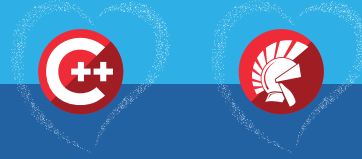


RAD STUDIO 10.4.1

PRODUCT FEATURE MATRIX












































Each feature in the following table has an indication if it is available in Delphi  and/or C++Builder  RAD Studio editions include both languages. Each column covers multiple, similar editions, with any difference specifically called out. Community edition¹ is available only for single personalities and has a limited license. Some of the features are only available for download from the IDE in the GetIt Package Manager, requiring an Internet connection.





































TABLE OF CONTENTS






































































| | |
|--|---|
| INTEGRATED COMPILERS AND TOOLCHAINS | DATABASE APPLICATION DEVELOPMENT AND CONNECTIVITY |
| LICENSING | FIREDAC MULTI-DEVICE DATA ACCESS LIBRARY ² |
| APPLICATION PLATFORMS, INTEGRATED FRAMEWORKS, DESIGNERS AND SDKS | DBEXPRESS AND IBX |
| FMX APPLICATION PLATFORM (FIREMONKEY) | RAD SERVER ³ |
| VISUAL COMPONENT LIBRARY (VCL) | WEBBROKER AND DATASNAP MULTI-TIER |
| COM/DCOM SUPPORT | DATABASE TOOLS |
| INTERNET OF THINGS (IOT) SUPPORT | INCLUDED DATABASES |
| VISUAL LIVEBINDINGS | CLOUD SUPPORT |
| INTEGRATED BUILD TOOLS AND PROJECT SUPPORT | REST CLIENT LIBRARY AND BAAS |
| RECENT C++ LANGUAGE AND CORE RTL FEATURES | XML AND SOAP |
| RECENT DELPHI LANGUAGE AND CORE RTL FEATURES | ADDITIONAL AND THIRD PARTY INTEGRATED TOOLS |
| SHARED RUNTIME LIBRARY FEATURES | CONNECT TO REST APIS WITH ENTERPRISE CONNECTORS |
| INTEGRATED DEVELOPMENT ENVIRONMENT AND DEVELOPER PRODUCTIVITY | FILE COMPARE WITH BEYOND COMPARE TEXT COMPARE |
| SOURCE CODE MANAGEMENT | LOGGING WITH CODESITE EXPRESS |
| INTERNATIONAL DEVELOPMENT | IP*WORKS! COMMUNICATION COMPONENTS |
| REFACTORINGS | TEECHART CHARTING COMPONENTS |
| UML MODELING | FASTREPORT REPORTING SOLUTIONS |
| INTEGRATED DEBUGGING | SENCHA EXT JS PROFESSIONAL EDITION |
| INTEGRATED UNIT TESTING | AQUA DATA STUDIO |
| INTEGRATED HELP | |

¹ Community edition planned for a future 10.4.x release. Current available Community Edition version is 10.3.3.









































| FEATURE | | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---|--|---|---|
| INTEGRATED COMPILERS AND TOOLCHAINS | | | |
| | Delphi 32-bit native code optimizing compiler (dcc32) and toolchain for Windows. Delphi 64-bit native compiler and toolchain for Windows (dcc64) |  |  |
| INTRODUCED IN 10.2 TOKYO! | Delphi 64-bit native compiler and toolchain for Linux (dcclinux64) | |  |
| INTRODUCED IN 10.3.2 RIO! | Delphi native compiler and toolchain for macOS 64-bit (dccosx64) |  |  |
| | Delphi compiler and toolchain for iOS 64 bit devices (dcciosarm64) |  |  |
| | Delphi ARM 32 bit compiler and toolchain for Android devices (dccaarm) |  |  |
| INTRODUCED IN 10.3.3 RIO! | Delphi 64-bit ARM compiler and toolchain for Android 64-bit platform (dccaarm64) |  |  |
| INTRODUCED IN 10.3 RIO! | C++ 17 Clang-enhanced compiler and toolchain for Win32 (bcc32x and bcc32c). Classic Embarcadero C++ compiler and toolchain for Win32 (bcc32) |  |  |
| INTRODUCED IN 10.3.2 RIO! | C++ 17 Clang-enhanced compiler and toolchain for Win64 (bcc64) |  |  |
| | C++Builder iOS 64 bit C++ compiler and toolchain |  |  |
| | C++Builder Android 32 bit ARM compiler and toolchain (bccarm) |  |  |
| LICENSING | | | |
| INTRODUCED IN 10.2.3 TOKIO | Limited license based on revenue and usage and team size (see EULA for details) |   | |
| | | COMMUNITY only | |
| | Licensing suitable for larger teams with no restriction on the number of licenses you can purchase or use and on revenue derived from the product (see EULA for details) |   |   |
| | | PROFESSIONAL only | |
| | Network named or concurrent licenses available |   |   |
| | | PROFESSIONAL only | |
| ENHANCED IN 10.4 SYDNEY! | Earlier version licenses included in network licenses (Delphi 2007–10.3, C++ Builder 2007–10.3). Delphi 7 and C++Builder 6 available separately |   |   |
| | | PROFESSIONAL only | |
| ENHANCED IN 10.4 SYDNEY! | Access to licenses and downloads for earlier versions with purchase of standalone product licenses (Delphi 2007–10.3, C++Builder 2007–10.3, Delphi 7, and C++Builder 6) |   |   |
| | | PROFESSIONAL only | |
| APPLICATION PLATFORMS, INTEGRATED FRAMEWORKS, DESIGNERS AND SDKS | | | |
| INTRODUCED IN 10.2 TOKYO! | Support for Linux server-side and standalone applications for Ubuntu 18.04 LTS, Ubuntu 16.04 LTS, and RedHat Enterprise Linux (version 7) | |  |
| ENHANCED IN 10.4 SYDNEY! | Support for Linux client-side applications using the bundled FMX Linux library* * Available for download in the GetIt Package Manager | |  |









































¹ Community edition planned for a future 10.4.x release. Current available Community Edition version is 10.3.3.













































































| | FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|---|---|---|
| ENHANCED IN 10.4 SYDNEY! | FireMonkey Application Platform for creating 32-bit Windows applications and 64-bit Windows applications for Windows 10, Windows 8.x and Windows 7; Windows Server 2019, 2016, and 2012 R2 |  |  |
| ENHANCED IN 10.4 SYDNEY! | FireMonkey Application Platform for creating 64-bit macOS applications that run on 10.15 Catalina, 10.14 Mojave, and 10.13 High Sierra |  |  |
| ENHANCED IN 10.4 SYDNEY! | FireMonkey Application Platform for creating native iOS applications for iOS 13, iOS 12, and iOS 11 for ARM 64-bit, with expanded support for iOS 13 |  |  |
| ENHANCED IN 10.4 SYDNEY! | FireMonkey Application Platform for creating native Android ARMv7 applications for 10, Pie (9.0), Oreo (8.0), Nougat (7.x), and Marshmallow (6.x) |  |  |
| ENHANCED IN 10.4 SYDNEY! | FireMonkey Application Platform for creating native 64-bit Android ARMv7 applications for 10, Pie (9.0), Oreo (8.0), Nougat (7.x), and Marshmallow (6.x) |  |  |
| ENHANCED IN 10.4 SYDNEY! | VCL (Visual Component Library) for rapidly building 32-bit and 64-bit applications for Windows 10, Windows 8.x and Windows 7; Windows Server 2012 and 2016 |  |  |
| | Windows Desktop Bridge .appx package format deployment (providing support for deploying to the Win 10 store), including the management of additional files, APPX packaging and code signing automatically invoking the platform SDK (<i>this feature requires running RAD Studio on Windows 10 Anniversary Update or above</i>) |  |  |
| ENHANCED IN 10.3 RIO! | Microsoft Windows SDK support for Windows 10, Windows 8 and Windows 7 APIs. Includes support for calling both classic Win32/Win64 APIs and enhanced support for WinRT APIs; required for the Windows Desktop Bridge |  |  |
| FMX APPLICATION PLATFORM (FIREMONKEY) | | | |
| | FireUI multi-device designer for visually building mobile and desktop applications and customize them at design time for different form factors and operating systems |  |  |
| | FireUI multi-device designer ability to make changes on the main user interface that are propagated to other device specific user interfaces and fine tune a device specific form factor without affecting other views; support for adding additional custom views to the designer |  |  |
| | FireUI App Previews lets you preview your FireMonkey application on iOS, Android, desktop targets as you are designing the app. Changes made in the FMX Designer are broadcasted in real time to connected devices using the appropriate Styles for the devices. |  |  |
| | Dozens of UI controls for building FMX applications, covering the most common UI guidelines and including also 3D support, for rapidly building multi-device applications |  |  |
| NEW IN 10.4 SYDNEY! | Metal Drivers GPU Support for macOS |  |  |
| NEW IN 10.4 SYDNEY! | Metal Drivers GPU Support for iOS |  |  |
| NEW IN 10.4 SYDNEY! | New Windows Styled Memo Implementation with enhanced IME support |  |  |
| NEW IN 10.4 SYDNEY! | TBufferedLayout Component for faster rendering of child controls |  |  |
| NEW IN 10.4 SYDNEY! | Support for iOS Launch Storyboard |  |  |
| NEW IN 10.4 SYDNEY! | iOS Theme check and theme change change notification |  |  |

















































































| FEATURE | | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|--|---|---|
| | Address Book component for iOS and Android, allowing access to and extensive modification of device contacts and groups and including monitoring of address book changes by other applications |   |   |
| INTRODUCED IN 10.3.2 RIO! | Google Firebase Push Notification support for the Android platform, with IDE-integrated configuration and updated Google Play services |   |   |
| INTRODUCED IN 10.2.2 TOKYO! | QuickEdit designers for FireMonkey, including a new pane for editing common control properties faster and several other additions to the IDE designer experience |   |   |
| | Extended clipboard service support, with new IFMXExtendedClipboardService interface, with support for querying and working with text, images, and custom formats |   |   |
| | Better High DPI resolution support on Windows |   |   |
| | Support for accelerator keys on Windows, compatible with other platforms and implemented using the new IFMXAcceleratorKeyRegistryService platform service. There is also a new FocusControl property for the Label control to specify the focus target for the label's accelerator |   |   |
| | Grid controls improvements including support for ImageList, new AutoDisplacement and CancelEditingByDefault options, and StringGrid supports for glyph and currency columns |   |   |
| | ListView item designer, providing an interactive way to work with ListView items; Touch animation support for TListView |   |   |
| | Enhanced TFont and TFontStyle to support multi-weight, multi-style fonts |   |   |
| | Improvements to MessageBox, ShowMessage and InputQuery now offering both synchronous (blocking) implementation and asynchronous (non-blocking) implementation |   |   |
| | Mouse-over Hints support for FireMonkey visual controls on desktop |   |   |
| | FireMonkey zOrder support for Windows and native style presentation for Windows for Edit and Memo platform controls |   |   |
| INTRODUCED IN 10.3 RIO! | FireMonkey zOrder support for Android and native style presentation for Android for Edit, Calendar, Switch, and Multiview controls |   |   |
| | Touch animation for Android platform |   |   |
| | FireMonkey apps can receive Android intents, regardless of the source (email, web link, other app). A new sample demonstrates this ability |   |   |
| | FireMonkey Behavior service for automatically adjusting UI properties to the target operating system standards |   |   |
| ENHANCED IN 10.2 TOKYO! | MultiView component to create a UI that adapts to the form factor, from mobile to tablet, from portrait to landscape. Now with specific support for Windows 10 UI, new options to manage borders appearance, and new alignments for docked panel mode |   |   |
| INTRODUCED IN 10.2 TOKYO! | Multi-Threading support for TBitmap, TCanvas and TContext3D |   |   |
| INTRODUCED IN 10.2 TOKYO! | Unification of Delphi and Java threads on Android |   |   |








| FEATURE | | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--------------------------------------|--|---|---|
| | Radiant Shapes controls collection* <i>* Available for download in the GetIt Package Manager</i> |  |  |
| | Specific TSwitch behavior for Windows 10 UI |  |  |
| | Edit and Calendar ability to dynamically render a platform native UI control on iOS; Memo platform controls for iOS for highest input fidelity |  |  |
| | FireMonkey platform rendering TGrid for iOS |  |  |
| | ListView, Calendar, Switch and ScrollBox platform controls for iOS |  |  |
| | MapView component for mobile platforms (iOS and Android) supporting platform specific interactive mapping libraries (respectively, by Apple and Google) |  |  |
| ENHANCED IN 10.2.2 TOKYO! | WebBrowser component for Windows |  |  |
| NEW IN 10.4 SYDNEY! | WebBrowser component for macOS based on WKWebView platform API |  |  |
| | Improved mixing of platform and styled components, with new platform styling options for iOS and controls Z-order improvements (with ControlType property for non-platform controls) |  |  |
| | ImageList component for FireMonkey, for storing and manipulating multiple images and sub-images in a single component; several components can more pick their graphical elements from the ImageList, rather than a standalone image |  |  |
| | Multi-monitor support for desktop platforms |  |  |
| | Splash screen support for Android, with specific project options matching the iOS ones |  |  |
| | Form-level multi-touch support for all platforms |  |  |
| | Tint support for buttons and toolbars on iOS and Android (for control surface and controls icons) |  |  |
| | In-app purchase component for iOS and Android, to help monetize your applications |  |  |
| ENHANCED IN 10.2.3 TOKYO! | Advertising component for Android, including AdMob support based on the Google Mobile Ads SDK (updated to version 7.0 in RAD Studio 10.2.3), also to help you monetize your mobile applications |  |  |
| ENHANCED IN 10.3.2 RIO! | Push notifications support for mobile platforms, to receive remote notifications even if the app is not running (updated to include Firebase Android support) |  |  |
| ENHANCED IN 10.2.2 TOKYO! | FireMonkey support for AppTethering across desktop and mobile applications, including both Wifi and Bluetooth support, with protocol enhancements, including encryption hooks and events to handle when a profile is connected or disconnected |  |  |
| | Native message alerts for iOS and Android |  |  |
| | Custom Pickers for iOS and Android, including Date Picker (DateEdit component) and Time Picker, Time Picker for desktop platforms |  |  |
| | Phone Dialer Support for iOS and Android |  |  |



























| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|---|---|
| Built-in text editing mode for Edit and Memo controls on Android and iOS, including Cut/Copy/Paste/Zoom; Spell Check Support for text input controls on iOS and Android |  |  |
| Notification Center Component for using notifications in your iOS and Android applications, including notification sound and now supporting also Windows 10 Notifications |  |  |
| Gesture support for iOS and Android including swipe (pan), tap, tap and hold, double tap and pinch & zoom |  |  |
| FireMonkey Mobile Application Wizard with header/footer, tabbed, and master detail templates |  |  |
| Full set of native iOS and Android styling options for buttons, toolbars, list boxes, sliders, switch controls |  |  |
| Swipe-to-Delete and Pull-to-Refresh on iOS and Android with the ListView component; search filtering for ListView |  |  |
| WebBrowser component for loading and displaying web content in your iOS and Android applications (now with corresponding desktop component) |  |  |
| Extended ListBox capabilities for iOS and Android, including header/footer/grouped styling, embedded search and expanded LiveBindings support |  |  |
| Support for various keyboard types on iOS and Android |  |  |
| TMagnifier component for easily zooming in on images and text |  |  |
| TCameraComponent component for accessing the front and back camera, the flash, and more device camera features |  |  |
| TabControl with new settings for using tabs as views and a PlatformDefault tab position to automatically adapt tab layout to the current mobile platform, support for TabControl tab icons on Android, slide transition action for TTabControl |  |  |
| FireMonkey Frames for designing portions of the UI and repeating them on multiple forms |  |  |
| Toggle Device Skin to show/hide mobile device background in the multi-device designer |  |  |
| FireMonkey Save State feature for persisting the forms status between sessions (and when the program is stopped by the operating system) |  |  |
| macOS Full screen Mode |  |  |
| Use of IFMXDragDropService to drag data to another applications on macOS |  |  |
| Actions and ActionLists for FireMonkey for better separation of the application logic from the user interface |  |  |
| Ready-to-use action for accessing the camera application and for accessing images from the camera roll on iOS and Android |  |  |
| Share Sheet support on iOS and Android for sharing content via Messaging, Mail, Facebook, Twitter etc. |  |  |



































| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---|---|---|
| FireMonkey control anchors for flexible positioning and sizing of the visual controls; Layout Managers (Flow Layout, Grid Layout) for flexible child controls positioning and sizing |  |  |
| Location Services component for GPS or triangulation, including geocoding support |  |  |
| Orientation sensor (gyroscope/compass) on iOS, Android, and on Windows (requires compatible hardware) |  |  |
| Motion Sensor component for accelerometer access on iOS, Android, and on Windows (requires compatible hardware) |  |  |
| 3D File Import Support |  |  |
| Non-Client Area Application Styling for Windows and Mac |  |  |
| Support for Windows gestures. On-screen keyboard support for Windows touch devices |  |  |
| Edit control with styleable glyph with built-in style support for search bar, password control and more |  |  |
| Animated progress glyphs, including Windows ring |  |  |
| StyleLookUp support with preview of available designs for the selected component |  |  |
| Shared external redistributable bitmap style designer for VCL and FMX |  |  |
| <div data-bbox="94 1205 243 1260" style="background-color: #e91e63; color: white; padding: 2px; font-weight: bold;">INTRODUCED IN 10.3.1 RIO!!</div> 5 new FireMonkey multi-device styles* with theming support for all supported platforms <i>* Available for download in the GetIt Package Manager</i> |  |  |
| Bitmap Style Designer enhancement, including new templates for Windows, Mac OS and Android |  |  |
| Lollipop styles, ability to create blank styles for different platforms, and to adjust objects for different graphic resolutions |  |  |
| Significantly improved integrated FireMonkey Style Designer, and enhancement to the TStyleBook component to support a collection of styles for various platforms |  |  |
| StyleViewer for Windows 10 Style in Bitmap Style Designer |  |  |
| Bitmap Links editor, to modifying TBitmapLink properties directly inside the IDE |  |  |
| Native UI and custom UI control styles |  |  |
| FireMonkey Visual Form Inheritance |  |  |
| Use one shader language for all rendering libraries (OpenGL or 3D) |  |  |

| FEATURE | | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---------------------------------------|---|--|---|
| VISUAL COMPONENT LIBRARY (VCL) | | | |
| | Object-oriented, fully extensible and reusable visual component library (VCL) and applications architecture |   |   |
| | VCL Form Designer to visually build native Windows applications, with live snap-to hints and layout guidelines |   |   |
| | Visual Form Inheritance and Form linking to reduce coding and simplify maintenance; Frames for building and reusing compound components |   |   |
| | Object Repository for storing and reusing forms, Data Modules, and experts |   |   |
| | Object Inspector to set component properties and events |   |   |
| NEW IN 10.4 SYDNEY! | VCL Styles support for High-DPI and 4K monitors, with support for multiple resolution of graphical elements, automatic scaling, and improved element sizing on different DPI configurations |   |   |
| NEW IN 10.4 SYDNEY! | A dozen of ready to use High-DPI optimized VCL styles |   |   |
| NEW IN 10.4 SYDNEY! | Per-control VCL styling support |   |   |
| NEW IN 10.4 SYDNEY! | Custom Title Bars and the TitleBarPanel Component |   |   |
| NEW IN 10.4 SYDNEY! | TVirtualImage component with support for images with multiple resolutions |   |   |
| NEW IN 10.4 SYDNEY! | TEdgeBrowser Component integrating Microsoft's Chromium-based Edge WebView2 component and changes to the TWebBrowser component to support both IE and Edge -- based on Microsoft pre-release version of Edge WebView2 component, might require updates upon release |   |   |
| ENHANCED IN 10.2.2 TOKYO! | QuickEdit designers for VCL, including additional items in the designer menu, a new pane for editing common control properties faster, and several other additions to the IDE designer experience |   |   |
| | Windows components fully integrated with the Windows API. |   |   |
| INTRODUCED IN 10.3 RIO! | New Windows API headers for areas like High-DPI and DPI-awareness, WM_POINTER pen input support, and more |   |   |
| | VCL library source code to help extending and debugging components |   Limited in COMMUNITY |   |
| INTRODUCED IN 10.3 RIO! | New TImageCollection and DPI-aware TVirtualImageList components to manage multiple-resolution images and improve application support for high-DPI monitors and application form scaling. Includes design time support with a new Image Collection editor and a new Virtual Image List editor. |   |   |
| INTRODUCED IN 10.3 RIO! | Support for Windows 10 "Per Monitor V2" mode in application manifest and enhanced system metrics API support (requires Windows 10 Creator's Update, build 1703) |   |   |
| ENHANCED IN 10.3 RIO! | High-DPI Awareness and 4K monitor support, plus Windows 8.1/10 multi-monitor support for VCL applications, with dozens of new improvements |   |   |
| | New custom VCL controls corresponding to some of the new Windows 10 UI controls, which can also be used on previous version of Windows |   |   |

























| | FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--------------------------------------|---|---|---|
| INTRODUCED IN 10.2 TOKYO! | DatePicker and TimePicker VCL controls; StackPanel and CardPanel VCL controls |   |   |
| | ActivityIndicator, SearchBox, RelativePanel, ToggleSwitch, SplitView VCL control; modern looking SelectDirectory function |   |   |
| | CalendarView and CalendarPicker VCL controls |   |   |
| ENHANCED IN 10.3 RIO! | VCL Font Scaling improvements for higher DPI and higher resolution monitors |   |   |
| | Konopka Signature VCL Controls (over 200 additional Windows UI controls)* <i>* Available for download in the GetIt Package Manager</i> |   |   |
| | VCL sensor components for Windows tablets |   |   |
| | VCL support for AppTethering across desktop and mobile applications, with Wifi and Bluetooth support with extensions and protocol enhancements, including encryption hooks, including events to handle when a profile is connected or disconnected |   |   |
| | Taskbar component with progress bars, overlay icons, custom buttons, and multiple previews; JumpList component for adding custom menus to taskbar buttons |   |   |
| | VCL Styles: Create VCL applications with enhanced GUI, with additional Windows 10 Styles for VCL and including Windows touch tablets optimized styles; support for styling of main menus, popup menus, and system menus |   |   |
| | Windows 10 specific VCL styles, to build applications matching Microsoft's Modern look and feel; Premium styles including TabletLight, Sky, and Glow VCL styles |   |   |
| INTRODUCED IN 10.3.1 RIO! | 10 new VCL Windows styles* that users can apply to their Windows applications <i>*Available for download in the GetIt Package Manager</i> |   |   |
| | Create your own custom styles with the VCL Style Designer |   |   |
| | VCL Styling improvements, including support for styling common dialogs and the TWebBrowser component |   |   |
| | Theming and styling support for TGrid descendants |   |   |
| | Integrated gesturing framework with multi-OS support for Windows 8. Gesture Designer enables full control of all gesture design and interaction; Gesture components (TGestureListView, TGesturePreview, TGestureRecorder) to build gesture creation and management into VCL based applications; Interactive multi-touch gestures for pan, zoom, rotate, tap, double tap, tap and hold (requires multi-touch enabled OS) |   |   |
| | TTouchKeyboard a virtual keyboard for enhanced non-keyboard interface interactions that support multiple locales and languages |   |   |
| | Modern VCL Components: TCategoryPanelGroup, TButtonedEdit, TLinkLabel, TBalloonHint |   |   |
| | Enhancements to existing controls: TButton, TEdit, TProgressBar, TListView, TTreeView, TRichEdit, TImageList |   |   |
| | Full support for PNG image format in TImage and TImageList |   |   |
| INTRODUCED IN 10.2 TOKYO! | TDBImage direct support for JPEG and PNG graphic formats |   |   |

| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|---|---|
| Support for Windows Imaging Component (WIC) including JPEG, TIFF, GIF, PNG, BMP, and HD Photo image formats. RAW camera formats (such as NRW, NEF, CRW, CR2, RW2, ARW, SR2, SRF, ORF, PEF, and DNG) also supported with manufacturer supplied codecs |  |  |
| Import Component wizard to import a type library, ActiveX control or .NET Assembly |  |  |
| Component wizard to create the unit for a new component |  |  |
| Standard components including frame, edit, menu, button, label, checkbox, list box, combo box, panel and action list |  |  |
| Additional components including graphical buttons, image, shape, scroll box, splitter, buttoned edit, tabs, panels, action toolbar, and color map |  |  |
| Windows common controls including page control, image list, rich edit, progress bar, date time, calendar, toolbar, tree view and list view |  |  |
| System components including timer, paint box, media player, OLE container and DDE |  |  |
| Dialog components including open, save, open/save picture, open/save text, font, color, print, printer setup, find, replace and page setup |  |  |
| Data Access Controls via datasource and the use of data-aware controls |  |  |
| Data Controls including DBGrid, navigator, text, edit, memo, image, listbox, combo box, checkbox, radiogroup, lookup and rich edit |  |  |
| TWebBrowser support, wrapped on the Microsoft IE ActiveX component |  |  |
| Task dialog component and enhanced Windows dialog components for file open and file save |  |  |
| COM/DCOM SUPPORT | | |
| Full COM/ActiveX support enabling transparent access to IDL and code, source control friendly, and allowing total control over implementation of COM and ActiveX objects; DCOM support |  |  |
| Wizards support wrapping existing VCL components as ActiveX controls |  |  |
| Import .NET assemblies as COM objects in Win32 VCL applications |  |  |
| Legacy support for DataSnap/MIDAS COM/DCOM based multi-tier database application framework |  |  |
| Advanced Type Library Editor that manages IDL, making COM development completely transparent; Support for Automation Object event handling |  |  |
| Create reusable native 32-bit and 64-bit dynamically linked libraries (.DLL), COM controls (.OCX), and standalone COM executable |  |  |
| COM Object Wizard; Microsoft ActiveX ® Control Data binding; Import COM servers as components |  |  |


















































































| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---|--|---|
| INTERNET OF THINGS (IOT) SUPPORT | | |
| Native Bluetooth APIs (on platforms that fully support the technology) for FireMonkey and VCL applications |  |  |
| Bluetooth framework improvements and new TBluetooth component for classic Bluetooth |  |  |
| Bluetooth LE component (on platforms that fully support the technology) |  |  |
| Proximity support based on the “beacons” technology (including the iBeacon and AltBeacon standards) for all supported platforms |  |  |
| Beacon enhancements with support for EddyStone format, change of AdvertiseData parser to include all fields, improved Beacon scan performance, new Android scan modes, and WinRT Bluetooth API integration, StartScan method on Android |  |  |
| New TBeaconDevice class for turning a device on one of the supported platforms into a “beacon” |  |  |
| BeaconFence components* for detecting a device position relative to pre-determined zones based and based on triangulation of beacons positions <i>* Available for download in the GetIt Package Manager</i> | |  |
| BeaconFence enhancements for detecting zones, Windows support, customized calculation of the current position, access last calculated position |  |  |
| New Bluetooth LE and Z-Wave compatible components* for Internet of Things devices, with demo projects for Delphi and C++. In order to use the component, you will need to have the physical IoT device. <i>* Available for download in the GetIt Package Manager</i> |  |  |
| Ready to use Bluetooth LE-based IoT components including heart rate monitors, blood pressure monitors, weight scales, thermometers, Environment sensors, speed and cadence fitness monitors, items trackers, light bulbs |  |  |
| Ready to use Z-Wave compatible IoT components including environment monitors, home automation devices, light and temperature monitors, and more |  |  |
| VISUAL LIVEBINDINGS | | |
| NEW IN 10.4 SYDNEY! | Optimized Visual Live Bindings RTTI integration for better performance |  |
| NEW IN 10.4 SYDNEY! | VCL and FMX controls bound to a TDataSet and TField now respect some of the TField properties like Alignment, EditMask, DisplayWidth |  |
| ENHANCED IN 10.3 RIO! | Visual Live Bindings Designer, to visually connect component properties and data |  |
| | Easily replace prototype data with real ClientDataSet data with one click |  |
| | Context sensitive LiveBindings Wizard supporting both dbExpress and FireDAC |  |











































































| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---|---|---|
| Support for QuickBinding components, ability to visually add and bind to additional component properties |  |  |
| Color coded component properties easily identify bindable members |  |  |
| Zoom control for Visual LiveBindings Designer and ability to save image of current LiveBindings Designer layout; Hide visual elements on right-click |  |  |
| Integrated Layers Management system for LiveBindings Designer with Photoshop® like layers, allowing you to visually organize and hide set of elements in the LiveBindings Designer |  |  |
| Tools Options support for LiveBindings Designer to show/hide certain components from the visual LiveBindings Designer view and enable/disable Wizard option in right-click menu |  |  |
| INTEGRATED BUILD TOOLS AND PROJECT SUPPORT | | |
| IDE support for building and managing projects for 32-bit and 64-bit Windows |  |  |
| INTRODUCED IN 10.2 TOKYO! | IDE support for building and managing projects for 64-bit Linux |  |
| INTRODUCED IN 10.3.2 RIO! | IDE support for building and managing projects for 64-bit macOS (including macOS App Store support and integrated Apple Notarization support) |  |
| Use MSBuild externally from the IDE to compile very large projects with the stand-alone Delphi and C++ compilers. |  |  |
| INTRODUCED IN 10.2.2 TOKYO! | The stand-alone Delphi compilers can now use the large memory address space. |  |
| The IDE shows Header Dependencies when building with bcc32c |  |  |
| Define Android application settings, including supported orientations, and use the new Entitlement lists to include advertising and notifications support in an app |  |  |
| INTRODUCED IN 10.3.3 RIO! | IDE support for creating Android App Bundle (AAB) including both 32-bit and 64-bit binaries for store submission |  |
| NEW IN 10.4 SYDNEY! | Integrated installation of AdoptOpenJDK, required by Android SDK tools | |
| IDE support for adding Java classes to an Android app classes.dex library and customizing it |  |  |
| Support for Android Services in the IDE, including wizards to create Android Services and to add them to an existing Android app |  |  |
| Java2OP (Java to Object Pascal bridge) API headers translation tool (for Android), improved to reduce dependency between units |  |  |
| SdkTransform tool to convert Objective-C / C++ headers to Object Pascal headers |  |  |
| Define info.plist application settings including supported orientations in the IDE |  |  |
| Deploy apps to the iOS Device (Debug/Ad Hoc/ App Store), now with several iOS device provisioning improvements to simplify the deployment process – including Auto Bundle identifier and support for executing an application from the IDE using the AdHoc target |  |  |

| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---|---|---|
| Define iOS application splash screens and mobile app icons in the IDE |   |   |
| Deploy apps to Android devices (Debug/App Store) |   |   |
| ENHANCED IN 10.3.2 RIO! Platform Assistant for deploying and debugging across platforms |   |   |
| INTRODUCED IN 10.2 TOKYO! Platform Assistant (PAServer) for Linux; Deployment Manager: Deploy to Linux | |  |
| Platform Assistant Manager Mac macOS tray app that helps managing multiple versions of Platform Assistant (PAServer) |   |   |
| Deployment Manager: Deploy to iOS, Android, Windows |   |   |
| Deployment Manager: Deploy to macOS |  |  |
| Automatic inclusion of project files (like media files and resource files) to the Deployment Manager |   |   |
| Project Manager view menu for directory (nested), directory (flat) and list view of files in a project and with an enhanced status bar for more file information. |   |   |
| File manipulation and creation through the Project Manager facilities |   |   |
| Flexible build system leveraging MSBuild with identical build process from the IDE or command line |   |   |
| ENHANCED IN 10.2 TOKYO! Delphi 1 through 10.2 project import and C++Builder 3 through 10.2 project import |   |   |
| Build Configurations provide flexibility to organize multiple build settings for all compiler, linker options, and platform support |   |   |
| Named option sets to save and apply build configurations to any project; Share option-sets between build configurations and between projects |   |   |
| Multi-select files in the Project Manager |   |   |
| Build Events for pre-build and post-build on project and file levels |   |   |
| Project dependency checking, Project level build ordering, Build/Make from here – Make or build current project and all later projects |   |   |
| IDE Studio personality indicator – shows which is active when multiple languages are available |   |   |
| Additional command line tools include Microsoft Resource Compiler, TDump utility to structurally analyze EXE, OBJ, and LIB files, GREP tool, and MAKE tool |   |   |
| RECENT C++ LANGUAGE AND CORE RTL FEATURES | | |
| INTRODUCED IN 10.3 RIO! Win32 C++ Clang-enhanced compiler (with C++ 17 language support) |  |  |
| INTRODUCED IN 10.3.2 RIO! Win64 C++ Clang-enhanced compiler (with C++ 17 language support) |  |  |
| ENHANCED IN 10.3.2 RIO! C++ runtime library (RTL) built with the updated Clang-enhanced compiler for Win32 and Win64, including 2018 edition of Dinkumware STL |  |  |

| | FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--------------------------------|---|---|---|
| INTRODUCED IN 10.3 RIO! | Improved C++ and Delphi ABI and header compatibility |  |  |
| INTRODUCED IN 10.2.3 TOKYO! | Support for using our C++Builder compilers to build CMake projects on the command line for Win32, Win64, iOS32, iOS64, and Android, including deployment support |  |  |
| ENHANCED IN 10.2 TOKYO! | Improved optimizations for C++ Clang-enhanced compilers code generation (-O1 and -O2 and now also -O3 optimizations) |  |  |
| | Simplified array initialization and construction for C++ Clang-enhanced compilers |  |  |
| | Android and iOS32 compilers updated to Clang version 3.3 |  |  |
| | The Clang-enhanced compilers are now large-address aware and can take advantage of additional memory |  |  |
| | Additional iterator wrappers over common Delphi RTL containers for all Clang-enhanced compilers for use with C++11 range-for loops and non-member std::begin() and std::end() |  |  |
| | C++ functions for TPoint, TPointF, TRect, TRectF core types |  |  |
| | ANSI/ISO C++11 and 99 Standard language conformance support for 64-bit |  |  |
| | #pragma once support that allows for better compatibility with MSVC and also acts as a header guard |  |  |
| | [[deprecated]] attribute to flag constructs as deprecated |  |  |
| | Secure C library functions |  |  |
| | Custom evaluators for C++ Strings types |  |  |
| | C++ RTTI compatibility with Delphi |  |  |
| ENHANCED IN 10.3.3 RIO! | Updated 2019 edition of the Dinkumware STL with C++17 headers for Win32 and Win64 |  |  |
| | ANSI/ISO standard library Technical Report 1 |  |  |
| | Improved standard C++ heap manager |  |  |
| | Optimized string/memory handling functions |  |  |
| | UnicodeString class and Unicode character types char16_t and char32_t |  |  |
| | Move semantics with rvalue references |  |  |
| | Explicit conversion operators |  |  |
| | Static assertions |  |  |
| | Full type trait support |  |  |
| | Extern templates |  |  |
| | [[final]] and [[noreturn]] attributes |  |  |

















































































| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---|---|---|
| Decltype keyword |  |  |
| Linker error handling to improve memory management flexibility and resolution |  |  |
| INTRODUCED IN 10.2 TOKYO! Large-memory space support for C++ linker and improved resource handling to address heap errors |  |  |
| RECENT DELPHI LANGUAGE AND CORE RTL FEATURES | | |
| NEW IN 10.4 SYDNEY! Custom managed records with the ability to define custom Initialize, Finalize and Assign operations, executed when a record is allocated, de-allocated, and copied |  |  |
| NEW IN 10.4 SYDNEY! New standard functions for low-level bit processing operations: CountLeadingZeros, CountTrailingZeros, CountPopulation |  |  |
| INTRODUCED IN 10.3 RIO! Inline variables declaration, supporting local scope, direct initialization, and type inference; inline constants declaration |  |  |
| INTRODUCED IN 10.3 RIO! Type inference for inline variable declarations (the type is inferred from the value assigned to the variable) |  |  |
| ENHANCED IN 10.3 RIO! Support for calling WinRT APIs, with now over 50 specific Object Pascal interface units |  |  |
| [Weak] and [Unsafe] support for interface references |  |  |
| [Volatile] attribute can be attached to a method parameters and local variables |  |  |
| Delphi compiler and linker performance improvements to improve compilation speed for generic methods and generic methods in standard classes |  |  |
| Improved initialization for dynamic arrays, support for mixing and matching constant and dynamic arrays |  |  |
| New string-like operations on dynamic arrays including + operator concatenation, Insert and Delete |  |  |
| Class, record, and intrinsic types helpers |  |  |
| Predefined helpers for core types such as string, char, integer, other ordinal types, and floating point types |  |  |
| RTTI for indexed properties and RTL support |  |  |
| Reflection support for exposure of Methods, Fields, and Properties to support dynamic invocations and other meta-programming approaches (Enhanced RTTI) |  |  |
| Custom attribute support for most code elements – types, fields, properties, methods, and parameters |  |  |
| Generics with full RTL list and collection support |  |  |
| UnicodeString type as the default string type and support for Unicode char manipulation |  |  |
| Anonymous methods (or closures) |  |  |
| Compiler option to treat warnings as errors |  |  |










| FEATURE | | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|---|---|---|
| SHARED RUNTIME LIBRARY FEATURES | | | |
| NEW IN 10.4 SYDNEY! | Unified memory management across all Delphi compilers and platforms, using classic Delphi memory management also for mobile (and Linux, since RAD Studio 10.3) |  |  |
| INTRODUCED IN 10.2 TOKYO! | Delphi RTL for 64-bit Linux | |  |
| | Delphi and C++ RTL for 32-bit Windows and 64-bit Windows |   |   |
| | Delphi and C++ packages support for 32-bit applications and 64-bit Windows |   |   |
| | Support for Windows 10 Notifications using the NotificationCenter component |   |   |
| INTRODUCED IN 10.3 RIO! | Support for Windows Store interaction via TWindowsStore component, with support for paid applications, paid add-ons, and trial mode |   |   |
| | Support for contracts, the system mechanism for sharing information with other Windows 10 applications (apps can behave like <i>contract sources</i>) using the new SharingContract component – C++ supported in the GetIt Package Manager |   |   |
| | Parallel Programming library for easy development of asynchronous code and faster multi-core applications, without coding threads manually |   |   |
| | System.Threading unit supporting parallel for loops, tasks scheduling and futures |   |   |
| | Optimized Unicode strings handling in iOS and Android ARM compilers |   |   |
| ENHANCED IN 10.4 SYDNEY! | Support for all classic string types (including UTF8String, ANSIStrng, and RawByteString) on iOS and Android |   |   |
| INTRODUCED IN 10.3.2 RIO! | Delphi RTL for macOS 64-bit |  |  |
| | Delphi and C++ RTL for iOS, iOS 64-bit API headers and RTL integration |   |   |
| INTRODUCED IN 10.3.3 RIO! | Delphi RTL for 64-bit Android |  |  |
| ENHANCED IN 10.3 RIO! | Delphi and C++ RTL for Android, with support for Android API level 26 |   |   |
| | DirectX 12 support on Windows |   |   |
| | OpenGL 4.3 support |   |   |
| | Enhanced compiler switches for XML representation of source code |   |   |
| | Extensible, cross platform, framework agnostic login credentials service |   |   |
| | Native zip file support. TZipFile class now has a callback to use during the extraction process to know the current progress, support added to extract ZIP files with passwords |   |   |
| ENHANCED IN 10.3 RIO! | Regular Expressions (Regex) library, now supporting PCRE UTF-16 on Windows |   |   |
| | Object-oriented path, file and directory I/O classes |   |   |
| | Buffered file read and write support, based on the TBufferedFileStream class, a high performance TFileStream descendant based on an internal configurable buffer |   |   |

| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE | |
|--------------------------------------|--|---|---|
| | TMemIniFile and TIniFile have new Modified and AutoSave properties |   |   |
| | TStrings enhancements including new properties IsUpdating, TrailingLineBreak, UseLocale, Options, plus overloaded TStringList constructors and AddPair fluent method |   |   |
| | StringReplace and Pos speed optimization |   |   |
| | Box2D physics engine, for manipulating on-screen objects according to the physics rules |   |   |
| | Object Pascal interfaces for the Box2D physics engine |  |  |
| ENHANCED IN 10.3 RIO! | TStringBuilder for easier and faster string concatenation, optimized and with flexible growth strategy |   |   |
| ENHANCED IN 10.3 RIO! | JSON (JavaScript Object Notation) processing using a JSON.NET implementation for JSON streaming with new readers and writers (including base TJsonReader and TJsonWriter classes) |   |   |
| ENHANCED IN 10.3 RIO! | Specialized JSON readers and writers, including the TJsonTextReader and TJsonTextWriter classes, the new TAsciiStreamWriter class, support for Extended JSON, better exception handling when reading not-well-defined JSON |   |   |
| | Binary JSON (BSON) readers and writers support, as part of the same JSON.NET architecture (including the new TBsonReader and TBsonWriter classes) |   |   |
| | JSON and BSON fluent method builders, including the TJSONArrayBuilder and TJSONObjectBuilder classes |   |   |
| | JSON and BSON fast forward-only iterator (TJSONIterator) |   |   |
| | System.NetEncoding RTL unit for Web encoding and decoding (Base64, HTML, URL) |   |   |
| ENHANCED IN 10.2 TOKYO! | System.Hash RTL unit, with hash functions to support the HTTP framework, now including also method for files hashing |   |   |
| ENHANCED IN 10.2 TOKYO! | HTTP client framework, mapped to platforms libraries on all supported platforms, including also platform HTTPS support (with no need to deploy the OpenSSL library), with improved asynchronous support |   |   |
| | NetHTTPClient and NetHttpRequest components, offering easy access to the HTTP client framework |   |   |
| | Support for native HTTP(S) client libraries on Windows, macOS (Delphi only), iOS and Android |   |   |
| INTRODUCED IN 10.2 TOKYO! | Support for native HTTP(S) client libraries on Linux | |  |
| | HTTP client library improvements including support for asynchronous HTTP requests, time-outs, and automatic decompression of gzip content |   |   |
| | Support for localized resources |   |   |
| | Expression evaluation in compiler directives |   |   |
| | Custom variants with support of your own data types, complex numbers, safe arrays, and passing variants through data sets; Variant support for Int64, unsigned types and Unicode strings |   |   |









































| FEATURE | | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|---|---|---|
| INTEGRATED DEVELOPMENT ENVIRONMENT AND DEVELOPER PRODUCTIVITY | | | |
| NEW IN 10.4 SYDNEY! | New Delphi Code Insight implementation (based on the Language Server Protocol architecture) for including Code Completion, Parameter Completion, Error Insight, Find Declaration, and Tooltip/Help Insight. The classic engine remains optionally available |  |  |
| INTRODUCED IN 10.3.3 RIO! | New C++ Code Insight implementation (based on the Language Server Protocol architecture) |  |  |
| NEW IN 10.4 SYDNEY! | Customizable LSP configuration per language and file extension in the IDE (including the ability to use external engines) |   |   |
| NEW IN 10.4 SYDNEY! | Code editor status bar font zooming, syntax highlighter and file encoding selections |   |   |
| NEW IN 10.4 SYDNEY! | Welcome page extensions with check for Patches and removal of Events feed |   |   |
| NEW IN 10.4 SYDNEY! | New implementation of the IDE Title bar (using the new matching VCL control) |   |   |
| INTRODUCED IN 10.3.1 RIO! | New IDE productivity tool: Bookmarks*, which extends the IDE's previous marking of locations in the code editor. * Available for download in the GetIt Package Manager |   |   |
| INTRODUCED IN 10.3.1 RIO! | New IDE productivity tool: Navigator*, which allows you to quickly jump to any location in your unit through intelligent search (for Delphi), and adds a minimap to the code editor <i>* Available for download in the GetIt Package Manager</i> |   |   |
| INTRODUCED IN 10.3 RIO! | IDE main window UX extensively improved, with a clean and modern look and feel designed for long-term use and productivity |   |   |
| INTRODUCED IN 10.3 RIO! | Commonly used dialogs (Project Options, IDE Options, New Items dialog, GetIt Package Manager dialog, Compiler progress dialog) have been redesigned and improved, for productivity and clarity |   |   |
| INTRODUCED IN 10.3 RIO! | Search added to the Project Options and IDE Options dialogs, allowing you to search for a setting inside each dialog |   |   |
| ENHANCED IN 10.3 RIO! | Styled IDE UI, including ability to toggle and disable IDE styling and support for a dark style. In 10.3 the IDE has a new Light theme based around the blue color and an updated Dark theme |   |   |
| INTRODUCED IN 10.2.2 TOKYO! | IDE UX improvements including a new Welcome page with sample projects, upcoming webinars, YouTube videos feed; updated component icons; and more |   |   |
| ENHANCED IN 10.3 RIO! | Additional IDE Startup Layout for the Welcome Page, with the ability for users to change and set the layout they want to use for each layout, including Startup |   |   |
| | The VCL and FireMonkey Designers can be separated from the code editor window, making it possible to have the designer on one monitor, while coding on another monitor, and to work on multiple forms at the same time |   |   |
| | Delphi project option "Show general messages" to show info messages when building a project |  |  |
| | The C++ Structure Parser has been rewritten and includes support for modern C++ |  |  |

| | FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--------------------------------------|--|---|---|
| | Method Toxicity Metrics; Bookmarks stack, Selection Expansion |  |  |
| INTRODUCED IN 10.2 TOKYO! | New modular View menu, re-arranged with subsections |   |   |
| | IDE built with large memory address model, to provide significantly more memory to the embedded compilers, integrated debuggers, and various tools executed in the IDE process |   |   |
| | Redesigned compiler unit caching mechanism, to free older units in case the available memory is being filled up, when compiling project groups with multiple projects |   |   |
| | Improved multi-monitor support in the IDE, with the ability to place most forms and panes on different secondary monitors |   |   |
| | Form designer option to hide/show non-visual controls icon (reducing form design potential clutter) |   |   |
| | Structure View Icons representing the corresponding component |   |   |
| | Unsaved file auto-recovery – unsaved work is periodically saved to a temporary location. If the IDE closes ungracefully (because of a system crash) the IDE will attempt to recover the user's unsaved work |   |   |
| ENHANCED IN 10.2 TOKYO! | Enhanced IDE Project Options to easily enable High-DPI Awareness in your applications, now supporting also several execution levels affecting the project manifest file on Windows |   |   |
| ENHANCED IN 10.2 TOKYO! | Full customization of the Object Inspector layout, with the ability of hiding the description panel, the quick actions, and the new filter panel |   |   |
| | Object Inspector contents can be filtered to display specific elements |   |   |
| | Shortcuts to increase/decrease the size of the font in the code editor |   |   |
| | GetIt Library Manager for easy discovery, download and update of source code libraries, components, and other features from Embarcadero GetIt servers*. Extended with Categories, UI improvements, and new actions <i>* Use of GetIt requires Internet connectivity. The feature is not available to off-line developers.</i> |   |   |
| NEW IN 10.4 SYDNEY! | GetIt Library Manager enhancements with support for updates, sort by date, subscription only packages |   |   |
| | Configuration settings migration tool to migrate configurations of older versions of the product to a newer version, or between different installations of the same version |   |   |
| | Welcome page with a list of favorite and recent projects |   |   |
| ENHANCED IN 10.3.2 RIO! | Project statistics information for activity tracking and to better understand team productivity (now optional and disabled by default) |   |   |
| | Multi-paste support to let you perform the same paste operation on multiple source code lines at once |   |   |
| | Structural highlighting ; Flow control highlighting, to visually see the flow jumps in your code directly in the editor; Code navigation toolbar with classes and methods combo boxes at the top of the editor, with an additional option to hide it |  |  |

| | FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|------------------------------------|--|---|---|
| | Project Manager enhancements, with the support for adding database files and simplifying their deployment |   |   |
| ENHANCED IN 10.2 TOKYO! | New install experience based on the GetIt architecture; with the ability to select the platforms to install and add more platforms later from the IDE (which has a Platforms Manager option in the Tools menu). Additional installation features are now available in the regular GetIt form. Now supporting parallel downloads to reduce installation time. |   |   |
| | A set of examples and demos to help new and existing developers get the most out of the environment |   |   |
| | Designer snapshots – copy form images to the clipboard |   |   |
| ENHANCED IN 10.3 RIO! | IDE Insight, the fastest way to find and execute commands in the IDE with 1-button click also with object inspector property support |   |   |
| | Code Formatter and beautification for source code including block formatting |   |   |
| | Command-line Code Formatter for integration with automated build processes |   |   |
| | Code Formatter profiles allow users to create / save / load custom formatter options sets |   |   |
| | Audits and metrics |  |  |
| | Search for Usages command now available from the code editor and Delphi Class Explorer context menus |  |  |
| | Compilation can be done in a background thread |   |   |
| | Support for C++ parallel compilation |  |  |
| | Checkbox for Boolean types in the Object Inspector greatly enhancing readability |   |   |
| | Property Editors for Date properties now use Calendar controls |   |   |
| | Use Unit interaction capabilities increased |  |  |
| | Class Explorer gives configurable hierarchical view of class libraries throughout project. Also enables fast navigation to declarations and implementations, as well as easy addition of fields and methods. |   |   |
| | Resource Manager greatly simplifies the addition of resources to projects |   |   |
| | Live Code Templates – dynamic scriptable templates streamlines coding complex and common structures and operations. Create or customize code templates and control the behavior, code generation, and user experience of your templates. Surround Templates that can wrap around selected code or text. |   |   |
| | Editor “Change Bar” indicates modified lines and saved modified lines |   |   |
| | “Smart” Block completion – anticipates and gracefully adds block closures as you type |   |   |
| | Virtual form positioner for VCL designer and FireMonkey designer |   |   |
| | Main toolbar with the addition of Run without Debug option |   |   |

















































| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---|---|---|
| Project Manager now has the ability to run selected applications with either Run or Run without Debug from the context menu. |  |  |
| Hot-key Tool Palette w/ Incremental search – find any component quickly |  |  |
| Gallery in Tool Palette – find gallery wizards when you need them |  |  |
| SyncEdit – block-edit multiple instances of a symbol simultaneously |  |  |
| History Manager with automatic multi-level file backups, file differencing and restore |  |  |
| Structure Pane that displays hierarchical view of source code and provides a VCL Object Treeview for quick navigation and manipulation of objects in the VCL designer |  |  |
| Syntax Highlighting Open Tools API extension with built in support for JavaScript, PHP, and INI files |  |  |
| Ability to individually customize editor options for particular file types |  |  |
| ENHANCED IN 10.3 RIO! Full-featured Open Tools API allows for customization of the IDE through wizards and experts, operate on projects and their various modules, access to the editor and designers, with improved style and theme support |  |  |
| Symbol Insight – click to navigate to declarations and implementations |  |  |
| Code Folding configuration and properties |  |  |
| Editor Gutter – easier to read with less clutter |  |  |
| Code Completion for Object Pascal |  |  |
| ENHANCED IN 10.3.2 RIO! Updated support for Code Completion for the C++ language, with asynchronous invocation support, based on the Language Server Protocol architecture |  |  |
| Custom IDE desktop layout profiles with enhanced support for docked windows |  |  |
| To-do lists keep your development on track |  |  |
| Help Insight – convenient tooltips provide help snippets as you develop |  |  |
| SOURCE CODE MANAGEMENT | | |
| Version Insight – Integrated framework for supporting source code management tooling inside the IDE |  |  |
| Subversion integration into the IDE, including change list labels, SVN merge dialog, branches switching and more |  |  |
| Subversion/History integration |  |  |
| A full default Diff viewer |  |  |
| Git version control integration into the IDE, now including authentication, Push and Pull changes to and from remote repositories |  |  |
| Mercurial version control integration into the IDE (supports cloning your remote repository, commit changes locally, show log data) |  |  |
| Version Insight also available as an open source project |  |  |

| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|---|---|
| INTERNATIONAL DEVELOPMENT | | |
| UnicodeString type ; Unicode-enabled development environment; Unicode-enabled VCL and FMX frameworks |  |  |
| English, German, French, and Japanese translations available for IDE menus and dialogs, compiled units, resources, and source code |  |  |
| Easy switching between the available languages for the IDE menus, dialogs, and more |  |  |
| REFACTORINGS | | |
| Prototype synchronization – as you change the prototype for a function, you can use this feature to synchronize the interface and implementation sections to match (Object Pascal language only) |  |  |
| Extract method and change parameters refactoring, including support for generic types |  |  |
| Rename refactoring for Delphi |  |  |
| Refactor driven Find References |  |  |
| Other refactorings include: Introduce Variable, Introduce Field, Inline Variable, Safe Delete, Push |  |  |
| Members Up / Down, Pull Members Up, Extract Superclass, Extract Interface, Move Members, Declare variable, Declare field, Find unit/import namespace, Extract to resource string |  |  |
| Refactor driven “Find in Files” |  |  |
| UML MODELING | | |
| UML Code Visualization – at any time, get a UML model view of your source code |  |  |
| Object Pascal code generation from class diagram |  |  |
| Object Ancestry; show an object full hierarchy |  |  |
| Automatic Sequence diagrams generation support |  |  |
| Ability to load an image into the diagram for annotations and advanced documentation |  |  |
| Sequence diagrams | |  |
| Collaboration diagrams | |  |
| State charts | |  |
| Deployment diagrams | |  |
| Use case diagrams | |  |
| Activity diagrams | |  |
| Component diagrams | |  |



































































| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|---|---|
| Documentation generation | |  |
| Run Documentation generation from the command-line | |  |
| 80+ Static Code Metrics that allow for deep understanding and analysis of the health of the object domain | |  |
| Kiviat graph enhancements for interactive reporting | |  |
| 10+ introductory level static code Metrics for understanding the health of the object diagram |  | |
| Run static Metrics from the command-line | |  |
| 10 introductory level static code audits for better code understanding |  | |
| 200+ Static Code Audits for deep code analysis to better understand the coding style and approach | |  |
| Pointer Analysis for Audits. Run static Audits from the command-line | |  |
| Import model from Rational ® Rose (mdl import) | |  |
| Language neutral UML 1.5 and 2.0 modeling | |  |
| Transformation from language neutral UML 1.5 and UML 2.0 projects to source code projects | |  |
| Design Patterns support, including GOF patterns | |  |
| Diagram printing |  |  |
| XMI 1.1 Import/Export | |  |
| Full two-way class diagrams with synchronization between code and diagrams | |  |
| OCL 2.0 support |  |  |
| "UML in Color" profile |  |  |
| Diagram hyper-linking and annotations |  |  |
| INTEGRATED DEBUGGING | | |
| Full-featured debugger with color syntax highlighting |   |   |
| Debug remote and local 64-bit Windows applications |   |   |
| NEW IN 10.4 SYDNEY! New debugger for C++ for Win64, based on LLDB 9, including formatters to evaluate common complex types like UnicodeString and AnsiString, C++ strings, vectors, deque, and more |  |  |
| INTRODUCED IN 10.3.2 RIO! Debug remote macOS 64-bit applications |  |  |
| Remote iOS device debugging and remote iOS 64-bit device debugging |   |   |
| Android device debugging |   |   |

| | FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|------------------------------|--|--|---------------------------|
| INTRODUCED IN 10.3.3 RIO! | Debug Android 64-bit apps on device | | |
| INTRODUCED IN 10.2 TOKYO! | Remote Linux 64-bit debugging | | |
| ENHANCED IN 10.2 TOKYO! | Improved debugging support for Clang-enhanced C++ compilers for Win32 | | |
| | Support for Delphi Unicode string evaluation, for evaluating properties and variants and function call support when debugging iOS64 applications | | |
| | CPU View support for iOS and Android application debugging along with support for Delphi Dynamic Arrays | | |
| ENHANCED IN 10.2.1 TOKIO! | Debugging visualizers to enable extended views of debugging data, enhanced with support for Delphi generics and C++ templates | | |
| | Build debugger visualizers for your own custom data types | | |
| | Debug visualizer for TStrings, TDateTime, TDate, and TTime types | | |
| | Detach from “Debug session in progress. Terminate?” dialog | | |
| | Multi-threaded-debugging the ability to selectively “Freeze” and “Thaw” threads | | |
| | Multi-threaded-debugging the ability to set a breakpoint for a selected thread | | |
| | Support for Wait Chain Traversal on Windows | | |
| | Disassembly pane has “Show Opcodes” and “Show Addresses” local menu items | | |
| | Debugger Options: “Scroll new events into view” and “Ignore non-user breakpoints” | | |
| | Call Stack View shows a glyph indicating if the frame has debug info | | |
| | CPU view panes can be opened individually outside of an editor tab | | |
| | Integration between debugger views and panes making it easier to find and understand information | | |
| | Call Stack view now automatically syncs the Locals view when you double click an item | | |
| | Evaluator tooltip hints go transparent when the CTRL key is pressed, allowing you to see through them to the editor | | |
| | Expandable tooltip expression evaluation | | |
| | Expandable watches and local variables view | | |
| | Selective symbol table loading | | |
| | Close implicitly opened files after debugging | | |
| | Multi-select and copy to clipboard support in CPU view | | |
| | Ctrl-Click in editor gutter to enable/disable breakpoints | | |
| | Sort by load order in Modules view | | |


























| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE | |
|---|---|---|---|
| Set Next Statement local menu item in editor |   |   | |
| Exception notification dialog: Break/Continue buttons, "Ignore exception type" checkbox |   |   | |
| Modules View sorting |   |   | |
| Thread view displays status on all processes and threads under debugger control |   |   | |
| CPU view for low-level debugging |   |   | |
| Multi-Process debugging for easy tracing through complex applications |   |   | |
| Breakpoint view with toolbar, in-place editing, and enable/disable checkbox |   |   | |
| Watch view supporting in place editing, checkbox enable/disabling, and the watch names separated from the values with columns |   |   | |
| Multi-tab watch view for logically grouping variables |   |   | |
| Attach to and debug any process, detach from any process |   |   | |
| Run until return |   |   | |
| Advanced breakpoints with Tooltips, actions, and groups for complete debugging control |   |   | |
| Breakpoint Data Aware Triggers |   |   | |
| Debug spawned processes |   |   | |
| Debug Inspector for easily monitoring properties while debugging |   |   | |
| Event log view |   |   | |
| INTEGRATED UNIT TESTING | | | |
| ENHANCED IN 10.3 RIO! | Integrated unit testing with the DUnitX testing framework |  |  |
| ENHANCED IN 10.3 RIO! | DUnitX unit testing support for mobile platforms (iOS and Android) |  |  |
| INTRODUCED IN 10.2 TOKYO! | DUnitX unit testing support for Linux | |  |
| | Runtime support for the DUnit testing framework |   |   |
| | Unit test wizards for quick and easy unit test and unit test project creation |   |   |
| | Execute unit tests from project manager |   |   |
| INTEGRATED HELP | | | |
| | Support for CHM help engine and updated IDE help structure |   |   |
| | Continually updated help system with diagrams showing class hierarchy and declared members pages! |   |   |

| FEATURE | | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|--|---|---|
| DATABASE APPLICATION DEVELOPMENT AND CONNECTIVITY | | | |
| | Powerful cross-platform and multi-database DB access architecture, based on TDataSet class, field definitions, fields and parameters managements |   |   |
| | Support for multiple TDataSet descendant classes shipping with the product or available from third-party vendors |   |   |
| INTRODUCED IN 10.2 TOKYO! | Support for display options for BlobFields |   |   |
| INTRODUCED IN 10.2 TOKYO! | Direct GUID access for TField classes |   |   |
| | Control of the automatic and persistent fields of a data set using the FieldOptions and FieldLifeCycle features. |   |   |
| FIREDAC MULTI-DEVICE DATA ACCESS LIBRARY ² | | | |
| ENHANCED IN 10.2 TOKYO! | Desktop platforms enterprise database support, including MySQL, MariaDB, Microsoft SQL Server, Oracle Database, InterBase, PostgreSQL, Informix, Sybase SQL Anywhere, Microsoft Access, IBM DB2 Server, Firebird, Advantage Database, generic ODBC driver | |   |
| ENHANCED IN 10.2 TOKYO! | Support for local databases, including Microsoft Access database, SQLite and MariaDB database, IBToGo / IBLite, InterBase on localhost, MySQL Embedded, MySQL Server on localhost, Advantage Database local engine, PostgreSQL on localhost, Firebird Embedded, Firebird on localhost <i>Some features in this table marked as 1 are limited to local connections in Professional editions</i> |   |   |
| INTRODUCED IN 10.2 TOKYO! | Linux enterprise database support, including MySQL, MariaDB, Microsoft SQL Server, Oracle Database, InterBase, PostgreSQL, Sybase SQL Anywhere, IBM DB2 Server, Firebird, Advantage Database, MongoDB, generic ODBC driver. Includes also support for local databases like SQLite database and IBToGo / IBLite. | |  |
| | iOS and Android mobile database support, including SQLite, IBToGo and IBLite |   |   |
| ENHANCED IN 10.3 RIO! | Updated FireDAC Microsoft SQL Server driver, supporting MS SQL 2017 | |   |
| ENHANCED IN 10.3 RIO! | Updated FireDAC MySQL driver, supporting MySQL v 8.0 and MariaDB v 10.3, MySQL Prepared Statements API, internal BLOB streaming |  ²  ² |   |
| ENHANCED IN 10.2 TOKYO! | Updated FireDAC ODBC driver 13, with support for data type mapping by data type name | |   |
| ENHANCED IN 10.4 SYDNEY! | Updated FireDAC SQLite driver with support for both static and dynamic linkage of SQLite engine | |   |
| ENHANCED IN 10.3 RIO! | Updated FireDAC InterBase with new support for TRUNCATE command, transaction wait time and little/big endian configuration in connection parameters, which adds to the support for querying the database service manager, real BLOB streaming and array data type |  ²  ² |   |
| | Updated FireDAC Oracle driver to support v 11g and 12c APIs, including among many other new features support for VARCHAR2, NVARCHAR2, and RAW data types up to 32K, native BOOLEAN in PL/SQL, 64-bit integers and unsigned INTs, identity / auto-increment columns, query change notifications, implicit ROWID fetching, implicit results, additional connection modes, network timeouts, and transaction state detection and synchronization. | |   |
| | TFDOracleAdmin service component | |   |










































² Some features are limited to local connections in Professional and Community editions











































| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--------------------------------|--|---|
| | Updated FireDAC Advantage driver with support for version 12 features like GUID data type, backup archive, default values phrase; improved support for encrypted tables, improved TFDADSUtility component |     |
| | Updated FireDAC DB2 driver, with support for DB2 on AS/400, IDENTITY columns, and a connection definition parameter |   |
| ENHANCED IN 10.3.1 RIO! | Updated FireDAC Firebird driver with support for version 3.0.4 and Firebird embedded, including local connection protocol, FB\$OUT package, support for long statements, little/big endian configuration in connection parameters, and more. |     |
| ENHANCED IN 10.3 RIO! | FireDAC PostgreSQL driver enhancements for version 10 including identity columns, macaddr8, password encryption and little/big endian configuration in connection parameters |     |
| ENHANCED IN 10.3 RIO! | FireDAC SQL Anywhere driver, now with support for ToolHome property and FDEventAlerter |   |
| | Updated FireDAC Informix driver with support for retaining update locks and pessimistic locking, plus ISAM error codes |   |
| ENHANCED IN 10.3 RIO! | Complete FireDAC support for the NoSQL MongoDB database, including a FireDAC MongoDB driver, now with TimeZone connection parameter |   |
| | MongoDB API wrapping classes, including TMongoConnection, TMongoDatabase, TMongoCollection and more MongoDB query, pipeline, update commands, with fluent methods builders |   |
| | MongoDB specific datasets, including TFDMongoDataSet (which allows to attach dataset to MongoDB cursor), TFDMongoQuery (which allows to execute queries to MongoDB collection) and TFDMongoPipeline (which allows to execute pipelines to MongoDB collection), and TMongoDocument Iterate method to iterate through document items |   |
| | FireDAC Teradata database support, based on the Teradata database ODBC driver |   |
| | FireDAC support for InterBase Change Views |     |
| | FireDAC support for change notifications, now with additional support for Oracle and MongoDB databases |     |
| | Improved FireDAC updates management |     |
| | Tools and scripts to help migration of dbExpress code to FireDAC |     |
| | FireDAC streaming support for blob fields and support for MSSQL file streams |     |
| | Support for DBMS API command native timeouts |     |
| | FireDAC connection parameters are now displayed in the Object Inspector as a record |     |
| | IBLite specific driver for desktop and mobile |     |
| | InterBase encryption connection options |     |
| | Windows/Mac native driver for Informix database |   |
| | Source code of the included database drivers |   |


















































| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--------------------------------|--|---|
| | Comprehensive support for SQLite v3.+ database, including “smart” data type recognition, supporting both dynamic and static linking |   |
| ENHANCED IN 10.2 TOKYO! | FireDAC ETL support (Batch move) with optimization and extension of the TFDBatchMoveSQLWriter component, with support for MERGE / INSERT OR REPLACE commands and for dmAppend, dmUpdate, dmAppendUpdate modes. Features new JSON Writer support added in 10.2.2. |   |
| | Easy to use TDataSet descendant classes |   |
| | Unified Data Access API |   |
| | Improvements of FireDAC cached updates mode, including UpdateOptions. AutoCommitUpdates property and improved compatibility with ClientDataSet |   |
| | FireDAC clients for DataSnap |   |
| | High-performance in-memory dataset |   |
| | FireDAC complete source code, including drivers source code |   |
| | Live Data Window mode enabling fast bi-directional navigation through large datasets |   |
| | Array Data Manipulation Language (DML) command execution and Command Batches for batch applications and for minimizing network traffic |   |
| | Direct support for asynchronous command execution, command execution timeout, and command execution canceling |   |
| | Cached updates mode with ability to track correlated changes for several datasets with cascading updates |   |
| | Full support for auto-incrementing fields, including those based on generators and table triggers |   |
| | SQL dialect abstraction through FireDAC escape sequences, conditional statements and macros |   |
| | Data type unification with flexible and adjustable data type mapping |   |
| UPDATED IN 10.2 TOKYO! | Easy to use TFDMemTable - in-memory dataset, highly compatible with TClientDataSet, now including optimized JSON serialization and the ability to edit the dataset data at design time |   |
| | DataSnap client support for HTTP, HTTPS and TCP/IP protocols and authentication |   |
| | Local SQL with heterogeneous SQL commands to TDataSets, full SQLite SQL dialect support, add-hoc TDataSet lookup |   |
| DBEXPRESS AND IBX | | |
| | dbExpress™ 4 database connectivity framework with connection pooling, tracing, and delegate drivers |   |
| | dbExpress local connectivity to InterBase, MySQL, SQLite | |
| | Included dbExpress drivers available for 64-bit Windows – InterBase local, MySQL local, and SQLite local |   |






















































































| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---|---|---|
| Included dbExpress drivers available for 64-bit Windows – InterBase, Firebird, Oracle, MySQL, SQL Anywhere, and Informix |  |  |
| TSQLMonitor support | |  |
| InterBase ToGo dbExpress driver for Windows, iOS and Android |  |  |
| dbExpress Server connectivity to InterBase ® XE7 and XE3, Firebird 2.5, 2.1 and 1.5, Oracle® 11g and 10g, Microsoft SQL Server® 2008, 2005, and 2000, Informix ® 9x (not Unicode-enabled), IBM DB2 ® 9.x (not Unicode-enabled), SQL Anywhere™ 12 and 11 (Unicode-enabled); and SQL Anywhere 9 (not Unicode-enabled), Sybase ® 12.5 (not Unicode-enabled), MySQL 5.1 and 5.0 (Unicode enabled) and 4.1 | |  |
| dbExpress ODBC Driver | |  |
| TClientDataSet for managing and manipulating datasets in-memory (with support for all platforms) |  |  |
| INTRODUCED IN 10.2 TOKYO! ClientDataSet support for 64-bit Linux | |  |
| INTRODUCED IN 10.3.2 RIO! ClientDataSet support for 64-bit macOS | |  |
| LiveBindings connect any type of data to any UI or graphical element in VCL and FMX |  |  |
| dbGO™ for ADO connectivity for Windows (MDAC 2.8) |  |  |
| InterBase Express (IBX) Components, including support for iOS and Android |  |  |
| RAD SERVER ³ | | |
| ENHANCED IN 10.3.2 RIO! RAD Server (formerly known as EMS) turnkey REST based middleware stack that includes API hosting, data access, and SQL Database access, with significantly optimized performance ³ | |  |
| INTRODUCED IN 10.2 TOKYO! Build, test and deploy RAD Server packages on Linux | |  |
| Create custom REST APIs for your business functionality and map them to custom URIs, using loadable packages for RAD server | |  |
| Integrated with FireDAC high-performance enterprise data access for Oracle, DB2, Microsoft SQL Server, Informix, SQL Server, and many more database servers | |  |
| INTRODUCED IN 10.3 RIO! New EndpointProduce attribute to map MIME types (from Accept HTTP request header) to GET endpoints; new EndpointConsume attribute to map MIME types (from Content-Type HTTP request header) to PUT, POST, PATCH endpoints | |  |
| INTRODUCED IN 10.3 RIO! HTTP Verb to Custom Method Name Mapping | |  |
| INTRODUCED IN 10.3 RIO! Ability to Delegate Processing of a Request to a Custom Class or Component (sharing response processing code) | |  |
| INTRODUCED IN 10.3 RIO! New TEMSFileResource and TEMSDataSetResource components for an extremely simplified implementation of RAD Server endpoints mapped to file system folders access and database tables and queries access, including support for paging and sorting | |  |




³ In version 10.3 Rio, Enterprise editions include also a single site RAD Server deployment license (additional RAD Server deployment licenses are sold separately), while Architect editions include a multi-site deployment license




| FEATURE | | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|-----------------------------------|--|---|---|
| INTRODUCED IN 10.3.2 RIO! | New FireDAC database connection wizard, for generating a properly configured TEMSDataSetResource components mapped to queries for one or more selected database tables | |   |
| INTRODUCED IN 10.2 TOKYO! | RAD Server (EMS) multi-tenancy support and console app for managing tenants configuration (on Windows and Linux) | |   |
| INTRODUCED IN 10.2 TOKYO! | RAD Server File Dispatching Support | |   |
| ENHANCED IN 10.3.2 RIO! | RAD Server Console UI redesign and migration to the Ext JS library | |   |
| ENHANCED IN 10.3.2 RIO! | EMS Push Notifications server support for iOS and Android (updated to Firebase) | |   |
| | EMSClientAPI component to simplify EMS client side development | |   |
| ENHANCED IN 10.2 TOKYO! | User, groups, sessions, and API calls analytics and reporting using a web based interface using the EMS Console (eventually filtered by tenant) | |   |
| ENHANCED IN 10.3.2 RIO! | Redesigned and expanded RAD Server Console (RSConsole.exe) client application to manage user accounts, edit the local configuration and run REST debugger-based requests against a RAD Server instance | |   |
| | ThingPoint provides developers with an enterprise access point between remote gadgets and devices; a ThingPoint can locally store, filter, and compute vast amounts of IoT data collected at the edge, while ensuring only critical data is synched with the central repository, an Enterprise Mobility Services server | |   |
| ENHANCED IN 10.3.2 RIO! | Support for declaring and retrieving EMS metadata, based on the Swagger open API initiative (http://swagger.io). This allows the use of the metadata language as YAML or JSON for the representation of the EMS REST API. Initial documentation generation is now an option of the RAD Server module wizard. | |   |
| INTRODUCED IN 10.3.2 RIO! | Installers to deploy the RAD Server engine and all of the required files to Windows and Linux servers* <i>* Available for download in the GetIt Package Manager</i> | |   |
| INTRODUCED IN 10.3.3 RIO! | Support to deploy Delphi Linux applications in general and RAD Server applications in particular to Docker. <i>* Available for download in the GetIt Package Manager</i> | |  |
| WEBBROKER AND DATASNAP MULTI-TIER | | | |
| | WebBroker library for HTTP servers development and integration, supporting CGI, ISAPI libraries for Microsoft IIS, and native HTTP servers based on Indy library |   |   |
| | WebBroker support for Apache HTTP server modules |   |   |
| | WebBroker default encoding changed to UTF-8 rather than ANSI |   |   |
| INTRODUCED IN 10.2 TOKYO! | WebBroker deployment support in Linux, as stand-alone or Apache modules | |  |
| | Create multi-tier database applications with DataSnap for Windows servers | |   |
| INTRODUCED IN 10.2 TOKYO! | Create multi-tier database applications with DataSnap for Linux servers | |  |
| | Deploy DataSnap servers on Microsoft IIS server (HTTP or HTTPS) using the WebBroker architecture | |   |








| | FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|------------------------------------|---|--|---|
| ENHANCED IN 10.2 TOKYO! | Deploy DataSnap servers on Apache HTTP server (using HTTP or HTTPS) using the WebBroker architecture. For Delphi available also on Linux. | |   |
| | DataSnap clients uses System.NET for HTTP and HTTPS, with no need to deploy the | |   |
| | OpenSSL client library (now both for REST connections and HTTP connections) | |   |
| | DataSnap server methods support TDBXJSONStream parameter for passing JSON streams between client and server | |   |
| | HTTPS support in stand-alone DataSnap Applications | |   |
| | DataSnap server ability to terminate socket connection. Communication Timeout for HTTP protocol | |   |
| | Specific DataSnap support for exposing FireDAC datasets and reconciling changes using deltas (with the unit FireDACJSONReflect), now with data compression for better throughput optimization | |   |
| | Heavyweight callbacks support broadcasting to specific callbacks | |   |
| | Authentication and role-based authorization. | |   |
| | Callback channel events for servers and clients | |   |
| | DataSnap REST server support for multiple Callback Tunnels | |   |
| | Session Events for TCP/IP Protocol, Object support in DataSnap sessions | |   |
| | Monitor and control connections | |   |
| INTRODUCED IN 10.2 RIO! | DataSnap REST now explicitly specifies "Content-Type=application/json" | |   |
| ENHANCED IN 10.2 RIO! | DataSnap REST client connection (TDSRestConnection), for all platforms, with new SecureProtocols property | |   |
| | Allow query parameters in REST calls and store them | |   |
| | Proxy information support for HTTP connections | |   |
| | ServerMethods give complete control over functionality of middle tier. Use TJSONValue pairs making it easier to pass data | |   |
| | Improved Session events for increased simplicity of a multi-tier implementation | |   |
| | DataSnap wizards from the Object Gallery to make server and client creation even easier | |   |
| | DataSnap wizard source code enabling developers to build their own DataSnap server wizards | |   |
| | Added support for REST(ful) interface and exposure from the Server and REST client proxy generation | |   |
| | DataSnap Server Proxy generation for Object Pascal and C++ clients | |   |

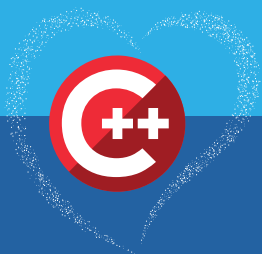
| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|---|---|
| Support for HTTP and HTTPS communication protocol beyond the local DataSnap (TCP/IP) approach; Added HTTP tunneling support for client code outside the firewall | |   |
| Added Filter support for encryption and compression over-the-wire | |   |
| Included encryption PC1 and compression filters now included for quick enablement. | |   |
| Lightweight Callbacks | |   |
| Windows 32-bit and 64-bit native (DBX) clients and REST clients | |   |
| macOS REST clients | |  |
| REST / JavaScript client support for browser platforms | |   |
| DATABASE TOOLS | | |
| Data Explorer support for FireDAC, optimized to add and manage database connections and browse database schema, including primary keys, foreign keys and sequences or generators |   |   |
| Data Explorer optimized to add and manage database connections and browse DB schema |   |   |
| Drag and Drop from FireDAC nodes and dbExpress nodes in the Data Explorer into forms and data modules to speed development |   |   |
| Direct SQL manipulation for any FireDAC connection |   |   |
| SQL console views for running queries and viewing results on any dbExpress 4 supported database |   |   |
| INCLUDED DATABASES | | |
| ENHANCED IN 10.3.3 RIO! | InterBase 2020 Developer Edition – up to 20 users and 80 logical connections |     |
| ENHANCED IN 10.3.3 RIO! | IBLite 2020 for iOS and Android with unlimited deployment license |     |
| ENHANCED IN 10.3.3 RIO! | IBLite 2020 for Windows with unlimited deployment license | |
| ENHANCED IN 10.3.3 RIO! | IBLite 2020 for macOS with unlimited deployment license |   |
| INTRODUCED IN 10.2.3 RIO! | Free InterBase ToGo Deployment License for mobile platforms |   |
| CLOUD SUPPORT | | |
| | Windows Azure components including AzureConnectionString, AzureBlobManagement, AzureQueueManagement, and AzureTableManagement |     |
| | Cloud libraries now use the System.Net native HTTP and HTTPS support | |
| | Ability to manipulate Windows Azure blobs, queues, and tables | |
| | MetaData support for TAzureQueueManagement | |
| | ContinuationToken support for Azure Table | |

| FEATURE | | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|-------------------------------------|--|---|---|
| ENHANCED IN 10.2 TOKYO! | Azure support updated to the current Azure APIs |   |   |
| | Amazon Simple Storage Service (S3) API |   |   |
| | Amazon Queue Service API |   |   |
| | Amazon SimpleDB API |   |   |
| ENHANCED IN 10.4 SYDNEY! | AWS support updated to the current AWS APIs and a more flexible support for regions |   |   |
| | Deploy to Amazon EC2 and Windows Azure |   |   |
| REST CLIENT LIBRARY AND BAAS | | | |
| ENHANCED IN 10.3 RIO! | Client Library for simplified invocation of REST services, with improvements in MIME types handling, new properties (RedirectsWithGET and SecurityProtocols) and new events (OnNeedClientCert and OnAuthEvent) |   |   |
| | Authorization support including Basic Authentication, Plan Authentication, OAuth1, OAuth2 |   |   |
| | TRestClient, TRestRequest, and TRestResponse components |   |   |
| | REST Debugger tool for testing REST calls and their parameters |   |   |
| INTRODUCED IN 10.3 RIO! | Enhanced REST Request parameters, with support for list parameters, parameters streaming, query parameters for all request methods, content body access |   |   |
| | JSON reader and writers used in the REST client library |   |   |
| | Backend as a Service (BAAS) architecture, with unified interfaces for the most common operations like user management, file storage, objects storage, and notifications support |   |   |
| | Integrated BaaS support for Kinvey and the Parse API |   |   |
| | JSON reader and writers used in the BaaS client library |   |   |
| XML AND SOAP | | | |
| | TXMLDocument component working on all platforms |   |   |
| | TXMLDocument component support for MSXML on Windows; native OmniXML library and native ADOM library on other platforms |   |   |
| | Easier selection of the default XML engine for XML data processing |   |   |
| | Easily create Win32, Win64 SOAP Web Services |   |   |
| | Build client-side SOAP Web Services, including support for SOAP 1.2 clients and mobile platforms |   |   |
| ENHANCED IN 10.3.1 RIO! | SOAP clients use the HTTP client library, with full support for the native SSL layer on each platform (with improved support for client certificates) |   |   |
| | WSDL External Schema support | |   |

| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|--|---|
| XML Transformation Tools and Components to exchange data between XML and datasets | |   |
| Native Object Pascal and C++ XML bindings to simplify XML programming – access XML documents using interfaces | |   |
| SOAP runtime support for optional and unbounded elements |   |   |
| ADDITIONAL AND THIRD PARTY INTEGRATED TOOLS | | |
| CONNECT TO REST APIS WITH ENTERPRISE CONNECTORS | | |
| INTRODUCED IN 10.3.3 RIO! | Enterprise Connector, powered by CData, allow you to integrate 70+ Enterprise applications, simplifying connectivity into a standard model using SQL* |   |
| INTRODUCED IN 10.3.3 RIO! | Includes components for QuickBooks Desktop, MailChimp, Salesforce, YouTube, SugarCRM, Jira, SurveyMonkey, Amazon DynamoDB, Couchbase, PayPal, eBay, Google Sheets, Facebook, Twitter, Slack, Dropbox and more* <i>*requires separate download from CData web site</i> |   |
| FILE COMPARE WITH BEYOND COMPARE TEXT COMPARE | | |
| Beyond Compare Text Compare integration |   |   |
| Compare and edit the contents of files with syntax highlighting |   |   |
| Ignore changes in whitespace and comments |   |   |
| Print reports of differences or save them as HTML or plain |   |   |
| Filter display to only show differences, optionally with a few lines of context |   |   |
| Built-in support for Object Pascal, C++, HTML, DFMs, and more |   |   |
| Adds a “Compare” menu to the IDE’s “Edit” menu and Project Manager, with commands to compare against previous revisions, other editor tabs, and original files |   |   |
| Automatically configured for both differences and merges from the History view |   |   |
| LOGGING WITH CODESITE EXPRESS | | |
| UPDATED IN 10.4 SYDNEY! | Raize Software CodeSite Express integration provides advanced application logging and debugging capabilities* <i>* Available for download in the GetIt Package Manager</i> |   |
| Log all kinds of information without data conversions including strings, numbers, dates & times and even objects, string lists, exceptions, and much more |   |   |
| Log information from application code (including recursive functions and multiple threads) without interrupting program execution or causing side effects |   |   |
| Emphasize important logging information through a variety of message types |   |   |
| Send logging messages to a CodeSite Log File for later review or to the CodeSite Live Viewer for real-time analysis, or to both simultaneously |   |   |
| Utilize the extensive analysis tools in the CodeSite Viewers to analyze message logs and locate problem areas faster |   |   |

| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|---|---|---|
| Filter message logs by application name, process id, thread name, computer name, category, and message text |  |  |
| Quickly organize the message log into multiple views by using the advanced CodeSite Message Organizer |  |  |
| Control the amount of logging information generated by using additional CodeSite loggers with their own Category instead of relying on arbitrary logging levels |  |  |
| Record method calls to add call stack structure to the message log |  |  |
| IP*WORKS! COMMUNICATION COMPONENTS | | |
| The full version of /n software's IP*Works! Components – A comprehensive suite of components for Internet communications including more than 40 individual components covering every major Internet Protocol* <i>* Available for download in the GetIt Package Manager</i> |  |  |
| Royalty free commercial components for Internet development including ATOM, CalDAV, FileMailer, FTP, HTMLMailer, HTTP, ICMPPort, IMAP, IPDaemon, IPInfo, IPMonitor, IPPort, JSON, LDAP, Mcast, MIME, MX, NetClock, NetCode, NetDial, NNTP, Ping, POP, RCP, REST, Rexec, Rshell, RSS, SMPP, SNPP, SOAP, Syslog, Telnet, TFTP, TraceRoute, UDPPort, WebDav, WebForm, WebUpload, Whois, XMLp, and XMPP |  |  |
| Components are easy to use, with a uniform, intuitive, and extensible design; share common interfaces across platforms and technologies |  |  |
| Components are fast, robust, and reliable with minimal resource consumption; lightweight and have no dependencies on external libraries |  |  |
| Detailed reference documentation, hundreds of sample applications, fully-indexed help files, and an extensive online knowledge base |  |  |
| TEECHART CHARTING COMPONENT | | |
| UPDATED IN 10.4 SYDNEY! TeeChart Standard components including chart, DBchart, and a rich set of different business graph types.* <i>* Available for download in the GetIt Package Manager</i> |  |  |
| FASTREPORT REPORTING SOLUTIONS | | |
| UPDATED IN 10.4 SYDNEY! FastReport VCL RAD Edition reporting tool |  |  |
| Exports to popular formats (PDF, RTF, HTML, BMP, JPEG, TIFF, GIF, TXT, CSV) |  |  |
| Grouping with drill-downs |  |  |
| Caching of the big reports(uses less memory) |  |  |
| Six levels in master-detail-subdetail relation |  |  |
| UPDATED IN 10.4 SYDNEY! FastReport FMX RAD Edition reporting tool * <i>* Available for download in the GetIt Package Manager</i> |  |  |

| FEATURE | PROFESSIONAL / COMMUNITY ¹ | ARCHITECT / ENTERPRISE |
|--|--|---|
| SENCHA EXT JS PROFESSIONAL EDITION | | |
| Ext JS HTML5/JavaScript (Framework and UI Component Library) - Pro Edition | |  ARCHITECT ONLY |
| Cmd: Build Optimization Tool | |  ARCHITECT ONLY |
| Ext JS Stencils: Design Kit | |  ARCHITECT ONLY |
| Architect: Visual App Builder | |  ARCHITECT ONLY |
| Sencha Themer: Styling Tool | |  ARCHITECT ONLY |
| AQUA DATA STUDIO | | |
| Register Servers/Databases, Database Navigator/Explorer | |  ARCHITECT ONLY |
| Query Analyzer (SQL editor) and Query Builder | |  ARCHITECT ONLY |
| Table Data Editor | |  ARCHITECT ONLY |
| Visual Analytics | |  ARCHITECT ONLY |
| Schema/Data/File Compare Import/Export Data and DDL | |  ARCHITECT ONLY |
| ER Modeler | |  ARCHITECT ONLY |
| Database Administration | |  ARCHITECT ONLY |



Download a Free Trial at www.embarcadero.com/products
CORPORATE HEADQUARTERS | EMBARCADERO TECHNOLOGIES, INC.
| 10801 North Mopac Expressway, Building 1, Suite 100 | Austin,
TX, 78759, USA
www.embarcadero.com | sales@embarcadero.com

© 2020 Embarcadero Technologies, Inc. Embarcadero, the Embarcadero Technologies logos, and all other Embarcadero Technologies product or service names are trademarks or registered trademarks of Embarcadero Technologies, Inc. All other trademarks are property of their respective owners. 082720