Rethink IT. Reinvent Business.

Cloud Computing

Cloud Adoption patterns: How enterprises are benefiting from cloud today

Presenter name
Title
Date

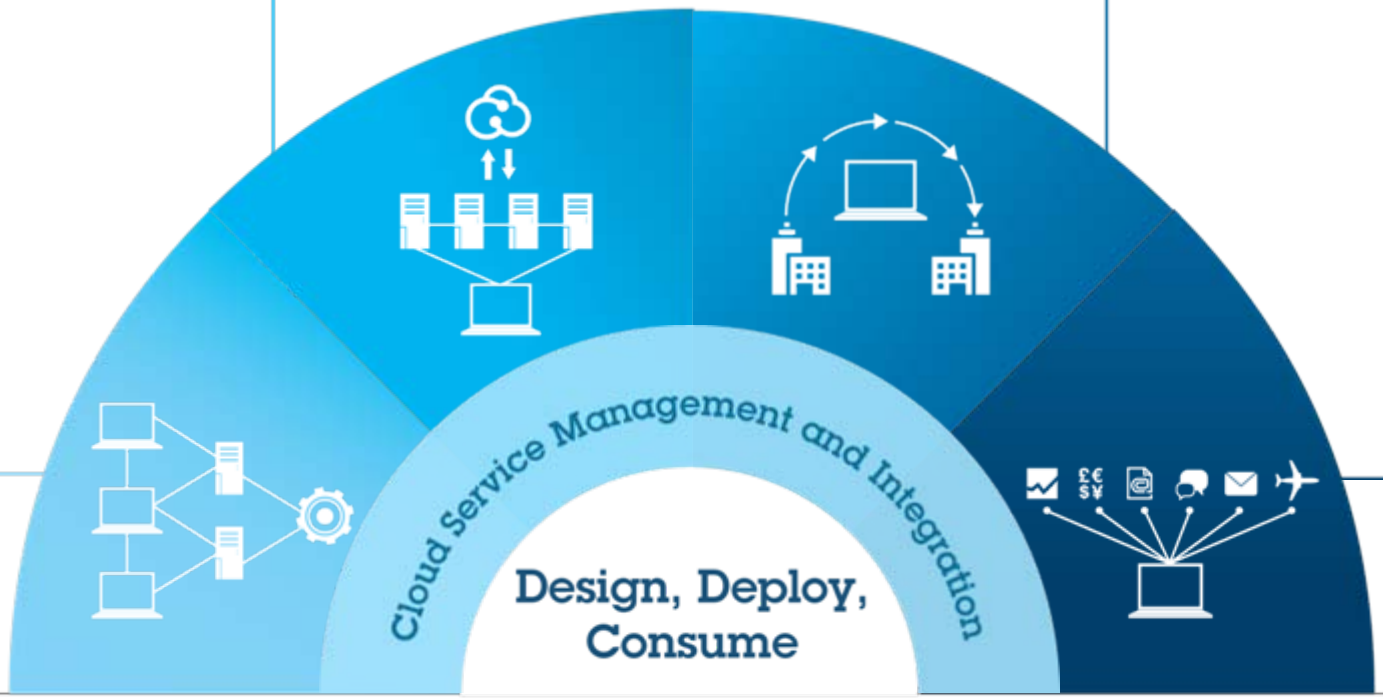
Adoption patterns are emerging for successfully beginning and progressing cloud initiatives.

IaaS: Cut IT expense and complexity through a cloud enabled data center

PaaS: Accelerate time to market with cloud platform services

Innovate business models by becoming a cloud service provider

SaaS: Gain immediate access with business solutions on cloud



IBM delivers prescriptive, repeatable cloud solutions for our clients' most pressing priorities.

Cloud Enabled Data Center

Integrated service management, automation, provisioning, and self service

Cloud Platform Services

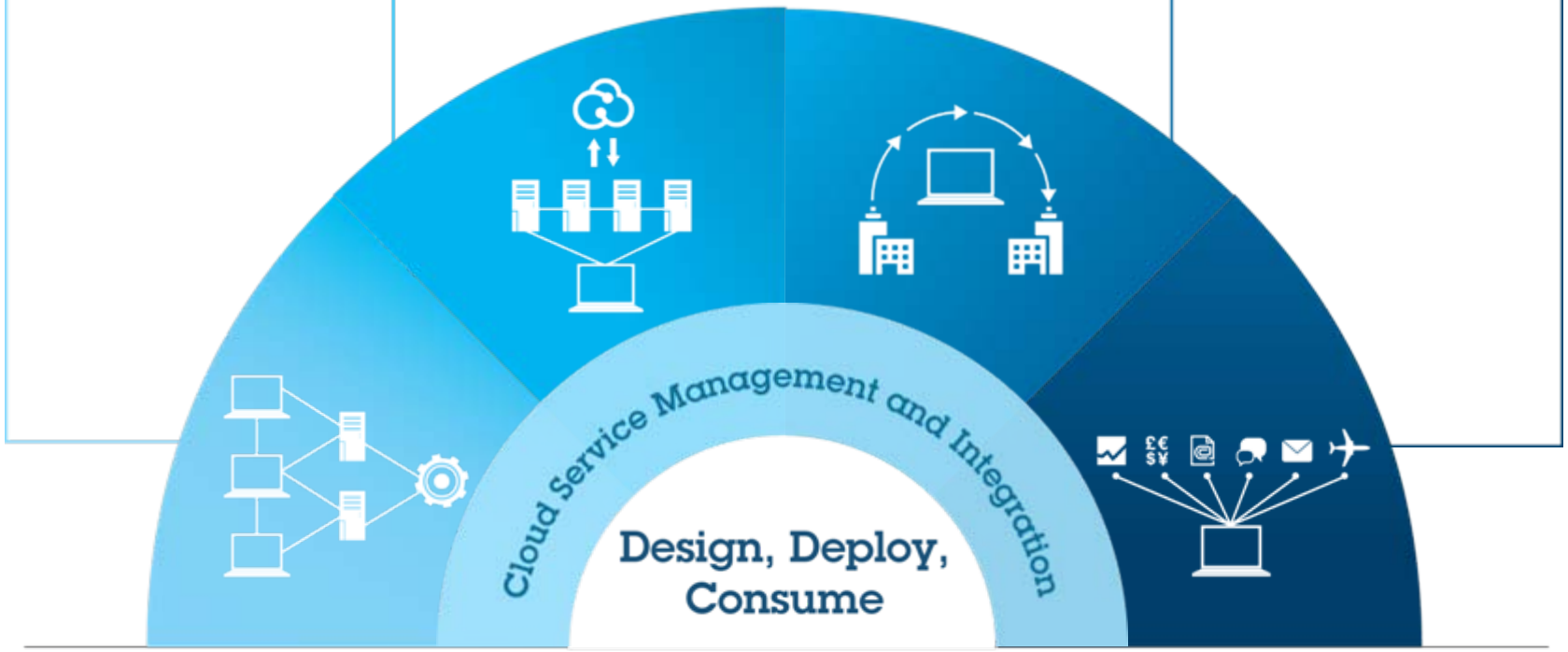
Integrated, dynamically adjusting stack of middleware optimized to build, deploy and manage heterogeneous workloads

Cloud Service Provider

Advanced, reliable, highly secure and scalable platform for creating, managing, and monetizing cloud services

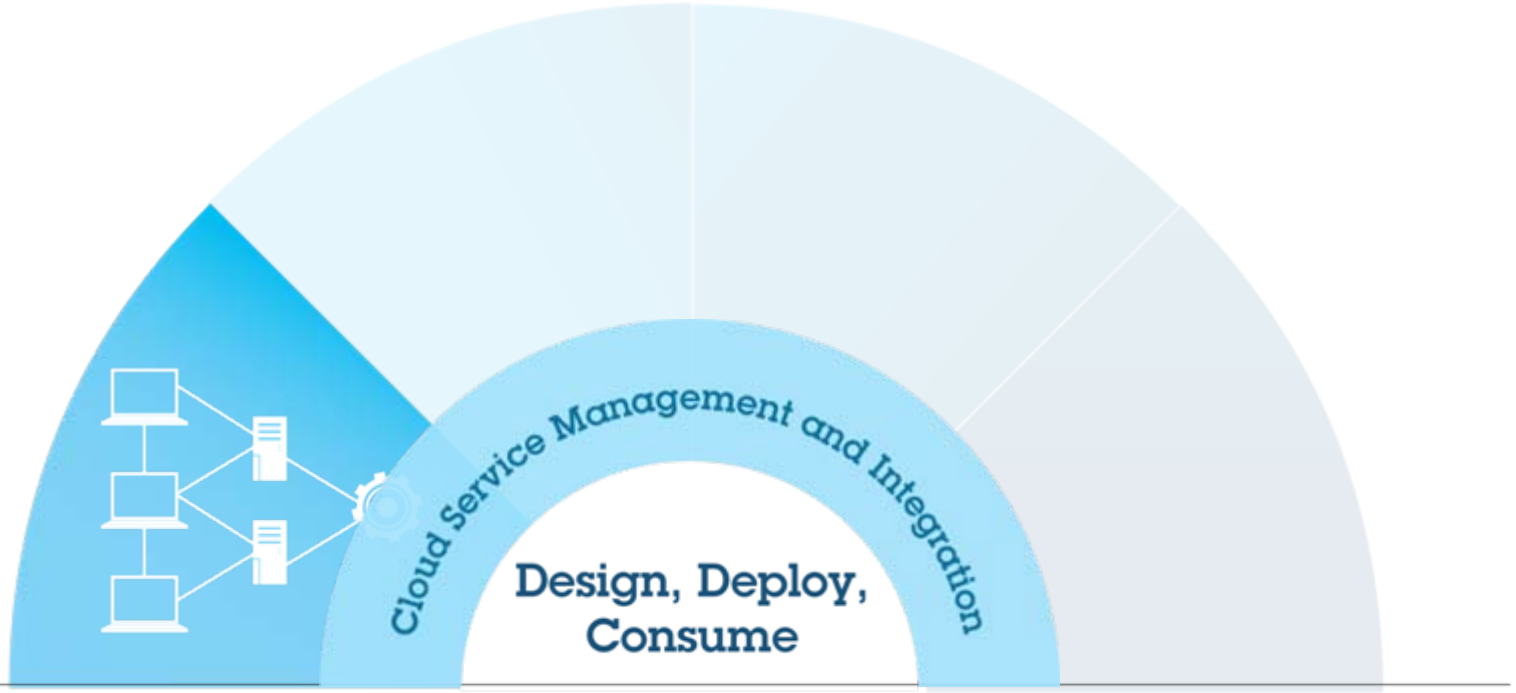
Business Solutions on Cloud

Software-as-a-Service delivering IT and process orchestration within and across enterprises



Cloud Enabled Data Center

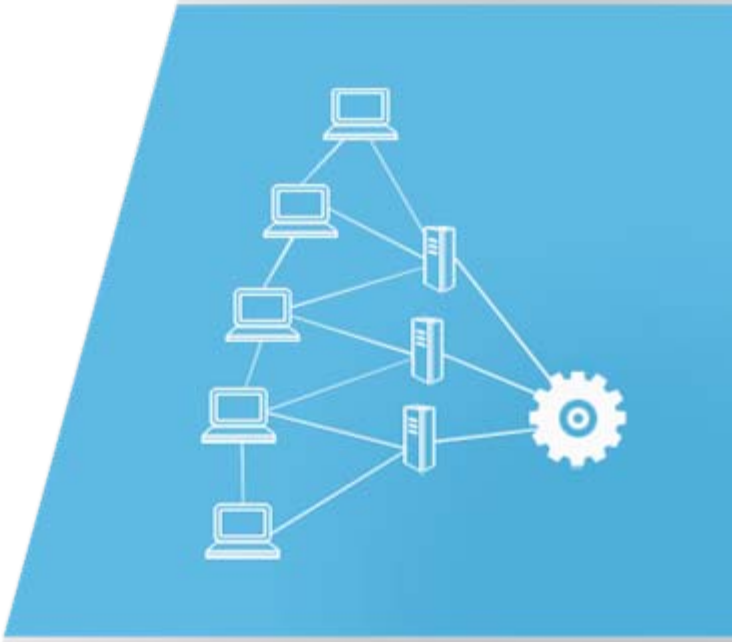
Integrated service management, automation, provisioning, and self service



Rethink IT. Reinvent Business. Cloud Computing

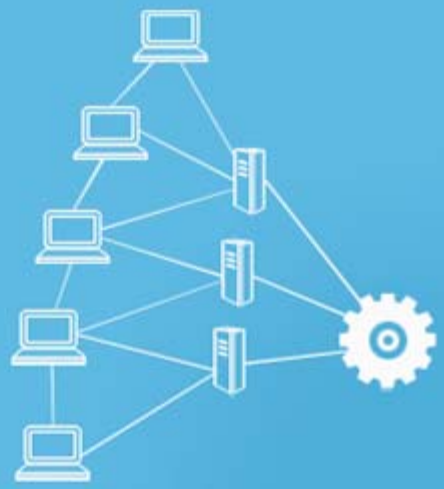
From virtualization to advanced cloud capabilities, optimizing your data center can provide real benefits for your cloud investment

- **Reduce operational, infrastructure and startup costs**
- **Speed time to market** through increased efficiency and automation
- **Scale operations** to meet market dynamics and business strategy
- **Reduce complexities** in managing virtualized environments
- **Improve security** of business and infrastructure functions
- **Eliminate downtime** and deliver on application SLAs



Expectations and demands on data centers are increasing exponentially

- There are nearly **33 million servers** worldwide - 15% of which run 24/7 without active daily use.
- **70%** of companies in the global 1,000 will have to modify their data centers to meet increased power and cooling requirements
- **69%** of all server workloads will be virtualized by 2013
- **80%** of digital data growth will be “unstructured” and requiring significant effort to “understand” and analyze
- **6 terabytes** of information is exchanged over the Internet every second



Source: ComputerWorld, December 16, 2009

The Cloud-Enabled Data Center from IBM

is built upon 100 years of technology experience

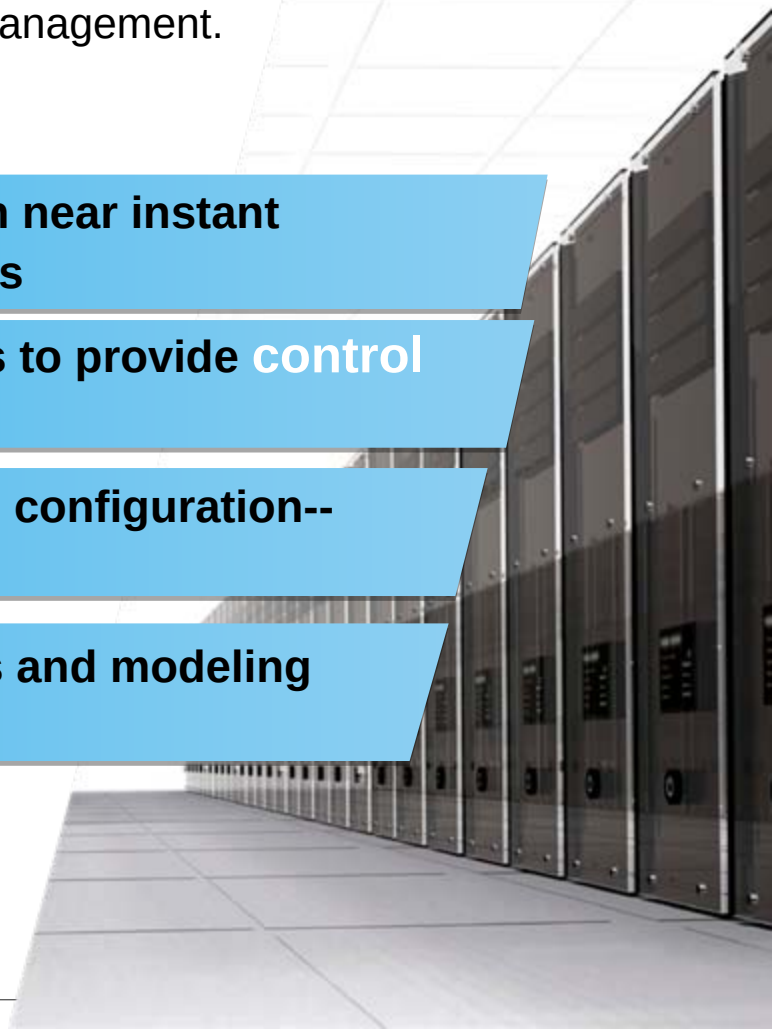
Enables organizations to leverage the flexibility, speed and economy of cloud computing by expanding beyond infrastructure virtualization, providing disciplined service delivery with security, resiliency, scalability and integrated service management.

Designed to meet business growth with near instant automation of 100s of virtual machines

Life-cycle management of smart images to provide control over image sprawl

Accelerated middleware installation and configuration-- up to 80% faster using automation

Empowering analytics using simulations and modeling for visibility



IBM has proven Cloud Enabled Data Center projects that leverage the combined power of our cloud capabilities …

- **Create a Cloud Strategy and Roadmap:** Rigorous qualitative and quantitative analysis tools to help you define a value-driven cloud computing strategy, optimized using cloud computing.

- **Consolidate and Virtualize your Infrastructure:** Efficient and effective consolidation and virtualization across server and storage platforms—to begin building a cloud infrastructure.

- **Image and Virtual Environment Management:** Gain control and visibility of your virtual environments with image library and composition, performance monitoring, capacity planning, and security- an important step in the Journey to Cloud.

- **Implementing an Entry Cloud Infrastructure:** Quickly implemented, rapidly scalable cloud infrastructure services and administration. Optimized for IBM Systems and expandable to heterogeneous environments.

- **Implementing an Advanced Cloud Infrastructure:** Visibility, control and automation of cloud services from deployment to service availability and assurance, with security, usage accounting, governance, and compliance. Customizable for individual client needs.

- **Access Compute and Storage as a Service:** Rapid access to security-rich, enterprise-class virtual server environments for development and test activities and other dynamic workloads.

Nationwide consolidates and virtualizes with Linux on IBM System z

Nationwide® On Your Side℠

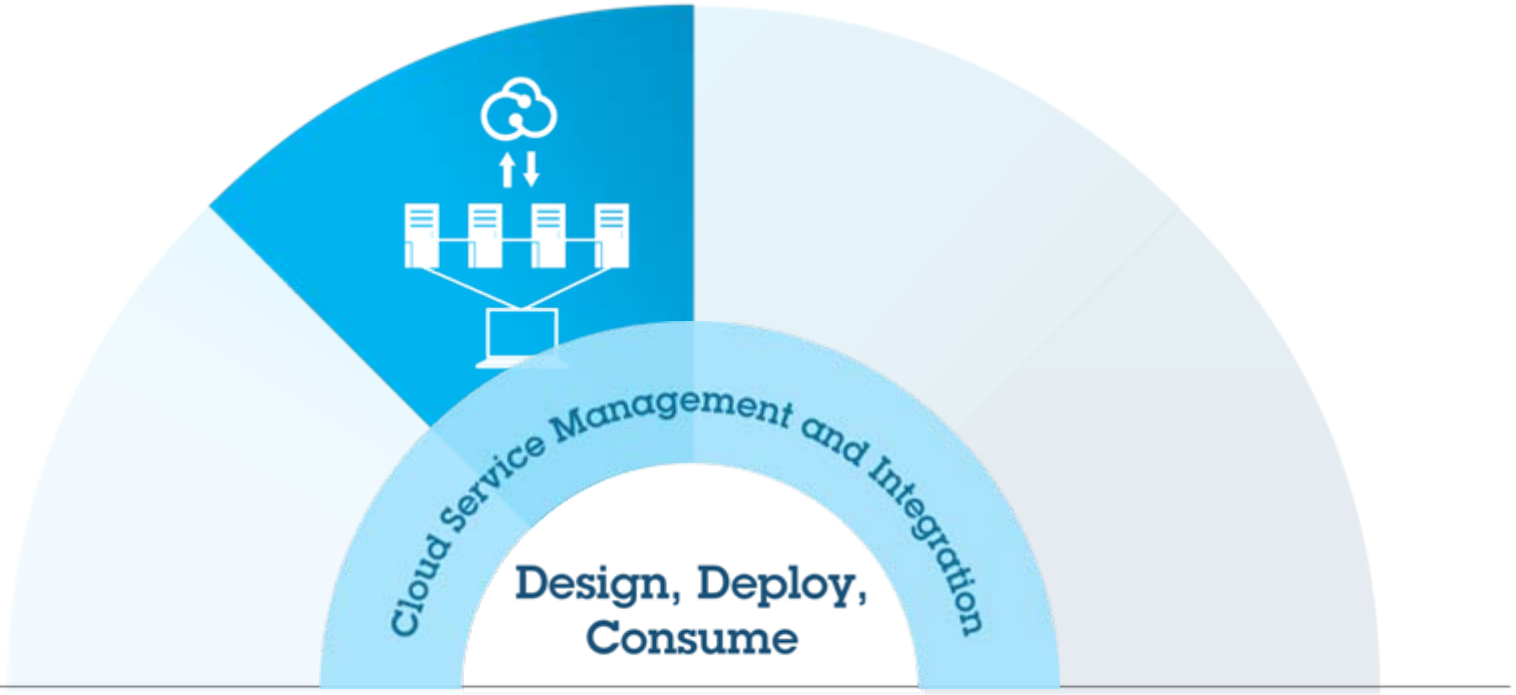
- US$15 million cost savings anticipated over three years
- 85-90% server utilization
- 80% reduction in environmental costs
- Web hosting costs lowered by 50 percent
- Migrated to z10 in 45, upgrading hundreds of virtual servers, with 0 application breakage

Business Problem:
With server proliferation, limited floor space, high cooling and electricity costs, and lengthy server provisioning times, Nationwide was faced with a need to build a multi-million dollar data center

Solution:
- Nationwide made a strategic decision to move to a flexible, virtualized IT environment.
- Running hundreds of virtual servers on two IBM System z10 Enterprise class machines
- Virtual server images are deployed in minutes after a request is submitted using Linux on z/VM
- Services are monitored and managed
- Applications move from zLinux to AIX back to zLinux depending on requirements

Cloud Platform Services

Integrated, dynamically adjusting stack of middleware optimized to build, deploy and manage heterogeneous workloads



Design, deployment and management of Software Platforms are time consuming and costly in today's IT environment

- **High cost** of governing and managing the delivery of enterprise software across global teams
- **Inefficient use of enterprise resources**:
  - Average lead time to get a new application environment up and running is 4-6 weeks
  - Poor utilization rates of application testing infrastructure, typically 10-20%
- **Insufficient collaboration** among Dev/Ops team results in error-prone services
  - 30% of bugs are introduced by inconsistent configurations
- **Limited IT agility** results in business needs not being met
  - Static middleware infrastructure doesn't react well to spikes in demand, jeopardizing SLAs
  - Long lead time to introduce new services to address growth opportunities

11

Today's enterprise requires capabilities to deliver robust Cloud Platform Services

IT

- **Standardized** application development, middleware, and IT services available on demand for development, test, staging, and deployment
- **Self-managing, self running applications** that require minimum configuration skills while enabling self-service deployment
- **Integration of critical application information** without jeopardizing continuity of business or data quality

Developer

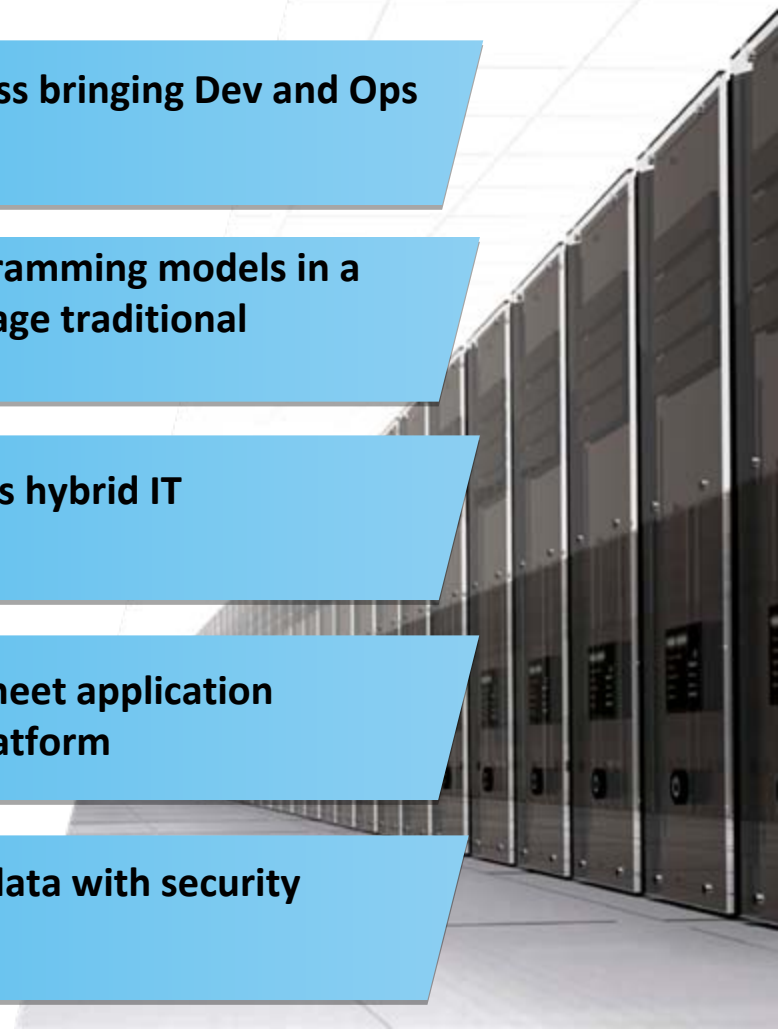
- **Rapid access to development tools and deployment services** to get applications into production faster
- Improved **collaboration and visibility** with IT to design and deploy enterprise services
- **Reuse and integrate** with data and applications outside of the organization for more interesting, value add applications that meet business need

Cloud Platform Services from IBM

Cloud Platform Services from IBM help you gain faster time to market in building and deploying applications with standardized, automated, pre-integrated infrastructure tuned to application specific needs

IBM's Differentiating Capabilities:

- **Integrated development and deployment process bringing Dev and Ops closer for predictive and error-free deployment**
- **Support for heterogeneous platforms and programming models in a virtual environment that can co-exist and leverage traditional delivery models**
- **Seamless application and data integration across hybrid IT environments**
- **Policy driven, automated platform services to meet application priorities with middleware optimized for the platform**
- **End-to-end protection of sensitive application data with security integrated into the middleware**



Organizations benefit with faster time to value, greater choice, and increased agility with IBM's Cloud Platform Services Projects

	Faster Time to Value	Choice	Agility
Development	**Developers have immediate access to tools and runtime for building apps without the headache requesting and procuring systems and configuring middleware**	**Developers have choice to build applications and integrate applications off premise and cross vendor hypervisors**	**Developers have self service capabilities to access IT resources or consume them via SaaS, but with the ability to securely integrate them with existing IT assets.**
Operations	**Operations have to quickly provision and de-provision resources and monitor the performance of these resources**	**Operations have flexibility and control over how they deploy and maintain infrastructure, platform, and integration services.**	**Operations can to dynamically reconfigure resource allocations to meet changing needs of the business**
Projects	**Develop and Deploy Cloud Apps** **Private Cloud Foundation**	**Develop and Deploy Cloud Apps** **Integrating existing systems and investments with Cloud**	**Delivering Dev and Test Environment** **Integrating existing systems and investments with Cloud** **Private Cloud Foundation**

IBM has proven cloud platform projects that leverage the combined power of our end-to-end cloud capabilities

1. **Private Cloud Application Foundation**
   - Virtualizing, standardizing & automating the provisioning and management of middleware services to lower operational costs, improve time-to-value, and better utilize hardware resources

2. **Develop & Deploy Cloud Applications**
   - Develop, deploy, and manage applications in a “low touch” way through a virtual application pattern
   - Enable businesses to gain efficiencies and greater collaboration between development and operations to improve time-to-market, optimize operational efficiency and reduce costs and risk as organizations move applications into cloud environments

3. **Deliver Dev and Test Environments**
   - Standardize and automate the delivery of development and test tools conforming to enterprise processes and enables globally distributed dev and test teams to quickly build and test apps

4. **Integrate Existing Systems and Investments with the Cloud**
   - Rapidly migrate data from existing applications in the enterprise to applications in the Cloud and maintain on-going integration and synchronizations between applications.

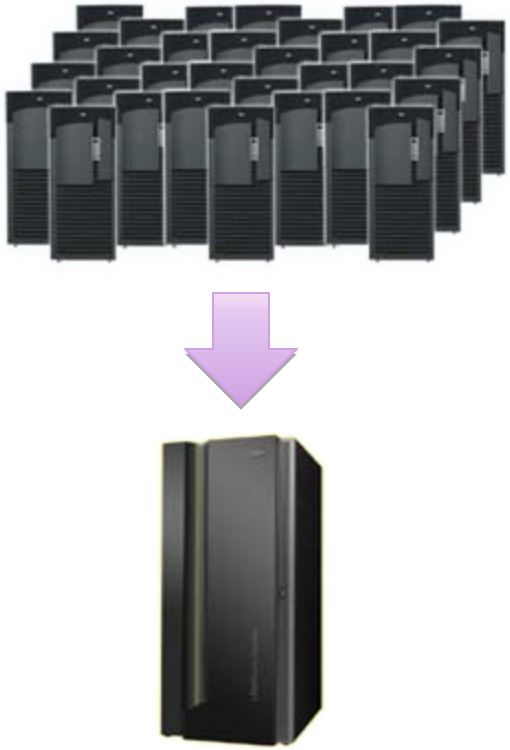
Blue Cross Blue Shield of Minnesota leveraging Cloud on System z today

BlueCross BlueShield of Minnesota

- Lead time for server provisioning reduced to 99%
- IT deploys new Linux Virtual Servers for test and dev within 20 mins
- Not a single incidence of unplanned downtime or underperformance
- With Linux on IBM System z, BCBSM can achieve near-continuous availability by reducing the need for planned downtime

Business Problem:
The Microsoft Windows and Intel processor-based server landscape at Blue Cross and Blue Shield of Minnesota (BCBSM) was inflexible and costly to operate and maintain.

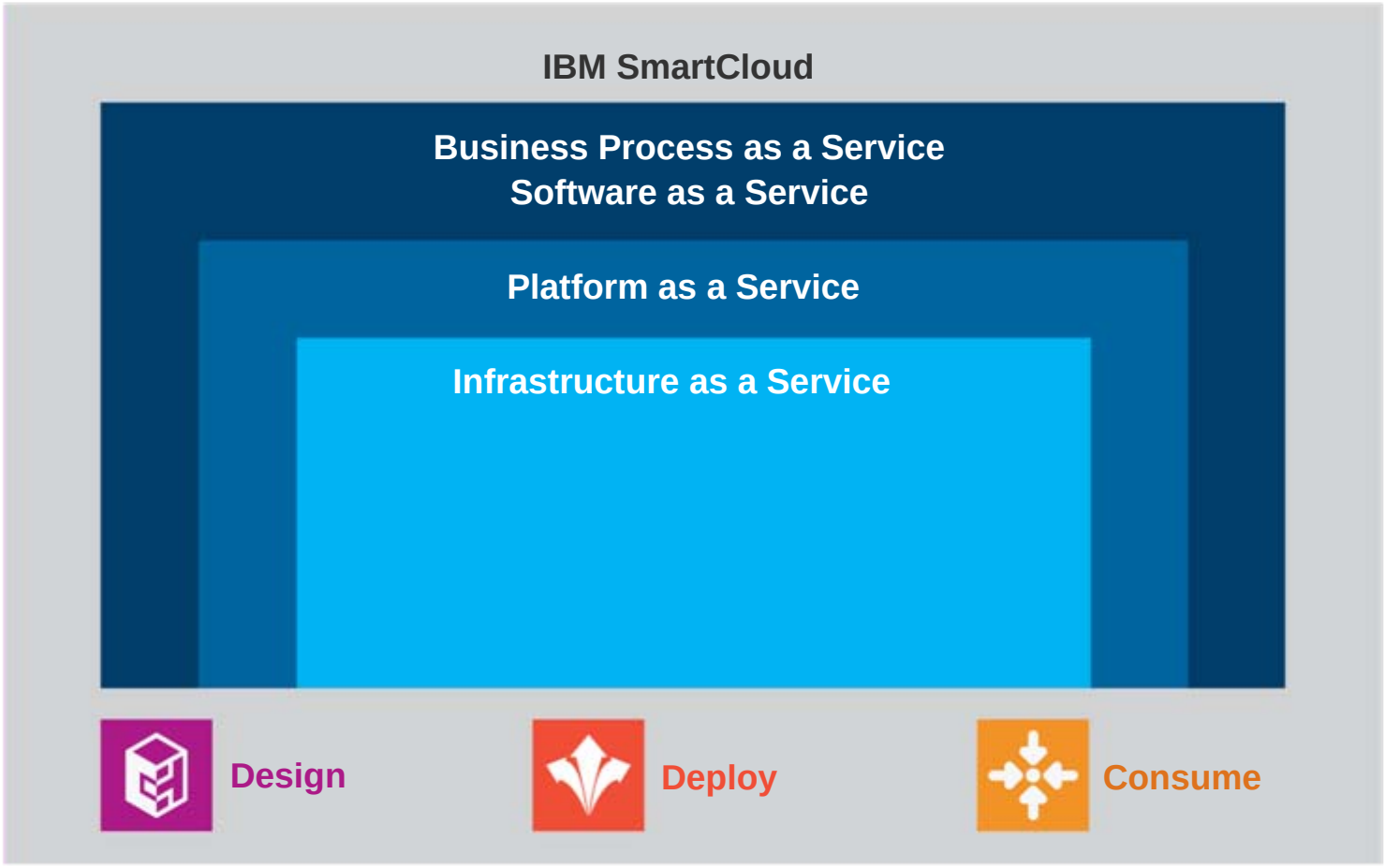
Solution:
- IBM consolidated 140 HP Intel-architecture servers to a single IBM System z with six Integrated Facility for Linux (IFL) engines.
- Key applications now run in SUSE Linux Enterprise virtual servers, while IBM DB2 databases run on z/OS on the same physical machine



"Even without factoring in the maintenance and support costs—which would be considerable for a large estate of physical servers—we found that running a virtualized Linux environment on System z would be somewhere between 30 and 50 percent less expensive than a distributed architecture."

— Ted Mansk, Director of Infrastructure Engineering and Databases at BCBSM

IBM's comprehensive capabilities make the cloud promise a reality.



We offer extensive real-world experience working with some of the most innovative, forward-thinking IT organizations on the planet.

2,000

successful private cloud engagements in 2010.

19M

public cloud users.

1M

managed virtual machines.

"IBM has one of the most comprehensive cloud portfolios, with the cloud integrated throughout its many lines of business. Moreover, IBM's consulting arm has put them in touch with numerous early adopters and special use cases—all of which helps the company stay ahead of competitors. "

– Jeff Vance, Datamation

80%

of Fortune 500 companies are using IBM cloud capabilities.

ibm.com/smartcloud

JD Williams improves shopping experience and sees revenue gain by efficiently managing different workloads

JD Williams
Look great, feel good

- E-Commerce sales are up 17% for 1H
- In November 2010, JD Williams experienced its heaviest 2 day online shopping experience with no performance degradation
- Reduced MIPs by 20% due to shift in workloads to assist processors

Business Problem:
JD Williams needed provide a better shopping experience, making changes to various websites without interruption. They also needed fast delivery of different workloads including images and videos to sustain and drive online shopping growth.

Solution:
- JD Williams is using z196 for image and video serving.
- System was optimized to handle Linux, Java, WebSphere, and Cognos workloads
- Starting with 4 zAAPs, 1 zIIP, 4 IFLs with flexibility to add more specialty processors later
- Simplified back up and recovery on 1 server

Transzap delivering strong business continuity, security and cost efficiencies

TRANSZAP

- Serve more than 69,000 users across 6,800 companies ·
- Provides higher levels of uptime for their customers
- Offers peace of mind through 24x7 world-class hardware support
- *"We intend to deliver a 99.9% application uptime guarantee to our customer base, thanks to the availability characteristics of System z"*

Business Problem:

As a small business with tens of billions of dollars in client transactions flowing through their systems each year, Transzap needed an economical, reliable platform to provide clients with high availability and security to their SaaS application while enabling the capacity to accommodate growth within their software as a service business model.

Solution:

- Transzap consolidated on an IBM System z platform to provide the stability and scalability needed to accommodate triple digit volume growth.
- Transzap migrated to System z and virtualized its critical applications on Linux® on System z, a platform that supports Transzap's environments.

"We have to be able to look our customer in the eye and assure him or her that our quality of service will be as good or better than the quality of service that can be provided to the organization from their own IT infrastructure"

--- Peter Flanagan, CEO of Transzap, Inc

Data center optimization in action

Accelerating development and delivery using the cloud

The need:

- Dramatically reduce time to market by rapidly accelerating development cycles for the company's more than 20,000 internal application developers.
- Improve 45 day provisioning times for server resources.

The solution:

- Build a private cloud using IBM lifecycle services management software solutions.
- Enable self-service request, automated provisioning, and internal chargeback capabilities
- Boost utilization rates and improving operational efficiencies.

The benefit:

- Slashed server provisioning times from 45 days to less than 20 minutes
- Faster delivery of new features to customers
- Increased support capacity of systems administrators – from 50 servers to more than 600 servers in the cloud

*"**Time to market** was one of the key complaints that we got from the development community. It forced us to look at our process of server provisioning, and this is when we decided to place our development in the cloud … **reduced provisioning time from 45 days to less than 20 minutes**."*

- Jonathan Moore, Senior Vice President at Citigroup

Cloud Platform Services:

Saving millions through standardization, automation and consolidation of the development environment

The need:

- Reduce costs through server consolidating across two data centers.
- Improve upon 60-day provisioning times for new environments
- Quicken response times by improving roll-out and take-down of temporary development environments

The solution:

- Leverage a drop-in appliance to roll out configurations and reduce the complexity of large environments
- Reduce complexity and maintain a consistency of server configurations through standardization
- Redefine internal processes for provisioning environments
- Roll out and roll back temporary environments to meet needs during peak sales seasons

The benefits:

$3- 4 million in savings in configuration costs

13 – 15x faster time to value (3 to 4 days versus 40 to 60 days)

Significant elimination of errors resulting from incorrect server configurations

Investment payback within 6 months to 1 year from go-live

"All the steps that took up so much time and effort on the part of IT staff have been removed. The savings for companies with large WebSphere implementations can be in the millions."

- Phil Schaadt, President and CTO, Haddon Hill Group. IBM Business Partner

Major Financial Services Company