



IBM System z10

Cornerstone of the
New Enterprise Data Center



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IT Organizations are Challenged by Operational Issues

Challenges

Service Delivery



**Application Modernization and Deployment:
Costly and Slow**

Business Resiliency and Security



**Global 24x7 Demand for Information
Services:
Always On, Always Secure**

Energy Consumption and Cost



**Rampant Server Proliferation:
Costly to Own, Manage and Power**

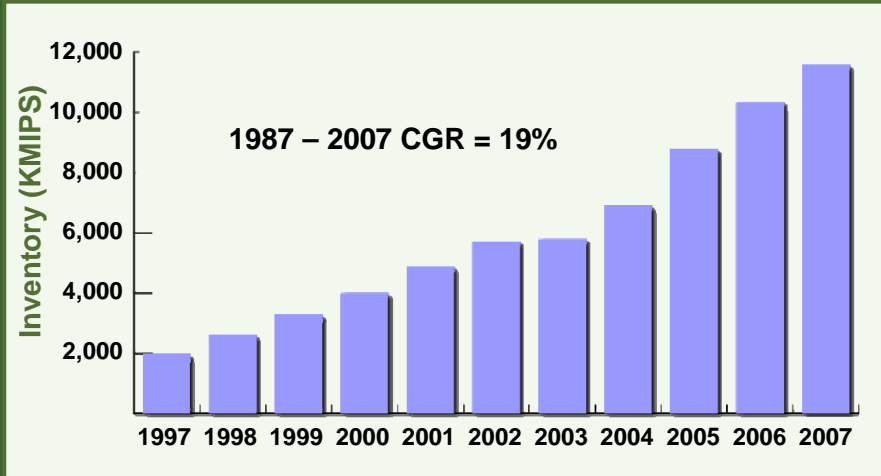


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System z Workload Growth



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Introducing...

The IBM System z10 Enterprise Class

*The world's most powerful
enterprise computing platform*



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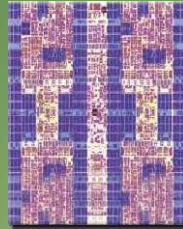
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IBM System z10 Enterprise Class

Continuing the Modular Design for Flexibility

- Enterprise Quad Core technology – 4.4 GHz
 - Decimal Floating Point
- Enhanced capacity 64-way model
- Up to 1.5 TB Memory, 3x more
- 6GBps InfiniBand for faster I/O and Coupling Links

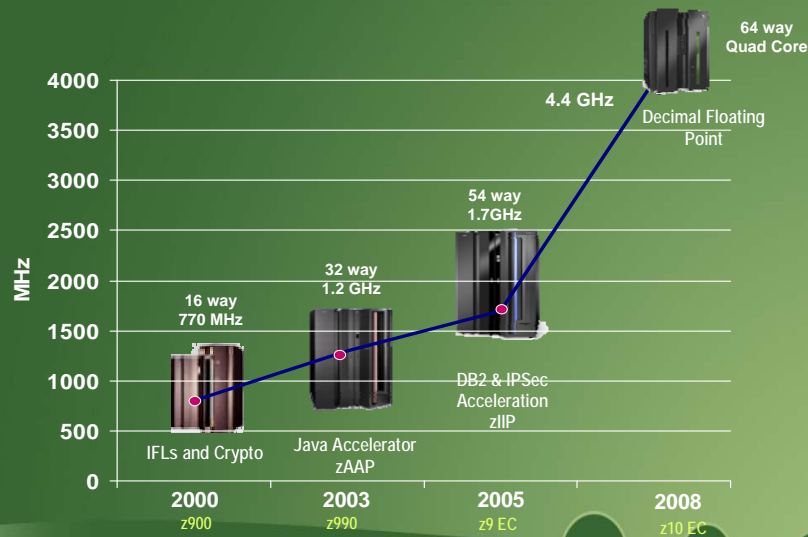


¹ Planned availability 2Q08 09 - Hottest News about the Coolest Mainframe v1.7

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IBM z10 Accelerates Scalability to New Heights



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IBM System z10: The Ultimate Consolidation Platform

Up to 80% TCO Savings Compared to Alternatives



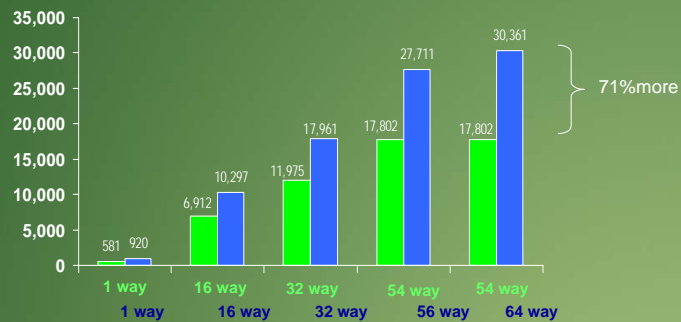
- **Enterprise Quad Core** technology, optimized for many different classes of workloads
- Fully automated on demand provisioning and resiliency
- 70% faster than z9
- 35% average improvement in price performance over z9



Processing Power Comparisons

MIPS Comparison of System z10 to System z9

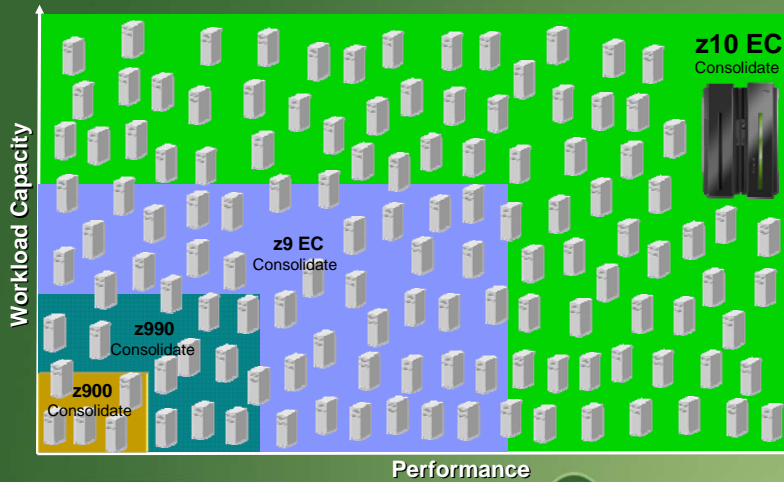
System z10 offers 71% improvement over the processing power of a System z9



System z9 ■
System z10 ■



Unprecedented Performance and Capacity Dramatically Change the Economics of the Data Center



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IBM System z10 and IBM Storage The Premier Information Service for the Enterprise

IBM System Storage DS8000: *The Best Gets Better*

- 4x the capacity for System z environments
- Further automates storage failover process
- Up to 95% faster data resynchronization for data mirroring
- Designed to ease migration

IBM System Storage
DS8000

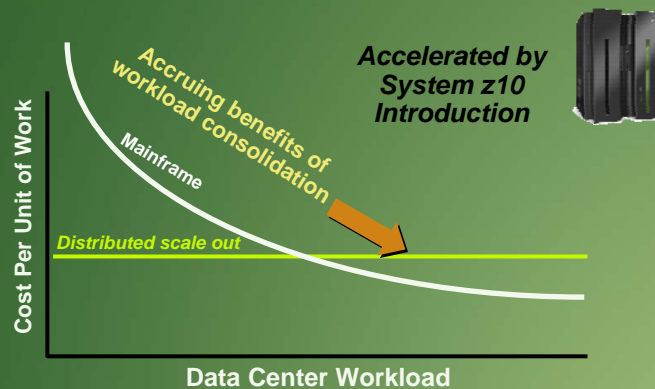


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Mainframe Cost Per Unit of Work Goes Down as Workload Increases



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A Typical Banking Data Center Workload

- **Banking by Telephone**
 - Interactive Voice Response (IVR)
 - Voice XML with WebSphere Application Server
 - 50 transactions per second
 - Each transaction is also logged to DB2 or Oracle
 - 24x7x365 availability required
- **Branch Transactions Sent to Backend Core Systems**
 - Message backbone with WebSphere MQ
 - Millions of messages per day
- **Workload is Separated by Function**
 - Production, development, quality assurance testing
- **Let's Consider the Cost of Hardware, Software, Labor, Power, Cooling and Floor Space Over 5 Year Timeframe**



Note: based on a real customer environment

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Three Choices to Run Workload



Intel Servers



Intel Servers with VMWare



**System z10
z/VM, Linux, IFL's**

350 Intel Servers

2.8 GHz each

700 cores

2,464,650 rated capacity

Low Utilization

45 Larger Intel Servers

3.2 GHz each

360 cores

1,263,555 rated capacity

Better Utilization

1 System z10

24 IFL's 4.4 GHz

24 cores

14,238 MIPS

High Utilization

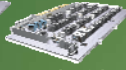


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Resources Consumed by Workload



Intel

Intel with VMWare

System z10

Servers

350

45

1

Memory GB

700

720

352

Cores

700

360

24

Software Licenses

742

352

40

System Administrators

35

18

5

Sq. Feet of Floor Space

135

75

62

Kilowatt Hours Per Year

3.2M

697K

127K



**\$ 7 million
yearly
savings**



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The Enterprise Data Center Service Management Evolution



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Just-in-Time Capacity and Management

Respond in minutes to unpredicted demand

- Business policy driven
- Fully automated or manually controlled
- Integrated monitoring

Deploy new workloads in minutes

- Eliminates pre-planning requirements
- Reduces planned system outages



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IBM Tivoli Service Management Center for System z

New Capabilities for System z



System Automation for z/OS and NetView

- *Enhanced integration with Tivoli OMEGAMON XE*

Tivoli zSecure Suite

- *Real-time mainframe monitoring solution*

Tivoli OMEGAMON

- *Automatic CICS Transaction Gateway Discovery for monitoring and TS Server analysis*



IBM Tivoli Monitoring Green Energy Agent

- *Power and thermal metrics reported with Tivoli Monitor*
- *Power and energy data reported in Tivoli Enterprise Portal*



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New Information On Demand Software for System z

Better Business Decisions, Faster, With a Lower Overall TCO

Cognos 8 Business Intelligence for System z



- *Single solution for reporting, analysis, dashboards and scorecards*

DB2 for z/OS Value Unit Edition

- *New OTC offering simplifying deployment of new application workloads*



Data Warehousing on System z

- *More than 50 new features in DB2 for z/OS supporting warehousing*



InfoSphere Master Data Management Server for System z

- *More effectively manage high-value operational data*



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New and Enhanced Development Tools for System z

Enterprise Modernization for System z

Rational Business Developer v7.1

Rational Developer for System z v7.1

- Leverage “EGL” to accelerate Web 2.0 and SOA deployment

Rational Transformation Workbench

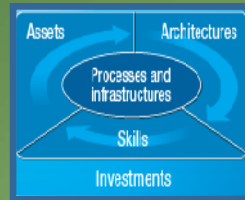
Rational Host Access Transformation Services

- Analyze, extend and reuse core System z transactions as services

Rational ClearCase for z/OS and Rational BuildForge

- Speed software delivery and improve quality by automating and streamline software lifecycle management process

Rational.



New IBM Services for System z10

Providing Premier Service and Support for the Enterprise

- **Rampant Server Proliferation**
 - Services to help rapidly deliver the benefits of server consolidation
- **Global 24x7 Demand for Information Services**
 - Services to deliver System z disaster recovery benefits to key open and distributed platforms
- **Business Resiliency and Security**
 - Services to accelerate implementation and optimization of tape encryption



A Growing Community

- Over 4,000 applications – up 600 in 2007
- Over 1,200 Linux applications – up 260 in 2007
- Over 1,300 ISVs
- Academic Initiative - Over 400 schools, 40,000+ students



Shifting Trends Favor the Mainframe Again

- Continuous availability is even more important in a web-enabled world
- Security and compliance are top of mind
- Server sprawl has driven up the cost of labor
- TCO pressure is driving customers to consolidate workloads on virtualized platforms
- Network economics favor consolidation once again
- Cost of power continues to increase
- Growing use of Linux
- IBM has delivered dramatic mainframe price reductions

Mainframes are more relevant than ever



The Value of Mainframe Computing

- ✓ Mainframe core business systems can be easily extended
- ✓ Mainframes have a much lower environmental impact
- ✓ Consolidation is a proven way to save money and simplify operations
- ✓ Modern mainframe tools enable speed to value, flexibility, deployment, productivity and reduced cost
- ✓ Mainframes deliver superior qualities of continuous operations, rapid scale up, and security
- ✓ Modern mainframes leverage the latest hardware and software technology for maximum business value



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