



# Manage Cloud Resources on System z with IBM System Automation Solutions

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# Agenda



## ■ Introduction – Cloud and Mobile

- IBM System Automation Family
- Cloud High Availability
- Cloud Disaster Recovery
- Mobile Automation Management
- Summary





# System z proven platform to seamlessly address challenges for Mobile and Cloud workloads



## Mobile

- Mobile Business workloads require security and high availability
- Increased mobile business data access and complexity
- Drives Scale-up and Scale-out Enterprise challenges

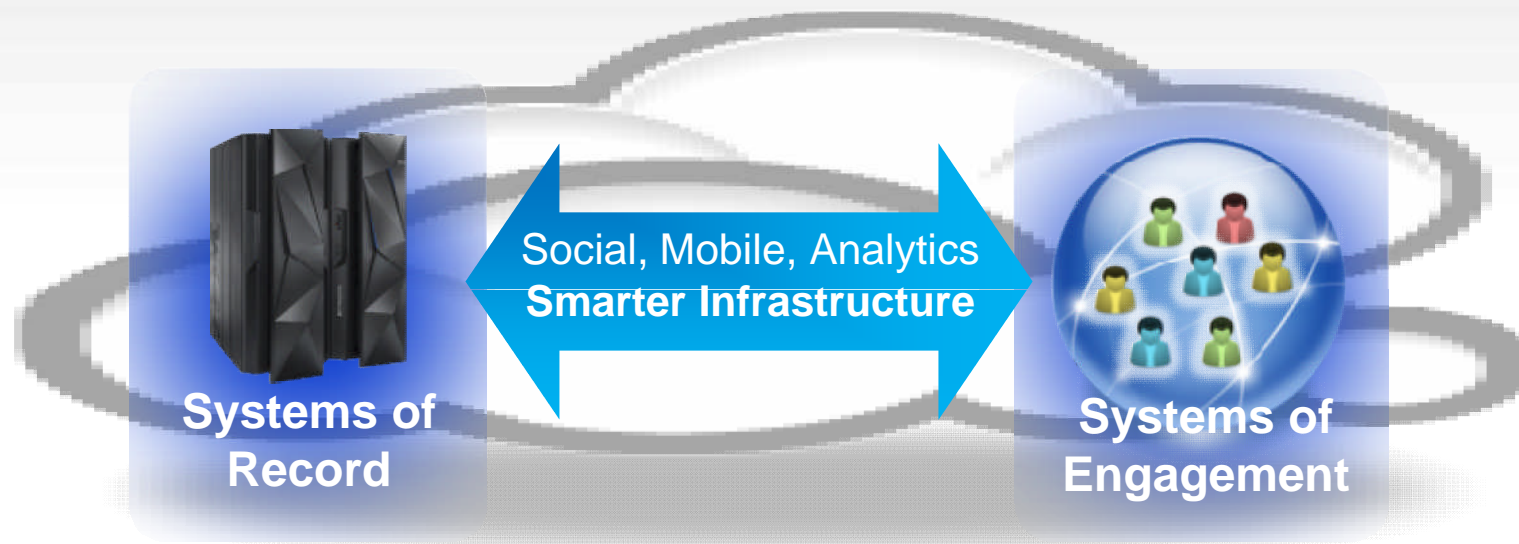


## Cloud

- Performance, security, high availability and disaster recovery
- Data protection and regulatory compliance
- Ability to quickly and easily provision and orchestrate

# Rapid growth of next generation technologies supported seamlessly on zEnterprise

System z scaling model and security to manage and optimize both



- Business Transactions
- Quality of Service
- Command & Control
- Facts and data “source of truth”
- z/OS

- Mobile and Social
- Dynamic
- Interactions and Collaboration
- Insight, trends, analytics
- Linux on System z



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

Customers can move across roadmap as business requirements grow

**C Suite/LOB**

**Infrastructure Teams**

- 1 Virtualization Optimization
- Image Management

**Dev & Operations Teams**

- Optimized Cloud
- Workload Optimized Patterns
- DevOps

**CIO / IT Executive**

- Self Service Provisioning
- Usage Metering and Chargeback

- Multi-tenant Workloads
- Disaster Recovery
- Enterprise Security

Common Cloud platform built on an open standards reference model



International Organization for Standardization



openstack  
CLOUD SOFTWARE



Advancing open standards for the information society

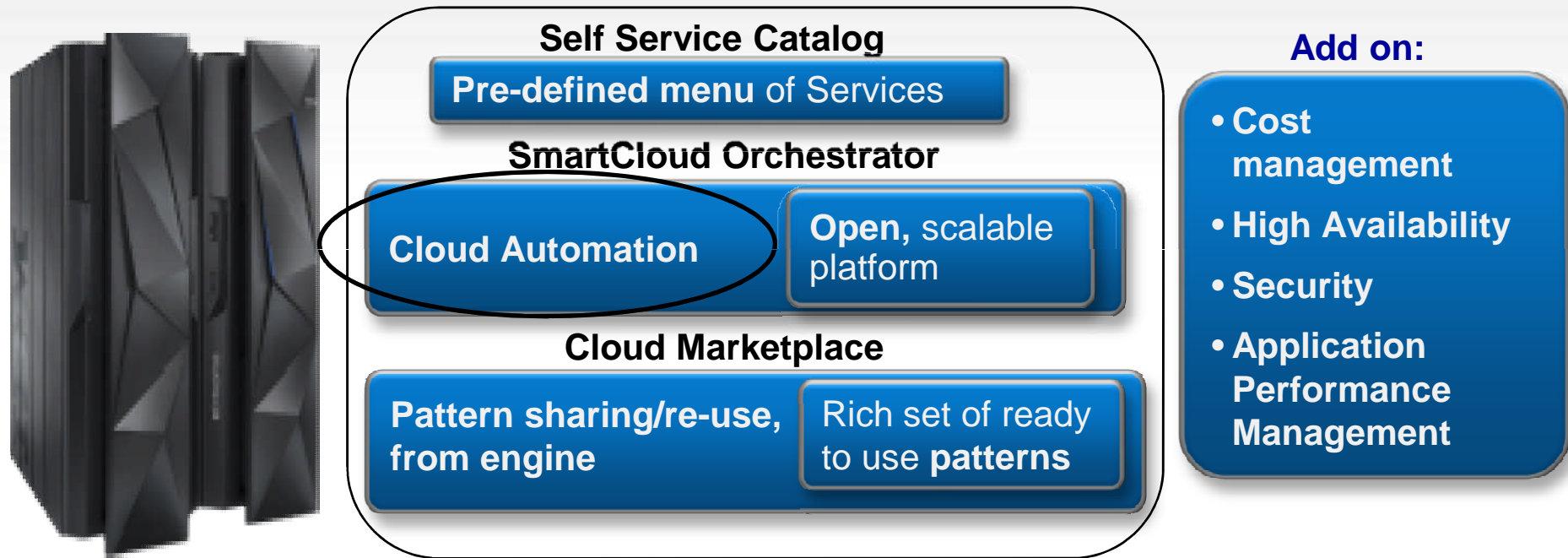


Business Partner



Complete solution for cloud workloads on System z includes number of key components to simplify usage and operations

### Cloud Management

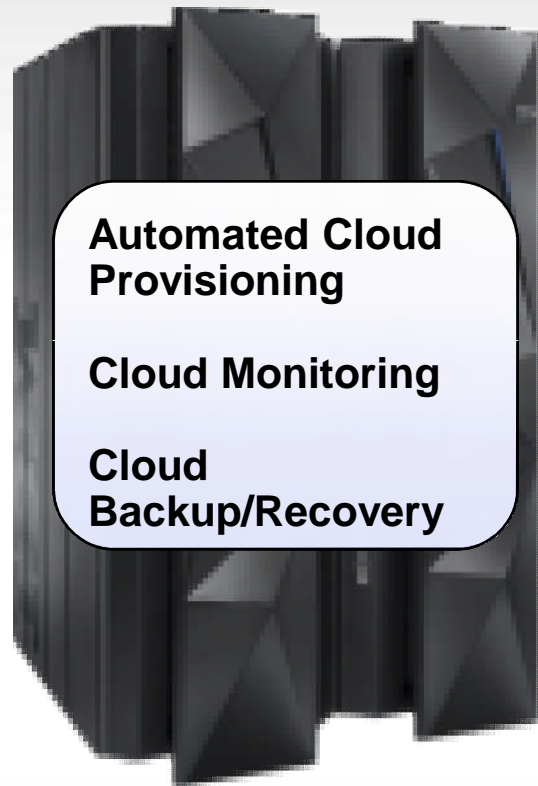


### Infrastructure Management





## Cloud Management Suite for System z provides critical workload provisioning to zEnterprise



- Easily move cloud services to System z with standardized, open orchestration
  - Provision workloads to z Linux from Orchestration running on x
- Fully automate deployment and lifecycle management of cloud services across workloads
- Simplify cloud operations and increase productivity with OMEGAMON monitoring of services
- Increase availability of cloud data with easy to implement storage backup/recovery
- Runs on z/VM V6.3 with Linux on z

*The thing I like about the product is its simplicity and flexibility. Frequently simplicity comes with a cost—narrow constructs necessary in order to be repeated easily. But here, it's the architecture that provides the simplicity and the 'drop-in' functionality via patterns provides the flexibility. IBM Business Partner*



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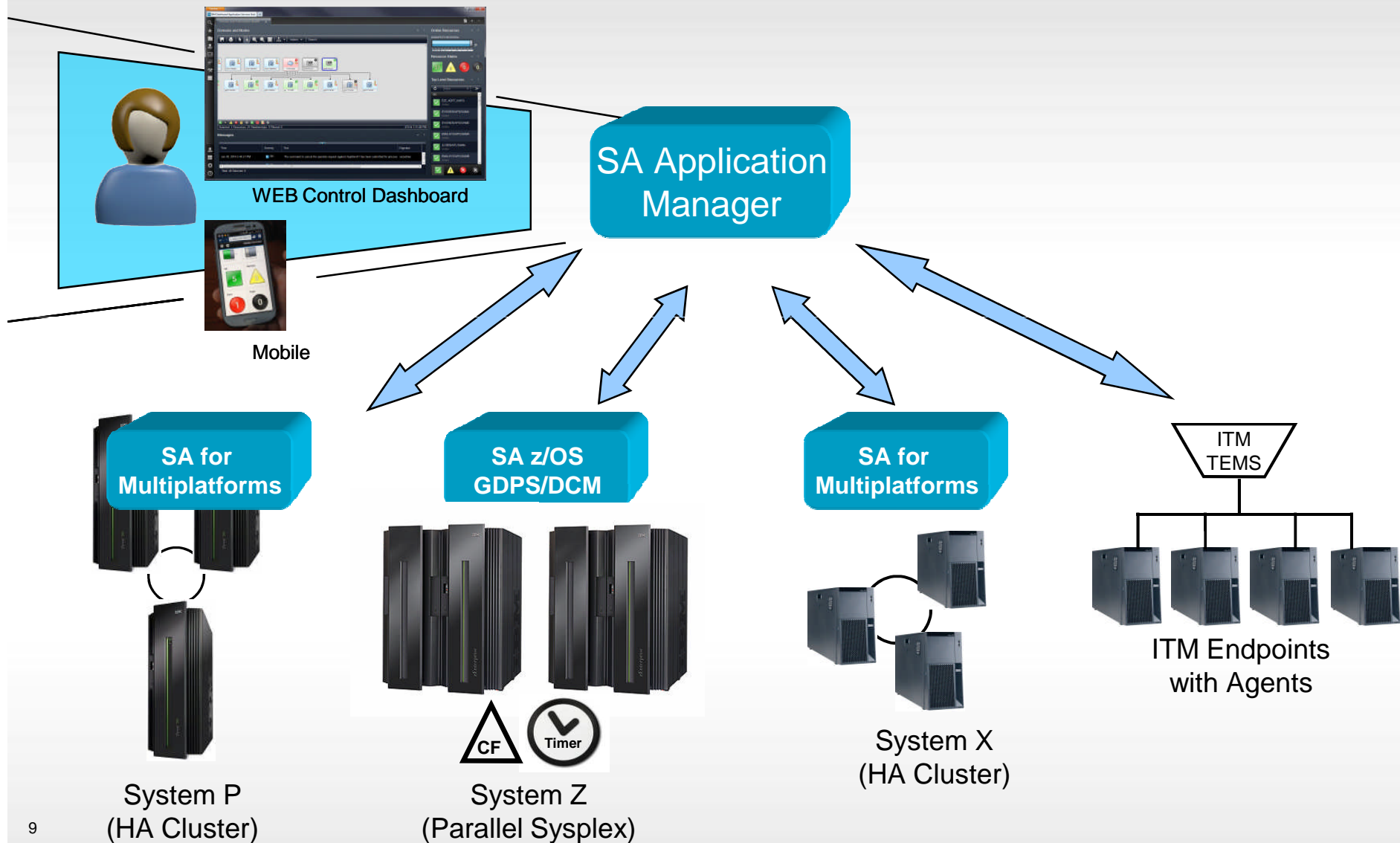


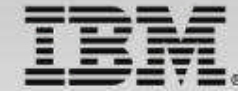
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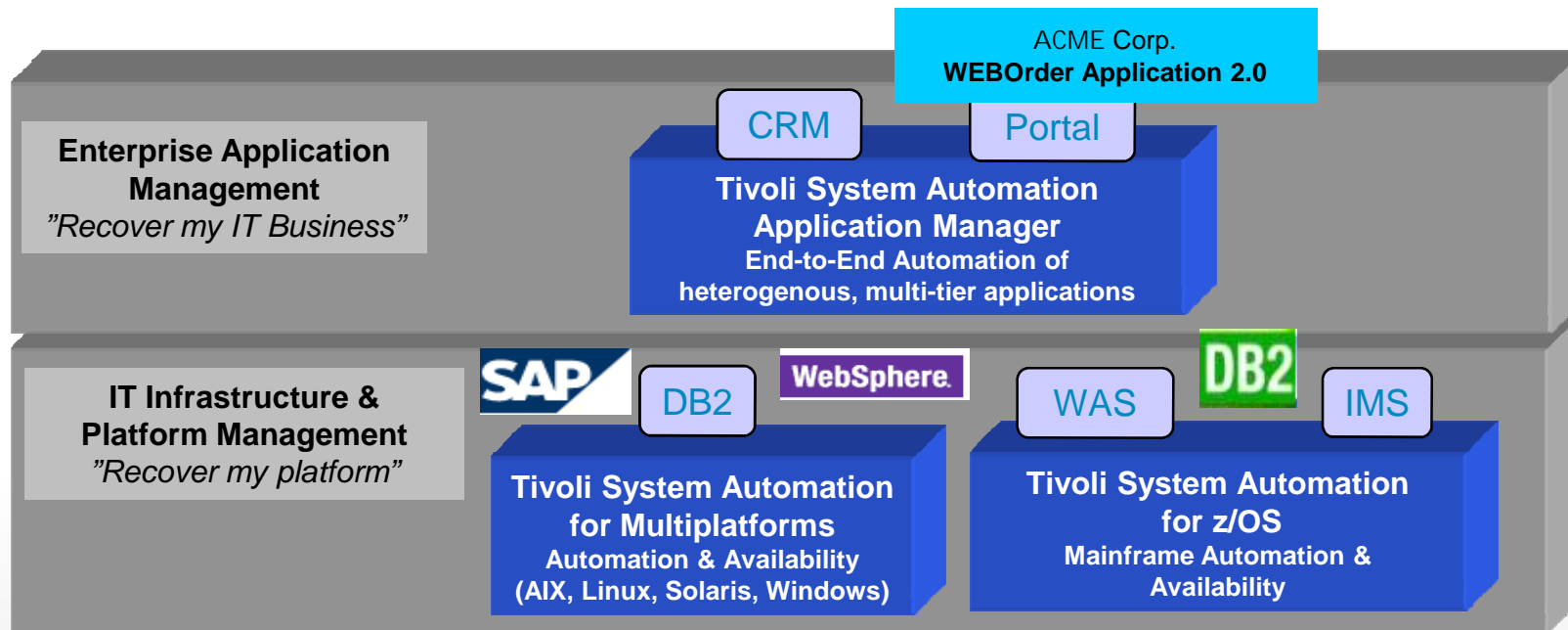
# System Automation High Availability, Automated Operations and Disaster Recovery for Cloud





## Value of implementing System Automation

- SA z/OS and SA for Multiplatforms (SAMP) ensure **High Availability** and **Automation** for **complex applications** on z, x and p for z/OS, Linux, AIX, Solaris, Windows
- SA Application Manager (SA AM) delivers consistent **cross-platform Operation View** and **cross-platform Automation** for **composite applications**
- With GDPS, **SA family** delivers unique capabilities for **Disaster Recovery** – ensuring that systems, applications and data safely and consistently moved to backup datacenter.



# Simplified User Experience: System Automation's new Dashboard

Set of “**pre-defined**“ **dashboards** for operators intended to deliver information needed for daily work. Each dashboard can be customized

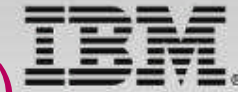
## Tivoli System Automation Application Manager

Version 4.1.0.0, Build number: 140303

Tivoli System Automation Application Manager is a cluster spanning end-to-end automation solution which provides high availability and disaster recovery for composite applications. This Dashboard Application Services Hub hosts the web-based user front end of Tivoli System Automation Application Manager. You can access pre-defined dashboards from below or you can create your own custom dashboards using the Page Editor.

Task based menus

Domain and Automation Health	Explore Automation Domains	Operate End-to-End Resources	Explore Automation Nodes	Activate Automation Policies	IBM Electronic Support
<p><b>Get an overview</b></p> <p>The Domain and Automation Health dashboard displays your domain and node topology. You can see statistics about the health of top level resources of a selected domain or node. From here you can also drill down to operational views of displayed</p>	<p><b>Navigate through automation domains</b></p> <p>If you want to perform maintenance actions on a specific node, it is required to find that node and understand which resources are hosted by that node.</p>	<p><b>Manage your applications</b></p> <p>The Operate End-to-End Resources dashboard displays all resources that belong to the active automation policy of a domain.</p>	<p><b>Work with your domains and nodes</b></p> <p>Using the Explore Automation Domains dashboard, you can navigate through a large number of domains and their related resources.</p>	<p><b>Activate different domain configurations</b></p> <p>The Activate Automation Policies dashboard displays all domains and policies. You can list, activate, and deactivate policies.</p>	<p><b>Find System Automation in the internet</b></p> <p>Forum, pre-canned policies, Blog and Open Program.</p>



# IBM Open Service Delivery Platform (JazzSM) provides improved usability and productivity

- Common Platform - **Unified platform** for reporting, Registry, Admin and Security
- **UI Services** - Enhancements for dashboard visualization and OSLC linked data support
- **Reporting Services** - Based on IBM's strategic business intelligence platform with enhancements for Mobile, iPad, Drag & Drop Reporting, and more
- **Security Services** – Enables single sign-on capability in Tivoli solutions containing non-WebSphere based products.

Easier to Navigate:  
Graphical  
Navigation,  
Favorites, and  
Search

Mobile Support

Solution  
Dashboards





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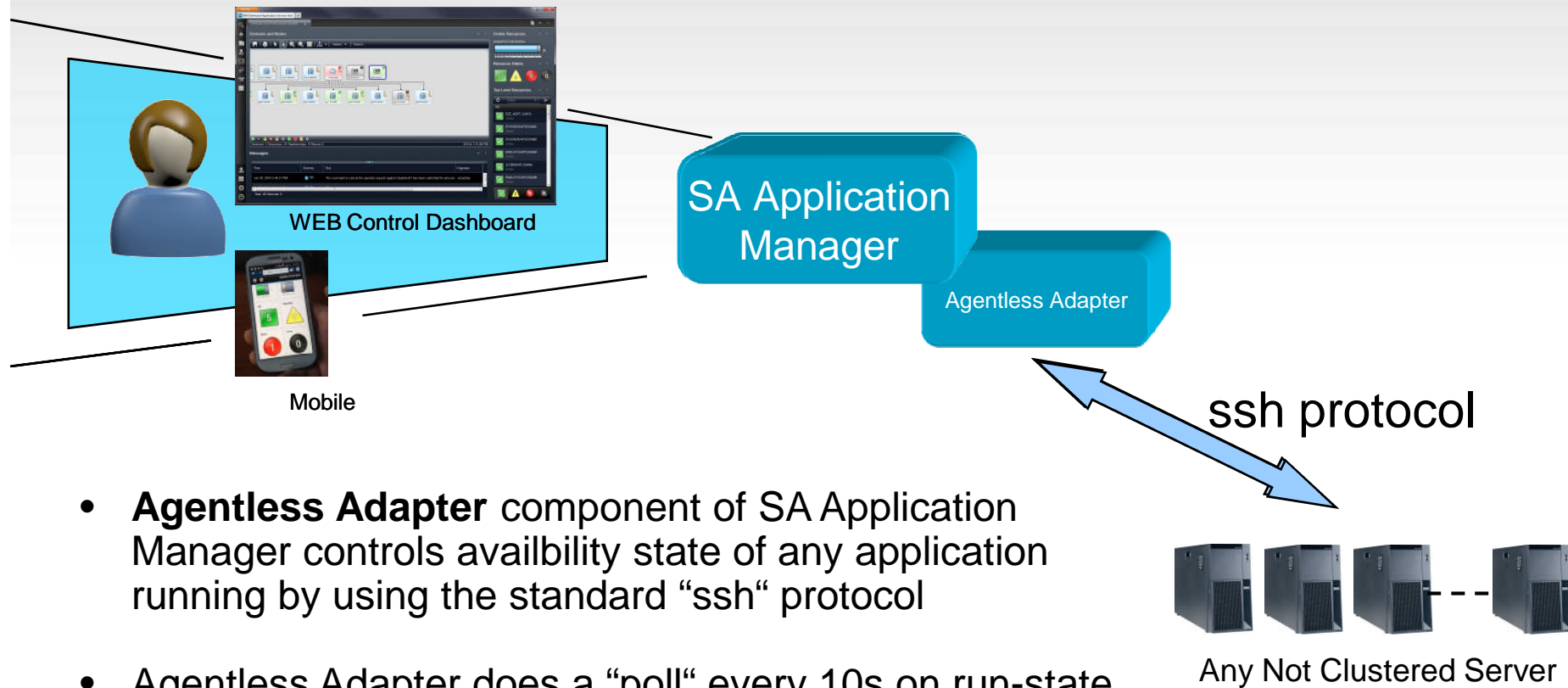
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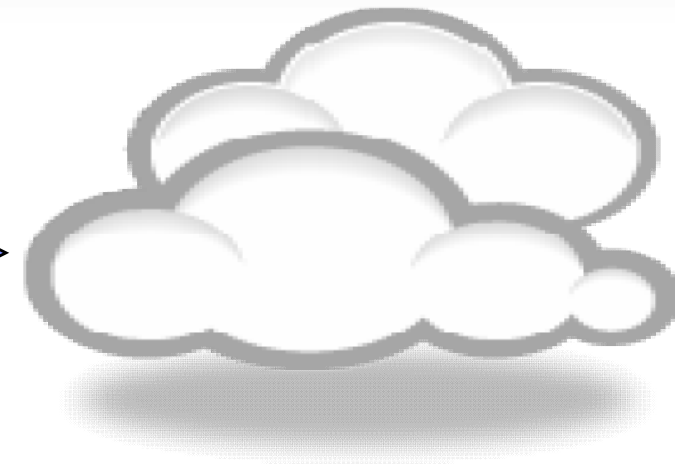
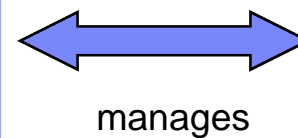
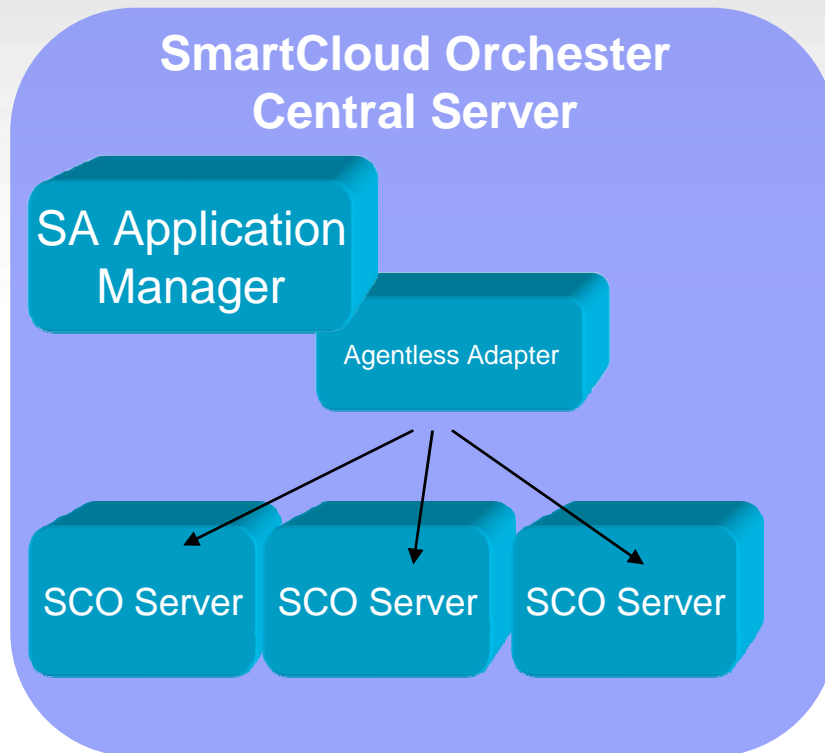


# SA Application Manager Integration with Agentless Adapter for simplified operations



- **Agentless Adapter** component of SA Application Manager controls availability state of any application running by using the standard “ssh” protocol
- Agentless Adapter does a “poll” every 10s on run-state
- Agentless Adapter pushes start/stop commands

# SA Application Manager Cloud Integration – With Agentless Adapter



Managed Cloud

Management Stack of SCO 2.3  
with SA AppMan 4.1



## SmartCloud Orchestrator (SCO) provides enhanced capabilities for improved application availability

*SCO v2.3 provides out of the box high availability solution.  
High availability for SCO management stack is achieved by:*

- **System Automation Application Manager**
  - Monitor and automatically recover failed **application components**. And simplify operating of SCO management stack.
  
- **vSphere HA Cluster**
  - Automatically recover virtual server failure, ESXi failure, or server failure running ESXi.
  - Failed virtual servers restarted on same ESXi server or backup ESXi server.
  
- Both high availability features can be installed and used independently.
- Possible to only enable one of two high availability options





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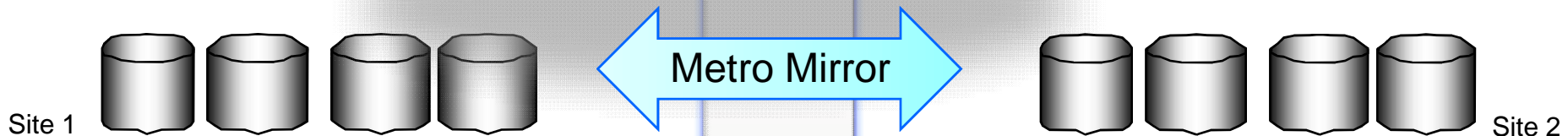
# Cloud on System z has increased High Availability and improved Disaster Recovery

Cloud Management Suite for System z  
z/VM Hypervisor  
Linux VM images  
System z servers

- ✓ High Availability and Disaster Recovery, enterprise-wide
- ✓ Even for cloud consumers
- ✓ Resilient cloud infrastructure
- ✓ Automated z/VM and Linux operations
- ✓ Automatic LPAR size adaption
  - ✓ Incl. On/Off Capacity on Demand
- ✓ Policy-based end-to-end operations & automation

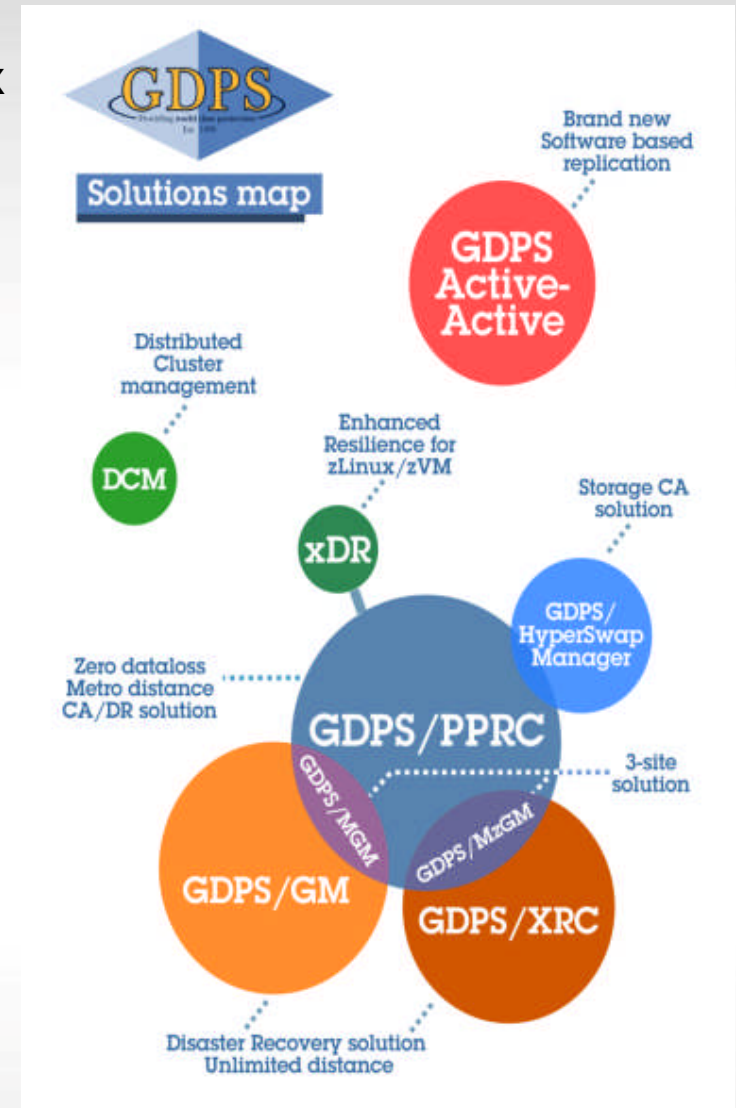
## *System Automation Family provides:*

- z/OS HA & DR
- Hardware Control
- External z/VM and Linux automation
- Linux clustering
- GDPS® xDR: Hyperswap for Linux
- GDPS DCM



# Disaster Recovery for Cloud with GDPS

- GDPS = Geographically Dispersed Parallel Sysplex
- Integrated / Automated Disaster Recovery solution
- Manages application and data availability in and across sites
  - Monitors systems, disk & tape subsystems
  - Manages planned and unplanned activities
    - System/disk maintenance/failure
    - Site maintenance/failure
- Builds on proven high availability technologies
  - Clustering
  - Remote copy (disk and tape)
  - Automation
- Easy to use interface
  - Intuitive panel interface
  - Simple scripting



## Disaster Recovery for Cloud with xDR

- xDR extends GDPS to support to Linux on System z
  - Disk error detection
  - Heartbeat for sanity checks
  - Re-IPL in place
  - Coordinated Site Takeover
  - Coordinated HyperSwap
  
- xDR is System Automation based Service Offering
  - Official Name:
    - GDPS/PPRC Multiplatform Resiliency for zSeries
  - Implement xDR with following products:
    - GDPS
    - System Automation for Multiplatforms with additionally charged xDR feature enabled
    - Linux on System z
    - z/VM, if Linux is running on z/VM





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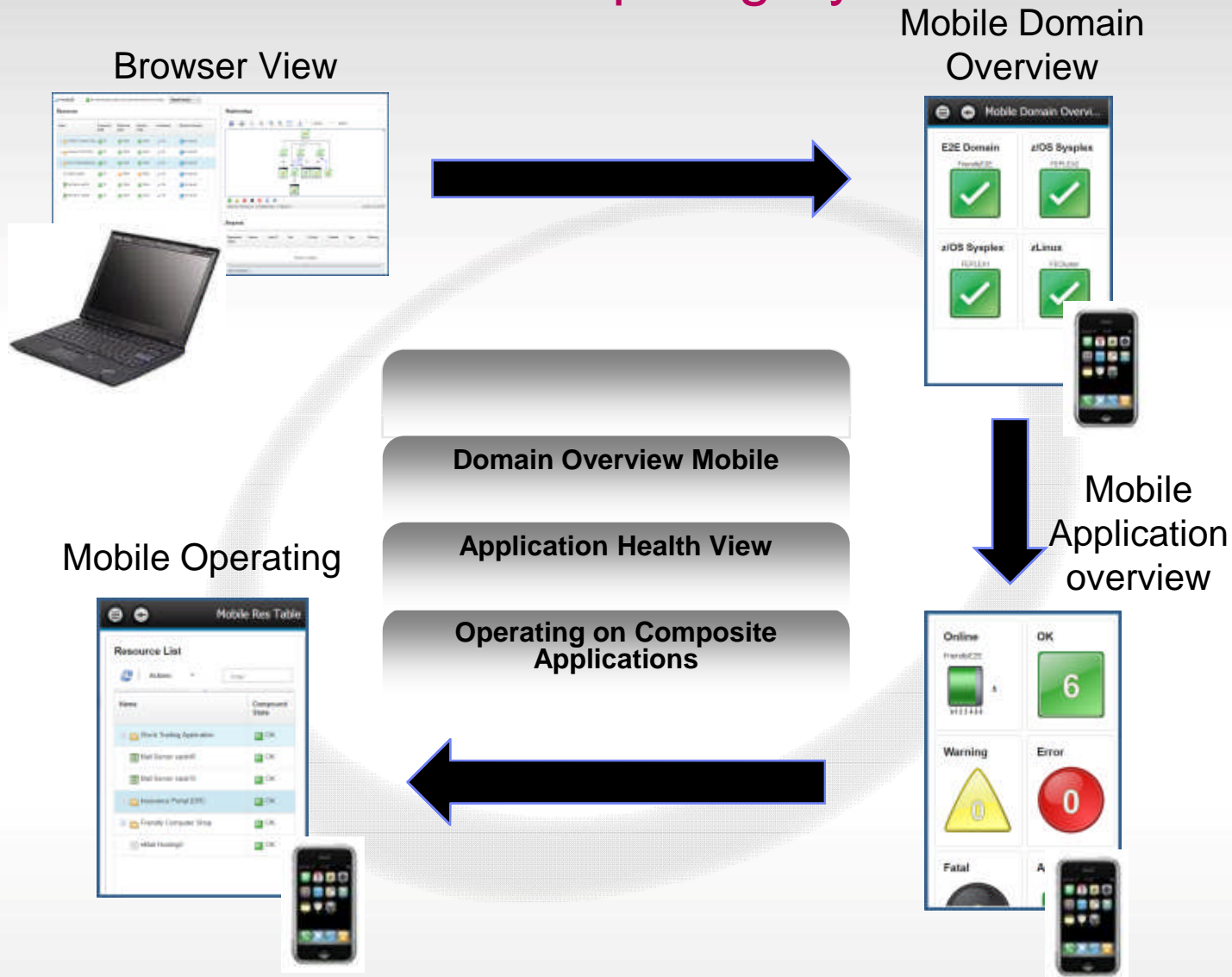
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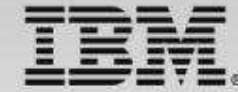


# Mobile Device Scenarios requiring System Automation



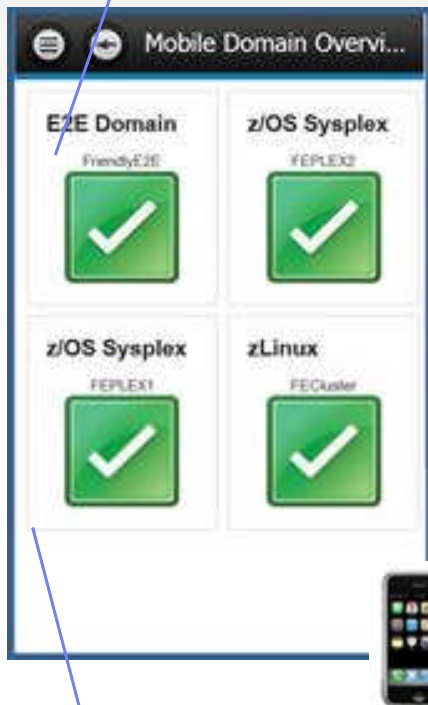


# Mobile View with System Automation

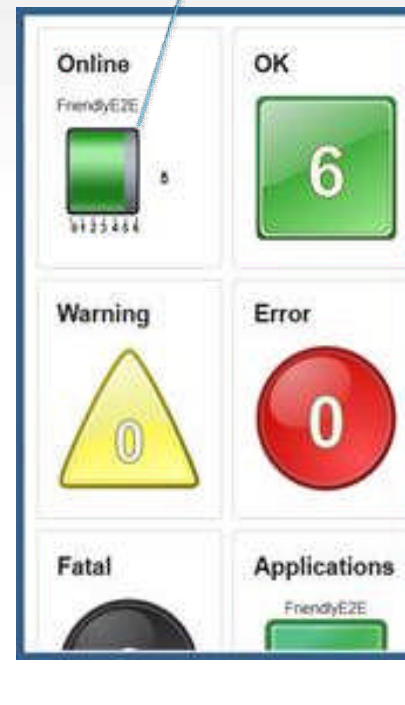


End-to-End Domain status of composite applications

How many composite applications are online/offline



z/OS Sysplex status of all resources on FEPLX1



In this case compound state of all apps in domain ok



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# Customers seeing value taking advantage of increased automation: GAD



## Client statement on the value of System Automation

*"System Automation for Multiplatforms (SAMP) and Application Manager (SAAM) help us to manage our Linux environment much more efficiently.*

***We think it saves us up to 4 person years of otherwise required scripting effort and it provides us with a unified way of controlling our resources.***

*Our operators have a single place to visualize and control services on up to 1000 Systems. We can also exploit SAAM functionality to control clustered systems and applications through other products such as Tivoli Workload Scheduler.*

*Mainframe resources managed by SA z/OS are included and managed as resources in our SAAM Operations Console – that gives us a cross-cluster span of control across all clustered platforms.*

*In the next release, we especially like the new SAAM Operations Console which offers customizable Dashboards to better visualize and operator our environment. This new technology is more intuitive, flexible and faster – we think this will improve our operator efficiency.*



**Industry:** Banking, Financial Markets

**Profile:** GAD eG provides information technology (IT) services to the banking industry, serving as one of only two companies in Germany that offers data-processing-center services.

Muenster-based, the company is an IT service provider for approximately 500 cooperative banks in Germany, and it's a software developer for the cooperative organization Genossenschaftlicher FinanzVerbund.

**Size:** 1000–4999

**Category:** SMB



## Moving to Cloud and Mobile on System z requires increased use of System Automation

1

IBM System Automation supports reliably running **Mobile and Cloud** workloads on System z cost effectively

2

IBM System Automation provides High Availability and Disaster Recovery for Business Critical Cloud workloads

3

IBM only vendor who can tie technologies together with Visibility, Control and Automation to meet cross-platform end-to-end SLA



## Learn more about the individual capabilities of IBM's System Automation Solution

IBM Tivoli NetView for z/OS	<a href="http://www-01.ibm.com/software/tivoli/products/netview-zos/">http://www-01.ibm.com/software/tivoli/products/netview-zos/</a>
IBM Tivoli Network Manager	<a href="http://www-01.ibm.com/software/tivoli/products/network-mgrproductline/">http://www-01.ibm.com/software/tivoli/products/network-mgrproductline/</a>
Tivoli Application Dependency Discovery Manager	<a href="http://www-01.ibm.com/software/tivoli/products/taddm/">http://www-01.ibm.com/software/tivoli/products/taddm/</a>
Tivoli Workload Scheduler	<a href="http://www-01.ibm.com/software/tivoli/products/scheduler/">http://www-01.ibm.com/software/tivoli/products/scheduler/</a>
Tivoli Netcool/OMNIBus	<a href="http://www-01.ibm.com/software/tivoli/products/netcool-omnibus/">http://www-01.ibm.com/software/tivoli/products/netcool-omnibus/</a>
Tivoli Business Service Manager	<a href="http://www-01.ibm.com/software/tivoli/products/bus-srv-mgr/">http://www-01.ibm.com/software/tivoli/products/bus-srv-mgr/</a>
IBM Tivoli Monitoring	<a href="http://www-01.ibm.com/software/tivoli/products/monitor/">http://www-01.ibm.com/software/tivoli/products/monitor/</a>
Tivoli OMEGAMON XE for Mainframe Networks	<a href="http://www-01.ibm.com/software/tivoli/products/omegamon-xe-mainframe/">http://www-01.ibm.com/software/tivoli/products/omegamon-xe-mainframe/</a>
Tivoli System Automation for z/OS	<a href="http://www-01.ibm.com/software/tivoli/products/system-automation-zos/">http://www-01.ibm.com/software/tivoli/products/system-automation-zos/</a>
IBM Geographically Dispersed Parallel Sysplex	<a href="http://www-03.ibm.com/systems/z/advantages/gdps/index.html">http://www-03.ibm.com/systems/z/advantages/gdps/index.html</a>



# Thank You

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