

Copyright Embarcadero 2022, an Idera company

## **RAD Studio 11.1 Alexandria** embarcadero<sup>®</sup>





Copyright Embarcadero 2022, an Idera company

## Introducing

## **RAD Studio 11.1 Alexandria**

## Embarcadero<sup>®</sup>



## The Landscape Microsoft released Windows 11

- o New dev platform Windows App SDK (aka Project Reunion)

### Transition to ARM on desktop

 Led by Apple with macOS o Plus, ARM reigns on mobile platforms

## • Developers on 4K Growing also for end-users

• Fully focused on it, key reason for picking "11"

• High resolution and multi screen are common for developers







## What's Great in RAD Studio

**Strong Community** - Full of Technology Partners, MVPs, trainers, authors and developers Backward Compatibility – You have an investment in your code, RAD Studio keeps that relevant

**Developer Productivity** - Shipping is a feature. Get to market 5x faster with Delphi and C++Builder **Fast Native Apps** - With native compilers, RAD Studio gives your apps the speed they need (no bloat) Database Access - Key to Delphi's initial design, database access is integral to RAD Studio **Powerful C++ Libraries** - Hundreds of C++ libraries can be used in C++Builder or Delphi in RAD Studio **Platform API Access** - Gives you access to all the platform APIs on all platforms Visual Designers - Forget prototyping in another tool, just design it and finish it in the RAD Studio IDE





## **RAD Studio 11.0 Summary**

### I. Large Focus on IDE

- IDE High DPI and High DPI enabled form designer
- VCL styles in VCL designer; improvements to FMX designer and Multi-window design/code for a unit
- LSP quality and new C++ code formatter
- New Welcome page
- Visual Studio Code LSP support
- Minimal installer improvements

### II. Delphi and C++ compilers and toolchains

- C++ Quality: RTTI (components); exception handling
- Delphi macOS 64 ARM (M1) compiler and toolchain
- Minor Delphi language improvements

### III. Libraries Improvements • Delphi RTL quality: TZipFile, 64-bit data structures, Bluetooth LE VCL Modernization work • Better FMX High DPI on Windows and desktop integration, including WebView 2 Android API 30 support and related work

III.Additional Delphi Platforms • Support for WSL 2 (Windows Subsystem for Linux) Including WSLg (Linux GUI) on Windows 11



## **RAD Studio 11.1 Overview**

- I. Focus on Quality and Improvements
  - Usability, performance, stability
  - Some new small IDE features
- II. Better Code Insight and LSP • For both languages, Delphi and C++

Copyright © 2022 by Embarcadero, an Idera company



### III. Platforms and Tooling o Official support for Windows 11, macOS 12 Monterey (a), iOS 15, and Android 12 (a)

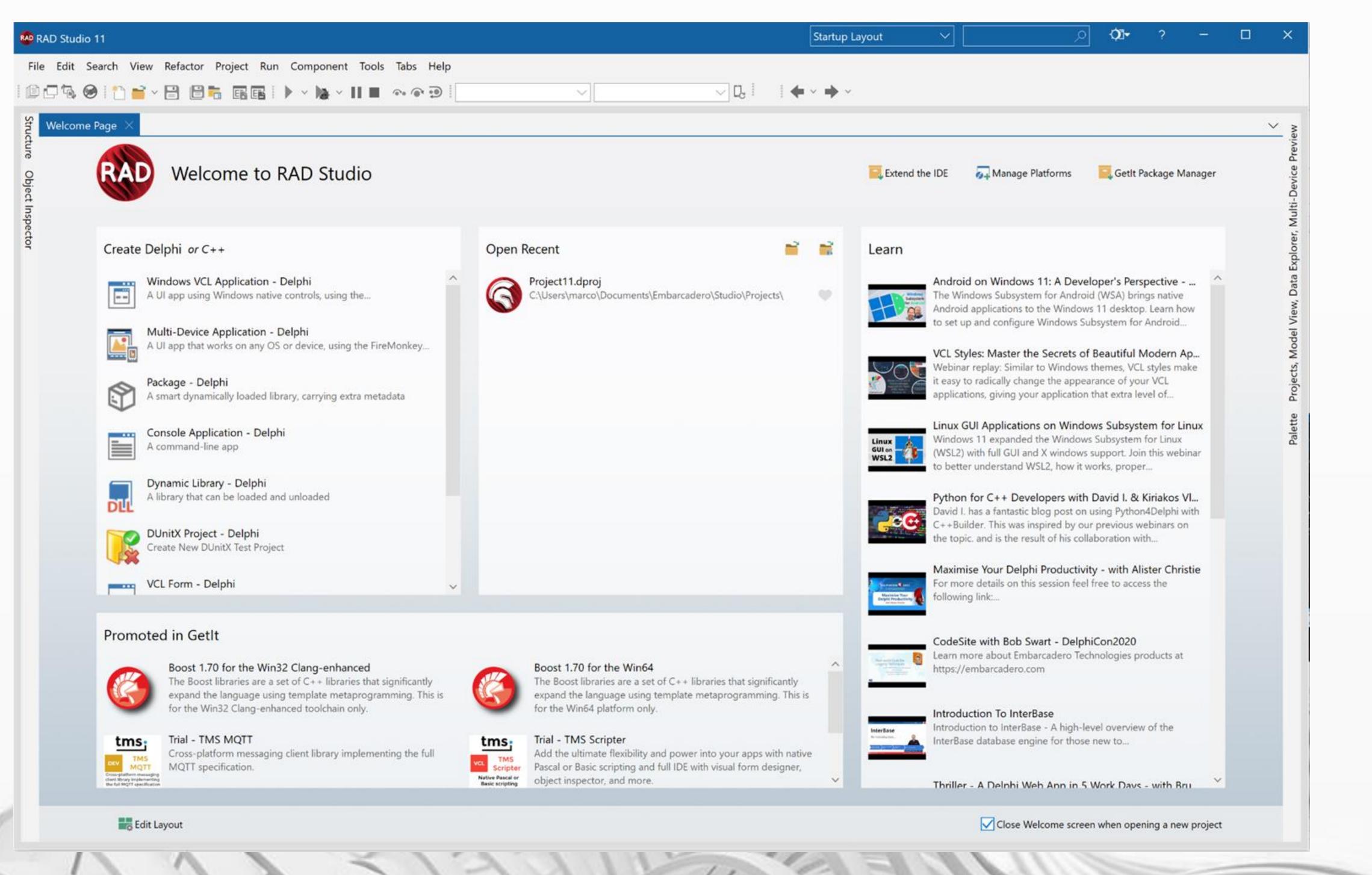
### IV. Libraries

• Performance and quality improvements and small additions to Delphi RTL, database libraries, VCL, FireMonkey



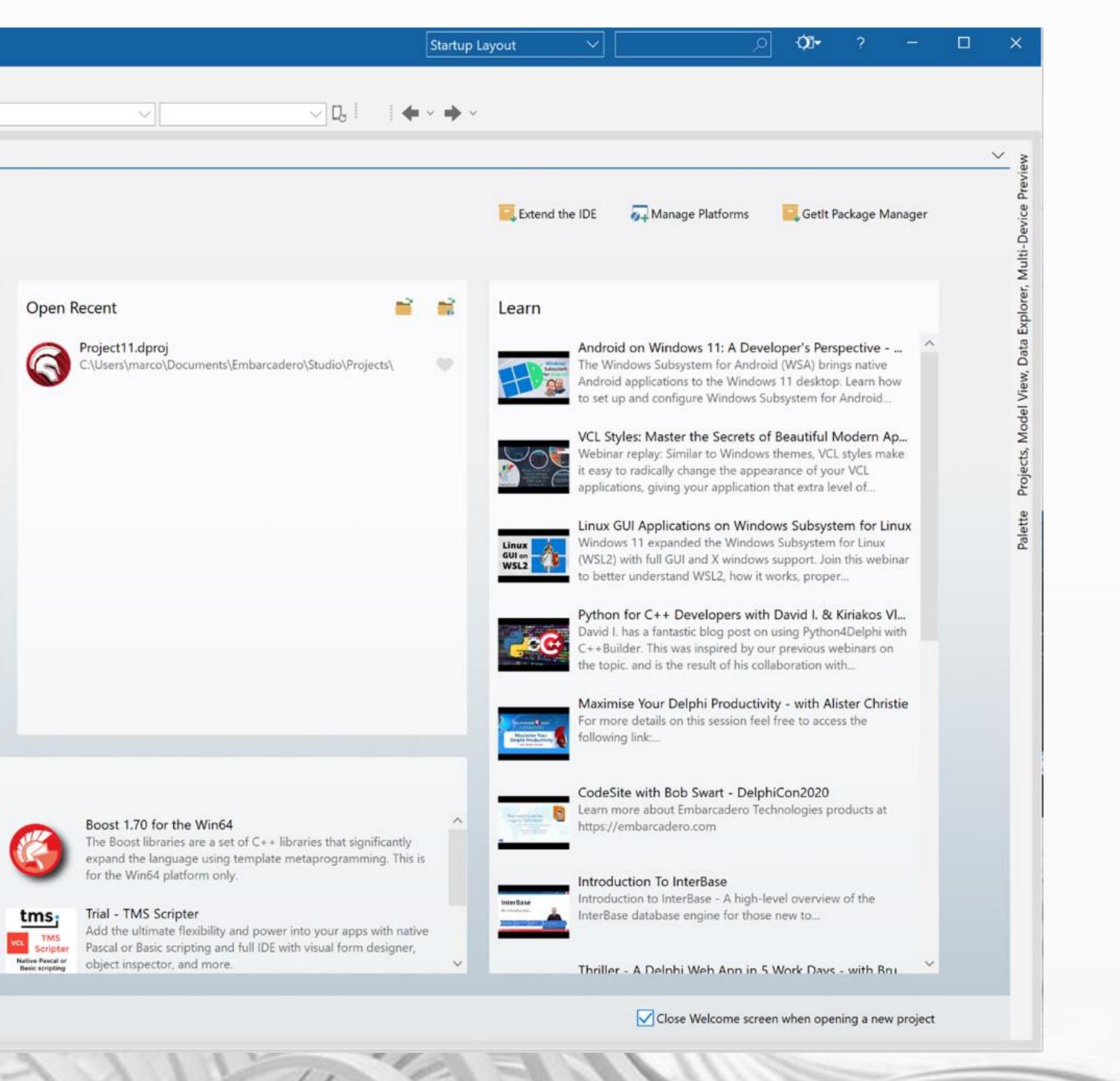
## **I.RAD Studio IDE**

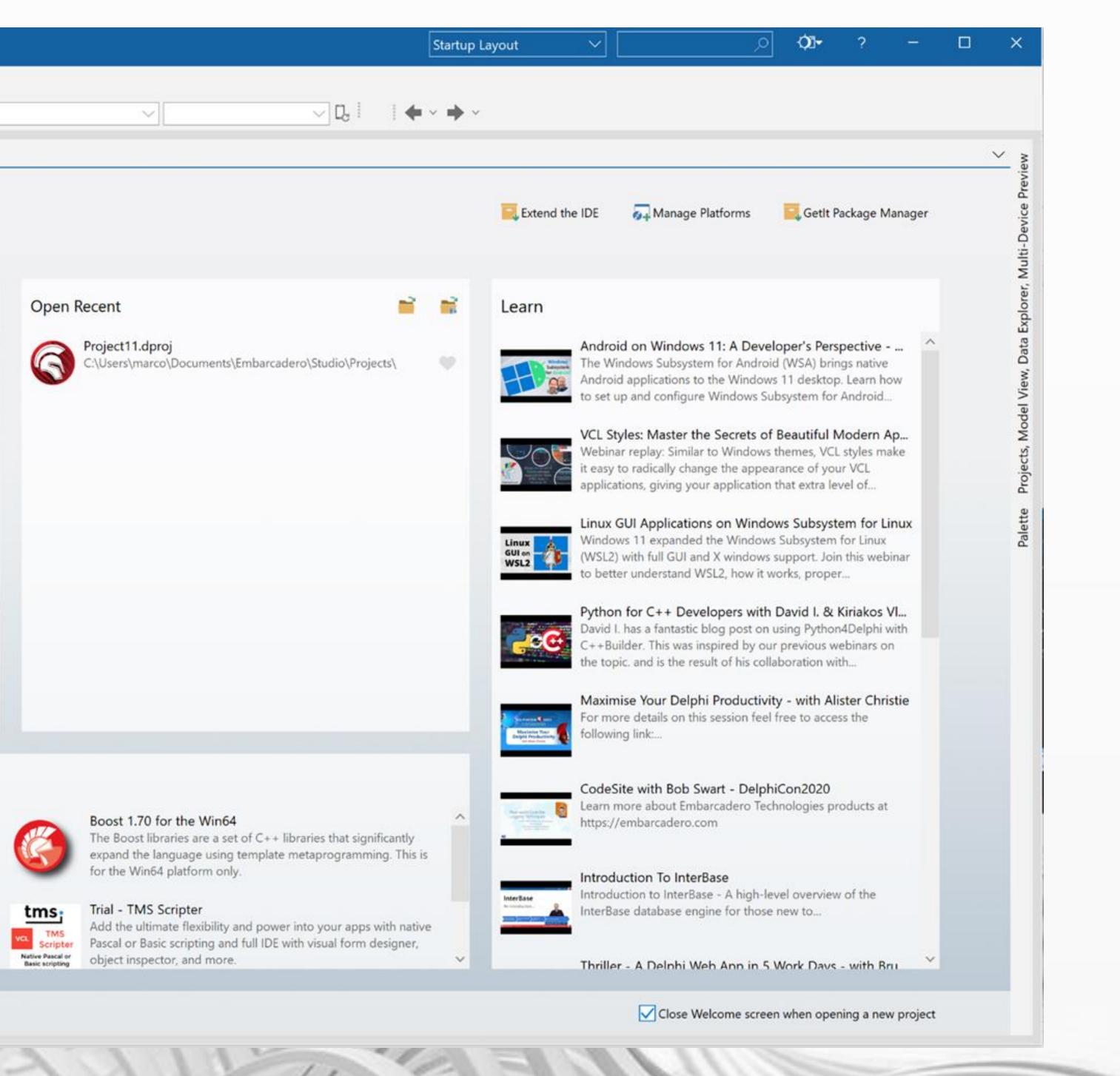






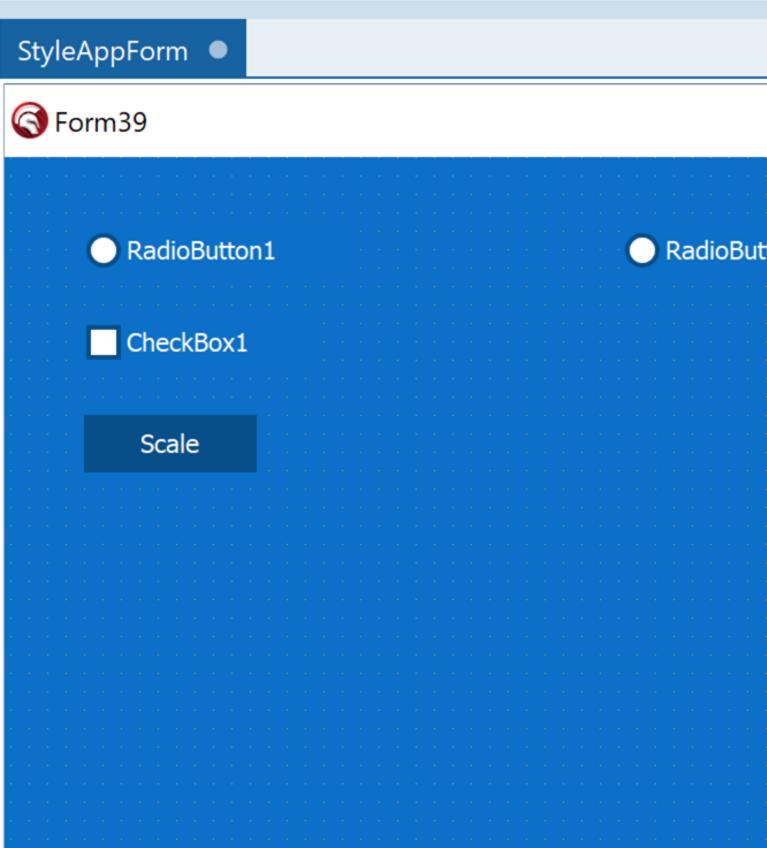






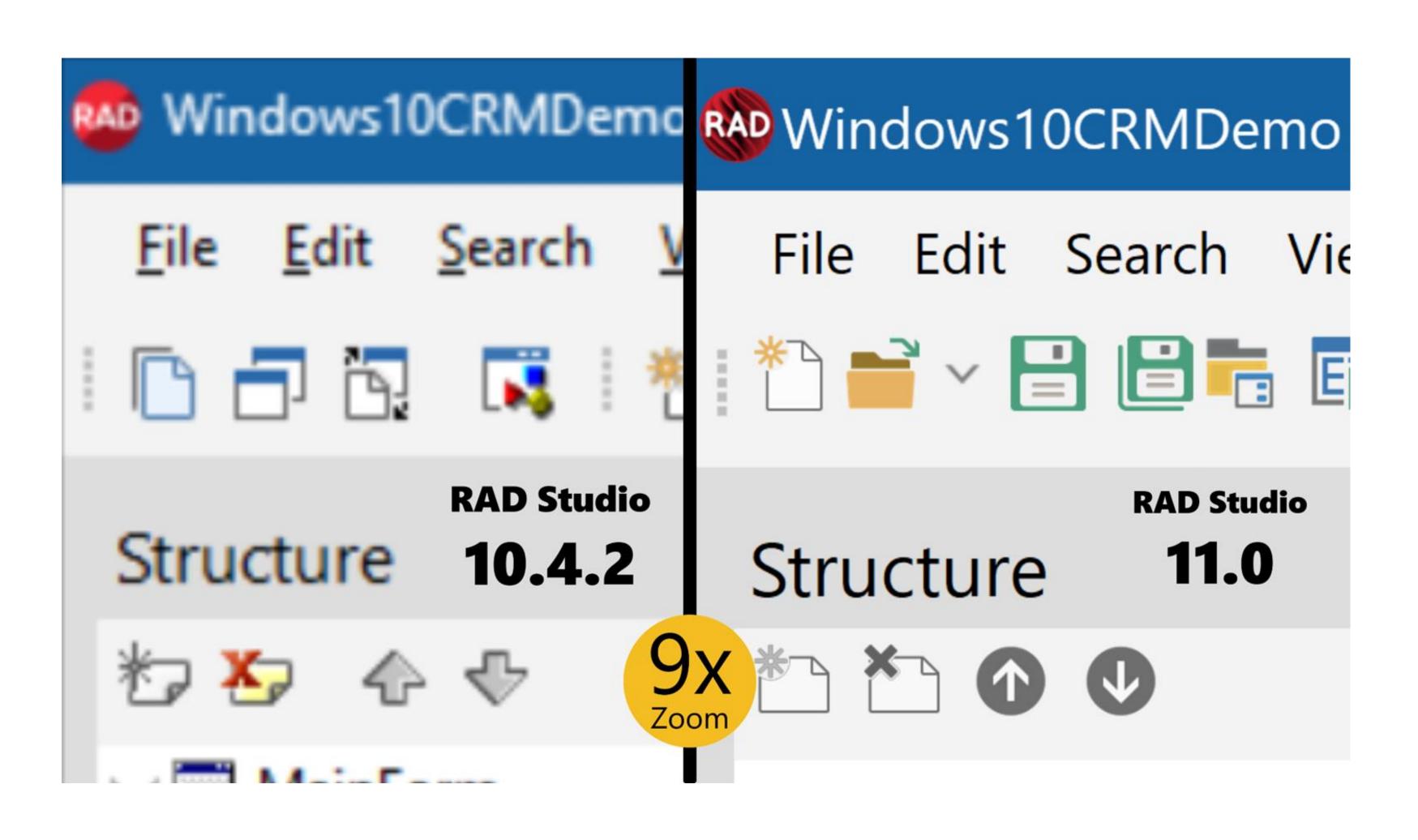
## **11.0: IDE and Designers**

- High DPI IDE • Crisp fonts in all windows and the editor
- High DPI enabled form designer
- Active Styles in VCL Designer



Copyright © 2022 by Embarcadero, an Idera company

																		_						I				×			
- - -	· ·	•	•	•	•	•	•	•	•		 •	•	•	•	•	•	•	· ·	•	•	•	· ·	•	•	•	•	· ·	•	•	•	
ut	tor	12																												•	
																														•	
																														•	
																														•	
																														•	
																														•	
																														•	
																															l
	_																														



RAD



## **11.1: IDE Quality**

- Extensive High DPI IDE quality
- Better use of the IDE with Remote Desktop
- Improvements in Toolbar, font sizing Better scaling when dragging windows between different
- resolution monitors
- Additional IDE Fix Pack integration
- Improved High DPI designers for VCL and FireMonkey and the styled VCL form designer
- GetIt dialog enhancements with image caching and reworked UI (based on VCL TControlList)
- "Start working" in user mode



- O Installed
- O Subscription Only
- **O** Updates
- Sort By Name
- O Vendor

### O Date

,	Categories	
	O Libraries	
	O Components	
	O Trial	
	O Industry Templates	
	IDE Plugins	
	O Styles	
	O C++ Libraries	
	O Tools	
	O New	
	O Sample Projects	
	O Promoted	



Live Local and Remote Application Logging



### FireMonkey App Low Code Wizard 1.0 by Embarcadero Technologies

Create a new fully-functional Delphi mobile application with n



RAD && Installer 1.0.2.6 by unSigned

NSIS and Inno Setup projects (installers) right within RAD Studio getting all benefits of ... 7 Oct 2021

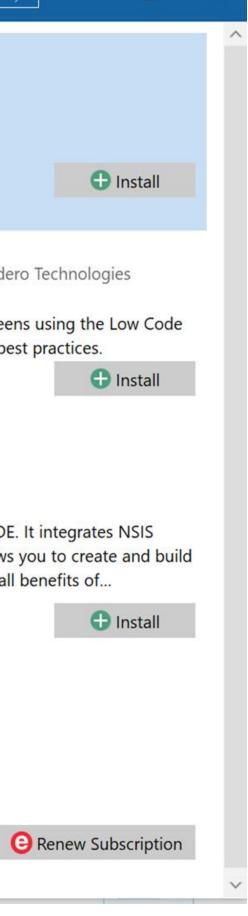
unSigned EULA



### TwineCompile 5.3.0 by JomiTech

Cut C++ compile times by up to 50

Update Subscription is required to install this item







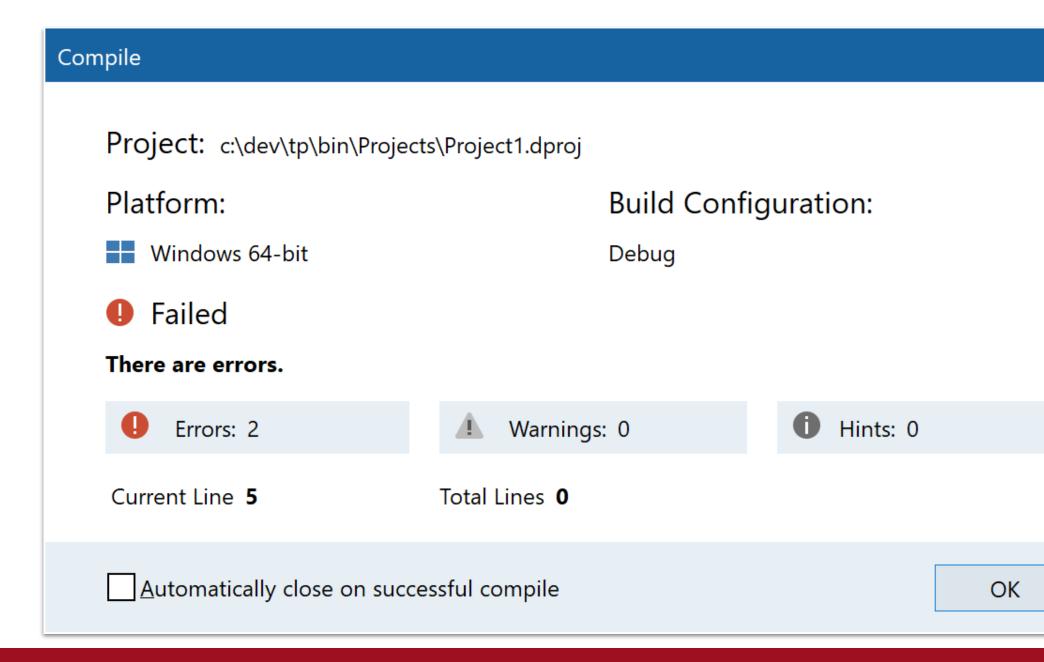
### **11.1: IDE Enhancements** Messages view: errors, warnings, and hints are differentiated by color (the colors can be customized)

- Also uses TControlList and offers other views
- configuration

Copyright © 2022 by Embarcadero, an Idera company

• New Items dialog: available platforms for each item

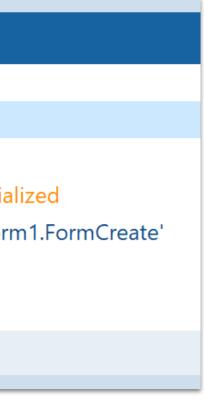
### • The Compile dialog shows the platform and build

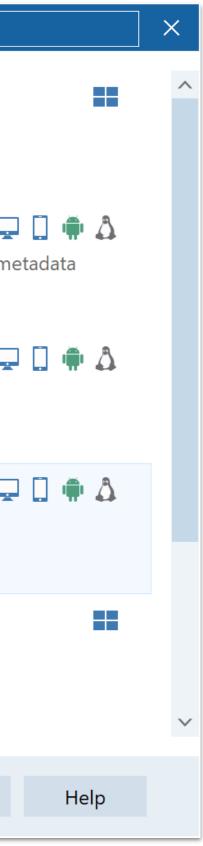




Mess	ages
Che	cking project dependencies
Con	npiling Project1.dproj (Debug, Win32)
> dcc	32 command line for "Project1.dpr"
[dcc	32 Warning] Unit1.pas(30): W1036 Variable 'Unassigned' might not have been initia
[dcc	32 Hint] Unit1.pas(27): H2164 Variable 'Unused' is declared but never used in 'TFor
Suc	cess
Elap	sed time: 00:00:00.9
Build	Output

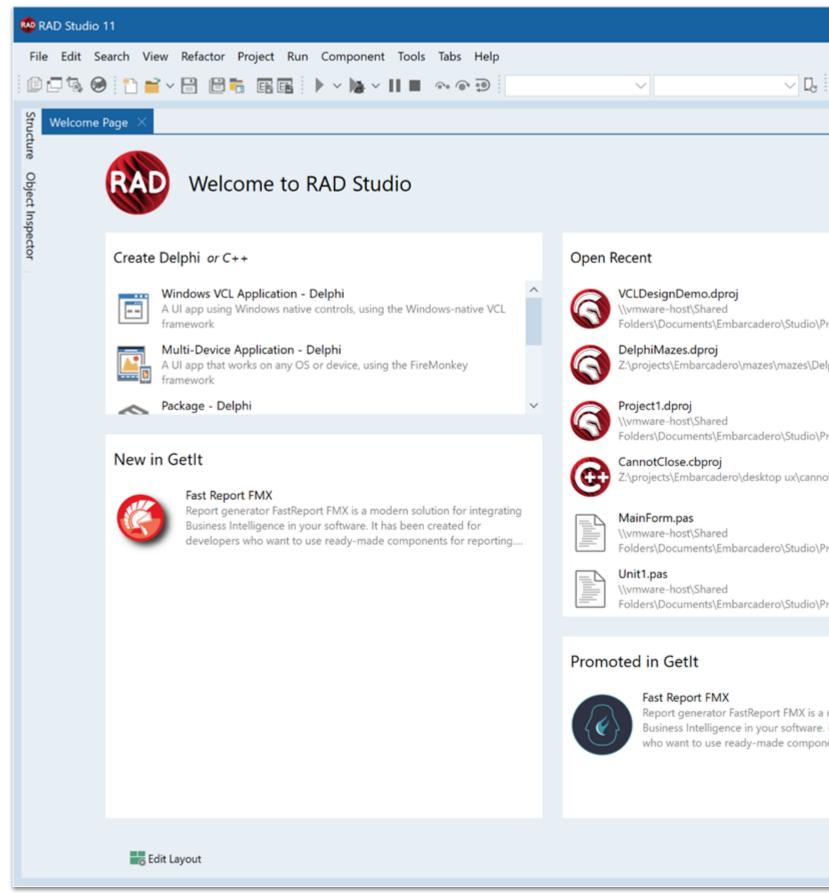
New Items		
<ul> <li>Delphi</li> <li>ActiveX</li> <li>Database</li> </ul>		Windows VCL Application A UI app using Windows native controls, using the Windows-native VCL framework
<ul> <li>DataSnap</li> <li>DUnitX</li> <li>Individual Files</li> <li>Inheritable Items</li> </ul>		Package 📰 🖵 A smart dynamically loaded library, carrying extra me
<ul> <li>IntraWeb</li> <li>Multi-Device</li> <li>RAD Server</li> <li>Web</li> <li>Windows</li> </ul>	DLL	Dynamic Library 📰 🖵
<ul> <li>C++Builder</li> <li>Modeling</li> <li>Other</li> </ul>		Console Application <b>I</b> Question <b>A</b> command-line app
	DLL	Resource DLL Wizard Resource DLL Wizard
Template Libraries 🔻		OK Cancel





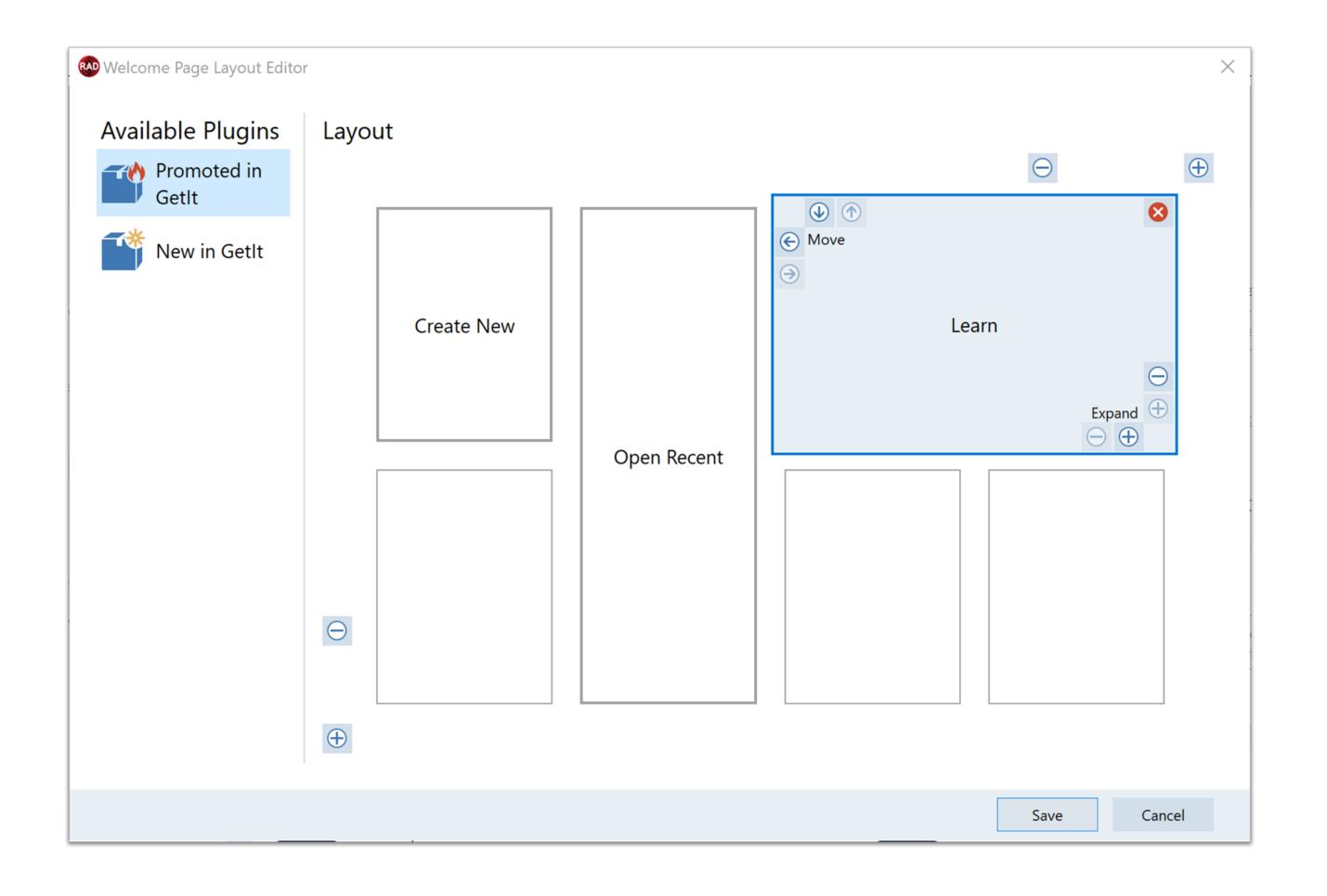


## **11.0: New Welcome Page** • New native Welcome page, VCL based and flexible • Layout and content is fully customizable: show what and where you want



### Copyright © 2022 by Embarcadero, an Idera company

	Startup Layout	<u> </u>		0	<b>Q</b> ]•	?	-	×
,								
	<mark>ਵਿ</mark> Ex	tend the IDE	曻 Manage Platfor	ms	<mark>E,</mark> Getit P	ackage M	anager	 Projects, Model View, Data Explorer, Multi-Device Preview
🚔 👒	Learn							Explorer, N
\Projects\high dpi		Disasters happ are prepared.	r Disaster Recovery en when they are lea Disaster recovery pla er data and operation	st expect ns are es	ted, and doi sential to pi			l View, Data
Delphi\ 🎔			Delphi 10.4.2 on Wi out Embarcadero Teo cadero.com				2	ojects, Mode
\Projects\high dpi	Proster of	MVPs David I a	ations Conversation and Ian Barker are joi are to discuss Data Vi	ned by N	Aarc Meuma	ann of		Palette Pro
\Projects\high dpi	en e	Learn about the fully functional,	Iphi Wizards - New e new app creation w , easily extensible cro h a few options in a v	vizard for ss-platfo	r Delphi: qui orm FireMor	nkey	te a	
\Projects\high dpi	/	Connecting to	n WehAssemhlv				~	
a modern solution for integrating re. It has been created for developers onents for reporting		FMXLinux Full features Firel	Monkey implementat	tion for L	inux Platfor	m.		
			Close Welcom	e screen	when open	ing a nev	v project	



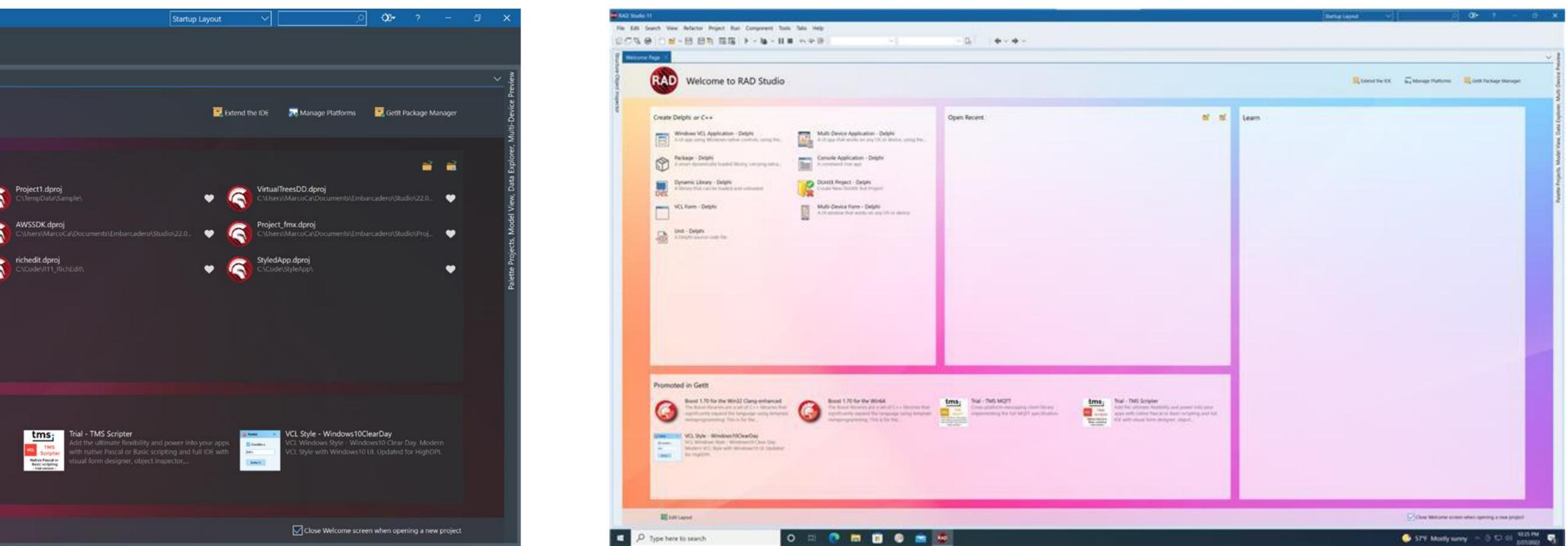
### KAD



### 11.1: Welcome Page Updates Background wallpapers • Predefined for each of the 3 styles, you can use a custom image • Supports adding custom frames with ToolsAPI Demos on github.com/Embarcadero/RADStudio11Demos in Object Pascal > VCL > VCL WelcomePage

🚾 RAD Studio 11		
<u>File</u> Edit Search	View Refact <u>or P</u> roject <u>R</u> un <u>C</u> omponent <u>T</u> ools <u>Ta</u> bs <u>H</u> elp	
00.00	♪ 🚔 🗸 🖯 🖉 🛱 🖬 🕼 🖡 🔺 🖕 × 🖡 × 🛯 🖛 → → 👁 🖢	Y
Welcome Page	×	
Welcome Page Structure Object Inspector	Welcome to RAD Studio	
The second se	eate Delphi <i>or</i> C++	Open Recent
	Windows VCL Application - Delphi A UI app using Windows native controls, using the Windows-native VCL framework	Project8.dproj C\Users\MarcoCa\Documents\Embarcadero\Studio\Proj
	Multi-Device Application - Delphi A UI app that works on any OS or device, using the FireMonkey framework	C\Users\MarcoCa\Documents\Embarcadero\Studio\22.0 👻 🧔
6	Package - Delphi A smart dynamically loaded library, carrying extra metadata	Project2.dproj C\Code\R11_TTreeView and checkboxes\
	Console Application - Delphi A command-line app	SystemMetrics.dproj C\Code\VCL_Windows10\SystemMetrics\
	Dynamic Library - Delphi A library that can be loaded and unloaded	
	Create New DUnitX Test Project	
Pro	omoted in GetIt	
	Boost 1.70 for the Win32 Clang-enhanced The Boost libraries are a set of C++ libraries that significantly expand the language using template metaprogramming. This is for the Win32 Boost 1.70 for the Win6 The Boost libraries are a set of C++ libraries that significantly expand the language using template metaprogramming. This is for the Win32	et of C++ libraries that Cross-platform messaging client library implementing the full MQTT specification.
	Edit Layout	

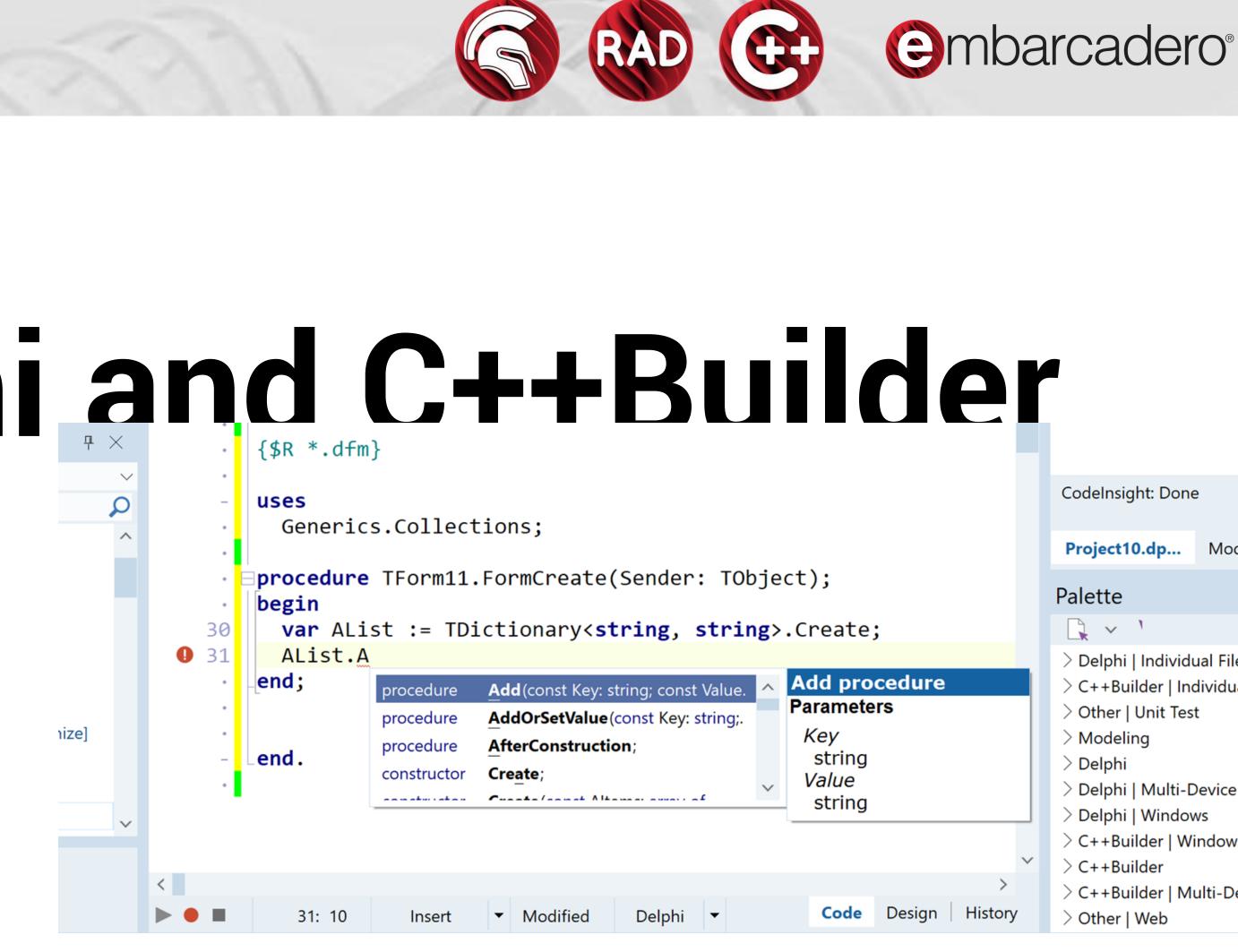
### Copyright © 2022 by Embarcadero, an Idera company





## 11.1 Code Insight Across Delphi and C++Builder • Delphi LSP quality work

- AList.A Big performance improvements, in common scenarios operations are **5-30x faster**  Biggest changes for units with lots of dependences o Improvements: type parameters when completing a class declaration, including T in a generic declaration, and showing set types
- Extensive C++ cquery quality work Significant improvement to the features and performance (eg 30s down to 2 seconds) • Planning a special C++ only followup release soon with even more improvements



CodeInsight: Done	9
Project10.dp	Mode
alette	
🔍 🗸 1	
> Delphi   Individu > C++Builder   Ind > Other   Unit Tes > Modeling > Delphi	dividual
> Delphi   Multi-D	
> Delphi   Windov > C++Builder   Wi > C++Builder	
> C++Builder   M > Other   Web	ulti-Dev



## II. C++ and Delphi Compilers and Tools



## **11.0 Compilers**

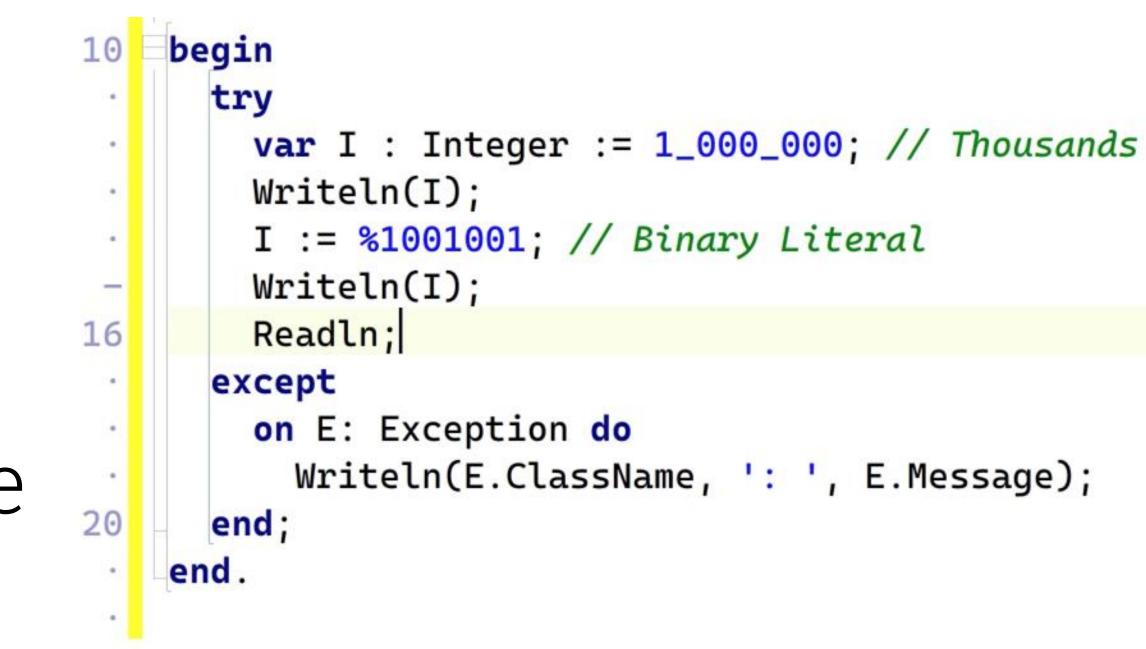
- Universal binary (package Intel + ARM)
- Minor Delphi language enhancements
  - Binary literals and digit separator support
- C++ Compilers Improved RTTI (for components) • Further work on exception handling C++/Delphi interop improvements

• New Delphi macOS 64-bit ARM target platform Inline assembler support for AVX instructions (AVX-512)

CMake: revision of functionality and packages it can handle







Separato	r

## **11.1 Compilers and Debuggers**

- Delphi compilers improve stability and performance (when used by LSP engine)
- The Delphi and C++Builder Window compilers have additional support for ASLR, DEP/NX, and TSAWARE platform security settings, now enabled by default
- New Delphi Debuggers based on LLDB o Delphi macOS 64-bit ARM debugger Delphi Android 64-bit debugger Part of strategic direction for RAD Studio debuggers to LLDB
- C++ compiler, STL and RTL quality Further improved Delphi RTL integration • For example, dynamic array with STL iterators







## New Linker Options

### • Data Execution Prevention (DEP)

 Allows the system to mark one or more pages of memory as non-executable preventing code from running from these regions of memory, making it harder to exploit buffer overruns.

### Address Space Layout Randomization (ASLR)

 Randomly arranges the address space positions of key data areas of a process, including the base of the executable and the positions of the stack, heap and libraries.

Prevents exploitation of memory corruption vulnerabilities.

Allows ASLR to use the entire 64-bit address space.

### • Terminal Services

Create Terminal Server aware (TSAWARE) applications.

Copyright © 2022 by Embarcadero, an Idera company

• High-entropy 64-bit ASLR (Only in 64-bit applications)

©mbarcadero<sup>®</sup>

225E068C139ED4C179D9EDC76E1CC4E -13078DDD NDDD1B8343A1999315FC91E67061F58 C053D665C275C088CE55C9AA0D690F8A4 ~F3A9A6320530902C2C7324A17EDFC211619F <sup>-</sup>5954AE9D51A523181F1A937D577D9773532BC54 \458BBE388054A57AF2D2ABCB07F6A5232740DE6F 5B7476CA1B3B6CA 460100D164BC 4B717DE3413900 242395456 73D01F**7**3 723BFA12 906DD54879A55 65544C35DA59817 113B431E0538542DC 56C78215A9718F53593 E0E6C95FB4A9F169BC5BBC7 4A58D8510BA03C01C5D73365740403117A66165CBFDA7 251F6F346F5D305FBDD3F277966FBE618AECBD5FB897B 966E4E3C48E38B3B1C5FB916B9C6A20520AB2C334E8BE 631B355AA7600D07405A486D17676C5A357B234FA9F7B 688DE4595CD97836BEE55F2AFFFAE02F5FA8621AC955E 9E301B60C5608B120754BE3FCF23BB075460A97D



# 

<ul> <li>✓ Building</li> <li>✓ Delphi Compiler</li> </ul>	^	Linking
Compiling Hints and Warnings		Target Release configuration
Linking Output - C/C++ > Resource Compiler Build Events > Application Forms Manifest Icons Services Version Info Appearance > Packages Runtime Packages > Debugger Symbol Tables Environment Block > Deployment Provisioning > Project Properties Gettt Dependencies		<ul> <li>&gt; Data Execution</li> <li>&gt; Debug informa</li> <li>&gt; EXE Description</li> <li>&gt; Generate cons</li> <li>&gt; Image Base</li> <li>&gt; Include remote</li> <li>&gt; Map file</li> <li>&gt; Maximum Stace</li> <li>&gt; Minimum Stace</li> <li>&gt; Output resource</li> <li>&gt; Set base addres</li> <li>&gt; Set extra PE Hes</li> <li>&gt; Set oS Version</li> <li>&gt; Set Subsystem</li> <li>&gt; Set User Version</li> <li>&gt; Support addres</li> <li>&gt; Support high-es</li> </ul>

### Copyright © 2022 by Embarcadero, an Idera company

- Windows 64-bit platform $\checkmark$ <u>Apply</u>	<u>S</u> ave	
n Prevention compatible	✓ true ✓	
on		
sole application	false	
	400000	
te debug symbols	false	
	Off	
ick Size	1048576	
ck Size	16384	
rce string .drc file	false	
ess for relocatable images	0	
leader flags	0	1
leader optional flags	0	
n fields in PE Header as <major>.<minor></minor></major>	6.0	
n Version fields in PE Header as <major>.<minor></minor></major>	6.0	
ion fields in PE Header as <major>.<minor></minor></major>	0.0	
ess space layout randomization (ASLR)	✓ true	
-entropy 64-bit address space layout randomization	true	1
er	✓ true	
Save Cancel	Help	

-3D665C275C088CE55C9AA0D690F8A4 Y46320530902C2C7324A17EDFC211619F AE0D51A523181F1A937D577D9773532BC54 

Data Execution Prevention (DEP) 4543E

00D164BCC5F7507E6B54E3B7204885FD8BAA 7DE3413900E670247F7B44B87EA3FD9F74FA741 3954563D5C05B0D3C31CC3E3E6AFE365B92F 001F71CF92BDA4252C746709AC265427263F 6906DD54879A5518EE9DB07B80587406CA504B55BAC17 265544C35DA59817B768587726ABBA7661C8C4A713D697 0113B431E0538542DC9ABA676AA7642046B1D514BC5DA9 056C78215A9718F535935CD3EEC45065A68B320317083A Address Space Layout
 B4FBF7743089D5 ddress Space -Randomization (ASLR) L17A66165CBFDA7 High-entropy 64-bit ASLR AB2C334E8BE
 High-entropy 64-bit ASLR AB2C334E8BE
 AFFFAE0255578234FA9F7B -1 Corver FCF22RPorter 4621AC955E Terminal Server FCF23BB075460A97D
 Terminal Server FCF23BB075460A97D



## New 11.1 C++Builder Linker Options

### Project Options for CppBuilder11\_1.exe (Win64 - Debug)

$\sim$ Building	^	C++ Linker
C++ Shared Options		
> C++ Compiler		Target
$\sim$ C++ Linker		Debug configuration - Wir
Output		✓ Advanced
Warnings		> Additional opt
<ul> <li>Delphi Compiler</li> </ul>		> Case sensitive
> Resource Compiler		Clear state bef
Turbo Assembler		> Data Execution
Build Events		
Build Order		> Delay load DLI
$\sim$ Application		> Do image cheo
Appearance		> Fast TLS
Manifest		> File alignment
lcons		> Object alignmo
Services		> Replace resource
Forms		> Support addre
Version Info		> Support high-
└ ∨ Debugger		> Terminal Serve
Symbol Tables		> Verbose linkin
Environment Block		$\sim$ Linker Heap Sett
$\sim$ Packages		> Code Heap Siz
Runtime Packages		> Data Heap Size
	$\sim$	> Dwarf abbrev l

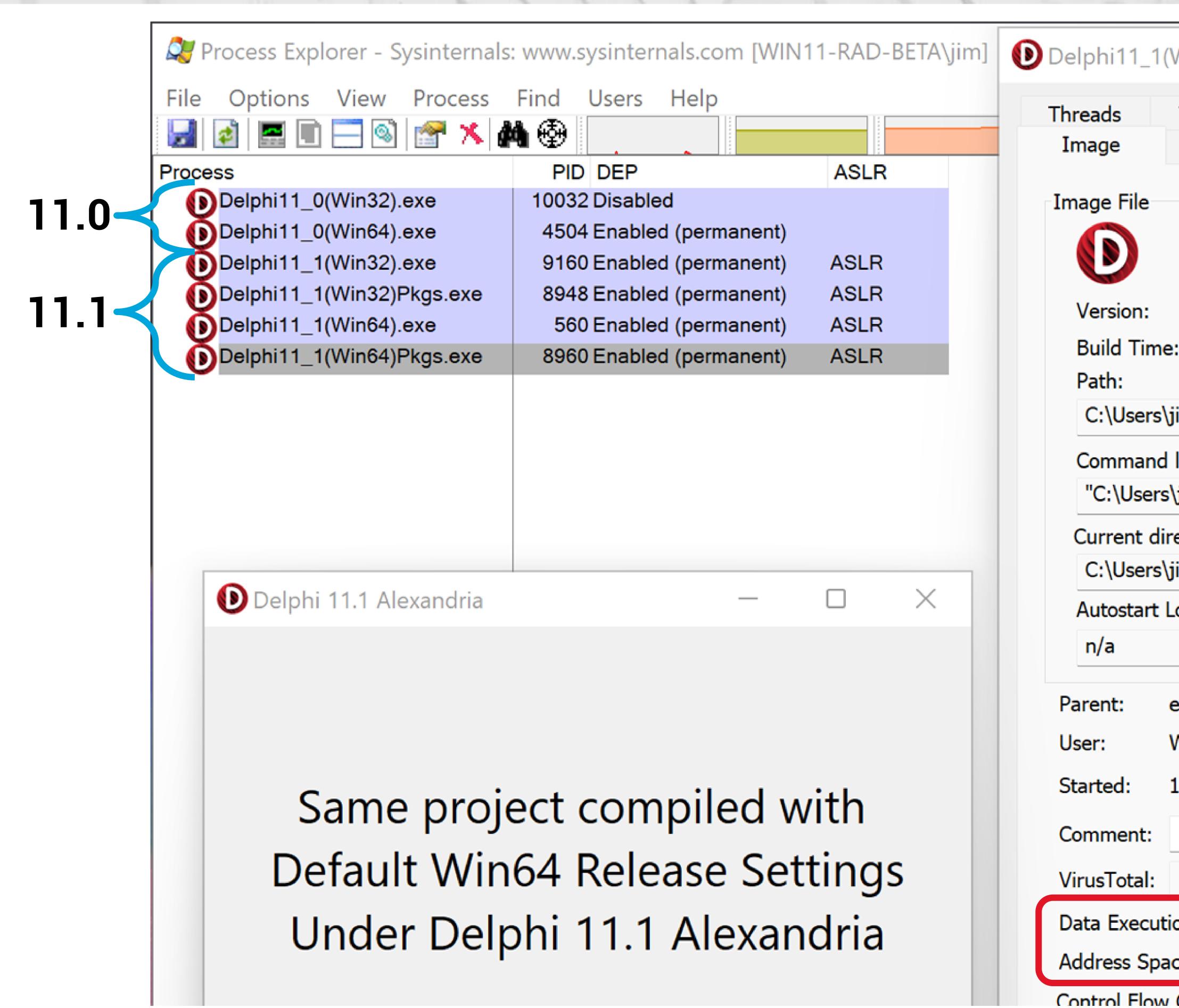
### Copyright © 2022 by Embarcadero, an Idera company

			×
Nindows 64-bit platform 🗸 🛛 🗛	oply	<u>S</u> ave	
	γ <b>ρ</b> ιγ	<u>J</u> ave	
		^	•
ptions			
ve linking	false		
pefore linking	false		
ion Prevention compatible	🖌 true		
DLLS	_		
hecksum	false		
	false		
ent	0x00000200		
iment	0x00001000		
ources	false		
dress space layout randomization (ASLR)	✓ true		
h-entropy 64-bit address space layout rand			
rver	false		
king	false		
ettings			
Size	0		
Size	0		
ev Heap Size	0	$\sim$	r
<b>C</b> over	Canad	Lista	
Save	Cancel	Help	
· · · · ·			

C179D9EDC76E1CC4E 15FC91E67061F58 D665C275C088CE55C9AA0D690F8A4 746320530902C2C7324A17EDFC211619F D51A523181F1A937D577D9773532BC54 °054A57AF2D2A76707E6A5232740DE6F `448E4A70F2CA23C1ABF93F4543E IRCC557507E6B54E3B7204885FD8BAA Data Execution Prevention (DEP) A741 BED0402423954563D5C05B0D3C31CC3E3E 3D01F71CF92BDA4252C746709AC265427263F Address Opcol Lay Randomization (ASLR) 51C8C4A713D697 High-entropy 64-bit ASLR 320317083A JITCH LL JOINT AUGUSTON AUGUST <sup>4251F6F346F5D305FBDD3F277966FBE618AECBD5FB897B</sup> 9966E4E3C48E38B3B1C5FB916B9C6A20520AB2C334E8BE Terminal Server 17676C5A357B234FA9F7B 11111-5608B120754BE3FCF23BB075460A970-CIVE SSF2AFFFAE02F5FA8621AC955E DB5D9A2B64C00708379E2577D1AEBD5C-







Copyright © 2022 by Embarcadero, an Idera company

	RAD		em	bar		
Win64)Pkgs.exe:8960 Prop	perties			$\times$		
,	Environment formance Graph	Job	String GPU Graph	S		
Delphi11_1						
1.0.0.0 e: Fri Mar 11 13:48:22 2022	With run	time pa	ckages			
jim\Desktop\EXESecurity\Delp	ohi11_1(Win64)Pkg	js.exe	Explore			
line: \jim\Desktop\EXESecurity\Delphi11_1(Win64)Pkgs.exe" rectory:						
jim\Desktop\EXESecurity\						
Location:			Explore			
explorer.exe(3144) WIN11-RAD-BETA\jim			Verify			
1:48:50 PM 3/11/2022 Image: 64-bit		Bring	Bring to Front			
		Kill	Kill Process			
	Submit					
ion Prevention (DEP) Status: ice Load Randomization:	Enabled (perman High-Entropy, Bo	-				
Guard	Disabled					



## **Security Code and Secure Application**

- C++Builder/Delphi 10.4.2 Supports TLS 1.2
- Combined with O.S. Setting can make your Web Server, DataSnap Server, RAD Server, RESTful Server pass "Vulnerability Weakness Scan"
- OWASP(Open Web Application Security Project<sup>®)</sup> Top 10
- Required by Government Regulations and Private Company Requirement
- $\circ$  C++Builder/Delphi support basic code scan  $\rightarrow$  Code Audits/Code Metrics
- C++Builder/Delphi are now researching how to implement OWASP security scan tools





### **OWASP(Open Web Application Secu**

A1 Injection

A2 Broken Authentica

A3 Sensitive Data Expo

A4 XML External Enti

A5 Broken Access Col

A6 Security Misconfigur

A7 Cross-Site Scripti

**A8 Insecure Deserializa** 

A9 Using Components with Know

A10 Insufficient Logging and

urity Project®) Top 10	C++Builder/Delphi相關?	是否可由靜態分析找到?
	是-dbExpress/FireDAC TQuery元件 LDAP API/元件	是
ation	是-程式碼規範	部份
osure	是-資料庫儲存,資料庫元件,物件/資料 Serialization	部份
tities	是-XML文件, XML分析引擎	部份
ontrol	是-程式碼規範	部份
uration	是-應用程式設定,OS設定	部份
ting	否	部份
zation	是-物件/資料反Serialization	部份
vn Vulnerabilities	是	是
d Monitoring	是-程式碼規範	否

RAD	emba





## **Security Code and Secure Application**

- C++Builder/Delphi Security Code Scan相關資源
- TMS FixInsight <u>https://www.tmssoftware.com/site/fixinsight.asp</u>
- CodeHealer for Delphi <u>http://www.socksoftware.com/default.php</u>
- SonarCube <u>https://www.sonarqube.org/</u>
- <u>https://github.com/JAM-Software/SonarDelphi</u>
- DerScanner https://derscanner.com/

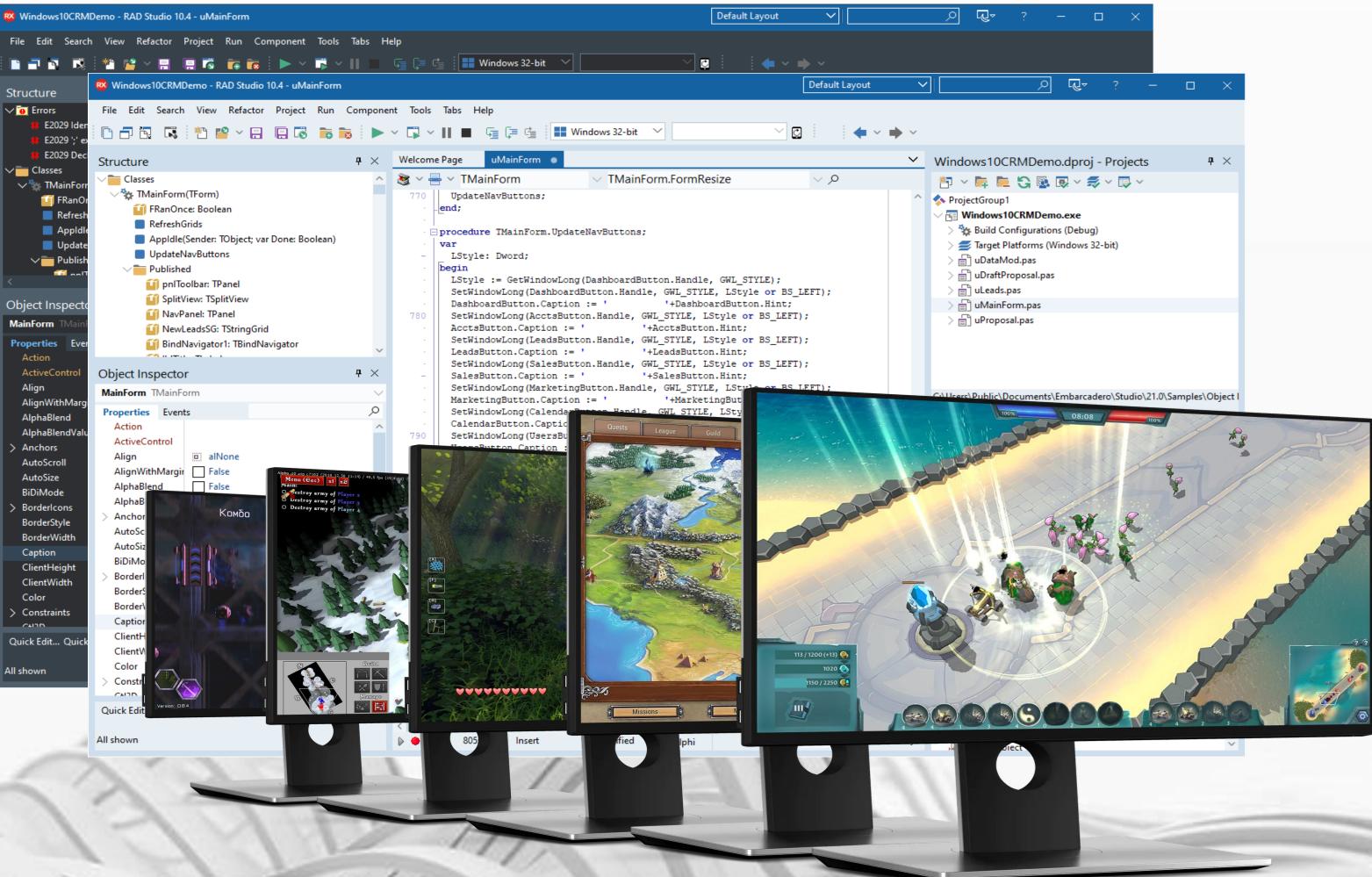
Copyright © 2022 by Embarcadero, an Idera company







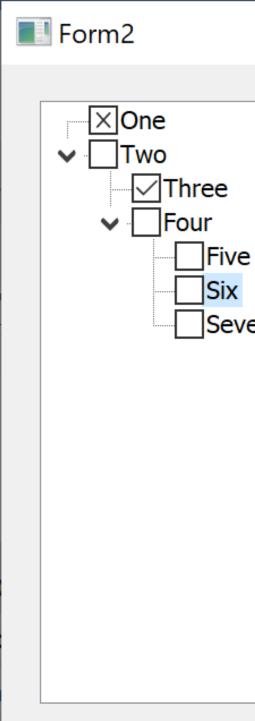
## III. RAD 11.1 Libraries Quality & Improvements

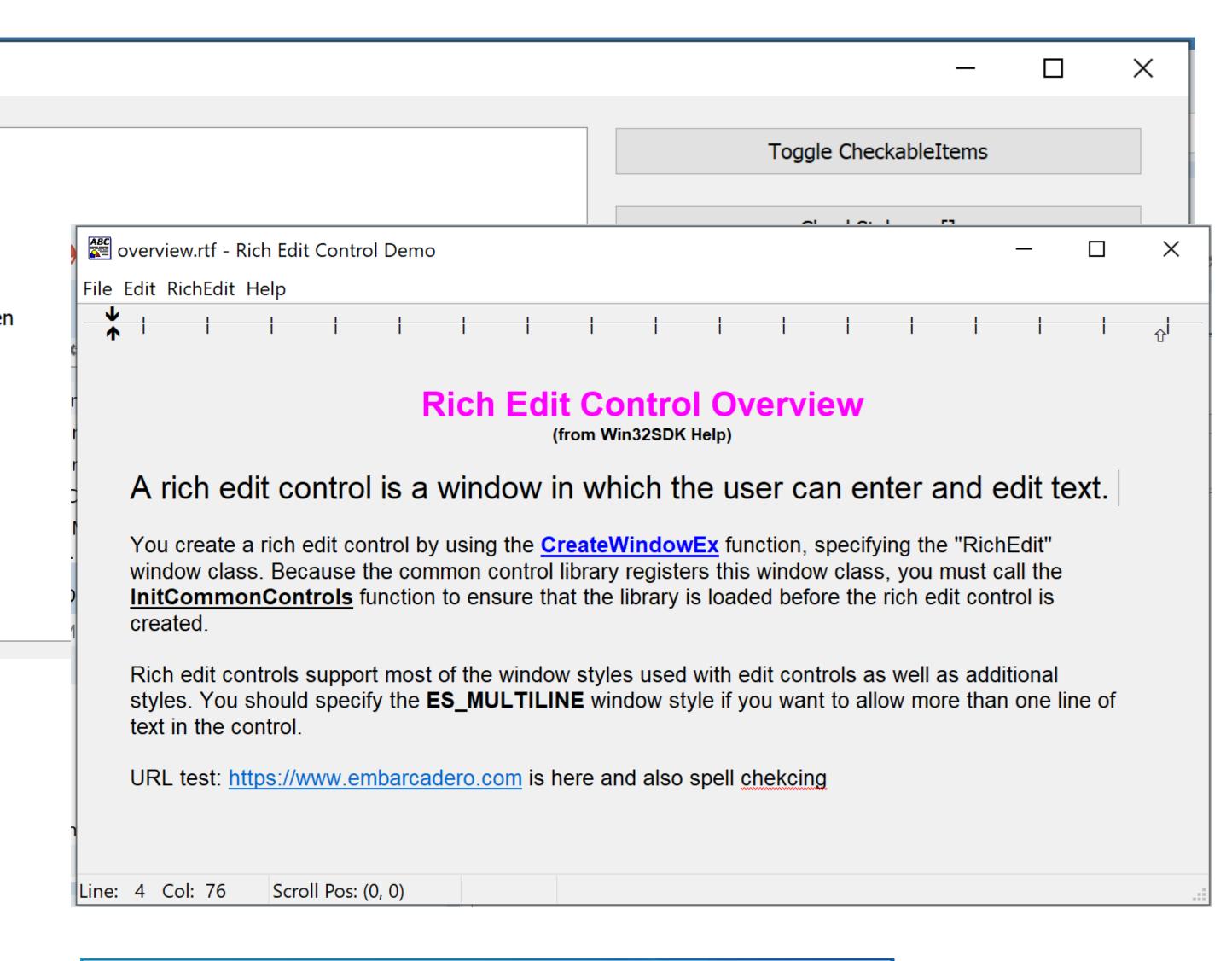


### "Alexandria" VCL Improvements Form2 • 11.0: Modernization Work One Two Three Four Five Six Seven o "New" RichEdit implementation (RichEdit 4.1) Large collection of small improvements focused on removing XP legacies New TDBLabeledEdit component

### • 11.1 VCL focus on recent features Including enhanced TTreeView, TRichEdit, TEdgeBrowser, TLabelledEdit and TNumberBox, flickering and DoubleBuffering, VCL High-DPI and scaling issues • A Delphi WinUI3 demo (available in GetIt) • Part of our Windows App SDK focus

Copyright © 2022 by Embarcadero, an Idera company





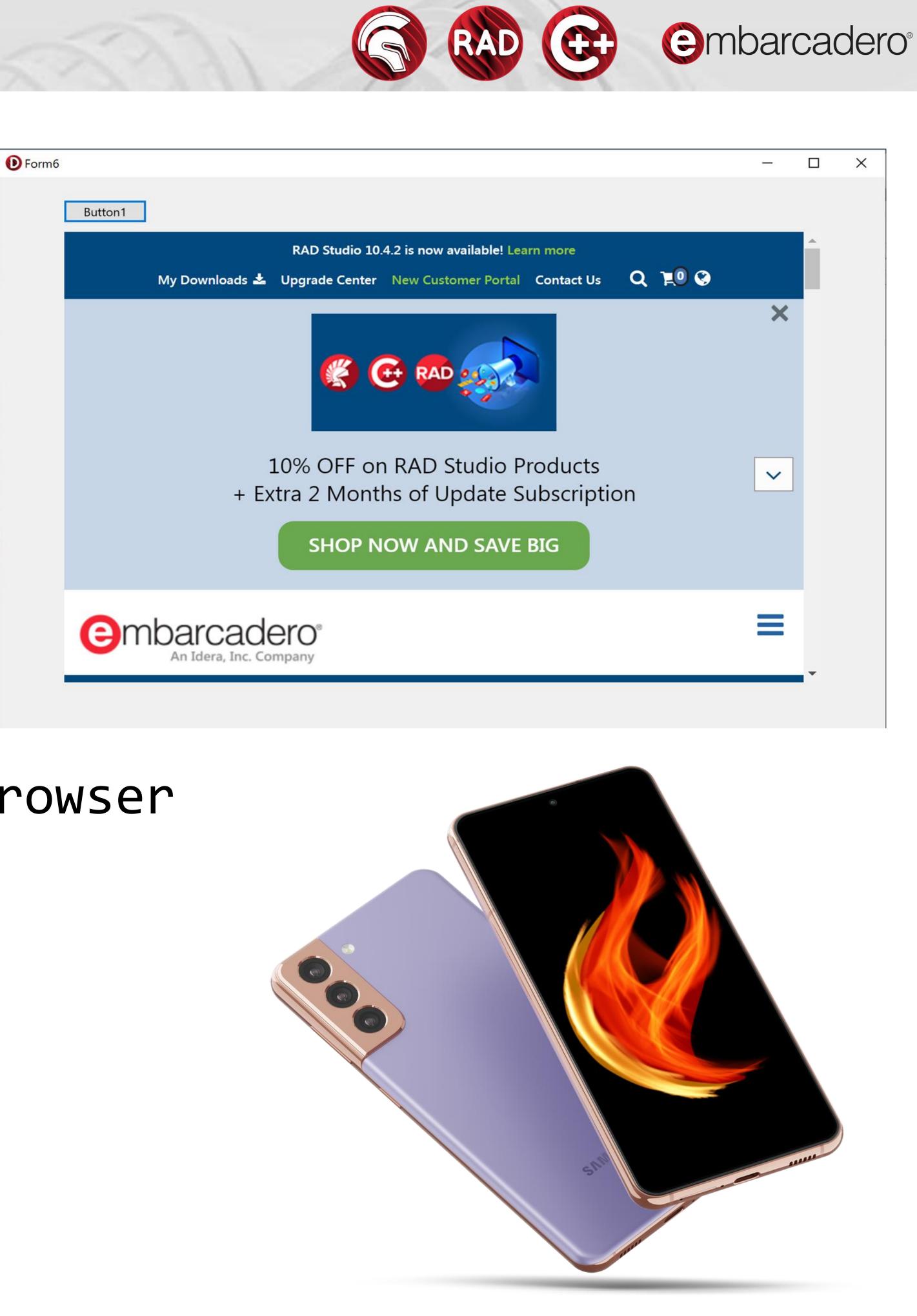
WinUI Desktop	_		×
Click Me			
Clicked			
Hello World			
Delphi			
WinRT Native App (XAML / WinUI 3)			
		Adventer (Constraint)	



### FireMonkey in "Alexandria" **11.0 Desktop and Mobile Improvements** Better FMX Windows and desktop integration FireMonkey Windows High-DPI improvements From pixels to device independent units (PX to DP) Target Android API 30 (AndroidX, in-app purchases, matching new Play Store requirements) WebView 2 (Chromium Edge) implementation of TWebBrowser

### **11.1 Quality Work** • **TListView** and **TWebBrowser** quality Improved Android SDK integration Windows High DPI-related issues Performance and much more

Copyright © 2022 by Embarcadero, an Idera company





## Delphi RTL in "Alexandria"

### 11.0 Key Features

- Bluetooth LE quality (for most platforms)
- PPL Thread pool statistics

### 11.1 Delphi RTL optimization and quality work • New TURLStream class (a TStream descendant with support for async operations)

• **TZipFile** (including Zip64, files deletion, quality improvements and optimizations) Large data structures (and 64-bit) improvements • Lists, large stream operations, dictionary improvements for hashing and capacity • Record helpers for TDateTime and TCurrency, UTCNow function • New core classes: TNoRefCountObject and TPointerStream Performance optimizations and RTTI improvements (open array support)

• Support for Window 11 and Server 2022 in the TOSVersion data structure







### **11.1 Data and Internet Improvements** • Data RTL and FireDAC Improvements • FireDAC Structure View integration Support for MariaDB 10.6, SQLite Encryption Extension (SEE), Firebird 4 new data types

 RAD Server New REST SysAdmin endpoints for logs handling, backups management, and database validation o Integrated deployment feature for RSLite RAD Server Lite (introduced in 11.0): Embeds IBToGo, easy to deploy, unlimited deployment, limited throughput • Web Technologies WebBroker on Android DataSnap quality

Copyright © 2022 by Embarcadero, an Idera company









## **Additional Product Initiatives**

- Appercept's AWS SDK for Delphi New releases expected at a constant pace
- Delphi UI libraries (VCL + FMX) for Python Free UI library for Python developers

Long term distribution deal, included in Enterprise and Architect

 Upgrade to a Delphi license for additional power and features Also, you can use Python in Delphi applications









## **RAD Studio 11.1 Summary**

### I. Focus on Quality and Im

- Usability, performance, stabi
- Extensive High DPI IDE qualit
- Improved High DPI designers and the styled VCL form desi
- Welcome Page now offers ba supports adding custom frar
- GetIt dialog with cached image
- Small new IDE features

### II. Better Code Insight and

- Significative C++ cquery LSP
- Delphi LSP performance focus and quality

nprovements	III. Platfc
oility	o Offici
ity (and Remote Desktop)	Mont
rs for VCL and FireMonkey	o Delpł
signer	Andro
background images and	o C++ S
mes	
ages and a reworked UI	IV. Librai
	o Perfo
JLSP	ands
	datab
P engine work	$\circ$ Some



### orms and Tooling cial support for Windows 11, macOS 12 terey (a), iOS 15, and Android 12 (a) hi macOS 64-bit ARM debugger and roid 64-bit debugger based on LLDB STL and RTL improve

### ries

ormance and quality improvements small additions to Delphi RTL, base libraries, VCL, FireMonkey • Some new small features

## 謝謝您的参加!

Copyright © 2022 by Embarcadero, an Idera company



