



programming

BORLAND C++ BUILDER 5.0



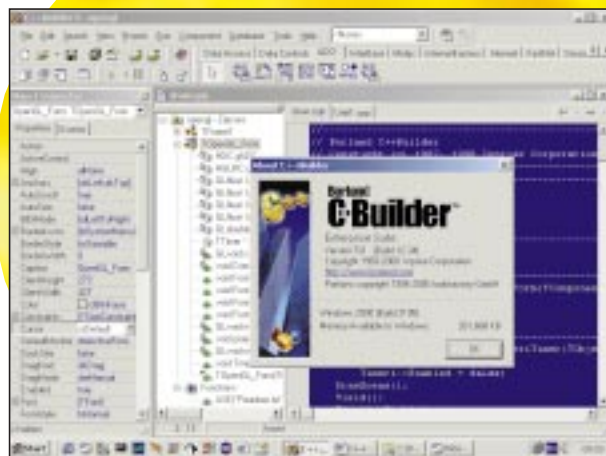
A raft of new productivity features for the world's best C++ development system

Minimum requirements Pentium 166 with 64MB RAM, Win95/98/2000/NT 4.0

Tested on Pentium III with 256MB RAM, Win2000

Extra information Professional Edition is £551 (£469 ex VAT), Enterprise is £1,809 (£1,540 ex VAT)

At first glance, C++ Builder 5.0 doesn't look markedly different from its predecessors, until you spot little clues like the revamped Object Inspector, the window layout combo-box beside the menu bar and those ADO controls beckoning seductively from the Component Palette...



■ **PRICE** From £81 ■ **EX VAT** From £69 ■ **SUPPLIER** Grey Matter Ltd ■ **PHONE** 01364 654100 ■ **WWW** www.greymatter.co.uk

In many eyes, C++ Builder 4.0 was already the world's best development system for desktop programming. With C++ Builder, you've got a super fast ANSI C++ compiler, the unsurpassed productivity of a truly visual RAD-based development tool, easy access to bucket-loads of shareware and freeware components, and – thanks to the upcoming Borland Kylix product – the tantalising possibility of cross platform portability to Linux later this year. What more could a programmer wish for?

Well, quite a bit actually. Version 5.0 consolidates the development system's already strong position with a whole slew of new goodies, many of which have a Web or database theme. C++ Builder 5.0 is actually available in three different editions (Standard, Professional and Enterprise) and the feature-set you get will obviously depend on which edition you go for. The full list of features versus product edition runs to something like six pages and, for the full picture, we'd recommend that you download the feature matrix (Adobe Acrobat format) from the Grey Matter Web site at www.greymatter.co.uk.

One of the hottest new features in Borland C++ Builder is the inclusion of ADO Express, a suite

of components which integrate with Microsoft's new ADO database access technology. One of the best things about ADO Express is that it enables you to write powerful database applications without requiring the presence of the BDE (Borland Database Engine), a technology which has acquired a reputation for being buggy and difficult to deploy. ADO support only comes with the Enterprise Edition, but it's possible to buy it as an optional add-in for the Professional Edition.

To-Do lists

Another useful item is the introduction of 'To-Do Lists', borrowed from Delphi 5. Using To-Do lists, you can easily keep track of things like bug lists, feature requests, and other supporting documentation. To-Do lists are implemented within your program source code as a special type of comment. This means that they're ignored by the compiler on the one hand, but remain closely associated with the source code in question. To-Do items have priority, owner and category fields, and once they're marked as completed, a line appears through that item.

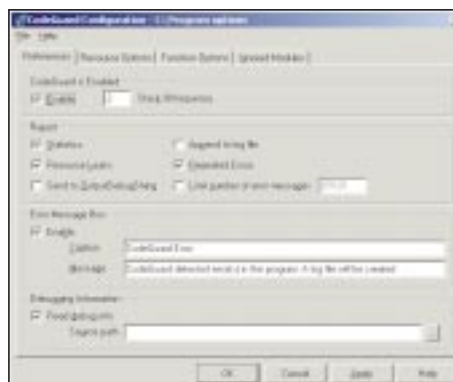
Delphi and C++ Builder always had a strong emphasis on reusability. Version 5 now includes Frames, which you can think of as almost like a mini-form within a form. Using this feature, you can place a group of components, set up their associated property settings and event handling code, encapsulating the whole thing into a frame which can be placed on the component palette and reused multiple times within the same application – or indeed used in other applications. Any time you place a frame on to a new form, changes made to the original frame at design-time are automatically reflected in each form that uses the frame. It's a powerful technique for rationalising the design of complex applications which use similar user-interface 'building blocks' in different places.

Those with very large C++ Builder projects will appreciate the new background compilation feature. This makes it possible to carry on working while the IDE builds your project in the background. In previous versions of the development system, you had to wait until the build was complete. With version 5.0, the development system marks each source file as read-only, compiles it and then marks the file as read-write again. It's a great time-saver for those who can't wait to carry on coding.

Microsoft watchers will have noticed the inclusion of a new delay-load mechanism into the software giant's development tools. Put simply, delay-loading means that you can implicitly link to a dynamic library rather than explicitly linking through the use of LoadLibrary and GetProcAddress statements. Nothing new there, you might think, except that a delay-loaded DLL isn't actually loaded into memory until the first call is made to that library. This is a crucial point because if you're writing a multi-platform application which must work under NT, Win95/98/2000, and the upcoming WinME (Millennium Edition), then you can use delay loading to greatly simplify the program code, eliminating all that messy explicit loading that would otherwise be required. Borland provides a number of extra gizmos which enable you to unload a specific DLL or get control when a particular DLL is first called.

With this release, seasoned Borland developers see the return of an old friend in the shape of CodeGuard, a run-time debugging tool which can be used to check for memory allocation errors, resource leaks, and other programming gaffs...

Speaking of Component Palettes, here's the new Servers page. As you can see, it's well stocked with automatically generated component wrappers which provide an interface to the various Microsoft Office applications.





PC Plus

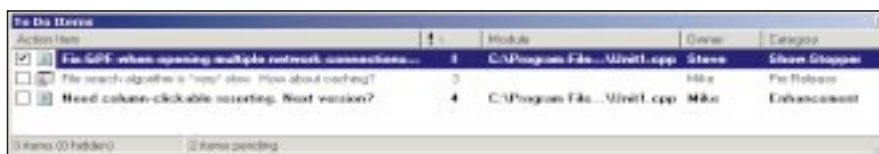
C++ Builder 5.0 sees the return of an old friend in the shape of CodeGuard. (This was formerly a part of Borland C++ before the company added RAD capabilities to its C++ compiler line.) As the name suggests, CodeGuard is a debugging tool which lurks in the background while your program is running, checking for things such as invalid file access, resource leakage, memory allocation errors and so forth. If you use CodeGuard while running your program inside the IDE, then you can view the CodeGuard analysis on a dockable output window within the IDE. On the other hand, if you run a CodeGuard-enabled application outside of the IDE, you can have the program create a log file which can be analysed later. This is useful when a troublesome application is remotely deployed at a customer's site.

Other goodies

The Project Manager has been drastically revamped, and Borland project files are now in XML format, no less. This seems to be something of a triumph of trendiness over convenience, since it's no longer possible to feed these XML-based project files directly into the MAKE command-line tool. Fortunately, there's an option to spit out a more traditional make file, but the old adage 'If it ain't broke, don't fix it' springs all too readily to mind.

Far more useful is the inclusion of a new local override mechanism in the Project Manager, enabling each node to override the globally defined project settings. In plain English, this means that you can set up different compiler settings for different source modules within the project. An especially cute feature here is the way in which locally overridden compiler options are highlighted in a user-definable colour, and can be easily 'reverted' to the project settings via a right-click context menu. Nodes, which override global settings, are visually flagged in the Project Manager window.

The Object Inspector now apes its Delphi 5 cousin by enabling properties to be grouped by category. As with Delphi 5, there is no way for the user



The new integrated To-Do list feature makes it easy to add to-do items to your project on a global basis, and also to add to-do lists to individual source items. As each item is completed, it appears with a 'strike-through' text appearance as shown here.

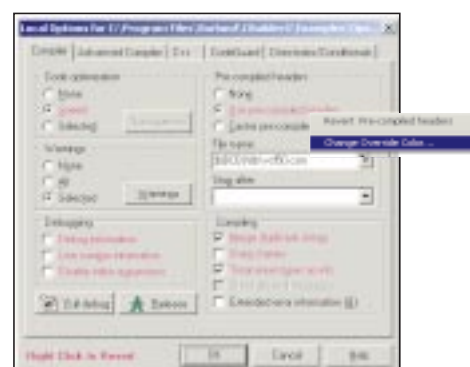


A number of new goodies have appeared on the ActiveX page of the repository dialog, including support for COM+, Microsoft's enhanced version of COM, the Component Object Model.

(by which we mean the non-component-writing developer!) to define custom property categories at the point of use, which is rather a shame. A more useful enhancement is the ability to display certain properties, visually. Thus, the standard Color and Cursor properties are now implemented as drop-down, owner draw combo boxes which visually show the available choices.

What else is new?

Other highlights include TeamSource, an 'integrated workflow management tool' (designed to enable multiple programmers to work on the same code through the use of PVCS or another version control system) and a new type library import facility which can put a VCL component wrapper around any registered COM server.



In the latest incarnation of the hierarchical Project Manager, you can locally override compiler settings for each source file. If you do so, settings which differ from the global project settings are flagged in a user-defined highlight colour.

Thus, you'll find that the C++ Builder 5.0 component palette now sports a fully populated Servers page, with components that correspond to many of the registered Office components. There's also support for Microsoft's new COM+ specification, better interoperability with the Microsoft C++ compiler, several other debugger enhancements, a jazzy new visually oriented Data Module designer. The list goes on and on...

Which version?

For the average developer, we reckon that the Professional Edition is the one to go for. The Standard Edition is probably too limited (although, remember, you really can pick up a lot of good freeware components on the Web) and the Enterprise Edition is way too expensive. Go for the Professional Edition and you can always buy ADO Express as an extra.

Dave Jewell

Version 5.0 consolidates the development system's already strong position with a whole slew of **new goodies**

WILL YOU BE UPGRADING?

New features in version 5.0, at-a-glance

- Frames for improved component/code reusability.
- Express components which don't require the BDE.
- To-Do Lists for built-in project management
- Background compilation – carry on working during long builds.
- Delay-load mechanism for writing neater, more portable programs.
- CodeGuard makes a welcome return for better debugging.
- XML-based Project Manager with new 'local override' option.
- Improved Object Inspector now groups properties by category.
- TeamSource – Integrated Workflow Management.
- Improved Type Library importing.

PC Plus

BORLAND C++ 5.0

For Remains by far the most productive C++ tool for desktop programming. Now has a stronger emphasis on Microsoft/MFC compatibility. Documentation is much better than previous versions!
Against Enterprise Edition has a very silly price tag. Easy to generate tons of massive files when using incremental linker. Still no 'do it from scratch' ActiveX control creation along the lines of the excellent Visual Basic Custom Control Creation Edition

Range of features.....	8
Ease of use	8
Documentation.....	8
Performance.....	10
Value for money (Pro Edition).....	9

9/10