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…)