

N-Tier Applications with Firebird and RemObjects Data Abstract

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Agenda

- What's a n-tier application
- Advantages of n-tier Architecture
- What's RemObjects Data Abstract
- Sample three-tier application
- RO/DA features overview
- Cross platform sample application
- Question any time!



About me

- From Brazil, maybe the largest FB market.
- Associate Member of the Firebird Foundation.
- Developer for more than 14 years.
- Delphi developer since its first version.
- Firebird user since its inception.
- Speaker at several conferences in Brazil like the Firebird Developers Day, Borland Conference, DUG meetings and others.
- First time in Europe.
- Beer lover.



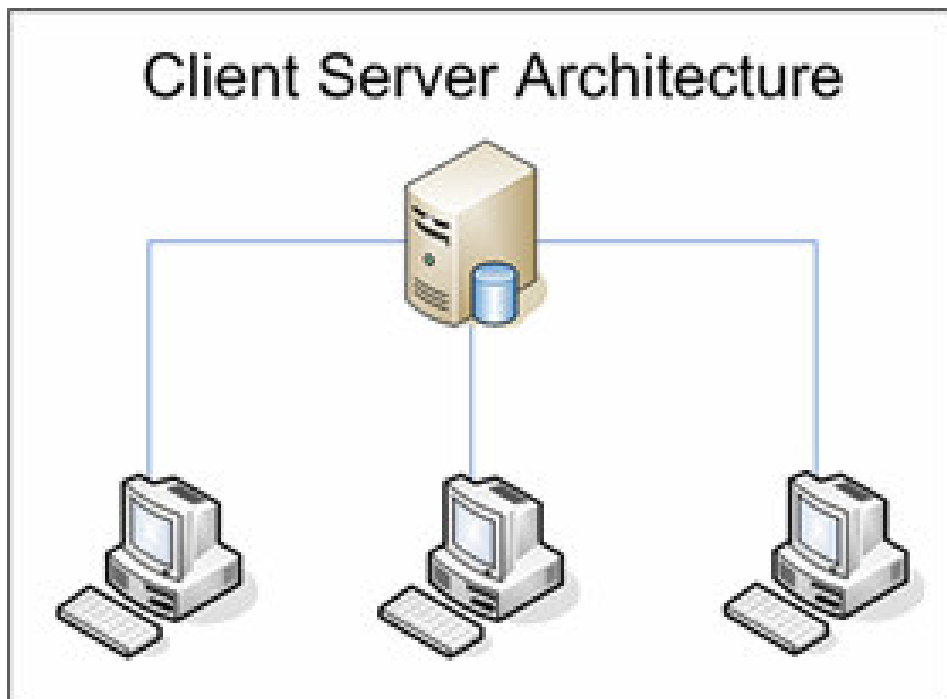
What's a n-tier application

- It's an application that is executed by several software agents, that acts as separated logic layers.
- The most common form of n-tier is three-tier.
- The client doesn't have direct access to the database. It asks the middle tier for data.
- The client works in a disconnected fashion, using in-memory copies of the remote data.
- Changes to the data are local and sent to the middle tier as a batch (deltas).
- The middle tier processes these deltas and send them to the database as SQL statements.

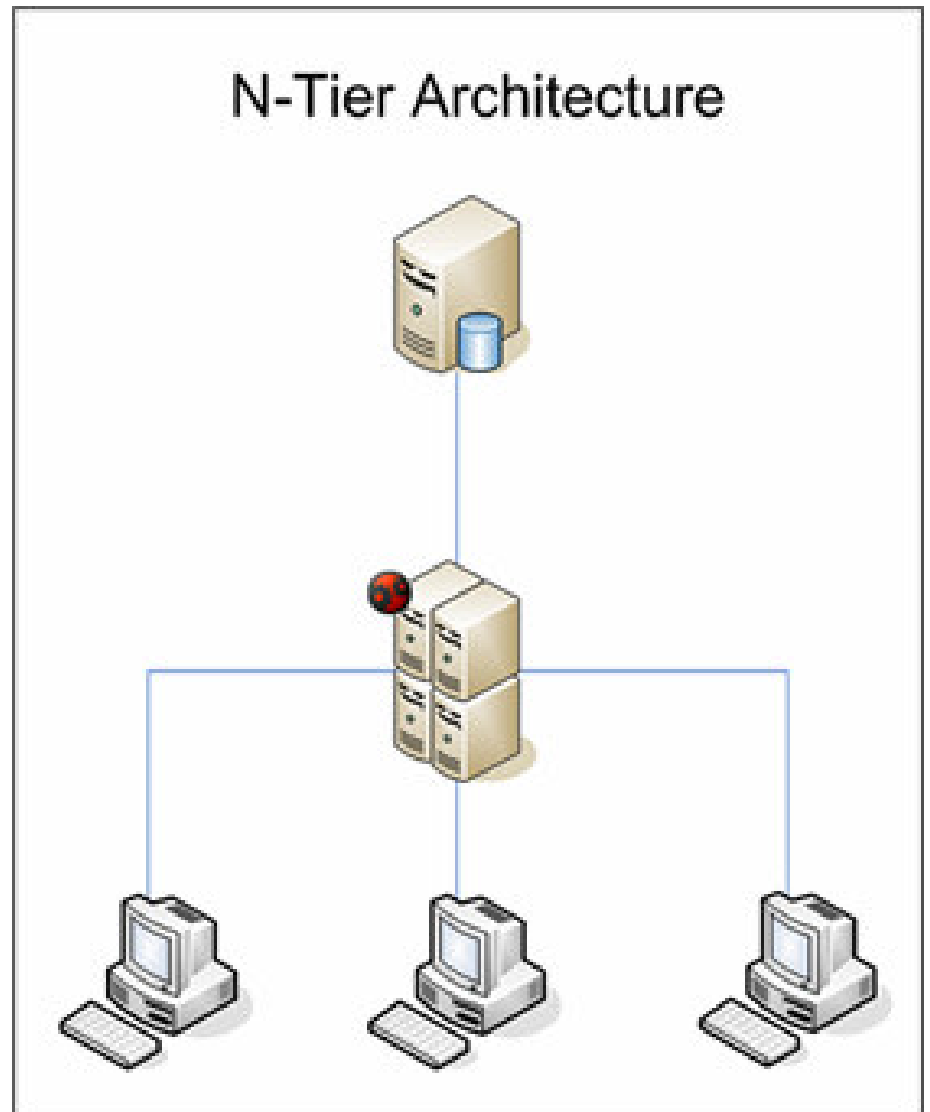


Architectures

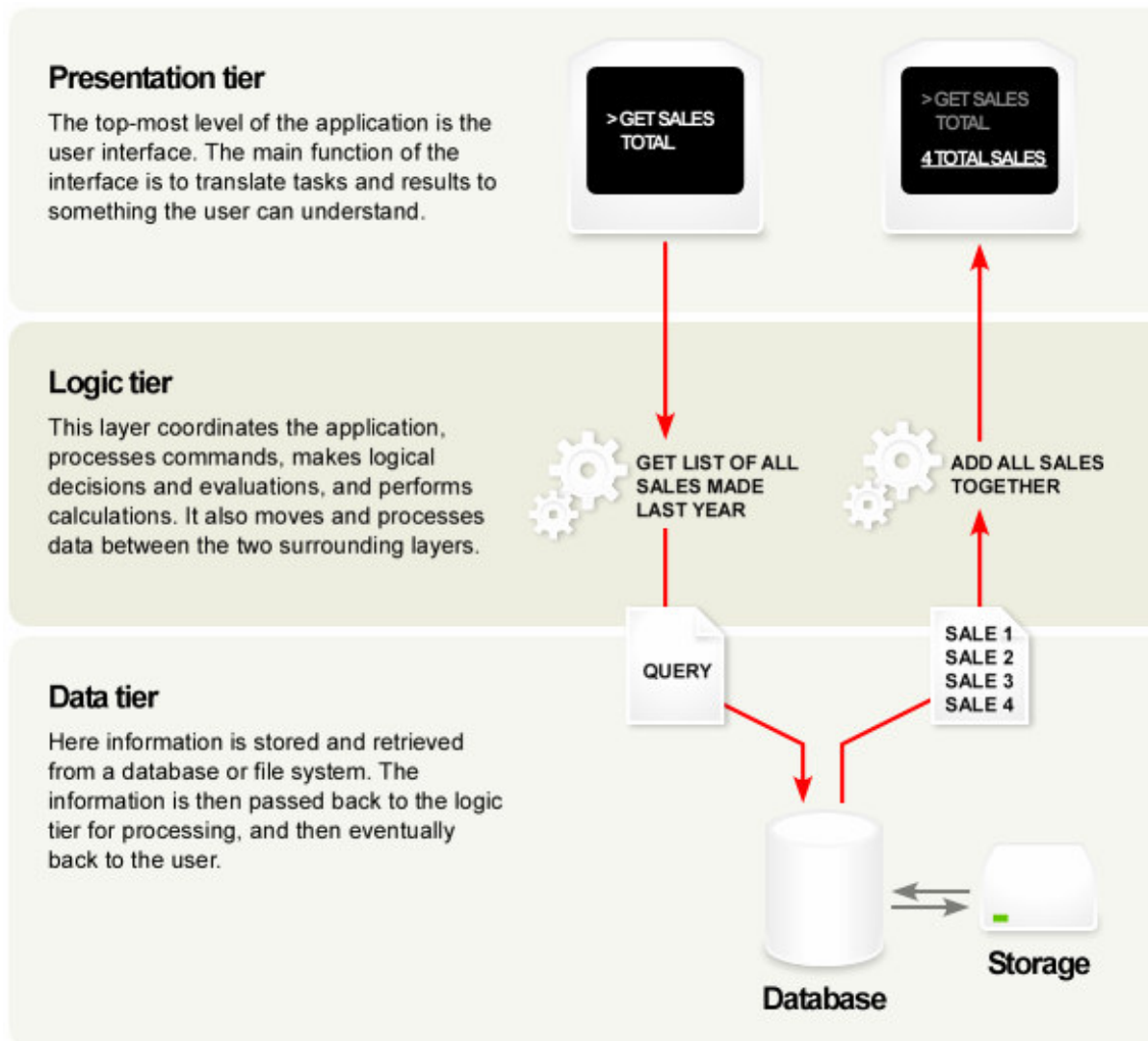
Client Server Architecture



N-Tier Architecture



Three-tier Application



Source:
Wikipedia



Advantages of n-tier

- Works through slow connections.
- Works disconnected.
- Different clients sharing the same business logic.
- Thin clients.



What is RemObjects DataAbstract (RO/DA)

- DA is a powerful RAD solution to develop n-tier applications for Win32, .NET (including Mono) and Linux (Kylix).
- It allows to access different databases with a single code base. It abstracts the database.
- It clearly separates all business logic from data-access and UI.
- It allows true cross platform n-tier apps. You could write the server in C# .NET and a client in Delphi Win32 for instance. Or vice-versa.
- It's built on top of the RemObjects SDK remoting framework, that is also bundled together.
- It replaces and provides much more features over DataSnap.



Sample Application

- Let's create a sample RO/DA application using BDS 2006 and Delphi Win32.



RO/DA Features

- True database abstraction.
- Tight integration with BDS and VS IDEs.
- Server applications created with RO/DA can run as ISAPI DLL, Apache DSO, stand-alone app, Windows Service, CGI and more.
- Large number of networking channels (TCP, HTTP, UDP, Windows Messages, Named Pipes, SMTP, POP3, etc).
- Designed with stateless in mind.
- Integrated ZLib data compression to improve message transfer on slow networks.



RO/DA Features

- Large and extensible set of service-instantiation options (pooled, singleton, per-call, etc.).
- Open standard SOAP and XML-RPC messaging allows your application to communicate with non-RO clients or servers.
- Access your RemObjects Servers from any COM compatible language, and from Active Scripting environments such as Office and ASP.
- Easily share common session data and event repository among multiple servers.
- No deployment license fees.
- Full source code.
- Works on Delphi Professional.



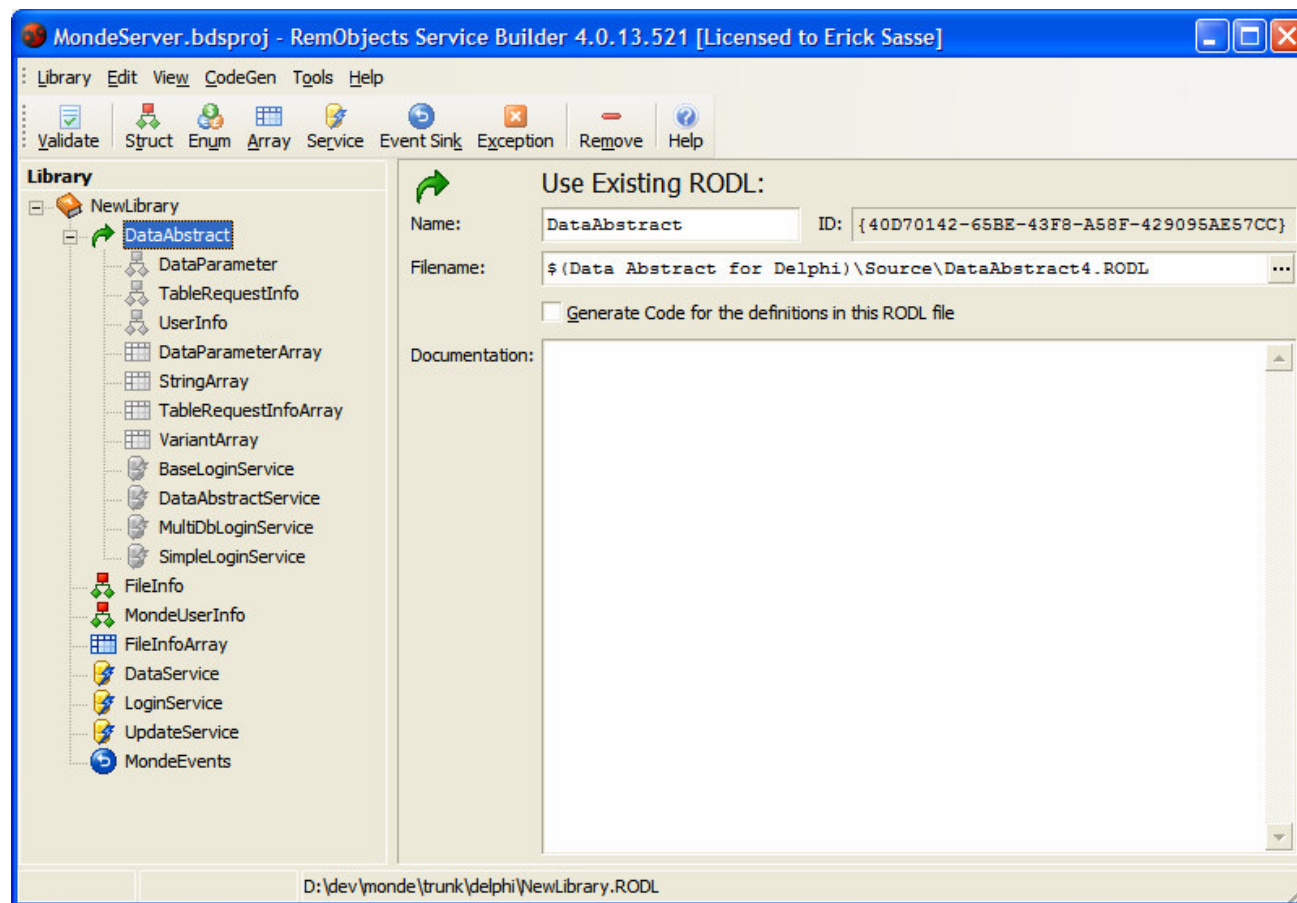
True Cross Platform

- Let's create a .NET client using Visual Studio 2005 that connects to our Delphi Win32 server.



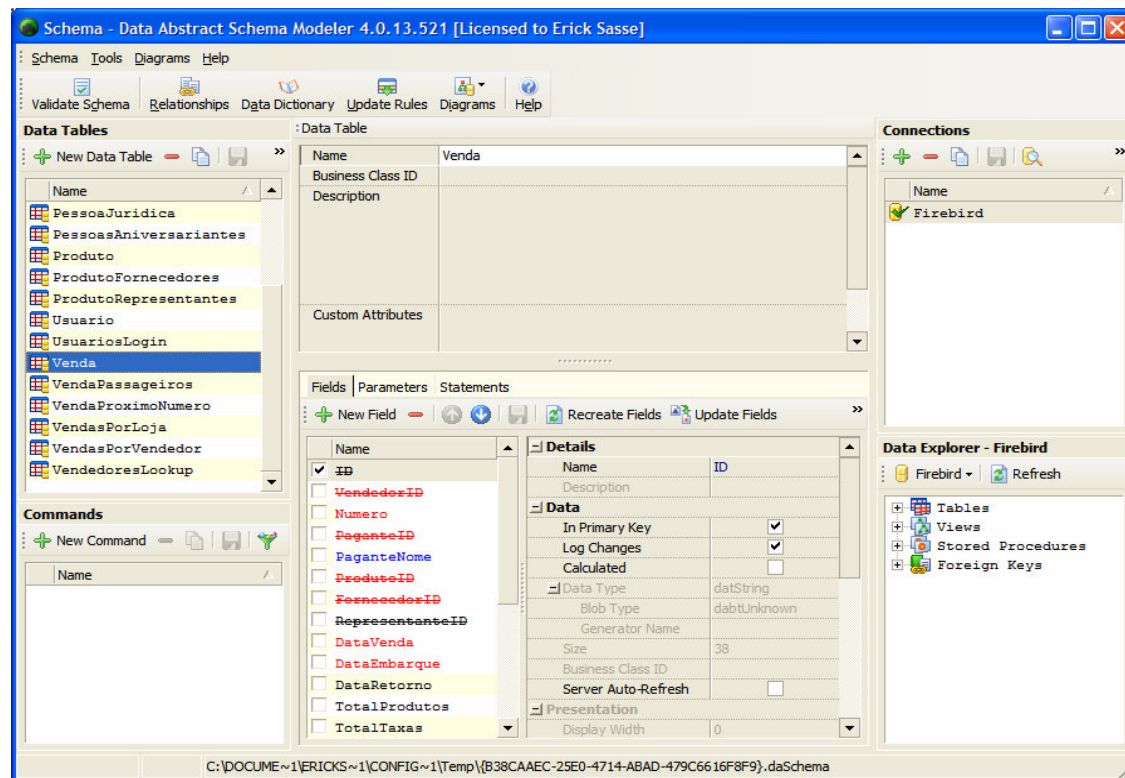
Service Builder

- RAD tool to design your services.



Schema Modeler

- Is the tool to design your database schema in a RAD way.



Strongly Typed DataTables

- Hybrid of ORMs and standard Delphi data-aware solutions.
- You type cast a normal data table to specific business interfaces.

```
Customer := dtCustomers as ICustomers;  
Customer.Name := 'Erick Sasse';  
Customer.CompanyName := 'Cadena Sistemas';  
Customer.Country := 'Brazil';
```



Smart Services

- You can expose your services using more than one protocol. SOAP and BIN for instance.
- The client chooses what protocol to use. When you have control of the client, you can use the optimized RO protocol and the SOAP remains available for other clients.



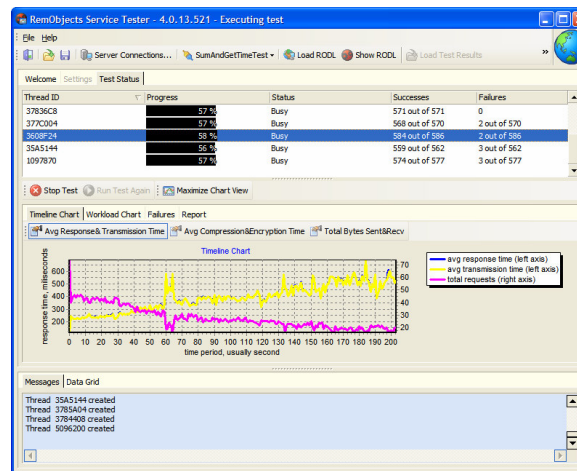
Multicast Events

- A RO server can trigger events on one or more RO clients.
- You can even have an offline queue of events.



Service Tester

- A RAD tool for creating and running tests against your server.
- Test *your* service implementations to see how they perform under different load or network conditions.



Thank you!

- Feel free to ask questions or invite for a beer! ☺

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