



# Private Clouds on System z - Providing efficiency at scale and ultimate security

**Dave Andrews**

**Director Product Management, Tivoli System z**





## Cloud implementations that include System z maximize Enterprise flexibility and increase cost savings

### Key Takeaways



- IBM SmartCloud open cross-platform architecture includes System z within **fit-for-purpose** framework
- System z in Cloud optimizes **critical business workloads** requiring high availability and performance
- Implement Cloud on System z quickly with **Cloud Ready**, and easily migrate to SmartCloud over time



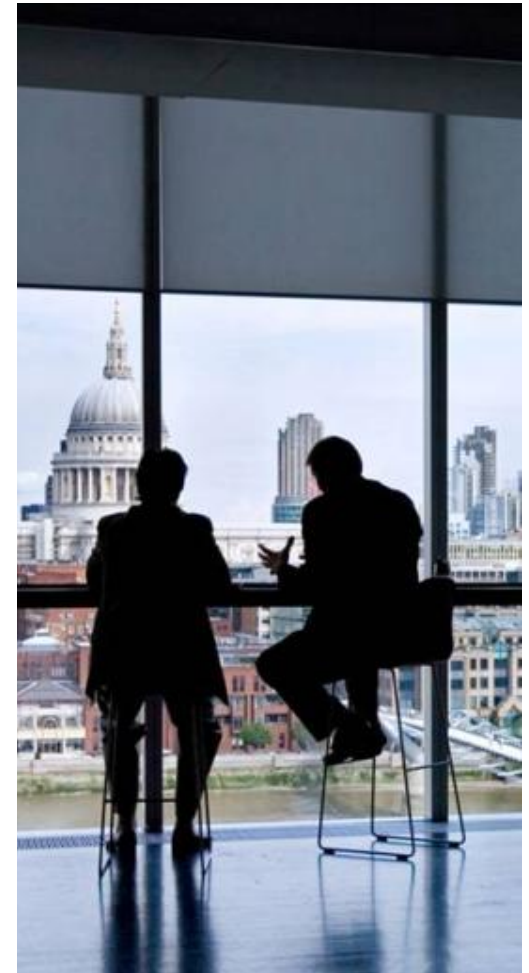
## Improve confidence in System z ability to support new operating models and business requirements going forward

### Technology now #1 on CEO's list

- Huge challenges of social, mobile and cloud
- Innovations required to remain competitive

### Value vs. Cost Pressures

- Managing risks vs. efficiencies
- IT pushed to be more rapid and dynamic
- System z needs modernizing





## As companies continue to exploit System z as platform for business critical applications

- 90% of Fortune 500 companies rely on mainframes
- 70% of Enterprise Customers indicate z will play part in **cloud initiatives**

### Why are customers continuing to use System z?

- Up to 50% savings on applicable IT costs
- Up to 99.999% availability and uptime
- Secure mixed-workload management



### Achieving agility, cost savings and high availability requires:



Visibility



Control



Automation



# IBM helping organizations embrace bold strategies to **Rethink IT and Reinvent Business**

## Smarter Infrastructure



### Optimize with Cloud



*Speeding service delivery from 45 days to 20 minutes*

### Extend to Mobile Devices



*Increasing sales with new promotions from 15% to 75%*

### Deploy Smarter Physical Infrastructures



*Recognizing & repairing over 50% of issues before operations impact*

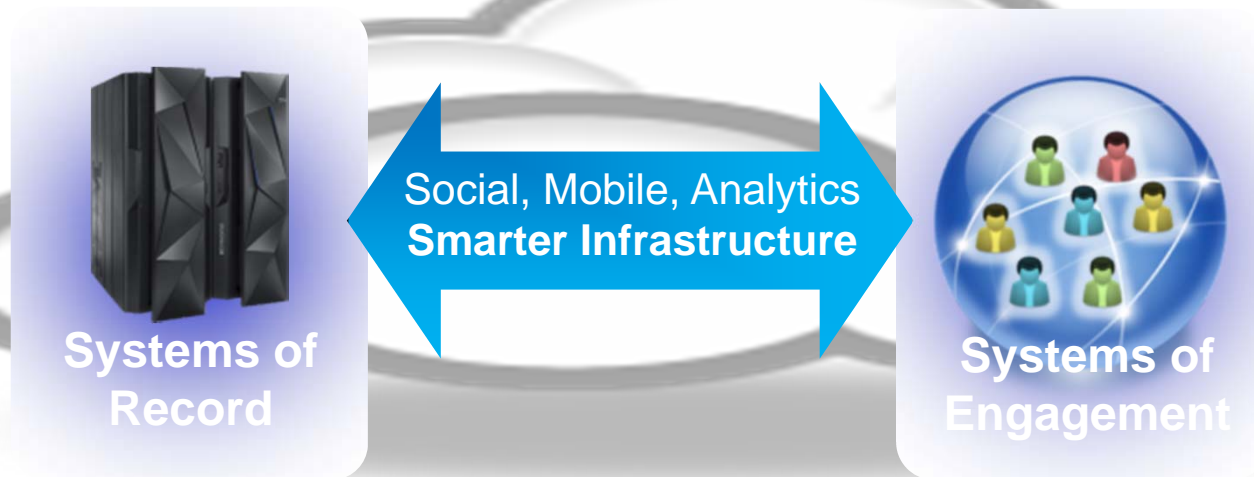
### Protect & Manage Data



*Reducing time it takes to backup critical data by 80%*



## Emergence of next generation architectures in Smarter Infrastructure will include enhancing System z



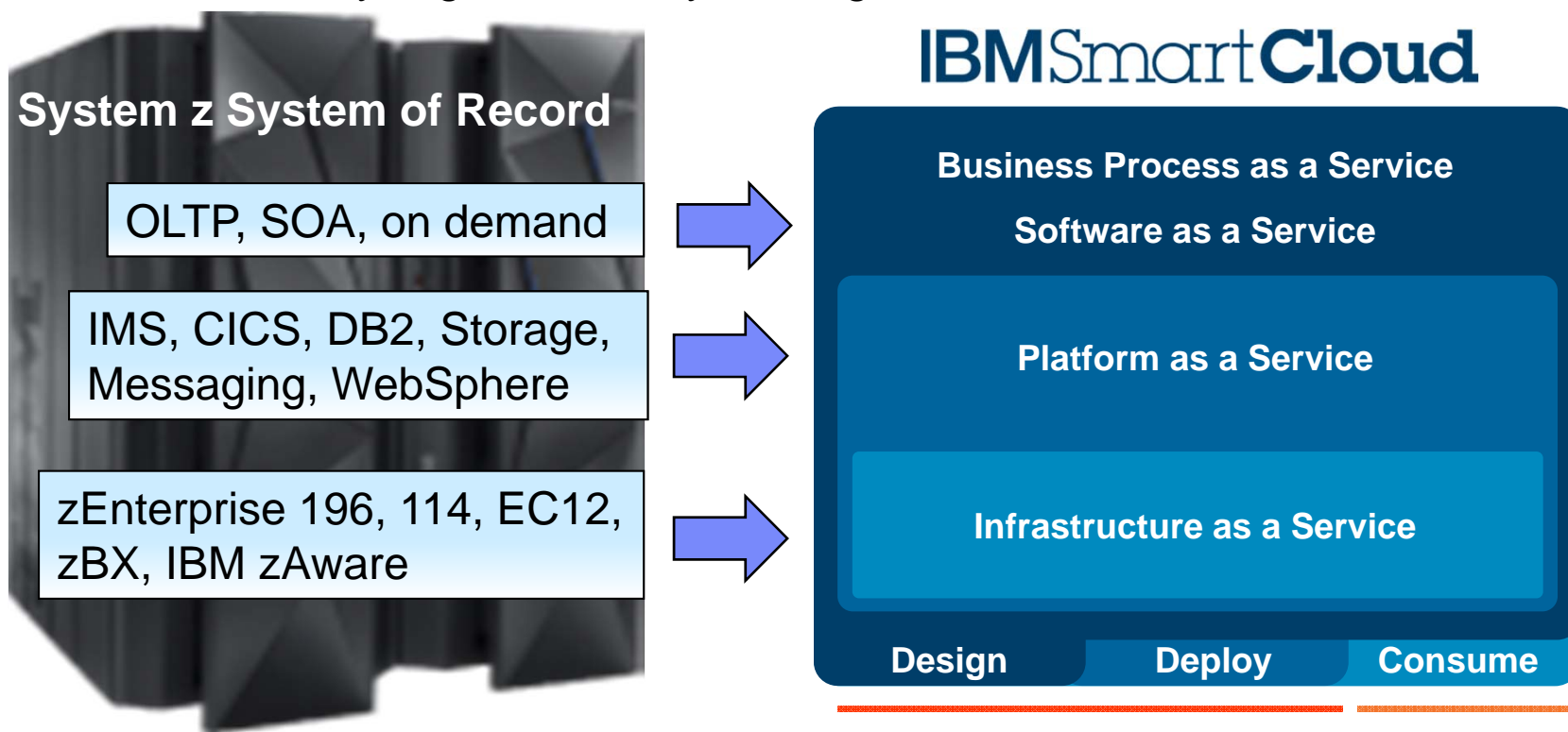
- Transactions
- Command & Control
- Authored content focused on text and graphic docs
- Facts and data mastered in single “source of truth”

- Interactions
- Collaboration
- Community based content primarily with video / audio
- Insight, trends, analytics thru open forums

Both ‘Systems of Record’ and ‘Systems of Engagement’ included in cloud

# System z Systems of Record provides key resources supporting SmartCloud Systems of Engagement

zEnterprise provides value for Cloud workloads, including virtualization, database, security, high availability and high utilization





## IBM provides necessary cross-platform building blocks to achieve savings in Cloud-enabled Data Center

- **Comprehensive** set of offerings
- **Optimized patterns** of adoption
- **Heterogeneous** environment support
- Interoperate based on **open standards**

### IBM SmartCloud Foundation

#### Platform as a Service



Lifecycle



Resources



Environments



Applications



Integration

#### Infrastructure as a Service



Infrastructure



Admin



Performance



Security



Usage

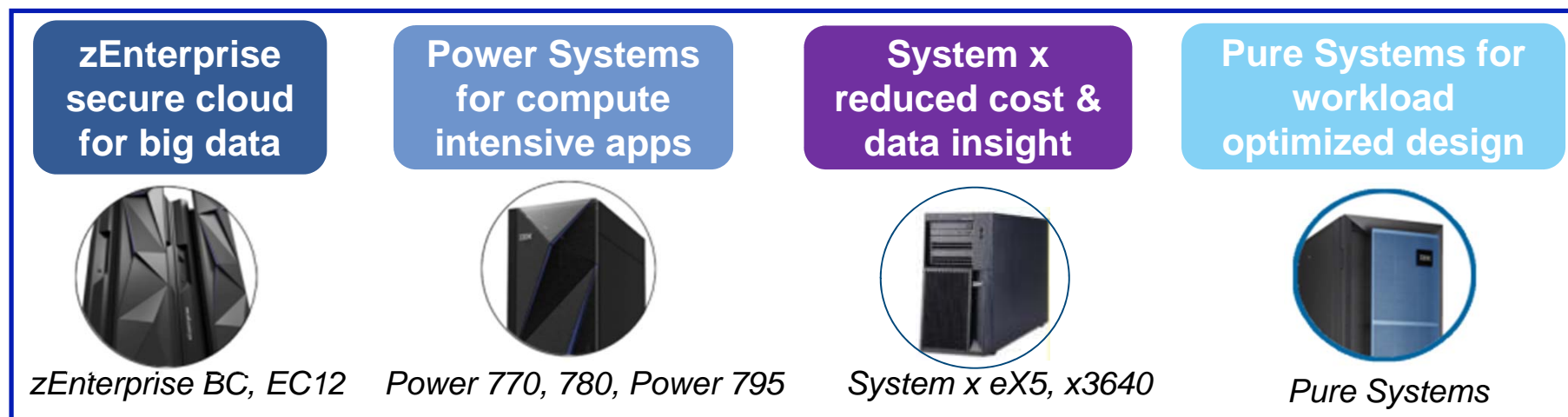


- Speed infrastructure delivery from 45 days to 20 minutes
- Improve server to administrator ratio from 10:1 to 100:1





## SmartCloud Foundation offers private cloud across platforms with open “fit for purpose” approach



### *Flexibility to choose platform that meets business requirements*

1. Management tools **consistent** and **interoperable** across platforms
2. **Open standards** approach supports multiple workload types
3. **Common tools** translate to low learning curve

# Exploiting Cloud on System z provides significant business value day one and increased value over time

*CIO / IT Executive*

**Infrastructure Teams**

## 1 Self Service Delivery and Management

*"I need to reduce my capital costs, lower utilization, and gain accountability for resource usage"*

**Virtualization Management**

**Operations Teams**

## 2 Virtualization Optimization

*"I am not gaining benefits of virtualization: image sprawl, compliance, lack of visibility"*

**Image Management**

**Cloud Ready for Linux on z**

**Dev & Operations Teams**

## 3 Workload Optimized Cloud

*"I need to standardize and optimize applications to deliver faster"*

**Workload Optimized Patterns**

**SmartCloud Provisioning**



## 4 Cloud Enabled Data Center

*"I need to optimize & orchestrate services across domains"*

**Self Service Automation**

**Usage Metering and Chargeback**

**SmartCloud Orchestrator**





## Quick and easy implementation of Private Cloud on System z with provisioning of images and applications

*Cloud Ready for Linux on System z*

**Cloud Monitoring**

**Service Lifecycle Management**

**Cloud Backup/Recovery**

**Automated Provision/De-Provision**

**Cloud Automation**

***Installation/Configuration support***



### **Benefits:**

- Bring up Cloud on Linux on System z in less than a week
- Quickly begin to see value of Cloud on System z



Visibility



## Enhanced visibility and management for z/VM and Linux applications and resources saving time and money

### Cloud Monitoring



### Increased Performance & Availability

- zVM Live Guest Relocation & Single System Image

### Cloud Health Visibility and Optimization

- Performance and Availability metrics/analytics

### Extensible Cloud Environment

- Business Expansion based on capacity planning
  - Grow without adding hardware

### Client Success

- Cloud service provider **consolidates 59 development & test labs into 6.**
- Increased utilization by **increasing VM density by 58%**



Control



## Holistically govern IT assets and workload lifecycle resources across entire enterprise Cloud

### SmartCloud Control Desk



#### Manage cloud services from single console utilizing Service Catalog

- Asset lifecycle management
- SLA based services and policies .
- Simplified control with intelligent provisioning
- Automate service request handling

#### **Benefits:**

- Minimize outages related to changes within IT Operations by **up to 70%**
- Increase Process Speed and Efficiency by **up to 40%**
- Increase Service quality and responsiveness by **up to 60%**



Automation



## Automated Provisioning simplifies end-user access and usage for improved agility and productivity

### Provisioning/De-Provisioning



#### Combines infrastructure and platform capabilities

- Deliver elastic workload aware management
- Virtual and physical server optimization
- Dynamically allocating resources
- Enable new delivery and billing options

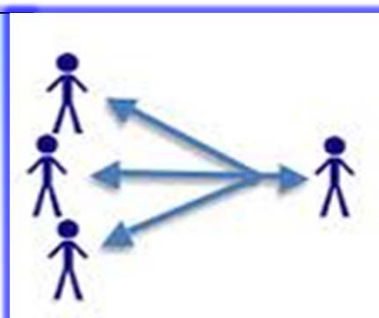
#### **Benefits:**

- Reduce IT labor cost **by 50%** in operations, management and monitoring
- Improve capital utilization **by 75%**, significantly reducing license costs
- Reduce provisioning cycle times from **weeks to minutes**
- Can reduce end user IT support costs by **up to 40%**

## Customers exploiting different approaches to take advantage of Private Cloud on System z today

### Workload consolidation to Linux on System z

- Reduce administration and capital cost
- Remove inefficiencies due to image sprawl
- Avoid server and workload underutilization across platforms



### Enabling System z to be Cloud Ready

- Get up and running quickly with Installation/Configuration Services
- Provide platform to easily interface to Enterprise wide cloud services



### Creating Peer to Peer Cloud across Distributed & System z

- Provide workload optimization based on business requirements
- Manage from either distributed or System z platform





## Government agency modernizing for cost avoidance and investment protection based on Cloud approach

### Business Challenge:

- US Government agency wanted asset management solution for physical assets (e.g. vehicles, equipment)
- Needed to deploy environment to support 5000 users

### IBM Solution:

- System z10 Server with 28 IFLs
- Oracle DB for Linux on System z Servers
- IBM Maximo Asset Management for System z



### Benefits:

- Leveraging unused processors on System z
- **Deploy in 1/3 time** of x86 servers and no additional energy costs
- Software license charges **saved \$1 million** on System z
- **Included Disaster Recovery** on System z, where it would double x86 costs



## Nationwide Insurance cuts costs with smart workload consolidation on Cloud on System z



### Client Pain Points addressed by solution:

- Need to standardize development in Fit-for-Purpose model
- Reduce complexity of deploying workloads
- Take advantage of best platform that met characteristics
  - Initially across z Linux and x Linux.
- Monitoring and capacity management based on SLA

### Solution description:

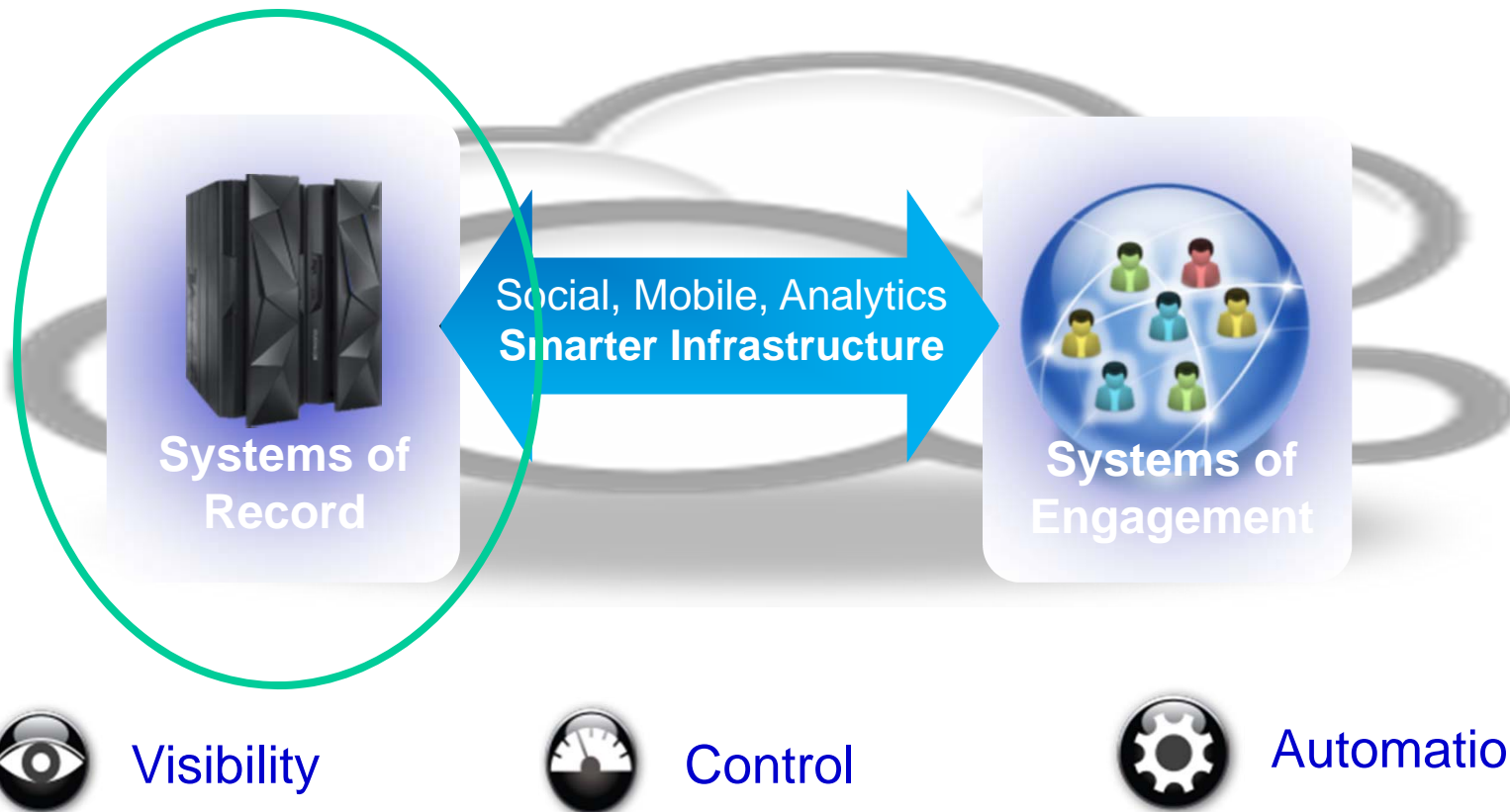
Faster time to market with deployment of standardized patterns on optimized expert system

### **Benefits:**

- Patterns to reduce complexity of application development
- Consistent user and admin interfaces across x and z
- Initial platform for cloud delivery with ability to grow



# IBM continues to enhance Systems of Record to better support current and future System z workloads





Visibility



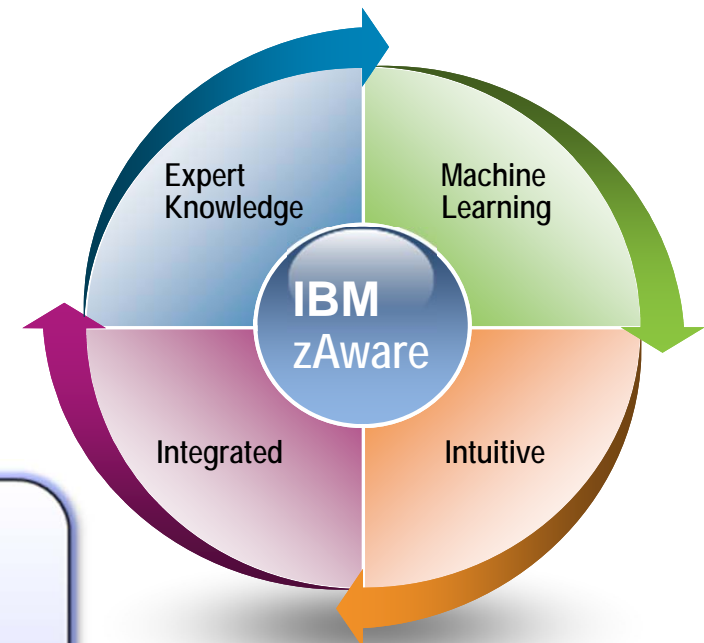
## Improved visibility with enhanced monitoring and analytics

### OMEGAMON V5.1 Monitoring and Management Family

- Increased Analytics exploiting IBM zAware
- Higher Availability across entire zEnterprise and subsystems with Enhanced 3270 User Interface
- Reduced costs from decreased resource usage with HW optimization and zIIP exploitation

#### **Benefits:**

- Save up to 75% of time needed to find problems
- Up to 73% of CICS SLA processing off-loaded
- Reduce fix times from 90 minutes to 2 minutes





Control



## IBM z/OS Storage Management Portfolio provides controls to support cloud and decrease costs

### Tivoli Advanced Storage Management Suite for z/OS

- Improve Availability by finding problems before they become outages
  - Precise alerts and automated actions
- Save time by maximizing operations efficiency
  - Reduce time to audit
  - Maintenance of online subsystems
- Increase productivity through storage software integration
  - Integrated solution
  - Break down operations silos



#### **Benefits:**

- Maximize efficiency of HSM environment
- Lower CPU operating cost of HSM
- Increase availability of DASD storage, Catalogs, and HSM



Automation



## System of Record automation focused on Cloud Availability and Disaster Recover with GDPS Active/Active



### GDPS Active/Active Support

Improved disaster recovery and maintenance with active synchronization to external site

- Enhanced IBM NetView for z/OS
- Tivoli System Automation for z/OS

#### **Benefits:**

Ensure resiliency and availability of critical business operations with recovery time objective of less than one minute



## System z provides cost savings and workload flexibility in Enterprise Cloud implementations

- SmartCloud open standards includes System z within **fit-for-purpose** framework
- Cloud **workload optimization** require z high availability and security
- Implement Cloud on System z today w/ **Cloud Ready** and move to SmartCloud





## Learn more with Service Management Connect

*Connecting to future of service management*

- Transparent development
- Product roadmaps
- Code downloads and demos
- Access to System z experts
  - Forums
  - Blogs
  - Wikis
- Best practices
- Submit requirements

- › 250+ System z blog entries from IBM experts
- › 4.5 million hits in 2012
- › 100 featured IBM expert profiles

[Service Management Connect for System z](#)



Thank  
You