Comparing COBOL Application Porting Approaches

Managed Business Solutions

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Agenda

- About Managed Business Solutions
- Application Port Process
  - Developing migration strategy
  - New environment analysis
  - COBOL Migration tools
- Summary – Protect your investment!

About mbs

MANAGED BUSINESS SOLUTIONS

- Established in 1993, employee-owned
- Based in U.S. (Fort Collins, CO)
- WW coverage, offsite & onsite
- Nearly 200 employees
  - ? Managed application support
  - ? Enterprise application development
  - ? MPE, UNIX, Windows expertise

PLATINUM business partner

hp invent

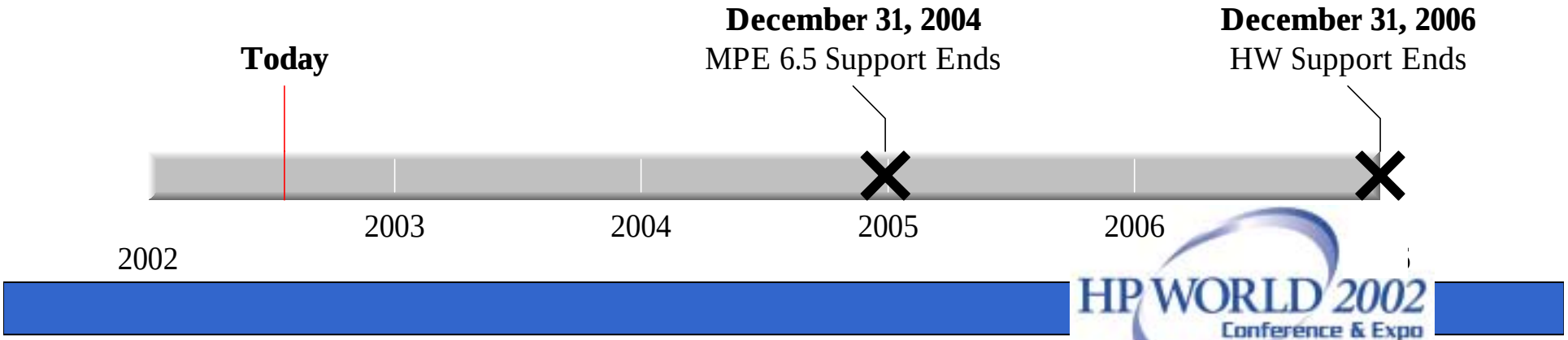
Developing Migration Strategy

5-step Process

- Create server inventory
- Create application inventory
- Perform migration assessment
- Determine migration sequencing
- Create executable migration plan

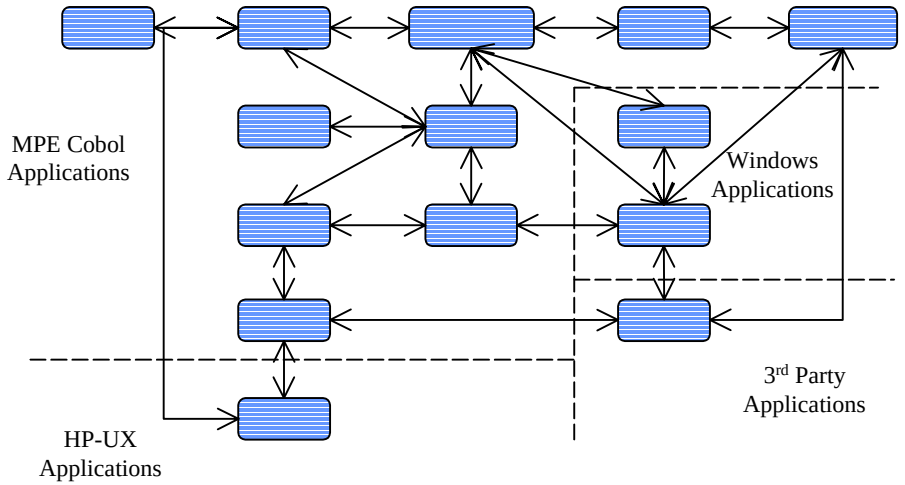
1. Create Server Inventory

- Hardware
  - Models
  - Networks
  - Data protection
  - End-of-support life
- Software
  - OS versions
  - Utilities
  - Job schedulers
  - Support contracts



2. Create Application Inventory

- Identify all applications to be migrated
- Application topology
  - Application details
    - Modules
    - Lines of code
    - User interfaces
  - Data flows
  - Dependencies
  - Database schema

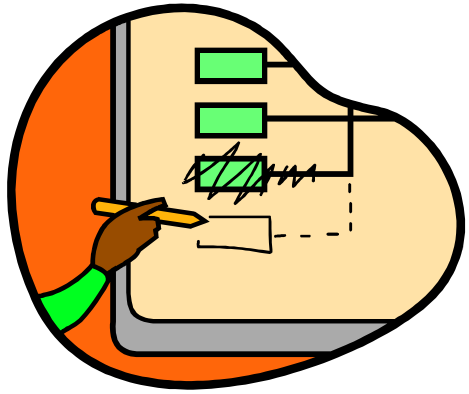


3. Perform Migration Assessments

- Gauge enterprise application satisfaction
- Decision tree: drive direction
- Stay, Port, Build, Buy
  - Stay: (delay), business as usual
  - Port: Move the application
  - Build: Create custom application (SDLC)
  - Buy: Purchase off-the-shelf application

4. Migration Sequencing

- Maintaining integration during migration
- Application topology grouping
  - Individual versus grouped transitions
  - Business impact
  - Needs for redundancy
- Change management

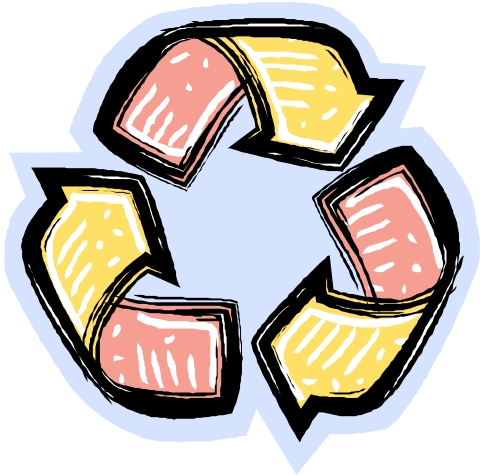


5. Executable Migration Plan

- Resource requirements
- Timing
- Costs
- Support during migration
- Business impact

New Environment Analysis

- Hardware platform
- Operating systems
- Databases
- Programming languages
- Application frameworks
- Component integration



Hardware Platform

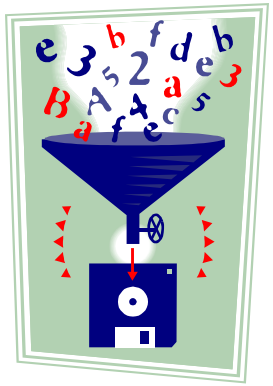
- Official IT strategy
- Price (immediate + long-term)
- Ease of use
- Support costs/availability
- Scalability
- Component integration

Operating Systems

- Windows
  - Windows 2000, XP
  - Strong GUI
  - 90% Desktop share
- Linux
  - Free!
  - Open source
  - Increasing share
- HP-UX
  - High availability
  - Secure, tailored
  - 60% Server share (UNIX)

Databases

- SQL Server
  - Windows only
  - Easy to use, scalable
  - Secure, focused
- Oracle
  - Windows, Linux, HP-UX
  - Scalable, reliable
  - Advanced security
- Eloquence
  - Proprietary (Marxmeier SW)
  - Windows, Linux, HP-UX
  - Image emulation
  - Low cost



Programming Languages

- Visual Basic
  - Designed for .NET
  - Based on BASIC
  - OO RAD (VB.Net)
- C#
  - Fully .NET integrated
  - OO, type-safety, versioning, scalable
  - Garbage collection
- C++
  - OO
  - Portable, efficient
  - Some OS specific calls
- Java
  - Simplified OO
  - Runtime environment
  - Platform independent

Application Frameworks

- Enterprise programming architecture
- J2EE
  - Integrated with Java Virtual Machine
  - Multiple OS support (Apache Web Server)
  - Standards driven
- .Net
  - Windows integrated
  - Product-strategy driven

Component Integration

OS/Database Compatibility

	SQL Server	Oracle	Eloquence
Linux	No	Yes	Yes
HP-UX	No	Yes	Yes
Windows	Integrated	Yes	Yes

OS/Programming Language Compatibility

	VB/C#.Net	Java	C++
Linux	No	Yes	Integrated
HP-UX	No	Yes	Integrated
Windows	Integrated	Yes	Yes

COBOL Migration Tools

- Transoft e-volutionary solutions
  - Based in Atlanta, GA
  - Nearly “native” solution
  - Service provider
  - Migration company
- neartek
  - Based in MA, France
  - Requires interpreter
  - Tool provider
  - Storage company
- ORDINA-DENKART
  - Based in Belgium
  - Requires interpreter
  - Tool provider
  - Migration company
- SUNGARD BI-TECH INC.
  - Based in Chico, CA
  - Requires interpreter
  - Tool provider
  - Education SW company

Environments

- All support Linux, Windows, HP-UX
- All support SQL Server, Oracle, Eloquence

Programming Language Support

	Visual Basic	Java	C++	COBOL
Neartek	No	UI Only	No	Yes
Denkart	No	UI Only	No[1]	Yes
Bi-Tech	No	No	No	Yes
Transoft	UI Only	UI Only	No	Yes

1 – Denkart does offer Pascal & SPL translations to C++

Environments (cont.)

Application Framework Support

	.Net	J2EE	Open COBOL
Neartek	No	Yes	Yes
Denkart	No	Yes	Yes
Bi-Tech	No	No	Yes
Transoft	Yes	Yes	Yes

Migration Techniques

- Programming language
  - Source code moved using open system COBOL compiler
  - Source code moved to new language, code structure intact
- MPE Intrinsics
  - Run-time library intercepts calls
  - Translation to new environment

Migration Techniques (cont.)

- Database
  - Tables created based on Image schema
  - Indices based on Image Master tables
  - Array fields flattened into tables as individual field names
  - Data moved into similar structure database
  - Inter-database connections built using data maps (Taurus)
  - KSAM <-> C-ISAM, Flat files <-> Flat files

Migration Techniques (cont.)

- User Interfaces
  - Vplus calls handled w/runtime library calls
  - Can re-engineer to build new GUI
  - Direct I/O calls port directly to open COBOL
- JCL
  - Translation to perl, ksh, other scripting
  - JCL emulation

Potential Migration Issues

- MPE intrinsic coverage
- Integrated, mixed programming languages
- Hierarchical versus relational databases
- Database performance
- Character-based versus GUI screens

COBOL Development Frameworks

- Microfocus COBOL
  - Bundled with HP 9000 (HP-UX)
  - Highly portable, open
  - Tools for web integration
  - Access to SQL, C-ISAM files (KSAM)
  - Optimizable native code
  - Advanced debugging/analysis tools
  - Multi-machine communication

COBOL Development Frameworks

- AcuCOBOL
  - Highly portable, open architecture
  - Tools for web integration
  - Access to SQL, VISION ISAM files (KSAM)
  - GUI development tools
  - Built-in MPE intrinsic handling
  - Partnered with ScreenJet to migrate Vplus forms to AcuCOBOL GUI

COBOL Development Frameworks

- Fujitsu Sweet3000
  - Extensive .Net integration (NetCOBOL)
  - Most work done on target platform
  - Replicates folder structure automatically
  - Splits copy libraries into separate files
  - Automatic screen (Vplus) converter

Comparing COBOL Application Porting Approaches: Summary

- Develop migration strategy

Start Planning NOW!

- Consider all facets of your system:
  - Operating systems
  - Databases
  - Programming languages
  - Application frameworks
  - Component integration

- Review migration vendor offerings
- Protect your investment!