

# Review: Graphics Server And Light Lib Business

by Chris Frizelle

Developers are finding that graphs (or charts) are not only an excellent means of presenting data but are also being demanded by the end-user. We review two graphing packages for Delphi: Graphics Server from Bits Per Second in the UK and LightLib Business from DFL Software in Canada. I installed both packages on a Windows 3.11 machine to work with Delphi 1.0.

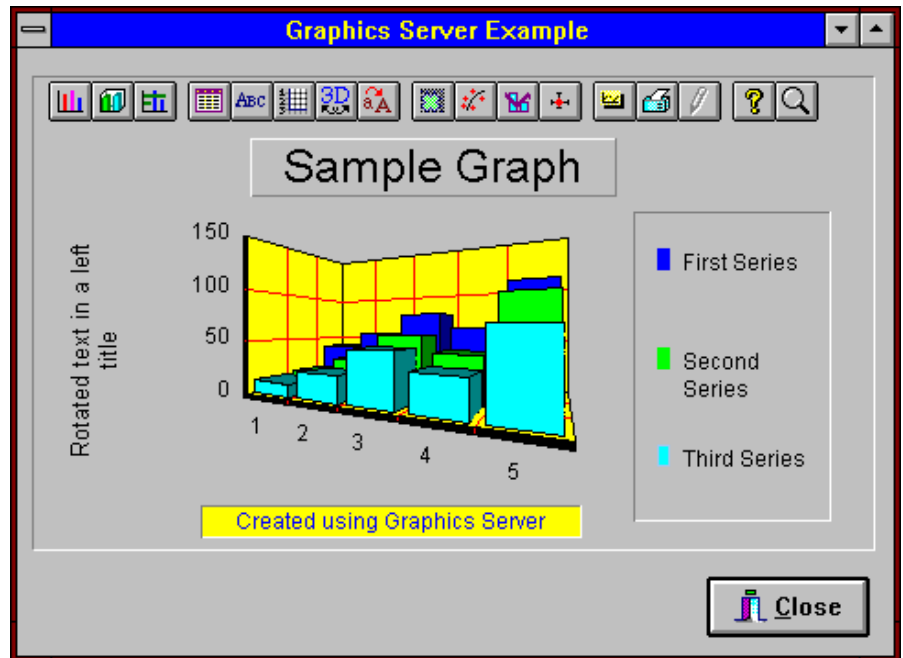
## Graphics Server

### ► Installation

When Graphics Server arrives on your desk you will know about it: the package comprises three manuals totalling over 1050 pages, an installation card and six 3.5 inch high density disks.

The install program is simple enough, but showing its age (it chugs along for a while and progress gets up to 18%, then bang it's all finished!). You are left with about 3Mb less disk space (for a Delphi-only installation) and a Program Manager group with some release notes files and help files (not the Delphi readme files though). For Delphi users, the component parts of Graphics Server are an EXE file (the server) and some DLLs, totalling about 1Mb, all of which live in the WINDOWS\SYSTEM directory, and the Delphi component files.

Unfortunately, the Delphi-specific parts of the installation have not been thought through. The three Delphi component files (GSPROP16.PAS, GRAPH16.PAS and GRAPH16.DCR) are buried 3 levels down in the directory tree, which means that if you follow the instructions you will probably end up with Delphi failing to complete the installation because it's run out of space on the library path. I'd recommend that the Delphi files (from the install subdirectory



\DELPHI\VCL) are copied to a directory already on your library path and installed from there.

### ► In Action

To help get you going, there are two sample programs included: one using the GSGraph component (on the Additional page of the Component Palette) and another using the Autograph API. The Autograph sample wouldn't compile. I tested the component version only (which is what you'd nearly always want to use anyway).

Getting started is simple enough: drop a GSGraph component on a form and size it, then set the properties. There are only a few published properties which show in the Object Inspector, the most significant of which is Custom. This calls up a tabbed dialog set of 16 Property Pages, which is really the heart of Graphics Server.

The same Property Pages are used at both design time and (optionally) at run time to customise charts. In most cases you can change values and options, then

press the Apply Now button and see the amendments in the displayed graph at design time – very handy. The various dialogs, which are also accessible from the toolbar, are:

**2D Gallery and 3D Gallery:** graph types to choose from.

**Style:** horizontal/vertical orientation and stacking.

**Data:** data values (entered using a grid), plus labels and legends.

**Titles:** these can be added at the top, bottom, left and right of the chart (for the latter two, rotated text is an option).

**Axis:** axis position, scales, ranges, labels, tick marks and grids. Whilst grid line types and colours can be altered, the line thickness cannot, it seems.

**3D:** allows you to select a perspective or isometric view of a 3D chart ('true 3D'), or to rotate it yourself in all of the three dimensions to get just the look you want. You can also set how the 'cage' and 'walls' look (style, colour etc).

**Fonts:** different fonts and sizes can be applied to graph titles, other titles, labels and legends.

Text can also be automatically sized using the 'Smart Scale' option. Text colours are strangely set in the Background page of the control (a standard font selection dialog would improve matters here).

**Markers:** selection of markers for data sets or individual points (colour, pattern, symbol, size etc).

**Trends:** you can add various statistical trend lines: mean, minimum & maximum, standard deviation and best fit, as well as apply curve fitting to your data points using 13 different methods.

**Overlay:** a second chart can be overlaid onto an existing one, with optionally a shared axis.

**Error Bar:** these can be applied using fixed or percentage values, standard deviation or standard error, or can be user-defined. These and the other statistical features, plus the good range of specialised graph types, show how well-suited Graphics Server is for scientific or engineering use.

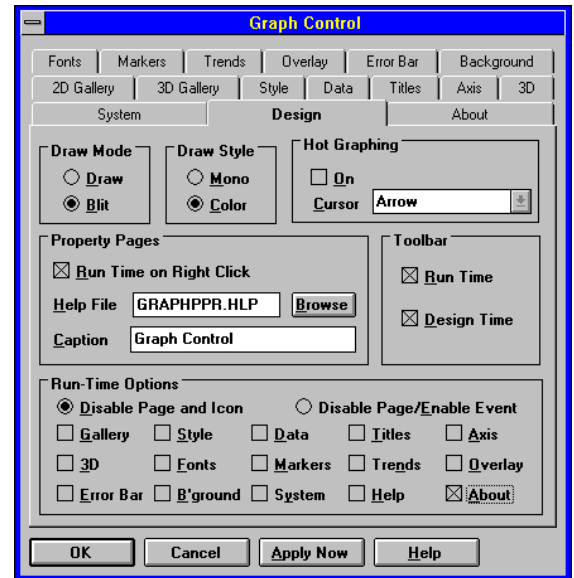
**Background:** allows shadows, raising/lowering and borders to be applied to the text, legend and the graph itself. This is also where you set the legend position.

**System:** here is where you print (mono or colour, with/without a border), or export (to a Windows Metafile or BMP file or to the clipboard) your graph. You can select from pre-set colour 16- or 128-colour palettes. The mono/greyscale export will be helpful for those preparing graphs for publication, where black and white is still the standard. Printing was quick and straightforward; version 4.5 (see below) will add a very welcome Printer Setup common dialog plus control over orientation, size and margins.

**About:** an About box, which can be switched off for runtime, complete with animated graph!

**Design:** design-time only settings (this page is absent at run-time), for drawing mode, the Toolbar and which (if any) Property Pages are available at run time. You can set the Property Pages to pop up when the user right mouse clicks on the graph area. Included in this page is hot graphing, but a

► *The Design dialog in Graphics Server's Property Pages*



Graph Type	Graphics Server	LightLib Business
Pie	2/3	2/3
Polar	2	
Bubble	2	
Scatter	2/3	
Line	2	2
Bar	2/3	2/3
Area	2/3	2/3*
Gantt	2	
High-Low-Close	2	2/3 (Professional Ed.)
Candlestick	2	
Box-Whisker	2	
Time Series	2	
Tape <sup>+</sup>	3	3
Surface	3	
2 = 2D graphs supported      3 = 3D graphs supported * LightLib Business calls Area graphs filled Line graphs + A Tape graph is a 3D Line graph		

► *Table 1: Comparison of graph types supported*

note in one of the README files says that this doesn't work under Delphi due to technical problems, which is a pity. You can name a Help file to be called up for help with the Property Pages at run time (a very good one is provided, which you can distribute).

In order to activate the toolbar you seem to have to write code: just selecting the relevant option in the property pages did not work for me (all it did was display the toolbar, not activate it). Adding:

```
GSGraph1.Toolbar := 2;
```

to the FormCreate event handler for the form containing my graph did the trick. Also, I found that trying to disable some of the Property Pages from the Design page didn't work and I suspect you'd need to code this in manually too.

This is a good place to mention that all of the properties, and of course your graph data, can be set from code, as is described very fully and clearly in the Graph

Control manual. The only downside is that the code examples are for Visual Basic, so you'd need to make a quick mental translation to Delphi syntax. Since Delphi seems to be overtaking VB in the popularity stakes, perhaps Bits Per Second will use Delphi code in a future manual (rogueish smile...).

### ► Distributing Applications

When shipping applications using Graphics Server, you need to include three DLLs and an EXE file, totalling about 1Mb, which all need to be installed into your user's WINDOWS\SYSTEM directory. The 'topmost' README.WRI file in the installation describes this.

### ► Documentation

I've already mentioned the Graph Control manual, in addition to this is *About Graphics Server*, which in 54 pages introduces the product and gives a very good overview of the different chart types supported and handy guidelines on what they can be used for, along with a glossary: well done, Bits Per Second! The third manual, at 636 pages, is the Autograph library reference, if you want to call the DLLs directly.

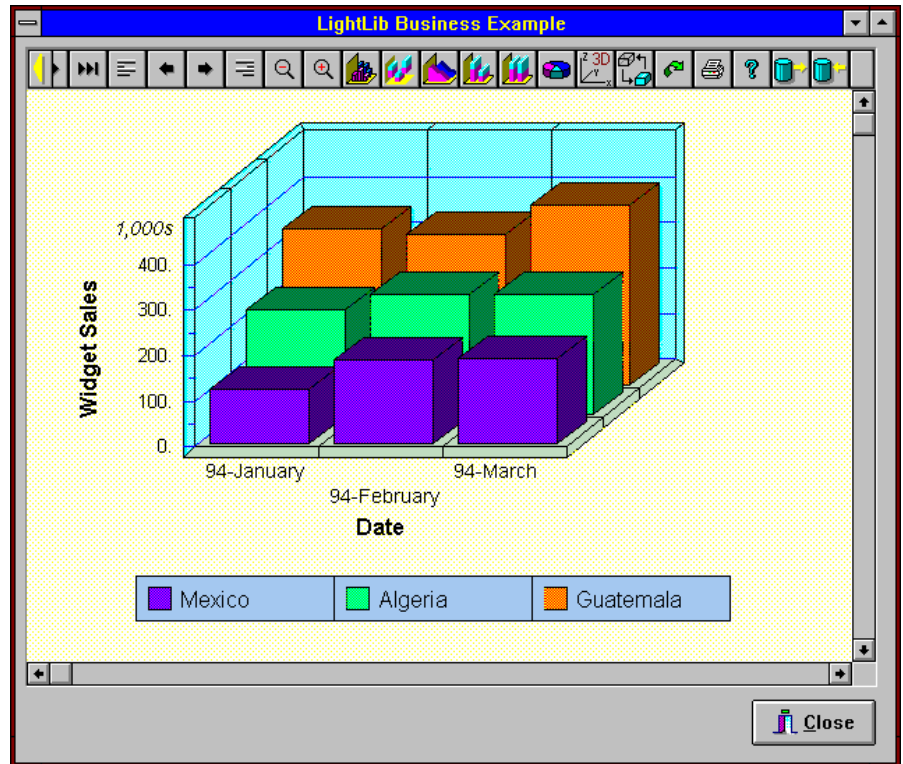
The Help files are also good, with clear and comprehensive explanations and good use of graphics with hot-spots. The only gripe I'd have is that there are too many README and release note files scattered throughout the directory tree.

### ► New In Ver 4.5

The version of Graphics Server we reviewed was 4.04. By the time you read this, version 4.5 will be available. New features include: Delphi 2.0 32-bit support, interactive zooming within the graph, Y axis label formats, floating bar charts, Pareto charts, smart pie labels to avoid overlap, save/restore of templates, plus lots more. An OEM edition of 4.5 will be included in Delphi 2.0. It has about 50% of the functionality of the full edition.

### ► Conclusions

Although I felt some aspects of Graphics Server were initially confusing, I managed to get to grips with it speedily and found that in



use it grew on me. It is a mature product, but one which has only recently been adapted for Delphi. I'd like to see some Delphi-specific documentation and some improvements to the interface. I can confidently recommend Graphics Server if you want to do serious charting from Delphi applications.

### LightLib Business

#### ► Installation

As you know from our review of LightLib Images last month, DFL don't believe in printed manuals, so opening the box reveals just three 3.5 inch high density disks and some leaflets. The install program is brimming with colour and progress gauges. If you buy the Standard Edition, you can install versions for Delphi, MFC (for C++), Visual Basic or Visual Objects. I installed only the Delphi files. I had a few problems getting the program to run through correctly. We tested version 1.21 Standard Edition).

On completion, the program reported it had failed to create a Program Manager group for some reason. Something over 8Mb of hard disk space was used.

As with Graphics Server, the Delphi components and associated files (there's quite a lot of them!) were buried several levels deep in

the directory hierarchy and I needed to copy them up to the top level in order to avoid eating up too much precious library path length. All component vendors take note: **don't** bury the Delphi files like this, **please!** To complete the installation, you need to read the *Getting Started Kit* Write file.

What wasn't immediately clear was that since I had a version of LightLib Images already installed (see the February issue) I had to remove the old LLO (LightLib Objects) support component, as it was an older version and gave me a *unit version mismatch* error.

#### ► In Action

Having got everything installed it's time to try the example application! The first thing you will discover is that to get data into a graph you need a database table – you can't just type it in or enter it programmatically. So, if you want graphs in your app then you have to ship the BDE (or an equivalent).

So, drop TTable and TDataSource controls on a form, connect the TTable to your table full of data, connect the controls together and then add a TLightLibRegister component (which links to the LightLib DLLs) and finally add and size a TGraphWindow control, connected

to your TDataSource. To actually get a graph to display, you right click on the blank area where the graph goes and use the Graph Column Layout dialog. Clicking Auto Layout will generate a sensible default graph from the data.

Along the top of the graph window is a toolbar, which contains navigational buttons to move from record to record in the data table, change the graph type, change some 3D and fill options, printing and BLOB field control. This last option allows your user to save a customised graph to a BLOB file (the name and location of which is set in the Object Inspector) and then retrieve it later – ie persistent graphs. This is an idea I really like, but it would be nice to be able to more easily save a number of graphs to a number of different files (you can do it, but you'd need to add code).

From here on in, the graph is customised by right clicking on the area of the graph you want to amend. There are two tabbed dialogs: Graph Setup and Column Setup (a column is what Graphics Server and spreadsheets call a series), plus dialogs for customising the X and Y axes and the legend.

**Graph Setup controls:** Graph type; surface colour, grid and whether the walls are 2D or 3D; title – just one is allowed; number of columns and rows of the database table which are visible; plus background colours.

**Column Setup controls:** colour of each column's display (for a bar this is the outline, fill and shadow), the column title (including font and colour), moves (ie move a column forward or backward in the layout), coordinates (X and Z offsets), column type and symbol type.

On the X and Y axes, the title (automatically rotated 90 degrees) and axis header can be set, with fonts and colours for these and the axis labels, plus axis scaling and colours. It looks like font sizes cannot be set. Here is also where you select which column in the database table is used as the X axis.

Legend customisation is limited to position and colours, the text is set in the Column Setup dialog.

You can print graphs from the button bar, but there seems to be no facility to save or export them as metafiles or bitmap files..

All the dialogs and the toolbar buttons, indeed the toolbar itself, can be turned on or off through properties in the Object Inspector or programmatically at run time.

The font and colour selection dialogs in LightLib Business are easier to use than the Graphics Server equivalents.

I would have preferred to be able to access all the settings dialogs from one place, as in Graphics Server, but you could set this up programmatically if you wish.

### ► Distributing Applications

As with LightLib Images (see February's issue) I could find no information about what files are required by a distributed application using LightLib Business or, indeed, what files you are licensed to distribute. My assumption is that you need and can distribute the three LightLib Business DLLs and the three supporting LightLib Objects DLLs, totalling about 1Mb.

### ► Documentation

The documentation for LightLib Business, relevant to the Delphi version, comprises registration and product info leaflets, the 'Getting Started Kit' Write file, a 270Kb Help file and a few README-type files. Putting aside my dislike of electronic-only documentation, I feel that what is provided is just about adequate but not anything like as good as either the printed or electronic documentation which comes with Graphics Server. As with Graphics Server, there is a 'user' Help file included which, presumably, you can distribute.

### ► Conclusions

In overall feel, LightLib Business is perhaps more Delphi-esque than Graphics Server and the options more logically grouped. However, it has far fewer graph types and has much less functionality. It does do the job of graphing data from database tables well, if that is your requirement, and I can easily recommend it for this purpose.

There are various Editions: the Standard Edition, which has multiple language support, the Delphi VCL-Only Edition, which has the same functionality as the Standard Edition but is Delphi-only, and the Professional Edition, which adds mixed graphs, high-low-close type ('stock') graphs, a secondary Y-axis and the 'rotate skipper' to exchange X and Y axes. I would prefer a single merged Edition, as the extra functionality in the Professional is not great yet it costs a lot more.

### Overall Conclusions

Included with Delphi 1.0 is the ChartFX VBX control, which you may have experimented with. ChartFX is fine for straightforward charting. Both Graphics Server and LightLib Business are more capable than ChartFX and it's to one of these that you will turn for more serious charting requirements.

If you want to produce graphs from database tables, LightLib Business is tailored to this need and certainly makes it easy. If your graphing needs are more general, being tied to a database engine is not in my view a good move and I could not wholeheartedly recommend LightLib Business, even though it is perhaps slightly more in tune with Delphi. In the UK, the VCL Only Edition costs about £100 to £120, the Standard Edition about £139 and the Professional Edition from about £260 upwards, all plus VAT and prices vary between vendors of course.

As a general graphing package, Graphics Server is excellent, with tons of functionality and very good documentation, both printed and on-line. This would be my recommended product. The street price is about £200 plus VAT(it's worth checking that you get the most recent version).

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