IBM System z Technology Summit

Track 5 Session 2

Improve availability and productivity with pro-active automation, including OMEGAMON

Speaker Name and Title

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

3

- Complexity of today's enterprise environments demands solutions that integrate across all aspects of the enterprise stack both distributed or z/OS

- IBM Tivoli in unique position to deliver solutions at all levels of the enterprise stack, including monitoring and automation

- IBM Tivoli OMEGAMON and Automation solutions core of system and network availability integration, providing Visibility, Control, and Automation across the entire IT stack

Tivoli monitoring, automation and scheduling integration

Goal: increase automation degree and make operations easier

Tivoli OMEGAMON and IBM Tivoli Monitoring
Get technical data about an application
> Response Time
> Number of connections, queue length, etc...

Tivoli System Automation Family
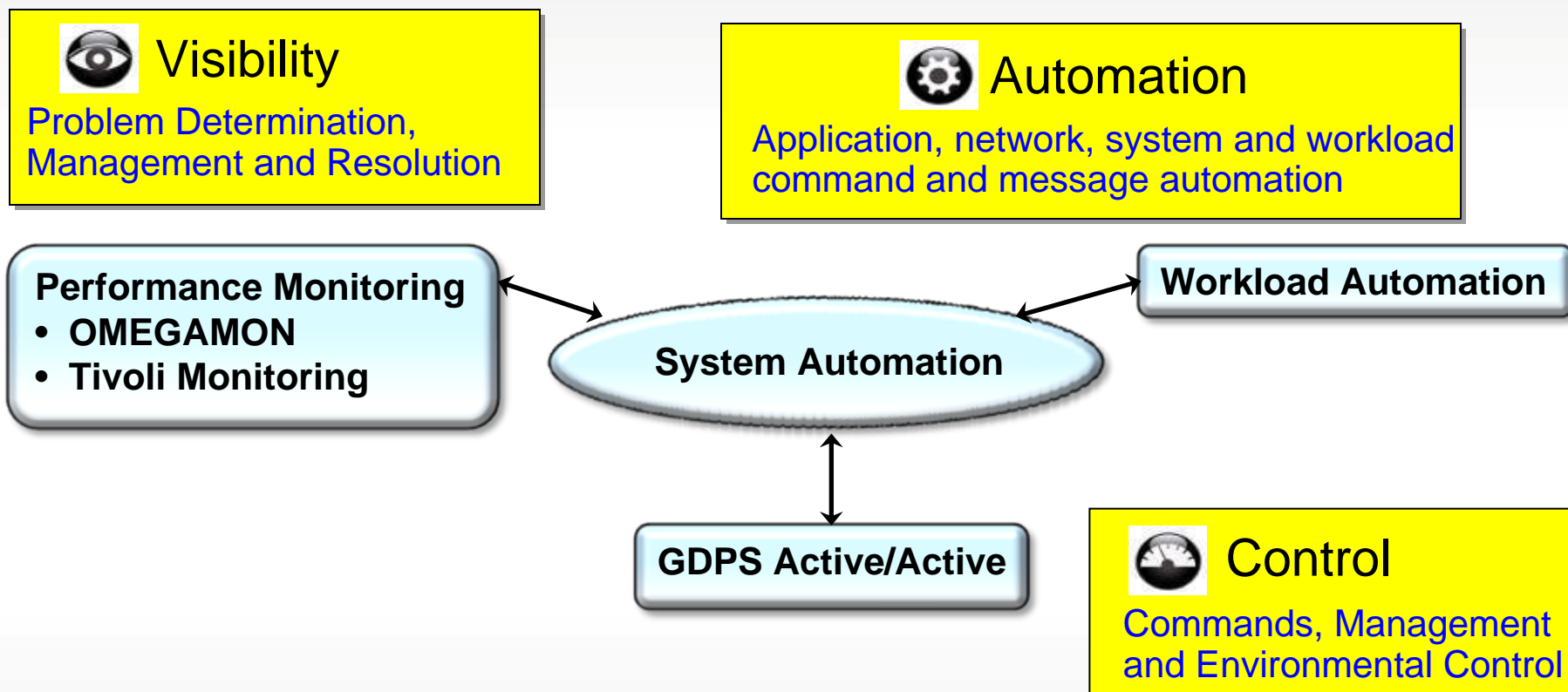Automate start and stop of application group including dependencies

Tivoli Workload Scheduler Family
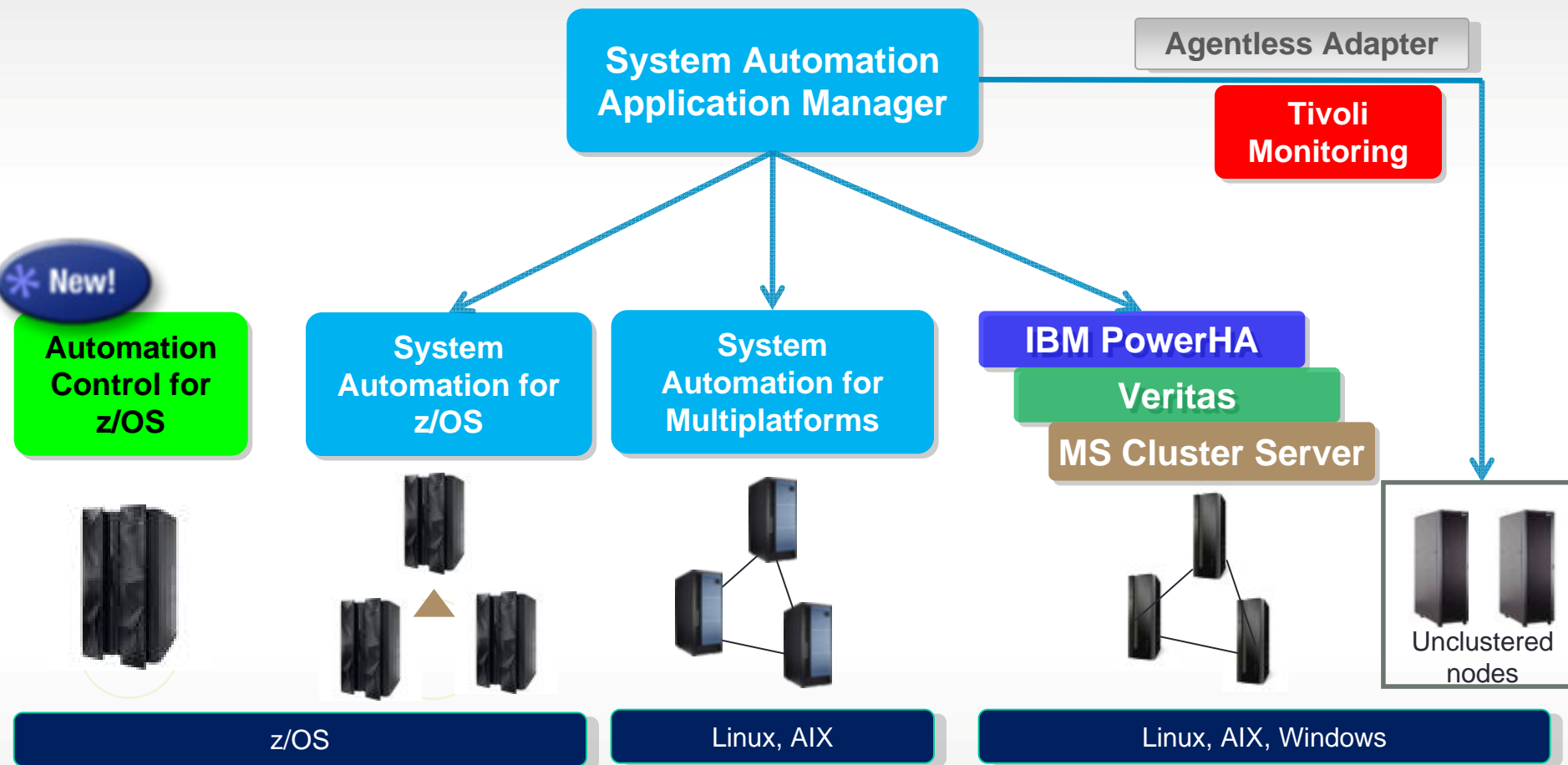Plan start and stop of application group in jobstream

IBM's System Automation integrated solution includes a number of key capabilities

Integrated System/Workload Automation solution:

Visibility
Problem Determination, Management and Resolution

Automation
Application, network, system and workload command and message automation

Performance Monitoring
- **OMEGAMON**
- **Tivoli Monitoring**

System Automation

Workload Automation

GDPS Active/Active

Control
Commands, Management and Environmental Control

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

System Automation Application Manager

Agentless Adapter

Tivoli Monitoring

New!

Automation Control for z/OS

System Automation for z/OS

System Automation for Multiplatforms

IBM PowerHA

Veritas

MS Cluster Server

Unclustered nodes

z/OS

Linux, AIX

Linux, AIX, Windows

Automation evolution from simple message filtering to enterprise-wide policy based management

1. Message filtering

2. Re-active message automation

3. Command-driven resource management

   – Start, stop, recycle
   – Parent–child dependency

4. **Policy-based** automation (vs. scripts)

5. **Goal-driven** application management

   – **Cluster wide**
   – Complex dependencies

6. **Desaster recovery**

7. **Pro-active**, health-based automation

8. **Composite application** management

9. **Adaptive** automation

Automation Manager

Policy-based automation

✓ End-to-end automation
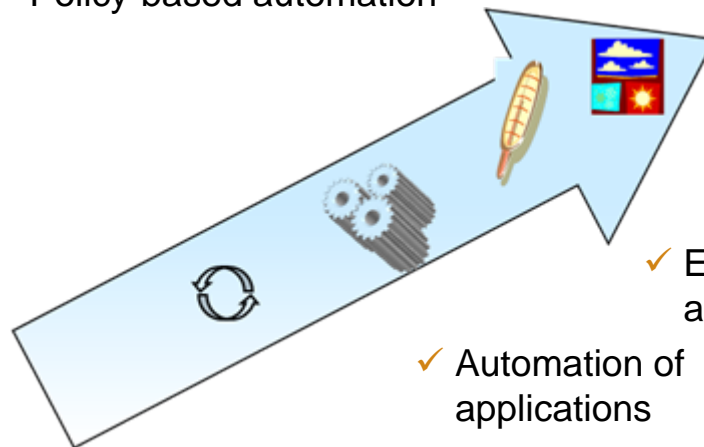
✓ Automation of applications

✓ Automated repetitive or complex tasks

✓ Message automation

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

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
- Adaption of thresholds
- Switching on of traces as needed avoids overhead

Enhanced OMEGAMON V5 family provides information to automation for improved enterprise management

Increased System Availability with faster problem resolution

- Enhanced 3270 user interface for SMEs

- Built-in Problem Solving Scenarios

Improved Productivity with simplified data

- Faster Install/Configuration/Maintenance

Reduced Costs with decreased resource usage

- Usage of zIIP specialty servers

- Simplified OMEGAMON architecture

> ***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 Performance Management Suite provides complete solution for enterprise monitoring

- OMEGAMON V5 comes with integrated monitoring with both Enhanced 3270 User Interface and Tivoli Enterprise Portal

- OMEGAMON family Launch in Context makes it easier to find problems that can span multiple subsystems

- OMEGAMON Performance Management Suite includes capability to gain improved visibility and management for z/OS and all critical subsystems
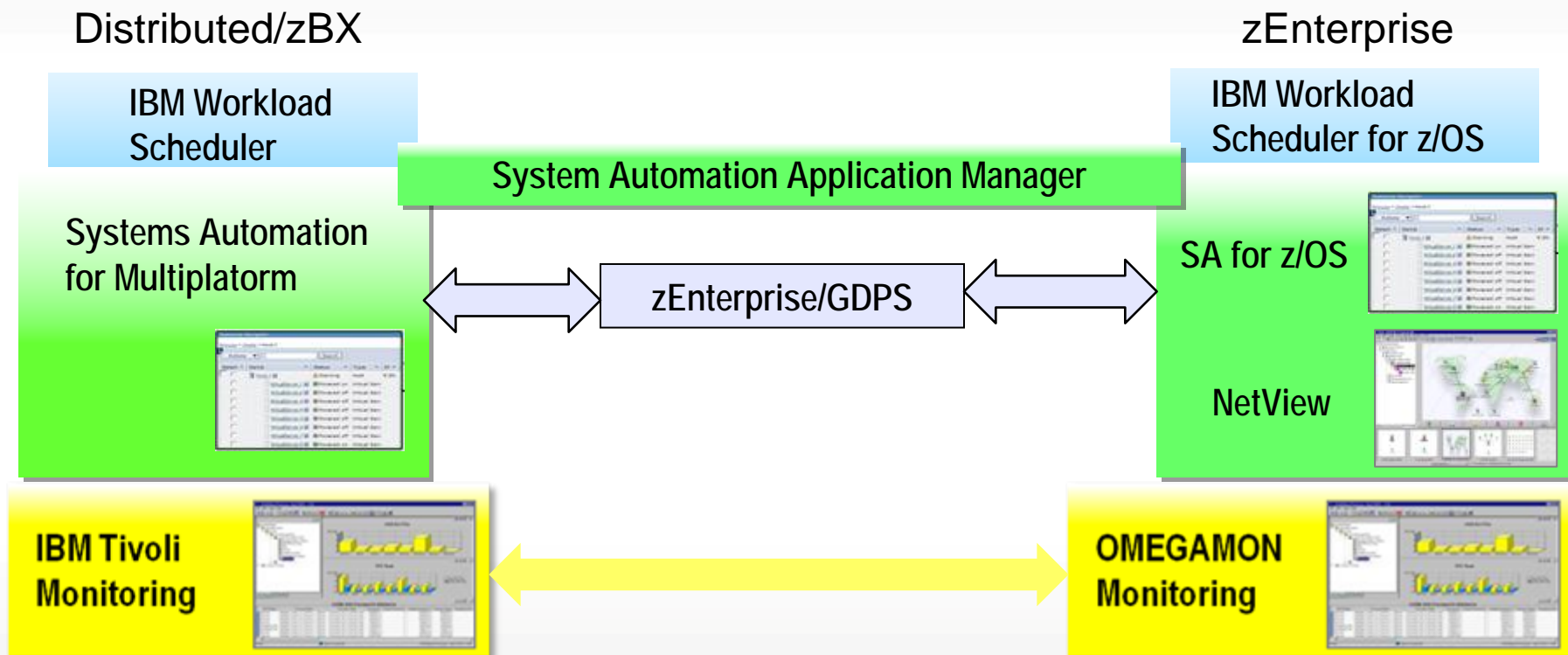 - CICS, DB2, IMS, WAS, Storage, Mainframe Networks

Information from OMEGAMON works with System Automation 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

- Expert level: Cure performance problem

  - Using performance monitor, system or affected subsystem
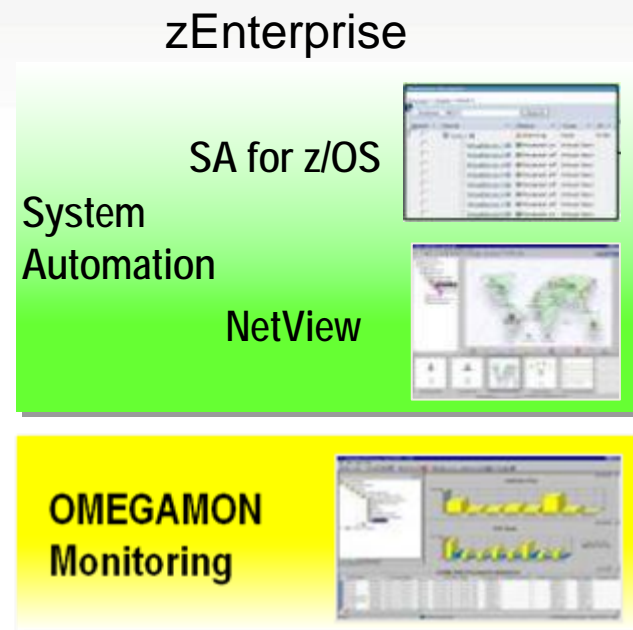
zEnterprise

Monitoring, System and Workload Automation work together across entire enterprise, including cloud

IBM provides end-to-end support including high availability

Distributed/zBX

zEnterprise

IBM Workload Scheduler

IBM Workload Scheduler for z/OS

System Automation Application Manager

Systems Automation for Multiplatorm

zEnterprise/GDPS

SA for z/OS

NetView

IBM Tivoli Monitoring

OMEGAMON Monitoring

System Automation and Workload Scheduler together drive reduced risk and decreased costs

Tivoli Workload Scheduler and System Automation cooperate and communicate to provide integrated approach to all automation

– TWS does workload automation
- Complex schedules
- Holidays
- First/last day stuff

– SA z/OS does application starting and stopping
- Predefined start/stop command sequences
- Takes care of dependencies, goals, and configuration
- Thresholding
- Automated recovery
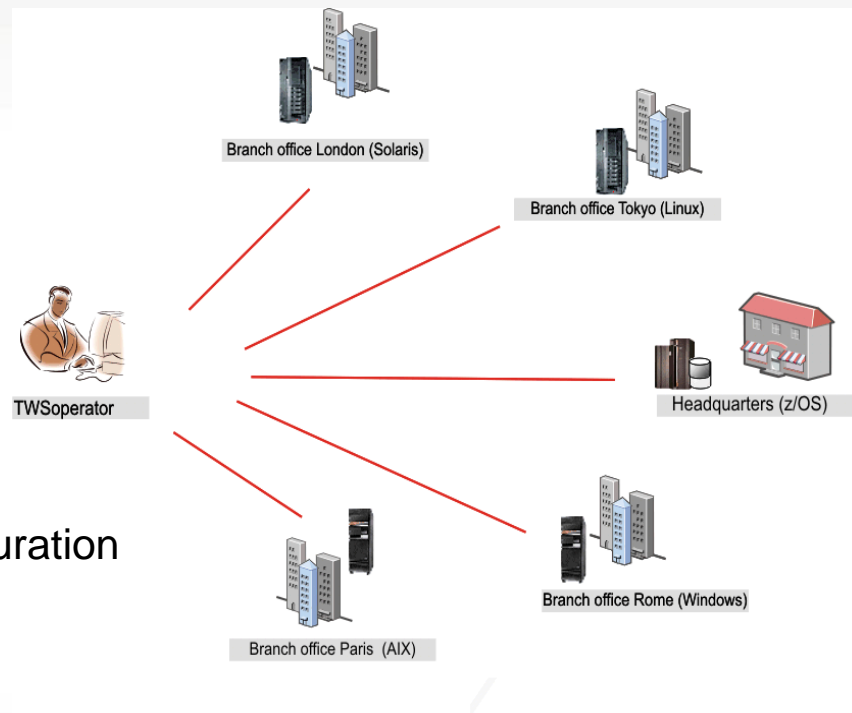
Together they provide single automation solution with higher automation degree

Tivoli Workload Scheduler interfaces with System Automation to manage events and activities

- TWS provides multiple interfaces to send requests to System Automation

  - 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 in an available state

    - If the resource is in an unavailable state

  - The TWS administrator can construct dependencies on them

IBM Automation Control for z/OS targeted at mid-market single System z environments

Gain value of IBM System Automation with single simplified product

Easy to install & configure - *Smart Configuration Assistance* dramatically improves time to value

Policy-based & goal-driven – Maximize efficiency and availability of critical systems and applications

Secure – Protect your systems with role based security, simplified operations, and improved usability and auditability

Integrated – With z/OS and IBM Tivoli solutions to improve efficiency and availability

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ProcOps | SysOps

Policy

Automation Services

z/OS services & interfaces
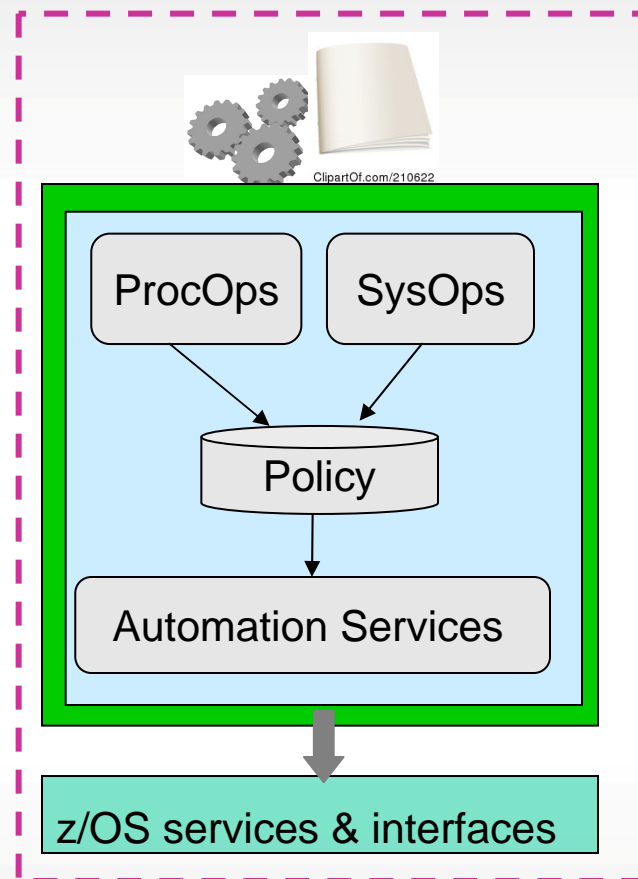
Tivoli System Automation Application Manager adds cloud, monitoring and zEnterprise support

- **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

- **Pro-active automation:** Smart integration with IBM Tivoli Monitoring (ITM)
  - Enhanced availability through automatic recovery actions across multiple systems
 - Save 50% on environment customization effort

End-to-End Automation with System Automation and monitoring simplify operations and increase availability

Scenario:

- Operator triggers start of application with command
- After startup, Monitoring Agents reports online status
- SA sets aggregated state of "Online Trading Appl." to "online"
- Agents monitor application and report to SA

Value:

- SA provides single view of entire application (distributed and z)
- SA 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.

Issue Command

"Start Online Trading"

Report Status

System Automation

Monitoring

DB2   WAS   Web

Online Trading Application
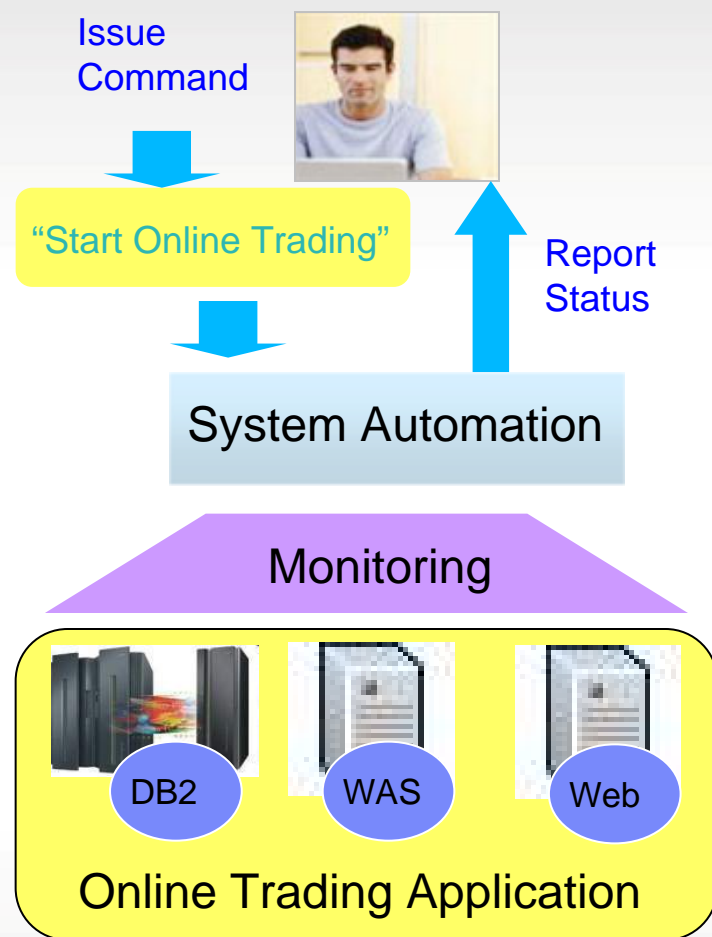
Integrate end-to-end scheduling with end-to-end automation

Tivoli Workload Scheduler (TWS) can use Tivoli System Automation Application Manager (SA AppMan) to request synchronous start/stops of complex business applications.

Value:

- Save cost through increased operator productivity
- Higher availability through reduced application and operator errors
- NO scripting required

Available with:

- Tivoli Workload Scheduler 8.6.1
- Tivoli System Automation Application Manager 3.2.2

TWS communicates to System Automation to manage workload/application requests

TWS

Jobtask Table

TWS Agent for SA AppMan

SA AppMan

SAP DB2

SA MP

Operations Team
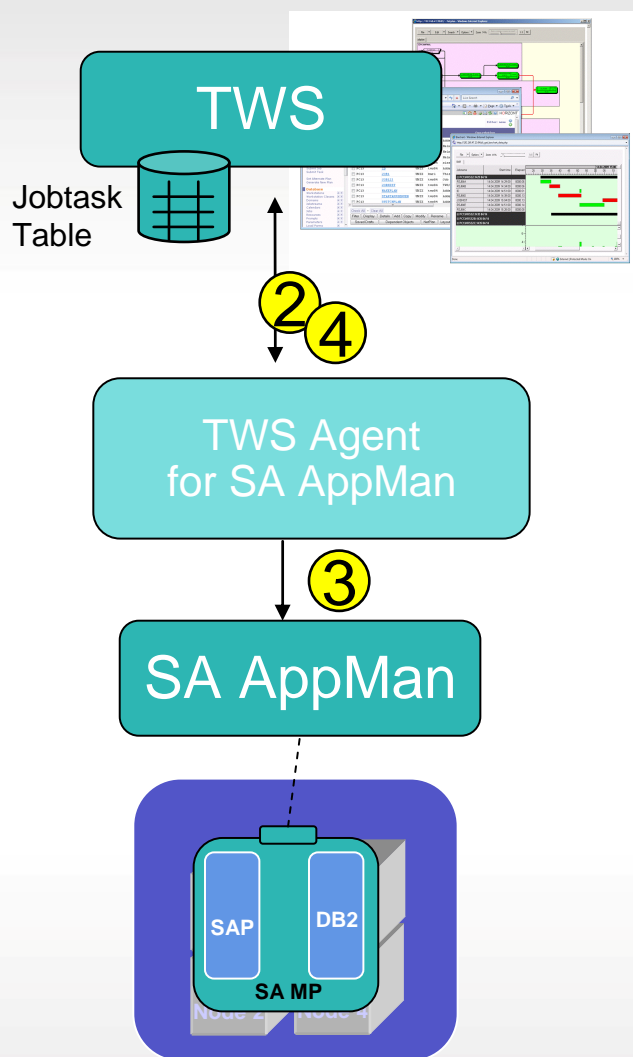
1. Operator defines scheduled start/stop actions for set of components

2. TWS uses agent for SA to issue start/stop request for composite business application

3. Agent uses SA Web Service to issue synchronous or asynchronous request

4. For synchronous requests agent waits for request completion and returns result. Waiting job-step can now continue

TWS works with System Automation for Multiplatform to provide improved High Availability capability

- **TWS built-in high-availability features to switch components to other nodes in a network**

  – Monitoring components

  – Eliminates moving components as a manual operation

  – Common relationships taken into account

24 Hours a Day
7 Days a Week
52 Weeks a Year

- **System Automation MP as third-party regulator**

  – More insight into status of all components (both hardware and software)

  – Solves split-brain situations

  – Maintains relationships automatically between components

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, SA automatically initiates recovery across the stack which saves us millions of dollars in terms of lost business.

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

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Learn more about OMEGAMON and System and Workload Automation as Pulse 2014

- System z track: Over 40 sessions
    - Customer, Analyst and Business Partner Sessions
- Meet the Experts
- Demos and Hands on Labs

http://www-01.ibm.com/software/os/systemz/pulse/index.html

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

Thank You

Executive presentation are available for downloading at

http://www-01.ibm.com/software/os/systemz/itsm/