



Project Update

Presented By:

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BroadView Software

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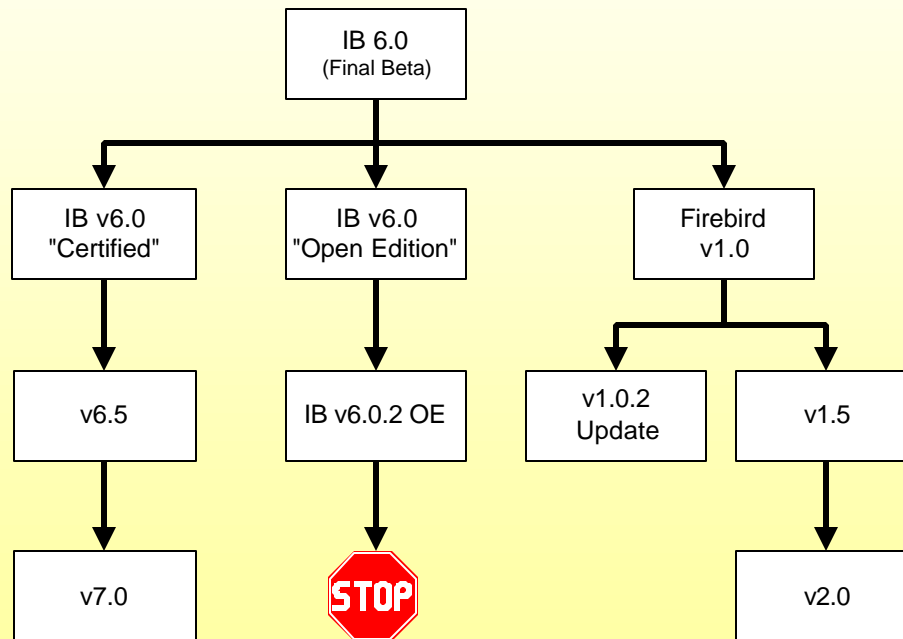
 - v1.0.2 Update
 - v1.5 Release

 - Future plans

 - FirebirdSQL Foundation

Project History

- Project started July 2000
- Based on the IB 6.0 Beta source released by Borland



Project History

- v1.0 released on March 12, 2002
- Over 200,000 downloads from SourceForge site
- Available for the following platforms:
 - MS Windows (95/98/NT/2000/XP)
 - Linux
 - FreeBSD
 - Mac OS – Darwin/10.0/10.1
 - Solaris – Sparc and Intel
 - HP/UX – v10 and v11
- In Maintenance Mode, only back ported bugs

Connectivity Options

- Project Modules
 - ODBC Driver
 - Jaybird for Java – native Type 4 JDBC driver (RC #2 released Dec. 17th)
 - Provides true XA support with two-phase commits
 - MS .NET Provider (Beta 1 released Jan. 6th)
 - Also works with Mono (OS implementation of .NET)
- Other Options
 - Delphi/BCB (VCL)
 - IBOjects
 - FIBPlus
 - InterXpress for Firebird (Beta 1 due Jan. 13)
 - Kylix
 - IBOjects (Beta ???)
 - InterXpress for Firebird (Beta 1 due Jan. 13)
 - Other Platforms: OLE/DB, ODBC, PHP, Python and Perl

GUI/Administration Tools

- Free Tools
 - IB_SQL
 - IBOConsole (IBConsole written with IBOjects)
- Commercial Tools
 - Firebird Workbench
 - Same code base as popular Interbase Workbench
 - Runs exclusively with Firebird servers
 - Portion of sales go to FirebirdSQL Foundation

v1.0.2 Update

- Released on Dec. 18th (there was no official v1.0.1 release, except for Mac OS 10.1)
- Includes:
 - 64-bit file i/o is now properly supported under Linux
 - Guardian install with Win32
 - String expression evaluation now throws an error if the expression could be greater than 64k. (Previously an error was thrown if the expression evaluated to a possible size of greater than 32k)
 - There was problem with connection strings on Unix platforms that could lead to database corruption
 - 6 other bug fixes

v1.5 Release

- Originally planned as a “simple” port of the v1.0 code to allow for C++ compilation, has extended well beyond that
- Goals:
 - Only minor ODS (On Disk Structure) changes
 - 100% interface compatible IB v6.x
 - 100% database compatibility (upward) IB v6.0 or prior (98% with IB v6.5)
 - Start the “road” to side-by-side install with IB
 - New Server name (FBServer.exe)
 - New Client name (FBClient.dll)
 - New ‘passthrough’ GDS32.DLL for backward compatibility

v1.5 Release Schedule

- Alpha #1 was released Sept. 29
- Alpha #5 was released Dec. 5
- Beta #1 is expected by Jan. 15
- Final Release is expected early Q2 2003

v1.5 – New Engine Features

- Server-side database aliases
 - Connection String = "Server:AliasName"
- "ISC4.GDB" Security database renamed to "xxx.fdb"
- New default database extension ".fdb"
- New Plug-In Manager
- New INTL Interface
- New Server Configuration Manager
 - "Firebird.conf" replaces "IBConfig"

v1.5 – New Engine Features

- In-Memory sorting
 - Use available memory to reduce/eliminate disk I/O
- New Memory Manager
 - Completely new implementation
- XNET protocol for Win32 SuperServer builds
 - Uses local shared memory space for data exchange
 - Substantially faster data access – ideal for application servers (MIDAS) and Web server with database on same box
 - To replace local loopback connections (i.e. localhost:xxx)
- Classic engine available for Win32
 - More SMP 'friendly'

v1.5 – New SQL Features

- “CASE” function support
- “COALESCE” function support
- “NULLIF” function support
- “GROUP BY” support:
 - By Function,
 - Sub-Query,
 - By Column Alias, and
 - By ordinal (column position)
- “ORDER BY” arbitrary expression
- “SELECT First X” and “ORDER BY” support for Sub-Selects

v1.5 – New SQL Features

- RECREATE VIEW
- NULL Ordering, as per SQL92 Standard
- User-Defined Constraint index names
 - Index names now based on either constraint name, or user defined name
- Explicit locking in SELECT statements
 - "SELECT ... FOR UPDATE WITH LOCK"
- EXECUTE STATEMENT
 - EXECUTE STATEMENT "...";
- "Boolean" alias to SmallInt
- "BIGINT" alias to Numeric(18, 0)

v1.5 – New Trigger and SP Features

- **Savepoints**
 - `SAVEPOINT save_pointname;`
 - `ROLLBACK [WORK] TO [SAVEPOINT] save_pointname;`
- **“CREATE OR ALTER” syntax**
- **Universal Triggers**
 - `CREATE TRIGGER my_trigger FOR my_table BEFORE INSERT OR UPDATE...`
- **Enhanced declaration of variables**
 - `DECLARE [VARIABLE] name <variable_type> [{ '=' | DEFAULT } value];`
- **Exception re-initiate semantics (ie. Throw)**
- **Support for empty “BEGIN ... END” blocks**

v1.5 – New Trigger and SP Features

- New System variables:
 - "ROWS_AFFECTED"
 - "TRANSACTION_ID"
 - "CONNECTION_ID"
 - "SQLCODE"
 - "GDSCODE"

v1.5 – Enhancements

- Optimizer enhancements
 - Better handling of AND nodes inside an OR node
 - Better support for using indices with "OR". Pick the best available compound index from all "AND" nodes
 - Support for detecting use of index with sub-selects in aggregate select
 - Let sub-selects also use indices when their parent is a stored procedure
- SuperServer thread scheduler, for better “sharing”
- New system indexes to improve statement compilation performance

v1.5 – Enhancements

- Deferred metadata compilation
 - Solves most causes the well-known "object in use" error
- Removed limit of 64 indexes per table
 - limit now database page size dependent

v1.5 – Bug Fixes

- LEFT JOIN reported incorrect results
- 3 Buffer Overruns
- Automatic/Background sweep hangs
- Metadata Security Hole

- Countless other bugs...

v1.5 – Miscellaneous

- Win32 compilation using open-source “MinGW” compiler
- New autoconf-based build configuration
- Command history added to ISQL for Linux
- Code now uses exceptions for errors

- IPX/SPX protocol support dropped
- Remove old/deprecated platforms (Appolo, Cray, NeXT, Netware, MS DOS, Win3.1, WFW...)

v1.5 – Statistics

- 1400+ Commits
- 18 developers / contributors
- Xxxx lines of source changed

Future Plans

- On Disk Structure changes
 - ODS v50 – Get out of IB number space
 - Increase Key Size
 - Increase Object Name Size
 - Native GUID Datatype
 - Better handling of Foreign Keys
- Built-in database functions
- Security
 - NT/Win2000 Domain
 - LDAP
- Performance/SMP

FirebirdSQL Foundation

- Open to all who share the same goal:
 - To provide a non-commercial infrastructure to accept and disburse funds, to advance and support the development of the FirebirdSQL Project and its related sub-projects.
- 100% Non-Profit/Non-Commercial
- Announced on December 12th, 2002
- 40 members (as of Dec 31) with over \$17,000 USD in funding commitments for the next year.

FirebirdSQL Foundation

- The seeds of the funding are already bearing fruit:
 - Dmitry Yemanov, lead the v1.5/2.0 development effort
 - Claudio Valderrama, review/scrutinize the source code commits
 - Alex Peshkov, work on thread scheduler and other optimizations
- “grants” does not mean full time salary
 - our grants do not compensate our grantees at anywhere near the commercial rates ... the grants will allow our grantees to devote time to Firebird

FirebirdSQL Foundation

- Membership

- Full Membership

- \$300 USD per year or \$25 USD per month

- Associate Membership

- \$50 USD per year, one-time payment

- Sponsorship

- Gold (\$5,000 USD and over)

- IBPhoenix

- Silver (up to \$5,000 USD)

- BroadView Software

- Bronze (up to \$2400 USD)

- Upscene Productions (Firebird Workbench and InterXpress)

FirebirdSQL Foundation

- Looking for others to join
 - so that we can “do more, faster”
- What are our future plans?
 - Anything and everything!
 - SMP Support
 - Security
 - Quality Assurance/Testing
- How can you help?

Online Resources

- www.FirebirdSQL.org
 - Project web site
- www.FirebirdSQL.org/foundation/
 - Foundation web site
- www.IBPhoenix.com
 - News/Updates
 - Searchable KnowledgeBase
 - Searchable List Archives
 - Resources (Documentation and more)