



Smarter Cloud Computing

Pete Kearney, Cloud/Analytics Leader, STG UKI

PCTY2011 

Pulse Comes to You

Optimising the World's Infrastructure



Agenda



Smarter Computing

Optimising IBM Systems

Architecture that Matters

IBM Integrated Systems

IBM and Smarter Cloud Computing

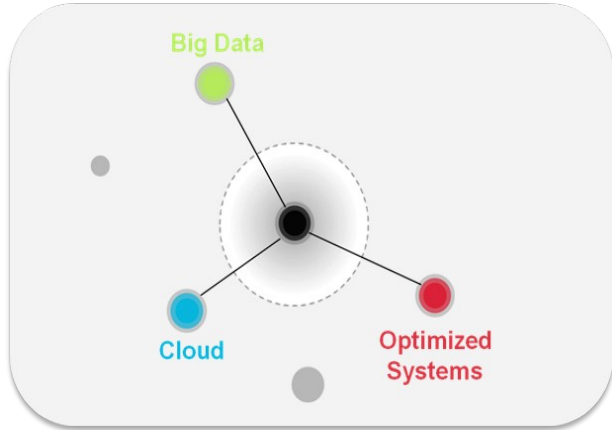


Smarter Computing

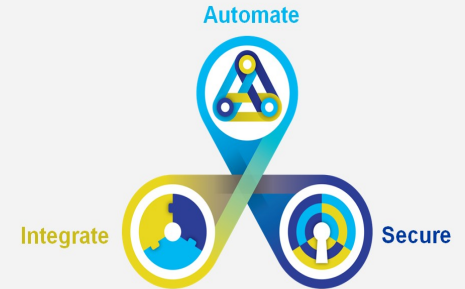


Smarter Computing The Era of Insight for Discovery

- Created by the integration of Big Data in Optimized Systems, managed as a Cloud
- Applied to deliver new insights and drive innovation
- Twice the capacity for service on a flat budget
- Achieving **'More with Less'** from your infrastructure assets



Efficient and innovative IT for improved economics





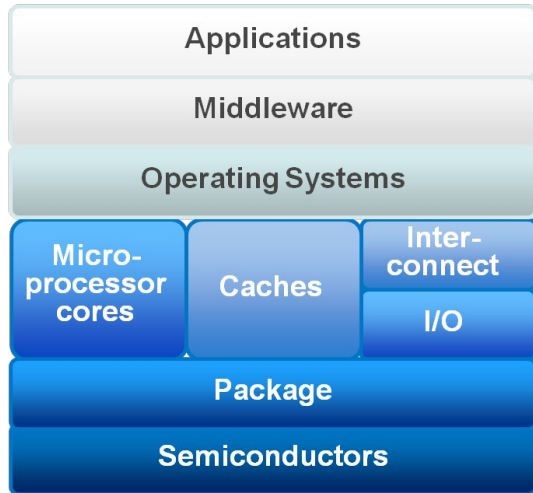
Optimising Systems for the Cloud



Optimized Systems will Address the Unique Needs of Specific Workloads

Domain Knowledge

- Workload characteristics
- Interdependencies
- Architecture options



Software

- Stack integration
- Middleware tuned for hardware
- Integrated management across architectures

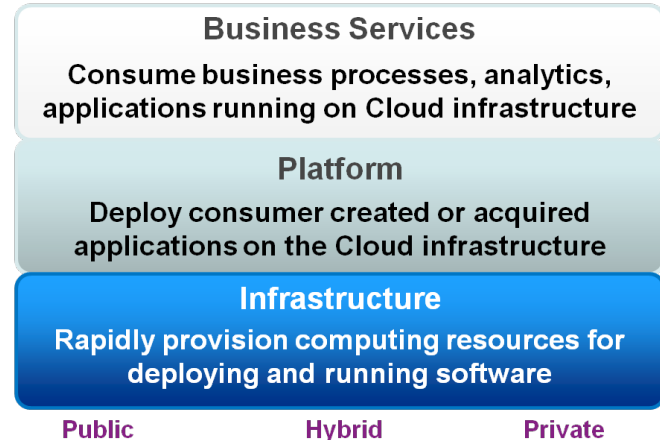
Hardware

- Multi-core architectures
- Advanced threading
- Low latency

Cloud Will Play a Fundamental Role in this New Era

Cloud ...

- Masks complexity of underlying components
- Rapid deployment of processes and infrastructure
- Consumer driven services, process, deployment





IBM platforms designed for Smarter Computing



System z

Freedom by Design

Achieve up to **55% lower TCO per workload** – fit for purpose



Power Systems

Performance Redefined

Power Systems running DB2 as low as **1/3 the cost of Oracle Database***



System x

Defining a Next Generation of x86 Servers

Industry leading Intel performance and **lower management cost by 50%**



IBM Storage

Storage Reinvented

Reduce power, operating and cooling costs by up to 60%



IBM Storage

Storage Efficiency

Transparently compress primary storage by up to 80%



Source: Based on IBM internal studies

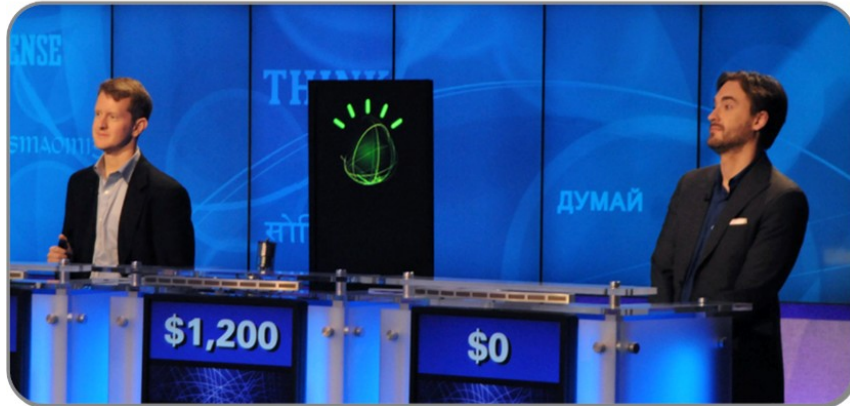
*Pricing comparison based on US list prices of IBM DB2 Advanced Enterprise Edition and the Oracle software with analogous capabilities: Oracle Database Enterprise Edition, Advanced Compression, Active Data Guard, Label Security, Partitioning, Oracle Enterprise Manager, Internet Developer Suite, Diagnostics Pack, Oracle-to-Oracle Federation, Golden Gate. All list prices based on US and valid as of 01/26/2011.



Workload Optimised Systems - Watson



Provide New Types of Insights



A System Designed for Answers

Built on a cluster of commercially available Power 750 servers

Run 32 simultaneous tasks

- 8 cores per processor
- 4 threads per core

Twice the bandwidth of other commercially available systems, 500 GB per chip

15 terabytes of RAM

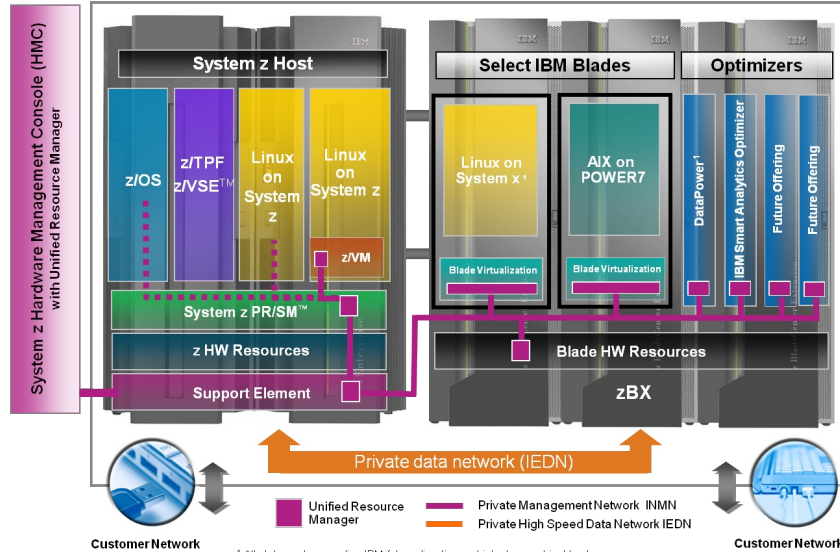
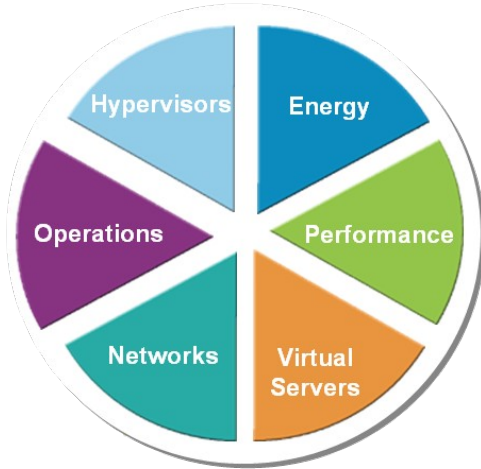


Smarter Cloud Computing



IBMs zEnterprise + zBX is the ultimate System of Systems ... a multi-platform Cloud-in-a-Box

Use the smarter solution to improve your application design



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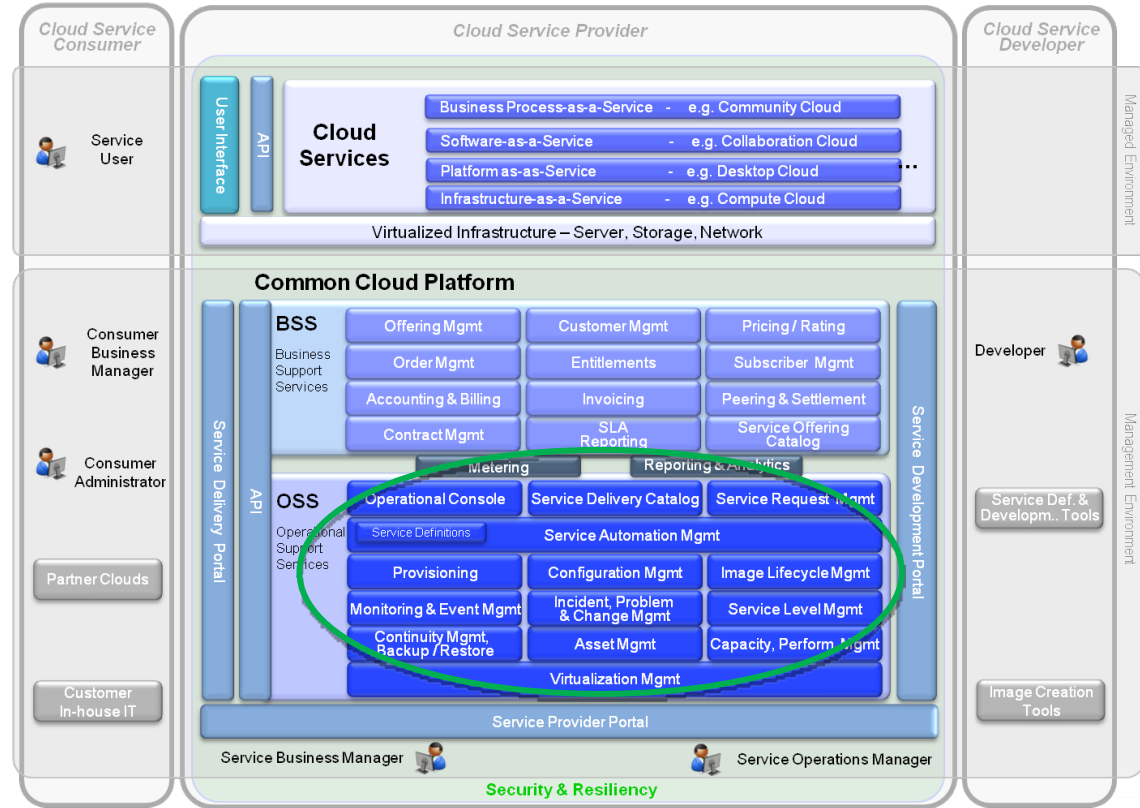
"The (...) change that's coming with the zBX, according to Doris Conti, director of System z marketing at IBM, is that Microsoft's Windows operating system will be supported on the Xeon blade servers inside the zBX complex. IBM has hosted over 300 workshops with mainframe customers discussing the new hybrid system, and customers were not exactly happy that IBM was restricting Linux to Xeon blades and not supporting Windows.

"We heard the feedback and we very much intend to deliver Windows support on zBX," says Conti."

The Register 2011

Architecture that Matters

- A Cloud Computing Architecture that incorporates a Business context
- Industry Orientation that considers typical Workloads
- IBM integration of the Technology Roadmap – inclusive of eco-system alliance partners
- Currently optimised for 2 specific Industry orientations – Telco & Healthcare



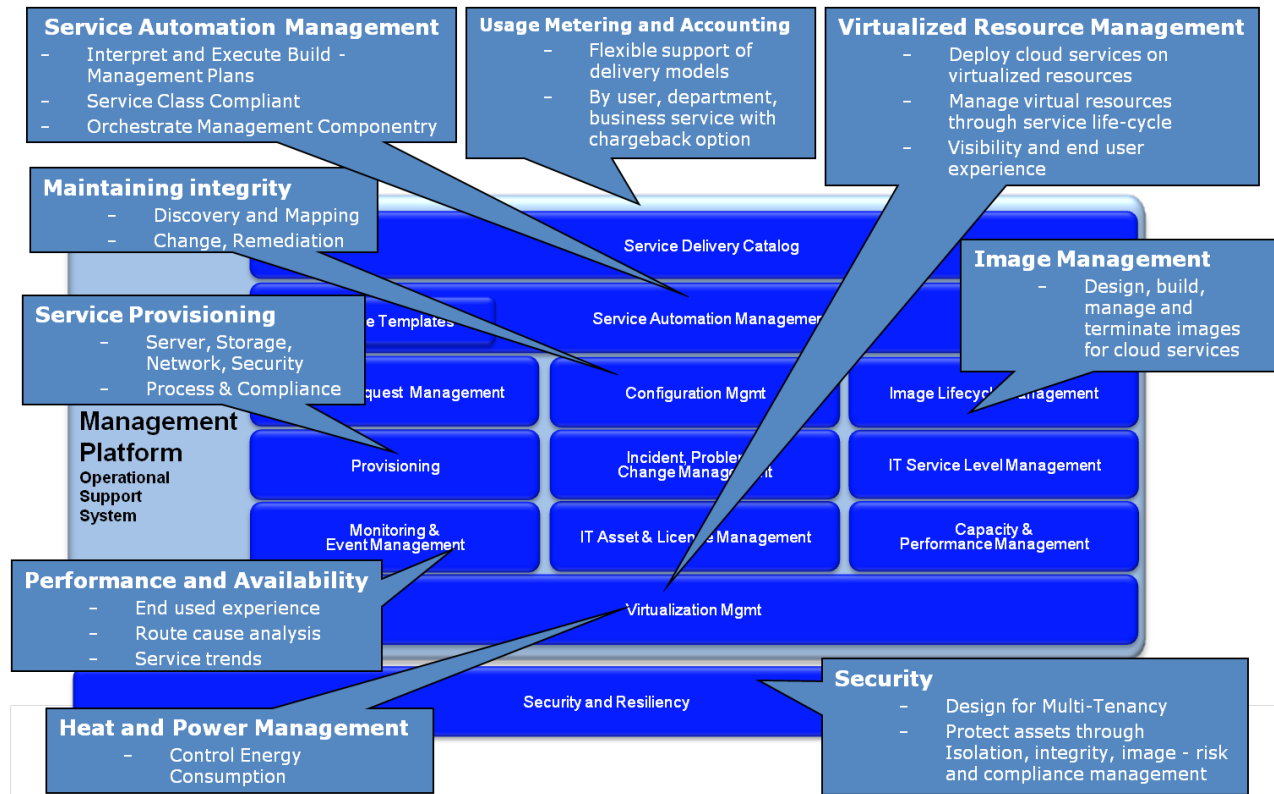


IBM's Integrated Service Delivery Manager



Integrated Service Delivery Manager (ISDM)

- Integrated portfolio of Cloud Computing software components
- Founded on TSAM - Service Automation & Management at its heart
- Provisioning & De-Provisioning
- Workflow patterns to enable necessary customisation
- Open Standards based



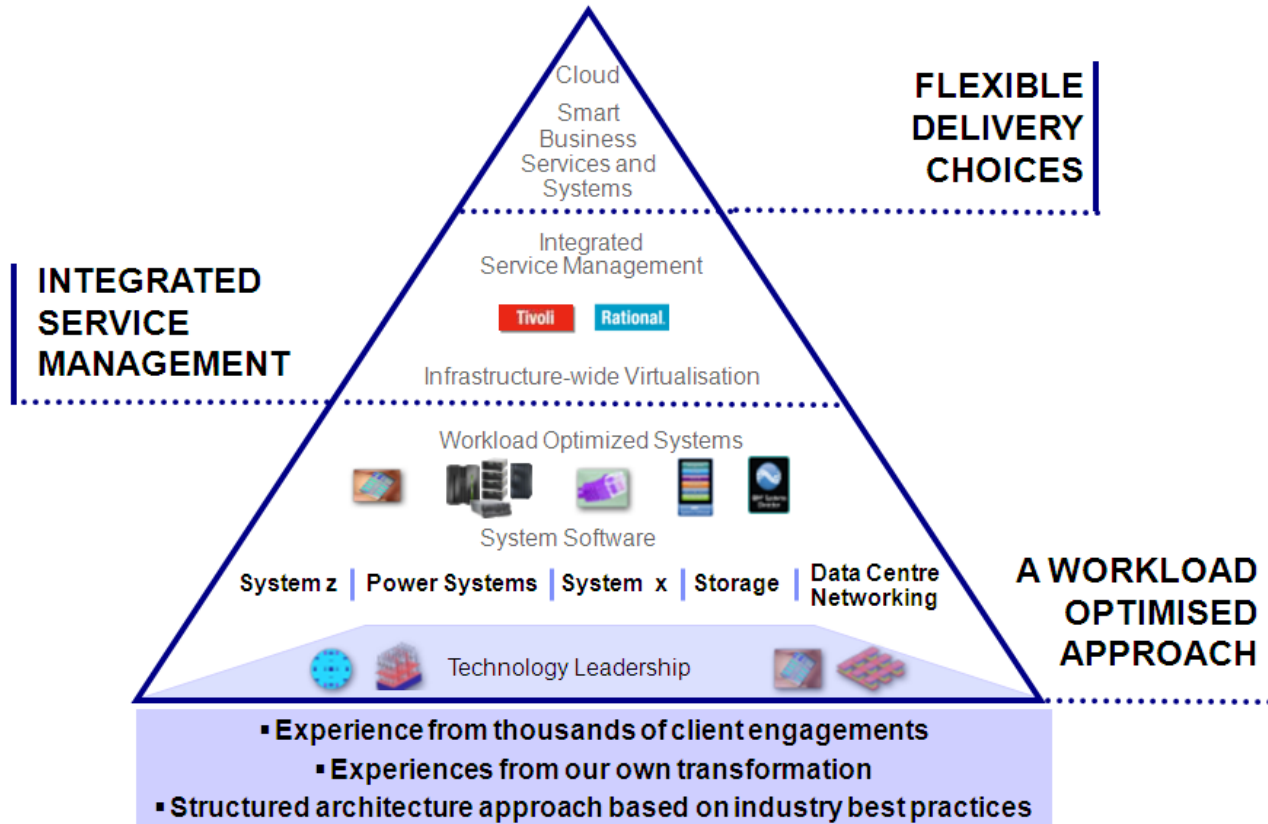
Integrated 'Systems' - IBM Cloudburst

- **Usage and Accounting**
 - Provide metering and accounting for cloud services
- **Platform & Virtualization management**
 - Automated provisioning & mgmt of the virtual environment
- **Energy management**
 - Energy management of the hardware infrastructure
- **Storage network virtualization**
 - Improve storage utilization, Enable multi-tenancy support
- **Service automation**
 - Service catalog & Orchestration of cloud operations
- **Monitoring**
 - Monitor both physical and virtual server environments
- **High Availability**
 - Redundancy built in for high availability
- **Server, Storage, Network hardware**
 - Preinstalled and configured on IBM hardware



"Built for Purpose" Cloud Solution

IBM as your Smarter Cloud Computing Partner





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