

A decorative graphic in the top left corner consists of several overlapping circles of various colors (yellow, orange, red, purple, blue) that are divided into segments, resembling a stylized sunburst or a cluster of data points.

IBM System z Technology Summit

Track 5 Session 2

Improve availability and productivity with pro-active automation, including OMEGAMON, System Automation and Workload Scheduler



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



- 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, stop and recovery of application group & dependencies



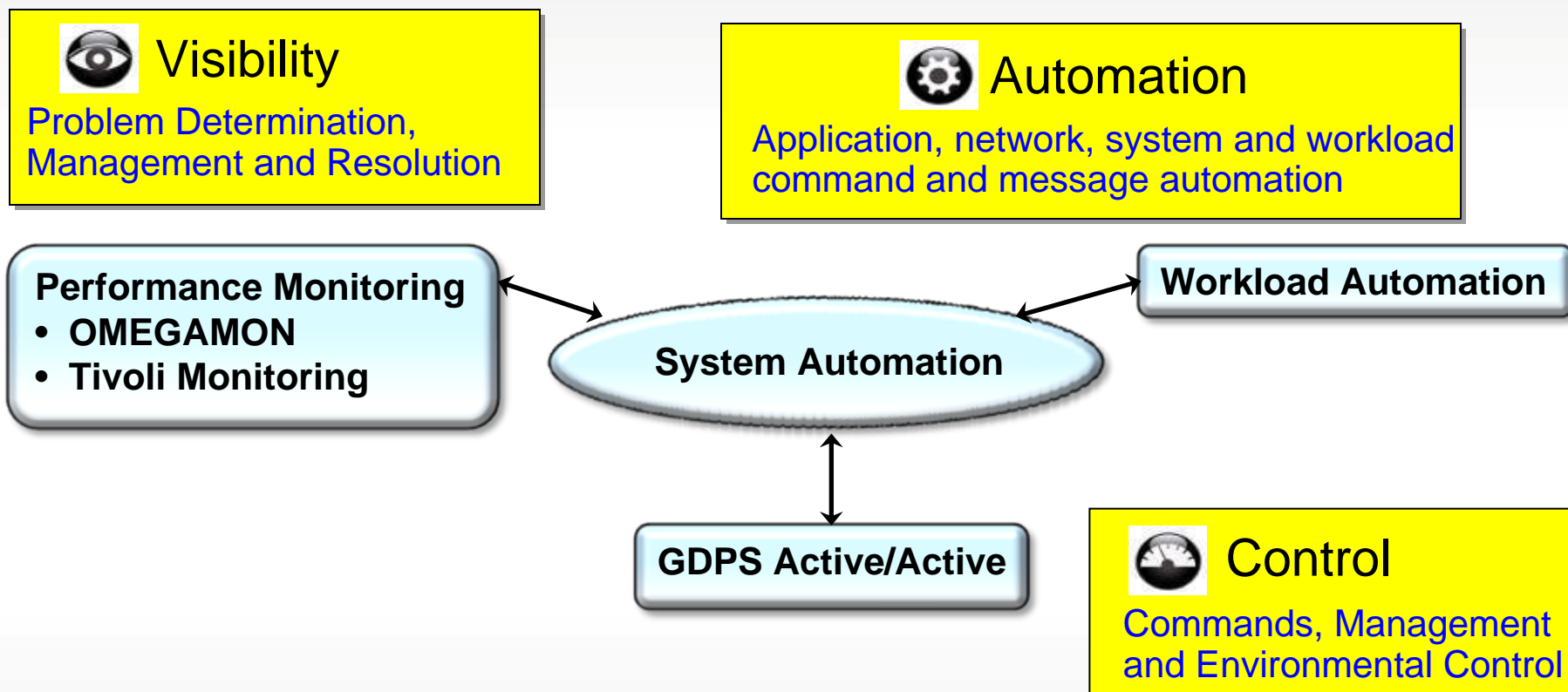
Tivoli Workload Scheduler Family

Plan start and stop of application group in batch jobstream



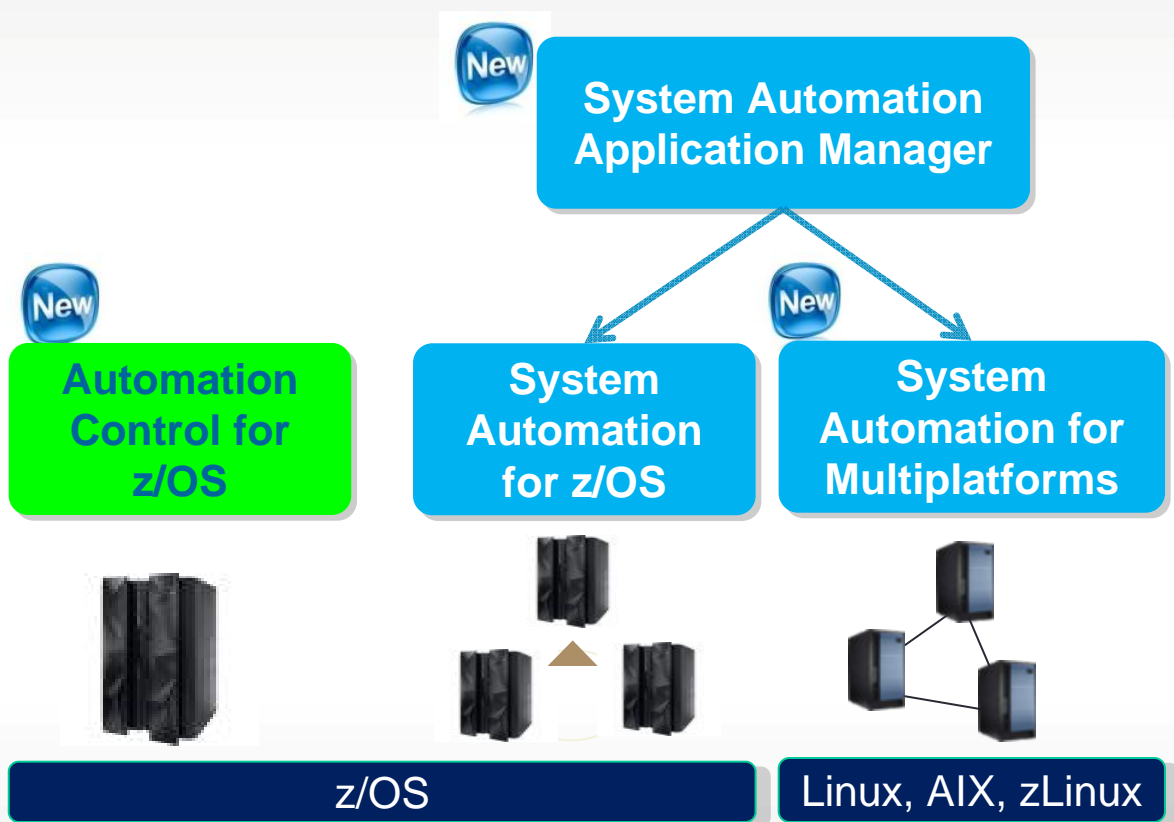
IBM's System Automation integrated solution includes a number of key capabilities

Integrated System/Workload Automation solution:



IBM System Automation for cloud workloads to provide cost savings and improved productivity

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



New SA AM capability

- Dashboard user interface
- Automation policies to load-dynamic environments

New SA MP Capability

- SAP high availability
- Improved serviceability enhancements, logging and auditing

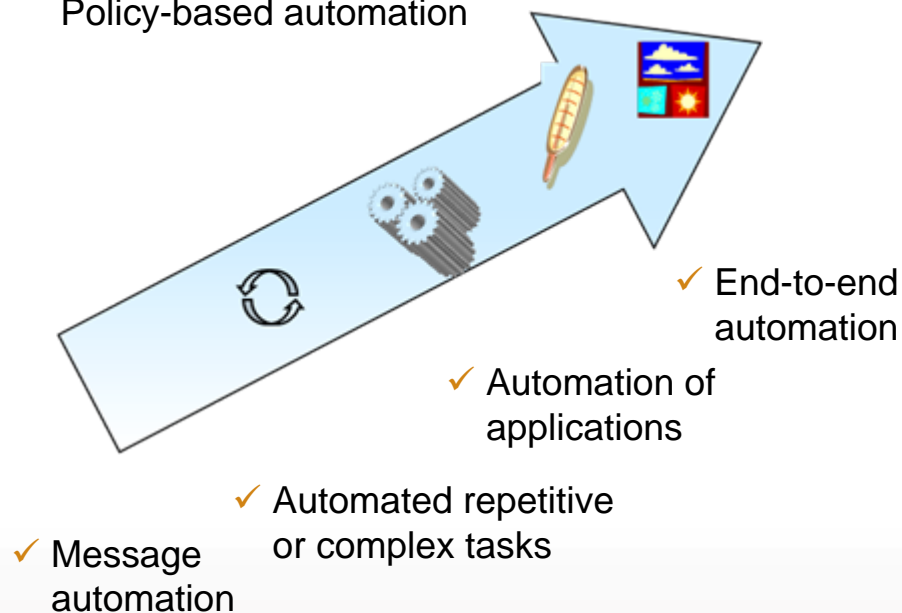
Automation evolution from simple message filtering to enterprise-wide policy based management

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. **Disaster recovery**
7. **Pro-active**, health-based automation
8. **Composite application** management
9. **Adaptive** automation

Automation Manager



Policy-based 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
- Anomaly detection with IBM zAware

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 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

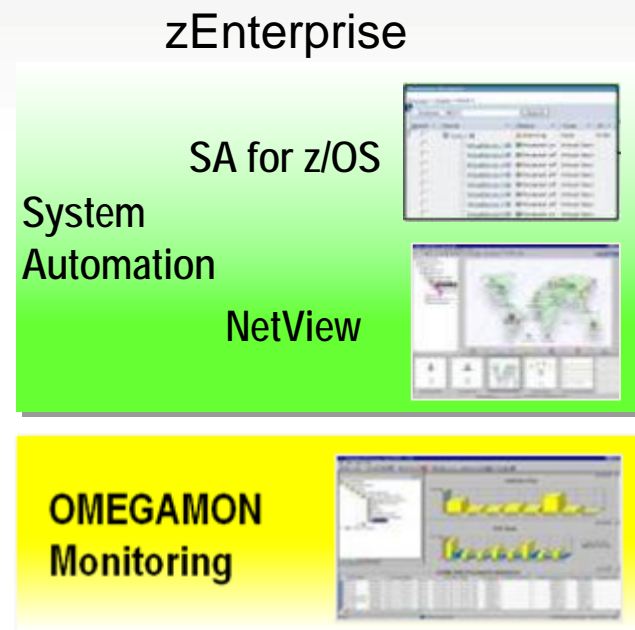
- OMEGAMON V5 comes with integrated monitoring with both Enhanced 3270 User Interface and Tivoli Enterprise Portal
- OMEGAMON family Launch in Context makes it easier to find problems that can span multiple subsystems





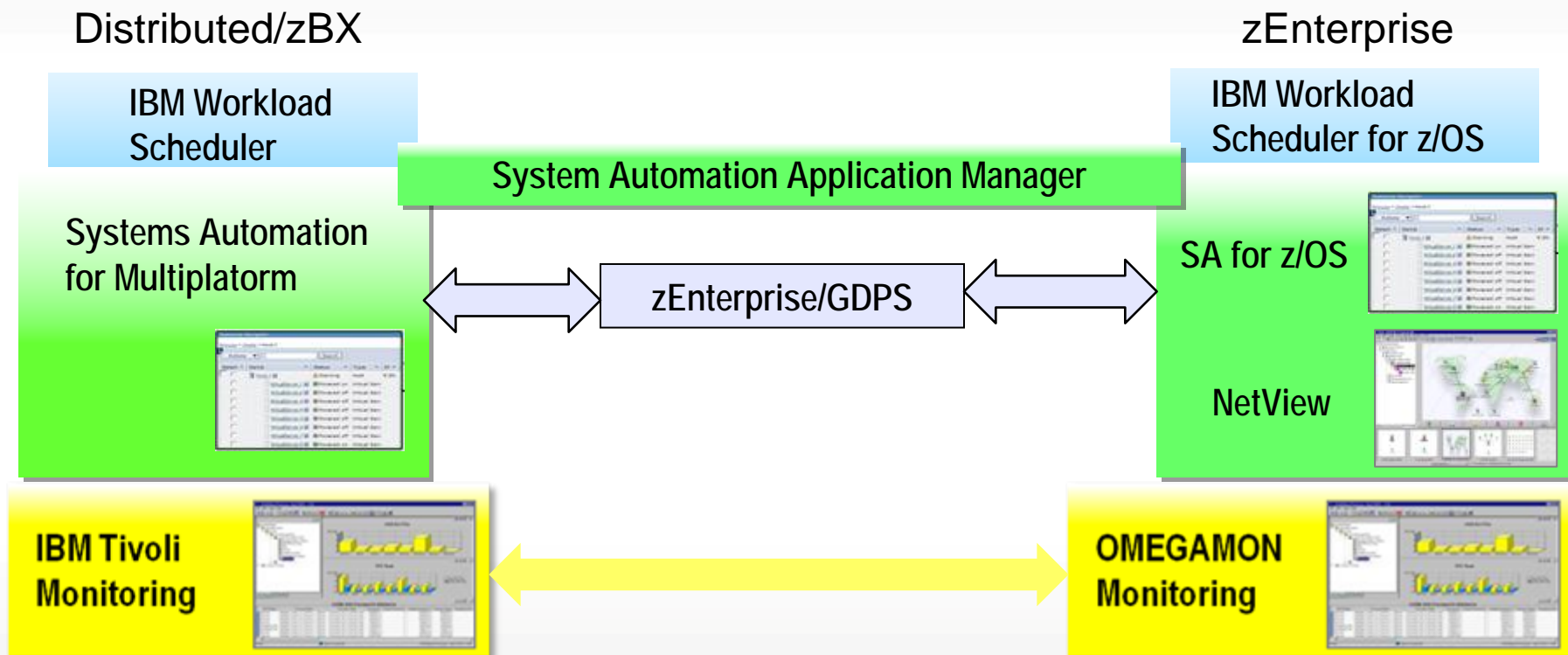
Information from OMEGAMON works with System Automation to improve availability and simplify operations

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



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

IBM provides end-to-end support including high availability



IBM Automation Control for z/OS (IACz) targeted at Mid-market single System z environments

- ➔ Entry-level Automation solution on z/OS to start, stop, monitor, and recover z/OS Monoplex environments as well as local System z HW resources
- ➔ Automation Control for z/OS is an Easy to operate solution without additional software pre-reqs

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



zEnterprise BC12



System Automation Application Manager offers new Dashboard UI and dynamic automation constructs

- **Continuous availability** of business applications even in virtualized infrastructure
 - Reduced costs with automatic site failover of applications forming composite workloads
 - Dynamic automation policy constructs allow to grow and shrink application stack on demand
- **Disaster recovery (DR)** capability
 - Site failover of entire business IT environment across unlimited distances
 - Reduced costs thru simplified cross-platform DR capabilities – integrated with GDPS
- **Enhanced Cloud** application management and visualization
 - Build-in for SCO cloud management stack automation
 - Monitor and control cloud applications and classic workload through modern Dashboard UI technology
- **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

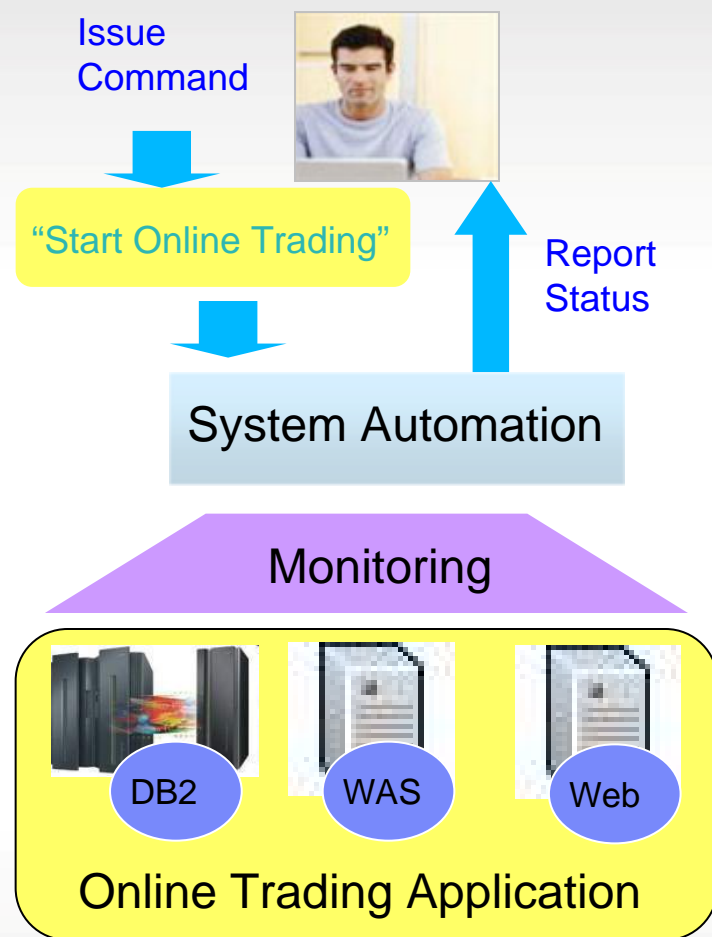
End-to-End Automation with System Automation and monitoring simplify operations and increase availability

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:

- System Automation 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.





IBM Workload Automation V9 leverages new technologies and supports Cloud workloads

- Easily map all environment constraints
- Improved monitoring and reporting
- Streamlined Log Management

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- Automated provisioning
 - Self-Service dashboards
 - Self-Service Catalogs

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- Incorporate new job types
 - Automated Trouble Ticket Mgmt

Reduce Costs



Incorporate Cloud



Decrease Risks



“Managing and monitoring TWS by mobile devices would be strategic and flexible for the future”



“Thanks to TWS z/OS – ITOM integration we can save disk space while keeping outputs for a longer period of time”

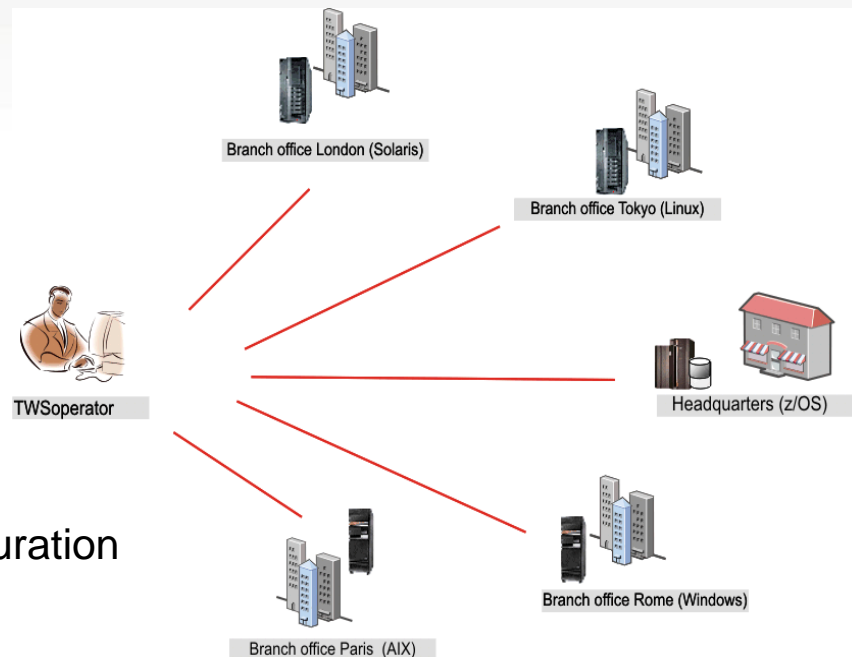




System Automation and Workload Scheduler together drive reduced risk and decreased costs

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



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:

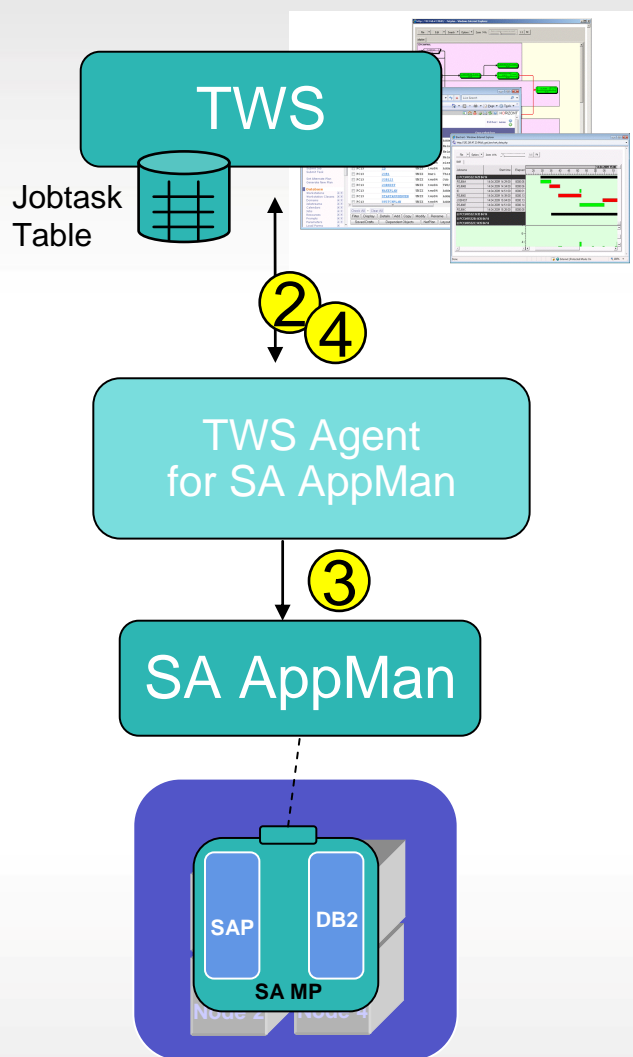
- Save cost through increased operator productivity
- Higher availability through reduced application and operator errors
- NO scripting required

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



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 Multiplatforms 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
- **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 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

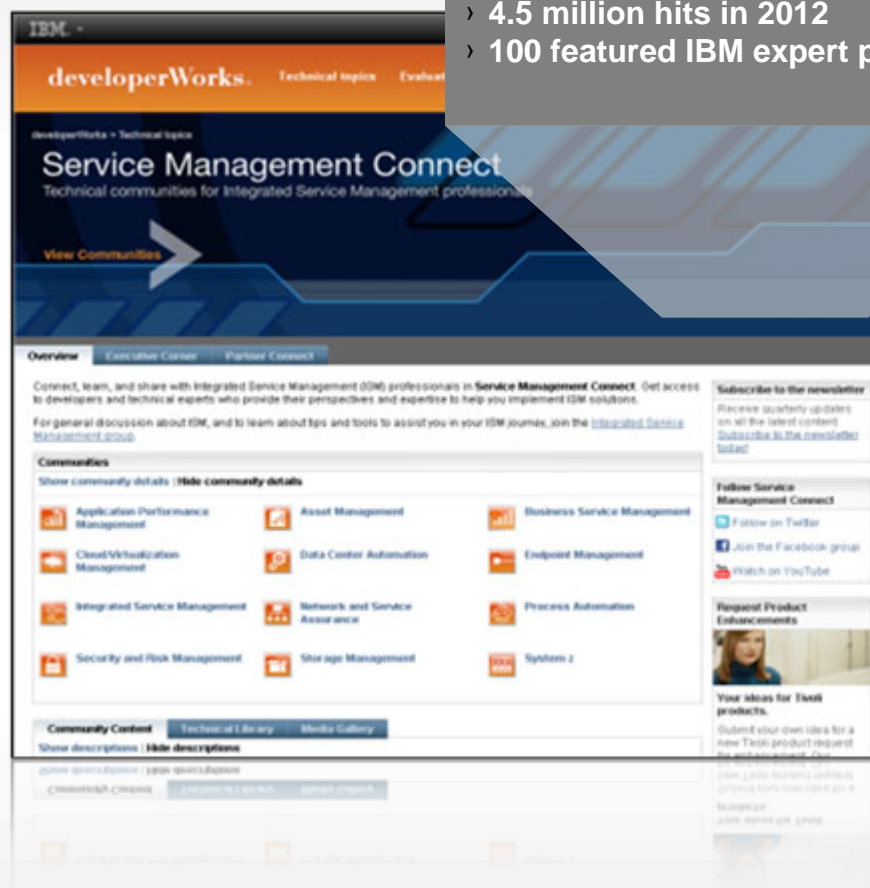


Service Management Connect

Connecting future of service management

- Transparent development
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 - Forums
 - Blogs
 - Wikis
- Best practices
- Submit requirements

- › 250+ System z blog entries from the IBM experts
- › 4.5 million hits in 2012
- › 100 featured IBM expert profiles





Thank You

**Executive presentation are available
for downloading at**

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