

RAD STUDIO

Should I Choose Enterprise?

by Stephen Ball - June 2021

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Notes for the Reader

The RAD Studio IDE provides a home to both the Delphi (the Modern Object Pascal) and C++Builder (C++ standards based) languages. The powerful libraries and features inside RAD Studio are predominately available to both Delphi and C++, with a few exceptions. In this paper, the term RAD Studio will be used to refer to content available for both languages. Anything that is specific to a language will use that language by name. All feature references should be checked against the latest feature matrix, available on the Embarcadero website, prior to purchase.

Introduction

RAD Studio, Delphi® and **C++Builder®** are available in **Professional, Enterprise** and **Architect** Editions.

This paper will explore the differences between the Professional and Enterprise editions to help you choose the right edition for your needs.

The **Professional** Edition of RAD Studio, Delphi® and C++Builder® is ideal for developers creating desktop and mobile applications with high speed and performance, and applications connecting to local peripherals and devices. Developers choose the professional edition for the deepest Windows 10 API integration in the market, plus rapid low-code application prototyping with stunning native UI, providing the best end user experience.

The **Enterprise edition** of RAD Studio, Delphi® and C++Builder® includes all the power of the Professional edition, plus a host of powerful enhancements and additional libraries for highly connected application development and secure mobile data storage. Keep reading to discover more about those.

The **Architect** Edition of RAD Studio, Delphi® and C++Builder® builds on top of Enterprise with a multi-site license for RAD Server (a standards based full powered Mobile enterprise application platform (MEAP)), plus a selection of **industry-leading tools** from within the Idera group, including **Ranorex** (for UI testing), **Aqua Data Studio** (a complete database IDE), and **Sencha Architect** (a leading JavaScript web-development framework).

If at any time you want to speak to someone about which is the right edition for your project, then please contact our global network of Partners and Sales People via <https://www.embarcadero.com/company/contact-sales>

Who Should Read This Paper

This paper is for those looking to choose the right edition of RAD Studio, Delphi® or C++Builder® for themselves or their team, or those looking to validate their reason to jumpstart their development with a higher edition.

Accessing Data Across Your Network

Blazingly fast database access with FireDAC

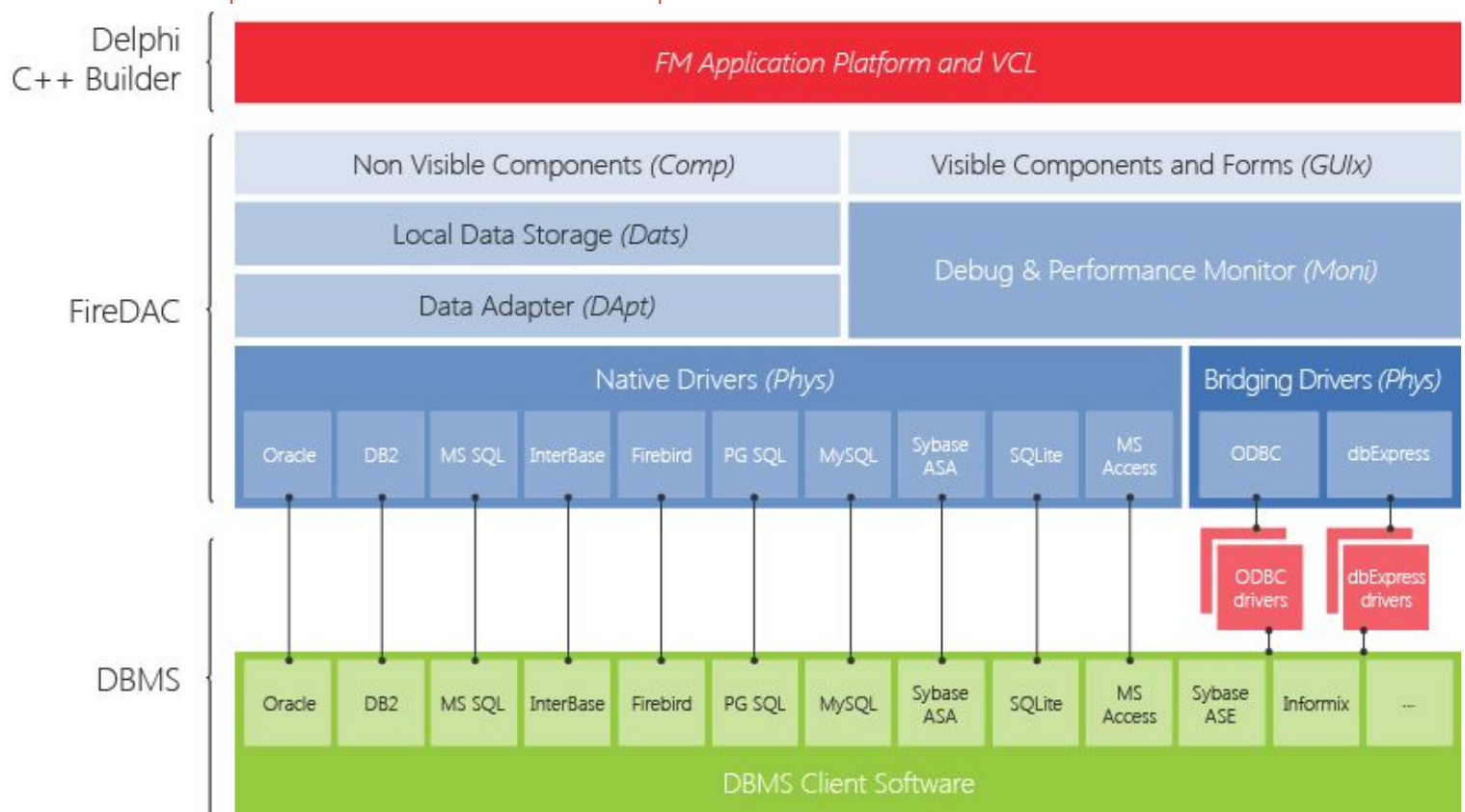
When it comes to accessing data, the FireDAC components inside RAD Studio provide blazing fast data access to a broad range of industry-leading databases.

FireDAC is a powerful yet easy-to-use access layer that supports, abstracts, and simplifies data access, providing all the features needed to build real-world high-load applications. FireDAC provides a common API for accessing different database back-ends, without giving up access to unique database-specific features and without compromising on performance.

The **Enterprise** edition for FireDAC **adds network-wide connectivity** to the already broad connectivity for local and embedded database connections in Professional Edition. Additionally, it adds access to **NoSQL** with MongoDB and also add-in **ODBC** for any other database without a native FireDAC driver.

Read more on FireDAC here:

<https://www.embarcadero.com/products/rad-studio/firedac>



Full local/embedded, client/server and enterprise connectivity to all supported databases including InterBase, SQLite, MySQL, SQL Server, Oracle, PostgreSQL, DB2, SQL Anywhere, Advantage DB, Firebird, Access, Informix, DataSnap and support for ODBC to Teradata and many more. Support also includes NoSQL with MongoDB.

Using BDE or ADO? - Time To Go! (To FireDAC)

Many existing RAD Studio developers (with applications that have been successfully running for many years) have been struggling with connectivity issues and deployment changes around ADO and BDE. The BDE was deprecated in 2000, due to limitations in the architecture and incompatibilities with modern versions of Windows.

FireDAC was written to be a replacement for the BDE from the ground up, making it the simplest migration path for any BDE project. Due to the way RAD Studio Components were used to abstract the Microsoft ADO layer, it's also very simple to migrate to FireDAC from ADO.

One developer once said to me in Sweden: "We moved to FireDAC from ADO, and released the product as a major update. The customers are delighted, our application was immediately faster, easier to deploy and more stable."

Migration to FireDAC for existing code can even be done using automatic tools like reFind (for Delphi). Other tools such as those by [DelphiParser](#) can also be used for automating your migration of C++ and Delphi projects to FireDAC. For more on migrating visit the [Migration and Upgrade Center](#) on the Embarcadero website.

Managing Databases & Visualising Data

If you need to develop, manage, or administer databases; access, manage, and visually analyze data; or connect to a large range of relational, cloud, and NoSQL database platforms, then it might be worth considering Architect Edition. RAD Studio Architect edition also includes Aqua Data Studio.

Aqua Data Studio is a universal integrated development environment (IDE) for databases and visual analytics. It enables database developers, database administrators, and data and business analysts to handle their multi-platform databases and the data contained therein.

In Summary

If you have no data storage in your applications, you might be fine with Professional edition. If you need remote data across the network, Choose Enterprise. If you need to manage a range of databases between production and development, check out Aqua Data Studio, which is shipped as part of the Architect Edition.

Accessing Your Data Remotely

Data has exploded in recent times, with more being created and collected than ever before. A key part of the modern data landscape is remote access to data. This could be via remote desktop or web applications, mobile apps, or by enabling access to your APIs as part of a microservices ecosystem.

Why remote data has to be handled differently to local data!

Opening the database ports up to the outside world is a complete security no-no, as anyone could run any query putting customer and business data at risk. Additionally, the instability of socket connections over wireless networks would provide a hard-to-manage and poor user experience solution. So what is the answer?

Middle-Tiers and N-Tier Architectures

Middle-tiers provide a way to provide specific functionality to remote applications, while protecting who and what can be called and accessed in your data layer. Middle-tiers benefit system design by adding a layer of separation from the remote devices and the backend logic, making it possible to update business logic, without having to update all clients.

RAD Studio has three middle-tier technologies.

- Web Services XML based SOAP calls.
- DataSnap Session capable remote data (Based on MIDAS)
- RAD Server Highly scalable MEAP powered by JSON

Web Services have been in RAD Studio since 2001 and provide simplistic object passing between server and client. XML based, they work using an open standard (so can be used with any programming language) and are available for basic passing of data in the Professional edition and higher. The Enterprise edition adds enhanced dataset parsing and XML transformation.

DataSnap (evolved from MIDAS based COM) supports HTTP(S) connections and both state, and non-state sessions. DataSnap has advanced features for traversing and updating data, and provides enhanced features for pushing events from the server to the client, (e.g. for live time chat applications).

Learn how BitTime use DataSnap with a global Connect 4 game

<https://www.embarcadero.com/case-study/bit-time-case-study>

Read more about developing with DataSnap

<https://www.embarcadero.com/rad-in-action/delphi-labs>

RAD Server is a full-scale **Mobile Enterprise Application Platform (MEAP)**. The most scalable of the middle-tiers, it provides published end points using SWAGGER, rapid exposure of datasets using REST, including indexing and sorting with zero lines of code, embedded user security, push notification, multi-tenancy support, a JSON data store, a high level of security and much more. Built with IoT awareness, you can even register distributed end-points to a central server for a single calling API that references multiple applications and locations.

Fully based on modern web standards and JSON, RAD Server is usable with any modern language. If you are looking to do web development, and want to use JavaScript, then using Sencha Architect (Bundled in the Architect edition) you can even call RAD Server a low-code manner.

A single-site license for RAD Server is included with the Enterprise edition, and a multi-site license is bundled with Architect. OEM/VAR options are also available.

Learn how Zernpfennig Informatik uses RAD Server to provide access to recycling and waste collection centers from mobile devices.

<https://www.embarcadero.com/case-study/zernpfennig-informatik-case-study>

Read more about RAD Server <https://www.embarcadero.com/products/rad-server>

In Summary

As we have seen, FireDAC provides great local network connectivity for data sources, (or even over a VPN connection), but remote data connection (especially over mobile networks) needs to be run via a middle layer, and typically today, that means REST.

RAD Studio Enterprise edition provides n-tier technology that enables rapid development of highly secure and scalable middle-tiers that can be easily consumed from inside RAD Studio, or any other modern programming language.

As well as publishing micro-service API's, RAD Studio has high connectivity for consuming standards based services, and includes the REST debugger tool. When coupled with the simplicity for exposing data, if you are faced with having to deliver solutions that use multiple API's and need a single sign on solution, RAD Server is something you should definitely consider.

Linux

Server or Desktop? Delphi delivers both!

When it comes to delivering low-cost solutions, Linux is **ideal for hosting**. One of the strengths of developing using RAD Studio is the component based model and cross platform Run Time Libraries (RTL). These libraries help encapsulate functionality to enable it to be used in the same way across multiple platforms through the use of advanced Object Orientated Programming. This means it is possible to develop using a single code base that natively compile for fast performance on Windows, macOS, Linux and also Android and iOS.

Predominantly, Linux is targeted by customers who need to deploy backend servers (such as RAD Server or DataSnap), and want to take advantage of the reduced ongoing hosting costs. The Linux compiler is available for Delphi in the Enterprise edition and above. Because of the RTL and component abstractions, reaching Linux with existing Windows code can be as simple as just adding a target platform and recompiling.

But Linux isn't just for backend servers: FMXLinux is included with Enterprise to enable desktop application development using FireMonkey. Because of FireMonkeys inbuilt styling capabilities, coupled with avoiding a Windows license and nuisances of the platform, one popular niche for Linux desktop is **Kiosk applications**.

FireMonkey mimics the VCL in many ways, so if you have experience with the VCL, you will immediately feel right at home. However, if you have long term investment in VCL, then it might be worth investigating **CrossVCL**, (available from one of our tech partners) to reach macOS and Linux with existing VCL code.

At the time of writing this paper, official Linux support covers Ubuntu LTS 18.04, and 16.04 and RedHat Enterprise 7. For the latest target platforms and versions, visit this DocWiki page:

http://docwiki.embarcadero.com/RADStudio/en/Supported_Target_Platforms

In Summary

Delphi makes it possible to reach Linux Servers, with a common code base that will also compile for Windows. This single source code approach not only provides the best in speed and performance, but simplifies development while providing the greatest flexibility to developers, and ultimately their customers.

Enterprise Data on Mobile

InterBase ToGo License Included!

Award-winning InterBase is one of the few databases that has **multi-platform support**, offering both **Windows** and **Linux** server, as well as a fully featured deeply embeddable version for mobile (**iOS** and **Android**) and PC (Windows, Linux, **macOS**).

Developers using InterBase are faster because a single file format is shared between development and production, regardless of the platform in use, making this **faster to develop, test** and **use** everywhere.

With data security (due to increasing fines and regulations) a key consideration in modern application design, InterBase helps you prototype faster thanks to inbuilt strong on-disk **data encryption**. Additionally, embedded database users, role based permissions and the ability to use multiple encryption keys (even in the same data table) help provide robust capabilities to help with the toughest data storage regulations and best practices. In part, this is why InterBase is widely used by ISV's in the world of **Medicine** and **Healthcare**.

InterBase Change Views is the IoT award winning feature that helps track changes for multiple destinations. This powerful **logless change tracking** technology makes tracking changes to data extremely simple, ideal for enabling offline, local working, that is synchronized with a remote server later. This can be done after the development is completed, avoiding the complexity and bloat of extra tracking fields inside a local data cache.

All these features and more are available in this small-footprint, highly flexible, fully-featured **admin-free** database. As part of the Enterprise edition of RAD Studio, a **run-time royalty-free** distribution license for InterBase ToGo for Android and iOS is included.

In Summary

The capability of adding an enterprise-grade admin-free data layer to mobile applications without additional runtime costs makes InterBase ToGo a powerful feature of RAD Studio Enterprise. With embedded user security, encryption, role based permissions, data change tracking and more, you can do more faster and quicker with InterBase... Just **Embed, Deploy** and **Relax**

Low Code - Enterprise Connectors

Make Connecting to Any Application as Easy as Connecting to a Database

Data today is more decentralized than ever, not to mention difficult to access, with the average company running upwards of 20+ SaaS applications, and at least as many on-premise applications. In partnership with CData, who have build extensions for FireDAC, it is possible to query 180+ SaaS, NoSQL, & Big Data enterprise solutions using standard SQL.

Enterprise Connectors give you direct real-time access to live data, without additional cloud intermediaries, and because they use a SQL standard for querying and updating data, you can develop faster and reduce ongoing maintenance costs for managing multiple data sources/APIs.

RAD Studio Enterprise includes CData's **EC Professional** license to use **90+** of the available **data sources**, including GMail, DropBox, Facebook, Twitter, Slack, Paypal, Ebay, Trello, Wordpress, Couchbase, Google Directory, and Jira!

Combining these data sources inside a RAD Server or DataSnap instance make a great way to combine multiple enterprise data sources into a simple to use middle tier that can be used by all your applications with single sign-on, simplify data management ever further.

Enterprise Connectors come with a run time royalty-free licence for use inside your organization, and have a OEM license available for wider distribution (available from CData).

The connections are highly secure with TLS/SSL encryption options for all client/server communications included.

In Summary

If you want to reach data from a wide range of enterprise solutions faster, Enterprise connectors are a way to fast forward your application development by expanding the already powerful FireDAC with wide reaching application data connectivity.

For more on Enterprise Connectors visit

<https://www.embarcadero.com/products/enterprise-connectors>

Summary

RAD Studio Enterprise edition offers powerful capabilities for taking your data beyond the local machine to deliver powerful native full-stack applications.

Following the write-once, compile-everywhere ethos, RAD Studio Enterprise offers a unique mix of a single code base with fully compiled source code, enabled thanks to its cross platform libraries based on strong Object Oriented Programming.

In the Enterprise Edition, **FireDAC** is expanded to enable **network-wide** connections to even **more data sources**, including NoSQL and ODBC.

RAD Server and DataSnap bring **n-tier** development to life with both session based and fully-featured REST servers. The **standards-based** approaches used make these frameworks are **highly scalable** and accessible to any modern development environment, making them ideal for modern **heterogeneous system** architectures.

Linux adds further flexibility to deployment choices for both server and desktop application, without compromising of speed or performance as all platforms are compiled down to the metal.

The runtime **royalty-free InterBase ToGo** deployment license makes adding secure data storage to your mobile applications a simple choice, thanks to its multi-platform file format that works throughout the development life cycle, on all targeted devices.

Finally, the CData enterprise connectors bring **low-code** integrations to over 90+ systems by extending FireDAC, all powered through simple to use SQL with full TDataSet support.

Should I choose Enterprise? (or maybe even Architect Edition?)

Hopefully this white paper has brought a number of the key details into focus for you to make your own choice. However, if you are still trying to decide which is the right edition for you, our team of technical pre-sales engineers are ready and waiting to discuss your project requirements and help advise you on the wider ecosystem of add-ons available through the community of Technical Partners. Some of them are covered in the RAD Studio and DevOps infographic on the following page.

RAD Studio and DevOps

embarcadero

The Power of RAD Studio

Code once, Natively target



CODE

Languages

- Delphi
- C++
- VCL for Windows
- FireMonkey Universal Cross Platform UI
- Sencha Web Components
- HTML
- JavaScript
- IntraWeb*
- TMS WebCore*

UI Frameworks

- tms: uniGUI*

Cross Platform RunTime Frameworks

- AppTethering
- REST & JSON
- RAD Server
- DataSnap
- Parallel Programming
- RTTI
- Web Broker
- SOAP
- XML Graphics

Data

- FireDAC Universal Database Access
- SAP Advantage Database
- Firebird
- IBM DB2
- Informix SOFTWARE
- InterBase
- MariaDB
- Microsoft Access
- Microsoft SQL Server
- mongoDB
- MySQL
- ORACLE DATABASE
- PostgreSQL
- SQLite
- SAP SQL Anywhere
- ODBC
- Generic ODBC Driver
- teradata.

Enterprise Connectors

70+ Sources included with Enterprise and Architect Edition. Up to 180+ sources via subscription*, the largest number of supported data sources in the industry.

- PayPal
- Facebook
- MailChimp
- Microsoft Teams
- Twitter
- Slack
- Salesforce & Force.com
- Wordpress
- ebay
- JIRA
- DocuSign
- Office
- SurveyMonkey
- Trello

BUILD

Database Management

- AQUAFOLD
- Aqua Data Studio
- Data Explorer
- IBConsole

Platforms

- Windows
- Linux
- macOS
- iOS
- Android
- Web

Version Control Integration

- Mercurial
- Git
- SVN
- Github
- Assembla

Build Systems

- CMake
- MSBuild
- FinalBuilder*

INTEGRATE

- Monkey Builder*
- Jenkins*
- Continua CI*
- RAD Studio IDE Integrated Deployment
- Configuration Management
- Azure Pipelines

DEPLOY

- Microsoft App Store
- Google Play Store
- iOS App Store
- macOS App Store
- Docker
- Web Server
- APACHE
- Microsoft IIS

TEST

Unit Testing (Automated)

- Dunit
- DUnitX
- TestInsight* (IDE plugin)
- Sencha Test
- Delphi Mocks*

UI / UA Testing

- TestRail
- Ranorex
- TestComplete*

Code & Runtime Analysis

- tms: TMS FixInsight*
- CodeHealer*
- AQTime Pro*
- Pascal Analyzer*
- Deleaker*

OPERATE

FireDAC Database Services

- Backup
- Restore
- Database Validation

MONITOR

- RAD Server Analytics
- Code Site
- FireDAC - Tracing and Monitoring with FDMonitor
- EurekaLog*
- MADExcept*
- Grijpy Logger*
- SmartInspect*

* RAD Studio is also supported by a range of open-source and commercial offerings. A few are featured in this infographic for illustration purposes. Always check the feature matrix for the latest on what is included with RAD Studio. Features subject to change. All product names, logos, and brands are the property of their respective owners. All companies and products used in this infographic are for identification purposes only. Use of these names, logos, and brands does not imply endorsement.

Beyond This Paper

Deeper Dive Into “Why Enterprise”

If you wish to dive deeper into the different capabilities of the Enterprise Edition, try clicking on the hotlink to view the **Top 5 Reasons Developers Choose RAD Studio Enterprise** webinar.



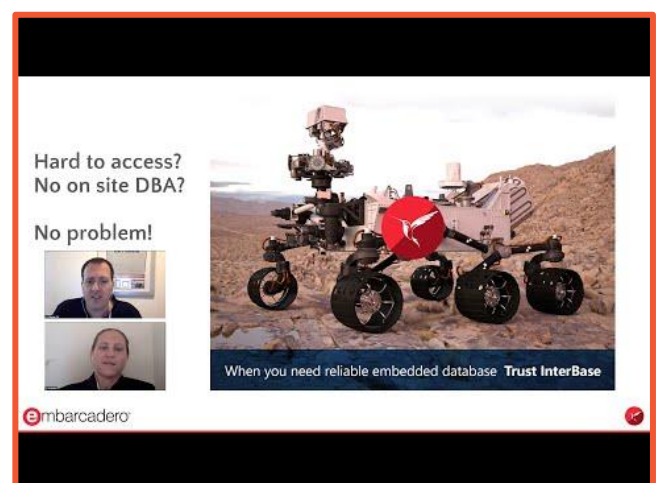
Building Apps Faster With Less Code

As noted at the top of this paper “The **Architect** Edition of RAD Studio, Delphi® and C++Builder® builds on top of Enterprise with a multi-site license for RAD Server, plus a selection of industry-leading tools from within the Idera group, including **Ranorex, Aqua Data Studio, and Sencha Architect.**” The hotlink to that webinar here shows each of these **tools in action** as part of the development lifecycle.



Discovering InterBase

To learn more about InterBase and how it can help reduce costs and improve data security, try the hotlink here to this Introduction to InterBase



The Embarcadero Way

Single-source, native multi-platform software development

The RAD Studio IDE and frameworks enable you to write your code in modern Delphi or C++ languages, and compile your single code base to natively target Windows, Linux, macOS, iOS, and Android.

Design it, Build it, Run it - Today!

