

ELEVATE 2017

Migrating to 64 bit

Bruce Armstrong



DISCLAIMER

This presentation was authored by volunteer(s) in the Appeon community. This is not a work for hire by Appeon. The views and opinions expressed in this presentation are those of the author(s).

Its contents are protected by US copyright law and may not be reproduced, distributed, transmitted, displayed, published or broadcast without the prior written permission of Appeon. All rights belong to their respective owners.

Any reference to third-party materials, including but not limited to Websites, content, services, or software, has not been reviewed or endorsed by Appeon. YOUR USE OF THIRD-PARTY MATERIALS SHALL BE AT YOUR OWN RISK.

Appeon makes no warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. Appeon assumes no responsibility for errors or omissions.

Agenda

- About the Presenter
- Database Drivers
- ActiveX Controls
- PowerBuilder Extensions
- Windows API calls
- Third Party DLL calls
- Miscellaneous
- Questions

Author Profile



Bruce Armstrong



<https://www.linkedin.com/in/brucearmstrong>



https://twitter.com/bruce_armstrong



<https://plus.google.com/+BruceArmstrong>

About

- Development lead with Integrated Data Services since 2004
- Independent consultant for 15 years doing PowerBuilder development for companies such as Rockwell, Hughes, Boeing, Western Asset Management, Investment Technology Group and Johnson & Johnson.
- Using PowerBuilder since version 1.0.B
- Charter member of TeamSybase (formerly TeamPS), PowerBuilder MVP, SAP Mentor
- Contributing author to SYS-CON's PowerBuilder 4.0 Secrets of the Masters.
- Editor of SAMS' PowerBuilder 9: Advanced Client/Server Development
- Contributed numerous articles to the PowerBuilder Developer's Journal (PBDJ) and the ISUG Tech Journal
- Editor-in-chief of PBDJ from 2004 to 2013
- Served as a technical editor for the ISUG Tech Journal
- Has done sessions on PowerBuilder at most TechWaves since 2004 and at other user group meetings, including meetings in Columbia, Germany, Belgium, Switzerland, England, Italy and France.

Company Profile



Integrated Data Services



<http://www.get-integrated.com>



<https://www.linkedin.com/company-beta/5239896/>

APPEON[®]

elevate.appeon.com

About

Integrated Data Services (IDS) is a leading provider of custom software products and Government financial management services.

IDS was founded in 1997 in El Segundo, California, and since that time has seen tremendous growth and success.

Currently IDS has offices supporting customers nationwide.

By providing customers with fast, efficient and reliable information systems and support services, IDS has become a preferred provider of financial and programmatic systems, services, and solutions across a wide variety of government

ag IDS Locations



Corporate Headquarters - El Segundo, CA	East Coast Satellite Office - Alexandria, VA
Aberdeen, MD	Montgomery, AL
Albuquerque, NM	Odenton, MD
Boston, MA	Omaha, NE
Colorado Springs, CO	Oklahoma City, OK
Dayton, OH	San Antonio, TX
Fort Walton Beach, FL	Sumter, SC
Huntsville, AL	Tullahoma, TN
Lancaster, CA	Warner-Robbins, GA
Layton, UT	Washington DC
Los Angeles, CA	

Database Drivers

- 32 bit drivers required by PowerBuilder IDE
- 64 bit drivers required for 64 bit compiled applications
- AppPath entry in registry can be used to ensure 64 bit application finds 64 bit client layer

Active X Controls

- 32 bit ActiveX controls required for development in PowerBuilder Ide
- 64 bit ActiveX controls required for 64 bit compiled applications
- On 64 bit systems, there are two different versions of REGSRV.EXE used to register ActiveX controls
 - Windows\System32 64 bit
 - Windows\SysWow64 32 bit
- Manifest files can be used to eliminate requirement for registry configuration

PowerBuilder Extensions

- You need both 32 and 64 bit versions of the extensions
 - 32 bit for running in the PowerBuilder IDE
 - 64 bit for running in the compiled 64 bit application
- Either
 - Filenames should be the same so that a single code base can be used
 - Use a PFC platform service approach that
 - Provides functions in an ancestor object that wrap the underlying calls
 - Provide descendants that implement the platform specific API calls
 - Use a global function to determine at runtime the platform and instantiate the correct descendant object

Windows API Calls

- For the most part, the 64 bit versions of Windows API calls are identical to the 32 bit version
- 64 bit Windows pointers are larger
 - PowerBuilder has a longptr datatype that is amorphous:
 - 4 bytes when running in 32 bit
 - 8 bytes when running in 64 bit

External DLLs

- You must obtain 32 and 64 bit versions of the DLL.
 - 32 bit for running in the PowerBuilder IDE
 - 64 bit for running in the compiled 64 bit application
- Either
 - Filenames should be the same so that a single code base can be used
 - Use a PFC platform service approach that
 - Provides functions in an ancestor object that wrap the underlying calls
 - Provide descendants that implement the platform specific API calls
 - Use a global function to determine at runtime the platform and instantiate the correct descendant object

Miscellaneous

- Application deployment location
 - 64 bit applications are deployed under Program Files directory on a 64 bit system
 - 32 bit applications are deployed under a Program Files (x86) directory on a 64 bit system
 - Review your code to ensure it is not making assumptions about where it is running from.
- Registry
 - 64 bit applications access normal registry entries on a 64 bit system
 - 32 bit applications access special WOW6432Node subkey on a 64 bit system
 - Review your code to see how registry entries are being accessed

| Questions?



Connect with the Appeon Community



community.appeon.com

Discussions, tech articles and videos, free online training, and more.



facebook.com/AppeonPB

Encourage us with a “like”, see cool pics, and get notified of upcoming events.



twitter.com/AppeonPB

Follow Appeon and community members to get the latest tech news.



linkedin.com

Build up your career profile, and stay in contact with other professionals.



youtube.com/c/AppeonHQ

Share important Appeon videos with others; no account registration required.



google.appeon.com

Follow Appeon and community members to get the latest tech news.