IBM System z Technology Summit

Maximize performance and productivity with IBM System Automation solutions

Presenter:

Title:

Increasingly a complete System Automation solution can improve availability across entire zEnterprise

Key Takeaways

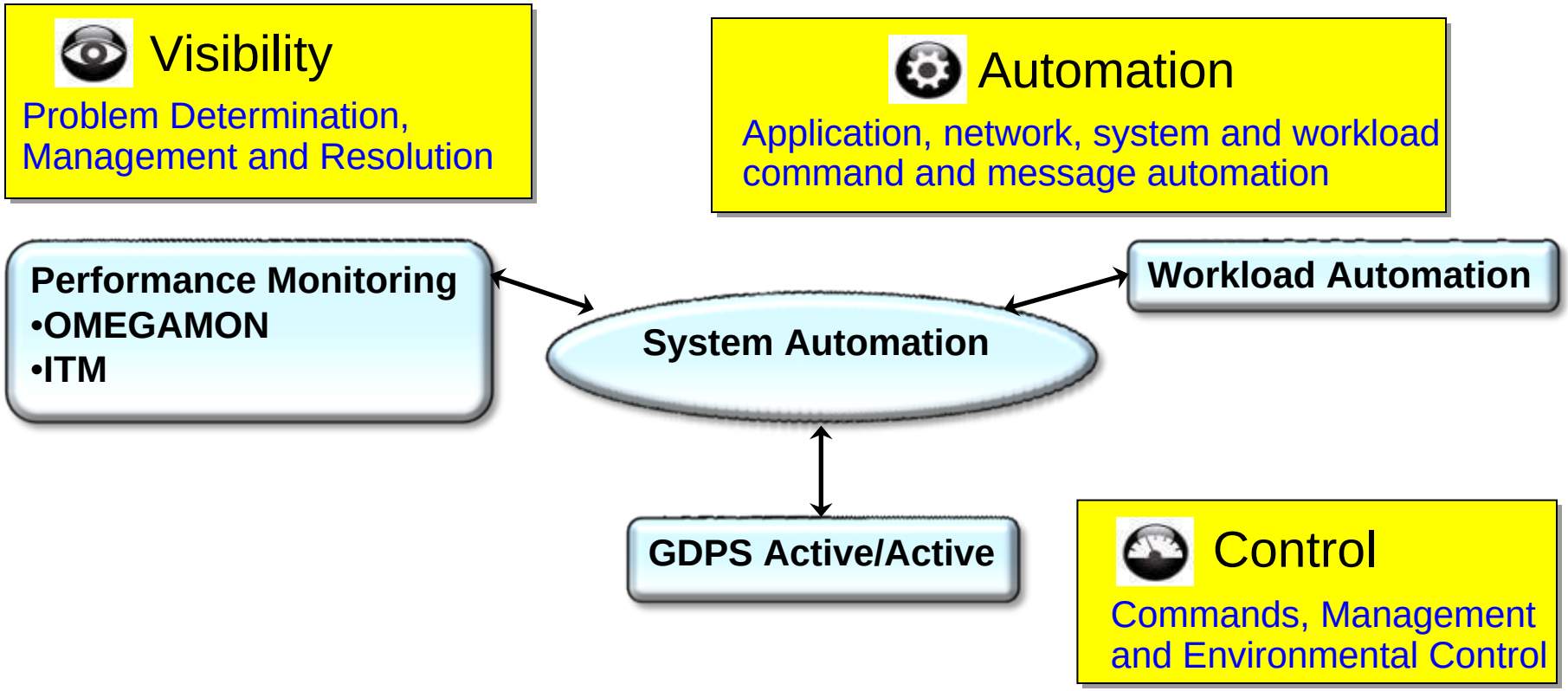
1. IBM provides System z Service Management leadership and best practices with System Automation family

2. Integrated monitoring and automation with OMEGAMON and System Automation together provides better availability and performance than standalone products

3. IBM's complete solution extends across System and Workload Automation for improved scheduling and management

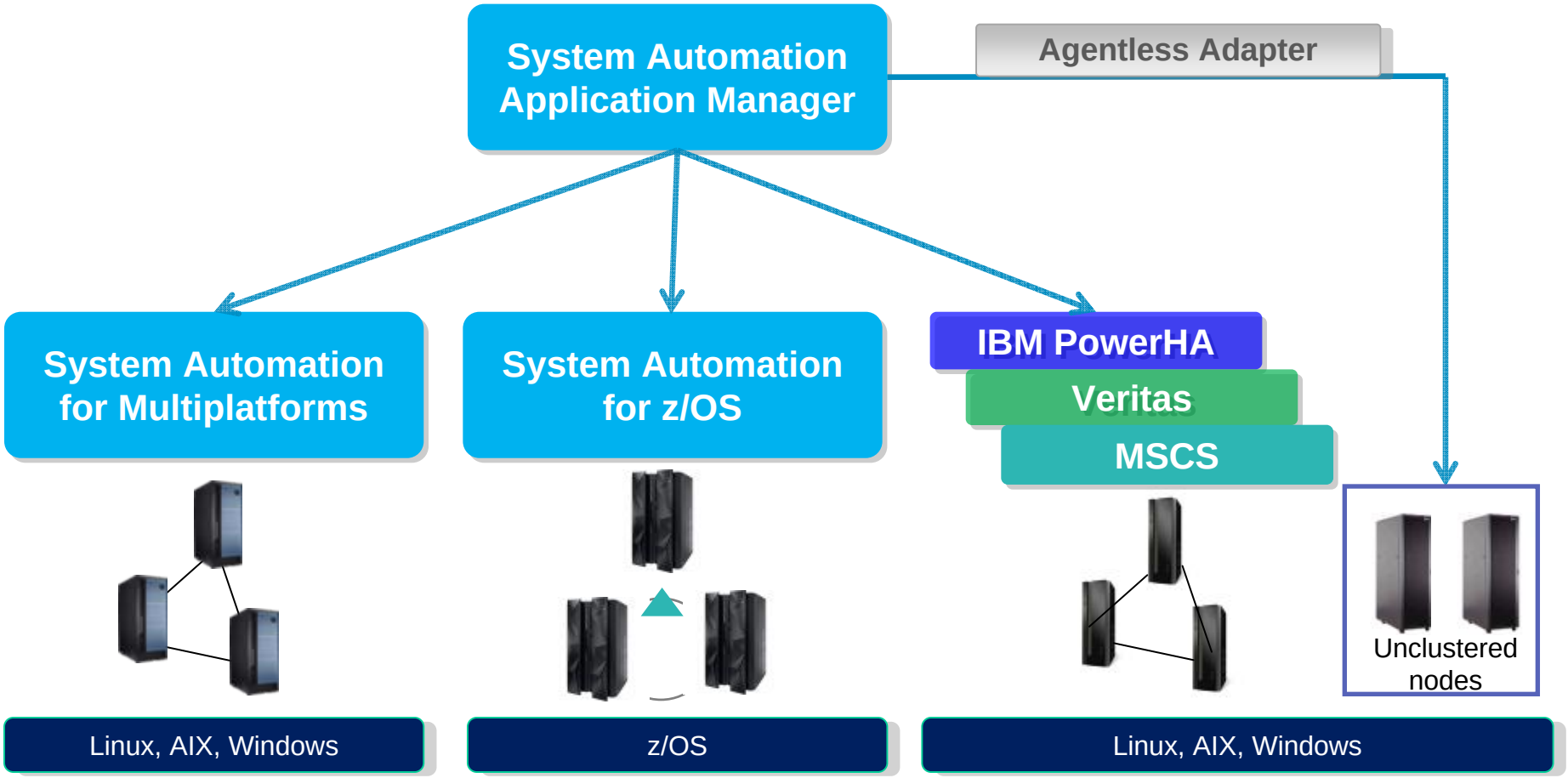
IBM's System Automation Integrated Solution includes a number of key capabilities

Integrated System Automation solution includes number of components



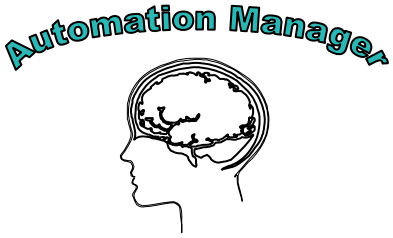
IBM System Automation family works together to provide Enterprise-wide cost savings with increased availability

IBM only vendor to provide end-to-end, cross-platform Automation



Enterprise Automation moved from simple message filtering to Enterprise-wide policy based management

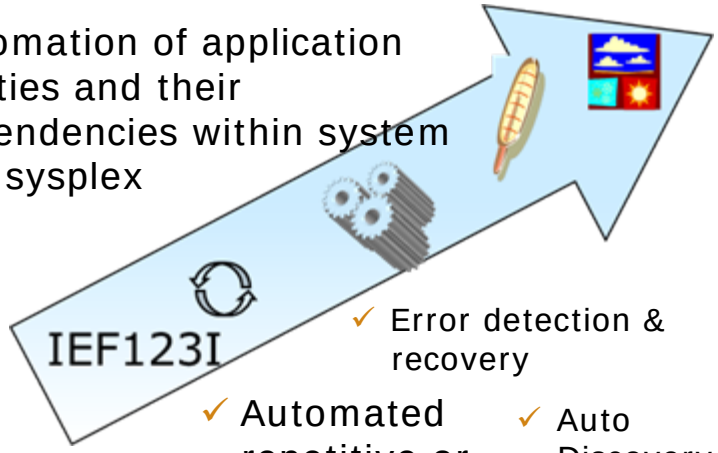
1. Simple Message filtering
2. Message automation
3. Error detection and auto-recovery
4. Resource management
   - Start, stop, recycle
   - Dependencies between resources
5. Application management
6. Autonomic computing
   - Understand health of system and applications
   - Pro-active, health-based automation
7. Application Performance Management



Policy-controlled
Using best practices

Pro-Active Automation

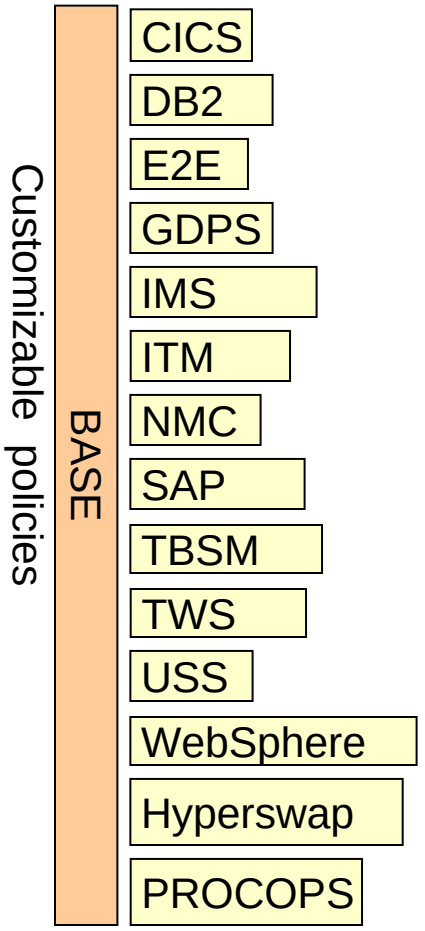
- ✓ Application health-based automation
- ✓ Automation of application entities and their dependencies within system and sysplex
- ✓ Error detection & recovery
- ✓ Automated repetitive or complex tasks
- ✓ Auto Discovery
- ✓ Message automation



IBM System Automation on z provides unique, easy to use policy based methodology

Goal Driven Automation defined via Policy

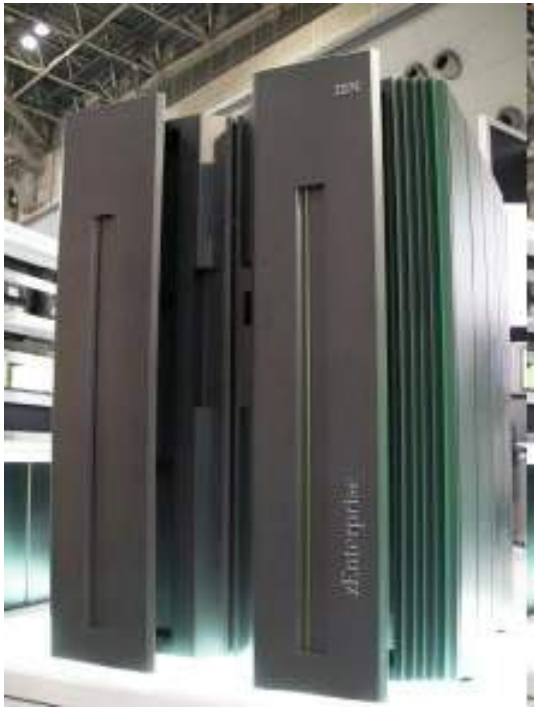
- No Programming Required
  - Faster time-to-value
  - Less maintenance cost
  - Less human errors
- Manage by State, not Message
  - View set of applications as solution
  - Performance included in state determination
- Intelligent relationships
  - Spans Systems
  - Controls orderly startup and shutdown
- Sophisticated Grouping concepts
  - Enables easy move of entire application either automatically or manually
  - Restart & Failover rules



Tivoli System Automation capability on System z enables simplification across hardware and software

Systems & Applications

- Automate applications
- Automate repetitive and complex tasks
- Monitor applications, messages, and alerts



Processor

- Automate and control hardware operations
- Power on/off and reset processors
- Perform system IPL for z/OS, zVM and Linux
- Automate LPAR settings, e.g. weights/capping

I/O Switches

- Change configuration on the fly
- Stay operational through system-integrated switching
- Manage ESCON and FICON directors

Significant availability savings with updated IBM System Automation for z/OS V3.4

- Versatile interfaces improve problem determination and reduce costs
  - Easier to visualize topology helps find problems 50% faster
  - Simplified usability and improved operator productivity with single screen (any size) view
  - Interface Customization and Maintenance reduces by 50%
- Improved turnaround time with resource recycle enhancements can lead to 50% higher availability
- Ability to speed automation across z196/z115 and zBX blades by 90% with new zEnterprise API support
- Migration aids for OEM Installs

Significant usability and productivity savings with updated IBM System Automation for z/OS V3.4

- Cut Time to Value by 80% with new Autodiscovery capability
  - Long-term key customer requirement
- Allow IPLs to proceed in stages that will ease partial start up for maintenance windows or disaster recovery exercises
- Faster automation customization via enhanced log visibility
  - Allow monitoring of Joblogs or other spooled output
  - Save 80% of customization effort to include job-related events
  - Increased Admin productivity by 30% via data import and customization

System of Record Automation focused on High Availability and Disaster Recover, including GDPS Active/Active

Communications, automation, and monitoring of GDPS continuous availability

GDPS Active/Active Support

Improved disaster recovery, maintenance, and system outage with active synchronization to external site

- IBM NetView for z/OS V6.1
- Tivoli System Automation for z/OS V3.4

Business Value

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

Tivoli System Automation Application Manager 3.2.2 adds Cloud, monitoring and zEnterprise support

- **Continuous availability** of business applications in virtualized infrastructure
  - Reduced costs with automatic site failover of composite workloads
  - Faster operations with reduced manual intervention and dynamic policies
- zEnterprise **disaster recovery (DR)** capability
  - Site failover of entire business environment across unlimited distances
  - Reduced costs thru simplified cross-platform DR capabilities
- **Enhanced Cloud** Application Management
  - Managed applications increased by 700%
  - DR for Cloud: Automated site failover thru SA AM/DB2 pre-canned replication policy
- **Performance-based automation:** Smart integration with IBM Tivoli Monitoring (ITM)
  - Enhanced availability through automatic recovery actions across multiple systems
  - Save 50% on environment customization effort

SA AM V3.2.2 Announcement Letter: http://ibm.co/KEDwOd

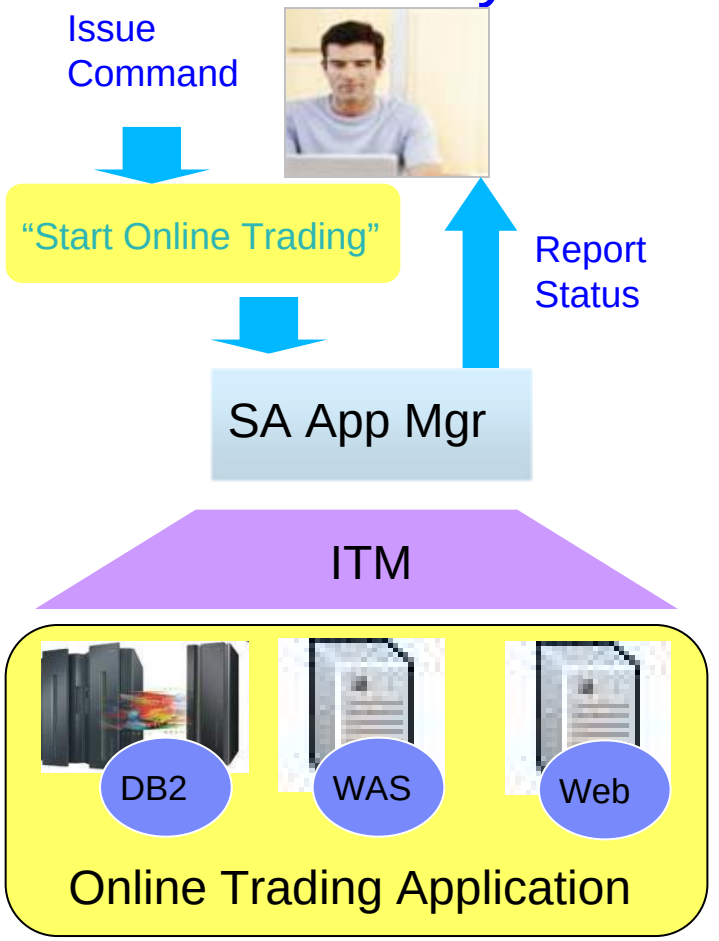
End-to-End Automation with SA Application Manager and ITM simplify operations and increase availability

Scenario:

- Operator triggers start of application with command
- After startup, ITM Agents reports online status to SA
- SA AppMan sets aggregated state of “Online Trading Appl.” to “online“
- ITM agents monitor application and report to SA AM

Value:

- System Automation Application Manager provides single view of entire application (distributed and z)
- SA AM can monitor application based on KPIs and manage problems before they become outages
- Manage availability with automatic recovery actions across entire application
- Automate operations to free up staff to handle more important tasks.



Integrate monitoring and automation to create Pro-Active Automation to find and resolve problems faster

Exception display and simple actions

- Create message filtering and message automation
- Monitor issues for potential automation
- Exploit OMEGAMON exceptions for automation
- Execute take action for particular situations
- Escalate problems as needed

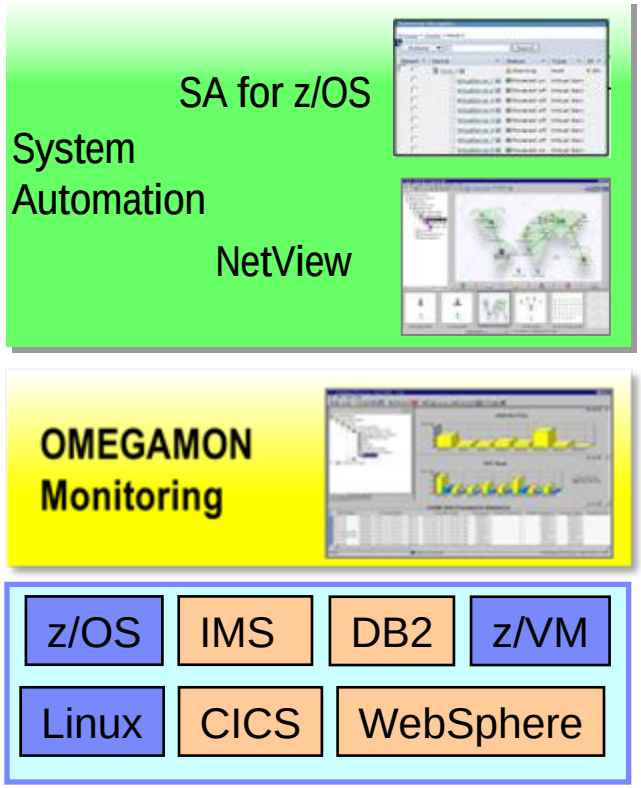
Integration of monitoring and automation

- Manual correlation of problems across applications
- Exploit single user interface to enable seamless operations
- Develop escalation with extended information

Pro-active automation

- Correlate of problems across applications
- Resolve problems or workaround
- Adaption of thresholds
- Switching on of traces as needed avoids overhead

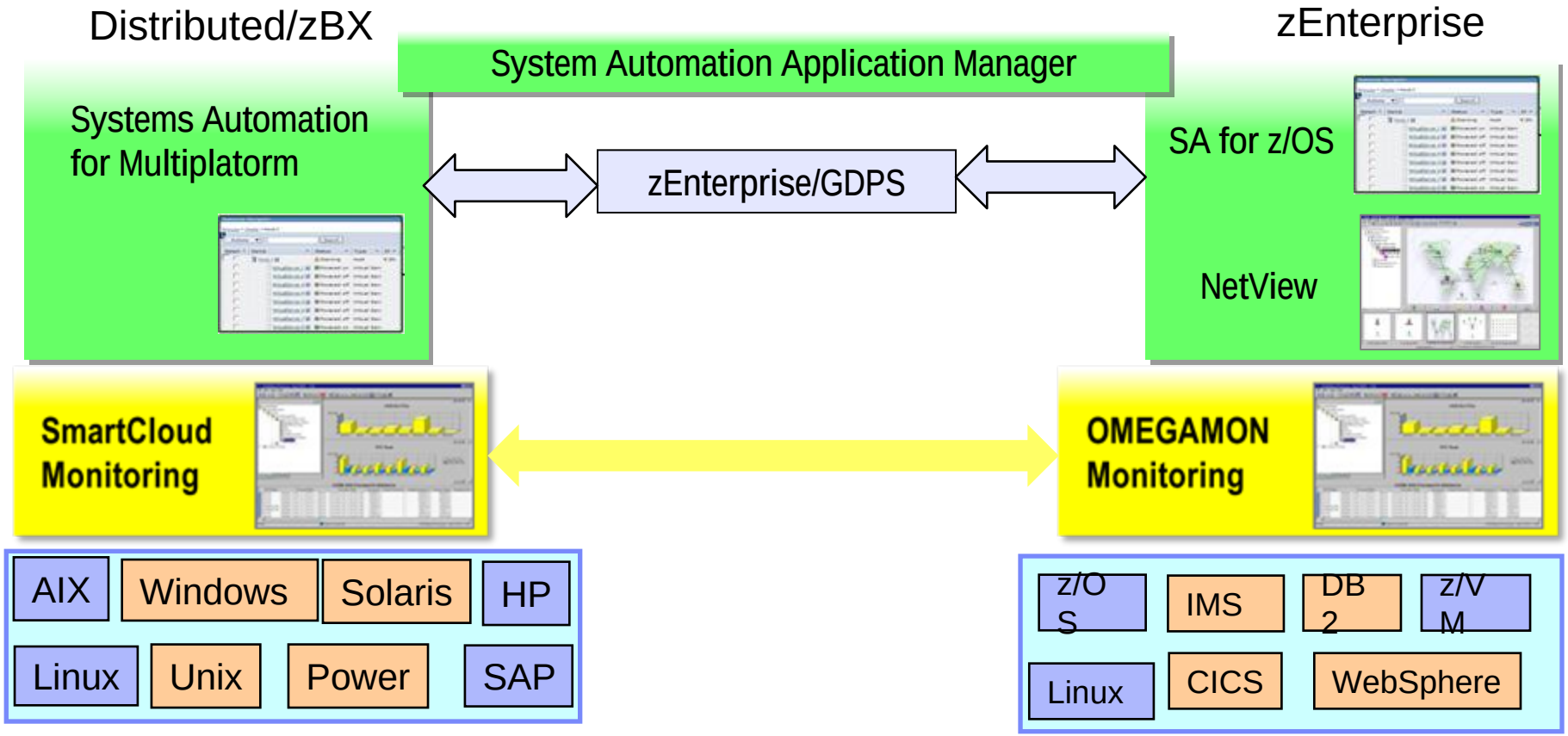
OMEGAMON and System Automation work together to improve availablity and simplify operations



- Active or passive performance monitoring
  - Managed by automation
  - Integrated with monitor products
- Determine health state or exceeded tresholds
- Send a notification to event receiver or owner
- Start/stop/move resources (work around)
- Expert level: Cure performance problem
  - Using performance monitor, system or affected subsystem

Monitoring and System Automation work together across entire enterprise, including Private Coud

IBM provides end-to-end support including High Availability



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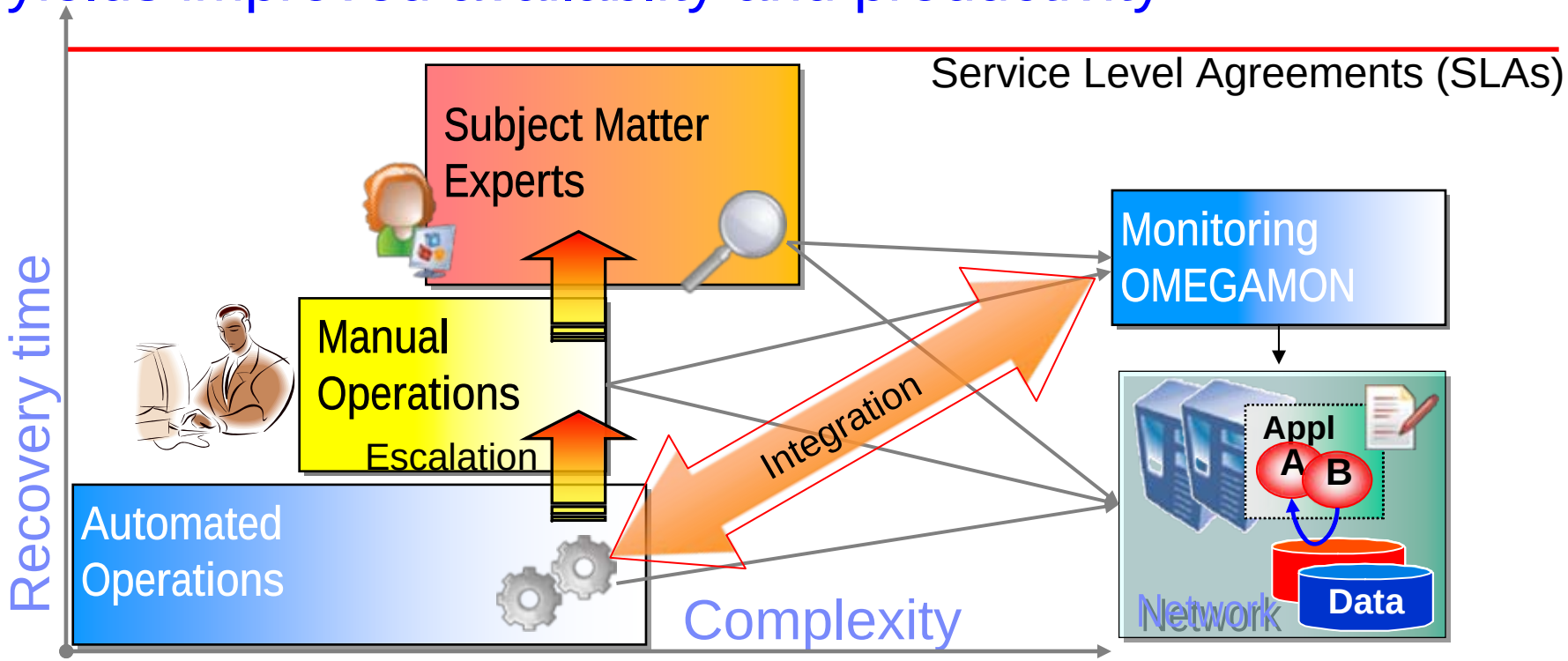
Ability to Monitor and Automate more applications yields improved availablity and productivity



- Message automation
- Recycle resource
- Application recovery
- Application move

Unlock
Kill
Reset
Offload

- Analysis logs, history
- Add resources
- Correct configuration
- Reinstall
- Fallback

Case Study: OMEGAMON and System Automation track IMS subsystem response time to meet SLAs

IT Commitment

- Ensuring IMS meets committed response time target

Technical solution:

OMEGAMON XE for IMS

- IMS transaction queuing causing a response time problem detected and information sent to System Automation for z/OS.

System Automation for z/OS

- Starts another IMS Message Processing Region, which reducing queuing and therefore response time.
- Informs operations via Tivoli Enterprise Portal and TBSM
- If problem persists, alert IMS transaction owner and stakeholders

Steps needed for customers to gain value of integreated OMEGAMON and System Automation starting today

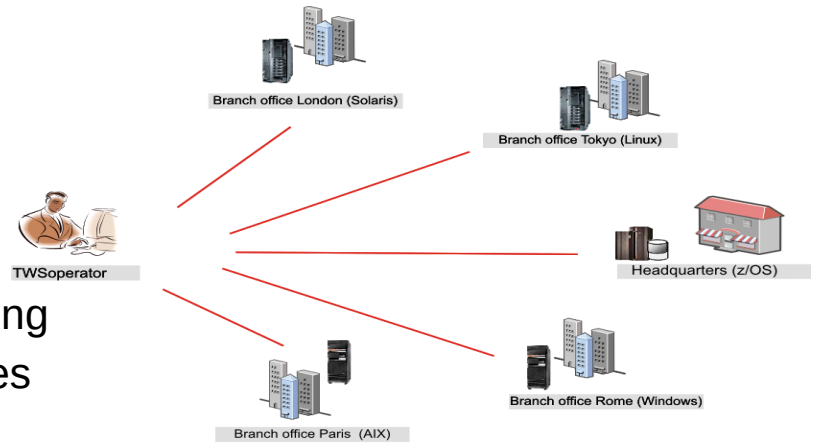
- Implement OMEGAMON automation using plug‘n play automation module

- Use SA z/OS Monitoring Agent to enhance Tivoli Enterprise Portal (TEP)
  - Display only, extendable by take actions for start, stop, etc.
  - Topology view can visualize complex configurations
  - Objects and attributes available e.g. for situations

- Exploit health-based automation
  - Monitor resources include monitor commands, thresholds and actions
  - Health status aggregated into compound status and propagated
  - OMEGAMON classic exceptions
  - Exploit 2-way interface to monitoring
    - Situations update SA z/OS monitor resources
    - Retrieve any performance data from monitoring

System Automation and Workload Schedule together create reduced risk and costs

- Tivoli Workload Scheduler and System Automation cooperate and communicate to provide integrated approach to all automation
  - TWS does workload scheduling
    - Complex schedules
    - Holidays
    - First/last day stuff
  - SA z/OS does application starting and stopping
    - Predefined start/stop command sequences
    - Thresholding
    - Automated recovery



  - Together they provide single automation solution

Workload Scheduler interfaces with System Automation to manage events and activities

- TWS provides multiple interfaces to send requests to SA
  - Request Interface
  - Batch Interface
    - Automation can be integrated into the batch flow
  - Command Interface

- SA provides feedback for TWS via status information
  - SA maintains TWS special resources with SA status info
    - If the SA resource is an available state
    - If the resource is in an unavailable state
  - The TWS administrator can construct dependencies on them

Global Food & Beverage Org gained real ROI from implementing System Automation

Challenge

- Unplanned downtime of SAP app hurting business
- System processed close to $20B of business
- Wanted solution that would span across multiple platforms and automate recovery of application components in case of failure

Customer View of Solution

"IBM Tivoli System Automation products automate high availability of our application infrastructure.

The current solution extends automation to the hardware and network layer in addition to keeping the SAP components and DB2 database highly available.

In case of any unplanned outages, TSA automatically initiates recovery across the stack which saves us millions of dollars in terms of lost business.

Additionally we drive operational efficiencies by being able to manage the entire application from one management console"

Business Benefits

- Eliminated most unplanned outages saving $M in lost business
- Quickly and efficiently respond to unplanned outages
- Better managed and executed planned outages
- Predictable and reliable recovery of application components saved overtime and labor related costs
- Drove operator efficiencies and better usage of IT teams
- Better alignment IT team duties, skills and responsibilities

Business success is directly dependent on the health of underlying IT systems, applications, and networks

- The complexity of today's enterprise environments demands solutions that integrate across all aspects of the enterprise stack, whether distributed or z/OS.
- IBM Tivoli is in the unique position to deliver solutions at all levels of the enterprise stack, including automation
- IBM Tivoli NetView and System Automation are core of system and network availability integration, providing Visibility, Control, and Automation across the entire IT stack.

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

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

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