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MARCO  
CANTÙ  
DELPHI  
2009  
HANDBOOK

**Marco Cantù**

**Delphi 2009  
Handbook**

Piacenza, Italy, November 2008

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Printed copies of this book are on sale on <http://www.lulu.com>

More information on <http://www.marcocantu.com/dh2009>

# Preface

*To my wife Lella, with love, encouragement,  
passion, dedication, and patience*

This is a book about CodeGear Delphi 2009.

You won't find an introduction to Delphi programming, its Object Pascal language or its Visual Component Library in it. In this book you can read only about *new features of Delphi 2009 for Win32* in each of these areas.

The book covers Delphi 2009 Unicode support, the new language features (such as generics and anonymous methods), the improvements of the IDE, the new classes of the Run Time Library, the new components of the VCL (including the Ribbon control), and the extensions to the database architecture and the DataSnap multi-tier technology.

As usual for my books, I'm covering the theory but also showing you dozens of examples, you can download and play with on your computer. If you still don't own Delphi 2009, you can download the trial version and also look at the actual programs in action in a series of videos linked from the web page:

■ <http://www.marcocantu.com/dh2009/videos.html>

## 4 - Preface

This book is a sequel to Delphi 2007 Handbook, as it doesn't repeat its content at all. If you are interested in new features of Delphi 2009 since Delphi 7 (or a similar old version), you can buy both of my Handbooks.

If you are looking for an introduction to Delphi, instead, you can refer to my “Essential Pascal” for the language foundations and to the books in “Mastering Delphi” series (in particular either “Mastering Delphi 7” or “Mastering Delphi 2005”). While my recent Handbooks and “Essential Pascal” are available on Lulu.com, the Mastering series was published in a more traditional way and can be found in physical or online bookstores.

You can find more details about all of my books at my personal website:

|| <http://www.marcocantu.com>

As usual, writing this book was quite an effort, and I have to thank many developers from the Delphi community who supported me in various ways, starting with the tech reviewers and Delphi product managers and R&D team members. A big thank you goes to my wife and kids for their patience and encouragement.

I hope you enjoy the result, like I've enjoyed writing it. And I hope you like Delphi 2009, one of the best versions of Delphi ever, as I did.

# Table Of Contents

<b>Preface</b> .....	<b>3</b>
<b>Introduction</b> .....	<b>13</b>
The Status of Delphi.....	14
Why Win32 Matters.....	14
This Book.....	15
The Author.....	16
Contact Information.....	17
<b>Part I:</b>	
<b>Unicode</b> .....	<b>19</b>
<b>Chapter 1: What is Unicode?</b> .....	<b>21</b>
Characters from the Past: from ASCII to ISO Encodings.....	22
Unicode: An Alphabet for the Entire World.....	24
From Code Points to Bytes.....	27
Unicode Code Points and Graphemes.....	27

## 6 - Table of Contents

Unicode Transformation Formats (UTF).....	28
Looking at UTF-16 .....	29
Unicode Code Point Descriptions.....	32
Byte Order Mark.....	34
Unicode in Win32.....	34
Unicode API Call Speed.....	37
UnicodeString Parameters in API calls.....	38
Unicode and Fonts and APIs.....	39
Unicode Before Delphi 2009.....	41
What's Next.....	41
<b>Chapter 2: The Unicode String Type.....</b>	<b>43</b>
From AnsiChar to WideChar.....	44
Char as an Ordinal Type.....	44
Converting with Chr.....	46
32-bit Characters.....	46
The New Character Unit.....	47
Of String and UnicodeString.....	49
The Internal Structure of Strings.....	50
UnicodeString and Unicode.....	52
The UCS4String type.....	54
The Many String Types.....	54
The New AnsiString Type.....	55
Creating a Custom String Type.....	56
Managing UTF-8 Strings.....	60
Converting Strings.....	61
Conversions Slow Down the Code.....	62
The Ensure Calls.....	64
Watch Out for Literals in Concatenation.....	65
Using RawByteString.....	66
New UTF-8 Conversion Functions.....	70
String and Character Literals.....	70
Streams and Encodings.....	72
Streaming Strings Lists.....	73
Defining a Custom Encoding.....	76
Unicode and the VCL.....	79
A Growing Core RTL?.....	80
Unicode in DFM Files.....	80
Localizing the VCL.....	81
What's Next.....	82
<b>Chapter 3: Porting to Unicode.....</b>	<b>83</b>
Char Operations That Fail.....	84
Watch Out for Set of Char.....	84
Avoid FillChar for Characters.....	86

## Table of Contents - 7

String Operations That Fail or Slow Down.....	87
Turn on All String Conversion Warnings.....	88
Don't Move String Data.....	89
Reading and Writing Buffers.....	91
Appending and Concatenating Strings.....	92
Strings are... Strings (not Bookmarks).....	93
Actual Troublesome “Porting” Cases.....	93
InliningTest used AnsiString.....	94
Calling Ansi-prefixed Functions.....	95
Unicode Strings and Win32.....	97
Win32 Console Applications.....	98
PChar and Pointer Math.....	99
The Problem with PChar.....	100
From PChar to PByte.....	101
PInteger and the POINTERMATH Directive.....	102
Don't use PChar for Pointer Math.....	103
Variants and Open Arrays Parameters.....	103
What's Next.....	104

### Part II:

<b>Delphi 2009 and Its Compiler.....</b>	<b>105</b>
--	------------

### **Chapter 4: New IDE Features.....107**

Installing and Running.....	108
.NET SDK Not Needed.....	108
Windows Install Clean Up.....	109
The -idecaption Flag.....	109
Managing Delphi Projects.....	110
Upgrading Project Configuration Files.....	110
Project Options Dialog Redesigned.....	113
New Project Options for the Compiler.....	114
Other New Project Options.....	116
Default Projects Location.....	116
The Project Manager.....	117
Project Manager Views.....	118
Build Configurations and Configuration Settings.....	119
Project Configuration Manager.....	122
Managing Resources in the IDE.....	123
A “New” Resource Compiler.....	126
The Delphi Class Explorer.....	127
Other New Features.....	129
Tool Palette Search Box.....	130
Updated Components Wizards.....	131



## 8 - Table of Contents

Anything New in the Editor?.....	132
Debugger.....	133
Debugging and New Language Features.....	134
What's Next.....	134
<b>Chapter 5: Generics.....</b>	<b>135</b>
Generic Key-Value Pairs.....	136
Type Rules on Generics.....	139
Generics in Delphi.....	140
Generic Types Compatibility Rules.....	141
Generic Global Functions (Well, Almost).....	143
Generic Type Instantiation.....	144
Generic Type Functions.....	145
Generic Constraints.....	148
Class Constraints.....	149
Specific Class Constraints.....	151
Interface Constraints.....	151
Interface References vs. Generic Interface Constraints.....	154
Default Constructor Constraint.....	155
Generic Constraints Summary and Combining Them.....	156
Predefined Generic Containers.....	157
Using TList<T>.....	158
Sorting a TList<T>.....	159
Sorting with an Anonymous Method.....	161
Object Containers.....	163
Using a Generic Dictionary.....	164
Generic Interfaces.....	167
Predefined Generic Interfaces.....	170
Smart Pointers in Delphi.....	171
What's Next.....	176
<b>Chapter 6: Anonymous Methods.....</b>	<b>177</b>
Syntax and Semantic of Anonymous Methods.....	178
An Anonymous Method Variable.....	179
An Anonymous Method Parameter.....	179
Using Local Variables.....	180
Extending the Lifetime of Local Variables.....	181
More on Anonymous Methods.....	183
The (Potentially) Missing Parenthesis.....	183
Behind Anonymous Methods.....	185
Ready To Use Reference Types.....	186
Anonymous Methods in the Real World.....	187
Anonymous Event Handlers.....	188
Timing Anonymous Methods.....	190
Thread Synchronization with the VCL.....	193

## Table of Contents - 9

Parallel For Loop.....	196
AJAX in Delphi.....	200
Debating the AJAX Demo.....	204
What's Next.....	206
<b>Chapter 7: More Language and RTL Changes.....</b>	<b>207</b>
Other New Language Features.....	208
Compiler Version.....	208
A Commented Deprecated Directive.....	209
Exit with a Value.....	210
Setting Properties by Reference.....	211
Changes in Overloading .....	212
Code That Triggers a Compiler Error.....	213
Code That Calls a Different Method.....	214
New and Aliased Integral Types.....	214
TObject's New Methods.....	216
The ToString Method.....	216
The Equals Method.....	217
The GetHashCode Method.....	217
The UnitName Method.....	218
Porting an Example from .NET.....	218
TObject Class Summary.....	221
Unicode and Class Names.....	222
Changes in Threading Support.....	223
Building Strings.....	226
Methods Chaining in StringBuilder.....	228
The Speed of Building Strings.....	229
Porting a Delphi for .NET Example.....	231
Using Readers and Writers.....	232
Exception(al) Enhancements.....	236
The InnerException Mechanism.....	237
Preprocessing Exceptions.....	241
New Exception Classes.....	242
Summary of New Units and New RTL Classes.....	243
More and Less FastCode.....	244
What's Next.....	244
<b>Part III:</b>	
<b>VCL and Databases.....</b>	<b>245</b>
<b>Chapter 8: VCL Improvements.....</b>	<b>247</b>
VCL Core Improvements.....	248
Custom Hints and Balloon Hints.....	248

## 10 - Table of Contents

Enhancements to Standard Components.....	251
Buttons Get New Features.....	251
Glowing Labels and LinkLabels.....	254
RadioGroup Text Wrapping.....	255
Edits Get Many New Features.....	256
ComboBoxes and Text Hints.....	259
The New ButtonedEdit Control.....	259
Updates to Common Controls.....	262
Grouping in a ListView.....	262
Marquee and More for ProgressBar Controls.....	265
Check Boxes in a Header.....	266
RichEdit 2.0.....	267
Native VCL Components.....	269
The Action Manager Components.....	269
About Panels.....	269
The New CategoryPanelGroup Control.....	270
TrayIcon Update.....	273
Default Fonts for Application and Screen Global Objects.....	274
Improved Graphics Support.....	276
The Clipboard and Unicode.....	280
Extended Vista Support.....	281
What's Next.....	282
<b>Chapter 9: COM Support in Delphi 2009.....</b>	<b>283</b>
IDL, Type Libraries, and RIDL.....	284
A Textual RIDL.....	285
The RIDL Format (COM Servers).....	286
Registering and Calling the Server.....	290
The New Registered Type Libraries Pane.....	291
COM and Unicode.....	293
Returning Features: Active Forms.....	294
What's Next.....	297
<b>Chapter 10: The Ribbon.....</b>	<b>299</b>
Introducing the Fluent User Interface.....	300
The Legal Side of the Ribbon.....	301
A First Simple Ribbon.....	301
Actions and The Ribbon.....	304
From Events to Actions.....	305
The ActionList and ActionManager Components.....	306
Actions and Ribbon in Practice.....	307
Groups And Commands.....	308
Application Menu.....	310
Quick Access Toolbar.....	313
Supporting Key Tips.....	313

## Table of Contents - 11

The Ribbon Components.....	315
Ribbons for Database Applications.....	319
Using Screen Tips.....	323
Screen Tips with No Ribbon.....	323
Screen Tips Manager and Actions.....	325
What's Next.....	328
<b>Chapter 11: Datasets and dbExpress.....</b>	<b>329</b>
A Unicode ClientDataSet.....	330
Unicode in Datasets, Take 2.....	332
Unicode String Lists.....	333
Bookmarks.....	334
Field Types and Strings.....	335
Other Dataset Enhancements.....	336
New Field Types.....	336
A More Virtual Dataset.....	337
Fields Extensions.....	341
BLOB fields Considered ANSI.....	343
Parameters Extensions.....	344
DataSet Internals.....	344
Porting a (Simple) Custom Dataset.....	345
dbExpress in Delphi 2009.....	346
Connection Settings and Connection Strings.....	347
Setting Driver Properties and Delegate Drivers.....	349
Deployment and INI files.....	350
Drivers in the Executable.....	351
Extended Metadata Support.....	352
Data Pumping for dbExpress.....	356
Data-Aware Controls.....	357
From DBImage to Poor Old DBGrid.....	359
What's Next.....	359
<b>Chapter 12: DataSnap 2009.....</b>	<b>361</b>
Building a First DataSnap 2009 Demo.....	362
Building a Server.....	362
The First Client.....	364
From DataSnap to DataSnap 2009.....	365
Adding Server Methods.....	366
Sessions and Threading with a Non-Database DataSnap Server.....	370
Server Objects Life Cycle.....	373
A Client Starting the Server and Opening Multiple Connections.....	374
Memory Management.....	377
Thread Management.....	378
Porting an Old DataSnap Demo.....	381
Porting the Server.....	381

## **12 - Table of Contents**

Upgrading the Client.....	382
Advanced Features of ThinPlus2009.....	383
The DataSnap Administrative Interface.....	387
Conclusion.....	390
<b>Index.....</b>	<b>391</b>

# Introduction

First introduced by Borland on February 14<sup>th</sup> 1995, Delphi has a long and glorious history of success in the Windows development and client/server areas. With millions of applications written in its Object Pascal language, Delphi spawned an entire ecosystem of components, tools, magazines, books, and (of course) web sites and online resources.

Delphi is now in its 12<sup>th</sup> version, the 20<sup>th</sup> if you count all the way back to its predecessor Turbo Pascal<sup>1</sup>, which was first released 25 years ago. What's new in this version of Delphi is the company owning the product!

With the acquisition of the CodeGear division of Borland on July 1<sup>st</sup>, 2008, Delphi became a subsidiary of Embarcadero Technologies. This change of ownership happened quite late in the Delphi 2009 development cycle, so the only practical effect of the change is the inclusion of ER/Studio in the Architect version of the product. Since the start of the CodeGear division within Borland, though, there has been a renewed focus (and investment in terms of R&D, QA, and Docs) on Delphi, specifically in its Win32 version. That's why it is relevant to focus for a second on some higher-level *political* issues.

---

1 The current version of the Delphi compiler, in fact, is 20.00. This is highlighted by the value of the VER200 define, mentioned in the section "Compiler Version" at the beginning of Chapter 7.

# The Status of Delphi

As I've just mentioned, the creation of the CodeGear division and then the acquisition of that division by Embarcadero Technology is providing a new foundation for Delphi, and new funding for investing in the product. Even if not aggressively marketed, and out of the radar of most publications Delphi still has millions of active users, both in the ISV sector (where its deployment simplicity wins over frameworks-based solutions) and in business client/server environments, where the stability of an investment is worth more than the *coolness* of the platform.

It is true that the Delphi community is smaller than it was a few years back, and that part of it sticks with older versions of the product, but it is certainly still lively in many countries and has actually got back into a nice mood over the last year.

## Why Win32 Matters

If you read most of the IT press, follow blogs, or attend to conferences, it looks that only the latest technology (and the latest fad) are worth working on and everything else is either dead or dying away. This is far from true.

From COBOL development to mainframes, from AS/400 computers to DBF databases, there is a ton of legacy technology that's not only maintained but sees significant new investment. It might be for compatibility reasons, but it is also because companies prefer having a proven and reliable technology for their core business rather than risking their business over the most-recently hyped technology.

This doesn't mean, of course, that following trends, providing higher quality, and empowering users is not important. Quite the opposite. If you can keep delivering additional value on a solid foundation, you have a win-win situation. Looking at the Windows side of things, for example, Microsoft has certainly created a lot of value with its growing set of libraries and architectures based on the solid foundation of the .NET framework. On the other hand it is true that, despite the robustness and stability of the core, targeting the latest and best .NET technologies is like focusing on a fast moving target, which is not exactly the best thing when you need to build your

client/server application that will take a couple of years to create and you hope will last at least for the next ten years or so.

The other extreme is that of Micro ISV, small tools vendors, shareware developers, Internet utility builders. They are in the situation of short life span products and could certainly benefit for staying on the edge... but even they cannot rely on a large and even changing framework for deploying their applications. They need something that works on each and every Windows box out there. This is a situation in which Delphi shines in comparison to most other solutions. The only real exception is Visual C++, but (if you've never tried to do so) developing in it is not a RAD and OOP experience like .NET and VCL development are.

Visual C++ MFC library is only a thin layer on top of the Windows API, while Delphi provides what has been called a platform, with memory management and runtime services, a pretty large class library with lots of insight into user interface creation, Internet support, and database connectivity, to name only the most noticeable areas of the product.

Delphi does such a good job of producing native looking Windows applications such as Skype that there is rarely any visible sign that an application has been developed with Delphi.

## **This Book**

Having introduced the status of Delphi, it is about time to talk about this book. Like my recent "Delphi 2007 Handbook" this is not an all encompassing manual covering all of the features of Delphi, as this would probably require close to 4,000 pages<sup>2</sup>.

Despite its size, the focus of this book is uniquely on new features found in Delphi 2009, or at least added to Delphi since Delphi 2007 was released (as BlackFish SQL and some of the dbExpress metadata extensions were included in Delphi 2007 updates).

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2 This figure (4,000 pages) is my estimate of the amount of material I've written in books about Delphi over the last 13 years. That is, without considering chapters that were included in subsequent editions of my Mastering Delphi series.



## 16 - Introduction

Needless to say I've given a central role to Unicode and to the core language changes (like generics and anonymous methods), but there is also material on updates to the RTL and the VCL, the improved support for Vista, the latest user interface controls, and an in-depth analysis of the improved dbExpress and new DataSnap 2009 multi-tier capabilities of the product.

As in my past books, there is a lot of theory and overview material mixed with countless examples, readily available online at:

▮ <http://www.marcocantu.com/dh2009>

As I mentioned in the “Preface”, I've also created short demonstration videos (covering how the program works, not how it was written) for most of the examples in the book, available online and listed at:

▮ <http://www.marcocantu.com/dh2009/videos.html>

Having published this book through Lulu.com, I could shape it the way I like most, get the help of editors and reviewers I trust, and (hopefully) make it more valuable for you while keeping the price lower than through a traditional channel. When I published “Delphi 2007 Handbook”, it was my first experience of publishing via Lulu.com. Now I've learned from mistakes, streamlined some operations, and have reduced some of the publishing headaches to fully focus on writing for quite some time. I hope you find this effort valuable!

## The Author

For those of you new to my books, and for those who haven't read a recent one, my name is Marco Cantù, and I've been in the “Delphi book writing” business since the first version of the product, when I released the original “Mastering Delphi” (a hefty tome of 1,500 pages). This was not my first writing experience, as I had previously written works on Borland C++ and the Object Windows Library.

Over the last few years, beside my continuous involvement in the Delphi community, I've also devoted a lot of time to XML-related technologies and XSLT, with web services (including SOAP and REST implementations), JavaScript and AJAX, and other Web 2.0 technologies. After a break, I got back to writing by self-publishing my books, not only on Delphi, as I ended up also with a volume on social networks.

**Marco Cantù, Delphi 2009 Handbook**

Beside writing, I keep myself busy with consulting (mostly on applications architectures), helping selling Delphi in Italy, doing code reviews, Delphi mentoring, and general consulting for developers.

I'm also a frequent speaker at Delphi and general developer conferences, including the new online CodeGear conferences. If you are interested in inviting me to speak at a public event or give a training session (on Delphi 2009 or any advanced subject) at your company location, feel free to send me a note over email.

## **Contact Information**

Finally, here is some contact information, with my main web sites (my blog, my not-so-up-do-date personal site, my company site):

- | <http://blog.marcocantu.com>
- | <http://www.marcocantu.com>
- | <http://www.wintech-italia.com>

My personal web site hosts a specific page devoted to the book, including updates, source code downloads, and other information:

- | <http://www.marcocantu.com/dh2009>

I have an online mailing list based on a Google group you can sign up from my web site. I also run an online newsgroup with a section devoted to discuss my books and their content, available on the web (in the section called “marco cantu”) at:

- | <http://delphi.newswhat.com>

Finally, feel free to drop me an email at my public address:

- | [marco.cantu@gmail.com](mailto:marco.cantu@gmail.com)

## **18 - Introduction**

# Part I: Unicode

The first part of this book focuses on Unicode, the international character encoding standard that Delphi 2009 supports for the first time. The three chapters in this part introduce the topic, describe the actual implementation, and address porting and compatibility issues, respectively.

- **Chapter 1: What is Unicode?**
- **Chapter 2: The Unicode String Type**
- **Chapter 3: Porting to Unicode**