

Learn How To Implement Cloud on System z

Delivering and optimizing private cloud on System z with Integrated Service Management

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Session: 11887

Private Cloud on System z reduces risk and decreases costs with increased business flexibility



- **IBM zEnterprise is industry's only heterogeneous cloud solution**

Combines cloud characteristics with System z's leading capabilities for efficiency, manageability, scalability, and security

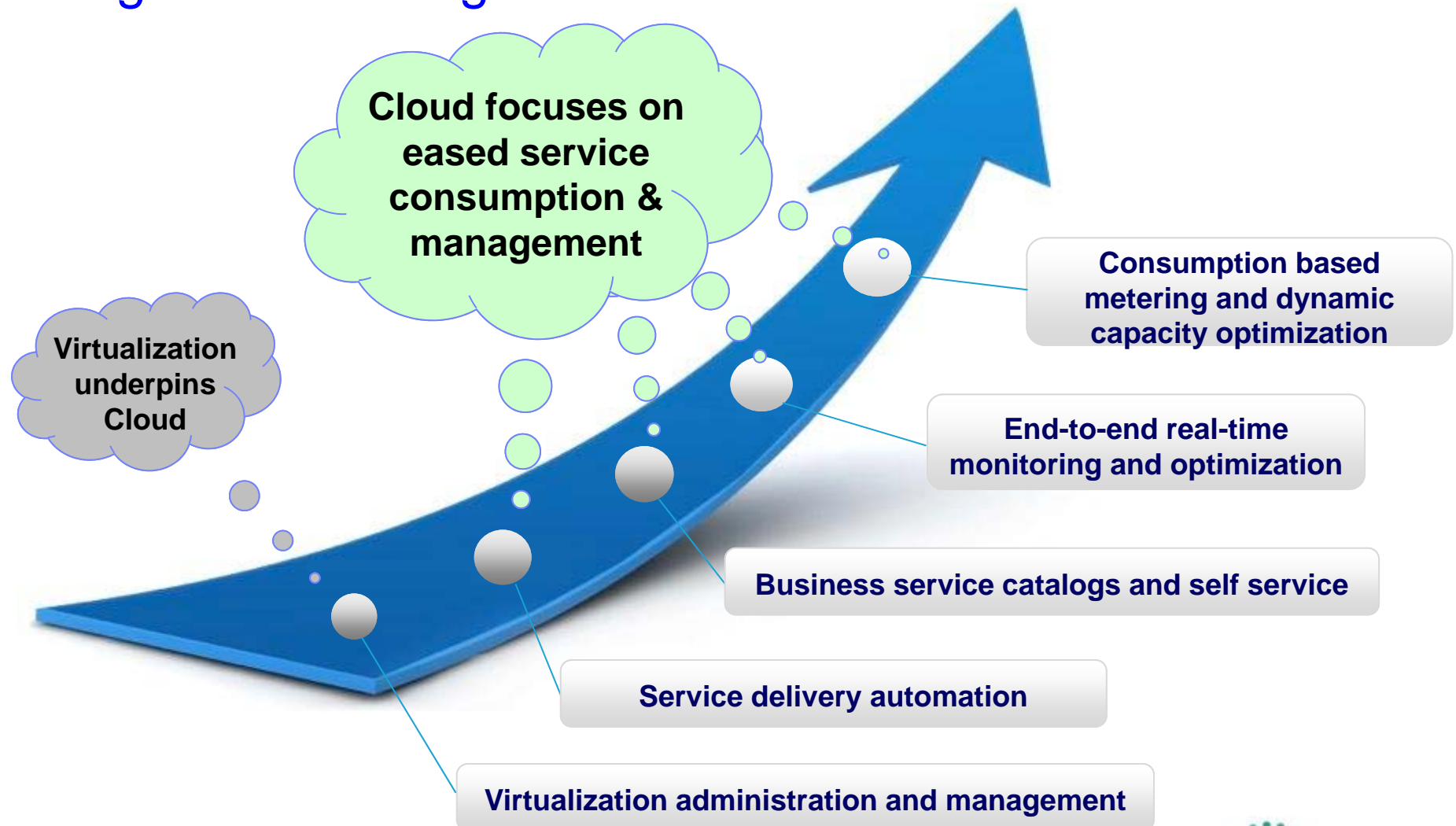
- **IBM Cloud Computing on System z is transforming business**

Better qualities of service, advanced workload optimization, and efficient resource consolidation

- **IBM Tivoli offers integrated service management capabilities for cloud**

Insight, control and automation of the cloud to optimize the IT services delivered

Organizations are now moving beyond virtualization to higher value stages of Cloud



Cloud on System z provides significant new customer value along with IT challenges

Value

- Elastic scalability
- Rapid provisioning
- Advanced virtualization
- Image management
- Multi-tenancy & Isolation
- Flexible pricing
- Better user experience

Challenges

- Compliance/Audit
- Software licenses
- Availability
- Data Protection/Integrity
- Transaction integration
- Analytics/capacity planning



System z ideal platform for private cloud focused on provisioning LOB, Development and Test



Create maximum Business flexibility while maintaining System z required integrity and performance

LOB Workloads

- Identify Application components
- Create Workflow to provision
- Define Security and SLAs
- Assign LPAR or Virtual Machines
- Isolation with ability to share production resources and report on utilization



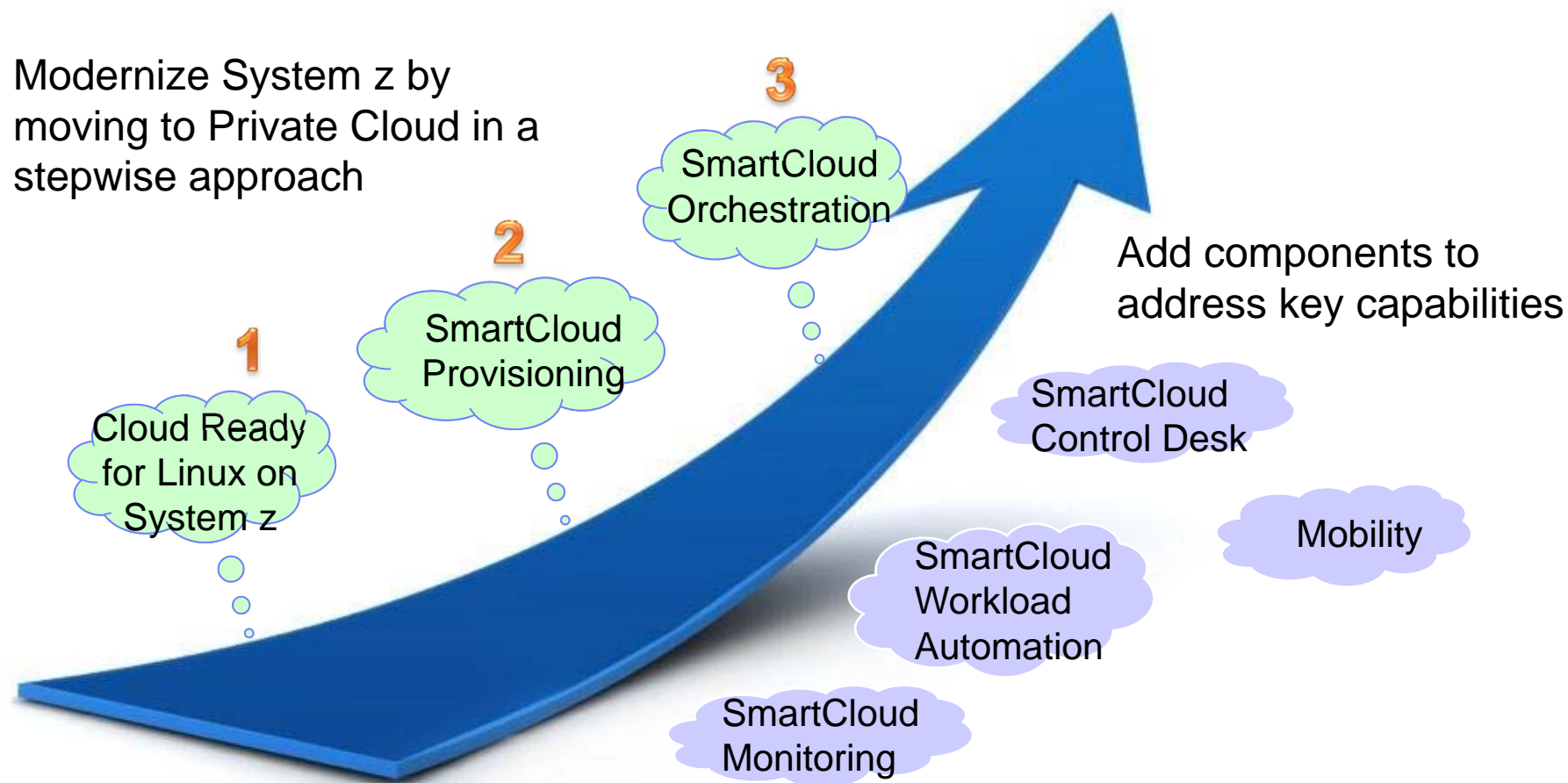
Development and Test

- Create Standardized Image
- Dynamically allocate resources
- zVM supports 1000's VMs on single processor with rapid provisioning
- Most efficient use of energy and software licenses
- Reclaim resources when done

Start small and grow cloud capability over time with IBM Linux on System z tools



Modernize System z by moving to Private Cloud in a stepwise approach



Get started quickly with Cloud Ready for Linux on System z



- **Image/SW-based Cloud Service Delivery** with integrated provisioning, monitoring, service catalog & service desk, storage management, and HA
- **Services** to have cloud service management solution up and running quickly

Business value addressed:

- Reduce high administration and capital cost
- Remove inefficiencies due to image sprawl and maintenance
- Move away from manual managements of disparate environments
- Centralize cloud administration including service catalog
- Run workloads with superior reliability, security, auditing, privacy, data integrity, automation and full isolation



Cloud Ready provides delivery and service management to see business value quickly



- Provides infrastructure to create and deploy standards in virtualized and mixed environments
 - Image Management: OS, Applications, Releases
 - Standards Management: Performance, Backup, Security
- Reduces cost to delivering services
 - Process Automation: Streamline manual procedures
 - Resource throttling: Automated de-provisioning of resources
- Establishes Common Service Delivery Model for deployment
 - Services rendered through a common Service Catalog
- Includes Plug-n-Play Service Management Infrastructure
 - Automated validation of assets prior to deployment
 - Integration with incident management



Cloud Ready supports quick and easy provisioning of images and applications



- Automated provisioning from simple VMs to clustered infrastructure applications
- Automated and integrated server lifecycle management for physical and virtual machines across platforms and hypervisors
- Pre-built automation that can be leveraged by customers existing tools



Benefits:

- Client turnaround time reduced per service request from 2 months down to 4 hours
- Build simple to complex VMs consistently and fast in an automated fashion
- Ensures standardized VM rollout at large volumes according to enterprises' best practices
 - 7 days a week, 24 hours a day, highly available and meeting the highest security standards

Use Cloud Ready to get up and running quickly, and supports moving to SmartCloud as needs grow



Cloud Ready for Linux on System z

SmartCloud

Automation with Cloud

System Automation for z/OS

Cloud Backup/Recovery

Tivoli Storage Manager

Cloud Monitoring

ITM/OMEGAMON for z/VM & Linux

Service Lifecycle Management

Tivoli Service Request Manager

Automated Provisioning

Tivoli Provisioning Manager



- Services for all stages of Cloud on z design & implementation
- Knowledge Transfer & on-going support, as needed.

Accelerate business transformation with capabilities from IBM cloud offerings



SmartCloud – IBM's vision for cloud computing

IBM SmartCloud Foundation

Platform as a Service Technologies



Application Lifecycle



Application Resources



Application Environments



Application Management



Integration

Infrastructure as a Service Technologies



Infrastructure Platform



Management & Admin



Availability & Performance



Security and Compliance



Usage and Accounting



System z an obvious choice for cloud computing:

- Leading virtualization capabilities, massively scalable
- Superior user experience
- Great economics

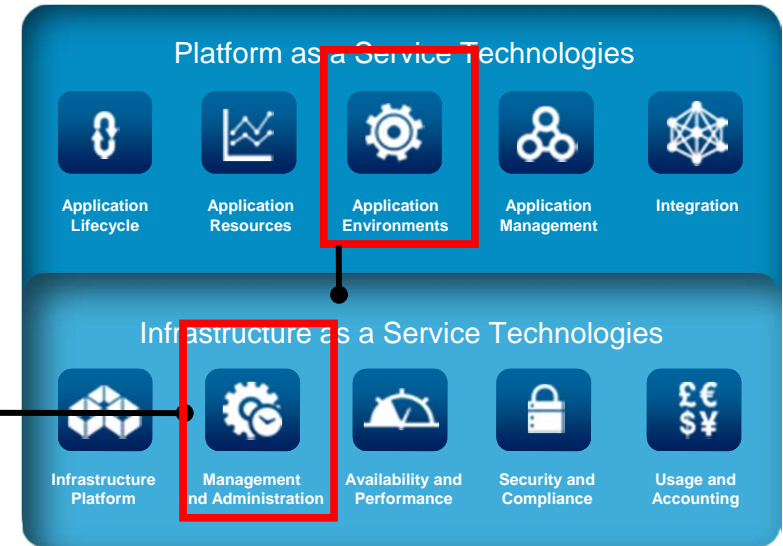
SmartCloud Provisioning adds automated provisioning for applications



IBM SmartCloud Foundation

AUTOMATE OPTIMIZED WORKLOADS

- Designed with parallel scalability and integrated fault tolerance
- Standardized middleware and application deployment via patterns
- Advanced image lifecycle management and analytics
- Multiple (pluggable) hypervisor support on heterogeneous platforms
- Low touch automation, self service UI



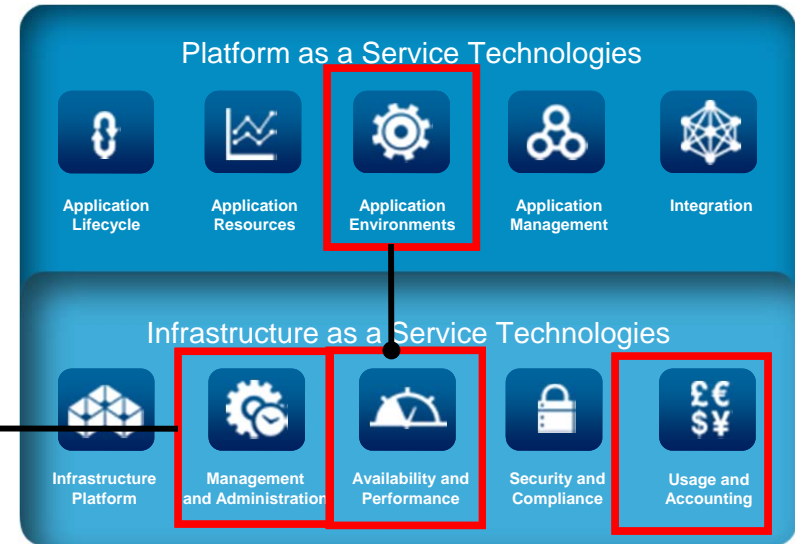
Benefits:

- Time to market - Demonstrated **35x** improvement for deploying new applications

Smart Cloud Orchestration adds control and automation to private Cloud



IBM SmartCloud Foundation



CONTROL

Tivoli Service Automation Manager

Advanced cloud delivery including service orchestration and runbook automation

IBM Service Delivery Manager

Advanced cloud delivery including service orchestration, runbook automation, monitoring, usage and accounting

Increased Business Agility

- **End to end automation** allow business to react to ever changing market conditions
- **Choice** of services through standards based hybrid connectivity
- **Flexibility** though easy adaptation to existing processes and tools (workflows)

Benefits:

- **40% - 60%** reduction of admin costs, through extensive automation of service delivery
- Achieve standardization of services, resulting in **50%** manual labor reduction

Marist College supports growing/changing student population with Cloud on System z



Marist College

Business Challenges:

- Provide environment for fluctuating student population
 - Enhance student learning
 - Develop Workforce skills
- Support growth of z/OS Knowledge Center

IBM Solution:

- zLinux Smart Analytics environment
 - Cognos and DB2`
- Automatic Provisioning with TSAM
 - Project completion deprovisioning

Business Benefits:

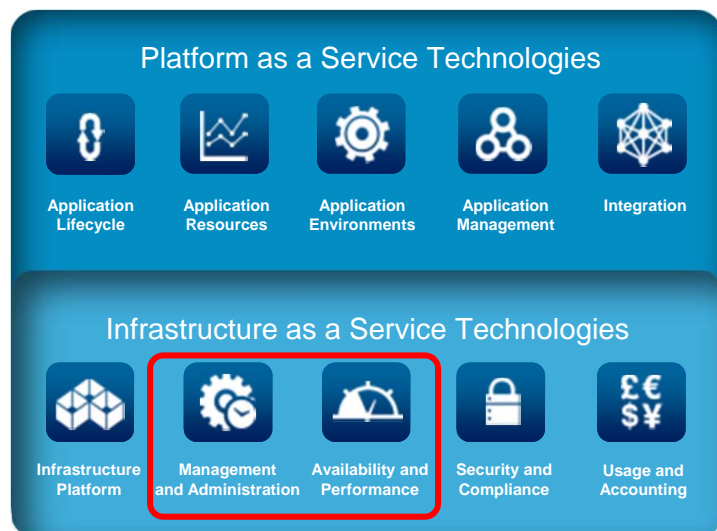
- Community-wide collaboration, moving to worldwide
- Expanded System access to other schools

- Recognized for excellence by US News and World Report, Time and Princeton Review
- Leadership in use of Technology
- Pioneered hosting IBM Technology with z/OS Knowledge Center in 2002

Smartcloud Monitoring includes capability planning and analytics



IBM SmartCloud Foundation



Cloud Health Visibility and Optimization:

- Performance and availability metric integration for end to end cloud health visibility, optimization and assurance recommendations

Foundation for an Extensible Cloud Environment:

- Capacity trending and analytics ensure room for business expansion

Performance & Capacity Analytics:

- Rich capacity optimization recommendations improve resource utilization and cost

Client Success

- Major cloud service provider **consolidates 59 development & test labs into 6** centralized labs.
- Utilizing SmartCloud Monitoring, able to increase utilization significantly, **increasing VM density by 58%**

OMEGAMON XE for z/VM and Linux simplifies monitoring and management of Cloud



IBM SmartCloud Foundation



z/VM Dynamic Workload Serviceability:

- Follows VMs that move between hosts
- Maintains historical data on VMs for analysis
- Benefits load-balancing optimization scenarios, a key tenet of SmartCloud Monitoring

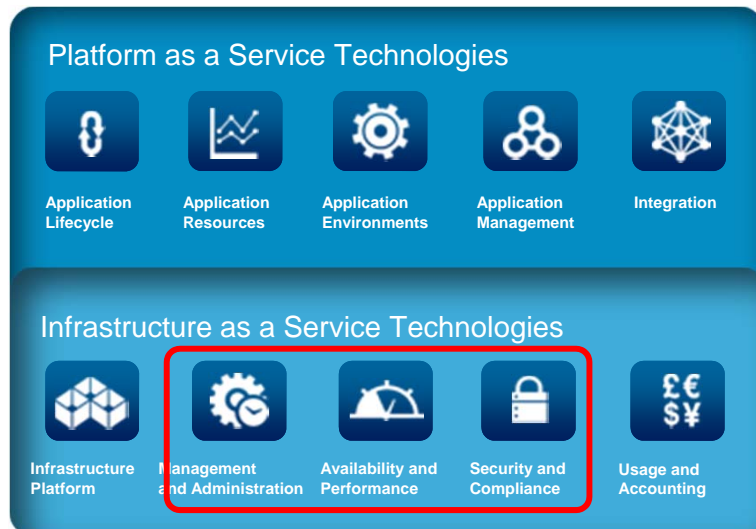
Serviceability Enhancements:

- Self-describing agents eliminate need to install z/VM application context on monitoring infrastructure management servers,
 - Allows OMEGAMON management agents to quickly and seamlessly join existing SmartCloud Monitoring deployment
- Dynamic Affinity eases agent maintenance and affinity

SmartCloud Control Desk provides IT Asset and Service Management across entire enterprise



IBM SmartCloud Foundation



Comprehensive IT Service Management solution

- Reduce cost and minimize service disruptions
- Automated service request handling
- Efficient change management,
- Optimized asset lifecycle management
 - Integration of Assets, CIs, Tickets

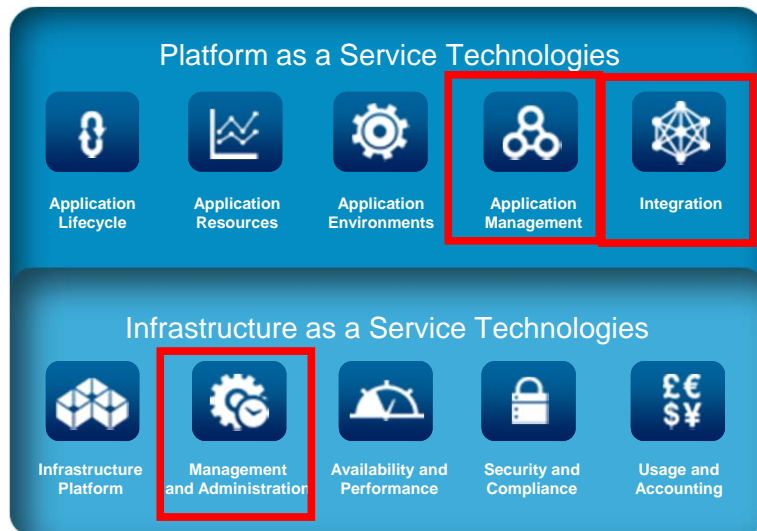
Benefits:

- 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%
- Optimize Software license usage and bring savings back to the business

SmartCloud Workload Automation key to scheduling applications and services



IBM SmartCloud Foundation



- Trigger, monitor, and repair business services for automation patterns and objects
- Leverage cloud for applications utilizing Virtual Machines and images that are immediately provisioned (and de-provisioned).
- Improve ability to meet SLA through elastic scaling of batch and online workloads
- Seamlessly link z/OS and Cloud parts with joint processes

Benefits:

- Transform business requirements into IT requirements with on-the-fly optimization
- Streamline IT resource and service requests and services from self-service catalog
- Save resource, installation and configuration costs through virtual images in the cloud
- Optimize SLA-driven delivery of business services

Mobile with Cloud on z will provide new business and application opportunities



Cloud Ready for implementation today moving to SmartCloud as business requirements change



- **Get started quickly with Cloud Ready**
 - Add SmartCloud capability over time
- **Lots of value from Private cloud on z:**
 - Automated Provisioning leading to DevOps Integration
 - Workload aware monitoring and capacity management
 - Automated compliance and reporting
- **System z and zEnterprise designed to support Cloud:**
 - Automated HA and DR at workload level
 - Workload level accounting and analytics
 - Secure isolation across smarter infrastructure

<http://www-03.ibm.com/systems/z/solutions/cloud/index.html>



Tivoli System z Sessions at SHARE

Monday

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|----------------------------------------------------------------------|---------------|
| 11:00 11207: Automating your IMSplex with System Automation for z/OS | Platinum 7 |
| 1:30 11832: What's New with Tivoli System Automation for z/OS | Elite 1 |
| 1:30 11896: Problem Solving with Consolidated Logs | Grand Salon A |
| 3:00 11886: Improve Service Levels with Enhanced Data Analysis | Elite 1 |

Tuesday

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|------------------------------------------------------------------|---------------|
| 9:30 11792: What's New with System z Monitoring with OMEGAMON | Elite 1 |
| 11:00 11791: Tuning Tips To Lower Costs with OMEGAMON Monitoring | Platinum 8 |
| 1:30 11900: Understanding Impact of Network on z/OS Performance | Grand Salon A |

Wednesday

| | |
|--------------------------------------------------------------------------|-----------------|
| 9:30 11835: Automated Shutdowns using either SA for z/OS or GDPS | Elite 1 |
| Noon 12109: Maximize System Availability and Performance - Lunch & Learn | Salon 2 |
| 1:30 11479: Predictive Analytics and IT Service Management | Grand Salon E/F |
| 1:30 11899: Top 10 Tips for Network Perf. Monitoring w/ OMEGAMON | Platinum 9 |
| 4:30 11836: Save z/OS Software License Costs with TADz | Elite 1 |

Thursday

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|----------------------------------------------------------------------|-----------------|
| 8:00 11887: Learn How To Implement Cloud on System z | Grand Salon E/F |
| 9:30 11905: Using NetView for z/OS for Enterprise-Wide Mgmt and Auto | Grand Salon A |
| 11:00 11909: Get up and running with NetView IP Management | Grand Salon A |

Friday

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|----------------------------------------------------------------------|---------|
| 9:30 11630: Getting Started with URM APIs for Monitoring & Discovery | Elite 1 |
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Thank
You