Delphi 2.0 Questions & Answers
Borland International
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Windows 95 and Windows NT Compatibility

Q. Are there new 32-bit versions of Delphi and Delphi Client/Server?
A. Yes, Borland has created new 32-bit versions of Delphi known as Delphi 2.0.   Delphi 2.0 fully supports many new operating system facilities of Windows 95 and Windows NT and has even faster optimized native code performance, a broader range of object-oriented capabilities that increase code reuse and more tools for sophisticated client/server development.

Q. Does Delphi 2.0 support NT?
A. Yes.   Developers can use Delphi 2.0 on either Windows 95 or Windows NT and can create applications for either platform.   This allows developers complete flexibility in choosing the platforms on which to develop and deploy their applications.

Q. Can Delphi 2.0 create 16 bit applications?
A. Delphi 2.0 is a 32 bit product and creates applications for the 32 bit platforms Windows 95 and Windows NT. Delphi 2.0 also includes the current 16 bit versions of Delphi 1.0 for creating applications that run on Windows 3.1. Developers who do not take advantage of new 32-bit specific features can recompile their applications using the 16 bit version of Delphi.

Q. Do you still support the 16 bit version of Delphi?
A. Yes.   We believe that 16 bit and 32 bit operating systems will co-exist for the next 18 to 24 months. Therefore we continue to support both the current 16 bit products as well as new 32 bit versions.

Q. How difficult is it to migrate current Delphi applications to Delphi 2.0?
A. In most cases, developers can simply recompile their applications with the new 32 bit optimizing compiler and immediately take advantage of performance increases of up to 300-400% on Windows 95 and Windows NT.   Developers who have written low-level code that is dependent on Windows 16 bit segmented architecture, Windows 3.1 features no longer supported on Windows 95 or the underlying physical structure of data structures that have changed for 32 bits will need to change their code as necessary.   Applications that use third party components should contact vendors in order to obtain 32-bit versions.

Q. How can developers take advantage of new Windows 95 features?
A. Delphi 2.0 includes a dozen new components to support new Windows 95 specific features such as user-interface elements including rich text editing, Windows 95 style notebook tabs, progress bars, OLE controls (OCXs) and so on.   Developers can simply add these components to their applications from the component palette just as they would any other Delphi component.   In many cases, Delphi 2.0 includes automatic support for new features such as long file names, new dialogs and styles, and so on.   In addition, because Delphi 2.0 uses a native code compiler, they have immediate access to the entire Windows 95 API including facilities such as multi-threading, Unicode strings, MAPI etc.

Q. Does Delphi 2.0 have the Windows 95 logo?
A. Yes. Delphi 2.0 has passed all of the certification requirements to get the Windows 95 logo.   In addition, Delphi 2.0 makes it easy for customers to create applications to meet the requirements to get the Windows 95 logo.

Q. Does Delphi 2.0 support OLE controls (OCXs)?   What about OLE automation?
A. Yes. Delphi 2.0 fully supports OLE controls (also known as OCXs) as well as OLE automation. Developers can install OLE controls onto the palette or chose from among the OLE controls included in Delphi 2.0.   In addition, developers can use OLE automation to create or control other applications such as Microsoft Word and Excel, Lotus 1-2-3, Borland C++, Paradox and so on. Delphi's support for OLE automation is fully compatible with the forthcoming Network OLE and as well as the remote automation technology included in VB4, with the added advantage of higher performance due to Delphi's optimizing native code compiler.

Q. Does Delphi 2.0 support in-process or out-of-process OLE automation servers or both?
A. Both. Delphi 2.0 fully supports in-process and out-of-process or local OLE automation servers thereby giving developers complete flexibility.

Q. Is Delphi 2.0 compatible with Network OLE?
A. Yes.   Because Delphi 2.0 supports both OLE automation controller and servers, it is fully compatible with the forthcoming Network OLE.   In addition, it is also fully compatible with the remote automation technology included in VB 4.0 with the added advantage of faster performance due to our optimizing native code compiler.

Q. Does Delphi support other forms of application partitioning?
A. Yes.   Delphi works well with several third party transaction processing (TP) monitors including Novell Tuxedo, TransArc Encina, CICS and others.   Typically these are implemented as DLLs and can be called directly from Delphi to create high performance transaction processing applications.   In addition, Borland is a member of the Object Management Group (OMG) and is investigating other technologies to provide CORBA support in the future.

Q. Does Delphi 2.0 support multi-threading?
A. Yes.   Because Delphi is a native code compiler it can take advantage of all facilities in the Windows 95 and Windows NT APIs. Delphi 2.0 also supports thread-local storage and the Visual Component Library (VCL) includes a Thread object for creating thread-safe applications.

Product Line

Q. How many versions of the new 32 bit Delphi are there?
A. There are three versions of Delphi 2.0:
- **Delphi Desktop 2.0**   -- targeted to individual programmers
- **Delphi Developer 2.0**   -- targeted to professional LAN based developers
- **Delphi Client/Server Suite 2.0** -- targeted to professional C/S developers

Q. Why have three different versions?
A. By providing three different products we are better able to meet the needs of a broader range of developers. The features found in these configurations reflect the different needs of developers.   Delphi Desktop corresponds most closely to the current version of Delphi and is targeted to individual programmers.   Delphi Developer includes additional professional features useful in network LAN development, and Delphi Client/Server Suite adds a range of tools for corporate professionals doing client/server development.

Q. What are the major new features of Delphi Desktop 2.0?
A. The major features included in Delphi Desktop 2.0 include:
- Optimizing 32 bit native code compiler with up to 300% - 400% faster applications
- Windows 95 user interface in the Delphi environment
- Complete component suite of Windows 95 common controls

- Object-oriented, fully extensible component architecture
- Visual Form Inheritance for easy access to the power of object-oriented programming
- Form linking for visually linking data aware controls across forms
- Support for OLE controls (OCXs) and OLE automation
- Support for advanced features of Windows 95 and NT including multi-threading, MAPI and Unicode
- High performance 32-bit Borland Database Engine for dBase and Paradox tables
- Data Module Objects for complete encapsulation of business rules
- Data aware components for visually creating database applications
- Database Explorer for drag and drop database development and table modification
- Fast database filters and smart database lookup fields
- Ability to create Data Modules that encapsulate data access and business rules
- Enhanced grid control with customizable column attributes and dropdown comboboxes
- QuickReport Delphi components that allow you to easily create embedded reports
- Currency type for increased financial accuracy using BCD math
- Long strings and data structures up to 2 gigabytes in size
- More example programs and demos
- Also includes the current 16 bit version of Delphi for Windows 3.1
- Includes complete documentation with five manuals and over 1100 pages including the Language Reference Manual

Q. What are the major new features of Delphi Developer 2.0?
A. Delphi Developer 2.0 includes all of the features of Delphi Desktop 2.0 and adds the following features most sought by professionals network LAN developers:

- Object Repository support for creating shared, reusable forms and data modules

- Scaleable Data Dictionary with named attribute sets for defining and reusing extended field attributes including ranges, display masks and edit masks

- BDE low-level API support and Help files

- ODBC Support

- Over 100 components for rapid application development

- A new Multi-Object Grid for more flexible database applications

- More sample components and OCXs

- Installation/Deployment expert

- More experts

- Winsight32

- Expanded Open Tools API

- Team Development Interface (requires PVCS 5.2 or later)

- Local InterBase Server (single user) for scaleable SQL applications

- ReportSmith 3.0 32-bit version with improved integration

- New math library with over two dozen advanced statistical and financial functions

- VCL32 source code

- Eight manuals and over 3,000 pages of documentation

Q. What are the major new features of Delphi Client/Server Suite 2.0?
A. Delphi Client/Server Suite 2.0 includes all of the features of Delphi Developer 2.0 and adds the following features most sought by professionals client/server developers:

- SQL Explorer for browsing server meta data such as domains, triggers and stored procedures on any server

- SQL Monitor to assist testing and debugging and performance tuning SQL queries

- Cached Update support for more efficient transactions in a C/S environment

- New 32-bit query engine with enhanced SQL support

- Unlimited deployment of SQL Links high performance native drivers for Oracle, Sybase, SQL Server, Informix and InterBase

- InterBase NT 2 user license for building and testing multi-user SQL applications

- ReportSmith 3.0 SQL edition

- Visual Query Builder

- Data Pump Expert for rapid upsizing and application scaling

- Integrated version control using included InterSolv PVCS

- Eleven manuals and over 3,500 pages of documentation

Pricing and Availability

Q. When is Delphi 2.0 available?
A. All versions of Delphi 2.0 will be available in the first calendar quarter of 1996.

Q. Are upgrades to Delphi 2.0 be available?
A. Yes.   Borland offers special upgrade pricing for customers who have purchased Delphi for Windows 3.1. Customers who have purchased Delphi Client/Server with maintenance will receive their Delphi 2.0 update free of charge.

Q. What is the price for each product?

US Prices	**Delphi Desktop 2.0**	**Delphi Developer 2.0**	**Delphi Client/Server Suite 2.0**
New User	$499.95	$799.95	$1,999.95
Competitive Upgrade	$199.95	$299.95	
Delphi Upgrade	$149.95	$249.95	$1,699.95
Delphi C/S Upgrade			$999.95

Q. What documentation is included with Delphi 2.0?
A.   Delphi Desktop 2.0 includes complete documentation with five manuals and over 1000 pages of documentation including a Getting Started manual, User's Guide, Component Writer's Guide, Database

Developer's Guide and Object Pascal Language Reference.   Delphi Developer 2.0 and Delphi Client/Server Suite 2.0 include additional manuals.

Q. How well is Delphi selling today?
A. Delphi and Delphi Client/Server are both selling well beyond Borland's expectations.   Although we do not release sales figures, Delphi has significantly penetrated both the desktop tools and client/server development tools markets outselling PowerBuilder, SQL Windows and Visual Basic.   Delphi has won over two dozen awards including:

• BYTE Best Technology of Comdex 1994 for best development/system software

• PC Week Labs Analyst Choice Award

• PC Magazine Top Ten Selling Products

• PC Magazine Technical Excellence Award

• PC Magazine Product of the year for 1995

• PC/Computing Excellence Award

• DBMS Reader's choice award

• Visual Basic Programmer's Journal Editor's Choice

• Best of LAN Times

• Windows Tech Journal Star Tech award

• Windows Magazine Win 100 Award for Applications Development

• Ziff-Davis Cannes Software Excellence Award, Overall Technical Excellence

• Ziff-Davis Cannes Software Excellence Award, Languages and Tools

• PC Expert (France) Technical Excellence in Development Tools

• PC Expert (France) Technical Excellence in Database Applications

• PC Pro (UK) Award for Exellence

• PC User (UK) Gold Award

• PC Plus (UK) Gold Award

• PC Magazine (UK) Editors Choice

• PC Magazine (UK) Technical Innovation Awards Best Development Tool

• Personal Computer World (UK) Editors Choice Visual Development Tools

• Computer Daily News (Australia), Top Ten Selling Products

• PC World (Spain) Product of the Year for programming languages

Q. How will Borland provide strategic solutions to companies needing outside support for their client/server development?
A. In the first quarter of 1996, Borland will announce a new Premier Partner VAR program with key client/server solutions providers. This program will play an important role in helping Delphi Client/Server Suite extend its reach into corporations developing client/server systems by providing needed strategic solutions from outside sources.

Features and Technology

Q. What is the Open Tools API?   How has it been improved?
A. Delphi included an Open Tools API for integrating third party tools such as version control systems, CASE tools, experts and so on.   In Delphi 2.0, the Open Tools API has been extended to provide even greater levels of functionality for file management, editor services and so on.   This technology goes beyond the Microsoft's Source Code Control (SCC) API to provide more general integration capabilities. Borland is working with a number of third party vendors to provide better integration with leading CASE tools such as Popkin System Architect, Sybase S-Designor, CSA SilverRun, LBMS and FMI Select Tools Enterprise and others.

Q. What kind of team development support is provided in Delphi 2.0?
A. Delphi Client/Server Suite 2.0 uses the Open Tools API to provide a tightly integrated version control system and includes Intersolv PVCS technology for file management, check-in, check-out, branching and so on.   Delphi Developer 2.0 includes an interface to Intersolv PVCS but does not include the PVCS technology itself.   Because of the Open Tools API, developers can also integrate other third party version control systems such as MKS Source Integrity, Microsoft Source Safe and others.

Q. What are the advantages of a 32 bit native code compiler?
A. By using a new optimizing 32 bit native code compiler Delphi 2.0 is able to improve on its already considerable performance advantage over p-code interpreters such as Visual Basic and PowerBuilder. Currently Delphi 1.0 applications run up to 10-20 times faster than p-code interpreters.   We expect additional performance advantages in the 32 bit release.   The new optimizing 32 bit native code compiler in Delphi 2.0 uses a back end code generator that is shared with Borland C++ and includes many code optimization techniques such as register optimizations, common sub-expression elimination, induction variables and pentium instruction ordering in order to generate tighter, faster code.   Applications recompiled with Delphi 2.0 are both smaller and faster than before.   Because the new compiler has a shared backend it includes the ability to link and create OBJ files for easier code sharing between Delphi and C/C++.   In addition, the compiler now generates better error messages, as well as hints and warnings on incorrect code, such as use of uninitialized variables, ignored function return values and so on.

Q. How much faster are applications compiled with the new Delphi 2.0 compiler?
A. Benchmark tests show that code compiled with Delphi 2.0 can run from approximately 300% to nearly 400% faster than 16 bit Delphi applications.   This means that Delphi continues to expand it's performance advantage so that it is now 15-50 times faster than p-code interpreters.   For example, the Delphi 2.0 Sieve benchmark results are 15 times faster than VB 3.0 and 815 times faster than PowerBuilder 4.0.

These are benchmark results of current 16 bit version of Delphi and the new 32 bit Delphi 2.0.   All benchmark tests were performed on a Gateway 2000 V66 (66Mhz 486 processor) with 16 megabytes of memory.   The 16 bit benchmarks were performed using on Windows 3.1.   The 32 bit benchmarks were performed with a pre-release version Delphi 2.0.

Larger numbers indicate faster performance

loops / sec	PowerBuilder	Visual Basic	Delphi 1.0	Delphi 2.0
Sieve	0.22	11.95	52.77	179.37
Whetstone	0.04	1.41	4.70	15.53
File write	0.05	0.42	0.74	2.89
File read	0.05	0.33	1.75	5.28

Q. What are the advantages of the new 32 bit Borland Database Engine?
A.   The new 32 bit Borland Database Engine includes an all new query engine that has been optimized for greater performance against remote SQL servers as well as local databases.   The 32 bit Borland Database Engine takes advantage of 32 bit flat address space and raw asynchronous 32 bit I/O for faster overall performance.   It also incorporates new optimizations specific to particular servers and local database formats. For example, the 32 bit SQL Links native drivers include many optimizations for Oracle, Sybase, Informix and InterBase servers.   The new engine includes support for cached updates thereby offering improved performance in transaction intensive client/server applications without requiring resource locking on the backend.   In addition the new engine supports local transactions, a new query engine that improves scalability with ANSI SQL-92 DML compliance, and easier configuration with ODBC 2.1 drivers.   The new Borland Database Engine has Data Dictionary support for storing extended field attributes such as minimum and maximum values, edit masks, display masks etc.   Delphi also include a new 32 bit version of the Local InterBase Server to offer full scalability from the desktop to any ANSI SQL 92 server.

Q. How is ReportSmith 3.0 integrated with Delphi?
A.   The new 32 bit version of ReportSmith 3.0 offers tighter integration with the Delphi environment and is able to connect to any Delphi data source, such as a query or table, for its data.   ReportSmith supports the creation of sophisticated reports in a client/server environment and has the robustness and scalability to deal with the highest volume Client/Server applications.   Delphi 2.0 also includes QuickReport components for easy embedded reporting within Delphi applications.

Q. How does Delphi 2.0 compare to Visual Basic 4.0?
A. The new 32 bit optimizing native code compiler in Delphi 2.0 provides an even more dramatic performance advantage over the p-code interpreter found in VB 4.0.   In addition, Delphi 2.0 offers better support for operating system services on Windows 95 and NT with support for multi-threading and Unicode support in addition to OLE Controls (OCXs) and OLE automation controller and server capabilities.   In fact, Delphi 2.0 can take full advantage of the remote automation technology included in VB 4.0 with the added benefit of even faster performance.

Delphi 2.0 significantly raises the bar beyond VB not only in performance but in its more advanced database and client/server support with tools such as the Database Explorer, new data aware controls such as the Multi-Object grid, reusable Data Module objects, Object Repository and Data Dictionary support. In addition, Delphi 2.0 includes new areas of innovation such as Visual Form Inheritance which provide further productivity benefits through the use of object-oriented programming.

Delphi remains the only tool to combine the advantages of a native code optimizing compiler, visual two-way tools and scaleable database technology.   By comparison, VB 4.0 has received a very mild reaction from customers and is perceived as simply a 32 bit port of their earlier version.   VB 4.0 does not address the fundamental issues of having a native code compiler or true object-oriented capabilities.

Q. How does Delphi Client/Server Suite 2.0 compare to PowerBuilder?
A. Delphi Client/Server Suite 2.0 includes a broader range of tools than is found in PowerBuilder that are aimed at giving a professional client/server developer everything he or she needs to build high-performance, robust client/server applications.   Foremost among these tools are the SQL Explorer for browsing server meta data such as stored procedures, triggers and event alerters, the SQL Monitor for testing and debugging SQL queries, integrated team development with built-in PVCS, an expanded Open Tools API for integrating with CASE tools and a 2 user version of InterBase for NT for creating and testing multi-user SQL applications.   In addition, the new Borland Database Engine's support for cached updates makes it significantly easier to create workgroup client/server applications that offer high

performance and robustness in a high-transaction multi-user environment.   Delphi Client/Server Suite 2.0 remains the only tool that combines a native code compiler, visual two-way tools and scaleable database technology with high-performance native SQL drivers.

Although PowerSoft has announced plans to incorporate a C code generator and the ability to compile the C code in mid 1996, it will not offer the fast turnaround time, ease of debugging or integration of Delphi, which is based on 10 years of leading edge native code compiler technology.

InterBase

Q. What is the InterBase Server?
A. InterBase is Borland's high performance cross platform SQL Server.   InterBase is available on over 15 operating systems, including: Windows 3.1, Windows 95, Windows NT, NetWare, SCO, Sun OS, Sun Solaris, HP-UX, IBM AIX, SGI IRIX, and many other Unix platforms.

Q. What is Local InterBase?
A. . A single user version of InterBase is included in Delphi Developer 2.0 and Delphi Client/Server Suite 2.0.   Local InterBase provides Delphi developers with their own ANSI 92 SQL conformant server for prototyping and development of true client/server applications.   Local InterBase has all of the same functionality as the multi-user versions of InterBase available for NT and Unix, including transaction control, stored procedures, triggers, and event alerters which will notify a user of the occurence of a pre-defined event without taxing the network with polling..

Local InterBase provides Delphi developers with the ability to build and test true client/server applications on just one machine.   This means that development can occur on a laptop while traveling or at a customer site, and that the ultimate database to be used can be changed when the application is ready to be deployed.   Unlike other servers, InterBase has the exact same API across all 15 platforms, so whatever a Delphi developer creates using Local InterBase works with all Unix and NT versions of InterBase Server without any modification.

Q. Have any enhancements been made to the new 32 bit version of Local InterBase?
A. Yes, the new 32 bit version of Local InterBase offers superior performance to the 16 bit version.   It also offers an exceptional Windows 95 GUI interface including configurable property sheets, native 32 bit tools like the Server Manager and Interactive SQL tools, and the complete on-line Help.

Q. How do Delphi developers deploy solutions written in Delphi using InterBase?
A. Using Delphi Client/Server Suite 2.0, developers can design, prototype, and test their Delphi/InterBase applications on one machine.   Once the application is ready for deployment, the developer simply purchases the version of InterBase required by their customer and the required number of user licenses for the server.   The database the developer designed is simply restored at the customer's location once the server software is installed, and the application is ready for production.   InterBase database functionality is identical across all versions of Windows 95, NT and Unix, so the application will behave identically without modification no matter where it is deployed.   In addition, Delphi Developer 2.0 and Delphi Client/Server Suite 2.0 both include InstallShield Express for the easy creation of install programs.

Q. How does InterBase compare to Watcom SQL?
A. InterBase and Watcom SQL share many common features, including stored procedures, triggers, and full transaction control.   However, InterBase is ANSI SQL 92 conformant, supports server events for event driven programming, and an exceptional concurrency model for multi-user access.   Watcom is not

ANSI 92 conformant, does not have support for server events, and has an entirely different database engine than Sybase. Similarly, InterBase is scaleable from 16 bit Windows to Unix operating systems and has the exact same programming interface [API] across all platforms. Watcom has no Unix versions, and has a different API than all versions of Sybase. Therefore, if a developer writes to the Watcom API when developing a Windows 3.1, Windows 95, or NT solution, they must rewrite the application if they wish to scale it up to high performance servers on Unix. InterBase provides a truly portable and scaleable solution for client / server developers who wish to write their application once, and know that it will work no matter what hardware platforms their customer employs for the server. Finally, unlike Sybase System 11 page locking, InterBase offers record level locking due to its Multigenerational Architecture, delivering superior performance because database read operations do not block database write operations.

Q. How should a Delphi developer chose between using a SQL RDBMS like InterBase instead of a PC LAN database format like dBase or Paradox?
A. For smaller applications, say less than 12 concurrent users, using a PC LAN database file server architecture such as dBase or Paradox file formats for your Delphi applications will deliver tremendous performance. PC LAN file server database applications also work well when the application is not mission critical, and good backups of the data exist. SQL RDBMS, like InterBase, come to play when more than 10 users are hitting important data and the customer requires high performance in multi-user scenarios, complete reliability, and high security. Writing client / server applications also enables the developer to handle large amounts of data (20MB - 20 GB) that would otherwise cause a file server application to be slow due to locking contention and network traffic. Similarly, when databases grow to this size, the data within them is often so valuable that the company using them is crippled when the data is unavailable or accidentally corrupted. SQL servers like InterBase ensure that data is always available due to their excellent multi-user performance, high security, and fast recovery features.

Q. What types of customers use InterBase, and why?
The largest InterBase customer today is the United States Army. The Army has written an InterBase application for their field artillery groups, and has a site license to deploy InterBase world wide. The Army's application is the definition of "mission critical" because lives are on the line, and the artillery information in the database lets commanders make informed and rapid decisions. InterBase is also used in the aeronautical industries by companies like Boeing and Lockheed for manufacturing, by the Money Store and many other banking institutions, and in financial trading centers like the Philadelphia, Boston, and Russian Stock Exchanges. The common thread among all these customers is the need for excellent multi-user performance, high security, and fast recovery when system failures occur.