

Presentation to VSA Membership Meeting November 8, 2006

New Vistas for VistA?

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Agenda

- The VSA Mission (reminder)
- Healthcare IT Players
- VistA SWOT Analysis
- Helpful Tools and Technologies
- Demos
- How These Tools May Help VistA
- “Under the Hood” (if time permits)
- Questions



The VSA Mission (reminder)

- Improving healthcare through IT
- Promoting the VistA EHR system
- Improving healthcare by increasing the quality of care, reducing patient errors, and lowering costs



HealthCare IT Players (partial list)

Non-VistA-based

- Cerner
- Eclipsys (M)
- Epic Systems (M)
- GE/IDX (M)
- McKesson (M)
- Meditech (M*)
- Misys Healthcare (M)
- QuadraMed (M)
- Siemens (M)

VistA-based

- VistA VA
- VistA Pacific Hui
- CHCS MHS
- RPMS IHS
- VOE CMS
- OpenVistA Medsphere



VistA SWOT Analysis

- **S**trengths MUMPS
- **W**eaknesses MUMPS
- **O**pportunities MUMPS with Java and Rdbms
- **T**hreats
Java and .NET dominate the programmer landscape
Relational technology dominates the database landscape
“bridging” technologies exist but are limited in scope



Helpful Tools and Technologies

- **JUMPS** M-to-Java code migration
M-to-Relational data migration
- **MJSP** Web-enabling M applications
- **JUMPS/FileMan** FileMan to Java/Rdbms migration using JUMPS



LIVE DEMOS

(not powerpoint vaporware)



How MJSP may help VistA

- Open source – no license fees
 - Allow VistA deployment on pure open-source stack, e.g. Linux + GT.M + Apache Tomcat + MJSP
- Freshen up legacy interfaces
- Can be used with Caché or GT.M
- Designed with performance and scalability in mind



How JUMPS may help VistA

- Any standard* M program/application can be deployed over both environments – M and Java/RDBMS
 - * Caché and GT.M
- Customers can be reassured that they are not locked in to a single deployment environment
- Computer Aided database mapping between M and Rdbms
- Fully automatic migration of entire databases from M to Rdbms
- Rdbms can be Open Source e.g. MySQL, PostgreSQL



JUMPS/FileMan DEMO



How JUMPS/FileMan may help VistA

Fully automated mapping of FileMan schema to relational schema



“Under The Hood”

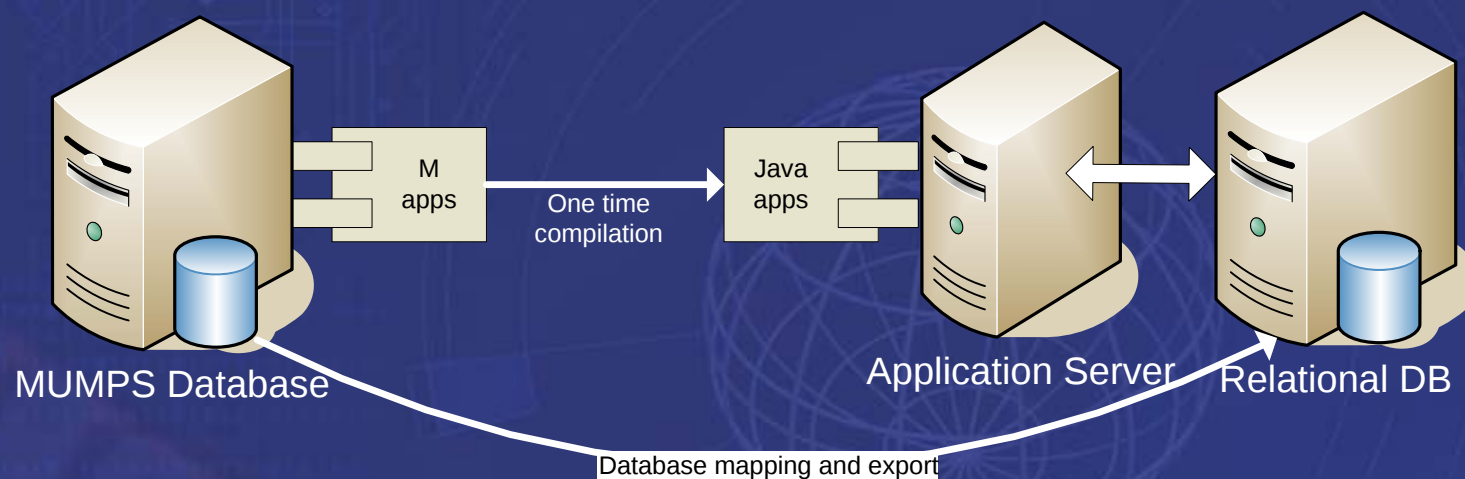


The Technology

- Automatic migration of a MUMPS application (code & DB) to Java code and RDBMS
- After the migration, the application is pure Java, interacting via JDBC with a relational database



Migration process outline



JUMPS Basic Modules

■ Compiler

- Takes M code and generates *functionally equivalent* Java code for the Runtime Engine

■ Runtime Engine

- Emulates M language functionality but translates all DB access to Relational access *“on the fly”*

■ DB Mapping

- For migrating entire databases from M to Relational
- For DB access at runtime



Performance

These specific benchmarks were performed:

Test	Details	JUMPS vs. Caché
DB write	Insert 1M records	1.9
DB sequential read	Iterate (nested \$O) over 1M recs	6.2
DB rand access	Access 10K recs of the 1M	0.9
Arith	Arithmetic operators	0.6
Strings	String manipulation op's and func's	2.8
Logic	Logical and relational op's	2.9



Post Migration

After migration, the choice is yours:

- **Continue application development and maintenance in MUMPS and deploy in both environments – M and Java/RDBMS**
 - Each changed/added routine is (re)compiled
 - Global structure changes are mapped
 - Debug the original MUMPS code using Jumps
- **Do future development in Java and deploy in Java/RDBMS environment**
 - Note: the legacy M code can be called using Jumps API from the migrated Java code



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