# Integrated Service Management on System z (ISMz)
# IBM® System z® Software Teleconference

Learn from System z customer experience with ISMz Solutions:

- Lower costs and decrease operational risk with integrated service management
- Use ISMz cookbooks to speed up solution deployment and lower time to value

**Lorin Ullmann**
Lead ISMz Architect and IBM Master Inventor
Tivoli System z Architecture and Strategy
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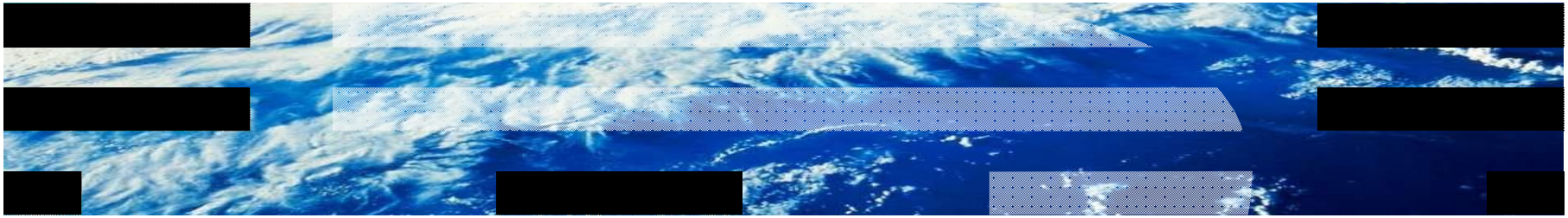

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*"**Why** IT organizations are implementing company-wide **Integrated Service Management Strategies**"*


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# Financial impact of poor business service

FT.com FINANCIAL TIMES — Software bug hits electronic traders

khou.com — Cell phone users have dropped calls due to system failure

THE WALL STREET JOURNAL. — Glitch Locks trader users Out of Their Stock Trading Accounts

denverpost.com — CHAOS: Voting Extension Denied Amid Massive Computer Problems

Air-traffic system outage grounds flights … software glitch causes flight delays

MSNBC — Major retailer web site shuts down on Black Friday morning

abc NEWS — Music web retailer is back to normal after holiday traffic quadruples

CNNMoney.com



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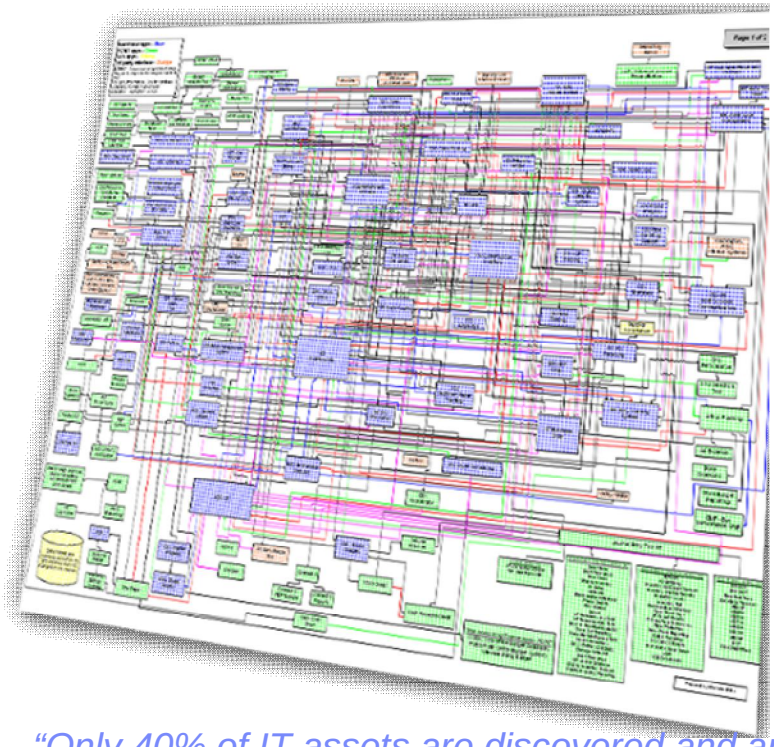
# Complexity and Constant Change point to the need for a Service-centric approach

- **Complex enterprise supports the needs to the business.**
  - **Challenge: Only a fraction of what is in datacenter is known.**
  - **Challenge: Unknown exposures exists (asset control, compliance, outages and service disruption outages, security audit).**
  - **Challenge: Audit readiness includes ensuring systems in the data center are configured properly, and compliant with company policies.**
- **A shift of IT investments is needed to Innovate**
  - **Challenge: Configuration changes can adversely impact key business services.**
  - **Challenge: Rolling back a change costs are lost time, additional labor, and lost revenue associated with the business service.**



*"Only 40% of IT assets are discovered and are understood" (Source: Finance Week)*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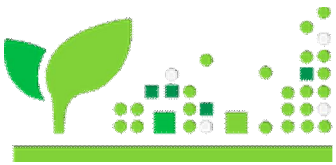
# Today's Challenges of IT

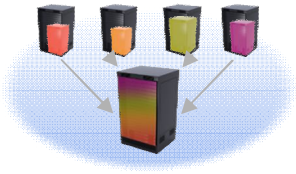


## Meet Increasing Business Expectations

Increase Transparency, Availability and Performance of Critical Services.  Prove it to your business champions.

## Be Dynamic and Agile

Deploy more complex applications more quickly with higher reliability. Update and manage N-Tier applications in near realtime.



## Be Omniscient

Operations knows everything, and never misses a problem.  At least that is what is expected of you.


## Do more with less

Continuing Cost Pressures on  Capital and Operations



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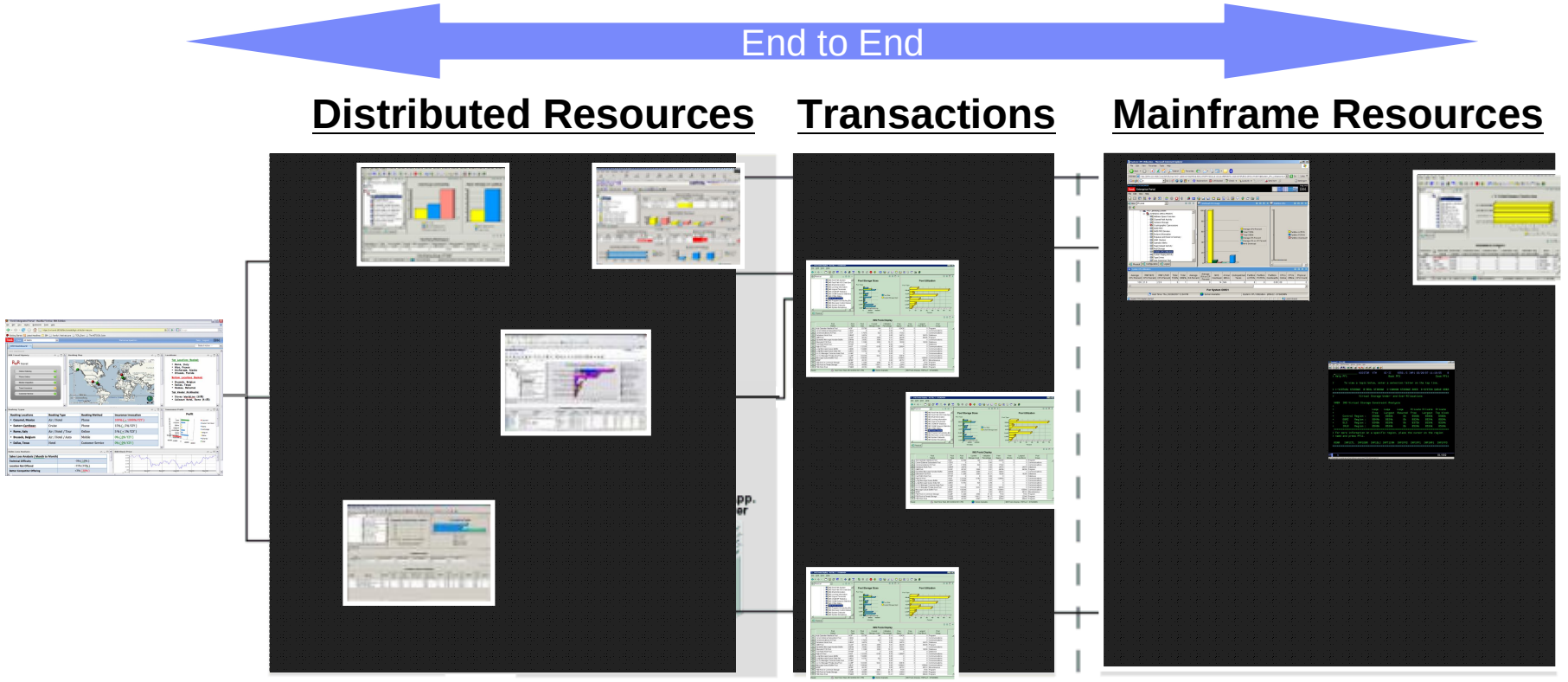
# Integrated Service Management needs to be End to End




- In today's environment applications span End-to-End
- A variety of domain tools manage these applications
- When an event is received domain specific tools have no idea of the impact to the business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*"**How** do Integrated Service Management for System z Solutions **address IT challenges**"*


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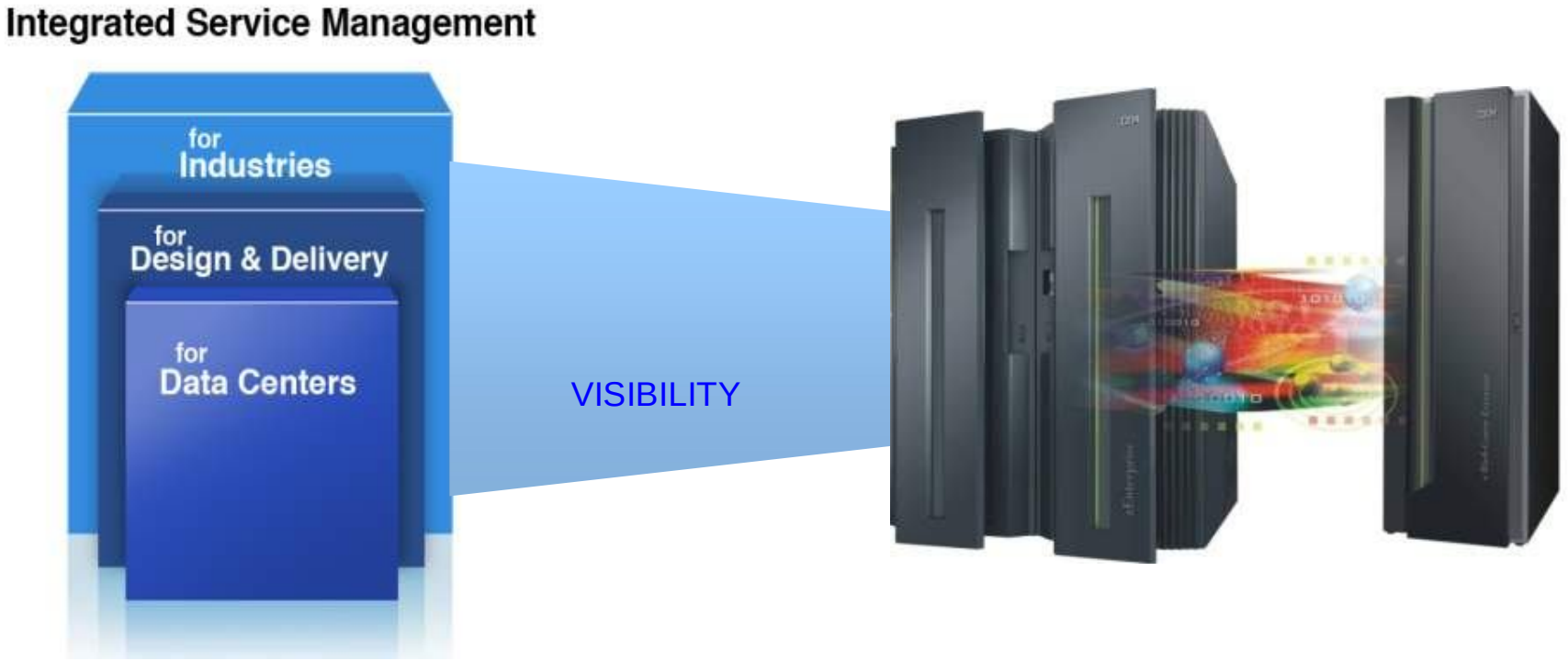
# ISMz Business Service and Discovery Solution Provides a single view across the integrated zEnterprise platform

**Visibility:** Consolidates information to provide real-time visibility of critical services delivered using Business, Compliance, and Operational dashboards




Single view across z, p, x platforms

# Business Service Management

Enables you to effectively and efficiently manage business services across complex enterprises on Distributed and System z platforms

- The Focus is on CONTEXT
- Quickly determine technology sources of business service disruptions
- Prioritize problem responsiveness based on business impact
- Improve delivery against service level agreements and accuracy of IT planning through historical tracking of performance and issues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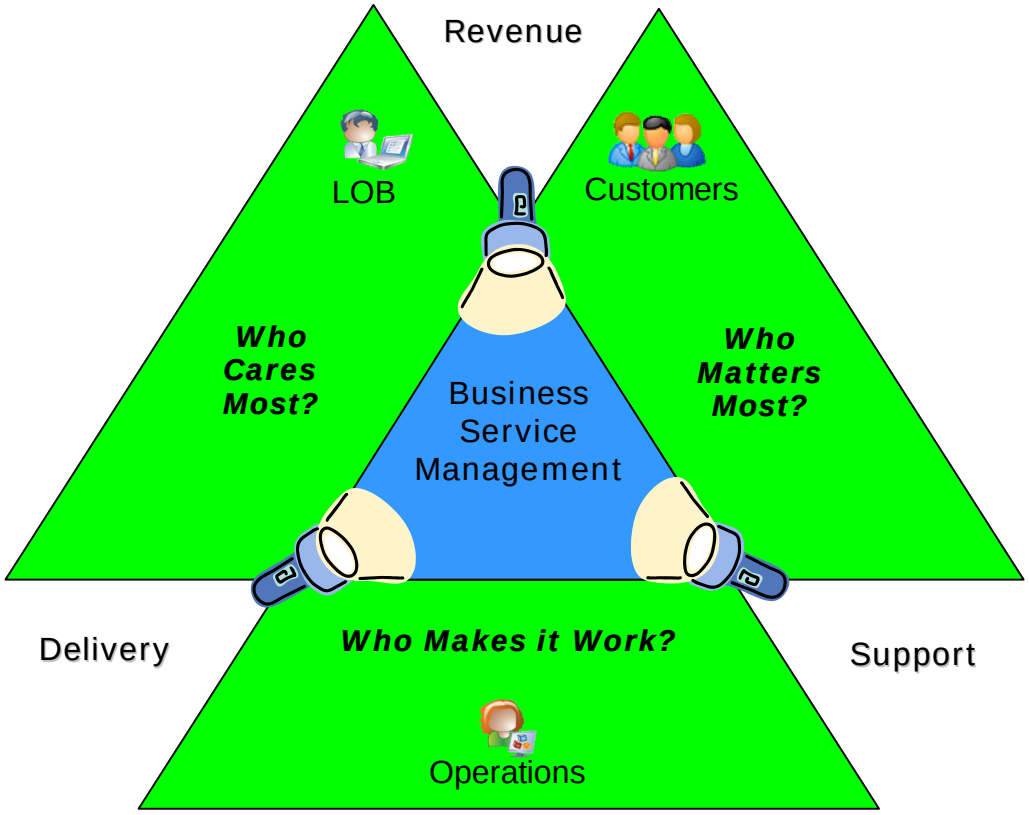
# The Role of Business Service Management
# "Understanding What Matters Most"





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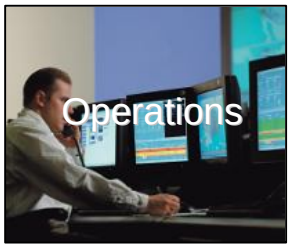
# Business Service Management Enables Shared Goals with Presentation Customized to Each Role


- **Executive Management:**
  - Grow revenue & manage risk
  - Control OpEx & CapEx
  - Maximize return from M&A
  - Maximize shareholder value


- **Lines of Business:**
  - Improve transactional revenue
  - Reduce customer churn
  - Manage operational risk
  - Prioritize business investments




- **Operations:**
  - Ability to support business initiatives
  - Assure quality & deliver against SLA commitments
  - Control Costs: Labor, Infrastructure, Power
  - Manage risk & compliance

- *Rapidly Customize Views to present relevant information to Each Role*
- *Shared Context improves Communication Top to Bottom*
- *Shared Goals increase focus and value of Operations Team to Business*
- *Business Service Management Makes IT more Important by Showing the Value of IT in Business Terms*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# Using Discovery to determine if configurations are compliant

- Compare configuration to “reference master”
- Compare to your standard policy

Comparing two instances of an Web Server to the reference master

Values in red and blue are policy violations

| | hpux1.lab.collation.net:4880 - Version:Current | utah.lab.collation.net:4880 - Version:Current | utah.lab.collation.net:3880 - Version:Current |
|---|---|---|---|
| Primary SAP | | | |
| Listening Port | 4880 | | 3880 |
| Product Version | Apache/1.3.26 (Unix) | Apache/1.3.9 (Unix) | |
| Process Pools | | | |
| Hpux1.lab.collation.net:4880 | | | |
| Arguments | /opt/apache13/bin/httpd -d /opt/apache13 -R /opt/apache13/l... | /home/jwang/apache/apache_1.3.9/bin/httpd -d /home/jwang... | /home/jwang/apache/testserver4/bin/httpd -d /home/jwang/a... |
| Product Name | Apache/1.3.26 (Unix) | Apache/1.3.9 (Unix) | |
| Config Contents | | | |
| Httpd.conf | | | |
| Permissions | -rwxr-xr-x | -rw-r--r-- | -rw-r----- |
| Last Modified | [Not Set] | 04/15/2004 22:24 PDT | 02/24/2005 16:33 PDT |
| Size | 37404 | 31660 | 36609 |
| Checksum | +8MD5CmmR57Ea6eNtx+npQ== | bKbFu12LwsAWsQkboI8sAg== | GVzu+7w4L+HvhaNxKuMMOw== |
| Containers | | | |
| Apache Web Container | | | |
| Keep Alive Timeout | 15 | 55 | |
| Max Spare Servers | 10 | 20 | |
| Virtual Hosts | | | |
| Hpux1.lab.collation.net:4880 | hpux1.lab.collation.net:4880 | [Not Set] | [Not Set] |
| Spartakis.lab.collation.net:3880 | [Not Set] | | spartakis.lab.collation.net:3880 |
| Spartakis.lab.collation.net:4880 | [Not Set] | spartakis.lab.collation.net:4880 | |
| Shannon.unixpeople.com:4880 | [Not Set] | shannon.unixpeople.com:4880 | |
| Server Root | /opt/apache13 | /home/jwang/apache/apache_1.3.9 | /home/jwang/apache/testserver4 |
| Max Clients | 150 | 50 | |
| Timeout | 300 | 500 | |
| Max Keep Alive Requests | 100 | 50 | |
| Score Board File | /opt/apache13/logs/httpd.scoreboard | /home/jwang/apache/apache_1.3.9/logs/httpd.scoreboard | |
| PID file | /opt/apache13/logs/httpd.pid | /home/jwang/apache/apache_1.3.9/logs/httpd.pid | |
| Start Servers | 5 | 8 | |
| Min Spare Servers | 5 | 10 | |
| Name | hpux1.lab.collation.net | utah.lab.collation.net | utah.lab.collation.net |



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# Using Discovery to perform audits of IT configurations over time

- Configuration Auditing
  - Tracks changes in applications
  - Depicts that information on the map
  - Depicts that information thru reports

Automatically tracks changes on all CIs & attribute values over time…

Application

| Type | Component | Change | Date | Attribute | Old Value | New Value |
|---|---|---|---|---|---|---|
| Apache | homeopathix.lab.collati | Updated | 12/04/2004 15:01 PST | appDescriptors | | /usr/local/apache/appd |
| Apache | homeopathix.lab.collati | Updated | 12/04/2004 15:01 PST | appDescriptors | | /usr/local/apache//app |
| ApacheWebContainer | homeopathix.lab.collati | Updated | 12/04/2004 15:01 PST | ApacheWebContainer | /usr/local/apache/ | /usr/local/apache |
| ApacheWebContainer | homeopathix.lab.collati | Updated | 12/04/2004 15:01 PST | ApacheWebContainer | 15 | 20 |
| ApacheWebContainer | homeopathix.lab.collati | Updated | 12/04/2004 15:01 PST | ApacheWebContainer | 88 | 100 |
| ProcessPool | homeopathix.lab.collati | Updated | 12/04/2004 15:01 PST | homeopathix.lab.collati | /usr/local/apache//bin | ./httpd -d /usr/local/a |


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*"What **technology is deployed** in Integrated Service Management for System z (ISMz) Solutions"*


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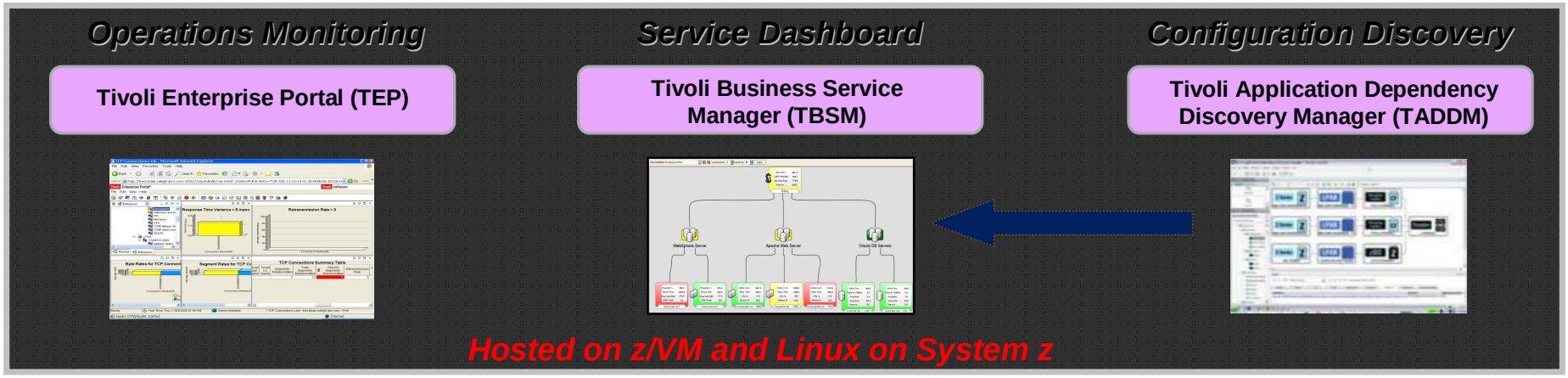
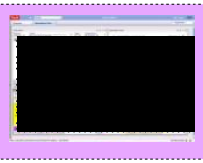
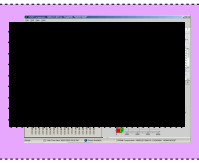
# Industry Example: Centralized Business Service Management on System z



**Event Consolidation & Correlation**

**( Netcool/OMNIbus )**



1000x events

10000x Events

***Server, Systems, & Application Availability & Performance Management***

***Network Availability and Performance Management***

***Mainframe***

**Performance Monitoring and Other Event Sources**

***Distributed***

**Performance Monitoring and Other Event Sources**

Probes

***Network***

**NetCool**

**Other Tools**

**Operating Systems**

**Applications**

**Middleware**

**Wire-line Networks**

**Wireless Networks**



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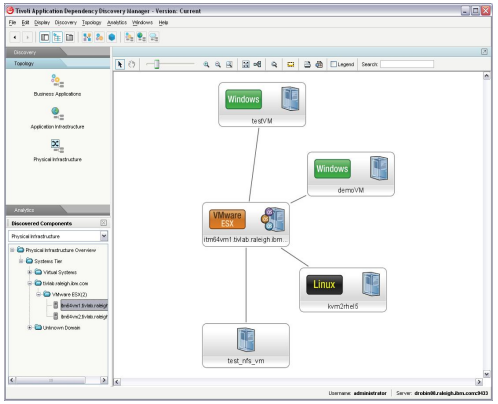
# Tivoli Application Dependency Discovery Manager (TADDM) Value

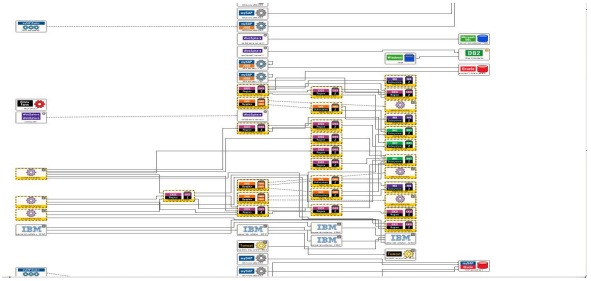
## *Universal Discovery Engine*

**Discovers** configuration items and their Actual State. Includes Topology Views and the ability to **discover relationships** between items. **Name Reconciliation And Normalization** of data



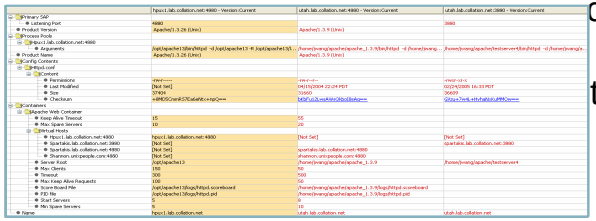

## *Application Mapping with Dependencies*

Customer can understand what they have through agent-less **discovery of interdependencies** between applications, middleware, servers and network components and automated application maps



## *Configuration Auditing*

**Shows how configuration items are configured and changing over time** by capturing the configuration of each CI, tracking changes to it and providing analytics to report on the **history of these configuration changes** over time



## *Compliance*

**Determines if configuration items are compliant** by using the capability to compare discovered configuration of CIs to a "reference configuration" and determine the variations that define violations to local policy

***TADDM is Tivoli's strategic discovery tool and provides visibility to what a client has, how it is configured, and how it is changing over time.***



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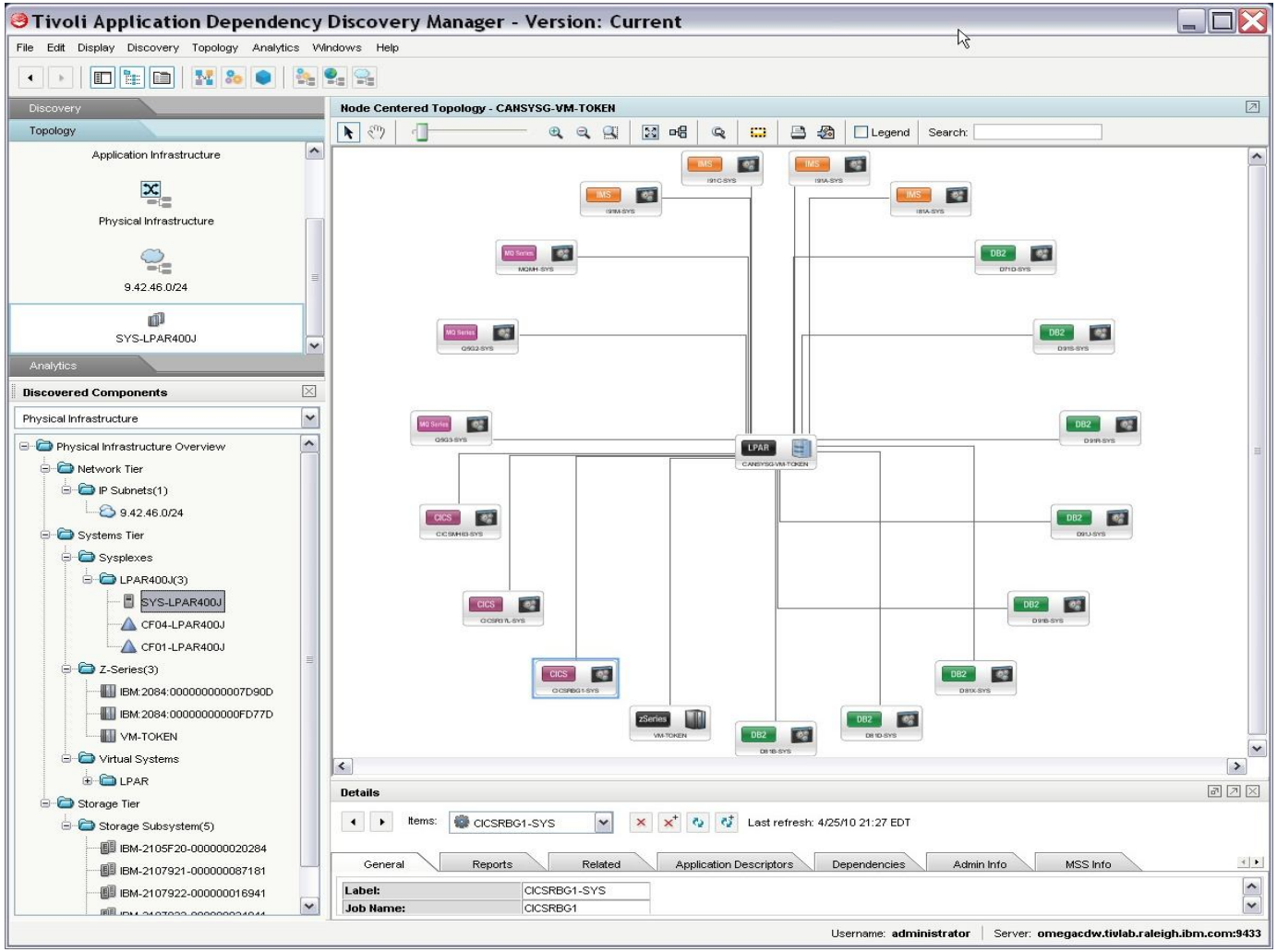
# TADDM z/OS Discovery Library Adapter (DLA) provides configuration details for z/OS LPARs



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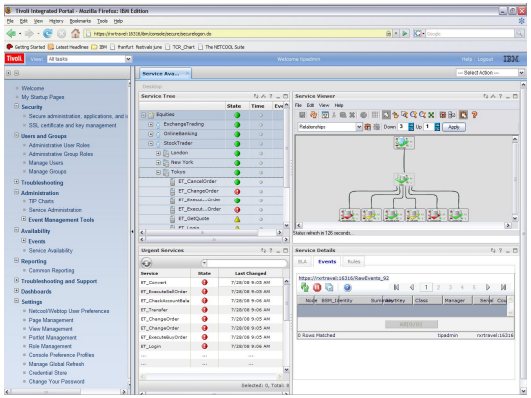
# Tivoli Business Service Manager (TBSM) Business Value

*Understand, monitor and explore the state of business operations*

## Business Impact

Determine impact of outages and provide notification of situations that require response. Calculate and propagate status from event and metric data sources.

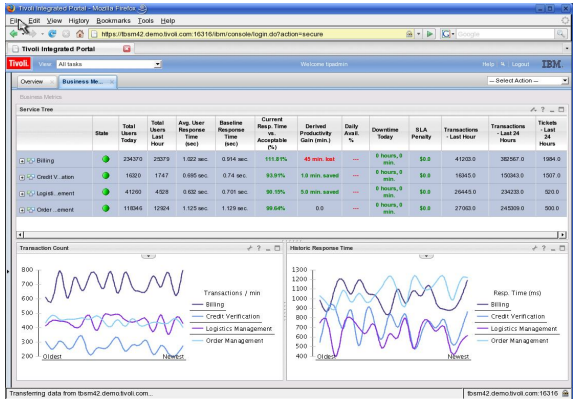


## Business Dashboards

Present information affecting business service performance


## Data Integration and Collaboration

Share IT and business metrics and models with teams to resolve situations. Utilize discovery data to build and maintain service models.



## Reports and Analysis

Understand trends through reports and analysis of historical service status and metrics



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# ISMz Solutions leverage the collective strengths of IBM technologies

✓*IBM is 100yrs old*

✓*Leverage decades of IBM innovation and the strength of its collective technologies.*


Linux

z/OS

z/VM

Tivoli®

WebSphere®

Information Management

## Single vendor ISMz Solution Stack



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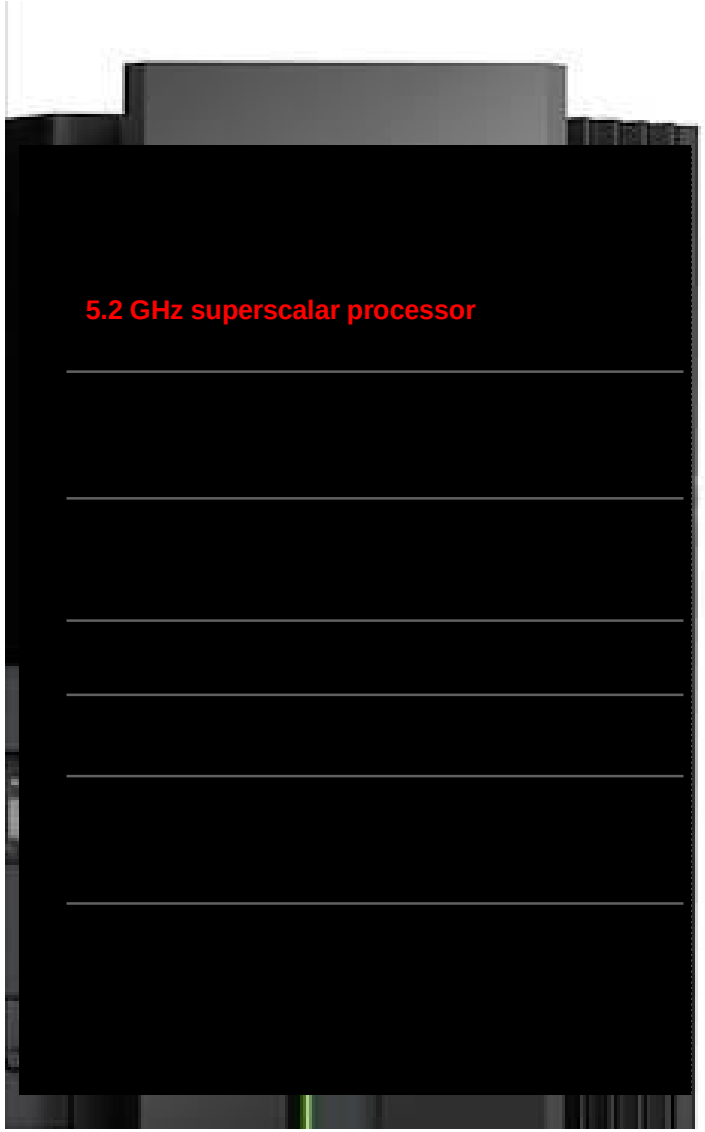
# IBM zEnterprise 196: The heart of the new machine

***The industry's fastest and most scalable enterprise server***




***Dramatic improvement over z10!!!***

## For Linux

Up to **60%**

**Improvement in performance**

for **35%**

**Less cost**

## For z/OS

Up to **40%**

**Improvement in performance**

with **60%**

**More capacity**

- **With no increase in energy consumption**
- **And even better performance with new software**



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*"How do **new ISMz cookbooks speed your time to value** with customer based deployment best practices"*


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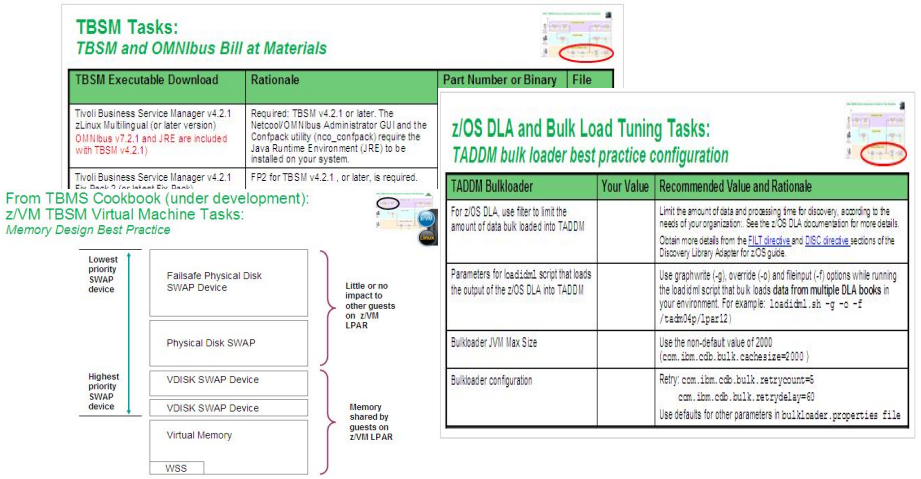
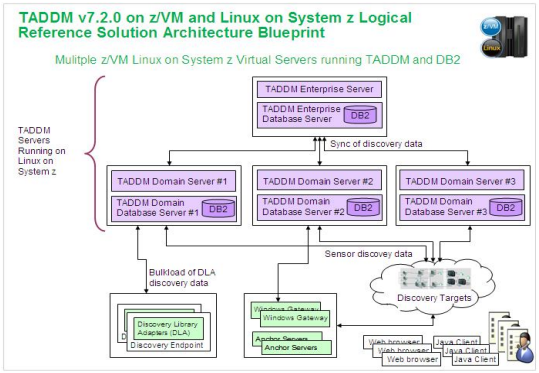
# Industry Best Practices: Use ISMz Solution Cookbooks – Now available in 2011!

- Based on actual customer deployments
- Single integrated IBM stack solution (hypervisor, OS, database, Tivoli products)
- Task oriented procedures for z/VM, Linux, DBA, Tivoli IT administrators for physical architecture blueprint
- Tailored to the needs of z clients, technical sales, business partners
- Authored by experts in Tivoli ( architecture, development, performance, support, ISST services, SWAT), STG, and SWG … with help from customers

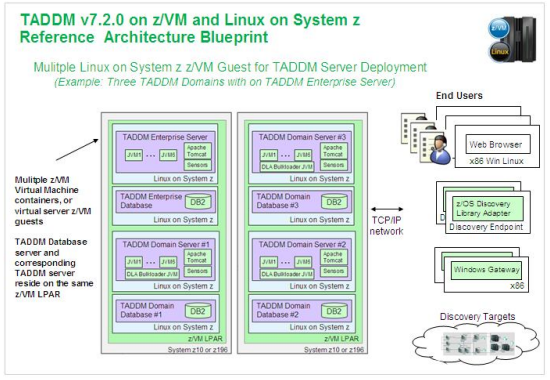
## Bill of material and best practice configuration, and tuning




## Logical Architecture




## Reference Architecture Blueprint



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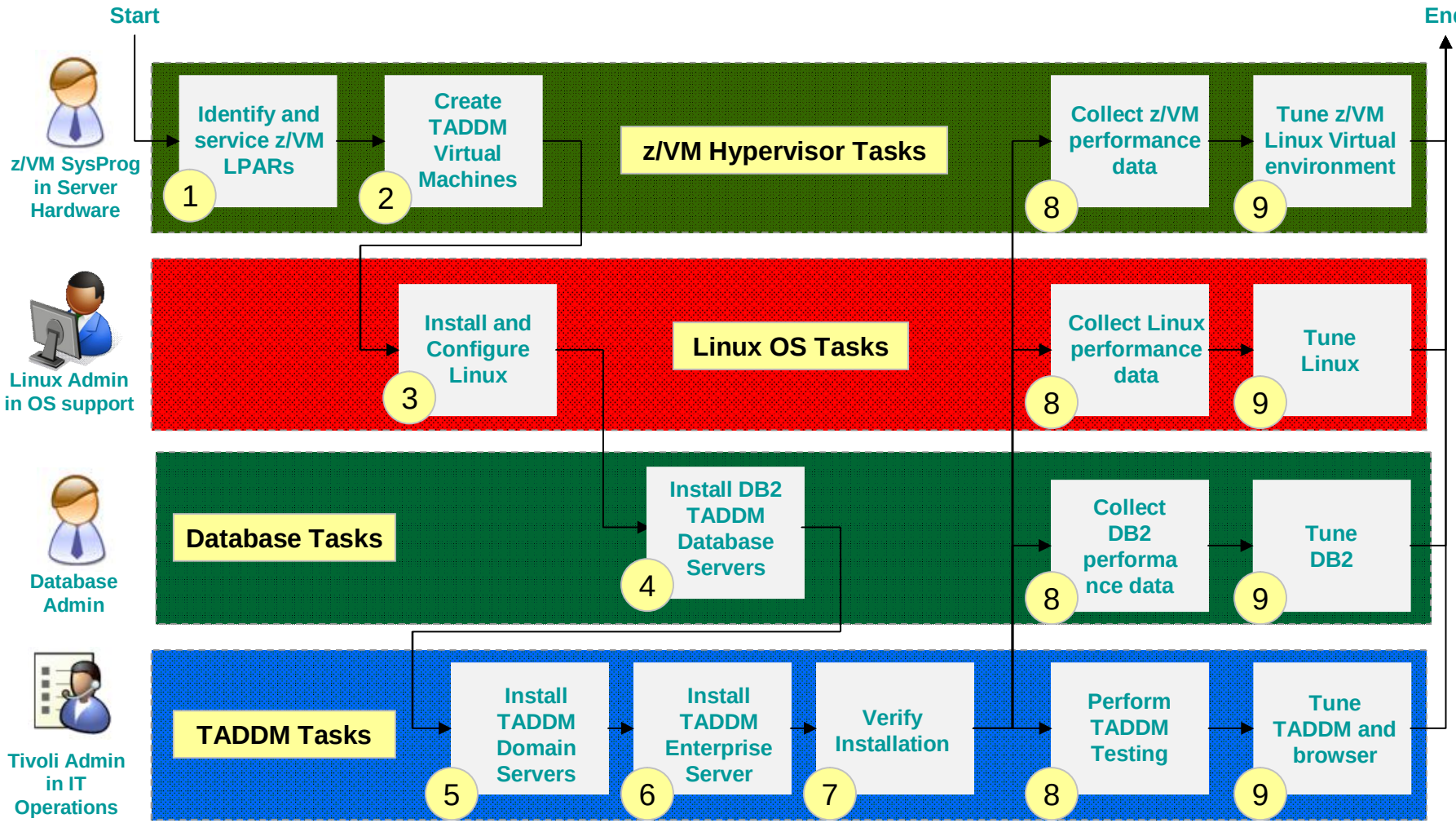
# From cookbook: ISMz TADDM Solution Deployment Cookbook Task Roadmap

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# Observations from ISMz Solution Centralization Project

- Leverage existing centralized teams to lower risk and standardize
- Additional teaming required across disciplines ( e.g. storage, security, server, IT operations )
  - Means you depend on others more in the short term, but create a more efficient organization in the long term
  - Hand-off tasks to experts in particular domains
- Company-wide mandate to use virtual servers helps eliminate the acquisition of physical hardware
- Cultural changes are required
  - Moving from the use of dedicated physical resources to the use of a highly-shared, virtualized environment.
  - Linux on System z virtual systems are managed with more rigid scrutiny (e.g. root passwords).
  - The shared z/VM environment requires increased interaction between capacity planning, performance and systems engineering teams to “get it right.”


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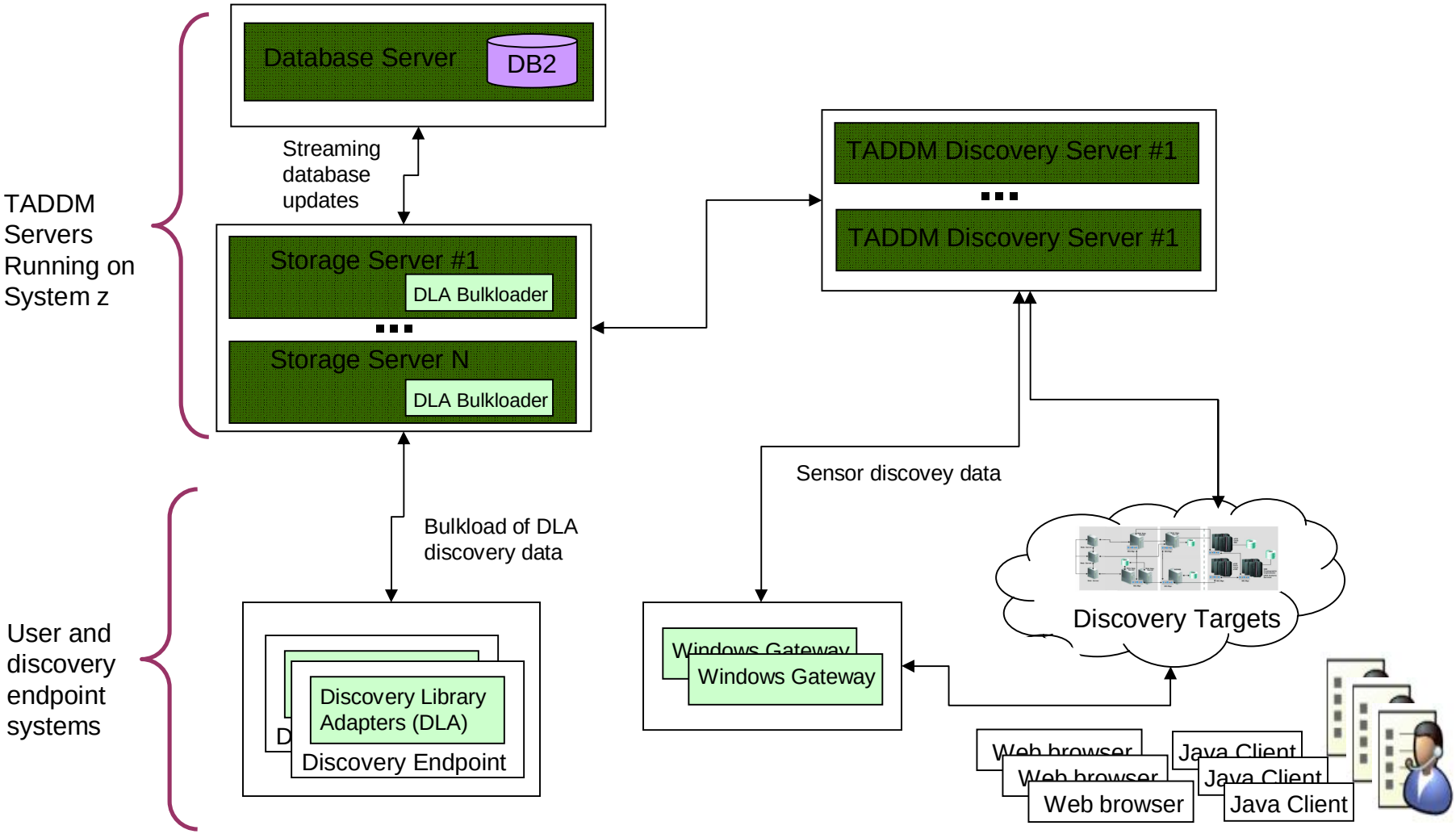
# From Cookbook: ISMz zEnterprise TADDM v7.2.1 Logical Reference Solution Architecture Blueprint

## Mulitple Virtual Servers running TADDM and DB2



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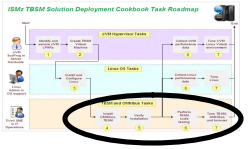
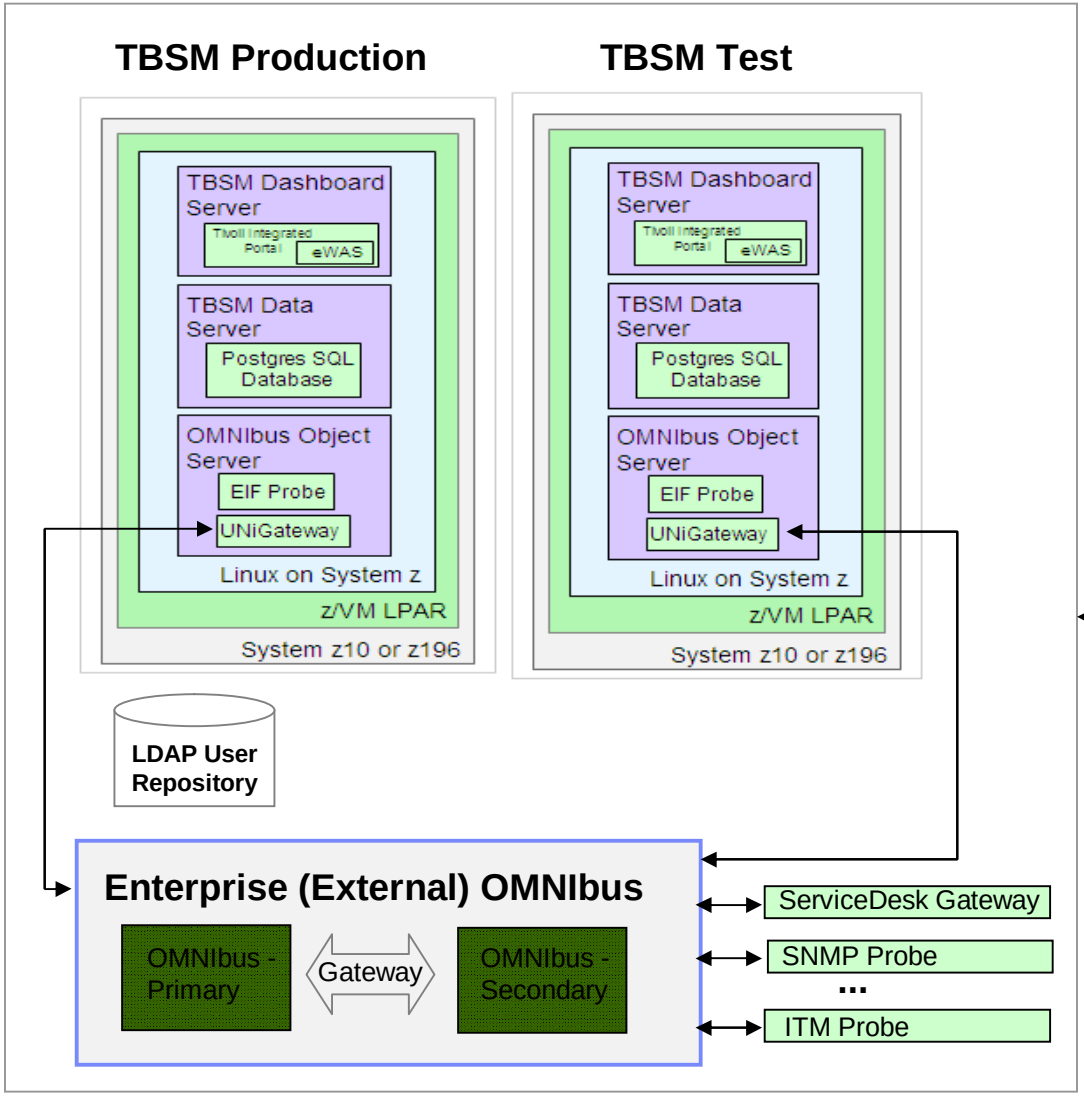
# From Cookbook: ISMz zEnterprise TBSM Logical Reference Solution Architecture Blueprint with External OMNIbus Deployment





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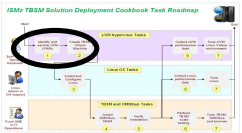
# From Cookbook: z/VM Tasks for TBSM:
## *Virtual Machine Best Practice Memory Design*



**Lowest priority swap device**

**Highest priority swap device**

failsafe physical disk swap device (rarely used, only in abnormal situation)

physical disk swap (occasional use)

vdisk swap device (used when very busy)

vdisk swap device (used when busy)

virtual machine memory (allocated at VM guest startup)

**Little or no impact to other guests on same z/VM LPAR**

- **Contributes to the LPAR's V:R ratio**
- **Impacts other VM guests on the same z/VM LPAR due to the sharing of real memory**

vdisk = Virtual Disk and Storage
V:R = virtual to real ratio on z/VM LPAR
LPAR = Logical PARtition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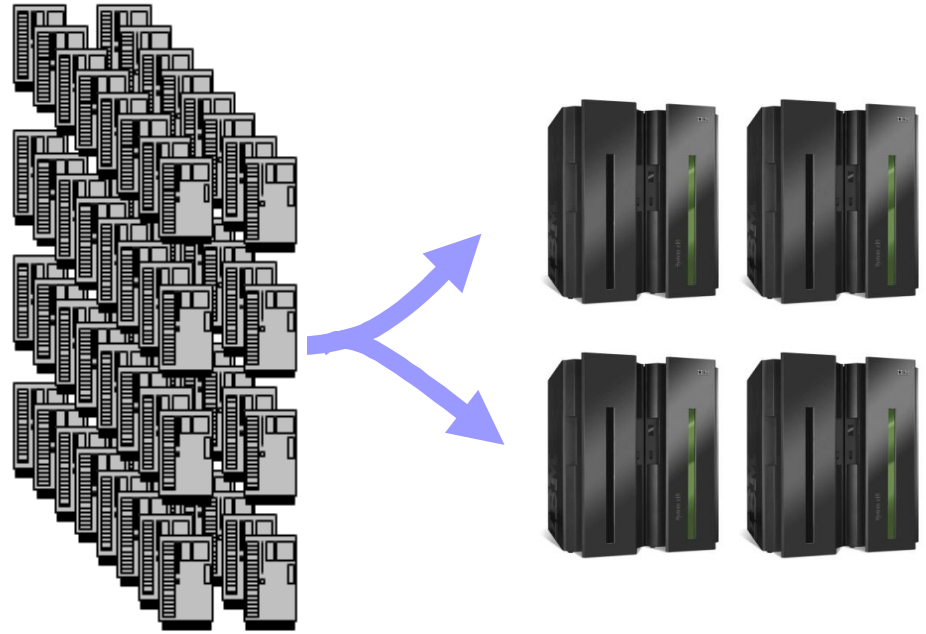
# Industry Examples of ISMz Solution's Return on Investment (ROI)

**System z Service Management Centralization Build Plan**

| Virtual Server Type | Planned | Complete |
|---|---|---|
| TADDM SB | x | x |
| TADDM Dev | x | x |
| TADDM Prod | x | x |
| ….. | | |
| ….. | | |
| ….. | | |
| ….. | | |
| **Total** | xx | xx |



## ISMz "Real-world" Value

- ✓ Use cookbook to ensure optimized and repeatable results
- ✓ Use available capacity, or "whitespace" on z10s or z196's
- ✓ Reduce energy usage and floor space
- ✓ Leverage centralized capacity and security teams
- ✓ Standardize on one z/Linux OS stack
- ✓ Discover resources faster with TADDM
- ✓ Lower the time needed to install fix packs
- ✓ Track resource usage and quickly tune to optimize ROI
- ✓ Respond to IT changes faster
- ✓ Eliminate dedicated, physical servers for TEPS
- ✓ Lower risk due to an extra TBSM test bed
- ✓ Realize less volatility with z platform
- ✓ Grow capacity as needed while your SMEs develop a new solution or prove out new architectures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# Conclusions

- The need exists for Integrated Service Management strategies
  - Lower costs
  - Lower operation risk
- Integrated Service Management Solutions provide enterprise-wide visibility into business processes and services
- Integrated Service Management for System z (ISMz) Solutions
  - Centralize critical service management functions, and manage heterogeneous resources at the highest quality service levels — including availability, reliability, security, scalability, and performance.
  - Improve discovery and event-driven business service management capabilities for System z, you can better support new business opportunities and new hardware like the zEnterprise™.
  - Manage risk and compliance from a centralized service management hub
  - Build agility into operations by automating repetitive and serial tasks
- New Integrated Service Management for System z Solutions Cookbooks, based on customer deployments, and are now available to speed your time to value of ISM solutions running on the mainframe.
  - Help plan and understand the tasks involved in deploying ISMz across your organization
  - Provide detailed information on how to implement ISM, and reference architectures.
  - Document prescriptive best practices that have been created with help from customers


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# How to get more information

- To obtain ISMz Cookbooks
  - Register now for the ISMz Cookbook webcast at ibm.com/software/systemz/telecon/jun23
  - Join the Service Management Connect community

IBM® System z® Software Teleconference

IBM

Teleconference – June 23, 2011

Learn from System z customer experience: Cookbooks that can speed up deployment of integrated service management

In many organizations, complex business processes are delivered across applications and systems that are grouped and managed in isolated silos, introducing inefficiency at many levels. In addition, many service management tools are focused on IT resources and IT management processes, ignoring integration with business services and processes. This is why businesses are turning to integrated service management to transform the data center and enable the enterprise to achieve its full potential.

**Teleconference**
Join us for this complimentary teleconference and learn how Integrated Service Management (ISM) for System z can centralize critical service management functions, and manage heterogeneous resources at the highest quality service levels—including availability, reliability, security, scalability, and performance. By improving discovery and event-driven business service management capabilities for System z, you can better support new business opportunities and new hardware like the zEnterprise™. In this session, we'll discuss the new ISM for System z cookbooks with detailed information on how to implement ISM, and reference architectures. These details include prescriptive best practices that have been created, based on customer deployments, and are now available to speed your time to value of ISM solutions running on the mainframe.

This session will take a look at how to use these ISM resources to help you:
- *Understand the tasks involved in deploying ISM across your organization*
- *Gain enterprise-wide visibility into business processes and services*
- *Manage risk and compliance from a centralized hub*
- *Build agility into operations by automating repetitive and serial tasks*

**Speaker:** *Lorin Ullmann*, Lead Architect, Tivoli® Technical Strategy for System z, IBM Software Group
**Broadcast date:** June 23, 2011, 11 a.m., EDT
**Developed for:** IT and enterprise architects, IT managers, systems analysts and programmers, operations managers and systems administrators
**Technical level:** Intermediate

**Register now**
Register now for this teleconference by logging onto ibm.com/software/systemz/telecon/jun23

Join us after the teleconference for a live question-and-answer session. This teleconference will also be available for replay after the event.

*This session is the fourth in a series of webcasts on integrated service management for zEnterprise. If you missed the previous webcast on this topic, register today and listen to the replay.*

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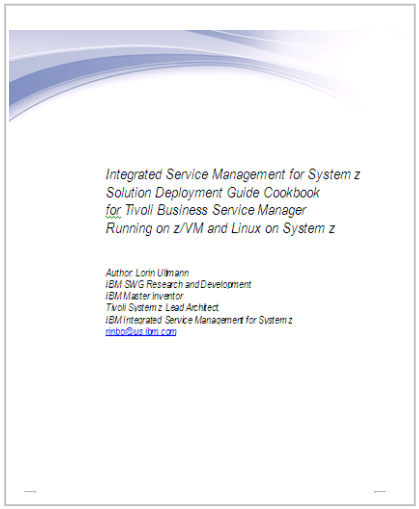

*Integrated Service Management for System z*
*Solution Deployment Guide Cookbook*
*for Tivoli Business Service Manager*
*Running on z/VM and Linux on System z*

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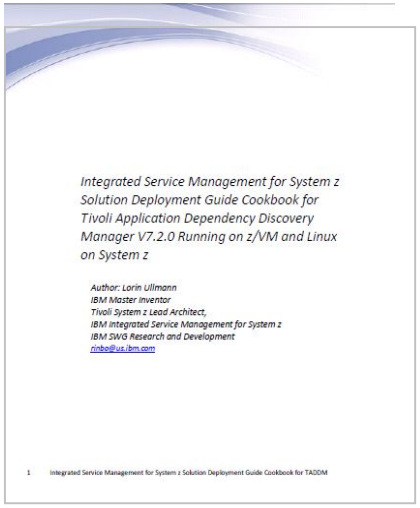

*Integrated Service Management for System z*
*Solution Deployment Guide Cookbook for*
*Tivoli Application Dependency Discovery*
*Manager V7.2.0 Running on z/VM and Linux*
*on System z*

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1 Integrated Service Management for System z Solution Deployment Guide Cookbook for TADDM


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