

Platform Migration

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CRATOS

+ TECHNOLOGY SOLUTIONS INCORPORATED -

Microsoft

MICRO
FOCUS

BUSINESS PARTNER

- Introduction to CRATOS
- Micro Focus Partnership
- Mainframe Migration Alliance
- COBOL – “Alive and Well”
- Why Migration
- Options
- Success Stories - Lombard

Introduction to CRATOS

- Formed in 1999, CRATOS is a Privately owned company – with offices in USA and Canada
- CRATOS has two major lines of business to serve its clients
 - Technology
 - Mainframe System Consulting - Migrations, Conversions, Upgrades, Enhancements – Financial Services, Insurance, Medical, Industrial...
 - Hospitality
 - Systems/Solution for Restaurants, Pubs, Golf Course...
 - .NET based Software, Hardware and Services
- We serve all of our clients with the same philosophy:

We partner with our clients!
We don't just consult – we deliver!

● Services

- All aspects of the Project Lifecycle – business cases, RFP/RFI, requirements, analysis, design... implementation and production support
- Installations/implementations/software upgrades
- Conversions/Migrations – phased or total approach
- Custom solutions
- Infrastructure review/recommendations
- Custom solutions and Enhancements
- Production Support
- Project & Vendor Management

- Projects (Overview):
 - We have completed over 100+ projects in 17 countries
 - 14+ Million Account Conversion
 - 8 Million Account Platform Migration
 - 6.5 Million Account Platform Migration
 - GUI Front-end for Thailand, Japan, Indonesia, Australian company
 - 20+ Million Account Migration & System Upgrade
 - Vendor/Package Enhancements (AMEX)

- We do most of our project development offsite using Micro Focus tools
- Micro Focus allows us to use a PC or a laptop to simulate a mainframe, including:
 - connectivity to sign-on remotely to client sites
 - center data & user input
 - run batches and reports...
- With Micro Focus, we are able to provide our clients with significant travel savings during the project and the ability to work on their projects/provide ongoing production support 24/7



- CRATOS is a member of the Mainframe Migration Alliance
www.mainframemigration.org



- “The Mainframe Migration Alliance (MMA) is a group of companies that are working together to help customers migrate workloads off of the mainframe and onto the Microsoft platform.”
- CRATOS is a Certified **Microsoft** Partner

● Clients



- “75% of world’s business data is in Cobol” – Gartner Group
- “15% of NEW application development is in Cobol” – Gartner Group
- “34% of coding activities are in Cobol” – Gartner Group
- 310 billion lines of software are in use today – Gartner Group
- 200 billion lines of COBOL are in use today (65% of the total software). This represents a \$2 trillion dollar total investment. – Gartner Group
- 5 billion lines of new COBOL are developed every year. – Gartner Group
- “More that 850,000 Cobol Developers” – IDC
- “COBOL remains a viable computing language well into the future” – British Computer Society

High Cost Of Mainframe

Mainframe hardware very expensive

	SHV	Mainframe
Price Per MIP	\$2	\$2,000 ¹
1 Gig RAM	\$500	\$10,000 ³
1.2 Terabyte Disk	\$1,500	\$78,000 ⁴

Mainframes cost much more than high-end Windows Servers

	Intel x86 16 way	z990 15 way
16 CPU System	\$200,000 ⁵	\$4,482,000 ³
16 CPU OS License	\$ Included	\$1,177,000/yr ²
32 Gig RAM	\$ Included	\$320,000 ³
1.2 Terabyte Disk	\$ Included	\$78,000 ⁴

- **Annual costs of mainframe environment are huge**
 - **E.g. State of ND spending annually \$450,000 hw, \$2,450,000 sw⁶**

1. Computerworld, February 14, 2000 – <http://www.computerworld.com/news/2000/story/0,11280,41261,00.html>
2. Z/Journal , August/September, 2003 – http://www.zjournal.com/PDF/Phelps_Article.pdf
3. IBM Press Release August 22, 2003
4. Microsoft Whitepaper “Mainframe Linux Benchmark Project” July 2003
5. Unisys, Fujitsu retail sales quotes, ave.
6. State of North Dakota, IT Operations. <http://www.state.nd.us/itd/meet/docs/agenda/directional/20041020-presentation.ppt>

Windows Server Scales (MIPS)



Mainframe Migration

Scalability of Micro Focus Enterprise Server and Microsoft Windows Server 2003

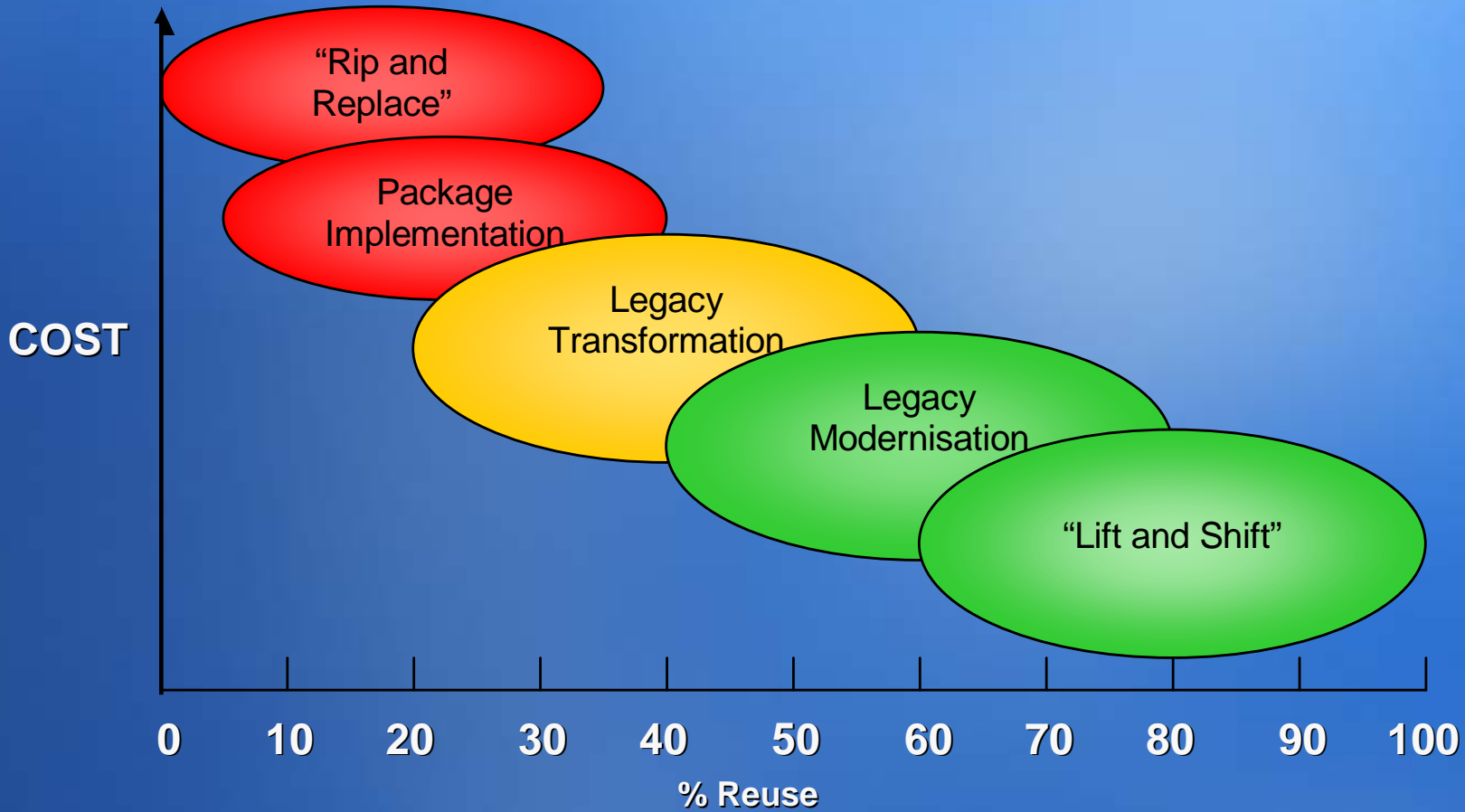
WinHEC 2005 Version - April 20, 2005

This study by Electronic Data Systems (EDS), Micro Focus, Microsoft, and Unisys Corporation estimates the equivalent of 1,715 mainframe millions of instructions per second (MIPS) for an 8-CPU enterprise-class system. Further, we show COBOL performance scales linearly under Microsoft Windows similar to what is expected in IT data centers.

- “Benchmark: Unisys 8 CPU at 1,715 MIPS
- Testimonial: HP 32 CPU at 16,000 MIPS at HP customer site
- Relevance: 85% mainframes deployed today below 1,000 MIPS²

1. Study at <http://www.microsoft.com/mainframe>
2. IDC

The Choices for Moving



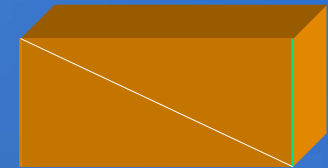
"Lift and Shift" - the best strategy

Legacy



“Lift and Shift”

Extend



- Benefits of a Migrated System:
 - Cost reduction
 - Lower hardware and software costs
 - Improved developer productivity
 - Increased agility
 - Maintainable, adaptable and extensible to... the internet, SQL, XML and Web services
 - Lower risk
 - Leverages your existing applications, skills and data to... deliver new business value at lower risk
 - Other
 - ROI delivered in months not years
 - System availability comparable to that experienced on the mainframe

- Why 'Lift and Shift'?
 - Not a 'rip and replace' approach
 - Invest in projects with a shorter ROI (9-18 months)
 - Maintain Application Knowledge
 - Reduced Development Cost
 - Increased Agility
 - Lower Risk
 - Lower H/W and S/W costs

- Why Not the Other Options?
 - Re-engineering is considered a high risk strategy because of the time and cost involved. “74% of these projects either fail or are significantly late and over budget.”
 - Packaged applications are a generic approach committing organizations to the business processes as defined by the package. This may mean that the organization loses critical business processes and must undertake complex data remodeling and retraining. This approach is also considered high risk as “42% of implementations are never completed or are more than 50% late”.

- CRATOS Migration Toolkit: 10 Step Guide utilizing Micro Focus tools
 1. Move system inventory from mainframe into migration toolkit using Mainframe Express (MFE)
 2. Perform detailed migration assessment using Revolve Enterprise Edition (Revolve EE)
 3. Build EBCDIC application reference project on Windows within MFE
 4. Build MFE ANSI application migration project on Windows within MFE
 5. Remove proprietary language dependencies >>

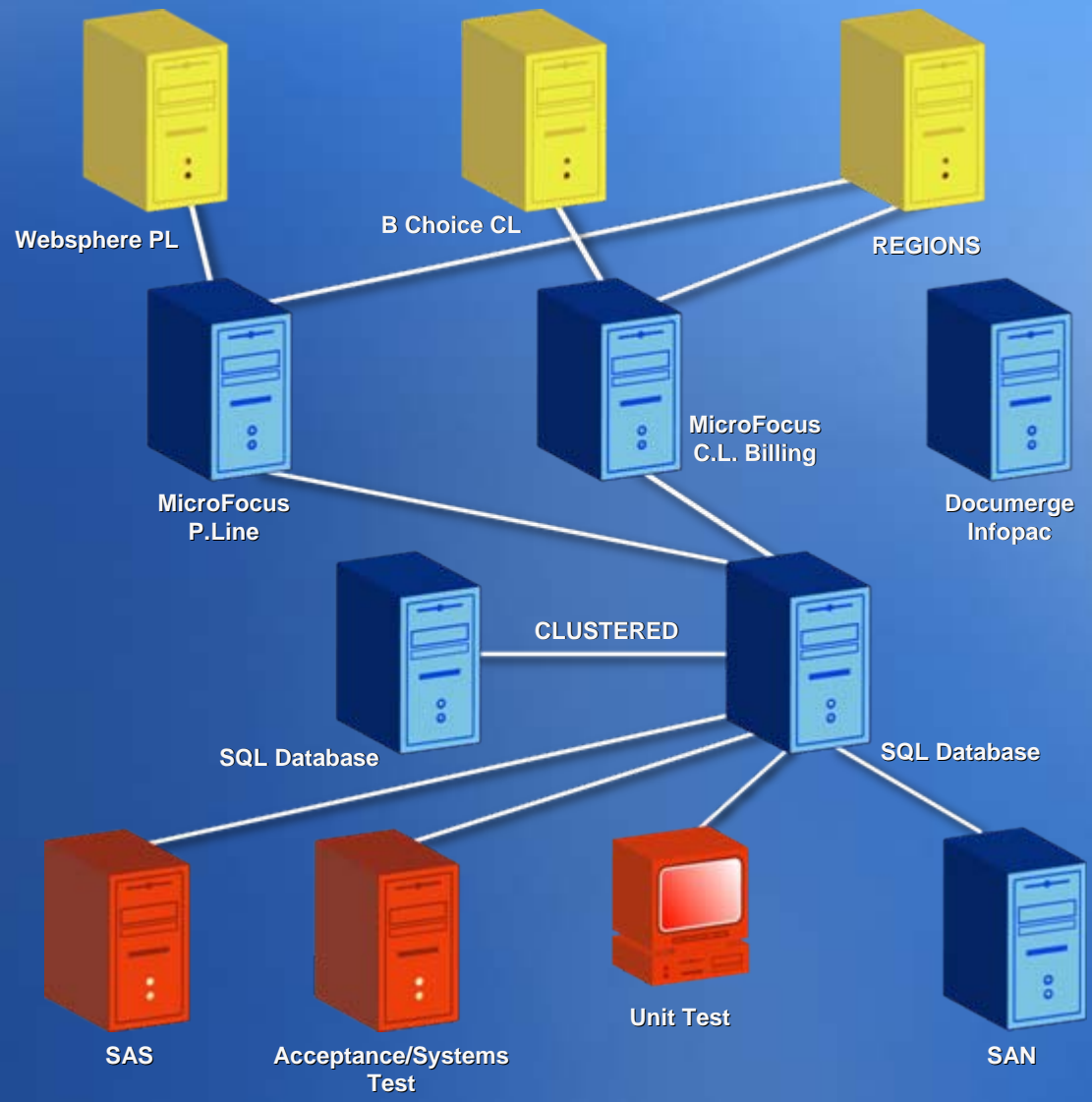
6. Replace JCL and scheduler – the Mainframe Transaction Option within Enterprise Server supports running IBM z/OS and VSE JCL batch script on Windows without the need to convert it to other formats
7. Migrate data resources to target environment(s)
8. Publish from migration toolkit to end user development environment (NXP)
9. Unit test migrated application on target development environment
10. System test on target production server environment

- Lombard Canada Ltd. is one of the oldest property and casualty insurance operations in Canada, the successor to a company which was granted a charter in 1782
- Commercial, Personal, and Specialized Insurance
- Consolidated gross premiums written totaling C\$ 1.94 billion
- Total shareholders' equity of C\$ 861.7 million
- Top 5 Insurance Company in Canada (profits)
- Wholly owned subsidiaries of Northbridge Financial Corporation (NB on the TSE)

- Phase 1 – Personal and Commercial Insurance Systems
 - IBM H70 - 200 MIPS (S/390) running z/OS (hosted at external supplier)
 - COBOL for MVS 1.2 – 3000+ programs
 - CICS T/S 2.2
 - VSAM
 - DB2
 - GTAM
 - Assembler
 - JCL
 - EZ Sockets
 - AS/400 Interfaces (LU6.2)
 - SAS
 - SELCOPY
 - Documerge – formatting/printing output

- Microsoft Windows Server 2003 Enterprise
- Microsoft SQL
- Migrate all COBOL to Micro Focus ES/MTO
- Re-write Assembler into Cobol or C#
- Utilize Micro Focus JCL Handler
- Convert AS/400 interfaces (LU6.2) to Web Services
- 3rd Party Software
 - Migrate SAS to Windows version
 - Replace SELCOPY with Windows version
 - Replace Documerge with Windows version
- Microsoft SourceSafe for Code Management

Lombard TARGET Environment Overview



← 2 x 4 CPU Application Servers (split workload + backup 32GB RAM)

← 2 x SQL/Data Servers (Passive Backup)

● Phase 1 A – CARP Sub-system

- Handed over to Lombard on April 25th, 2005
 - 37 Cobol Programs
 - 16 BMS CICS Maps
 - 145 Cobol Copybooks
 - 3 Assembler Programs
 - 12 GTAM (Assembler Tables)
 - 7 VSAM files
 - 2 DB2 tables
 - 2 Flat/Sequential files
 - 4 JCL Streams – with 21 JCL Jobs/Proc
- 92.3% of COBOL code retained!!

● Phase 1 B – Commercial and Personal

– Handed over to Lombard December 2005

- 2,964 Cobol Programs & copybooks
- 3,600,000 lines of code
- 1,088 BMS CICS Maps
- 145 Cobol Copybooks
- 285 Assembler Programs
- 125 VSAM files
- 44 DB2 tables
- 126 Flat/Sequential files
- 18 JCL Streams

Why Migration?

1. Migrations are lower risk
2. You don't have to change your business
3. It works
4. Improved productivity within MicroFocus/Windows environment
5. System Performance Improvements
6. Extendibility into .NET

Will this work for you?

- CRATOS will:
 - Review existing application code, environment...
 - Outline a high-level project plan & approach
 - Migrate sample program(s) – complex or potential problem areas
 - Provide a fixed price proposal
- Cost: \$0!!

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