you to enter the text name for the curve. This name appears as the curve title in the legend.

If you want to enter a longer description for the curve, use the *Description* option. This description also appears in the legend.

### The Description Option

The *Description* option allows you to enter the text that describes the curve. This description appears in the legend under the curve title.

**Setting Curve Attributes**

If the *Description* text is not visible when you call up the legend, you must enlarge it (the legend). See "Using the Legend," later in this section for details on how to do this.

### The Curve Number

The *Curve number* option lets you set the "current curve." You need this option when your graph contains more than one curve: it tells SAP Statistics which curve you are modifying. Curves are numbered: just click on the up or down arrows until the number of the curve you want appears.

Each time the curve number changes, the rest of the menu options display the current settings for the curve designated.

In particular, the *Description* field reminds you which curve is named by a given curve number.

### The Attribute ID Option

The *Attribute ID* option lets you save attribute settings and reuse them from graph to graph. As a result, you can format separate graphs (whose curves have related meanings) with a consistent set of attributes.

An attribute setting consists of all the options in the menu (including the legend and description texts). You can save up to 255 attribute settings, each identified by a number (the *Attribute ID* value).

### The Color Option

The *Color* option lets you change the color of the curve.

Simply click on the up- and down-arrow to choose the number of the desired color. Or position the cursor where the numeric value is, delete the entry and re-type it.

The possible colors are numbered from 0 to 63. These are the same colors as those in the color palette of the *Color assignment* menu.

You can choose a color by number by finding the equivalent color in the palette. The colors in the palette start with number 0 in the upper left and end with 63 in the lower right.

### The Width Option

The *Width* option lets you change the width of the curve's line. Possible values are from 0 (thinnest) to 20 (thickest).

If the curve has been designated as a *Markered*, *Area*, or *Stepped area* curve (in the *Curve type* option), the *Width* option has no effect.

### The Curve Type Option

Use this option to choose how the curve is represented in the diagram. Only one curve type can be active at a single time. Possible curve types are:

- *Continuous*

  A smooth continuous line. If you choose a continuous curve, you simultaneously activate the *Continuous curves* option. This latter option lets you choose what kind of continuous curve you want to see.

- *Markers*

  A series of markers at selected points. If you choose *Markers*, you activate the *Markered curves* option. This latter option lets you choose what kind of markered curve you want to see.

- *Area*

  Like a *Continuous* curve, but with the area under the curve colored. The *Color* value is used to color in the area.

- *Histogram*

  A series of vertical rectangles, one for each data value. The *Color* value is used to color in the rectangles.

- *Stepped line*

  A "rectangular-ized" curve: it consists entirely of vertical and horizontal segments that approximate the smooth *Continuous* curve.

- *Stepped area*

  Like a *Stepped line* curve, but with the area under the line colored. The *Color* value is used to color in the area.

### The Continuous Curves Option

This option lets you choose what kind of line pattern you want for displaying a curve. To use this option, the *Curve type* option must be *Continuous*, and the *Width* option must be 0.

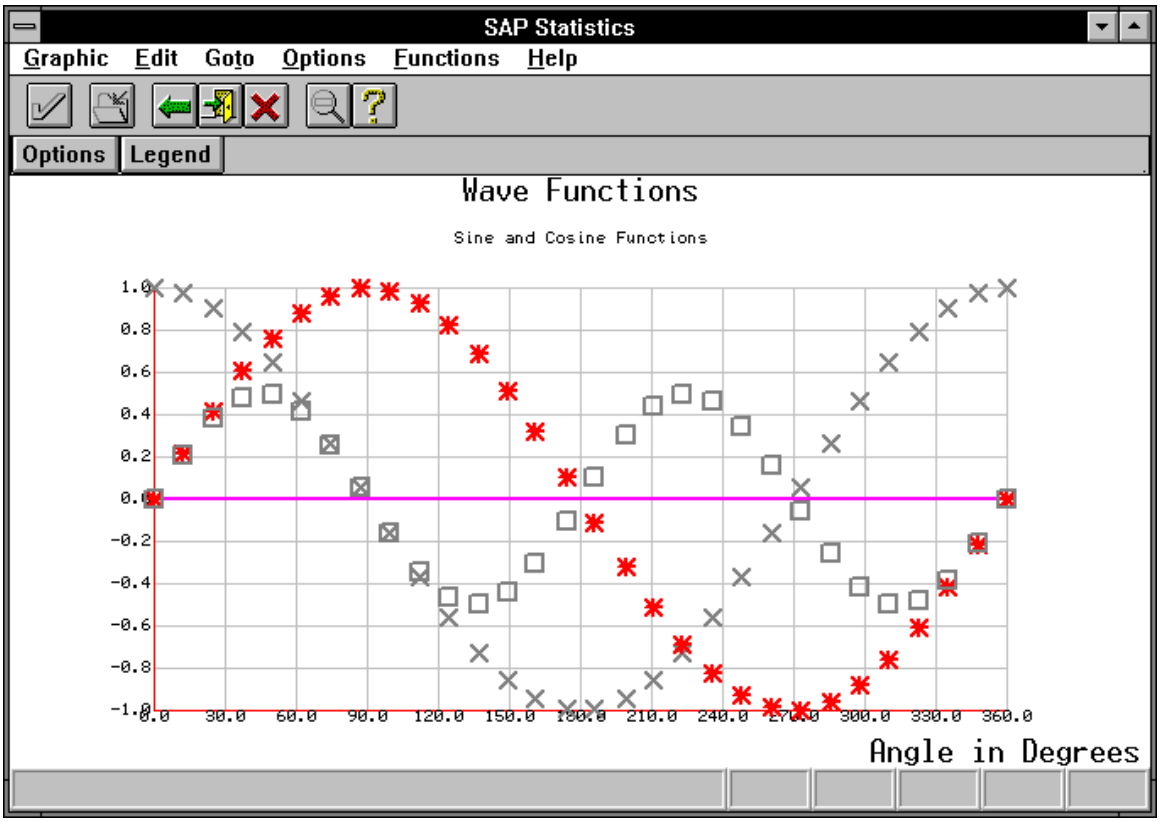
The choices listed in the *Continuous curves* option include some that are not *literally* continuous; rather, a continuous curve is suggested by a series of dots or dashes.

### The Markered Curves Option

This option lets you choose what kind of markers you want for displaying a curve. In order to activate this option, you must set the *Curve type* option to *Markers*. Otherwise, you cannot set any values in this menu.

The following graph [Page 184] shows markered curves with exact representation.

# Graph with markered curves




This graph illustrates *Exact* representation.

# Displaying the Curve Legend

The legend is a popup window containing keys for all the curves. Each key includes the title of the curve, a text explanation, and a segment of the curve as illustration. This segment gives the color and curve pattern (*Continuous*, *Markered*, *Area*, and so on).

The legend appears when you select the *Legend* option in the *Options* menu. You can also get the legend by clicking on the *Legend* button (at the bottom of the window). When you select *Legend* a second time, the legend disappears.

You can modify the attributes of the legend using the *Curve attributes* menu.

You can move the legend by clicking anywhere inside it and then dragging it with the mouse.

Dragging means clicking the left mouse button (anywhere inside the legend), holding the button down, and moving the mouse to the desired position. An outline of the legend moves with the mouse, and turns into the legend itself when you release the mouse button.

You can resize the legend by doing the following:

1. Move the cursor onto the edge of the legend. The cursor icon changes to a two-directional arrow.
2. Press the left mouse button and hold it down while moving the mouse away from the legend.

   This extends the legend in the direction you are moving.

This procedure also works when you start with the mouse cursor on a corner of the legend. In this case, you can extend both the length and width of the legend at the same time.

# Setting Global Options

Select *Options* → *Global options* to call up the *Global Options* dialog box. This dialog box offers options for changing everything about the graph's appearance except the curves themselves. To change the appearance of curves (color, line texture) see Setting Curve Attributes [Page 181].

Some of the following global options are only available if the x-axis has time line scaling, since this scaling requires special options.

Gridline Pattern [Page 187]

Exact or Rounded Curve Point Representation [Page 188]

X or Y-Axis as Reference Axis [Page 191]

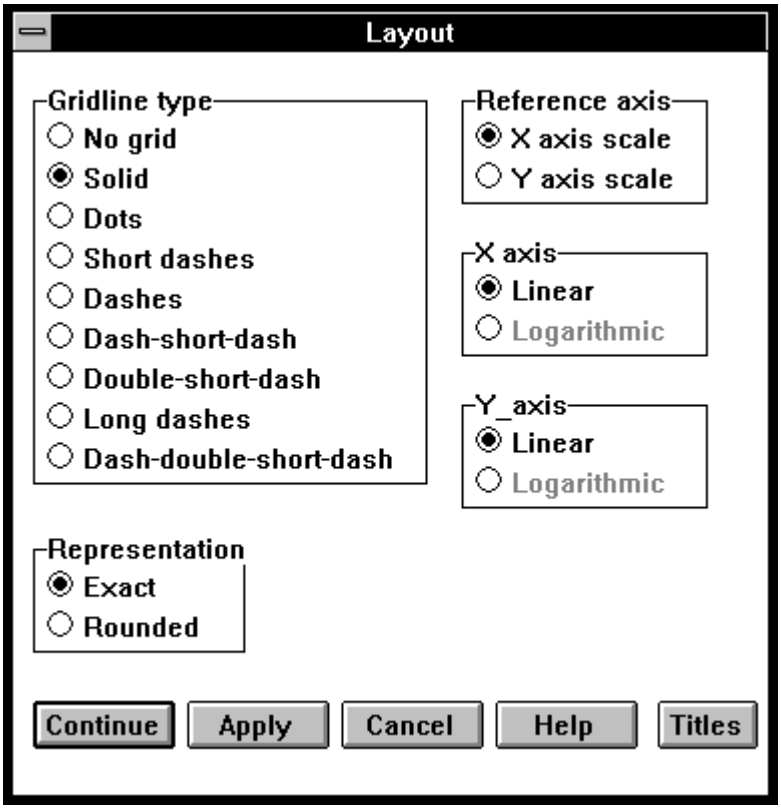
Linear or Logarithmic Scaling [Page 192]

Titles, Subtitles and Legend [Page 193]

Grid Type [Page 194]

Fine or Coarse Time Grid [Page 195]

Time Units [Page 196]



# Gridline Pattern

Under *Gridline pattern* in the *Global Options* dialog box, choose the line pattern for gridlines in the back of the graph.

The *Gridline pattern* option is available in both types of *Global Options* dialog boxes.

# Exact or Rounded Curve Point Representation

The options under *Representation* in the *Global Options* dialog box only apply to *reference axes* graphs, and these graphs must not have time line scaling.

The *Exact* and *Rounded* options let you specify how the points in the curve are distributed over the reference axis. In the discussion of these options, the reference axis is assumed to be the x-axis.

These options are important when, as is most often the case, the number of pixels in the window is not an even multiple of the number of points in the curve. SAP Statistics must decide two questions:

- How the points are to be spread over the width of the window?
- How the gridlines are to be spread over the width of the window, and how they should be labelled?

Both considerations depend on how the number of curve points compares to the number of window pixels:

- *More curve points than window pixels:*

  SAP Statistics must choose a selection of the points to display.

  Example: For a 700-point curve and a 200-pixel window, the system can choose 200 of the 700 curve points for display: approximately every third or fourth (that is, every "3.5th") curve point.

- *Fewer curve points than window pixels:*

  The system can display all points in the data, but must decide which pixel to assign each point to.

  Example: For a 200-point curve and a 700-pixel window, the system can display all 200 points: at intervals of approximately one point every three or four (that is, every "3.5th") pixels.

The two options under *Representation* solve these questions as follows:

- *Exact*

  The data points in the graph are all the same distance apart, and each point lies on a gridline.

  With an *Exact* representation, the system assigns one point to every nth pixel (more points than pixels) or exactly n pixels to every point (fewer points than pixels).

  A gridline is drawn for each point displayed, and is labelled with the point's x-value. (The above figure shows a graph with *Markered* curves with an *Exact* representation of three curves. Compare with the following figure.)

  Achieving this regularity provides a more accurate representation of the input, but often makes inefficient use of the display space. For example, with 700 pixels and 200 points, only 600 pixels can be used (by displaying a point on every third pixel). The other available 100 pixels are not used, so that an empty stripe appears at the right end of the graph.

- *Rounded*

The system does not maintain the same distance between data points, and the points do not necessarily lie on gridlines.

With a *Rounded* representation, the system does not use a whole number (such as the n factor mentioned for *Exact*) to assign points to pixels or pixels to points. Instead, the quotient of the larger number and the smaller (pixels and points) is used to drive the assignment in an irregular fashion.

For example, for 700 pixels and 200 points, the quotient 3.5 is used, instead of 3. Every "3.5th" pixel is pinpointed for assignment: the number of each is rounded down if the result is fractional. Thus the first five points, (theoretically assigned to pixels 0, 3.5, 7, 10.5, 14), would be actually be placed on pixels 0, 3, 7, 10, 14.

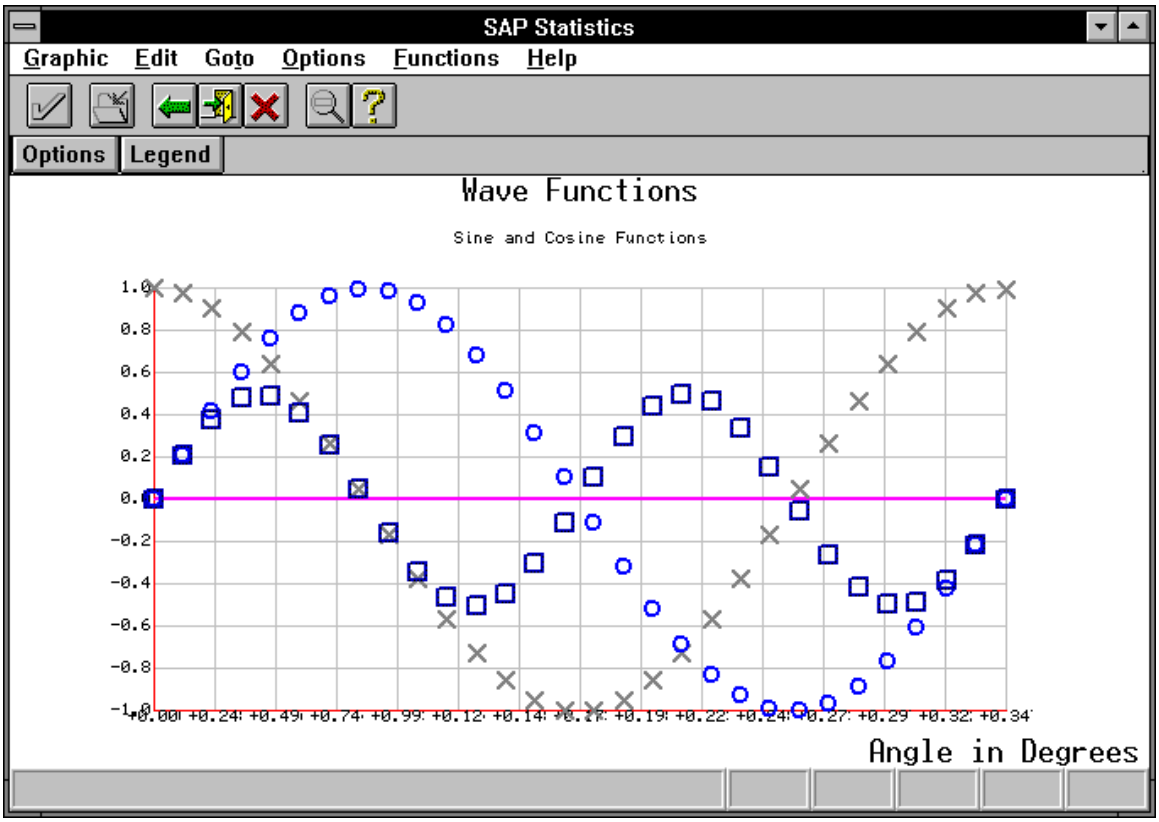
Using the *Rounded* method, the distance between pixels with points on them will vary slightly from point to point. In this example, sometimes every third, sometimes every fourth.

A similar calculation is performed when there are more points than pixels, except that every "3.5th" point is assigned to a pixel. In this case, the display sometimes shows every third point and sometimes every fourth.

With *Rounded*, gridlines are assigned by dividing the number of pixels by the optimal number of gridlines, and labelling each with the x-value of data point that is nearest. (The optimal number of gridlines is derived from the the window width and the size of the character strings needed to label the reference axis.) There is no guarantee that the point for that label falls exactly on the gridline shown.

The following figure shows a *Rounded* representation of three curves. Compare with it with the preceding figure, which shows an *Exact* representation.

## Exact or Rounded Curve Point Representation




The *Rounded* option makes maximum use of the display area because it is not restricted to using a number of pixels that is an even multiple of the number of curve points. This can make a substantial difference for example when there are 1000 pixels and 501 curve points.

A graph shown using the *Rounded* option may not be as accurate a depiction of the input. However, in most cases, the variable distances between points in the graph may be neither visible nor important.

# X or Y-Axis as Reference Axis

The *Reference axis* option in the *Global Options* dialog box can only be used when your graphs have a reference axis, and this axis is not scaled by a time line. (Reference axes are defined in the introduction to this section.)

This option lets you assign the reference axis to the vertical or horizontal axis of the diagram. Clicking on *X-axis* scales the reference axis along the horizontal axis. This is the default.

Clicking on *Y-axis* scales the reference axis along the vertical axis. The x- and y-values for the curves points are also reversed. As a result, the original graph appears turned on its side.

A reference axis cannot be scaled logarithmically.

# Linear or Logarithmic Scaling

You can apply linear or logarithmic scaling to the x- and y-axes by choosing the appropriate option in the *Global Options* dialog box.

### Scaling the X-Axis

The x-axis must be a non-reference axis in order to specify logarithmic scaling. In addition, the scale range for the x-axis must have no negative values.

The *X-axis scale* option does not appear in the *Global Options* dialog box that appears for reference axis graphs with time line scaling.

### Scaling the Y-Axis

The y-axis must be a non-reference axis in order to specify logarithmic scaling. In addition, the scale range for the y-axis must have no negative values.

# Titles, Subtitles and Legend

If you click on the *Titles* button in the *Global Options* dialog box, you get a window where you can enter text for:

- the diagram's main title
- the diagram's sub-title
- the text legend for the reference axis

The reference axis text legend labels the reference axis as a whole. Thus, if the scale values for the reference axis were a series of dates, a logical text legend might be "Date."

# Grid Type

The *Grid type* option in the *Global Options* dialog box applies only to curve data that specifies a reference axis with time line scaling. The reference axis in the graph of this curve is scaled by a time line.

This option allows you to specify the density of gridlines to be drawn in the background of the graph. Possible values, which are mutually exclusive, are:

- *No grid*

  Choose this value if you want no gridlines at all.

- *Coordinate grid*

  Choose the *Coordinate grid* value when you want gridlines drawn for each point in the graph: one line appears for each point's x-value.

- *Time grid*

  Choose the *Time grid* value when you want gridlines drawn according to the time unit used in the time line.

  This value activates the options *Coarse* or *Fine* under *Time grid*. If you don't choose the time grid type, you cannot set these options.

# Fine or Coarse Time Grid

Under the title *Time grid* in the *Global Options* dialog box, you specify the desired density for gridlines scaling a time line reference axis. In order to use this option, the *Time grid* option under *Grid type* must be turned on.

If you choose the *Fine* value for the time line, one gridline is drawn for each time unit interval. Thus, if the time unit being used is *Days*, one gridline is drawn for each day.

If you choose the *Coarse* value for the time line, gridlines are drawn for the more inclusive time unit used on the top half of the time line. Thus, if the active time unit is *Days*, days are displayed on the bottom half of the time line, and months on the top half. In this case, a gridline is drawn for each month.

The *Time grid* option is available only in the *Global Options* dialog window that appears for reference axis graphs with time line scaling.

# Time Units

SAP Statistics displays a special time line for scaling reference axes where scale values along the axis are times or dates. The time line appears along the x-axis and is divided into an upper and lower half.

The *Time units* option in the *Global Options* dialog box allows you to select the time unit that is used in the time line.

When you choose a time unit, it appears as the unit of measure in the bottom half of the time line. The upper half is used to show a more inclusive time unit. For example, if you choose the *Days* time unit, the bottom part shows days and the top half shows months.

The time units you can choose are:

- *Minutes*
- *6-minute intervals*
- *Hours*
- *Days*
- *Weeks*
- *Cal. weeks* (Calendar weeks)
- *Months*
- *Quarters*
- *Years*

The *Time Units* option is available only in the *Layout* menu that appears for reference axis graphs with time line scaling.

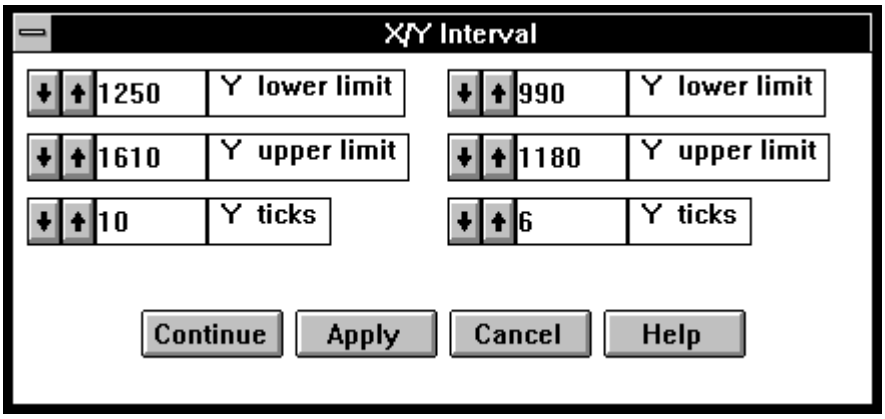
# Documentation not Available in Release 4.6B

# Setting X/Y Intervals

The *X/Y Interval* menu only applies to *non-reference* axes.

Select *Options* → *X/Y interval* to call up the *X/Y Interval* dialog box. This dialog box offers options for changing everything about the graph's appearance except the curve itself. To change the curve's appearance (color, line texture) see Setting Curve Attributes [Page 181].

The *X/Y Interval* menu lets you modify the range of the axis scale. You can use the options in this menu to cut off the ends of the axes. For example, an x-axis with a range from -40 to +60 can be restricted to the range -10 to 30. When you request this restriction, SAP Statistics slices off the right and left sides of the display at x=-10 and x=30, respectively.




If the x-axis is a reference axis in your graph, the *X/Y Interval* menu only lets you change the y-axis. If your graph contains no reference axes, the *X/Y Interval* menu lets you change both.

Note that if you have turned *Separate scaling mode* on (by selecting *Goto* → *Display mode* → *Separate scaling mode*), the separately scaled axis will have different scaling on either side of the graph. In this case, the *X/Y Interval* menu presents a double set of options for the axis.

The *X/Y Interval* menu contains the following variables:

- the upper limit for an axis
- the lower limit for an axis
- the ticks (number of gridlines) that span the axis

  The number of gridlines includes the two outer sides of the graph. Hence for 10 ticks in the x-axis, vertical gridlines divide the graph into 9 stripes.

To change the values of these variables, click on the up or down arrows for each. The current value of the limit gets bigger or smaller as you click. You can also simply type in a new current value: click on the box where the current value is contained, delete the entry, and type in another.

If you have turned *Separate scaling mode* on (by selecting *Goto* → *Display mode* → *Separate scaling mode*), it is possible to request a different number of gridlines for the two sides of the y-axis. In this case, gridlines are drawn according to the scaling on the left side. On the right side, scale numbers appear, but do not necessarily correspond to the gridlines that are drawn.

# Displaying a Time Marker

If your graph contains an reference axis scaled with a time line, you can display a special time-marker line using the *Functions* → *Time marker* option. This line can have two meanings:

- It can mark the current time or date. This is the default meaning.
- It can serve as a "milestone" marking an important point in time. This milestone must have been specified by the ABAP program you used to call SAP Statistics.

# Specifying What Curve is in the Foreground

You can use the *Functions* → *Foreground curve* option to "page through" the curves in your graphs. Each time you select this option, the next curve in the series is displayed in the foreground.

This option is only relevant when you have multiple curves that overlap each other. A graph can contain up to 16 curves, some of which may hide important sections of others. This happens especially when some of the curves are formatted as having *Area* or *Stepped Area* curve types (in the *Curve Attributes* menu).

To display a particular curve, select *Functions* → *Foreground curve* repeatedly until the desired curve stands in the foreground.

# Documentation not Available in Release 4.6B

# Printing a Graphic

Selecting *Graphic* → *Print* sends the current graphics view to the printer.

You can set the following options in the dialog window *Printer setup*:

- Destination

  You can choose one of the following options:

  - *Local:* prints your graph on your local printer (not available for Motif)
  - *R/3 Spool*: sends your graph to the R/3 printer queue (PostScript printers only)
  - *File:* creates a print file
  - *Clipboard:* copies your graph to the clipboard

- Additional options provided for the *R/3 Spool* and *File* options*:*

  If you choose *R/3 Spool* oder *File*, additional options are available in the dialog window:

  – *Format*

  You can choose from various formats (Postscript, Graneda (format of Netronic), WMF, etc.).

  – *Paper format*

  You can choose from various paper formats from a list (DIN, Legal, Letter, etc.). The print format (portrait or landscape) must be identical with the paper format of your printer.

  – *Portrait* / *Landscape*

  You can print your graph in portrait format on a landscape paper format, and vice versa.

  – *Standard character height*

  (not available for SAP Network Graphics and SAP Bar Chart Graphics)

  – *Printer name* (available with the *R/3 Spool* option)

  – *File name* (available with the *File* option)

- Additional options for SAP Network Graphics and SAP Bar Chart Graphics:

  If you are working with SAP Network Graphics and SAP Bar Chart Graphics, the following additional options are provided:

  – *Pages*: Choose the page range you want to print by double-clicking in the raster.

  – *Fit to page(s)*: The various views are fit the paper format size and printed.

  – *Default size*: The various views are printed in their default size.

  – *Cutting marks*: The cutting marks around the various print sections of a default size view will appear in the printout.

  – *Color print*

Option menus or popup windows that obscure the view, or that merely exist somewhere on the monitor screen, are not sent to the printer and have no effect on the printing of the view itself.

## Printing a Graphic

When you print a graphics view from SAP Business Graphics, one of the following color schemes (*Options* → *Global Options*) should be active:

- Color Scheme E: for Matrix printers and plotters
- Color Scheme F: for Postscript printers

### How the System Sizes Output for the Printer

Your SAP Graphics program prints the largest possible image allowed by the output format currently specified in the printer.

If your window is a horizontal rectangle (that is, wider than it is high), the width of the window is expanded to match the output format width. The window's height is then scaled accordingly.

If your window is a vertical rectangle (higher than it is wide), the height of the window is expanded to match the output format height. The window's width is then scaled accordingly.

In either case, the height-width ratio of the original window is maintained. Whether your graphics window is small or full-screen, what you see on the screen is what you get on paper.

Note the special features of SAP Network Graphics and SAP Bar Chart Graphics described above.

### Printer Requirements

In order to print graphics views, the printer attached to your system must be able to print graphics as well as text. It must also have a suitable resolution.

Printing through R/3 Spool requires a PostScript printer.

Printer output depends in part on the capabilities of the printer drivers supported by your operating system. For example, in the OS/2 operating system, you can specify the various output format options in the Print Manager.

# Exiting from SAP Graphics

If you want to exit from your SAP Graphics application, choose *Graph* → *Exit* or press F15. Your current settings are saved.

If you want to cancel your SAP Graphics application without saving your current settings, choose one of the following alternatives:

- *Edit* → *Cancel*, F12 or the cancel icon.
- *Goto* → *Back*, F3, or the back or exit icon.
- Click twice on the upper left corner of your SAP Graphics window.

# SAP Gantt Chart Graphics

The SAP Gantt Chart system displays a table of events over a given time period and allows you to reschedule them.

Overview [Page 207]

Editing Charts [Page 210]

Setting Options [Page 221]

Choosing a Time Unit [Page 233]

Printing a Graphic [Page 234]

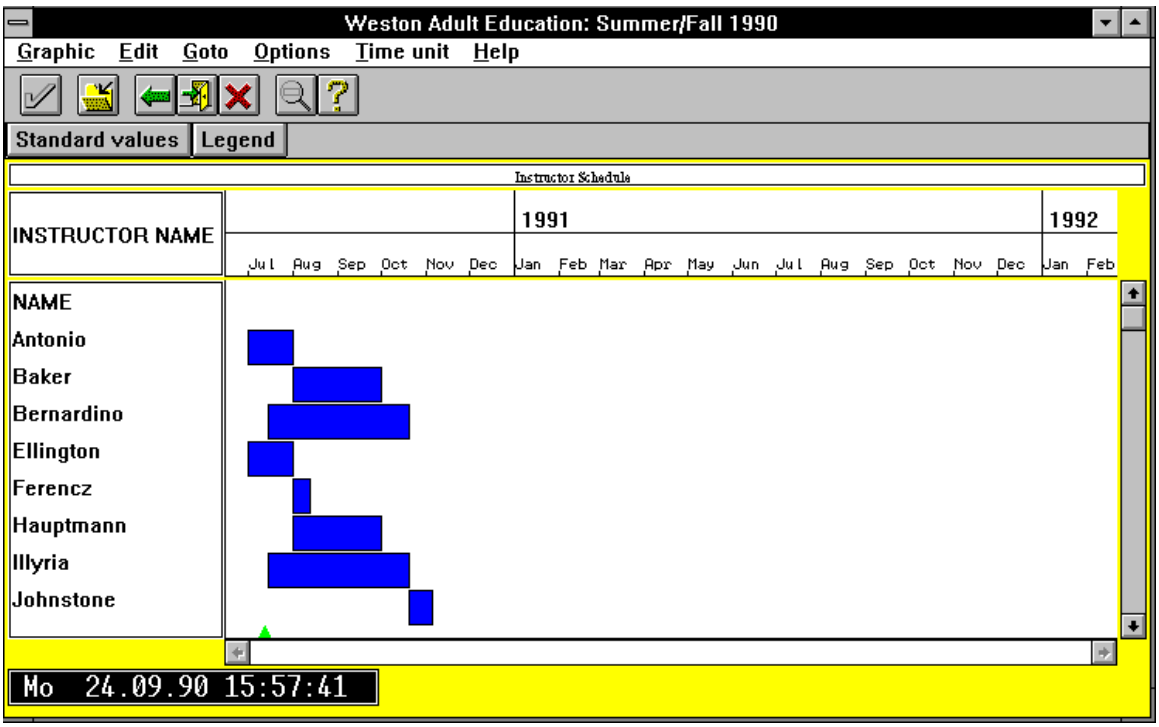
Saving Your Changes [Page 236]

Exiting from SAP Graphics [Page 295]

# Overview

The SAP Gantt Chart system displays a table of events over a given time period and allows you to reschedule them.

The following figure shows the SAP Gantt Chart Planning Board [Page 209]. The *Time units* value is *Months*.




The *Edit* menu allows you to manipulate the events, line items and milestone markers in the planning board (change, move, delete, and so on). The display mode (*Edit* → *Display*) is inactivated upon choosing one of the the edit options.

The *Options* menu provides options for changing the appearance of the schedule window.

The *Time Units* menu contains the possible time increments into which you can divide the planning board.

The pushbuttons at the top of the window let you call up certain functions quickly.

On Apple frontends, a number of alternative and additional options are available for SAP Graphics. For more information, see the following topic:

Special Features on Apple Frontends [Page 51]

# Planning Board

Display area containing the schedule

The schedule contains a time scale, a row labelling block explaining the event blocks, and the event blocks.

Events are depicted as blocks, which can be shifted.

# Editing Charts

You can use the Edit menu to change your planning board.

Changing all Planning Board Elements [Page 211]

Changing the Duration of an Event [Page 213]

Moving Elements [Page 214]

Copying Elements [Page 217]

Deleting Elements [Page 218]

Inserting Milestones [Page 215]

Inserting Events [Page 216]

Inserting Line Items [Page 219]

Selecting an Element [Page 220]

# Changing all Planning Board Elements

Select *Edit* → *Change all* to change the characteristics of any element in the planning board.

Types of elements are:

- Line Items

  These are the text-string entries listed on the left side of the planning board. The line items provide the text name for the corresponding events in the right side of the board.

- Milestones

  These are small markers you can insert in the events area (right side of the planning board). Milestones can have various colors or shapes, and are useful in marking particular points in time.

- Events

  These are the horizontal bars (in the events area at the right side of the planning board) that show the duration of an event. (The name for the event is shown in the corresponding line item on the left side of the chart.)

If you have activated the *Change all* option, clicking on a line item, milestone, or event causes the window for that element type to appear.

### Using the Line Item Window

In the line item window, you can edit the text string that appears in the line item.

### Using the Milestone Window

The milestone window lets you modify the following aspects of the milestone you clicked on:

- *Text*

  The text name for the milestone

- *Shape*

  The shape for the milestone: *Rectangle*, *Triangle* or *Line*.

- *Position*

  The position of the milestone within the event: *Top*, *Bottom*, or *Center*.

- *Size*

  The size of the milestone: *Small*, *Medium*, or *Large*.

- *Time*

  The point in time that the milestone marks. You can specify the date (day, month, and year) and time (hour and minutes).

- *Color...*

  The milestone's color. When you click on this item, a popup *Color Assignment* window appears. To use this window, click on *Milestone* (right column), then on the color you want, and then on *Continue*. The milestone does not change to the new color until you click on *Continue* in the milestone window.

For more information on using the *Color Assignment* window, see "The Color Assignment Window" in the section Setting Options [Page 221].

### Using the Event Window

The event window lets you modify the all aspects of the selected event. You can shorten or extend its duration, move it to a different time altogether, change its color, and so on. However, moving the event to a different line is not possible.

Event window fields are:

- *Text*

  The text name for the event

- *Position*

  The position of the event block (*Top*, *Bottom*, or *Center*) within the event slot. This field has no effect when the *Height* field is set to the maximum size (15). Only when the height is less than 15 does the *Position* value make a difference.

- *Border*

  The frame for the event block. You can display events with or without borders. (The default is *Yes*.)

- *Height*

  The height of the event block. Values of 1 to 15 are possible. If a line item has two events that overlap in time, you can display the overlap by using different *Height* values for each. (With different *Position* values and small enough *Height* values, you can make both events completely visible.)

- *Pattern*

  The pattern for the event block. You can use one of nine different shading patterns (numeric values 1 to 9).

- *Start*

  The starting time for the event. You can set the date (day, month, year) and time (hour and minutes.)

- *End*

  The ending time for the event. You can set the date (day, month, year) and time (hour and minutes.)

- *Color...*

  The event block color. When you click on this item, a popup *Color Assignment* window appears. To use this window, click on one of the color variable in right column (*Event text, Event background, Event border*), then on the color you want, and then on *Continue*. The new colors do not appear until you click on *Continue* in the event window.

  For more information on using the *Color Assignment* window, see "The Color Assignment Window" in the section Setting Options [Page 221].

# Changing the Duration of an Event

1. Select *Edit* → *Change duration*.
2. Position the mouse cursor on the event block you want to change. To change the starting time for the event, the cursor must be in the left half of the block. To change the ending time, place the cursor in the right half.
3. Press the left mouse button, and holding it down, move the mouse right or left.

   While you do this, a vertical line appears for the edge you are changing. This line connects the edge of the block with the time line above.
4. When the vertical line touches the desired starting or ending time in the time line, release the mouse button.

   The vertical line disappears, and the event block re-appears with its new starting or ending time.

# Moving Elements

The *Move element* option lets you move a line item, event or milestone to a new position. The steps for doing this are:

1. Select *Edit* → *Move element*.
2. Position the mouse cursor on the element you want to move, and press the left mouse button.

   *Line item:* A rectangle appears around the line item text.

   *Event block*: Vertical lines appear that connect the edges of the block with the time line above.

   *Milestone:* The mouse cursor changes to a cross.
3. Holding the mouse button down, move the mouse (and the element) to the desired position. For line items, move the rectangle to the position *just before* the desired position.

   When you release the mouse button, the element re-appears in its new place.

# Inserting Milestones

The *Insert milestone* option lets you add a new milestone.

When you select *Edit* → *Insert milestone*, a milestone window appears, as described in the section "Changing Planning Board Elements". See this section for information on using the milestone window.

# Inserting Events

The *Insert event* option lets you add a new event.

When you select *Edit* → *Insert event*, an event window appears, as described in the section "Changing Planning Board Elements". See this section for information on using the event window.

# Copying Elements

The *Copy element* option lets you add a new element by copying an existing one. The steps for doing this are:

1. Select *Edit* → *Copy element*.
2. Position the mouse cursor on the element you want to copy, and press the left mouse button.

   *Line item:* A rectangle appears around the line item text.

   *Event block*: Vertical lines appear that connect the edges of the block with the time line above.

   *Milestone:* The mouse cursor changes to a cross.
3. Holding the mouse button down, move the mouse (and the element) to the desired position. For line items, move the rectangle to the position *just before* the desired position.

   When you release the mouse button, both the new and the old elements appear in their places.

# Deleting Elements

The *Delete element* option lets delete any element. The steps for doing this are:

1. Select *Edit* → *Delete element*.
2. Click on the element you want to delete.

   A popup window appears asking whether you really want to delete. If you are sure, click on *Yes*. The element disappears.

# Inserting Line Items

The *Insert line item* option lets you add a new event. Perform the steps:

1. Select *Edit* → *Insert line item*.
2. Click on the line that the new line should follow.
3. A popup window appears. Enter the line item text, and click on *Continue*.

   The new line appears in the desired spot.

You can now create events for the new line item using the *Insert Event* or *Copy* options.

# Selecting an Element

You can select an element, and have your selection reported back to the ABAP program you used to call SAP Gantt Chart. Perform these steps:

1. Select *Edit* → *Select element*.
2. Click on the event you want to select. It does not show any highlighting when you do this.

Selecting events is only meaningful when the ABAP program you are using offers special functions independent of SAP Gantt Chart. For example, when you select an event, you might get a special event-related menu or display.

# Setting Options

You can use the Options menu to change the appearance of your chart.

Displaying a Vertical Grid [Page 222]

Displaying a Horizontal Grid [Page 223]

Displaying Event Text [Page 224]

Displaying the Time Line [Page 225]

Marking Partly Hidden Events by Arrows [Page 226]

Choosing the Grid Density [Page 227]

Choosing a Print Mode [Page 228]

Assigning Colors [Page 229]

Restoring Standard Values [Page 231]

Displaying the Legend [Page 232]

# Displaying a Vertical Grid

Select *Options* → *Vertical grid* to display vertical grid lines appear in the events area of the planning board.

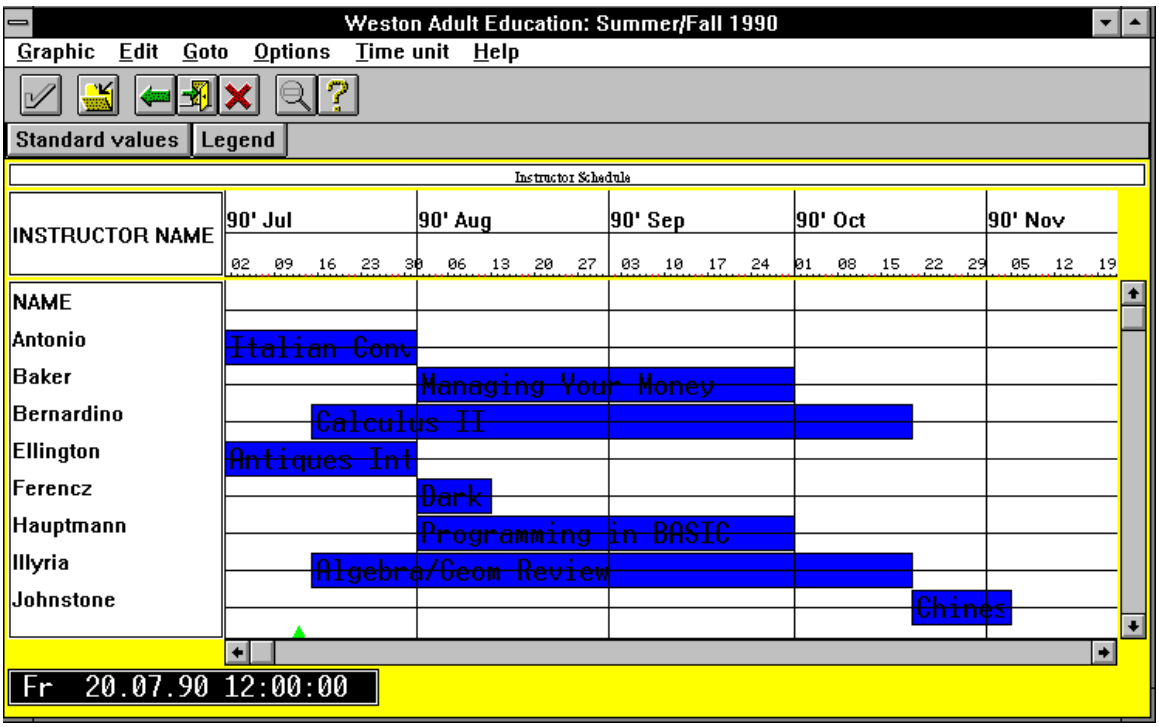
How often the grid lines appear depends on the way the *Grid density* option is set. If you choose a *Grid density* of *Coarse*, the grid lines mark the boundaries between the time units shown in the upper level of the time line. For example, if you are using either the *Days* or *Weeks* time unit, grid lines appear between months. If you choose a *Grid density* of *Fine*, the grid lines appear more often.

# Displaying a Horizontal Grid

Select *Options* → *Horizontal grid* to display horizontal grid lines appear in the events area of the planning board.

There is one gridline for each line item shown at the left side of the planning board.

The following figure shows a planning board with *Time Units=Days*, *Horizontal grid* and *Vertical grid*, *Density=Coarse*.



# Displaying Event Text

Select *Options* → *Event text* to display the text in event boxes in the plan. When this option is not activated, no text labels appear.

Text also does not appear if an event box is too short for its label. This may be because the time unit you are using is too big. Choosing a smaller time unit causes the event boxes to appear bigger.

# Displaying the Time Line

Select *Options* → *Time line* to display a vertical line in the plan to mark the current time. The meaning of this line depends on the time unit currently in effect. For days, the time-now line gives the date; for weeks, the time-now line gives the current week, and so on.

# Marking Partly Hidden Events by Arrows

When an event box occurs on the boundary of the plan, you can insert a small arrow where the box breaks off to show that you can scroll further to see the rest of the box.

Select *Options* → *Arrows* to display such arrows.

# Choosing the Grid Density

Select *Options* → *Grid density.*

This option allows you to determine how densely vertical grid lines should appear in the plan. Choose *Coarse* if you want fewer lines and *Fine* if you want more. The figure under Displaying a Horizontal Grid [Page 223] shows a *Coarse* density.

For example, if the current time unit is *Days*, *Coarse* grid lines appear at every month-boundary, and *Fine* at every week-boundary.

This option has no effect if the *Vertical grid* option is not turned on.

# Choosing a Print Mode

Select *Options* → *Print mode.*

This option provides you with two sub-options:

- *Automatic*

  This sub-option chooses a time unit for you that allows all the events to fit *horizontally* across a single page. The time unit chosen is the smallest time unit sufficient to display all events from the earliest to the latest.

- *Plot*

  This sub-option causes time events to appear as boxes with colored borders instead of with solid colors. This makes printing to the plotter faster.

# Assigning Colors

Select *Options* → *Color assignment.*

The *Color Assignment* dialog box can be called up from various places in SAP Gantt Chart (the *Event*, *Milestone*, and *Options* dialog boxes).

The *Color Assignment* dialog box consists of three parts:

- A color palette of 16 colors
- A list of color variables for the graph. A color variable is an aspect of the graph that is colorable.
- A large color stripe at the top of the palette. This stripe shows the current color of the color variable highlighted.

### How to Set Color Values

You can use these components to color various parts of the graph. Set the color variables to particular color values from the palette, as follows:

1. Click on the color variable whose value you want to set. When you have selected the variable, its current value appears in the large color stripe at the top of the menu.
2. Assign a new color to the variable by clicking on one of the palette colors with the mouse. The large color stripe changes to the requested color. Click on *Apply* (or *Continue*) to apply the new color to the graph.

### Color Variables

The color variables listed in the *Color Assignment* menu depend on where you request the menu. If you select *Color...* in the *Event* window, you can set the following event-related color variables:

- *Event text*

  The text that appears in the event block.
- *Event background*

  The background color for the event block.
- *Event border*

  The border around the event box.

If you select *Color...* in the *Milestone* window, you can set the following milestone-related color variable:

- *Milestone*

  The color of the milestone.

If you selected *Color Assignment* in the *Options* menu, you can set these color variables for the diagram as a whole:

- *Holiday*

  Time line text for times known to be holidays, including Saturdays and Sundays. For example, when you use a time unit of hours, the time line shows hours in the bottom half

and the day and date in the top half. For Saturdays and Sundays, both halves of the time line appear in the *Holiday* color.

- *Time line text*

  All time line text except holiday text. (The latter is colored by the *Holiday* color variable.)

- *Time line background*

  The time line's background. This color applies to all background in the time line, including the background of holiday times. (The text of holidays is colored by the *Holiday* color variable.)

- *Gridlines*

  The vertical and horizontal grid lines in the event area. To see this color, you must have the *Vertical grid* and *Horizontal grid* options turned on.

  This color also colors the time-now line, if the *Time-now line* option is turned on.

- *Events area background*

  The part of the planning board where the event boxes and grid lines appear.

- *Line item background*

  The part of the planning board (left hand side) where the line items are listed.

- *Line item text*

  The text of the line items.

- *Border*

  The thin border areas of the planning board: around the events area, line item area, the time line and title area.

- *Date text*

  The text in the date block at the bottom left of the planning board.

- *Date background*

  The background in the date block at the bottom left of the planning board.

- *Title text*

  The text of the diagram title.

- *Title background*

  The background for the diagram title area.

# Restoring Standard Values

Select *Options* → *Standard values.*

This option lets you reset all option settings to their default values. Clicking on the *Standard values* pushbutton has the same effect.

# Displaying the Legend

Select *Options* → *Legend.*

This option lets you call up the *Legend* popup window that accompanies your diagram. The legend contains all event-types with colors, sizes and names.

# Choosing a Time Unit

Select *Options* → *Legend* to display all the possible time units you can use to display the schedule.

The planning board has a time line at the top of the events area. This time line is divided into an upper and lower half.

When you choose a time unit, it appears as the unit of measure in the bottom half of the time line. The upper half is used to show a more inclusive time unit. For example, if you choose the *Days* time unit, the bottom part shows days and the top half shows months. (See the figure at the beginning of this section.)

The time units you can choose are:

- *Second*
- *Minute*
- *Quarter hour*
- *Hour*
- *Day*
- *Week*
- *Calendar week*
- *Month*
- *Quarter*
- *Year*

# Printing a Graphic

The *Graphic* → *Print* option sends the planning board to the printer.

You can set the following options in the *Printer setup* dialog window:

- Destination

  You can choose one of the following options:

  - *Local:* prints your graph on your local printer (not available for Motif)
  - *R/3 Spool*: sends your graph to the R/3 printer queue (PostScript printers only)
  - *File:* creates a print file
  - *Clipboard:* copies your graph to the clipboard

- Additional options provided for the *R/3 Spool* and *File* options*:*

  If you choose *R/3 Spool* oder *File*, additional options are available in the dialog window:

  – *Format*

    You can choose from various formats (Postscript, Graneda (format of Netronic), WMF, etc.).

  – *Paper format*

    You can choose from various paper formats from a list (DIN, Legal, Letter, etc.). The print format (portrait or landscape) must be identical with the paper format of your printer.

  – *Portrait* / *Landscape*

    You can print your graph in portrait format on a landscape paper format, and vice versa.

  – *Standard character height*

  – *Printer name* (available with the *R/3 Spool* option)

  – *File name* (available with the *File* option)

- Additional options for SAP Gantt Chart Graphics:

  Under *Print modes*, the *Pages* and *Window* options are provided:

  – *Pages*

    Prints all data, using as many pages as necessary to accomodate the line items.

    If Automatic is set for the Print mode option (Options menu), the system picks the largest time unit that allows all events to fit horizontally across a single page. Then the plan is printed in multiple pages, as needed for the given line items. The standard character height defined in the printer is used.

    A last page containing the legend is also printed.

  – *Window*

    Prints all data in the current window, using a single page.

No attempt is made to choose a time unit that fits all events width-wise on the page. Events not currently visible on the screen are not printed out.

If the window does not fit within the page size specified by the printer, the window is resized to fit. The length-width proportion, however, is maintained.

Option menus or popup windows that obscure the view, or that merely exist somewhere on the monitor screen, are not sent to the printer and have no effect on the printing of the view itself.

### Printer Requirements

In order to print graphics views, the printer attached to your system must be able to print graphics as well as text. It must also have a suitable resolution.

Printing through R/3 Spool requires a PostScript printer.

Printer output depends in part on the capabilities of the printer drivers supported by your operating system. For example, in the OS/2 operating system, you can specify the various output format options in the Print Manager.

# Saving Your Changes

The *Graphic* → *Save* option sends the current version of your graph (with any changes: additions, re-positioning or deletions of graph elements) back to the ABAP program that called SAP Gantt Chart. The ABAP program then processes the new version further, as required for your application. This processing may or may not include actually saving the new version in the SAP System.

If you close SAP Gantt Chart without selecting *Graphic* → *Save*, your changes remain local to SAP Gantt Chart, and are thrown away when you leave. Any further processing by the ABAP program will use the old version of the graphic (before you made your changes).

# Exiting from SAP Graphics

If you want to exit from your SAP Graphics application, choose *Graph* → *Exit* or press F15. Your current settings are saved.

If you want to cancel your SAP Graphics application without saving your current settings, choose one of the following alternatives:

- *Edit* → *Cancel*, F12 or the cancel icon.
- *Goto* → *Back*, F3, or the back or exit icon.
- Click twice on the upper left corner of your SAP Graphics window.

# SAP HPGL Display

The SAP HPGL Display system allows you to display a graphics file coded in HPGL format on the screen.

Overview [Page 239]

Zooming a Sub-Area [Page 240]

Printing a Graphic [Page 292]

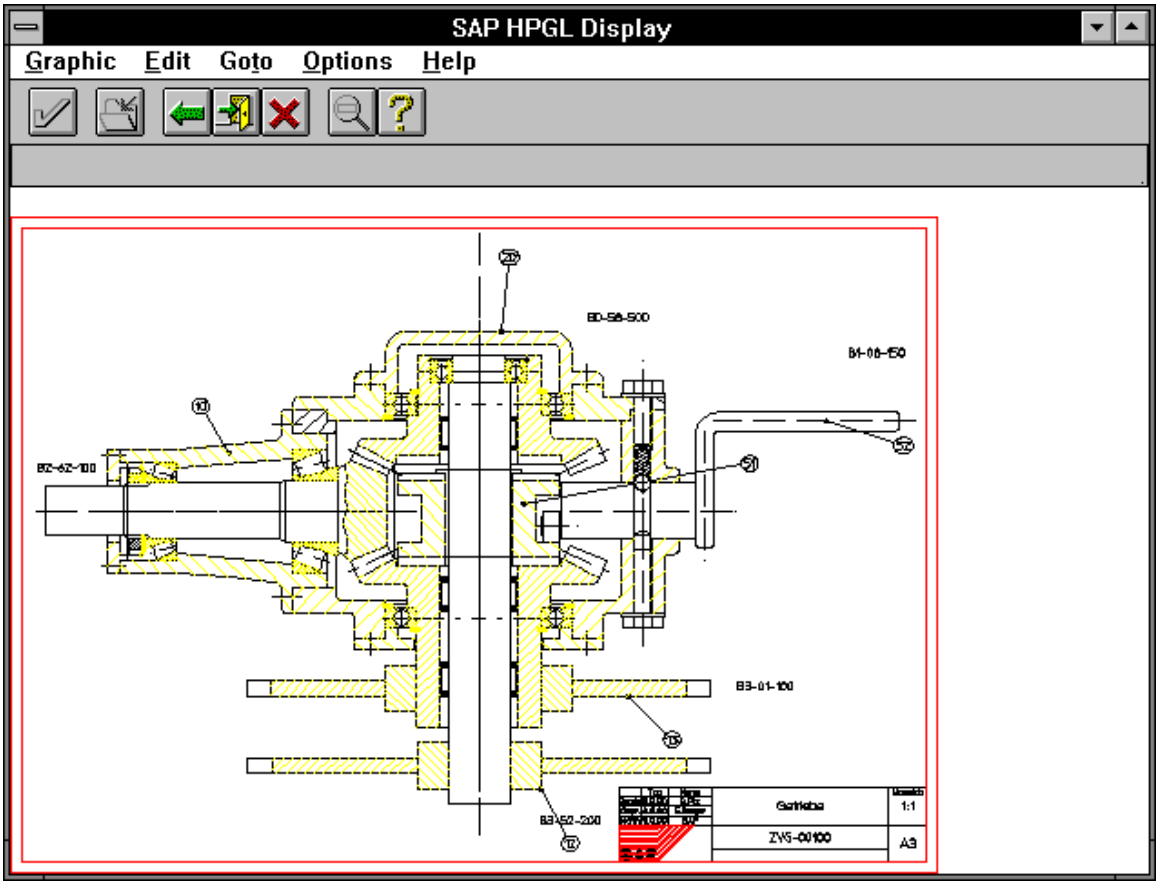
Exiting from SAP Graphics [Page 295]

# Overview

The SAP HPGL Display program allows you to display a graphics file coded in HPGL format on the screen. HPGL (Hewlett Packard Graphic Language) is a language for coding vector graphics.

You can zoom sub-areas of the graphic. However, you cannot edit an HPGL graphic with the SAP HPGL Display program.

The following figure shows an example of an SAP HPGL Display graphic.




On Apple frontends, a number of alternative and additional options are available for SAP Graphics. For more information, see the following topic:

Special Features on Apple Frontends [Page 51]

# Zooming a Sub-Area

The *Zoom* function lets you select a sub-area of the diagram and re-display it at full window size. When you do this, the original diagram disappears, and the blown-up sub-area appears.

To use the *Zoom* function, do the following:

1. Click on a corner of the sub-area you want to see enlarged. Do this without releasing the mouse button.

   A spot appears at your cursor point.

2. Holding the mouse button down, move the cursor in the direction that crosses the desired sub-area diagonally.

   The spot becomes a rectangle that grows in length and width as you move the cursor. The area inside this rectangle is the sub-area you are requesting.

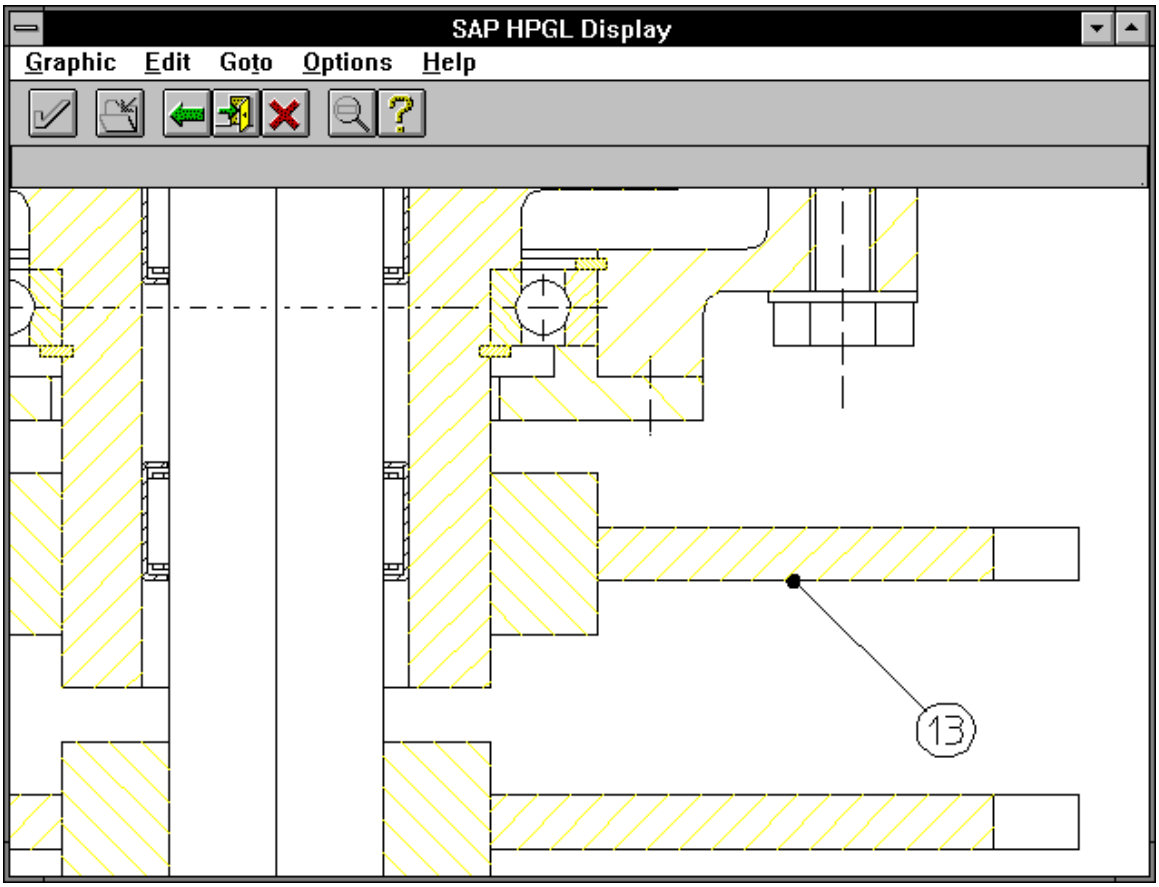
3. When you have a rectangle that encloses the desired sub-area, release the mouse button.

   The original diagram disappears, and the sub-area, blown up to window size, takes its place.

To display the original graphic again, choose *Settings* → *Complete picture*.

To display the last sub-area before the current one, choose *Settings* → *Last zoom*.

The following figure shows a zoomed view of the drawing shown in the Overview section.


SAP HPGL Display
Graphic
Edit
Goto
Options
Help
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# Printing a Graphic

Selecting *Graphic* → *Print* sends the current graphics view to the printer.

You can set the following options in the dialog window *Printer setup*:

- Destination

  You can choose one of the following options:

  - *Local:* prints your graph on your local printer (not available for Motif)
  - *R/3 Spool*: sends your graph to the R/3 printer queue (PostScript printers only)
  - *File:* creates a print file
  - *Clipboard:* copies your graph to the clipboard

- Additional options provided for the *R/3 Spool* and *File* options*:*

  If you choose *R/3 Spool* oder *File*, additional options are available in the dialog window:

  – *Format*

    You can choose from various formats (Postscript, Graneda (format of Netronic), WMF, etc.).

  – *Paper format*

    You can choose from various paper formats from a list (DIN, Legal, Letter, etc.). The print format (portrait or landscape) must be identical with the paper format of your printer.

  – *Portrait* / *Landscape*

    You can print your graph in portrait format on a landscape paper format, and vice versa.

  – *Standard character height*

    (not available for SAP Network Graphics and SAP Bar Chart Graphics)

  – *Printer name* (available with the *R/3 Spool* option)

  – *File name* (available with the *File* option)

- Additional options for SAP Network Graphics and SAP Bar Chart Graphics:

  If you are working with SAP Network Graphics and SAP Bar Chart Graphics, the following additional options are provided:

  – *Pages*: Choose the page range you want to print by double-clicking in the raster.

  – *Fit to page(s)*: The various views are fit the paper format size and printed.

  – *Default size*: The various views are printed in their default size.

  – *Cutting marks*: The cutting marks around the various print sections of a default size view will appear in the printout.

  – *Color print*

Option menus or popup windows that obscure the view, or that merely exist somewhere on the monitor screen, are not sent to the printer and have no effect on the printing of the view itself.

When you print a graphics view from SAP Business Graphics, one of the following color schemes (*Options* → *Global Options*) should be active:

- Color Scheme E: for Matrix printers and plotters
- Color Scheme F: for Postscript printers

### How the System Sizes Output for the Printer

Your SAP Graphics program prints the largest possible image allowed by the output format currently specified in the printer.

If your window is a horizontal rectangle (that is, wider than it is high), the width of the window is expanded to match the output format width. The window's height is then scaled accordingly.

If your window is a vertical rectangle (higher than it is wide), the height of the window is expanded to match the output format height. The window's width is then scaled accordingly.

In either case, the height-width ratio of the original window is maintained. Whether your graphics window is small or full-screen, what you see on the screen is what you get on paper.

Note the special features of SAP Network Graphics and SAP Bar Chart Graphics described above.

### Printer Requirements

In order to print graphics views, the printer attached to your system must be able to print graphics as well as text. It must also have a suitable resolution.

Printing through R/3 Spool requires a PostScript printer.

Printer output depends in part on the capabilities of the printer drivers supported by your operating system. For example, in the OS/2 operating system, you can specify the various output format options in the Print Manager.

# Exiting from SAP Graphics

If you want to exit from your SAP Graphics application, choose *Graph* → *Exit* or press F15. Your current settings are saved.

If you want to cancel your SAP Graphics application without saving your current settings, choose one of the following alternatives:

- *Edit* → *Cancel*, F12 or the cancel icon.
- *Goto* → *Back*, F3, or the back or exit icon.
- Click twice on the upper left corner of your SAP Graphics window.

# SAP Network Graphics

You can use SAP Network Graphics to create, display and modify network displays or hierarchies.

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Editing Graphics [Page 248]

Setting Options [Page 263]

Displaying Views [Page 265]

Printing a Graphic [Page 292]

Exiting from SAP Graphics [Page 295]

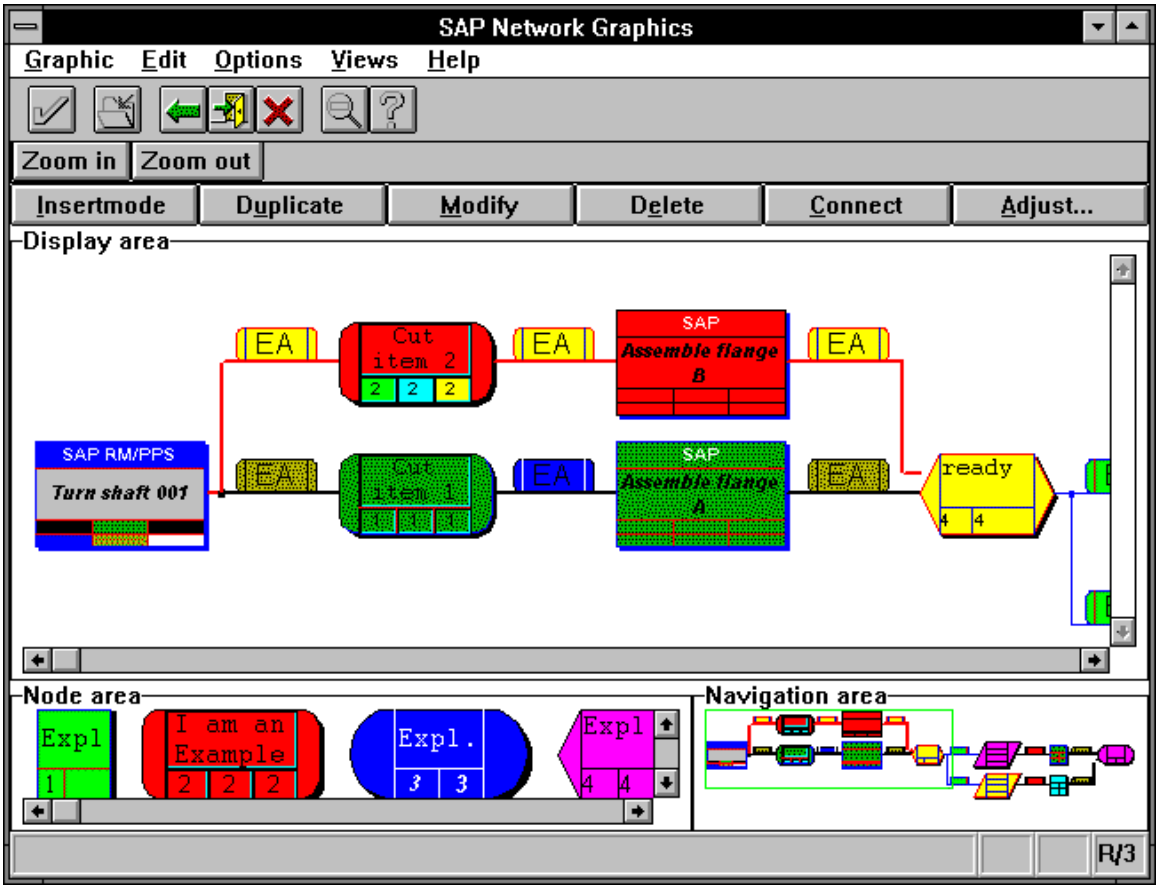
# Overview

You can use SAP Network Graphics to create, display and modify network displays or hierarchies.

Modifying your graph is not always possible. This depends on whether the ABAP program you used to call your graphics program allows you to modify the graph.

A network display consists of the stages of a project or of an activity in the project. Using a network as a basis in the implementation of a project, you can plan, analyze, describe, control and monitor deadlines, costs, and resources (labor, machines, production aids and materials).

The following figure shows a network display created with SAP Network Graphics.




The SAP Network Graphics main menu contains the standard elements of an R/3 window (action bar, icon bar, pushbutton bar, and status field) and the following elements:

- Toolbox

  The toolbox consists of pushbuttons with the most important editing functions. It is normally located at the top of the window.

  You can place the toolbox on the left or you can hide it.

  (*Options* → *Toolbox*).

- Work area

  The work area consists of three areas:

  - Display area

    The display area contains the framed subsection of the navigation area. You can change the size of the display area by choosing the *Zoom out* and *Zoom in* pushbuttons. You can mark the subsection in the navigation area.

  - Node area

    The node area contains a sample node of each type of node that appears in the display area.

  - Navigation area

    The navigation area contains the complete network display.

    The frame in the navigation area marks the section that currently appears in the display area. You can size the frame vertically, horizontally and diagonally or shift it by dragging it.

    The section you choose appears in the display area.

You will learn how to use the functions of the standard menus. The applications programmer can create more menus with new functions from the ABAP program.

On Apple frontends, a number of alternative and additional options are available for SAP Graphics. For more information, see the following topic:

Special Features on Apple Frontends [Page 51]

# Editing Graphics

You can use the *Edit* menu to change your graph.

Changing Settings for the Edit Options [Page 249]

Inserting a Node [Page 251]

Duplicating a Node [Page 252]

Modifying a Node [Page 253]

Deleting a Node [Page 254]

Connecting Nodes [Page 255]

Splitting Off Sub-Trees [Page 256]

Adjusting the Display [Page 257]

Selecting and Deselecting Nodes [Page 258]

Arranging Equal Nodes [Page 259]

Hiding a Hierarchy Sub-Tree [Page 260]

Hiding a Node [Page 261]

Revoking an Action [Page 262]

# Changing Settings for the Edit Options

You can change the settings for the following menu options: *Insert mode, Duplicate, Modify, Connect, Adjust* and *Select*. To change current settings, select one of these options under *Edit* → *Settings*.

The available settings for these functions are described in the following sections.

### For the Insert Mode Option

You can choose one of the following settings under *Edit* → *Settings* → *Insert mode:*

- First predecessor
- Last predecessor
- Left brother
- Right brother
- First successor
- Last successor

### For the Duplicate Option

You can choose one of the following settings under *Edit* →*Settings* → *Duplicate*:

- First predecessor
- Last predecessor
- Left brother
- Right brother
- First successor
- Last successor

### For the Modify Option

You can choose one of the following settings under *Edit* → *Settings* → *Modify*:

- Object field color
- Object shape
- Object contents

### For the Connect Option

You can choose one of the following settings under *Edit* → *Settings* → *Connect*:

- First successor
- Last successor

## Changing Settings for the Edit Options

### For the Adjust Option

You can choose one of the following settings for the Adjust option under *Edit* → *Settings* → *Auto-adjust*:

- On
- Off

### For the Select Option

You can change the settings for the selection type and the selection objects.

You can choose one of the following settings under *Edit* →*Settings* → *Selection type*:

- Plus direct successors
- Plus all successors

You can choose one of the following settings under *Edit* → *Settings* → *Selection objects*:

- Lines
- Nodes
- Lines and nodes

# Inserting a Node

To insert a node in the network display in the display area, proceed as follows:

1. Click on the *Insert mode* pushbutton in the toolbox or select *Edit* → *Insert mode*.
2. Place the mouse pointer in the node area. As the pointer meets a node, it changes into a cross-shaped mark.
3. Click on the node that you want to insert in the display area.
4. A frame appears in the display area. Move the frame to the position where you want to insert the node and click. The node appears.

   If you position the new node on an existing node, the new node is appended to the existing node as its first or last predecessor, left or right brother or first or last successor.

# Duplicating a Node

To duplicate a node in the network display in the display area, proceed as follows:

1. Select a node in the display area by clicking on it.
2. Click on the Duplicate pushbutton in the toolbox or choose *Edit* → *Duplicate*.

   The alignment of the network display in the display area changes. A copy of the selected node appears.
3. Click on the Adjust pushbutton in the toolbox to re-align the network display. Depending on the setting for the Duplicate function, the new node is appended to the original node as its first or last predecessor, left or right brother or its first or last successor.

# Modifying a Node

To modify a node in the network display, proceed as follows:

1. Select one or more nodes in the display area.
2. Click on the Modify pushbutton in the toolbox or choose *Edit* → *Modify*.
3. A popup window appears with options for either object colors, object shapes, or object contents, depending on the current setting (see *Edit* → *Settings* → *Modify*). Make your changes.

# Deleting a Node

To delete a node in your network display, proceed as follows:

1. Select the node to be deleted in the display area by clicking on it.
2. Delete the selected node by clicking on the Delete pushbutton in the toolbox or by choosing *Edit* → *Delete*.
3. A popup window appears with options for either object colors, object shapes, or object contents, depending on the current setting (see *Edit* → *Settings* → *Modify*). Make your changes.
4. The popup window *Confirm operation* appears.

   Choose one of the options provided.

# Connecting Nodes

To connect a node with a new node (as its first or last successor: see *Edit* → *Settings* → *Connect)*, proceed as follows:

1. Click on the Connect pushbutton in the toolbox or choose *Edit* → *Connect*.
2. To connect the two nodes, position the mouse pointer on one of the two nodes, then press the left mouse button and keep it pressed while moving the mouse pointer to the other node and release the mouse button.

# Splitting Off Sub-Trees

The Split option allows you to cut a sub-tree out of the hierarchy and create an independent tree with it. When you do this, you get two separate hierarchies at the same time. The node highlighted at the time you selected the Split option becomes the "root" (topmost node) in the new tree.

To split off a sub-tree in a hierarchy, proceed as follows:

1. Select the topmost node of the sub-tree to be split off.
2. Split off the selected sub-tree by choosing *Edit* → *Split*. The sub-tree is split off and appears to the right of the remaining hierarchy tree.

# Adjusting the Display

After making changes to your network display, you should adjust it. Click on the Adjust pushbutton in the toolbox or choose *Edit* → *Adjust*. The popup window *Confirm operation* appears.

Choose one of the options provided.

# Selecting and Deselecting Nodes

You can select individual nodes or a group of nodes.

If you want to select or deselect all nodes or the complement of one or more nodes, choose an option under *Edit* → *Select*. You can choose between the following options:

- Select all
- Select complement
- Unselect all

To select individual nodes, click on them. To select a group of non-adjacent nodes, click on them while pressing the shift key. Alternatively, you can select the complementary nodes of selected nodes via the menu.

To select a group of adjacent nodes, drag the mouse to draw a frame around the section containing these nodes.

Position the mouse pointer on any point in the display and, holding the mouse button down, move the pointer diagonally to the end of the section to be framed. All the nodes completely framed are selected.

# Arranging Equal Nodes

You can choose between a vertical or horizontal arrangement of nodes of the same hierarchy level in a sub-tree. Choose *Edit* → *Arrange*.

# Hiding a Hierarchy Sub-Tree

This menu option applies to hierarchy displays only.

In a hierarchy tree, you can hide a node and its child nodes. Proceed as follows:

1. Select the node(s) you want to hide.
2. Choose *Edit* → *Outline* → *Collapsed.* The selected node and its children disappear.

# Hiding a Node

This menu option applies to both hierarchy and network displays.

You can hide some nodes in a display to get a better overview. Proceed as follows:

1. Select the node(s) you want to hide.
2. Choose *Edit* → *Visibility* → *Invisible.* The selected nodes disappear.

# Revoking an Action

To revoke your last action, choose *Edit* → *Undo*.

# Setting Options

Select the options in the *Options* menu to perform the following actions:

## Changing the Work Area

In the standard view, the work area is partitioned into three sub-areas: the display area, the node area and the navigation area.

To change the partitioning of the work area, proceed as follows:

- Choose *Options* → *Change partitioning*.
- The current window is replaced by a window in which only the option *Color assignment* is available in the *Options* menu. The work area of the window contains the schematic of the current work area partitioning and a number of alternative partitionings on the left.

  Select another partitioning and/or other color settings.

## Re-ordering Sub-Areas in the Work Area

To change the order of the windows in the work area, proceed as follows:

- Choose *Options* → *Change ordering.*
- The current window is replaced by a window in which only the option *Color assignment* is available in the *Options* menu. The work area of the window contains templates with alternative sub-area positions. The current template is highlighted.

  Select another template for the work area and/or other color settings.

## Positioning the Toolbox

The toolbox is located on top of or to the left of the display area. It contains the most important edit functions. You can place the toolbox in either position, or you can hide it.

Choose one of the following options under *Options* → *Toolbox*:

- Vertical toolbox
- Horizontal toolbox
- No toolbox

## Changing Node Selection Marks

You can change the selection marks for the nodes.

Choose one of the following options under *Options* → *Mark nodes*:

- Surrounded
- Inverted
- With pickmarks

## Changing Link Selection Marks

You can change the selection marks for link labels.

**Setting Options**

Choose one of the following options under *Options* → *Mark links*:

- Surrounded
- Inverted
- With pickmarks
- With color

## Changing Color Assignments

You can change the color settings in the three sub-areas of the work area.

Choose *Options* → *Color assignment*. A popup window appears. It contains a list of objects and a color selection menu. Choose the desired colors.

## Saving Current Settings

You can save your current changes. Choose *Options* → *Save current settings*.

Next time you invoke SAP Network Graphics, the application window will appear with your last saved settings.

# Displaying Views

Select the options in the *Views* menu to display different views:

## Displaying a User-Defined View

If you saved your own view during an earlier session, you can activate it at any time while you are in the standard view.

Choose *Views* → *User-defined view*. Your own view appears.

## Displaying the Standard View

To display the standard view, choose *Views* → *Standard view*.

## Displaying the Standard View

While you are working with your own view, you can display the standard view at any time.

To display the standard view, choose *Views* → *Standard view*. The application window now contains the original view with the *Display area, Node area* and *Navigation area*.

## Displaying the Display Area Only

You can choose a view where your work area contains the *Display area* only.

Choose *Views* → *Display view*.

## Displaying the Display Area and the Node Area Only

You can choose a view where your work area contains the *Display area* and the *Node area* only.

Choose *Views* → *Insert view*.

## Displaying the Navigation Area Only

You can choose a view where your work area contains the *Navigation area* only.

Choose *Views* → *Navigation view.*

## Changing the Display Area Section

Your work area may contain the whole graphic, or the graphic may be centered around a label or around marked objects.

The *Views* → *Viewpoint* menu provides the following options:

- Complete view
- Center around label
- Center around marked objects

In addition, you can display a zoomed section of the partial view in the display area.

Position the mouse pointer on the starting point of the section to be zoomed in the display area. Then press the Ctrl key and keep it pressed while moving the mouse pointer to the end point of the section. The zoomed view appears.

## Displaying Additional Views

The *New view* function is available under X/Motif only.

It is only a display function. You can use this function to display different views in each new view window.

When you choose the *New view* option, a window appears that contains a new view of your graph. You cannot edit such views. You can only choose between a complete or a partial view. You can display a partial view by dragging the mouse to draw a frame.

You can call up multiple views via the *Goto* menu. Each new window is numbered (View 1, View 2...). The number of view windows is limited by the capacitiy of your main memory.

To close a view window, choose *Graphic* → *Exit*, *Edit* → *Cancel* or *Goto* → *Back*.

# Printing a Graphic

Selecting *Graphic* → *Print* sends the current graphics view to the printer.

You can set the following options in the dialog window *Printer setup*:

- Destination

  You can choose one of the following options:

  - *Local:* prints your graph on your local printer (not available for Motif)
  - *R/3 Spool*: sends your graph to the R/3 printer queue (PostScript printers only)
  - *File:* creates a print file
  - *Clipboard:* copies your graph to the clipboard

- Additional options provided for the *R/3 Spool* and *File* options*:*

  If you choose *R/3 Spool* oder *File*, additional options are available in the dialog window:

  – *Format*

  You can choose from various formats (Postscript, Graneda (format of Netronic), WMF, etc.).

  – *Paper format*

  You can choose from various paper formats from a list (DIN, Legal, Letter, etc.). The print format (portrait or landscape) must be identical with the paper format of your printer.

  – *Portrait* / *Landscape*

  You can print your graph in portrait format on a landscape paper format, and vice versa.

  – *Standard character height*

  (not available for SAP Network Graphics and SAP Bar Chart Graphics)

  – *Printer name* (available with the *R/3 Spool* option)

  – *File name* (available with the *File* option)

- Additional options for SAP Network Graphics and SAP Bar Chart Graphics:

  If you are working with SAP Network Graphics and SAP Bar Chart Graphics, the following additional options are provided:

  – *Pages*: Choose the page range you want to print by double-clicking in the raster.

  – *Fit to page(s)*: The various views are fit the paper format size and printed.

  – *Default size*: The various views are printed in their default size.

  – *Cutting marks*: The cutting marks around the various print sections of a default size view will appear in the printout.

  – *Color print*

Option menus or popup windows that obscure the view, or that merely exist somewhere on the monitor screen, are not sent to the printer and have no effect on the printing of the view itself.

## Printing a Graphic

When you print a graphics view from SAP Business Graphics, one of the following color schemes (*Options* → *Global Options*) should be active:

- Color Scheme E: for Matrix printers and plotters
- Color Scheme F: for Postscript printers

### How the System Sizes Output for the Printer

Your SAP Graphics program prints the largest possible image allowed by the output format currently specified in the printer.

If your window is a horizontal rectangle (that is, wider than it is high), the width of the window is expanded to match the output format width. The window's height is then scaled accordingly.

If your window is a vertical rectangle (higher than it is wide), the height of the window is expanded to match the output format height. The window's width is then scaled accordingly.

In either case, the height-width ratio of the original window is maintained. Whether your graphics window is small or full-screen, what you see on the screen is what you get on paper.

Note the special features of SAP Network Graphics and SAP Bar Chart Graphics described above.

### Printer Requirements

In order to print graphics views, the printer attached to your system must be able to print graphics as well as text. It must also have a suitable resolution.

Printing through R/3 Spool requires a PostScript printer.

Printer output depends in part on the capabilities of the printer drivers supported by your operating system. For example, in the OS/2 operating system, you can specify the various output format options in the Print Manager.

# Exiting from SAP Graphics

If you want to exit from your SAP Graphics application, choose *Graph* → *Exit* or press F15. Your current settings are saved.

If you want to cancel your SAP Graphics application without saving your current settings, choose one of the following alternatives:

- *Edit* → *Cancel*, F12 or the cancel icon.
- *Goto* → *Back*, F3, or the back or exit icon.
- Click twice on the upper left corner of your SAP Graphics window.

# SAP Portfolio Graphics

SAP Portfolio Graphics is an analysis tool for strategic corporate planning, in particular in multi-product companies.

Overview [Page 271]

Changing Titles and Subtitles [Page 273]

Editing Graphics [Page 274]

Changing Views [Page 275]

Changing Settings [Page 276]

Printing a Graphic [Page 292]

Exiting from SAP Graphics [Page 295]

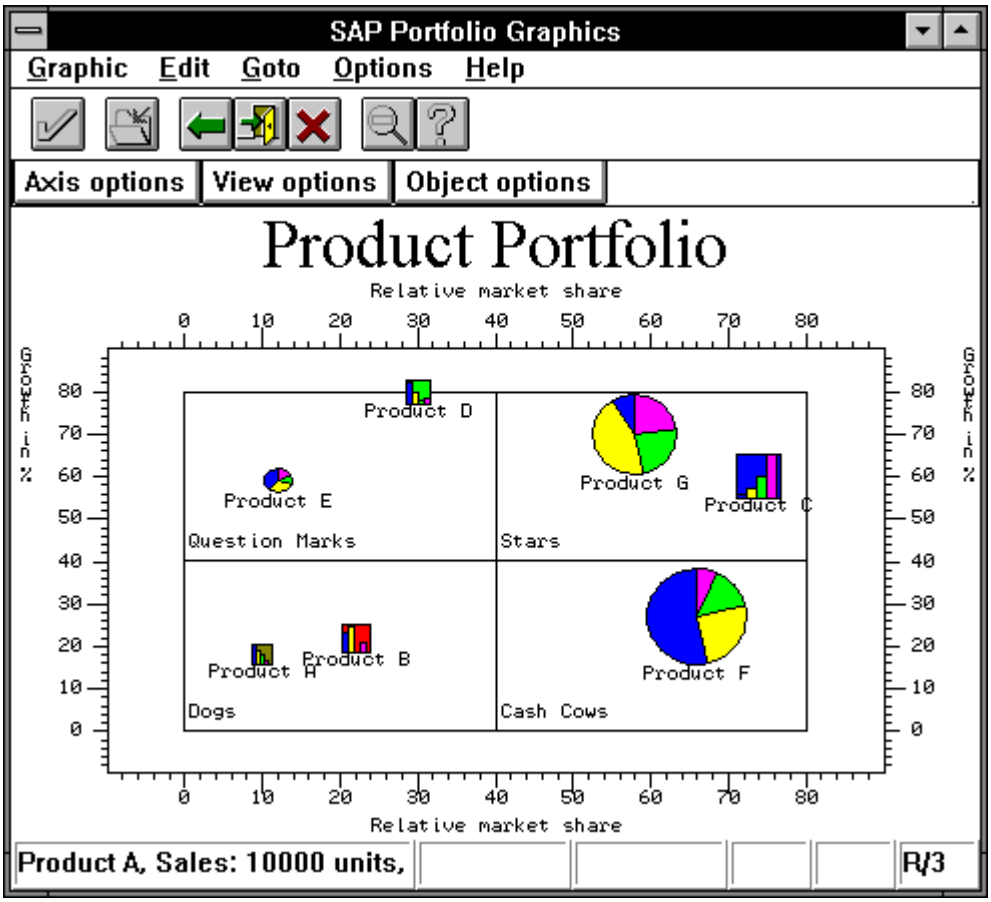
# Overview

SAP Portfolio Graphics is an analysis tool for strategic corporate planning, in particular in multi-product companies.

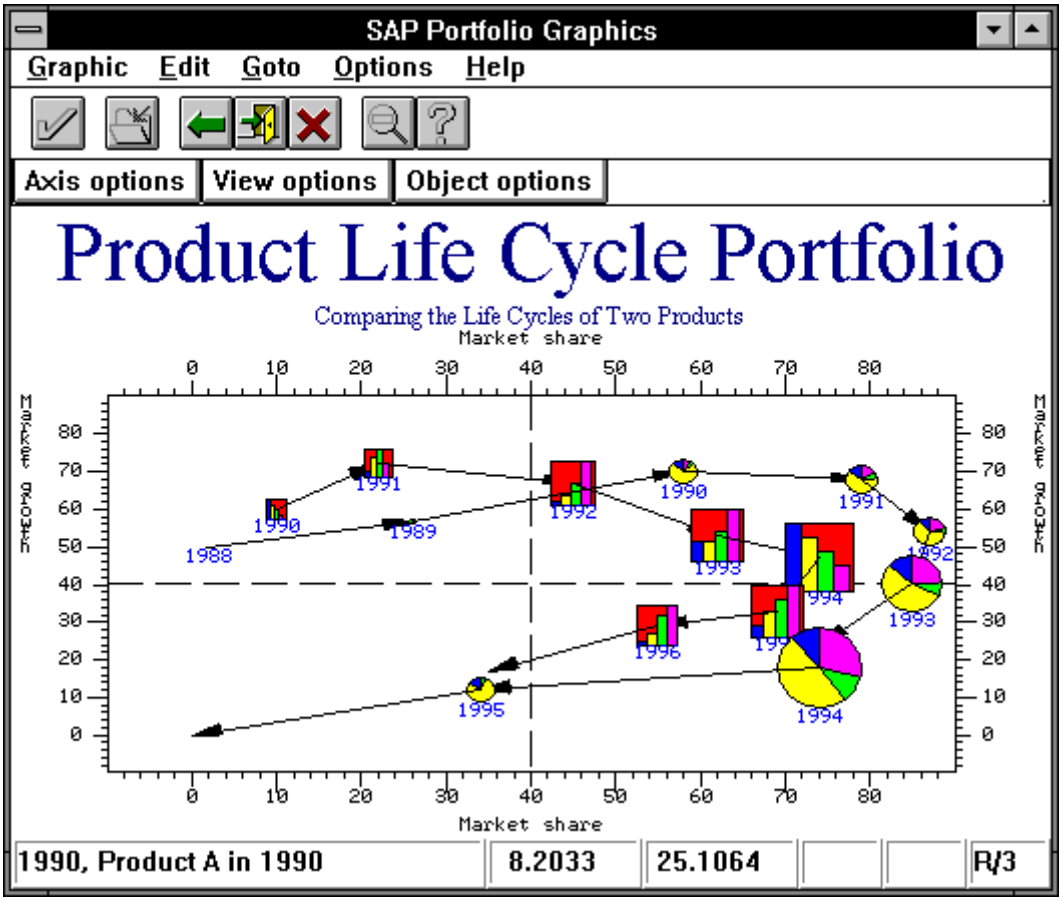
Strategic planning provides a basis for decisions on long-term commitment of resources. It deals with the question of which products should be sold in which markets and with what use of resources (finances, personnel, raw materials, etc.) and at what time.

The analysis of a portfolio representation gives you information on the current competitiveness, company profitability and liquidity.

The following figure shows a simple portfolio representation.




The following figure shows a complex portfolio representation.




The application developer can define further menus with additional functions in the ABAP program, which calls the graphics program.

On Apple frontends, a number of alternative and additional options are available for SAP Graphics. For more information, see the following topic:

Special Features on Apple Frontends [Page 51]

# Changing Titles and Subtitles

You can change the title and subtitle of your portfolio representation. Double click anywhere in the title area.

A dialog window appears where you can enter a new title or subtitle.

You cannot save a title or subtitle. You can only display or print changed titles or subtitles in your current session.

# Editing Graphics

To perform the following actions, use the options of the *Edit* menu:

- Selecting objects
- Modifying objects
- Editing data tables

These actions are described below.

## Selecting Objects

When the *Select objects* function is active, information on the individual objects appears in the status line as you move the mouse pointer over them.

If the calling ABAP program offers extended functions for an object, you can call them by doubleclicking the object. SAP Portfolio Graphics sends a message to the calling ABAP program. The ABAP program then performs the appropriate functions.

When an object is selected, the whole object is selected, not, for example, only individual object segments. This has no effect on other functions of SAP Portfolio Graphics.

## Modifying Objects

When the *Modify objects* function is active, information on the individual objects appears in the status line as you move the mouse pointer over them.

You can modify individual objects as follows:

1. Doubleclick on the object you want to modify.
2. A pop-up window appears. Make your changes here.

   You can modify the following object characteristics:

   - Shape (circle, triangle and square)
   - Colors (filled, line, text and arrow colors)
   - Title
   - Text (to display in the status line)
   - Values for portfolio categories (for example, relative market share, growth, etc.)

## Editing Data Tables

If you select the *Edit data sheet* function, the underlying data table appears. You can then make your changes. (This function is not currently available.)

# Changing Views

To perform the following actions, use the *Goto* menu:

- Displaying the graph view
- Displaying the data view
- Zooming display sections
- Displaying the total view

These actions are described below.

## Displaying the Graph View

When you choose *Goto* → *Graph view*, the data table is displayed graphically. (This function is not currently available.)

## Displaying the Data View

When you choose *Goto* → *Data view*, the underlying graphics data table appears. (This function is not currently available.)

## Zooming Display Sections

To display the relative position of objects in a window more clearly, choose *Goto* → *Zoom in*.

To choose the area to zoom, drag the mouse to draw a frame. Position the mouse pointer on any point in the display and, holding the mouse button down, move the pointer diagonally to the end of the section to be zoomed. The objects in the section are then displayed with more accurate scaling.

You cannot choose a section more than three times in succession. To return to the previous section, choose the function *Back*. To go directly to the overall representation, choose *Total view*.

## Displaying the Total View

If, instead of a zoomed section, you want to display the overall representation, choose *Goto* → *Total view*.

# Changing Settings

To perform the following actions, use the *Options* menu:

- Changing Axis Settings
- Changing View Settings
- Changing Object Settings
- Changing Color Settings for Object Elements

These functions are described in the following sections.

## Changing Axis Settings

An SAP Portfolio Graphic contains objects, which are usually identified by the following values:

- Value on the X axis (Example: Relative market share)
- Value on the Y axis (Example: Growth in %)
- Value for the object size (Example: Sales)
- Value for arrow on the X axis (Trend value)
- Value for arrow on the Y axis (Trend value)

The values of these portfolio categories are defined in a data table in different columns. For each object, you can define further columns (categories) with values. Examples are X and Y values for trends (trend arrows in the graphic). You can define any number of columns with values.

To change the axis settings, choose the function *Axis options*. You will see a pop-up window, where you assign value columns (portfolio categories) to the X and Y axis. You can also change the color settings.

## Changing View Settings

To change the settings for frame, axis and objects, choose the function *View options*. You will see a pop-up window, where you can change the following settings:

- Frame Options
  - Display grid lines
  - Display shadow lines
  - Display background color
- Axis Options
  - Display axis title
  - Display shadow lines
  - Display colors
- Objects Options
  - Hide object titles
  - Cut objects at frame border

- Hide trend arrows

## Changing Object Settings

This function is not currently available.

## Changing Color Settings for Object Elements

To assign different colors to the elements (segments or bars) within the objects, choose the function *Color assignment*.

A pop-up window appears containing a list of object elements and a color selection menu. To assign colors to an element, click on that element and choose the color you want in the color selection menu.

For details of how to change the filling color (background color), line color, text color or arrow color of an object, please refer to the section "Modifying objects" above.

# Printing a Graphic

Selecting *Graphic* → *Print* sends the current graphics view to the printer.

You can set the following options in the dialog window *Printer setup*:

- Destination

  You can choose one of the following options:

  - *Local:* prints your graph on your local printer (not available for Motif)
  - *R/3 Spool*: sends your graph to the R/3 printer queue (PostScript printers only)
  - *File:* creates a print file
  - *Clipboard:* copies your graph to the clipboard

- Additional options provided for the *R/3 Spool* and *File* options*:*

  If you choose *R/3 Spool* oder *File*, additional options are available in the dialog window:

  – *Format*

    You can choose from various formats (Postscript, Graneda (format of Netronic), WMF, etc.).

  – *Paper format*

    You can choose from various paper formats from a list (DIN, Legal, Letter, etc.). The print format (portrait or landscape) must be identical with the paper format of your printer.

  – *Portrait* / *Landscape*

    You can print your graph in portrait format on a landscape paper format, and vice versa.

  – *Standard character height*

    (not available for SAP Network Graphics and SAP Bar Chart Graphics)

  – *Printer name* (available with the *R/3 Spool* option)

  – *File name* (available with the *File* option)

- Additional options for SAP Network Graphics and SAP Bar Chart Graphics:

  If you are working with SAP Network Graphics and SAP Bar Chart Graphics, the following additional options are provided:

  – *Pages*: Choose the page range you want to print by double-clicking in the raster.

  – *Fit to page(s)*: The various views are fit the paper format size and printed.

  – *Default size*: The various views are printed in their default size.

  – *Cutting marks*: The cutting marks around the various print sections of a default size view will appear in the printout.

  – *Color print*

Option menus or popup windows that obscure the view, or that merely exist somewhere on the monitor screen, are not sent to the printer and have no effect on the printing of the view itself.

When you print a graphics view from SAP Business Graphics, one of the following color schemes (*Options* → *Global Options*) should be active:

- Color Scheme E: for Matrix printers and plotters
- Color Scheme F: for Postscript printers

### How the System Sizes Output for the Printer

Your SAP Graphics program prints the largest possible image allowed by the output format currently specified in the printer.

If your window is a horizontal rectangle (that is, wider than it is high), the width of the window is expanded to match the output format width. The window's height is then scaled accordingly.

If your window is a vertical rectangle (higher than it is wide), the height of the window is expanded to match the output format height. The window's width is then scaled accordingly.

In either case, the height-width ratio of the original window is maintained. Whether your graphics window is small or full-screen, what you see on the screen is what you get on paper.

Note the special features of SAP Network Graphics and SAP Bar Chart Graphics described above.

### Printer Requirements

In order to print graphics views, the printer attached to your system must be able to print graphics as well as text. It must also have a suitable resolution.

Printing through R/3 Spool requires a PostScript printer.

Printer output depends in part on the capabilities of the printer drivers supported by your operating system. For example, in the OS/2 operating system, you can specify the various output format options in the Print Manager.

# Exiting from SAP Graphics

If you want to exit from your SAP Graphics application, choose *Graph* → *Exit* or press F15. Your current settings are saved.

If you want to cancel your SAP Graphics application without saving your current settings, choose one of the following alternatives:

- *Edit* → *Cancel*, F12 or the cancel icon.
- *Goto* → *Back*, F3, or the back or exit icon.
- Click twice on the upper left corner of your SAP Graphics window.

# SAP Bar Chart Graphics

The SAP Bar Chart Graphics program displays a table of events over a given time period.

Overview [Page 282]

Editing Graphics [Page 284]

Setting Options [Page 291]

Printing a Graphic [Page 292]

Saving Graphics [Page 294]

Exiting from SAP Graphics [Page 295]

# Overview

The SAP Bar Chart Graphics program displays a table of events over a given time period.

Modifying your graph is not always possible. This depends on whether the ABAP program you used to call your graphics program allows you to modify the graph.

Apart from the standard elements (menu bar, symbols bar and pushbutton bar), the SAP Bar

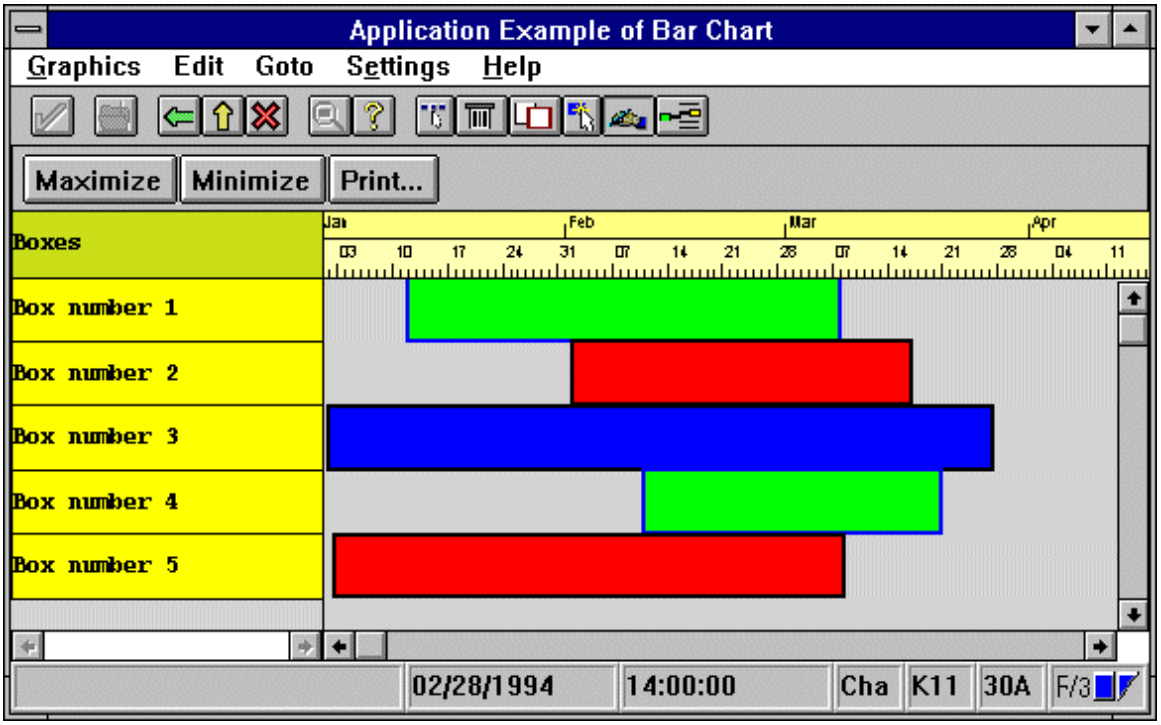



Chart Graphics window contains part of or all of the following elements:

- Graph title in the window title bar

  The graph title is defined in the ABAP program that called the graphics program.

- Time line

  The time line sets the time span for the display areas.

- Display areas (8 max.)

  You can display a maximum of eight bar charts in a graphics window. Each display contains a title which is defined in the calling ABAP program. You can resize the displays by dragging the dividing line between the displays.

  Each display consists of the following elements:

  - Time units line

    For each display, you can choose one of the time units provided. The time span is set by the time line.

  - Tables area

The tables section on the left contains the table heading and the table fields for each graph area. You can adjust the width of the colums. You can also change the width of the tables section and with it the width of the graph display area.

To change the width of the columns or the tables section, move the relevant dividing line by dragging it with the mouse.

- Graph display area

  The graph display area contains objects (event blocks) depicting the duration of events. Each of the graph areas contains its own time units line within the limits of the time line. You can choose among a number of time units (day, week, etc.).

The standard pushbuttons in the pushbutton bar let you change the size of the graph display and the tables section.

The calling ABAP program determines which elements are to contained in the graphics window. The applications programmer can define more menus with additional functions or leave out standard functions and symbols. For detailed information, see your application-specific SAP Bar Charts Graphics documentation.

On Apple frontends, a number of alternative and additional options are available for SAP Graphics. For more information, see the following topic:
Special Features on Apple Frontends [Page 51]

# Editing Graphics

You can insert, move, resize copy and delete objects (event blocks). You can also call up special functions, provided such functions are contained in the ABAP program.

Symbols are provided for most of these editing functions.

You can select, change, connect or insert objects.

The following sections explain how to use the editing functions and their symbols.

- Selecting Objects [Page 285]:
- Moving and Resizing Objects [Page 286]:

  Presetting individual objects or groups of objects:
- Connecting Objects [Page 287]:
- Deleting Objects [Page 288]:
- Copying Objects [Page 289]:
- Inserting Objects [Page 290]

# Selecting Objects:

You can select objects in order to delete or copy them.

You can also select objects to call up special functions, provided such functions are contained in the ABAP program. For example, selecting an object may call up an event-driven menu or a display.

The selection mode is indicated by *Sel* in the status line at the bottom of the window.

You can select and deselect individual objects or groups of objects. You can also select and deselect the complement of selected objects:

Proceed as follows:

- Selecting individual objects:
  1. Choose the select or move mode.
  2. Click on the object you want to select.

  To select additional objects, move the mouse pointer to the next object to be selected and click while pressing down the shift key.
- Selecting groups of objects:
  1. Choose the select or move mode.
  2. Move the mouse pointer to a point near the group of objects you want to select and draw a frame by dragging the mouse. All the objects within the frame are selected.

     To select an additional group of objects, repeat this action.
- Selecting the complement of objects:
  1. Click on the objects you do not want to mark.
  2. Choose *Edit* → *Select* → *Select complement*. The complement of the selected objects is selected.
- Selecting all objects:
  1. Choose the select or move mode.
  2. Move the mouse pointer to the border area of the display and draw a frame around all objects by dragging the mouse. All objects are selected.

     Alternatively, choose *Edit* → *Select* → *Select all*.
- Deselecting objects:

  To deselect a selected object or group of objects, click on it while pressing the shift key.

# Moving and Resizing Objects:

This mode provides the following options:

- Resizing objects
- Moving objects

This mode is indicated by *Cha* in the status line at the bottom of the window.

To preset single objects or groups of objects, click on the following toggle icons before moving or resizing objects:

## Resizing Objects

To shift the start and end points of objects in the graph display, proceed as follows:

1. Click on the move/resize symbol.
2. Move the mouse pointer to the object (or group of objects) you want to change.

   To shift the start point of the object, position the mouse pointer on the left end of the object or group of objects. To shift the end point of the object, position the mouse pointer on the right end.
3. Press the left mouse button and hold it down. The mouse cursor jumps to the left or right end of the object and becomes cross-shaped. The vertical line of the cross meets the the time line.
4. Move the cross-shaped mouse cursor to the left or right while keeping the left mouse button pressed. As you release the mouse button, the end of the object or group of objects assumes the current pointer position. The mouse cursor changes back to a pointer.

## Moving Objects

To move objects in the graph display, proceed as follows:

1. Click on the move/resize symbol.
2. Move the mouse pointer to the center of the objects (or group of objects) you want to move.
3. Press the mouse button and hold it down while moving the mouse pointer (and with it, the object or group of objects) to the new position. Releasing the mouse button lets the object or group of objects assume its new position.

# Connecting Objects:

You can connect objects with lines.

This mode is indicated by *Con* in the status line at the bottom of the window.

Proceed as follows:

1. Click on the connect symbol.
2. Move the mouse pointer to the object you want to link with another object. Then press the left mouse button.
3. Hold the mouse button down and move the mouse pointer to the other object. Release the mouse button to link the two objects.

# Deleting Objects:

You can delete any object in the graphic display.

Proceed as follows:

1. Select the objects you want to delete.
2. Click on the delete symbol.
3. A dialog box will ask you whether you want to delete the selected objects. Click on *Yes*. The objects are then deleted.

# Copying Objects:

You can copy objects and insert them at another position.

Proceed as follows:

1. Select one or more objects or a group of objects.
2. Click on the copy symbol. A copy of the selected objects is inserted at another position, normally in a new line. The insertion point is specified in the ABAP program.

You can edit the copied object using the move/resize symbol or using the *Edit* menu functions.

# Inserting Objects

You can insert preset objects in the graph display.

Proceed as follows:

1. Choose one of the object types (bars, lines, arrows of triangles) provided under *Edit* → *Setttings*.
2. Choose *Edit* → *Insert.*
3. Click on the spot where the new object is to be inserted. The object is inserted.

# Setting Options

The *Options* menu contains the following entries:

- Marker type
- Interval
- Save current settings
- Activate last settings

The actions you can perform using the above menu options are described in the following.

## Setting a Marker Type

Choose *Options* → *Marker types*.

You can choose one of the following marker types.

- Framed
- Inverted
- With pick mark

## Setting an Interval

You can choose from a number of time units for the graph display and the position indicator in the status line,

Choose one of the time units provided under *Options* → *Interval*.

For example, it may be useful to set the time unit to *Hour* when you want to move an event block of a schedule.

The time frame line is located above the display area(s). It consists of an upper and a lower section. The time unit you choose appears in the lower section. The top section contains a more general time unit. For example, if your time unit is *Day*, the lower section contains days scaling, while the upper section contains months scaling.

## Saving Current Settings

Choose *Options* → *Save current settings* to save the settings you have made.

## Reactivating Last Saved Settings

Choose *Options* → *Last saved settings* to reactivate the settings you saved last.

# Printing a Graphic

Selecting *Graphic* → *Print* sends the current graphics view to the printer.

You can set the following options in the dialog window *Printer setup*:

- Destination

  You can choose one of the following options:

  - *Local:* prints your graph on your local printer (not available for Motif)
  - *R/3 Spool*: sends your graph to the R/3 printer queue (PostScript printers only)
  - *File:* creates a print file
  - *Clipboard:* copies your graph to the clipboard

- Additional options provided for the *R/3 Spool* and *File* options*:*

  If you choose *R/3 Spool* oder *File*, additional options are available in the dialog window:

  – *Format*

    You can choose from various formats (Postscript, Graneda (format of Netronic), WMF, etc.).

  – *Paper format*

    You can choose from various paper formats from a list (DIN, Legal, Letter, etc.). The print format (portrait or landscape) must be identical with the paper format of your printer.

  – *Portrait* / *Landscape*

    You can print your graph in portrait format on a landscape paper format, and vice versa.

  – *Standard character height*

    (not available for SAP Network Graphics and SAP Bar Chart Graphics)

  – *Printer name* (available with the *R/3 Spool* option)

  – *File name* (available with the *File* option)

- Additional options for SAP Network Graphics and SAP Bar Chart Graphics:

  If you are working with SAP Network Graphics and SAP Bar Chart Graphics, the following additional options are provided:

  – *Pages*: Choose the page range you want to print by double-clicking in the raster.

  – *Fit to page(s)*: The various views are fit the paper format size and printed.

  – *Default size*: The various views are printed in their default size.

  – *Cutting marks*: The cutting marks around the various print sections of a default size view will appear in the printout.

  – *Color print*

Option menus or popup windows that obscure the view, or that merely exist somewhere on the monitor screen, are not sent to the printer and have no effect on the printing of the view itself.

When you print a graphics view from SAP Business Graphics, one of the following color schemes (*Options* → *Global Options*) should be active:

- Color Scheme E: for Matrix printers and plotters
- Color Scheme F: for Postscript printers

### How the System Sizes Output for the Printer

Your SAP Graphics program prints the largest possible image allowed by the output format currently specified in the printer.

If your window is a horizontal rectangle (that is, wider than it is high), the width of the window is expanded to match the output format width. The window's height is then scaled accordingly.

If your window is a vertical rectangle (higher than it is wide), the height of the window is expanded to match the output format height. The window's width is then scaled accordingly.

In either case, the height-width ratio of the original window is maintained. Whether your graphics window is small or full-screen, what you see on the screen is what you get on paper.

Note the special features of SAP Network Graphics and SAP Bar Chart Graphics described above.

### Printer Requirements

In order to print graphics views, the printer attached to your system must be able to print graphics as well as text. It must also have a suitable resolution.

Printing through R/3 Spool requires a PostScript printer.

Printer output depends in part on the capabilities of the printer drivers supported by your operating system. For example, in the OS/2 operating system, you can specify the various output format options in the Print Manager.

# Saving Graphics

Choose *Graphic* → *Save* to report the current version of your chart with all of its settings back to the ABAP program that called SAP Bar Chart Graphics.

Depending on the application, the underlying ABAP program will process the new version.

The current version is not saved in all cases.

# Exiting from SAP Graphics

If you want to exit from your SAP Graphics application, choose *Graph* → *Exit* or press F15. Your current settings are saved.

If you want to cancel your SAP Graphics application without saving your current settings, choose one of the following alternatives:

- *Edit* → *Cancel*, F12 or the cancel icon.
- *Goto* → *Back*, F3, or the back or exit icon.
- Click twice on the upper left corner of your SAP Graphics window.

# SAP Structural Graphics

The following topics describe the basic features in Structural Graphics.

What is Structural Graphics? [Page 297]

Customizing and Structural Graphics [Page 298]

About the Toolbox [Page 299]

The Dialog Box Buttons [Page 300]

Switching Between Overview and Detail Mode [Page 301]

Overview: Selecting Objects [Page 302]

Overview: Working with Hierarchical Structures [Page 307]

Overview: Working with Objects Individually [Page 321]

Overview: Color Assignments [Page 325]

Overview: The Search Feature [Page 328]

Overview: The Sort Feature [Page 331]

Overview: View Windows [Page 334]

Overview: View Options [Page 339]

Overview: Object Options [Page 344]

Overview: Line Options [Page 348]

Changing Design Groups [Page 352]

Saving Option Settings [Page 353]

Deleting Option Settings [Page 354]

Mailing Hierarchical Structures [Page 355]

Printing a Graphic [Page 356]

# What is Structural Graphics?

SAP Structural Graphics provides a means to present information using hierarchical structures [Page 369].

This type of graphical display suits situations where objects are linked or related in some way, and are easily represented hierarchically.

Structural Graphics allows you to subdivide the display area into separate view windows. This capability is quite helpful since in each view window you can focus on different sections in a hierarchical structure.

It is also possible to apply a variety of display attributes. For example, you can adjust colors, shapes, line styles, and so on.

Structural Graphics also allows you to perform object maintenance such as creating and changing objects. The maintenance functions available vary according to the R/3 application where you are working.

Different R/3 applications may offer additional functionality and features that are not explained in this documentation.

**For more information:**

Customizing and Structural Graphics [Page 298]

Overview: View Windows [Page 334]

# Customizing and Structural Graphics

Each R/3 application that uses Structural Graphics has the ability to offer more features, as well as modify existing features, according to their requirements.

Consequently, you must refer to the Implementation Guide for the R/3 application where you are working, to determine the customizing possibilities available.

# About the Toolbox

The Toolbox contains a set of functions that allow you to perform various maintenance activities, for example, creating, changing and moving, for the objects shown in the structure.

The contents of the Toolbox vary according to the R/3 application you are using. Consequently, for specifics you must refer to documentation on the application where you are working.

# The Dialog Box Buttons

A group of button options are consistently offered in the dialog boxes encountered in Structural Graphics. When selected, the system reacts as follows.

### Continue

The system saves the entries made and exits the dialog box.

### Apply

The system saves the entries made. The dialog box remains open.

### Cancel

The system does not save the entries made and exits the dialog box.

### Help

The system displays online help that describes the options offered in the dialog box.

# Switching Between Overview and Detail Mode

It is possible to view hierarchical structures in either *overview* or *detail* mode.

- *Overview* mode means that the system compresses the hierarchical structure you are working with so that you can see all of it in one view window. Because the objects in the structure are compressed, the text that identifies the objects may not be completely shown.
- *Detail* mode means that the system presents a hierarchical structure so that you can easily read the text that describes each of the objects in the structure. Because the structure is larger, you may not be able to see all of it.

If you are working with multiple view window [Page 374], it is possible to use different view modes in different view windows. For example, view window 1 could present an overview of a hierarchical structure, while view window 2 could provide a detailed presentation.

To switch between view modes, proceed as follows.

1. Either:
   - Click on the menu options *Goto* → *Detail<->View,* or
   - Click on the *Detail<->View* button.

   The system changes the view mode.

# Overview: Selecting Objects

When you perform certain types of activities, for example, changing object shapes or colors, you must begin by selecting the object you want to work with. Selecting means identifying the object you want to work with.

It is possible to select single objects, groups of objects, or all objects.

Selecting Single Objects [Page 303]

Selecting Groups of Objects [Page 304]

Selecting All Objects in a Structure [Page 305]

De-selecting All Objects in a Structure [Page 306]

# Selecting Single Objects

Select a single object when you want to work with one particular object within a hierarchical structure.

To do so, proceed as follows.

1. Click on the object.

   The system highlights the selected object.

# Selecting Groups of Objects

Select groups of objects when you want to perform the same activity for a number of objects.

You can use different methods to select groups of objects.

**To select objects randomly, proceed as follows.**

1. Press and hold down the `SHIFT` key.
2. Click on the first object you want to select.

   The system highlights the selected object.
3. Repeat step #2 as many times as required, while still holding down the `SHIFT` key.

**To select a group of objects, proceed as follows.**

1. Click the mouse and hold it down.

   A small rectangle appears in the view window.
2. Drag the mouse across the window, until the desired objects are surrounded by the rectangle.
3. Release the mouse button.

   The system highlights the selected objects.

**To select one branch of a structure, proceed as follows.**

1. Press the `CTRL` key.
2. Click on the object which is at the highest level in the branch you want to work with.

   The system highlights the selected branch.

**To select a more than one branch of a structure, proceed as follows.**

1. Press and hold down the `CTRL` and `SHIFT` keys.
2. Click on highest level object in the first branch you want to work with.

   The system highlights the selected branch.
3. Click on the highest level object in the next branch you want to work with.

   The system highlights the selected objects.
4. Repeat step #3 as many times as required.

# Selecting All Objects in a Structure

The select all feature is a short cut that allows you to select all objects within a hierarchical structure. When you perform certain types of activities, for example, changing object shapes or colors, you must begin by selecting, or identifying the object you want to work with.

The select all feature is helpful when you want to perform the same activity for all objects. When invoked, the system selects all objects in all view windows [Page 374].

To select all objects, proceed as follows.

1. Click on the menu options *Edit* → *Select all.*

   Selected objects are highlighted.

# De-selecting All Objects in a Structure

Use the de-select feature to cancel the selection of all objects in a hierarchical structure. When invoked, the system de-selects all objects in all view windows [Page 374].

To de-select objects, proceed as follows.

1. Click on the menu options *Edit* → *De-select all.*

   The system de-selects all objects.

# Overview: Working with Hierarchical Structures

There are numerous features that allow you to experiment with the way the system presents hierarchical structures, so that you can view information from different aspects.

Displaying Close-ups of a Structure [Page 308]

Displaying Substructures [Page 309]

Displaying Parent Structures [Page 310]

Displaying Whole Structure [Page 311]

Centering Selected Objects [Page 312]

Centering Root Objects [Page 313]

Displaying Paths [Page 314]

Suppressing Subordinate Objects [Page 315]

Displaying Subordinate Objects [Page 316]

Increasing Space Between Objects [Page 317]

Decreasing Space Between Objects [Page 318]

Using One Level Lower [Page 319]

Using One Level Higher [Page 320]

It is also possible to manipulate the appearance of hierarchical structures using the features offered in the View Options, Object Options and Line Options dialog boxes.

# Displaying Close-ups of a Structure

Use this feature to obtain a close-up or enlarged view of a specific area of a hierarchical structure. The area you select expands so that it fills the view window. (This feature affects the active view window only.)

This feature is available only when you work in overview mode.

The *Display Substructures* feature offers a different method to view selected areas of a structure. For details, see Displaying Substructures [Page 309]

To obtain a close-up view, proceed as follows.

1. Either:

– Click on the menu options *Goto* → *Choose section*, or

– Click on the *Choose Section* button (if available).

A rectangle appears in the window.

2. Click on the rectangle and hold down the left mouse button. Drag the rectangle to the area you want to blow up.
3. Release the mouse button.

The system enlarges the selected section of the structure.

# Displaying Substructures

Use this feature to display a specific area of a hierarchical structure, by focusing on a substructure. Substructures are the individual parent [Page 371] /child [Page 367] structures that collectively makeup a larger hierarchical structure.

When you use this feature, Graphics temporarily hides the objects that occur above and below the substructure you select.

This feature is active in overview and detail mode, and only affects the active view window.

The *Choose Section* feature offers a different method to view selected areas of a structure. For details, see Displaying Close-ups of a Structure [Page 308]

To display substructures, proceed as follows.

1. Click on the object that is the parent object, in the substructure you want to view.
2. Click on the menu options *Goto* → *Display substructure.*

   The system changes the display.

# Displaying Parent Structures

Use this feature to reveal objects situated one level higher in a hierarchical structure.

This feature is helpful only if you have previously hidden parent objects, using other Graphics features such as *Display Substructure*. This feature only affects the active view window.

To display parent structures, proceed as follows.

1. Click on the menu options *Goto* → *Parent structure.*

   The system reveals the parent objects.

# Displaying Whole Structure

Use this feature to view the entire hierarchical structure you are working with.

This feature is helpful after you have used other features to confine a view window to a specific area of a structure.

This feature only affects the active view window.

To display an entire structure, proceed as follows.

1. Click on the menu options *Goto* → *Display whole structure.*

   The system changes the display as directed.

# Centering Selected Objects

This feature works differently depending on whether you are in detail mode [Page 368] or overview mode [Page 370].

### Detail mode

Use this feature to adjust a view window so that a selected object (s) appears in the center of the window. The actual position of the object within the hierarchical structure is unchanged. The system shifts the entire structure over, so that the object is in the center.

If you select more than one object, the system centers each object in turn.

This feature only affects the active view window.

Proceed as follows.

1. Select the object(s) than should be centered.
2. Click on the menu options *Goto* → *Center selected object.*

   The system centers the object.
3. If you selected more than one object:
   – Press the `TAB` key.

     The system centers the next object

### Overview mode

Use this feature to aim the mouse pointer positioned at a selected object(s). If you select more than one object, the system centers each object in turn.

This feature only affects the active view window.

Proceed as follows.

1. Select the object(s) than should be centered.
2. Click on the menu options *Goto* → *Center selected object.*

   The system centers the object.
3. If you selected more than one object:
   – Press the `TAB` key.

     The system centers the next object

# Centering Root Objects

Use this feature to adjust a view window so that the root object [Page 372] of a hierarchical structure appears in the center of the window. The actual position of the object within the hierarchical structure is unchanged. The system shifts the entire structure over so that the object is in the center.

This feature only affects the active view window, and is available only when you work in detail mode.

To center a root object, proceed as follows.

1. Click on the menu options *Goto* → *Center selected object.*

   The system centers the root object.

# Displaying Paths

Use this feature to get a list of each object that exists along a selected pathway, or route within a hierarchical structure.

You select a route or path by clicking on any object in the structure. The system then traces the structure from that location, up to the root object [Page 372], at the top of the structure.

To display a path, proceed as follows.

1. Click on the object whose path you wish to view.
2. Click on the menu options *Object* → *Display path*.

   The Object Path pop-up window appears displaying a list of the objects found along the path.
3. To view objects found along other paths:

– Click on the next object that interests you.

  The system produces a new list.

4. To exit the Object Path window:
   – Click on the Control Box.

     A drop down menu appears.
   – Click on the menu option *Close*.

# Suppressing Subordinate Objects

Suppress subordinate (or child [Page 367]) objects when you want to hide, or conceal any objects that are situated below a certain level, in a particular branch of a hierarchical structure.

If you are working with multiple view windows, this feature affects all view windows, in either overview and default mode.

To suppress subordinate objects, proceed as follows.

1. Click on the object whose child objects you want to conceal.
2. Click on the menu options *Object* → *Suppress Subordinate Objects.*

   The system hides the selected branch of the structure.

# Displaying Subordinate Objects

Display subordinate (or child [Page 367]) objects when a branch of a structure is currently hidden, and you want to reveal it. (It is possible to conceal selected branches of a structure using the Suppress Subordinate Objects feature. See Suppressing Subordinate Objects [Page 315])

If you are working with multiple view windows, this feature affects all open windows.

To display subordinate objects, proceed as follows.

1. Click on the object whose subordinate objects you want to display.
2. Click on the menu options *Object* → *Display Subordinate Objects.*

   The system displays the selected branch of the structure.

# Increasing Space Between Objects

You can visually increase the space that appears between objects within a hierarchical structure by adjusting the *Outer Frame* and *Inner Frame* settings in the Object Options dialog box.

Changing the Object Options [Page 347]

# Decreasing Space Between Objects

You can visually decrease the space that appears between objects within a hierarchical structure by adjusting the *Outer Frame* and *Inner Frame* settings in the Object Options dialog box

Changing the Object Options [Page 347]

# Using One Level Lower

Use the one level lower feature to push an object, or branch of objects, one structure level lower.

This could be helpful if, for example, you prefer that a particular object be shown lower in the structure.

> This feature does not actually affect the relationship or placement of objects in a structure. It is for ease of viewing only.

The system applies this feature to all view windows currently open, in detail or overview mode.

Proceed as follows.

1. Click on the object you want to move lower.
2. Click on the menu options *Object* → *One level lower.*

   The system pushes the selected object lower in the structure.

# Using One Level Higher

Use the one level higher feature to push an object, or branch of objects, one structure level higher.

This could be helpful if, for example, you prefer that a particular object be shown lower in the structure.

> This feature does not actually affect the relationship or placement of objects in a structure. It is for ease of viewing only.

The system applies this feature to all view windows currently open, in detail or overview mode.

Proceed as follows.

1. Click on the object you want to move higher.
2. Click on the menu options *Object* → *One level higher.*

   The system pushes the selected object higher in the structure.

# Overview: Working with Objects Individually

It is possible to apply different attributes to objects on an individual basis.

Changing Color Assignments for Objects [Page 322]

Changing Shapes for Objects [Page 323]

Changing Line Styles for Objects [Page 324]

# Changing Color Assignments for Objects

Change color assignments when you want Structural Graphics to use different colors to present different object-related elements, for a specific object. You can adjust colors applied to:

- the background color of an object shape
- the text that identifies an object
- the lines that connect an object to its parent object [Page 371]

You can only change object color assignments when the *Design* setting in the View Options dialog box is set to *manual*. For details, see The View Options Dialog Box [Page 340]

The color selections made apply only for the current work session.

To change color assignments, proceed as follows.

1. Click on the object you want to work with.
2. Click on the menu options *Object* → *Change colors*.

   The Color Assignment dialog box appears.
3. Make your color selections.

   For more information on the dialog box settings, see The Color Assignment Dialog Box [Page 326]
4. Click on the *Apply* button.

   The system changes the color as specified.
5. To change color assignments for other objects:

– Click on the object.

– Repeat steps #3 to #4.

6. To exit the Color Assignment dialog box, click on the *Continue* button.

# Changing Shapes for Objects

Change shapes when you want a specific object to be presented using a different geometric shape. This can be helpful when, for example, you need to visually differentiate or set apart a specific object.

The settings you enter are valid only during the current work session.

> You can only change object shapes when the *Design* setting in the View Options dialog box is set to *manual*. For details, see The View Options Dialog Box [Page 340]

To change the shape of a specific object, proceed as follows.

1. Click on the object you want to work with.
2. Click on the menu options *Object* → *Change shape*.

   A drop-down menu appears listing the shapes you may select from.
3. Click on the shape you want to use.

   The system changes the shape of the object.

# Changing Line Styles for Objects

Change line styles when you want to change the type of line that connects objects in a hierarchical structure. You can, for example, select solid lines, dotted lines, and so on.

You must select a specific object, and Structural Graphics changes the line from the selected object to its parent object.

You can only change line styles when the *Design* setting in the View Options dialog box is set to *manual*. For details, see The View Options Dialog Box [Page 340]

To change line styles, proceed as follows.

1. Click on the object whose line style you want to change.
2. Click on the menu options *Object* → *Change line style*.

   A drop-down menu appears listing the line styles you may select from.
3. Click on the line style you want.

   The system changes the line style of the object.

# Overview: Color Assignments

It is possible to specify or control the colors used to present each of the elements in the Structural Graphics display.

The Color Assignment Dialog Box [Page 326]

Changing Color Assignments for Objects [Page 322]

# The Color Assignment Dialog Box

The Color Assignment dialog box lets you dictate which colors are used to present different elements that appear in the Structural Graphics display, for example, the objects, the title bars, the view window frames, and so on. This is achieved by selecting various settings.

### Left side of dialog box

Use the left side of the dialog box to select the color you want to use. To do so, click on the appropriate color plate.

### Right side of dialog box

Use the right side of the dialog box to select the individual element whose color you want to change. The elements listed vary according to how you access the Color Assignment dialog box, from the *Object* or *Options* menu. To make a selection, click on the appropriate element.

**For more information:**

Changing Color Assignments [Page 327]

Changing Color Assignments for Objects [Page 322]

# Changing Color Assignments

Change color assignments when you want to adjust the colors used to present various elements in Structural Graphics. It is possible, for example, to adjust the colors used to present title bars, background shading, the text in title bars, and so on.

Changes are valid only for the current work session. However, it is possible to save the settings for future work sessions, using the *Save Options* feature.

It is possible to create and maintain a number of overall color schemes using design profiles. You can then select the design you want to work with through the *Design* setting, in the View Options dialog box. The design profiles themselves are setup in Customizing.

To change color assignments, proceed as follows.

1. Click on the menu options *Options* → *Color Assignment*.

   The Color Assignment dialog box appears.

2. Use the dialog box options to enter your selections.

   For more information on the options, see The Color Assignment Dialog Box [Page 326]

3. Click on the *Apply* button.

   The system changes the color as specified.

4. To change other color assignments:

– Repeat steps #2 to #3.

5. To exit the Color Assignment dialog box:

   – Click on *Continue* or *Cancel*.

# Overview: The Search Feature

The search feature in Structural Graphics allows you to search for specific objects within the hierarchical structure you are viewing.

The Search for Objects Dialog Box [Page 329]

Searching for Objects [Page 330]

# The Search for Objects Dialog Box

The Search for Objects dialog box lets you dictate how the system conducts a search. This is achieved by selecting various settings.

### Search string

Use this field to identify the object(s) you want to locate, by entering a whole or partial character string. The system compares the character string you enter with the text associated with each object in the hierarchical structure.

To complete this field, type in the appropriate text.

### Case sensitive

Use this field to indicate if the system should match the case used in your entry in the *Search string* field, when it checks each of the objects in the hierarchical structure. To check case, mark the check box.

### Remove previous selection

It is possible to keep the Search for Objects dialog box open and conduct several searches, one after the other. Use this field if you have conducted prior searches, and wish to remove the settings from the previous search. To remove settings, mark the check box.

**For more information:**

Searching for Objects [Page 330]

# Searching for Objects

Conduct a search for objects when you want to quickly locate an object or objects, within a hierarchical structure.

The search is conducted according to the text associated with objects. You can enter a complete or partial text string. The system highlights any object that contains the string you enter.

The settings you enter are valid only during the current work session. However, it is possible to save the settings for future work sessions, using the *Save Options* feature.

This feature is helpful when you are working with large and complicated structures. The search includes all open view windows.

To search for an object, proceed as follows.

1. Click on the menu options *Object* → *Search for objects*.

   The Search for Objects dialog box appears.

2. Enter the appropriate settings in the *Search string, Case sensitive* and *Remove previous selection* fields.

   For more information on the settings, see The Search for Objects Dialog Box [Page 329]

3. Click on *Search*.

   The system highlights objects that match your entry.

4. To search for other objects:

– Repeat steps #2 to #3.

5. To exit the dialog box:
   - Click on the Control Box.
   - A drop down menu appears.
   - Click on the menu option *Close*.

# Overview: The Sort Feature

The sort feature affects the order in which objects are presented in a hierarchical structure *from left to right,* within each branch of a structure.

You can arrange objects according to various criteria, for example, ascending versus descending order.

A sort does not affect the inter-relationships among the objects in the structure.

The Sort Objects Dialog Box [Page 332]

Sorting Objects [Page 333]

# The Sort Objects Dialog Box

The Sort Objects dialog box lets you dictate the order in which objects are presented in a hierarchical structure *from left to right,* within each branch of a structure. This is achieved by selecting various settings.

The settings you enter are valid only during the current work session. However, it is possible to save the settings for future work sessions, using the *Save Options* feature.

### Sort mode

Use this field to identify what type of information you want to use, as a means for conducting the sort. To do so, mark the appropriate radio button.

*No sort* - The system returns to the original sort order. When you specify no sort parameters, the system presents objects according to the order that they were provided to Structural Graphics, by the R/3 application where you are working. For example in Personnel Planning and Development (PD) this is the order that objects were extracted from the database.

*By priority* - When you create objects it is possible to give them priority numbers. The system can use priority numbers to sort objects. Priority numbers can be any number, from 1 to 99. Number 1 has the highest priority and is shown farthest to the left, and number 99 has the lowest priority and is shown farthest to the right.

*By key* - The system sorts objects according to the key that identifies an object. The key varies from one R/3 application, although it typically contains different codes that represent the essential details that identify objects.

*By text* -The system sorts objects alphabetically, according to the text that describes the objects.

### Text type

If you select a text-oriented item for sorting (set in *Sort mode*), use this field to determine if the system should use detail or overview texts. Overview texts are used to identify objects, when you are in overview mode [Page 370]. These texts are abbreviations the system makes according to available space. Detail texts are used to identify objects, when you are in detail mode [Page 368]. These texts are complete.

### Sequence

Use this list box to indicate if objects should be sorted in ascending or descending sequence. To do so, mark the appropriate check box.

**For more information:**

Sorting Objects [Page 333]

# Sorting Objects

Sort objects when you want to change the order in which objects appear in a structure. A sort affects the order of presentation from *left to right*, within each branch of a structure.

The settings you enter are valid only during the current work session. However, it is possible to save the settings for future work sessions, using the *Save Options* feature.

To sort objects, proceed as follows.

1. Click on the menu options *Object* → *Sort objects*.

   The Sort Objects dialog box appears.

2. Enter the appropriate settings.

   For more information on the settings, see The Sort Objects Dialog Box [Page 332]

3. Click on *Sort*.

   The system sorts all objects as directed.

4. To exit the Sort Objects dialog box, click on *Close*.

# Overview: View Windows

It is possible to work with multiple view windows in Structural Graphics. The following topics describe features that pertain to view windows.

Adding View Windows [Page 335]

Deleting View Windows [Page 336]

The Arrange Views Dialog Box [Page 337]

Arranging Views [Page 338]

**Also see:**

Overview: View Options [Page 339]

# Adding View Windows

Add more view windows whenever you want to sub-divide the Structural Graphics display into separate windows. Splitting the Graphics display like this allows you to view different parts or aspects of a structure in each window you add. You can also apply different attributes, like color or shape assignments, in the different view windows.

This feature can be particularly helpful when you are working with a large and complicated structure.

To add view windows, proceed as follows.

1. Either:
   - Click on the menu options *Options* → *Further view*, or
   - Click on the plus sign (+) in the top right corner of the display area.

   Another view window appears.

   You can determine how multiple view windows are arranged in the Structural Graphics display, for example, side-by-side or stacked, using the arrange views option. See Arranging Views [Page 338]

# Deleting View Windows

Delete view windows when you want to remove one of the windows shown in the Structural Graphics display. (It is possible to sub-divide the display into separate, windows using the *Add View Windows* feature.)

To delete view windows, proceed as follows.

1. Either:
   - Click on the menu options *Options* → *Delete view*, or
   - Click on the minus sign (-) in the top right corner of the display area.

   The view window disappears.

# The Arrange Views Dialog Box

The Arrange Views dialog box lets you dictate how different view windows are grouped together in the Structural Graphics display.

The arrangement you specify applies only for the current work session. Default settings for arrangements are setup through Customizing.

### Left side of dialog box

Use the left side of the dialog box to adjust how windows are structured, for example, side-by-side or stacked on top of each other. To do so, click on the appropriate option.

### Right side of dialog box

Use the right side of the dialog box to rotate the order in which windows are presented. Normally, view windows are displayed in the order that they were opened. However, you may decide the information shown in the third window should appear first. To change the order of the view windows, click on the different arrows to achieve the desired effect.

**For more information:**

Arranging Views [Page 338]

# Arranging Views

Arrange views when you are working with multiple windows in the Graphics display, and you want to adjust how the different windows are presented on-screen.

To arrange views, proceed as follows.

1. Click on the menu options *Options* → *Arrange views*.

   The Arrange Views dialog box appears.

2. Arrange the view windows as required.

   For more information on the options, see The Arrange Views Dialog Box [Page 337]

3. To implement the changes, click on the *Arrange* button.
4. To exit the Arrange Views dialog box, click on the *Close* button.

# Overview: View Options

The View Options let you control how the system presents hierarchical structures, from a visual point of view. For example, the system can present structures using different formats, top-down or left-to-right, for example.

The View Options Dialog Box [Page 340]

Changing the View Options [Page 343]

# The View Options Dialog Box

The View Options dialog box lets you dictate how hierarchical structures are presented in the different view windows you are working with. View options apply in both detail and overview mode.

Normally, the changes you make apply only to the current work session. However, it is also possible to save the settings for future work sessions, using the *Save Options* feature.

If you access the View Options dialog box through the Print dialog box (not through the menu), the settings you enter apply to the print request only.

### View

Use this option to identify the view window whose view options you want to adjust. (View windows are numbered sequentially, in the order that the windows are opened.) To select a view window, click on the arrows until the correct view window is shown.

### Display Level

Use this option to determine how many levels of a hierarchical structure should be displayed. 0 stands for entire structure, 1 for top level only, 2 for top two levels only, and so on. To select a level, click on the arrows until the correct level is shown.

### Grid

Hierarchical structures are laid out on a grid, which can be shown or hidden. Use this option to indicate if the grid should be displayed or not. To include a grid, mark the check box.

### Display Mode

Use this option to select the view mode, overview or detail. *Overview* mode means the system compresses the hierarchical structure you are working with so you can see all of it in one view window. *Detail* mode means the system expands the hierarchical structure so that each object in the hierarchical structure can easily be seen. The drawback is that you will not be able to see all of the structure.

(It is also possible to use the *Detail<->View* button or the menu options *Goto* → *Detail<->View* to toggle between overview and detail mode.)

### Knock-On Mode

This option lets you determine how Structural Graphics displays on object, when it is selected. (You must select objects before doing things like changing the object's shape, color, line style, and so on.)

This option is intended for situations when you work with multiple view windows. When you do so, this option allows you to view a single, selected object from different points of view, simultaneously.

The idea is to select a different knock-on option for each of the view windows open. Then, when you select an object, each of the windows shows the selected object differently. For example, one window shows the selected object centered, one shows the substructure of the selected object, and another shows the parent structure.

To select a knock-on mode, mark the appropriate radio button.

*Off* - The system highlights the selected object, but otherwise the presentation does not change.

*Center* - The system highlights the selected object, and positions it in the center of the view window.

*Substructure* - The system highlights the selected object, and confines the display to the select objected and its child objects [Page 367].

*Parent structure* - The system highlights the selected object, and confines the display to the selected object and its parent objects [Page 371].

### Graphic Type

Use this option to determine how Structural Graphics presents a hierarchical structure. To make a selection, mark the appropriate radio button.

*Normal* - The system presents the hierarchical structure in a top-down format.

*Feathered* - The system presents the hierarchical structure in a right-to-left format.

*Compact* - The system presents the hierarchical structure using a combination of formats. Top-down format is used for the upper levels of the structure. Objects on the lowest level are presented vertically. (When this option is selected, the system automatically sets the number of levels displayed to 3, although you can change this setting if required.)

*User-defined* - The system presents the hierarchical structure according to a user-defined format, set using the *Define Graphic Type* button, below.

### Design

Use this option to select which design profile you want to apply to a view window. Design profiles contain a set of presentation characteristics. For example, a profile could stipulate that squares should represent objects, lines connecting objects should be blue, and so on. Design profiles are defined in Customizing

To select a design, click on the appropriate option.

The system determines which design profiles to offer according to the currently selected design *group*. It is possible to change design groups. See the *Change design* option below.

### Define Graphic Type

Use this button to set your own method for presenting hierarchical structures. You can control object alignment and rotation.

*Alignment* - The system aligns the objects in the hierarchical structure, so that they are either left justified, right justified, or centered. To set alignment, mark the appropriate radio button.

*Rotation* - The system rotates the entire structure so that it is presented at the rotation degree specified. For example, if you enter a rotation of 180° the structure appears upside down. To set rotation, click on the arrows until the correct rotation is shown.

To use this feature:

1. Under Graphic Type, click on *User defined*.
2. Click on the *Define graphic type* button.

   The Define Graphic Type dialog box appears.

**The View Options Dialog Box**

3. Make your selections.
4. To exit the dialog box, click on *Close*.

   You return to the View Options dialog box.
5. Click on *Apply*.

   The system applies the settings to the active view window.

### Change Design

Use this option to select a different design group. Design groups consist of a set of individual design profiles that have been gathered together as a unit. The design group selected determines the individual design profiles you can select from in the *Design* setting (above). To change design groups:

1. Click on the *Change Design* button.

   The Design dialog box appears.
2. Click on the design group you want to use.
3. Click on *Continue*.

For more information, see Changing Design Groups [Page 352]

**For more information:**

Changing the View Options [Page 343]

# Changing the View Options

Change view options when you want to modify how Structural Graphics presents hierarchical structures in view windows. You can enter different settings for different view windows.

View options settings control things like the method used to present a structure, top-down or right-to-left.

To change view options, proceed as follows.

1. Click on the window whose view options you want to change.
2. Either:

– Click on the menu options *Options* → *View options*, or

– Click on the *View Options* button (if available).

The View Options dialog box appears.

3. Click on the appropriate settings.

For more information on the settings, see The View Options Dialog Box [Page 340]

4. To implement your selections, click on *Apply*.
5. To enter settings for other view windows:

– Click anywhere on the next window you want to work with.

– Repeat steps #3 to #4.

6. To exit the View Options dialog box, click on *Continue*.

# Overview: Object Options

The Object Options let you control things that pertain specifically to the way the system presents objects within a hierarchical structure.

The Object Options Dialog Box [Page 345]

Changing the Object Options [Page 347]

# The Object Options Dialog Box

The Object Options dialog box lets you dictate how information about individual objects within a hierarchical structure are presented. Object options apply in both detail and overview mode, for the active view window.

Normally, the changes you make apply only to the current work session. However, it is also possible to save the settings for future work sessions, using the *Save Options* feature.

If you access the Object Options dialog box through the Print dialog box (not through the menu), the settings you enter apply to the print request only.

### Text Alignment

Use this option to control the alignment of the text that identifies the objects in a hierarchical structure. To do so, mark the appropriate option.

### Draw

Use this option to determine how the system presents the shapes that represent objects. To do so, mark the appropriate option.

*Shadow* - The system puts shading around the outside of a shape to give a three-dimensional effect.

*Solid* - The system fills the shape with a solid color.

*Line Wrap* - The system automatically “wraps” the text that identifies objects in a hierarchical structure. Wrapping means that the system detects how much text fits on a single line, and automatically breaks the text into separate lines where needed. This options is active only in overview mode.

### Font

Use this option to determine the size of the text that identifies objects, on-screen. The system uses the selected font in any printouts you request. To make a selection, click on the appropriate option.

### Outer Frame and Inner Frame

The shape used to represent an object consists of two frames, an outer frame and inner frame. The outer frame provides the outline for the shape itself. The inner frame identifies the boundary for the text box, which contains the text that describes an object.

The different shapes that make up a hierarchical structure are laid out on a grid. (The grid can be shown or hidden.) Each cell within the grid can hold a single object.

### Outer Frame

Use this setting to control the size of a shape relative to the size of the grid cell where the object is situated. The top arrows control horizontal size, and the bottom arrows control the vertical size. To enter settings, click on the arrows until the correct dimensions are shown.

**The Object Options Dialog Box**

To increase the amount of space between objects, decrease the vertical outer frame. Since more space is available, the system can display a more complete text, to describe the relationship between the objects.

### Inner Frame

Use this setting to control the size of the text box relative to the size of the object itself (determined by the *Outer frame* setting). The top arrows control horizontal size, and the bottom arrows control the vertical size. To enter settings, click on the arrows until the correct dimensions are shown.

### Font Size

The use of this field depends on how you access the Object Options dialog box. Normally, this field is for display only. However, if you access this dialog box through the Print dialog box, this field lets you scale the font size for printing purposes. To do so, click on the arrows until the correct dimension is shown.

**For more information:**

Changing the View Options [Page 343]

# Changing the Object Options

Change object options when you want to adjust settings that control how object shapes and text are presented in a selected view window. For example, you can adjust the alignment of text and the font size of the text.

To change object options, proceed as follows.

1. Click on the view window whose object options you want to change.
2. Click on the menu options *Options* → *Object options*.

   The Object Options dialog box appears.
3. Enter the appropriate settings.

   For more information on the settings, see The Object Options Dialog Box [Page 345]
4. To implement the settings, click on *Apply*.
5. To enter settings for other view windows:

– Click anywhere on the next window you want to work with.

– Repeat steps #3 to #4.

6. To exit the Object Options dialog box, click on *Continue*.

# Overview: Line Options

It is possible to control how Structural Graphics presents the lines that connect different objects in a hierarchical structure.

The Line Options Dialog Box [Page 349]

Changing the Line Options [Page 351]

# The Line Options Dialog Box

The Line Options dialog box lets you dictate how the lines that connect different objects in a hierarchical structure are presented. For example, you can select diagonal or straight lines and the thickness of the line. Line options apply in both detail and overview mode, for the active view window.

Normally, the changes you make apply only to the current work session. However, it is also possible to save the settings for future work sessions, using the *Save Options* feature.

If you access the Line Options dialog box through the Print dialog box (not through the menu), the settings you enter apply to the print request only.

### Relationship line

Use this option to select the type of lines you want to use, diagonal or straight. To do so, mark the appropriate radio button.

### Relationship indicator

Use these options to control other aspects of the way a line is presented. To do so, mark the appropriate check boxes.

*Text* - The system displays any text that describes the association, or relationship between two objects connected by a line. (The existence of such text depends on which R/3 application you are working with.)

*Marker* - The system places a small rectangle on the line.

*Arrow* - The system uses an arrow to illustrate the direction of the relationship.

### Font

Use this option to determine the size of the text that describes the connection or relationship between two objects. (The presence of such text depends on the R/3 application you are using. Some applications may not use text descriptions.) The system uses the selected font in any printouts you request. To make a selection, click on the appropriate option.

### Group same texts

Often where there is a group of objects that are subordinate to the same parent object, the relationship between the subordinate objects is the same, and so the text describing the relationship is also the same.

Use this option to indicate that when the same text applies to a group of objects, the text should only be displayed once. This is advantageous since there will be more room in the view window. The system can then show a single, more complete description of the relationship.

### Font size

The use of this field depends on how you access the Line Options dialog box. Normally, this field is for display only. However, if you access this dialog box through the Print dialog box, this field lets you scale the font size for printing purposes. To do so, click on the arrows until the correct dimension is shown.

**For more information:**

## The Line Options Dialog Box

Changing the Line Options [Page 351]

# Changing the Line Options

Change line options when you want to adjust how the system presents the lines that connect different objects within a hierarchical structure. For example, you can adjust the line style, straight versus diagonal, the thickness of the line, and so on.

To change line options, proceed as follows.

1. Click on the window whose line options you want to change.
2. Click on the menu options *Options* → *Line options*.

   The Line Options dialog box appears.
3. Click on the appropriate settings.

   For more information on the settings, see The Line Options Dialog Box [Page 349]
4. To implement your selections, click on *Apply*.
5. To enter settings for other view windows:

– Click anywhere on the next window you want to work with.

– Repeat steps #3 to #4.

6. To exit the Line Options dialog box, click on *Continue* or *Cancel*.

# Changing Design Groups

Design groups consist of a set of individual design profiles that have been gathered together as a unit. The design group selected determines which design profiles you can select from in the *Design* setting, in the View Options dialog box.

Design profiles themselves contain a set of presentation characteristics or specifications, such as objects should be represented by rectangles, lines connecting objects should be blue, and so on.

Design groups and profiles are defined in Customizing.

Change design groups when you would like to work with a different set of design profiles.

To do so, proceed as follows.

1. Click on the menu options *Options* → *Change Design*.

   The Design dialog box appears.

2. Select the design group you want to use.
3. Click on *Continue*.

   This procedure may vary according to the R/3 application where you are working.

# Saving Option Settings

The Save Option Settings feature allows you to retain changes you have made to settings that control how the system presents hierarchical structures.

The system saves settings made in the:

- View Options dialog box
- Object Options dialog box
- Line Options dialog box

As well, the system saves:

- sort options
- search option settings
- the number of view windows opened
- color assignments, except for those applied to specific objects through the Object menu option

If you do not save the settings, the next time you use Structural Graphics the system reverts to the last options saved.

To save settings, proceed as follows.

1. Either:
   - Click on the menu options *Options* → *Save options*, or
   - Click on the *Save options* button (if available).

   The system saves the settings.

# Deleting Option Settings

Delete option settings to clear, or remove all settings previously used to present hierarchical structures.

To delete settings, proceed as follows.

1. Click on the menu options *Options* → *Delete options*.

   The system clears all settings.

# Mailing Hierarchical Structures

Mail hierarchical structures when you want to send or forward a structure to the Inbox of a person at your firm. In order to use this feature, your company must use the R/3 mail system, SAPoffice.

When you mail a structure, the system transmits the hierarchical structure as it currently appears in the active view window, except for any “temporary” adjustments made to the structure. Temporary adjustments include viewing substructures [Page 373] or centering root objects [Page 372], and so on.

To send a structure, proceed as follows.

1. Click on the menu options *Structure* → *Send*.

   The Send Document window from SAPoffice appears.

2. Use the *Recipient* field to identify the persons who should receive the hierarchical structure.

3. Click on the *Send* button.

   The system sends the hierarchical structure to the recipients identified.

# Printing a Graphic

The print feature in Structural Graphics allows you to obtain a hard copy of the hierarchical structure you are viewing.

The Print Dialog Box [Page 357]

The Format Dialog Box [Page 359]

Printing Hierarchical Structures [Page 360]

Overview: Printing Tips and Troubleshooting [Page 361]

# The Print Dialog Box

The Print dialog box lets you enter parameters that control where and how the system prints a hierarchical structure.

The settings you enter are valid only during the current work session. However, it is possible to save the settings for future work sessions, using the *Save Options* feature.

### Print Quantity

Use this option to select a print style or mode. There are three print styles available. To make a selection, mark the appropriate radio button.

*Completely* - The system prints the entire structure. In overview mode, the structure fits on one page. However, in detail mode the structure will often be too large to fit on one page, and so the printer prints the structure on separate pages. You can join the pages together to make a poster.

*View* - The system prints the hierarchical structure as it currently appears in the active view window. In detail mode, the substructure may not fit on one page.

*Book* - The system prints each substructure within a hierarchical structure on a separate page. Substructures are the individual parent [Page 371] /child [Page 367] structures that collectively makeup a larger hierarchical structure.

The system starts at the root object [Page 372], and prints a substructure for each object encountered (provided there are underlying objects). You can define how many levels are included in the substructures using the *Display level* setting, in the View Options dialog box.

The substructures may be too large to fit on one page, if you are in detail mode. In this case, the printer prints the structure on separate pages. You can join the pages together to make a poster.

If you select *Book* style, you can also request page numbers and page references, using the so named fields below.

### Frame

Use this option to select a frame style. To do so, mark the appropriate radio button.

*Solid Frame* - The system prints a solid frame on each page.

*No Frame* - The system prints without using any frames.

*Edges only* - The system prints frames at the corners only. The corner frames can be helpful if you plan to join pages together, to make a poster.

### Output

Use this option to select an output device. To do so, mark the appropriate radio button.

*Local printer* - The system prints to a local PostScript printer (a printer connected directly to your PC). If you select this option, you must name the printer port in the *File* field, for example, PRN or LPT1.

*System (R/3 Spool)* - The system prints to a PostScript printer connected to the SAP R/3 system. If you select this option, you must provide the logical name of the target printer in the *File* field.

**The Print Dialog Box**

The printer you select must be a PostScript printer and must be designated within the R/3 system to receive structural graphics. Otherwise, the print request will not work.

*File* - You can copy the hierarchical structure to a file on your PC. If you select this option, you must provide a filename in the *File* field.

### Export Filter

Use this option to select the device where the system sends the hierarchical structure. To do so, mark the appropriate radio button.

*PostScript* - The system sends the structure to a PostScript printer.

*CGM* - The system sends the hierarchical structure to a Computer Graphics Metafile (CGM) file. CGM is a special file format used for graphics. Files with this format can be read by PowerPoint© 4.0, CorelDRAW! © and other graphics programs.

### Page numbers

Use this option to apply page numbers to your printout. This option is only available when you select the *Completely* or *Book* print styles, under *Print Quantity*. To include page numbers, mark the check box.

### Page References

This option applies page references to your printout. This option is only available when you select the *Book* print style, under *Print Quantity*. The option is automatically selected, when you select page numbers (above).

### File

Use this field to identify a destination. The destination varies according to your selection in the *Output* list box. For local printers, enter the name of the printer, for example PRN or LPT1. For R/3 spool, enter the logical name of the printer. For files, enter a filename.

### Format options

Use this option to enter print format settings, for example page orientation and size. For details, see The Format Dialog Box [Page 359]

To control text font size or line styles in the print out, use the View Options, Object Options and Line Options buttons in the Print dialog Box, to access the appropriate settings. When you access these dialog boxes through the Print dialog box, the settings you enter only pertain to the print request. They do not effect the view windows.

**For more information:**

Printing Hierarchical Structures [Page 360]

# The Format Dialog Box

The Format dialog box lets you enter parameters that control the format of printed hierarchical structures.

### Format

Use this option to select the paper size. The selection made here determines the dimensions shown in the *Print* list box. To make a selection, click on the appropriate item.

### Orientation

Use this option to determine the paper orientation used for printing. You can print on paper using a landscape (horizontal) or a portrait (vertical) orientation. To make a selection, mark the appropriate radio button.

### Unit

Use this option to select a unit of measurement used to identify paper dimensions and margins. To make a selection, mark the appropriate radio button.

### Printer

This option identifies the dimensions of the paper you are printing on. Dimensions are automatically provided according to the selection in the *Format* list box. Dimensions are stated according to the unit of measurement selected in the *Unit* list box. To make a selection, click on the appropriate item.

### Border

Use this option to specify the size of page margins the printout should have. To do so, enter the appropriate amounts. State margins according to the unit of measure identified in the *Unit* list box.

**For more information:**

Printing Hierarchical Structures [Page 360]

# Printing Hierarchical Structures

Print the hierarchical structure you are working with anytime you want a hard copy.

If you are working with multiple view windows, the system prints from the active view window [Page 374].

To print a structure, proceed as follows.

1. Either:

– Click on the menu options *Structure* → *Print*, or

– Click on the *Print* button.

The Print dialog box appears.

2. Complete the print parameters as appropriate.

The correct print parameters vary according to the environment at your company. For more information on the settings, see The Print Dialog Box [Page 357]

3. Click on the *Print* button.

The system sends the structure to the printer.

4. When printing is complete, the Print State dialog box appears.
5. Click on *Continue*.

# Overview: Printing Tips and Troubleshooting

The following troubleshooting tips are available.

General Hints [Page 362]

Problems Importing CGM files into Graphics Programs [Page 363]

Problems Printing PostScript Data [Page 365]

# General Hints

- You must have a properly-installed PostScript printer.

  Because the R/3 system runs on different platforms, the system does not route print requests through any platform-dependent print utilities, for example, the Print Manager in Windows ©. This means settings in platform-dependent utilities are not considered when you print from Structural Graphics.

- You must ensure that all settings that effect the transfer of data from computer to computer, or from computer to printer, match. Different computers can convert data to ASCII values differently, and if the settings do not match, distortion may occur. Then, you will not be able to read or print the data. For example, when using File Transfer Protocol (FTP), you should ensure that the transfer mode is set to binary with the command **<bin>**.

- You must ensure that the page size set corresponds to that set for the printer you are using.

# Problems Importing CGM files into Graphics Programs

It is possible to import hierarchical structures from Structural Graphics into various graphics programs, for example, CorelDRAW! ©, Microsoft Draw ©, and so on. You must use the file format Computer Graphics Metafile (CGM).

**Problem:**

The CGM file is imported by the graphics program but text, objects, lines, and so on, are missing.

**Solution:**

It is possible that the colors are wrongly set or have been imported incorrectly. Try changing the background color. It is also possible that the object in question was not imported at all, or incorrectly imported by the import filter. Try using another graphics program. Another alternative is that, as a result of various changes to the settings (font size change and so on), the missing object is now outside the visible area and can no longer be displayed.

**Problem:**

It is not possible to select the various objects within the imported graphic, with the graphics program used.

**Solution:**

Some graphics programs such as CorelDRAW! © 3.0 automatically group the imported graphics into one object. In order to select individual objects, they must first be ungrouped. For more information on grouping/ungrouping objects, refer to the documentation that comes with the graphics application.

**Problem:**

The layout of the texts in the imported graphic does not correspond to the original layout (left-aligned, right-aligned, and so on.)

**Solution:**

The positioning of the text is not always done correctly by the importing graphics program. There have been no problems with left-justified texts. However, right-justified and centered texts are not always correctly aligned. This reaction seems to vary according to the graphics program.

**Problem:**

The font used does not correspond to the one previously used.

**Solution:**

In CGM format it is not possible to specify a font name as it is with PostScript. You select the font via an index. The best results have been achieved using the font, Helvetica. As a result, this is the font that is exported when you use CGM format. However, since the selection is done from an index, sometimes different programs assign different fonts to file texts. In order to change the font, mark the text concerned and assign a new font.

**Problem:**

The text size is not correct.

**Solution:**

It is possible that the scaling of the importing program is incorrect. Mark all objects concerned and adjust them to the required size. Alternatively, select the text objects concerned and change the font size. Not all graphics programs offer this feature, however.

**Problem:**

The message “Output unit cannot be opened” appeared.

**Solution:**

Either:

- The system cannot locate the device where you sent the print request.

  You have either entered a device that does not exist.
- The system cannot open the path or file you entered.

  You have entered an incorrect path or filename.

The system displays the device or path you entered in the brackets <...>. Check that the entry is correct.

# Problems Printing PostScript Data

**Problem:**

The printer only prints text, no graphics. The text looks as follows:

%!PS-ADOBE-1.0

%%Creator: SAP-Strukturgrafik

%%Title:

%%Pages:

%%DocumentFonts: Courier, Helvetica, Times-Roman

%%PrintMode:

%%EndComments

**Solution:**

In this case, your printer is printing the PostScript data directly, and cannot interpret it. The printer must be PostScript-compatible! Check that this is the case and that it is properly installed. See *General Hints* for details.

**Problem:**

No reaction from the printer.

**Solution:**

Check that the printer is properly installed and connected. See *General Hints* for details.

**Problem:**

There is a reaction from the printer at the start of output, but no printout.

**Solution:**

The data may have been distorted during the transport and cannot be correctly interpreted. See *General Hints* for details.

**Problem:**

The message “Output unit cannot be opened” appeared.

**Solution:**

Either:

- The system cannot locate the device where you sent the print request.

  You have either entered a device that does not exist.
- The system cannot open the path or file you entered.

**Problems Printing PostScript Data**

You have entered an incorrect path or filename.

The system displays the device or path you entered in the brackets <...>. Check that the entry is correct.

# Child object

The terms child and parent describe the relationship between two objects in a hierarchical structure, where the parent object is found one level higher in the structure than the child object, and where the child directly descends from the parent.  Synonym: subordinate object

# Detail mode

Detail mode refers to the way the system presents a hierarchical structure in Structural Graphics. In detail mode the system presents a hierarchical structure large enoulgh so that you can easily read the information that describes each of the objects.  Because the objects are larger, you will only be able to see part of the structure in the view window.

# Hierarchical structure

The term hierarchical structure describes a structure where different elements are arranged in successive levels, and where the individual elements in the different levels are interdependent.

# Overview mode

Overview mode refers to the way the system presents a hierarchical structure in Structural Graphics. In overview mode, the system compresses the hierarchical structure you are working with so that you can see all of it in one view window. Because the objects in the structure are compressed, the text that identifies the objects may not be easy to see.

# Parent object

The terms parent and child describe the relationship between two objects in a hierarchical structure, where the parent object is found one level higher in the structure than the child object, and where the child directly descends from the parent.  Synonym: superior object

# Root object

A root object is the object at the highest level in a hierarchical structure. A hierarchical structure is built from the root object, down.

# Substructures

Substructures are the individual parent/child structures that collectively makeup a larger hierarchical structure.

The terms child and parent describe the relationship between two objects in a hierarchical structure, where the parent object is found one level higher in the structure than the child object, and where the child directly descends from the parent. Synonyms: child/subordinate object, parent/superior

# View window

In Structural Graphics it is possible to sub-divide the screen into separate windows. This allows you to view different areas of a hierarchical structure simultaneously. The separate windows are called view windows.

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