

It's time to take control of your infrastructure

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It's time to THINK again about your business needs

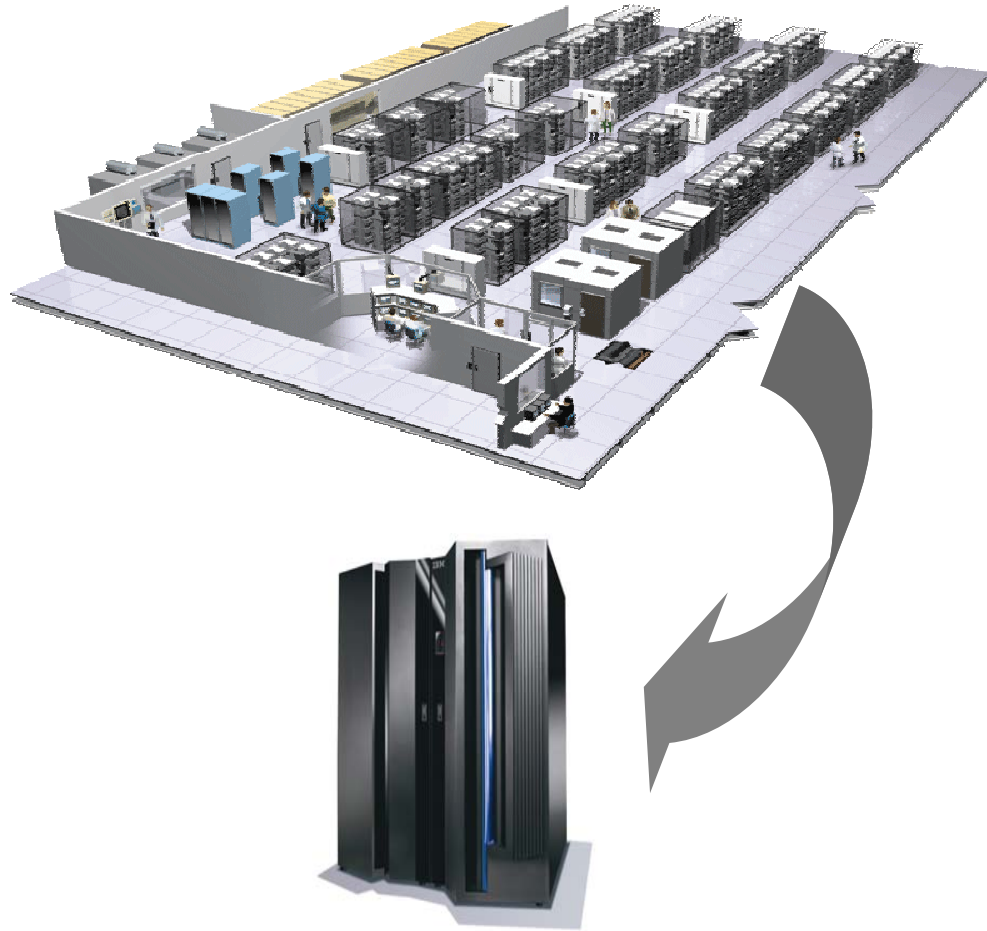
- **Rethink your business**

- **Rethink the role of the mainframe**
 - ▶ **A System z9 platform for all mainframe customers**
 - ▶ **Hundreds of virtual servers - the power and simplicity of a single server**
 - ▶ **IBM Software for end-to end Systems Management and single point of data reference**
 - ▶ **Designed for data serving and SOA**

- **Rethink the future**



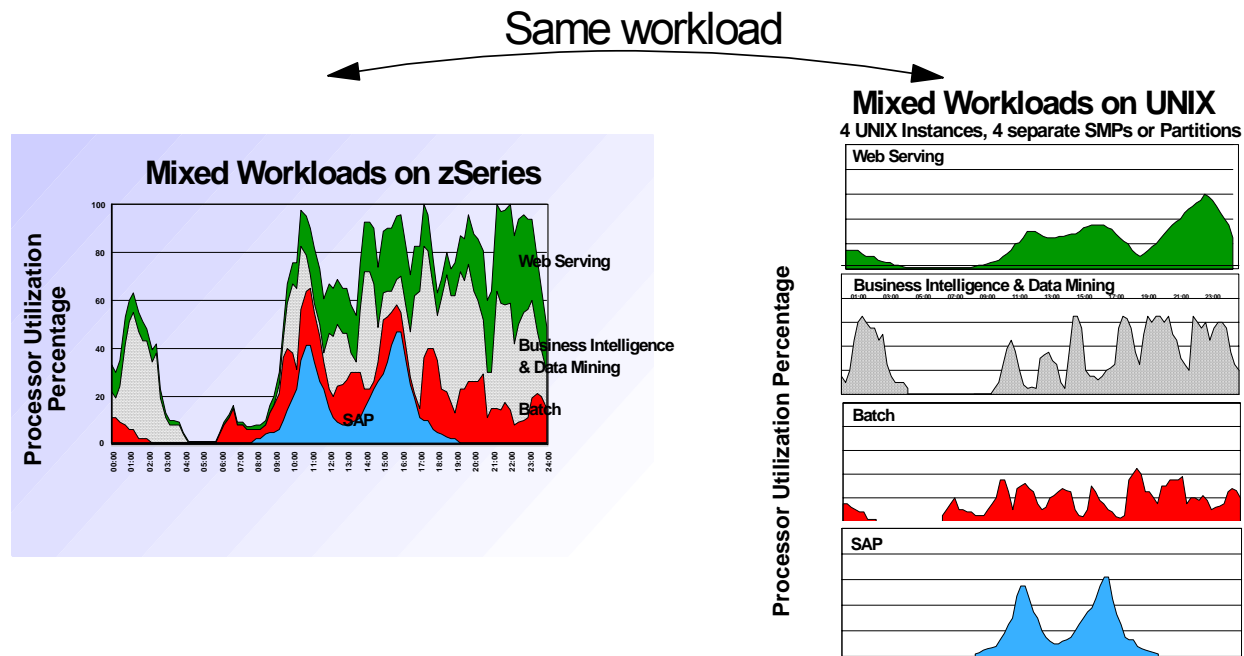
IT Optimization starts with a Data Center in a box ... not a server farm



- **Central point of management**
- **Higher resource utilization**
- **Lower cost of operations**
 - ▶ **Less Servers**
 - ▶ **Fewer SW Licenses**
 - ▶ **Fewer resources to manage**
 - ▶ **Less energy, cooling and space**
- **Fewer intrusion Points**
 - ▶ **tighter Security**
- **Fewer points of Failure**
 - ▶ **Greater Availability**

We needed a solution that could provide high levels of availability around the clock, along with the flexibility to quickly and cost-effectively deploy new services both internally and externally. IBM eServer zSeries fitted the bill perfectly on both counts, enabling us to run multiple Linux virtual machines on a single, ultra-reliable hardware platform. Tim Simpson, IT Support Manager, Dundee City Council

Optimizing Workloads on a Mainframe is more effective



■ IBM Mainframes: Up to 100% Utilization

- Highly virtualized and shared resources
- “hands off”, business priority driven intelligent workload management
- Fewer servers, less power, cooling & admin
- Optimized use of SW assets

■ UNIX processors: typically under 25% utilization

- More of them and more SW license
- Static scripted workload management
- Higher admin and environmental cost
- Intel worse, typically <10% utilization

Baldor Electric, Arkansas

‘Baldor migrated to a z990 in January, and consolidated Unix-based servers onto a single IBM z990, or “T-Rex,” with 24 separate, secure partitions on Linux and z/OS. According to (Baldor Electric IS director Mark) Shackelford, this has allowed Baldor to increase application performance by 40% and cut IT expenditures from 1.7% of total sales to 1.2%. He expects to get that figure under 1% by the end of 2005.

From “Tech Target August 2005

IBM has the tools to simplify your infrastructure

- **New System z9 Processors**
 - ▶ **Sized right to fit your business**
 - ▶ **New lower MSU charges**
 - ▶ **Specialty engines**
 - ▶ **Comprehensive multi-dimensional virtualization**
 - ▶ **On-off capacity on demand**
- **IBM Software**
 - ▶ **DB2**
 - **Fewer copies of data**
 - **Security rich**
 - **Easier to manage than replicated data**
 - ▶ **Tivoli software**
 - **End to end systems management**
 - **Resilience**
 - **Provisioning and control**
 - ▶ **Rational Software**
 - **Develop in a standard environment**
 - **Enable Service Oriented Architecture**

IBM delivers economic value on System z

- **Generation to generation price / performance improvements for hardware, software and maintenance***
- **Flexible ‘pay for what you use’ pricing methodologies available through capacity on demand and subcapacity software pricing**
- **Attractive for new workload with specialty engines and low cost z/OS operating environment**
- **Designed to reduce the hidden costs of computing that are rapidly accelerating in many environments:**
 - ▶ The costs of Systems Management
 - ▶ The costs of downtime
 - ▶ The costs of Security Breaches
 - ▶ On-going energy costs



* - z900 to z990 to z9-109

And continues to deliver additional value



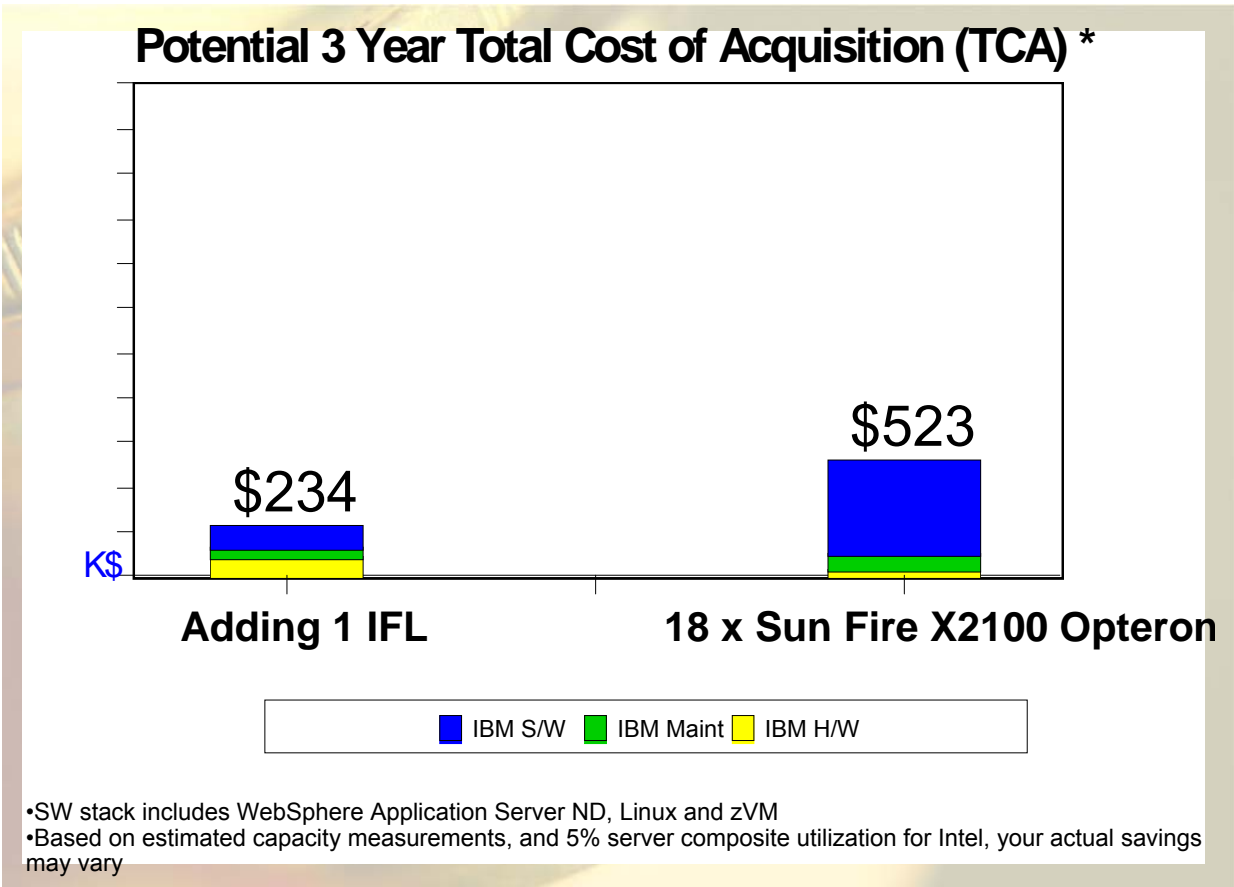
- **New IBM System z9 Business Class delivers price / performance improvements and technology-driven value**
 - ▶ Low entry point and more granular capacity settings help improve “right-sizing” your hardware and software costs
 - ▶ Generation to generation price / performance improvements*
 - 10% reduction in chargeable MSUs
 - Up to 23% reduction in hardware maintenance costs
 - Up to 34% hardware performance improvement for Linux (IFLs), Java (zAAPs), and Internal Coupling Facilities (ICFs)
 - ▶ Typically, no charge MES upgrades on IFLs and zAAPs
- **Greatly enhanced Granularity and On Demand capability for z9 EC**
- **New IBM System z9 Integrated Information Processors (zIIPs) at \$125K designed to reduce the cost of certain DB2 Workloads****
 - ▶ zIIP capacity, like that of zAAP and IFL, is free of IBM software charges
- **New offers on software, services, and financing help to optimize your investment**



*When compared to z890s
 ** US Price only, prices vary outside of the US

Harness the value of a System z9 BC Mainframe's high utilization and transform your enterprise's IT costs

Leverage an incremental IFL in a Web Application Serving environment and potentially reduce costs by up to **55%** when compared to an equivalent Opteron based Sun solution



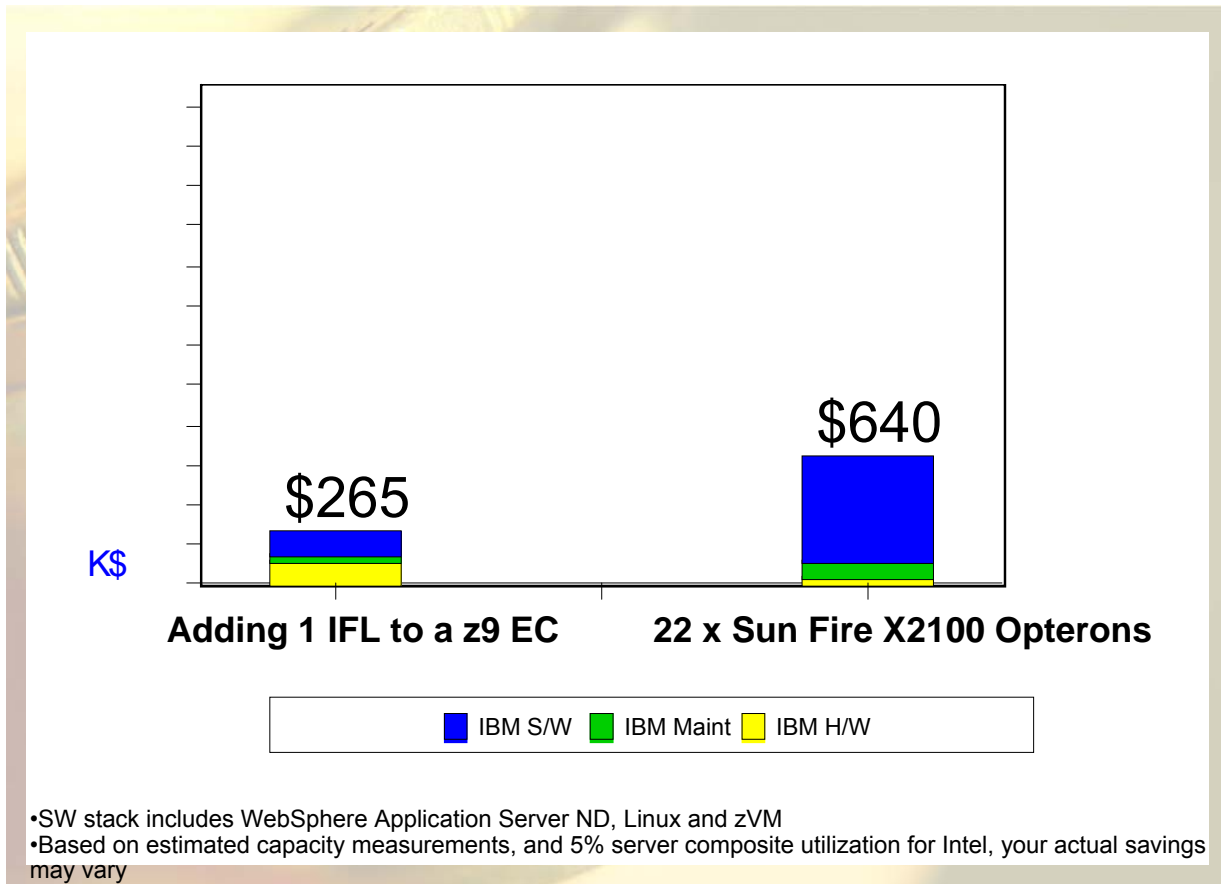
- Savings driven by:**
- Consolidation of OTC SW licenses from 18 to 1
 - Savings increase as solutions scale up to a 7 way System z
- Other likely Savings:**
- Energy – adding 18 Intel servers consumes 5200 Watts vs. 0 for one incremental IFL*
 - Space – adding 18 Intel servers requires 5 sq feet. Turning on an IFL takes 0 and you can have up to 7 of them (or 113 **equivalent Intel servers) with no additional space
 - People – adding an IFL or multiple IFLs will not likely require more people to manage them
- *Microcode upgrade only
 ** Based on 5% composite Utilization

First National Bank of Omaha - Ken Kucera, senior vice president and division head of FNBO Enterprise Technology Services

“For every application I had, I needed another one to five servers behind that, for things like development and application and Web serving. And every 20 servers translates to another body to administer them.”

Harness the value of a System z9 EC Mainframe's high utilization and transform your enterprise's IT costs

Leverage an incremental IFL in a Web Serving environment and potentially reduce costs by up to **58%** when compared to a equivalent Opteron based Sun Solution



Savings driven by:

- Consolidation of OTC SW licenses from 22 to 1
- Savings increase as solutions scale up to a 54 way System z

Other likely Savings:

- Energy – adding 22 Intel servers consume 6358 watts vs. 0 watts for one incremental IFL*
- Space – adding 22 Intel servers requires 5 square feet. Turning on an IFL takes 0 and you can have up to 54 of them (or 789** equivalent Intel servers) with no additional space
- People – adding an IFL or multiple IFLs will not likely require more people to manage them

*Microcode upgrade only

** Based on 5% composite Utilization

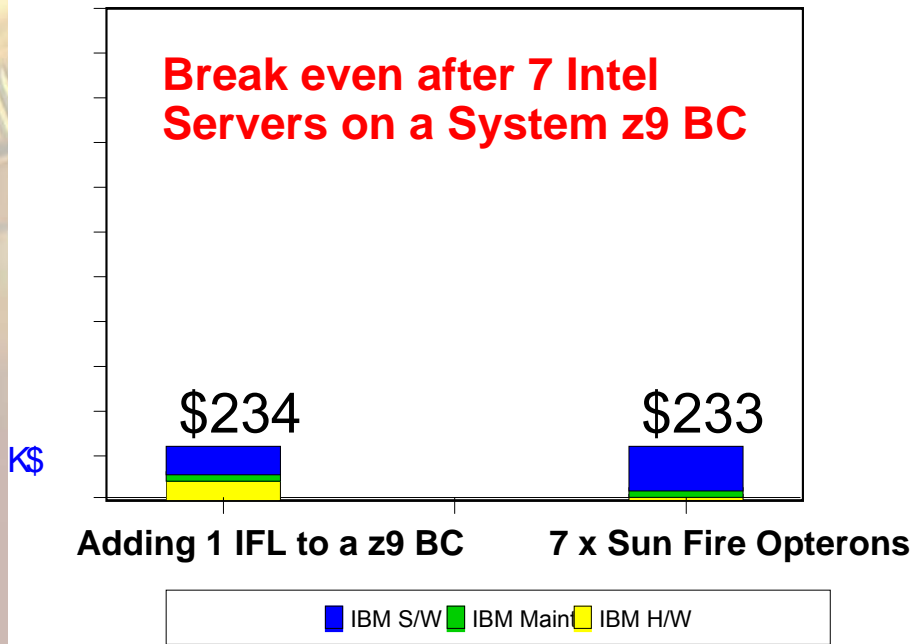
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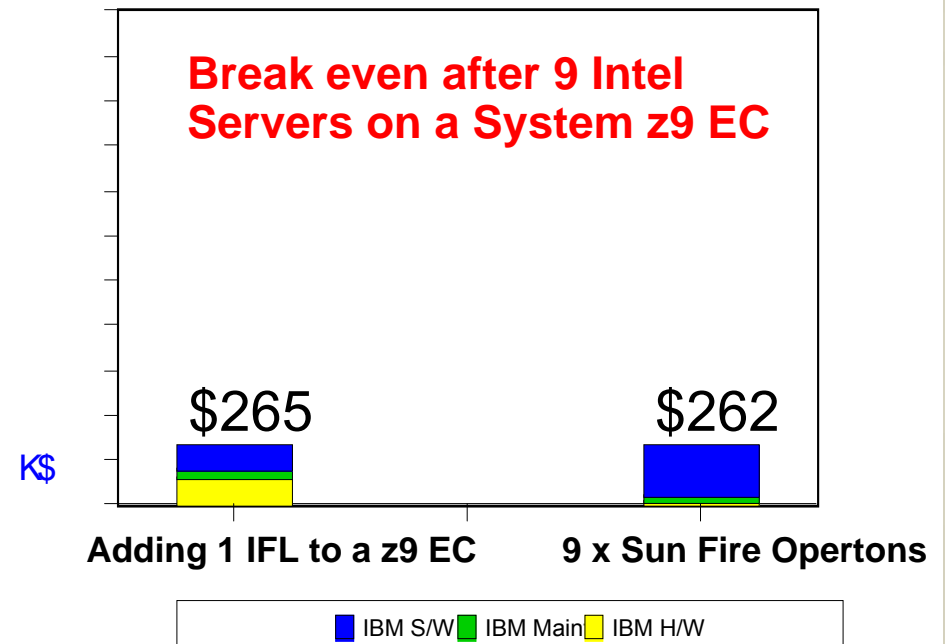
Harness the value of a System z9 Mainframe's high utilization and transform your enterprise's IT costs

When leveraging an incremental Integrated Facility for Linux (IFL) on a z9 Mainframe in a Web Application Serving environment the break-even point is not hundreds of Intel servers, but just 7 or 9 servers.

Potential 3 Year Total Cost of Acquisition (TCA) *



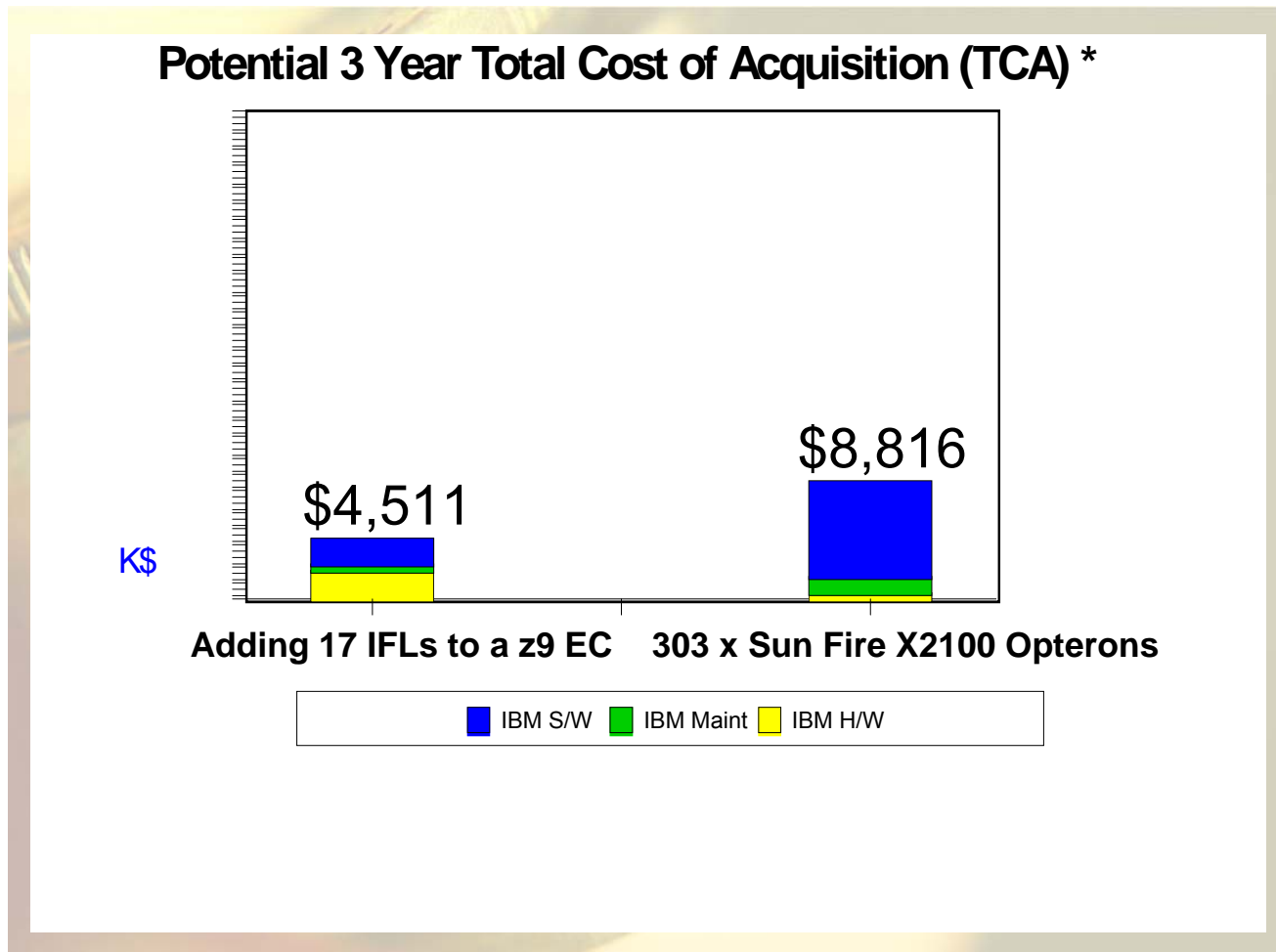
Potential 3 Year Total Cost of Acquisition (TCA) *



•SW stack includes WebSphere Application Server ND, Linux and zVM
 •Based on estimated capacity measurements, and 5% server composite utilization for Intel, your actual savings may vary

Harness the value of a System z9 EC Mainframe's high utilization and transform your enterprise's IT costs

When leveraging the incremental Integrated Facility for Linux (IFL) on a z9 Mainframe in a large Web Application Serving environment the potential savings remain great. This example is with 303 Intel Servers showing approximately a **\$4M (48%) TCA saving** over 3 years.



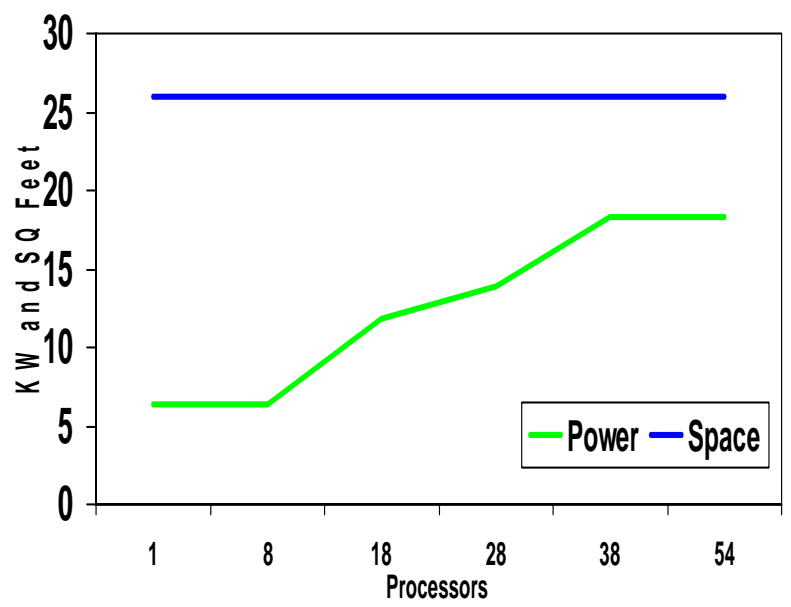
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Harness the value of a System z9 Mainframe's high utilization and transform your enterprise's IT costs

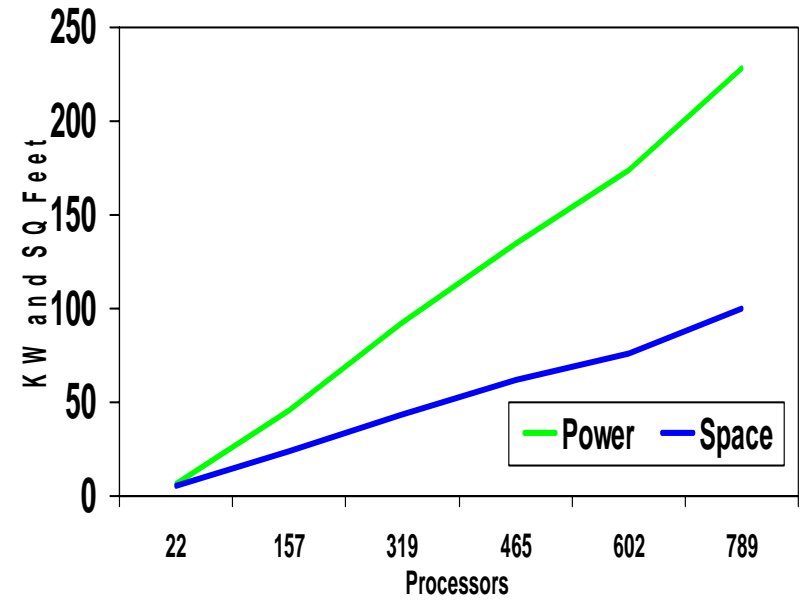
Power and Space Consumption

*The System z9 EC delivers up to 4 times the same work in the same space!
The System z9 EC delivers up to 12 times the work for the same power consumption!*

System z9 EC



Sun Fire x2100



The energy savings are dramatic even at a lower processor capacity - an 8 way IBM System z9 EC (4,000 mips) may only utilize approximately 1/7th the energy needed by a typical distributed environment doing the same work.

And the software evolution continues



Innovation

WebSphere.

- Extend and enrich core applications for easier information access
- Helping you to improve productivity with latest eclipse-based tooling for System z®
 - ▶ Rapidly integrate traditional and WebSphere™ applications with WebSphere Developer for zSeries®
- Increased SOA Support
 - ▶ Deploying composite applications to help manage business processes with WebSphere Application Server, WebSphere Process Server and WebSphere Enterprise Service Bus
 - ▶ Creating higher-level web services from CICS® transactions with CICS Service Flow feature

DB2.

- Better database security with streamlined infrastructure in support of compliance and auditing
- Extending our outstanding transaction processing availability, scalability and performance
- Decreasing complexity by simplifying DBA tasks
- New SQL enhancements to improve data warehousing and portability
- Extending DB2's ability to handle the next generation of applications

Tivoli.

- IBM Tivoli Service Management: A better way to manage the business of IT
- New Process Managers and CCMDDB
 - ▶ Tivoli Availability Management Process Manager
 - ▶ Tivoli Capacity Management Process Manager
 - ▶ Tivoli Service Order Management Process Manager
 - ▶ Tivoli Information Lifecycle Management Process Manager
- Delivering on ITSM Execution, Leadership and Innovation
- IBM Tivoli Unified Process updated
- Elevate product decisions to process-oriented solutions

Rational.

- IBM Rational Software Development Platform
 - ▶ Develop in a standard environment
 - ▶ Modernize application architectures
 - ▶ Enable SOA Development
 - ▶ Increase business development flexibility
 - IBM Rational COBOL Generation Extension for zSeries
 - IBM Rational COBOL Runtime for zSeries

Computerworld did a story comparing two "growing midsize companies" *

Baldor implemented SAP using zLinux, z/VM, and DB2 on z/OS and is spending less than 1% of sales on I/T.

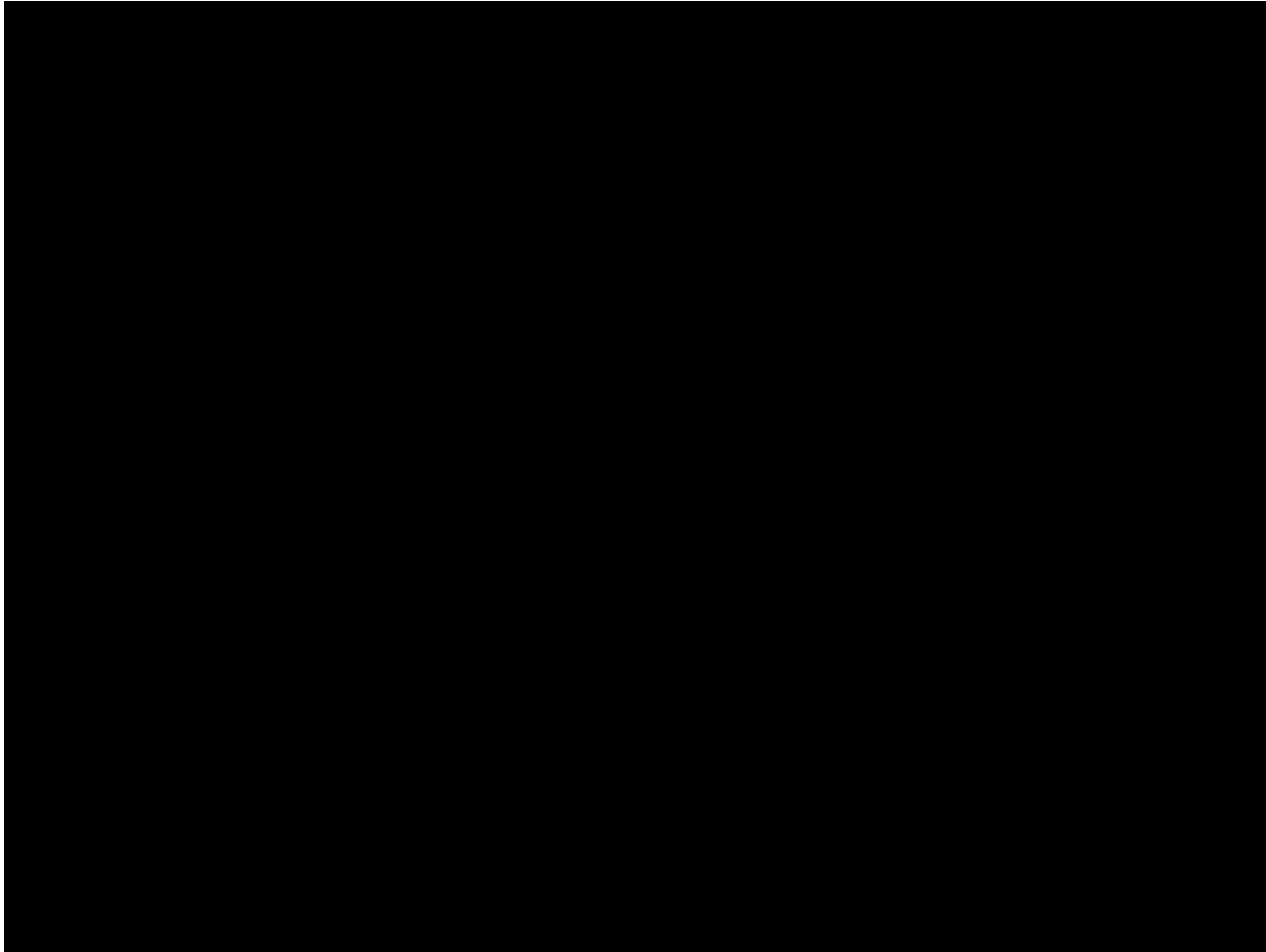
Welch's implemented Oracle ERP on DELL using VMware, Oracle DB, Linux and is spending 2.5% of sales on I/T.

Both have "...similar size IT departments" Both "...use packaged ERP applications.... and want complete alignment with the business"

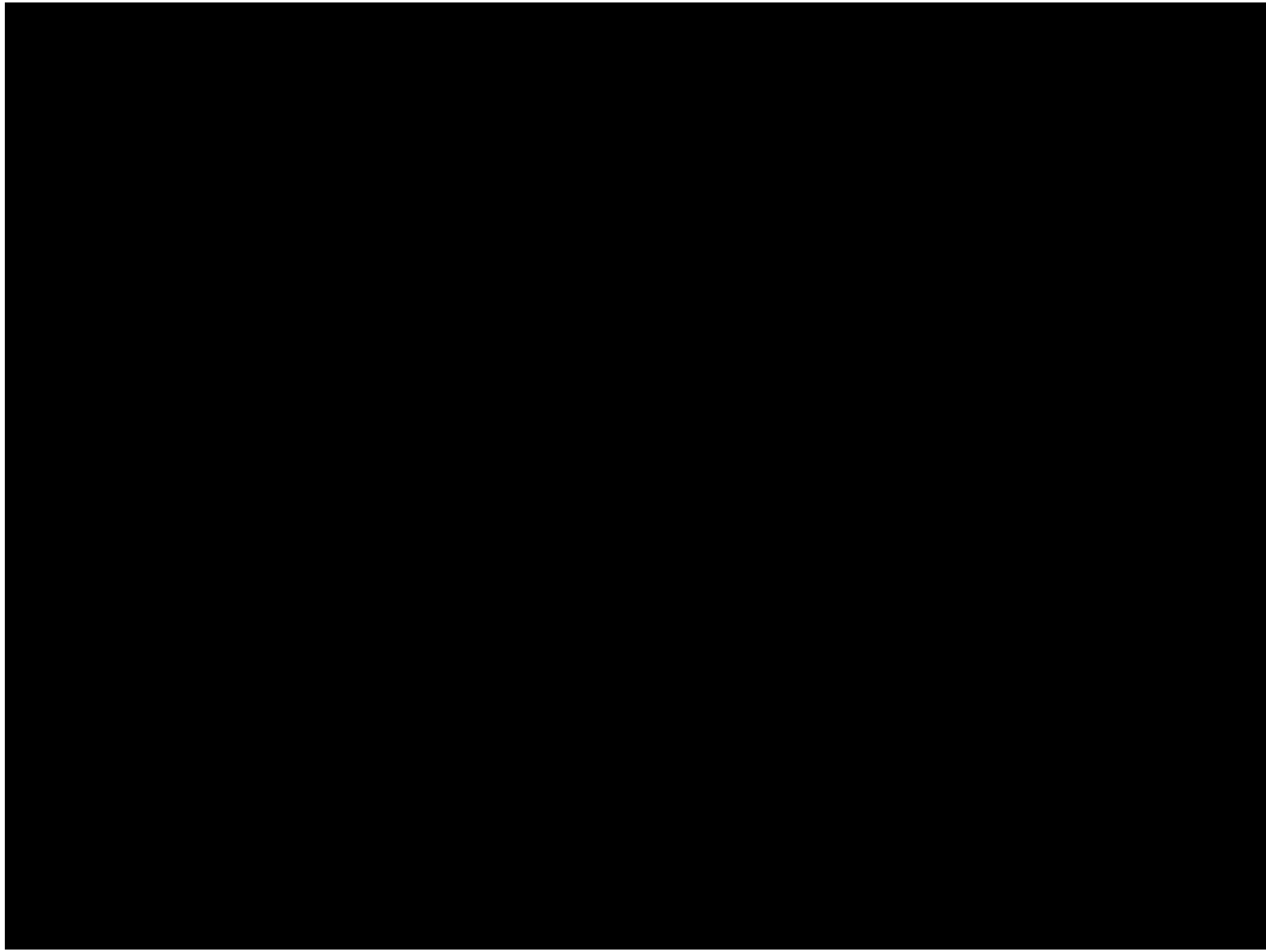
However "when it comes to the hardware running these systems, the companies are polar opposites"

	Baldor Electric	Welch's Food
Supplier	IBM	Dell
Moved From...	3 Mainframes and 8 Unix Servers	S/390 and AS/400
Moved To...	1 z990 System z Server + IFLs	100 Intel Servers
Solution	DB2 database runs in IBM z/OS®, and SAP applications run in 24 Linux® virtual machines on the same server.	Oracle ERP on Dell using VMWare, and Oracle DB using Linux
Decision to Completion Time	Approximately 6 months	Started sometime before June 2005, project will continue into 2007
IT Staff	Down to 38	50
IT Spending	1.2% of Sales in first year of implementation Still declining ... now down to 0.9%	About 2.5% of Sales

Infrastructure simplification is REAL Hear how FNB Omaha simplified it's infrastructure



Infrastructure simplification is REAL Hear how Hannaford Markets simplified it's infrastructure



It is time to THINK again!

■ Rethink your business

- ▶ Opening up new opportunities as an On Demand Business
- ▶ Addressing business challenges with IT

■ Rethink the role of the mainframe

- ▶ Take control of your infrastructure

■ Rethink the future

- ▶ Unify and leverage the infrastructure

It is our intention to continue to make it better!



System z – the coolest place in the data center

There's a system z9 that can help to tame any infrastructure



... which one is right for you?