

InterBase[®], Firebird, & Active Databases

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Questions for today

What is InterBase[®]?

What is Firebird?

Why consider yet another open source database?

Who am I?



Who am I?

Firebird

IBPhoenix

InterBase Software

DEC

Jim Starkey



What is InterBase[®] ?

Commercial database

Mission critical applications



What is InterBase[®]?

Mature

First ship in 1985

Six major versions

Wide distribution



InterBase[®] by design

Easy to manage

Install

Maintain

Move

Modify

Small

5 MB server

Sources ~2 million
lines

Engine < half



InterBase[®] by design

Self-tuning

- One index type
- One storage type
- No placement issues

Fast

- High concurrency
- Bitmap enhanced index retrieval
- Join order optimization



InterBase[®] Open Source

July 2000

Schism

Certified vs. Open Edition



What is Firebird?

Fork of InterBase 6.0



Firebird Path : first six months

Make the builds work

Learn the coding conventions

Deplore the coding conventions

Start ports



Firebird Path : Today

Add features & fix bugs for V1

Move to C++ & change coding
conventions

Reorganize & simplify



Features : Common

- sql 89 & sql 92
- stored procedures
- triggers
- constraints
- delimited identifiers
- index compression
- data compression
- localization
- user defined functions
- events
- arrays
- role based security



Firebird Project

4 Administrators

56 Project members

12 Active developers



Why another OS database?

Firebird is an active database

- Code runs on the server side

- Reduced network traffic

- Encapsulation

- Enforcement of business rules



Active database

Computed fields

Triggers

Views with triggers

User defined functions

Blob filters

Stored procedures



Computed Fields

Not stored

Optimizer folds computation into query

Local and cross-table values



Triggers

Extended SQL

Before & after action

Positioned



Views with triggers

Updateable views

Before & after action triggers

Non-updatable views

Define the action

Used like procedures



User defined functions

Libraries written in programming language

Lack connection context

Return single value



Blob filters

Blob type translation

Compression

Encryption

Editing

Cascade



Stored procedures

Encapsulate actions

Build pseudo-tables

Atomic



Procedure & trigger language

SQL plus

IF / THEN / ELSE

BEGIN / END

WHILE / DO

Exceptions

FOR SELECT ...

SUSPEND

SQL minus

DDL

Transaction control

Cursors

Prepare



Questions?

