

Migrating COBOL and IMAGE/SQL to Linux with Open Source

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Agenda

- Introduction
- Project Goals
- Technical Components
- Database
- COBOL
- Pilot Migration Project
- Lessons learned – What's Next?
- References for more Info...

Introduction

- Duane Percox, QSS
- Additional team members – Craig Davies and Jeff Woods
- ISV focus
- A report on our on-going investigations and efforts

Project Goals - Database

- Evaluate Linux open source RDBMS options and viability for QSS applications
- Evaluate / Determine database interface
- Establish standard data type usage
- Establish methodology for moving data
- Develop abstracted SQL interface to reduce 'tie-in' to a specific database
- Understand the reason why everyone says relational is slower than Image...

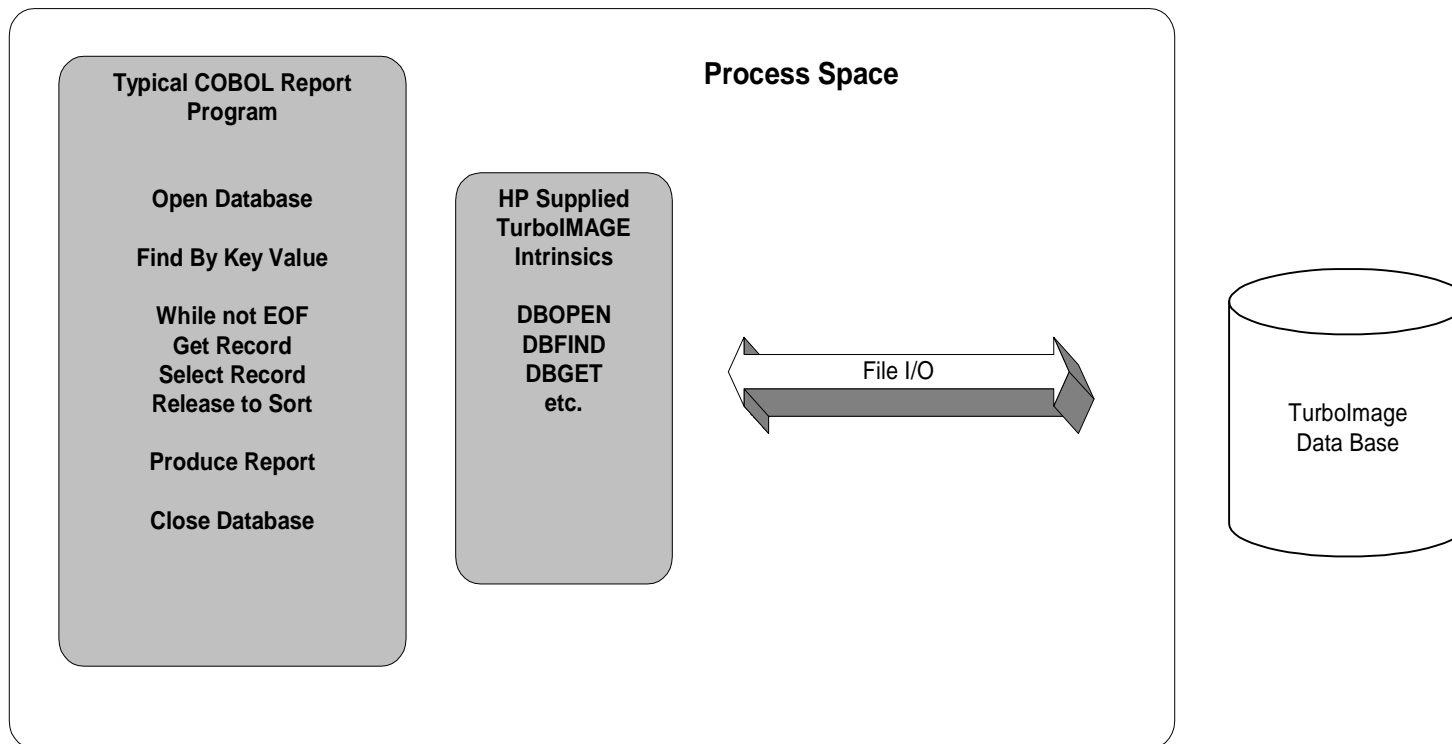
Project Goals - COBOL

- Evaluate effort to move HP COBOL to Linux open source COBOL
- Evaluate viability of Linux open source COBOL options
- Evaluate compatibility with hp-ux COBOL
- Evaluate / Determine RDBMS interface and changes this would require in existing COBOL code
- Generate test COBOL accessing Linux RDBMS – on HP e3000 and Linux

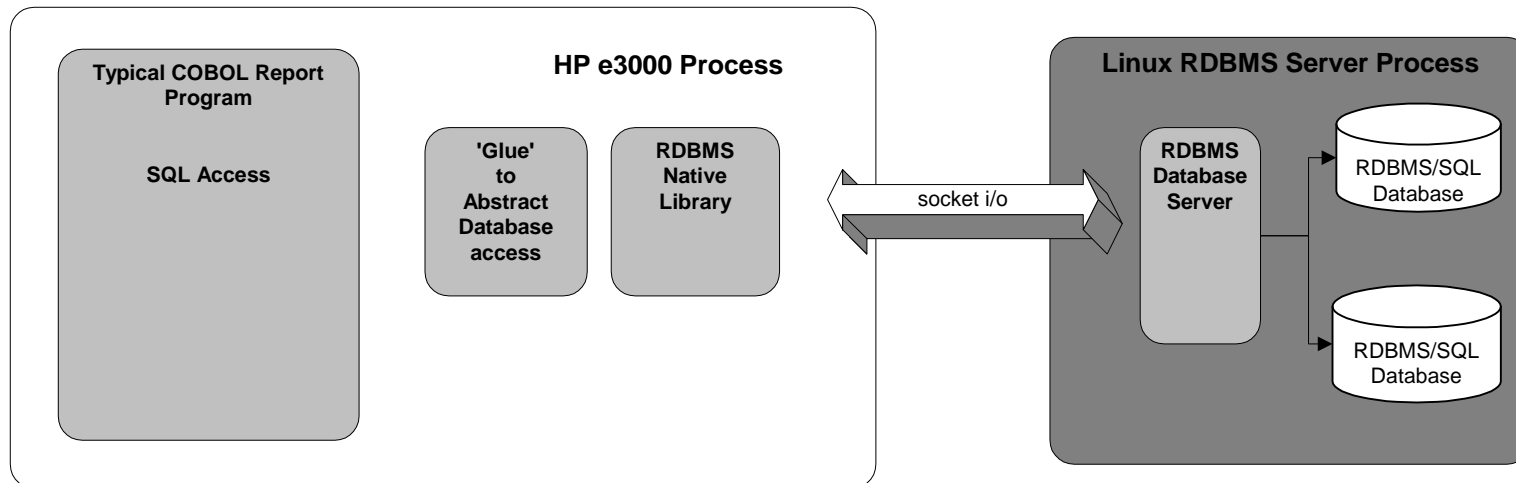
Technical Components

- Dell PowerEdge 500SC server – 1ghzPIII, .5gbM, 60gbD (ide)
- SuSe Professional 7.3
- tinycobol version .56
- PostgreSQL version 7.1
- gnu 'c' 2.95
- HP e3000 A400, 110mhz, 2gbM, 72gbD
- MPE/iX 7.0 exp-1, COBOL, gnu 'c'
- WhisperTech Programmer Studio

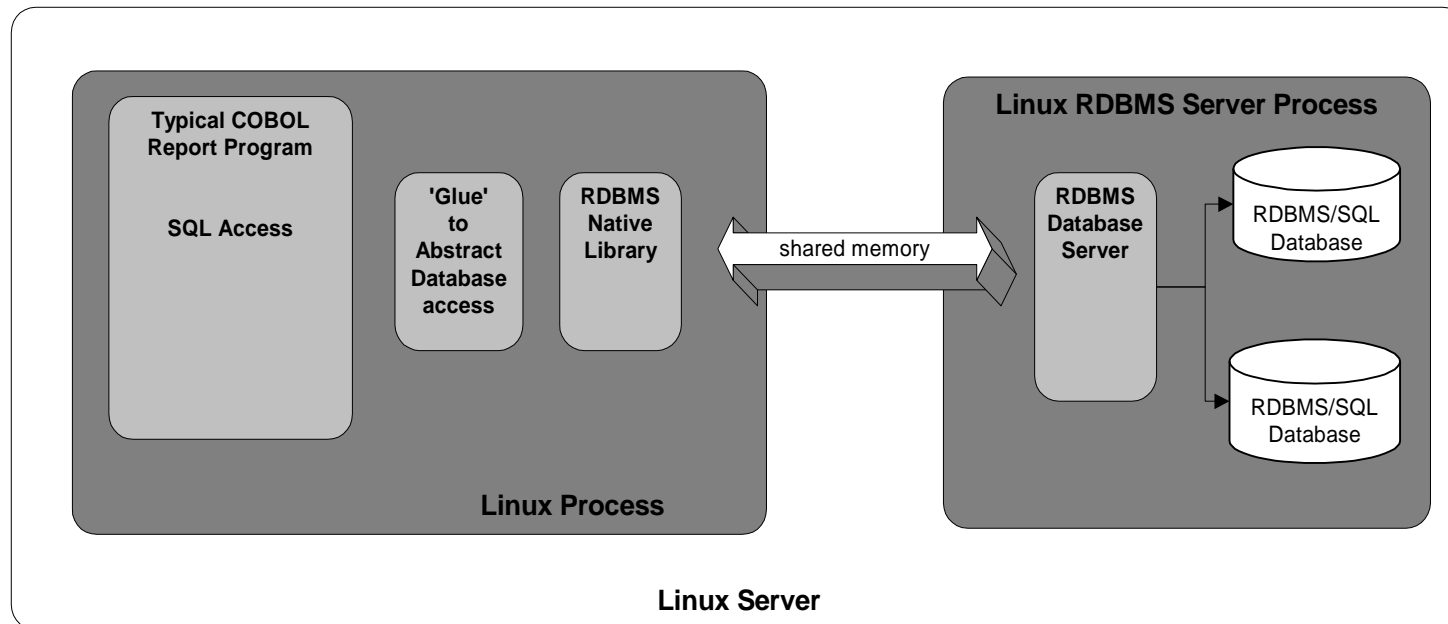
Image Access Model



RDBMS/SQL Access Model – HP e3000 to Linux



RDBMS/SQL Access Model – Same Linux System



Which Database?

- Literature and reference evaluation of MySQL, PostgreSQL, Interbase, SAP DB; chose PostgreSQL (pgsql) for this project
- Pgsq, Interbase, SAP DB have support for transactions and row locking
- More books available (at this time) for pgsq
- SAP DB is worth a look. Interbase has not established a good open source community.
- MySQL v4 (future) to support transactions

PostgreSQL Basics #1

- Connection from client to db is transparent regardless if same system (shared memory) or different system (tcp/ip). X-system can use SSL for secure transmission.
- Server engine is called 'postmaster'
- Separate process created for each connection. Better performance on unix style o/s since postgresql is not multi-threaded.
- Each db contained within separate directory owned by the 'postgres' user

PostgreSQL Basics #2

- Server control functions: initdb, initlocation, ipclean, pg_ctl, pg_passwd, postgres, postmaster
- DBA functions: createdb, createlang, createuser, dropdb, droplang, dropuser, pg_dump, pg_dumpall, pg_restore

PostgreSQL Basics #3

- Client access: psql, pg_access (x-win), pgadmin (win 9x/nt)
- Programmatic access: libpq, libpq++, libpqeasy, ODBC, jdbc

COBOL

- Compiler only – don't need an IDE
- Tinycobol – limitations and migration issues
- What about gnu COBOL?
- Any other COBOL compilers satisfy our project goals?

Pilot Migration Project

- Asset Database
- Detail Set (FIXED-ASSET) with 70 fields
- 2-character path (DI-NO) and a 12-char path (ASSET-ID)
- Test programs to mirror find/get of large sets of records

Lessons Learned – Database

- Data typing
- Interface of SQL results to COBOL record structures
- Performance
- Improving performance
- Migrate with minimal code change AND allow for performance gains

References for More Information

- www.tinycobol.com
- www.postgresql.org
- www.sapdb.org
- www.linux.org