Tech Note

embarcadero

The Impact of 64-bit Applications to your Company's Bottom Line

Moving your Applications to 64-bit with no added expense using Delphi XE2

November 2011

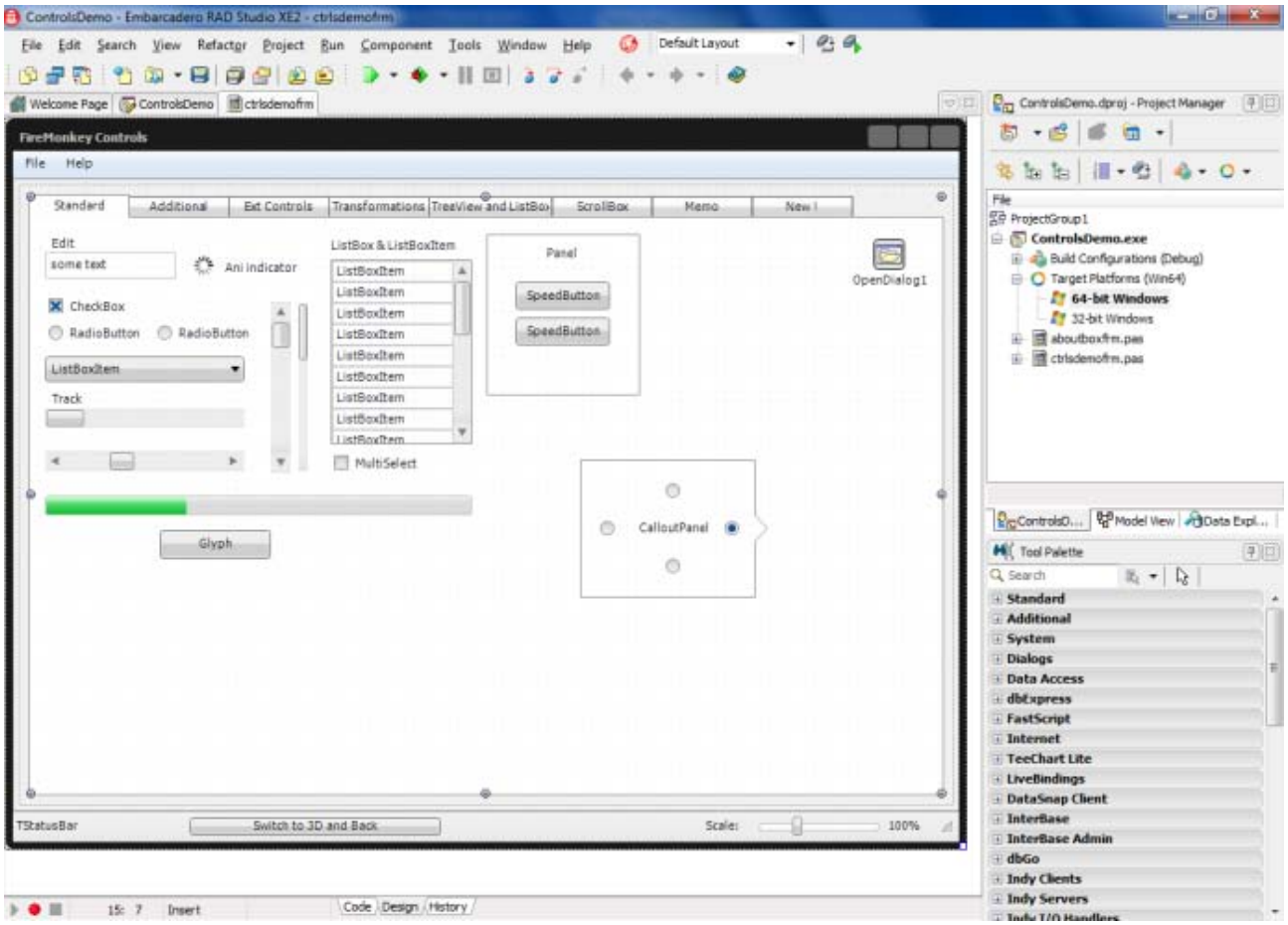
Americas Headquarters
100 California Street, 12th Floor
San Francisco, California 94111

EMEA Headquarters
York House
18 York Road
Maidenhead, Berkshire
SL6 1SF, United Kingdom

Asia-Pacific Headquarters
L7. 313 La Trobe Street
Melbourne VIC 3000
Australia

INTRODUCTION

Developing 64-bit applications has become increasingly more important in the last couple of years as it has presented a viable business opportunity to both ISVs and enterprise developers alike for expanding their market reach and increasing company revenue. When looking at the importance of developing 64-bit applications today, it makes sense to take a step back and look at the history of 64-bit and how processors have evolved over the years.



HISTORY OF 64-BIT

Going back to the 1960s and 70s, 8-bit and 16-bit mini computers were prevalent in the industry. During the late 1980s, with the increased demand for supporting applications with large data, users started to run out of address space on 16-bit systems. This resulted in the appearance of 32-bit systems for desktop and laptop computers in the 1990s. Also, in the 1990s, 64-bit processors for servers were introduced but mainly used for UNIX and database servers at the time. Starting in the early 2000s, notebooks and desktop PCs began to ship with 64-bit CPUs. However, back then, many applications existed as 32-bit versions only, which meant that most users continued to use 32-bit applications on their 64-bit machines.

In 2009, Microsoft released Windows Server 2008 R2 and announced that from that version on, Windows Server would only run on 64-bit processors. Fast forward to now. Within the last couple of years, 64-bit computers have become the norm and it is estimated that within the next few years, most corporate Windows computers will be 64-bit only as companies need more powerful machines with memory requirements beyond 4 GB RAM.

IMPORTANCE OF DELPHI AND 64-BIT

OVERVIEW

Today's applications are richer than ever before. Whether you're developing a consumer application or business application, you are likely working with large amounts of data, accessing videos, large images and more. Having more memory for increased data sizes allows you to do more with your applications and work faster. Also, with 64-bit, more 64-bit subsystems and interfaces are provided and developers need 64-bit programming tools to access those subsystems.

ISV	ENTERPRISE
Sell more software and provide more flexibility for your customers	Support the growing 64-bit upgrade initiatives among corporations
Accelerate upgrades of your software	Create more powerful enterprise level applications
Stay competitive in the industry and beat the competition	Build applications that allow users to fully leverage the power and capabilities of 64-bit machines

Delphi XE2 enables developers to take their existing 32-bit VCL applications and build them as a 64-bit application simply by selecting 64-bit as the target platform. In addition, if you are running on a 64-bit only Windows server, such as Windows Server 2008 R2 or later and want to build web applications, web services, DataSnap servers or user defined functions for 64-bit databases, you can use Delphi to achieve that very quickly. Now, with Delphi XE2, you can create 64-bit Windows applications that take advantage of the latest hardware, access more memory, and push the envelope of performance while meeting the demands of your customers looking for 64-bit applications.

ISVs

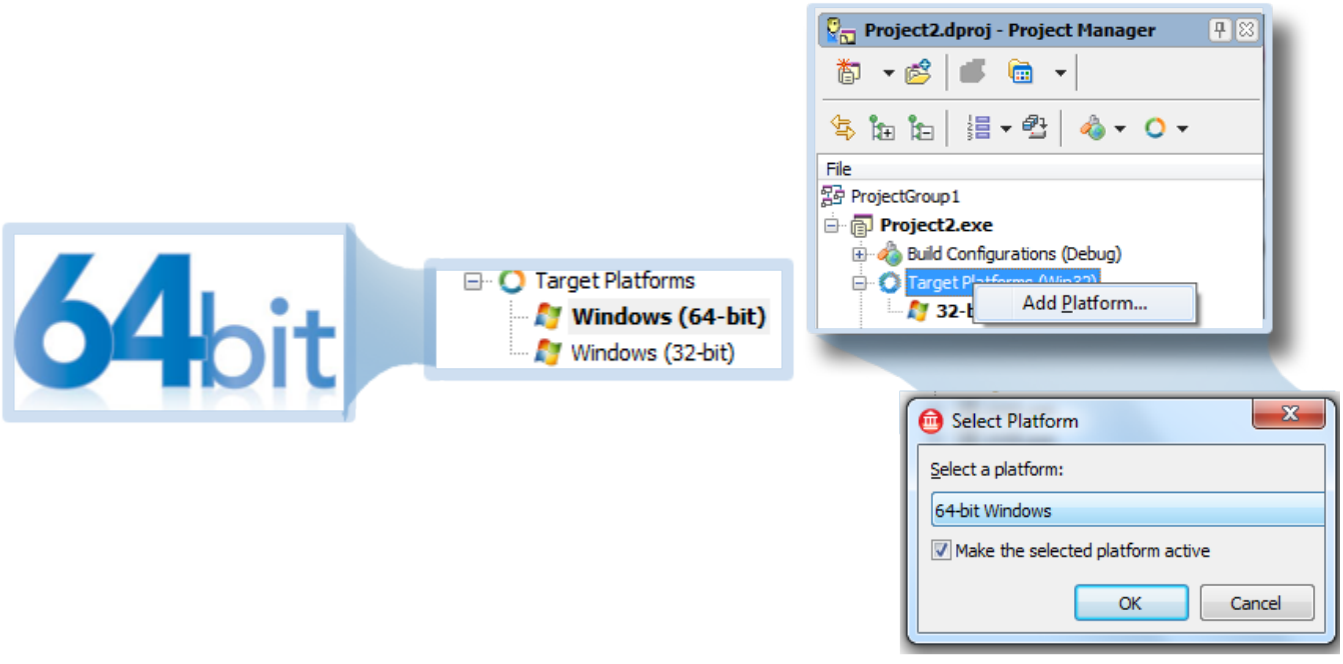
If you develop packaged software, having 64-bit versions of your software available helps you stay competitive in the industry. An increasing percentage computers sold today have 64-bit processors. More and more ISVs are building 64-bit applications to allow their end users to take advantage of the benefits of 64-bit, and customers often look for applications that are available as both 32-bit and 64-bit applications. Offering both 32-bit and 64-bit versions of your applications provides increased flexibility for your customers and helps

you sell more. In addition, by offering 64-bit versions of your software you can accelerate upgrades of your software as you're able to reach customers who are looking for 64-bit versions to leverage all of 64-bit's capabilities. 64-bit support drives upgrade business by enhancing all of your product's features and capabilities. With Delphi XE2, adding support for 64-bit does not result in any added cost for your company. You simply select 64-bit as the target platform and build and deploy.

ENTERPRISE DEVELOPERS

If your company has a 64-bit initiative, you are able to address the needs of your internal personnel by developing applications that allow your company to stay more competitive. Whether you are using 64-bit desktops or servers, developing 64-bit versions of your in-house applications allows users to fully leverage the power and capabilities of 64-bit machines to get the job done faster. Developing 64-bit enterprise applications with Delphi XE2 allows you to address the growing corporate 64-bit upgrade initiatives. Industry stats predict that that 64-bit OS upgrades are one of the top budgeted IT initiatives in the next two years*, and companies have shown to purchase more software upgrades during budgeted OS upgrade initiatives than any other time.

**Per a Gartner report referenced by DailyTech.com*



DELPHI & 64-BIT TECHNOLOGY

All Windows technologies in Delphi are 64-bit enabled, including FireMonkey, VCL, RTL, the Delphi compiler and debugger, streamlining the migration of existing VCL applications to 64-bit.

- Same programming language
  - Leverage your existing Delphi programming skills to create 64-bit applications from your existing 32-bit VCL application using Delphi or create new 64-bit FireMonkey applications
- Same FireMonkey
  - Same business application platform for developing 32-bit and 64-bit FireMonkey applications
- Same VCL
  - Build 64-bit versions of your existing 32-bit VCL application simply by changing the target platform
- Same dbExpress & DataSnap
  - Develop the same for both
- Same RTL
  - Same for 32-bit and 64-bit applications
- Same Windows API
  - Same for 32-bit and 64-bit applications

SUMMARY

With Delphi XE2, you can create data rich business applications using FireMonkey or VCL for both 32-bit and 64-bit. Simply select 64-bit as the target platform to compile your existing application as a 64-bit application. With Delphi XE2, you can create more powerful applications for your end users and address the growing 64-bit OS upgrade initiatives in companies today.

Build your application once in Delphi XE2, and target either 32-bit or 64-bit platforms with no additional cost or effort.

RESOURCES

- Bob Swart Delphi 64-bit blog post
  - http://www.drbob42.com/examines/examinD7.htm
- Microsoft on 64-bit Windows programming
  - http://msdn.microsoft.com/en-us/magazine/cc300794.aspx
  - http://msdn.microsoft.com/en-us/library/7kcdt6fy.aspx
- The Long Road to 64-bits – ACM Queue Magazine
  - http://queue.acm.org/detail.cfm?id=1165766

Embarcadero Technologies, Inc. is the leading provider of software tools that empower application developers and data management professionals to design, build, and run applications and databases more efficiently in heterogeneous IT environments. Over 90 of the Fortune 100 and an active community of more than three million users worldwide rely on Embarcadero's award-winning products to optimize costs, streamline compliance, and accelerate development and innovation. Founded in 1993, Embarcadero is headquartered in San Francisco with offices located around the world. Embarcadero is online at www.embarcadero.com.