



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



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

## Key Takeaways



- Including System z in your Cloud strategy allows you to optimize **critical business workloads** that require high availability and performance
- The IBM SmartCloud cross-platform open architecture includes System z within a **fit-for-purpose** framework
- Enable rapid & agile delivery using **Cloud Ready for Linux on System Z**, and easily move up to full IBM SmartCloud model

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

## Technology becoming #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 usage can be modernized



# 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



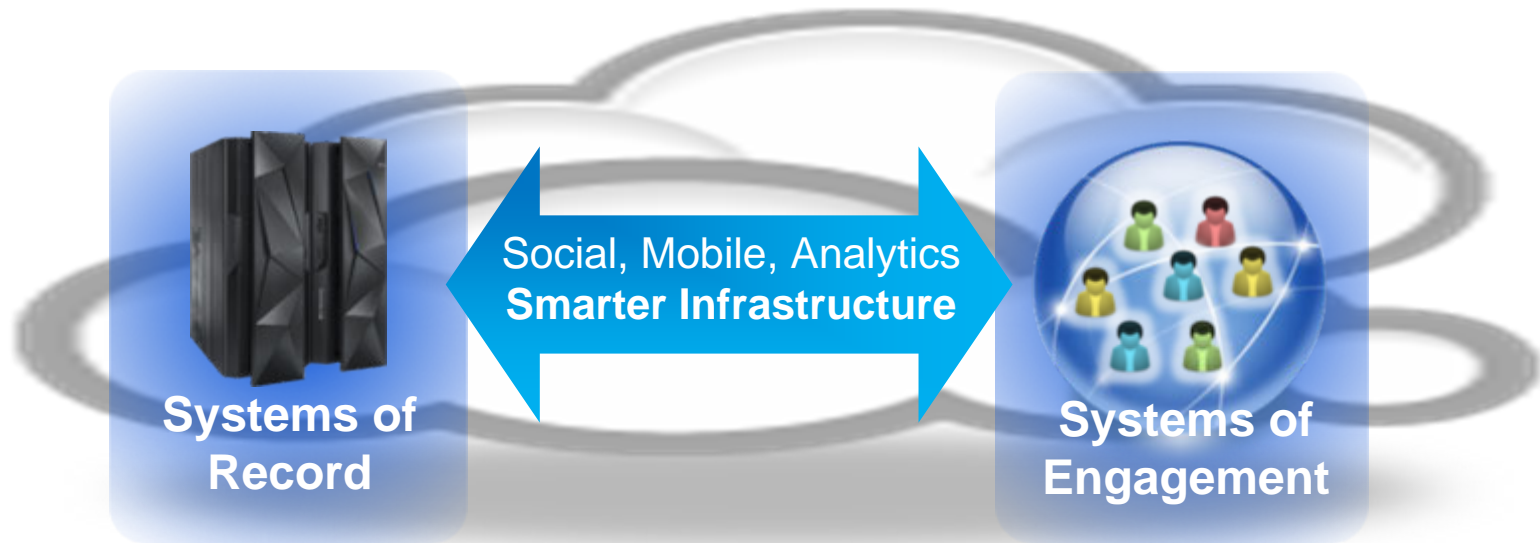
*Recognizing & repairing over 50% of issues before operations impact*

### Protect & Manage Data



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

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



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

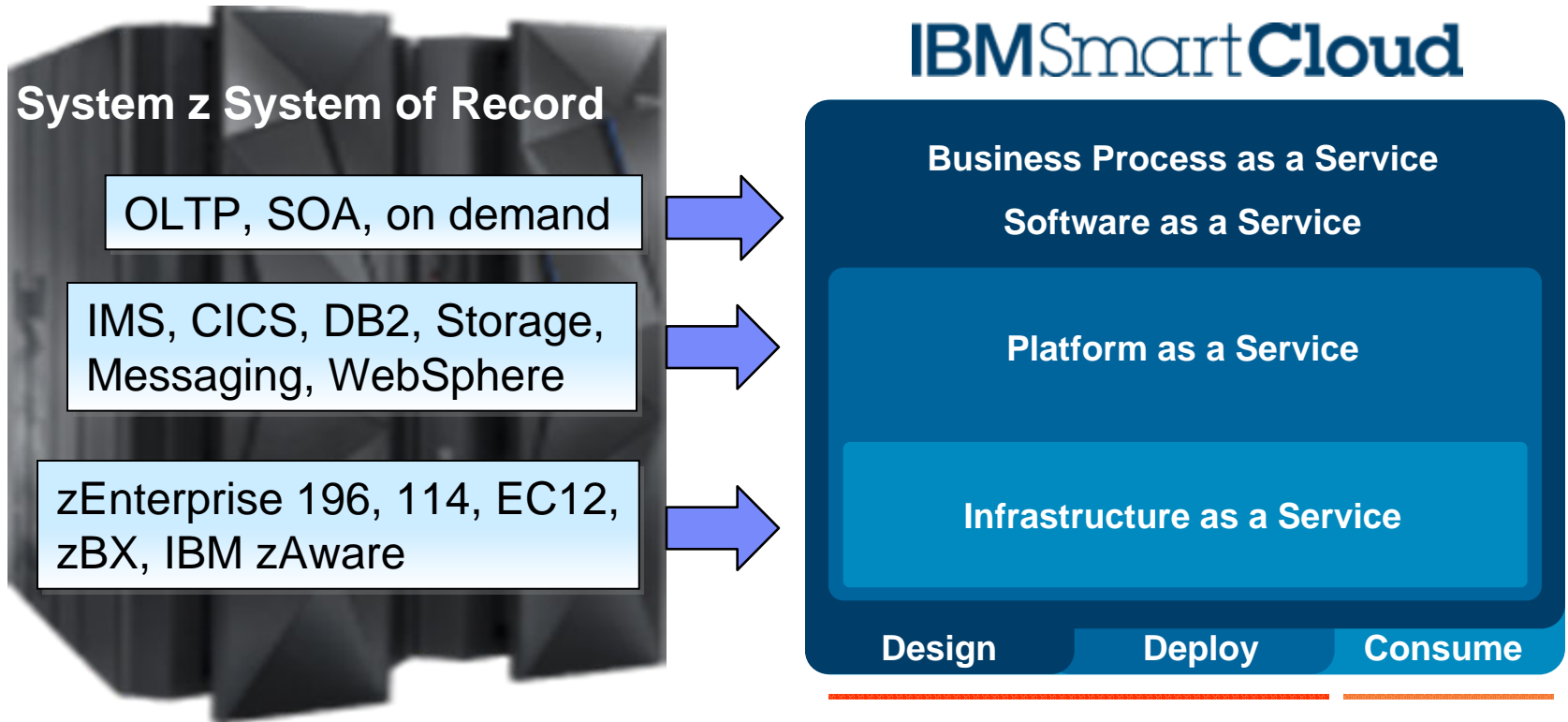
- Interactions
- Collaboration
- Community based content primarily with video / audio
- Insight, trends, analytics thru open forums

Cloud management system needs to support ‘Systems of Record’ and ‘Systems of Engagement’



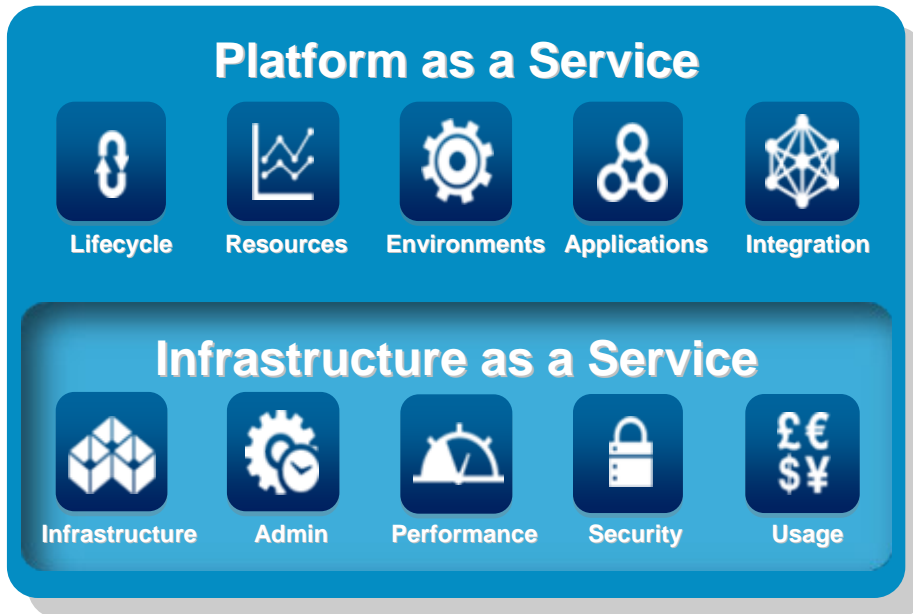
# System z Systems of Record provides key resources supporting SmartCloud Systems of Engagement

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




# IBM SmartCloud Foundation enables private and hybrid cloud support of business services


Integrated capabilities for virtualization, automation and management



- Resilient to velocity of changing business requirements
- Enterprise-class and workload-aware
- Built-in analytics for improved insight
- Choice & flexibility in hybrid environments



- 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

zEnterprise  
secure cloud  
for big data



*zEnterprise BC, EC12*

Power Systems  
for compute  
intensive apps



*Power 770, 780, Power 795*

System x  
reduced cost &  
data insight



*System x eX5, x3640*

Pure Systems for  
workload  
optimized design



*Pure Systems*

## *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 zEnterprise 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**

**4** Cloud Enabled Data Center

*“I need to optimize & orchestrate services across domains”*

**Self Service Automation**

**Usage Metering and Chargeback**

**SmartCloud**

Common Cloud platform built on an open standards reference model



International Organization for Standardization



Advancing open standards for the information society





# Quick and easy implementation of Private Cloud on zEnterprise 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



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

## SmartCloud 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 **consolidated 59 development & test labs into 6**
- Increased utilization by **increasing VM density by 58%** using embedded analytics in IBM SmartCloud Monitoring and OMEGAMON XE for z/VM



# 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%**



# 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:**

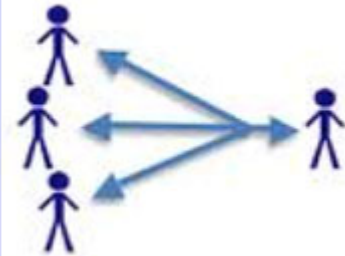
- Reduce IT labor cost **by 50%** in operations, management and monitoring
- Improve capital utilization **by 75%**, significantly reducing license costs
- Reduce provisioning cycle times from **weeks to minutes**
- Can reduce end user IT support costs by **up to 40%**



# Customers exploiting different approaches to take advantage of Private Cloud on zEnterprise 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 to avoid cost and protect investment using a System z based Cloud

## 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:

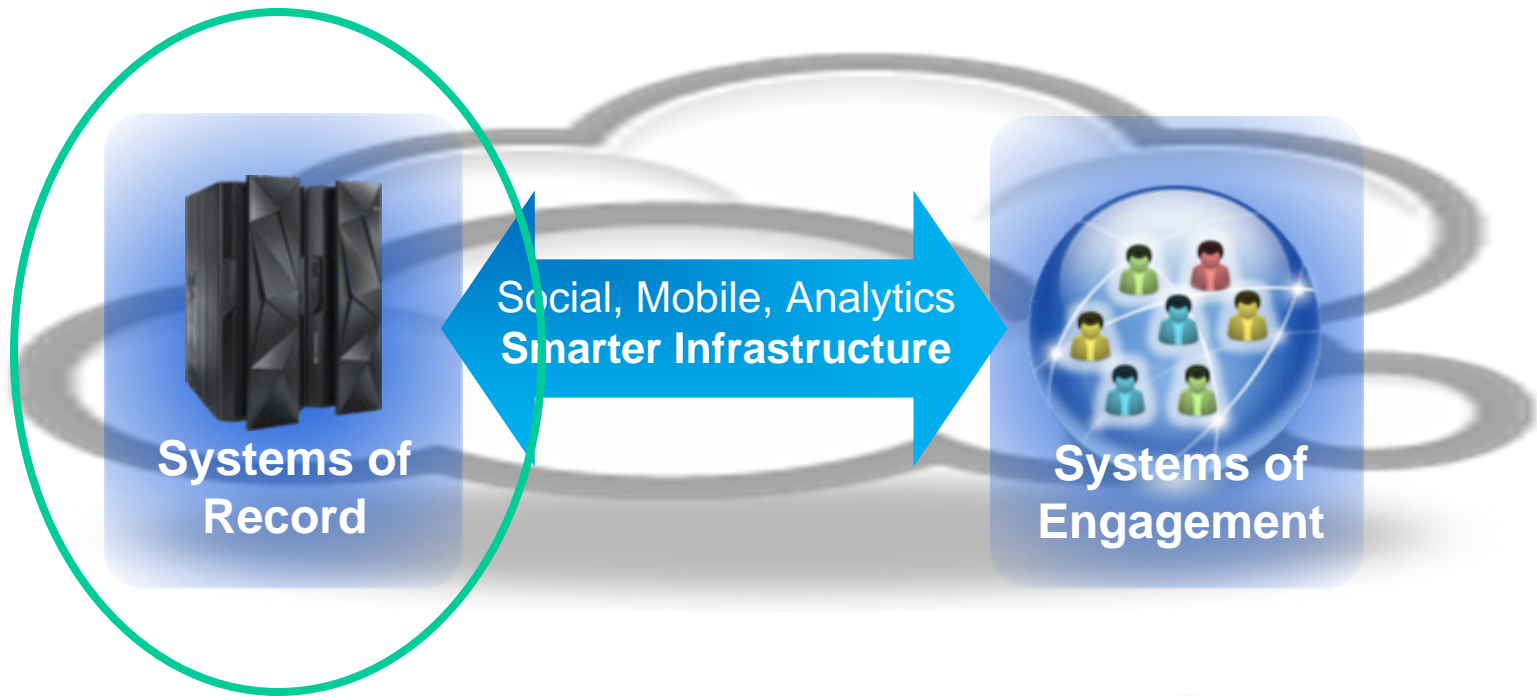
- System z10 Server with 28 IFLs
- Oracle DB for Linux on System z Servers
- IBM Maximo Asset Management for System z



## 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, to avoid doubling x86 costs for HADR

# IBM continues to enhance Systems of Record based on increased requirements from Mobile, Analytics and Cloud



Visibility



Control

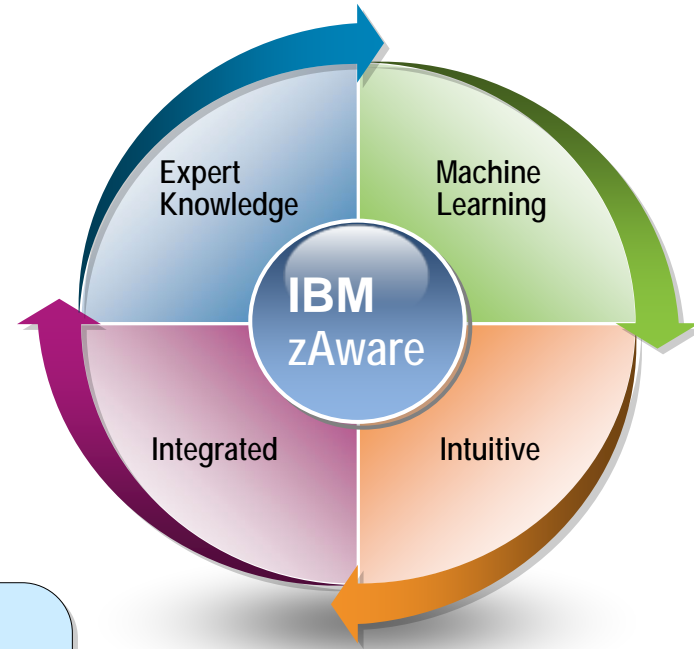


Automation



# Improved Application Performance Management with enhanced monitoring and analytics

- Visibility into IBM DB2 Analytics Accelerator (IDAA) delivering Enterprise-wide improvements
  - Maximize organization's ROI from appliances
- Savings with IMS Application Trace Facility replacing near term history.
  - Uses 24% less CPU than OM 4.2 running ATF
- Increased visibility outside z platform for common WebSphere MQ metrics.



**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

OMEGAMON V5.1 Monitoring and Management Family



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

- 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



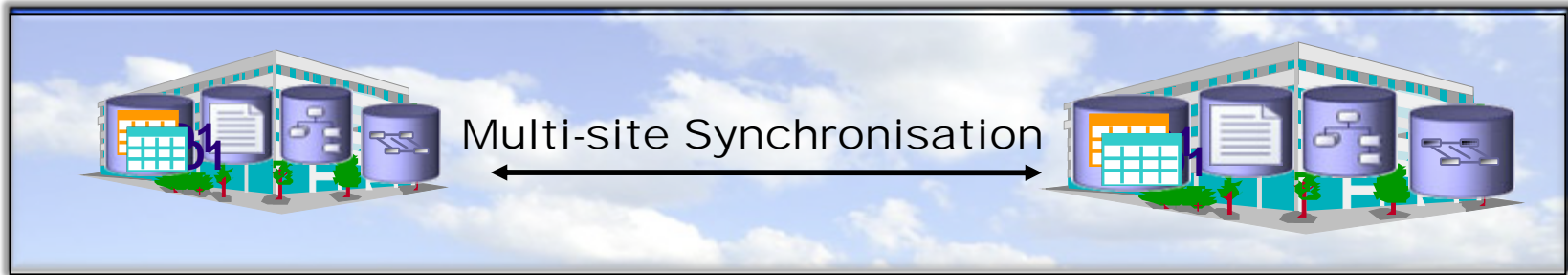
### **Benefits:**

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

Tivoli Advanced Storage Management Suite for z/OS



# Smarter Infrastructure automation enables Cloud Availability and Disaster Recover with GDPS Active/Active



## GDPS Active/Active Support

Improved disaster recovery and maintenance with software-based active synchronization to external site

### **Benefits:**

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

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





# Improved Visualization Services & Custom Dashboards

Solution Views



Mobile Views



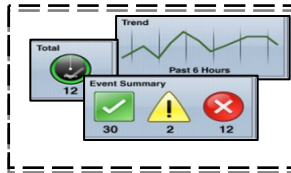
Customized Views



Widgets for Desktop



Widgets for Mobile (New)



Drag & Drop Page Creation

Data Provider

IBM

Data Provider

3<sup>rd</sup> Party

Data Provider

Business Providers

“...can reduce the integration costs of an average project with 4 integrations by 33%, and the average time to develop an integration by 75% ...”



“DASH is incredibly clean and efficient to use. It was very intuitive and I’m excited for the future of dash boarding and visualization.”



“... This can reduce the time required to maintain these connections by 80% and easily save over \$10,000 a year per linked product”



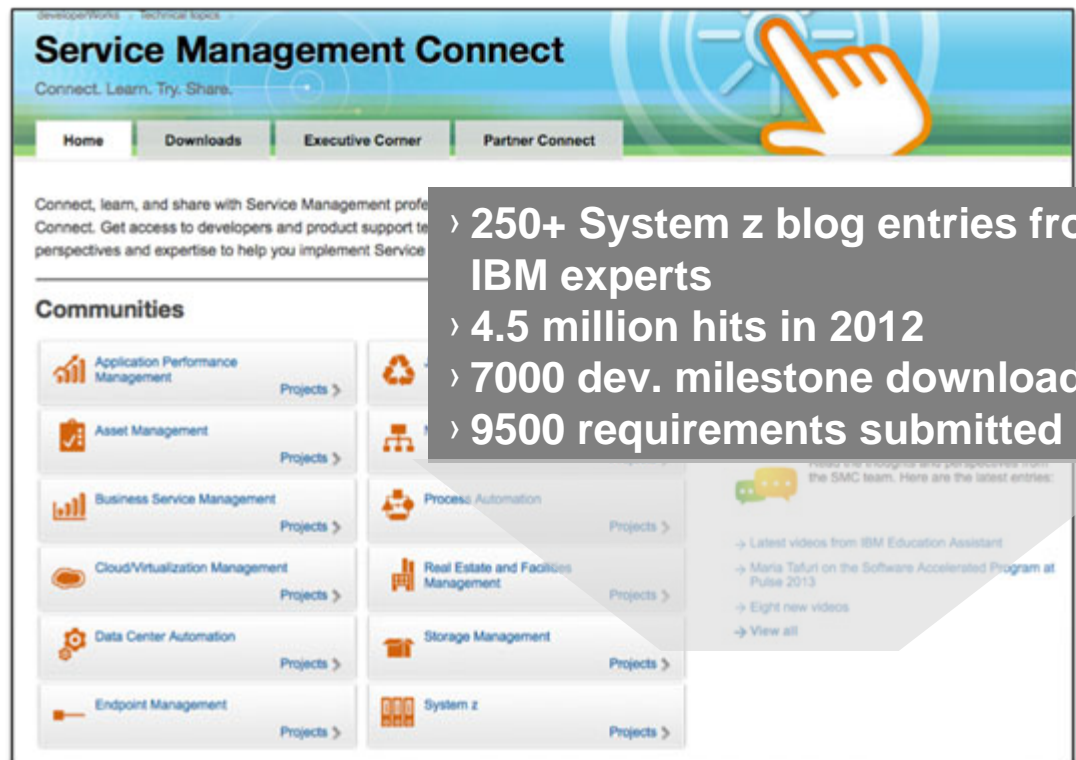


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› 250+ System z blog entries from IBM experts  
 › 4.5 million hits in 2012  
 › 7000 dev. milestone downloads  
 › 9500 requirements submitted

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