Achieving High Availability and Resiliency for Your Business with the New Capabilities of Tivoli System Automation Version 3.3

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Today's Automation Topics

1   **Keeping the Smarter Planet Highly Available and Resilient with System Automation**

2   **Optimizing Availability and Resiliency with System Automation Version 3.3**

3   **System Automation and Social Media**

4   **System Automation Resources to Help You**

Something meaningful is happening…
The world is about to get a whole lot smarter.

"Every human being, company, organization, city, nation, natural system and man-made system is becoming **interconnected, instrumented and intelligent.** This is leading to new savings and efficiency—but perhaps as important, new possibilities for progress."

IBM Tivoli System Automation: Keeping the Smarter Planet highly available and resilient

Smart is: Maintaining *continuous business and IT operations* while rapidly adapting and responding to risks and opportunities with high availability and business resiliency

SMART IS: Always open for business in a 24/7 world.

SMART IS: Reducing cost through proactive incident response and reduced downtime

SMART IS: Managing risk with enterprise-wide resiliency strategy

SMART IS: Responding with speed and agility while minimizing risk exposure.

SA z/OS Version 3.3 Release Themes

- **Integration with Other Tivoli Solutions in Support of the Service Center**
  - Continue tighter interoperation with monitoring products and new TEP workspaces
  - Integration with OmniBus and Tivoli Service Request Manager (TSRM) for improved alerting and event notification

- **Consumability Improvements**
  - Automatic generation of the Message Revision Table
  - Rolling recycle to stop and restart members of server groups, minimizing the impact to application availability

- **Feature Integration: Improved CICS and IMSPLEX Support**

- **Focus on Customer Needs and Requests**
  - CDEMATCH enhancements to support new comparators and wildcard characters
  - New INGEXEC command to route a command to one to more systems based on the location of resources
  - New INGMSGS command to capturing messages and make them visible in the message history of the associated resource

Integration: Sending Events to TEC/OMNIBus

- **Based on the Alerting support Infrastructure**
  - Same set of pre-defined alert-points
- **User defined Events via INGALERT command**
  - Events can be issued for APLs, MVC, MTRs, APGs
    - „sysplex" events only processed by one agent
- **Support for clearing events for given resource**
  - Clear single event or all events
  - Automatic clearing of events for APLs + MTRs
- **Highly customizable via policy**
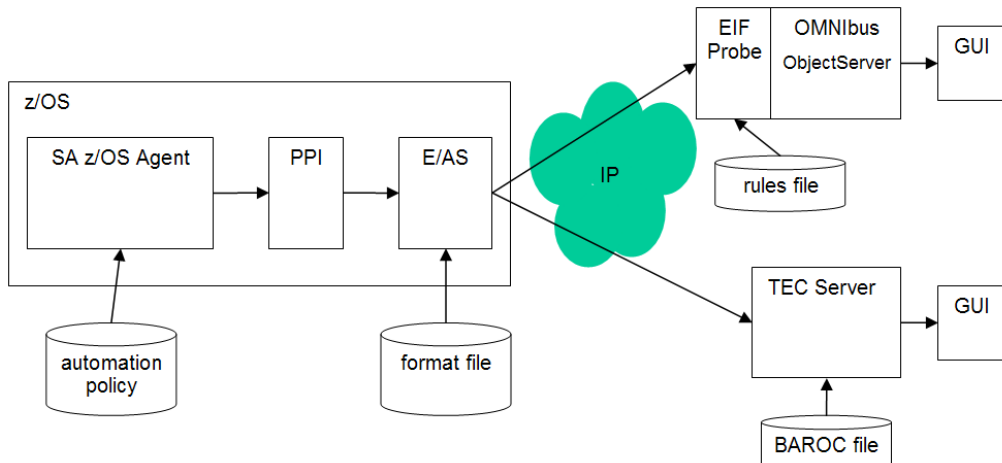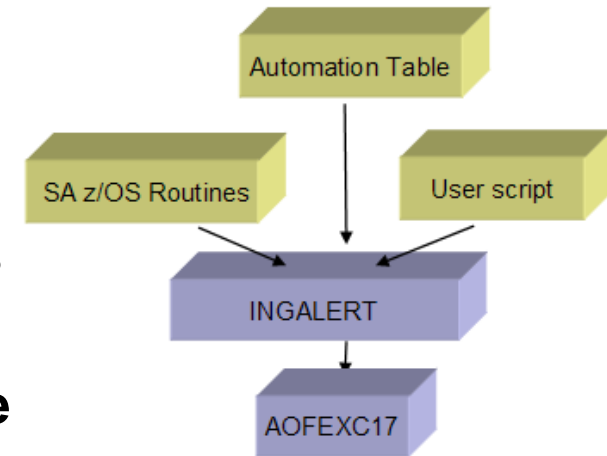
Integration: Sending Events to User Destination

- **Triggered via notification target USR in InformList**

- **Same Alerting infrastructure**
  - Predefined alert points

- **Up to the Installation what to do with the event**
  - Sample exit AOFEXALT provided by SA z/OS

INGALERT ....

z/OS

SA z/OS
Agent

user-defined
alert handler

???

IP

???

Automation Policy
INGCNTL USRHANDLER=...

???

- •Resource name, Job name
- •Alert id, mode and node
- •Alert text & User data
- • Alert date & time
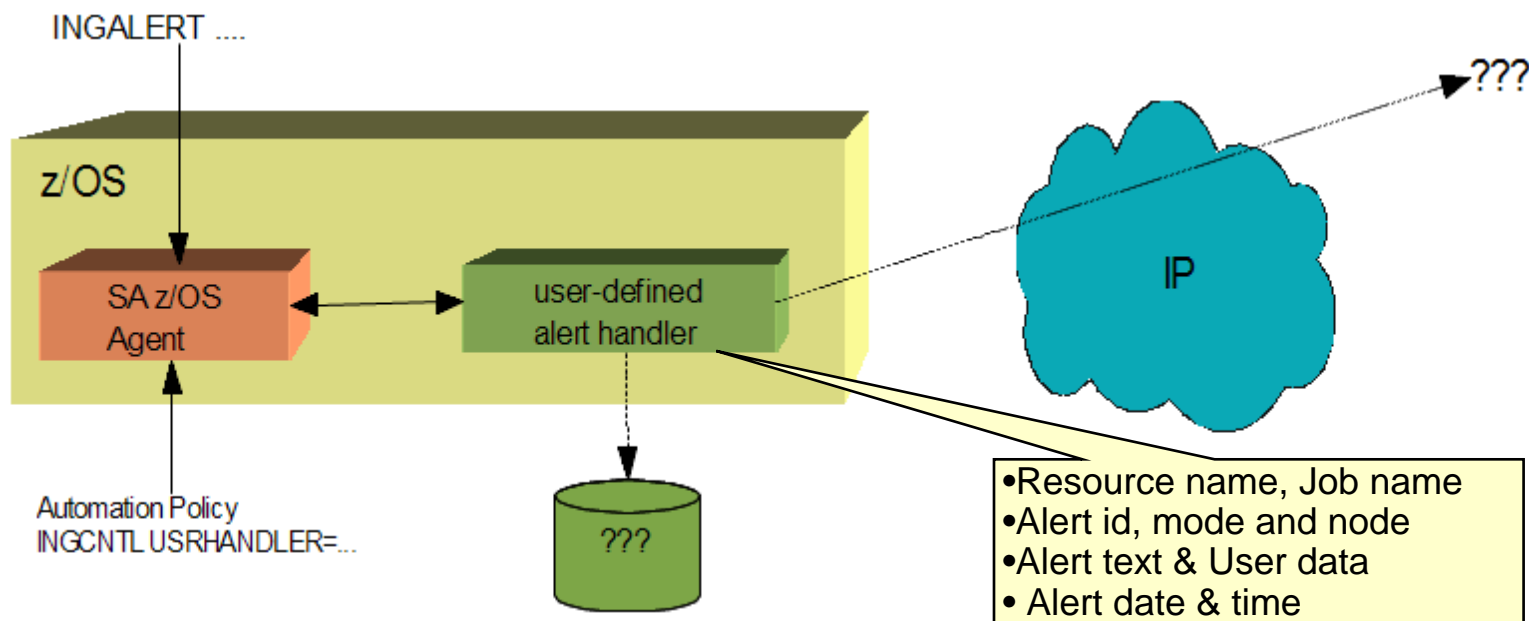
Integration: Opening a Trouble Ticket

- **Based on the Alerting Infrastructure**

- **Enabled/Disabled via INGCNTL cmd**

- **Resource dependent context data automatically gathered at point of error**
  - Similar to INGLKUP REQ=COLLECT
  - Data stored in Detail Dataset (automatically allocated)
  - Exit AOFEXC22 used to collect user specific data

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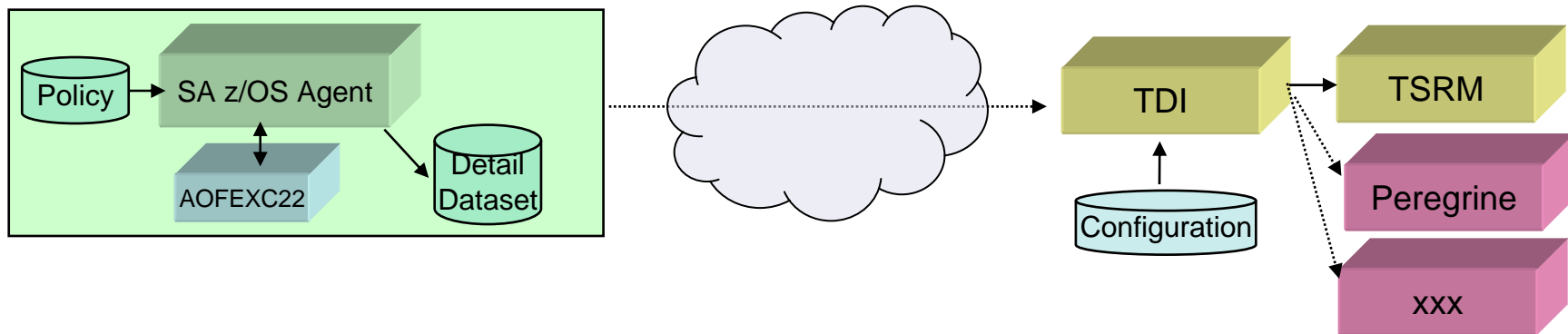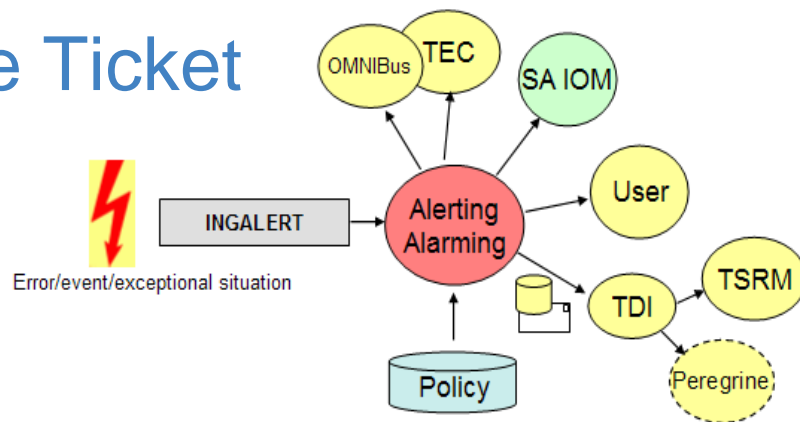
Integration: New TEP Workspaces

- Exceptional Messages

- Gateway Sessions

- WTORs

Consumability: Automatic MRT Generation

- **Automatic Generation of Message Revision Table (MRT) based on data stored on the policy database**
  - Highlighting of message (coloring)
  - Modifying of message text
    - Capitalization
  - Delete message
  - Suppress message

- **No specific MRT syntax skill required**

- **Common build keeps all configuration files in sync**
  - MRT loaded together with AT at configuration refresh

- **All automation data in one source**

MPF list

SA Config file

NetView AT

New

Policy DB

NetView MRT
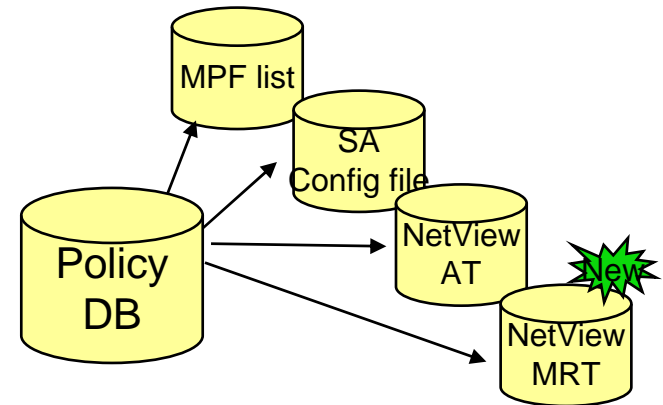
Consumability: Rolling Recycle

- **Stops and restarts members of server groups minimizing impact of application availability**

  - Single action to initiate the rolling recycle via INGGROUP command

  - Provision to abort the rolling recycle

  - Rolling recycle continues across an Automation Manager fail over

  >>--INGGROUP-- group_name -- ACTION={RECYCLE|CANCEL} ---- ... --->

- **Currently active number of members maintained**
  - Active members are recycled one after the other
  - Inactive members are untouched

- **Watch for intersecting groups**
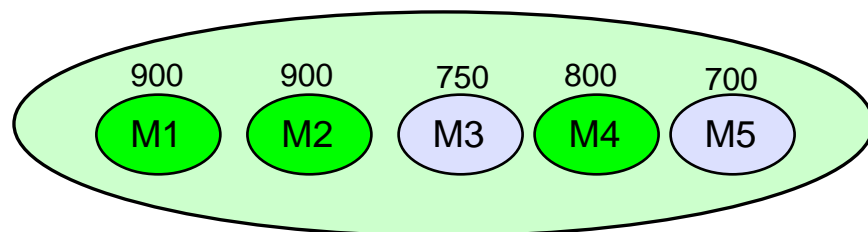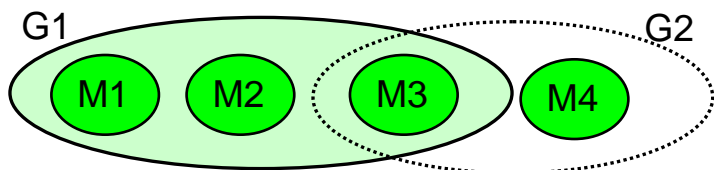
Features: Flow of CICS Automation Startup/Shutdown

ACTIVMSG UP=YES

ACTIVMSG

TERMMSG

TERMMSG FINAL=YES

RECOVERY	I/RS	START	RECOVERY	TERMINATE	RECOVERY

Up

Down

Message automation

Message automation

Message automation

Message automation

Message automation

POSTSTART Commands

SHUTFINAL Commands

STARTUP Commands

Shutdown Commands/Replies

PRESTART Commands

SHUTINIT Commands/Replies
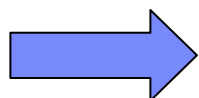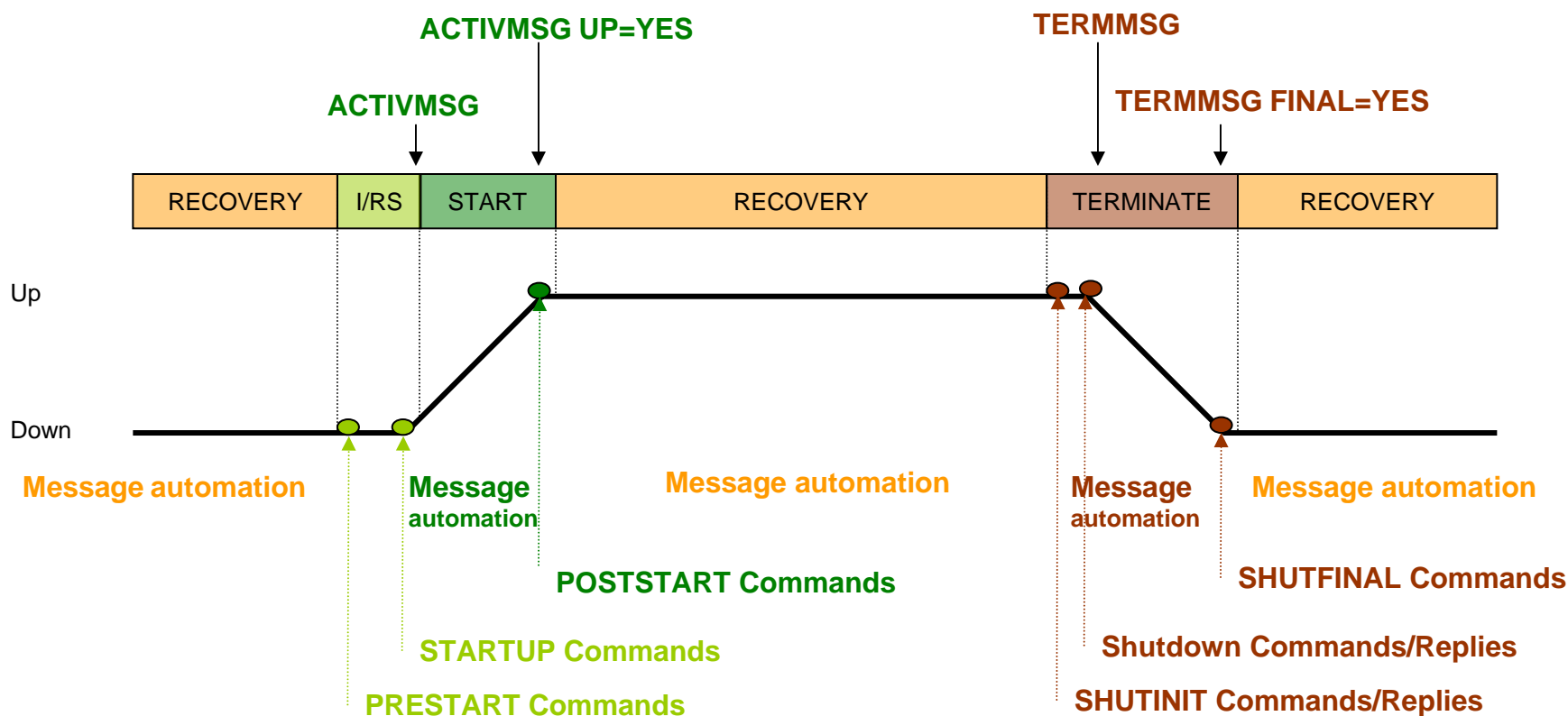
➡ CICS automation now functions in the same manner as other features of System Automation for z/OS.

Features: IMSPlex Support

- **INGIMS command enhanced to provide an API for IMS commands**

  - Type 1 IMS commands (/cmd ...)

    - Type-1 command output is in message format, encapsulated within XML tags
      - SA z/OS does not format Type-1 command output

  - Type 2 IMSplex commands (QRY, INIT, TERM, DEL, UPD, CRE)

    - Command Response returned in XML format
    - Automatically translated to display format

Advantage
Commands can be entered to one
or more IMS systems in an IMSplex

- Routes commands to IMSplex members registered for the command

- Consolidates command responses from individual IMSplex members into a single response to present to the command originator

NetView

User REXX

INGIMS command

Set up environment
Issues IMS command
Retrieve results

Structured Call Interface — SCI

Operations Manager (OM) — SCI

IMS Control Region — SCI

IMS provides MVS setup program, REXX functions, and variables to enable SA z/OS to interface with IMS through OM.

····▶ Register with SCI
◀──▶ Command entry and response
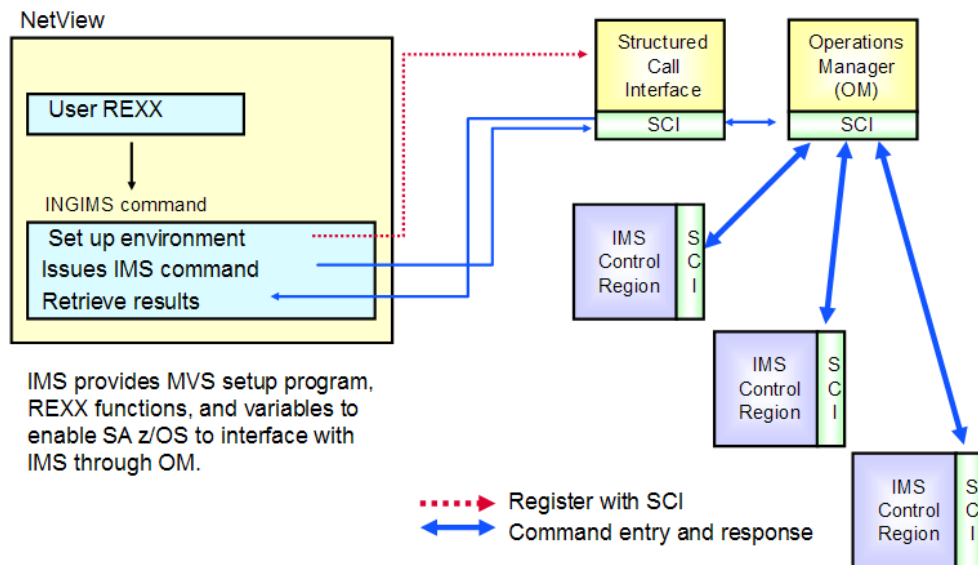
Customer Requests: CDEMATCH Command Enhancements

- **Support of Comparators**
  - @EQ (=), @GT (>) , @GE (>=), @LT (<), @LE (>=), @NE ➔ numeric comparison
  - $EQ (=), $GT (>) , $GE (>=), $LT (<), $LE (>=), $NE ➔ text comparison

FOO	@GT 95		CRITICAL
FOO	@GE 75		WARNING
ABC	$NE XXXX		NORMAL

Watch sequence

Must be numeric

- **Enhanced Wildcard Support**

FOO*			CRITICAL
*FOO			WARNING
F%%O*			NORMAL

Placeholder for 1 character

Customer Requests: INGEXEC Command

- **New command to route given command to one to more systems based on the location of resources**

- **Eliminates the need to know where the resource is currently running**

- **Resource can be:**
  - Application, Appl group, Monitor, SYS resource, etc

- **Can be used to fan out command to multiple systems**

- **Command can contain subsystem variables (&SUBSxxxx)**
  - Resolved at the target system where resource runs
  - Use #SUBSxxxx when command is defined in SA policy

- **Output of command(s) is collected and returned to the operator in one or more multi-line messages**

Customer Requests: Message Capturing Function

- **Enables installation to trap "important" messages and to make them visible in the message history of the associated resource**
  - Optionally forwarded to SDF and NMC
  - But several shortcuts done to update SDF/NMC directly

- **Restructured to be central "portal" for any kind of message forwarding to final destination**
  - Maintains central place for all exceptional messages
  - Message automatically removed from the exception table when the condition is no longer true
    - Message deleted by operator
    - Message deleted by SA user
    - By SA recovery/automation routine (eg CHKTHRES)
  - Forwarded to SDF, NMC, TEP, SA IOM, TEC/OMNIBus
    - Controlled by INFORM attribute of resource

- **New INGMSGS command to display all "exceptional" messages**
  - Exceptional message have severity UNUSUAL, IMPORTANT, CRITICAL
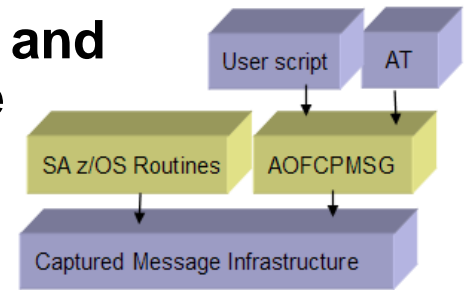
Customer Feedback About SA V3.3

"We manage all our mainframe services with SA z/OS. It makes a huge difference to the time and effort needed. Over 15 years we have grown our infrastructure by a factor of 4 or 5 times without increasing staff. Every new release improves our efficiency because we need less home-grown scripting. In 3.3, we especially like the closer integration with GDPS, and improvements in the customisation dialogue could save us an additional 5% effort. Also, we get closer to our goal of 24/7 availability while still having significant maintenance windows. We're really happy with this product.

The Beta gives us a closer connection to the lab and a better understanding of the product, so we use it more effectively."

Peter Erbstoesser, Itergo, Germany

Customer Feedback About SA V3.3

"We have been testing SA 3.3 and we are very satisfied. We feel that SA 3.3 is very stable and reliable. We have changed our SDF configuration and are now using dynamic SDF panel definition and we are very satisfied with that. We have recently started to use DB2 automation and so far we are satisfied. We also use TWS automation."

Niclas Voltaire,
Svenska Handelsbanken, Sweden

IBM Tivoli Automation Resources

System Automation for z/OS Resources

– [System Automation for z/OS web site](#)

– [SA for z/OS V3.3 Announcement Letter](#)

– [SA for z/OS V3.3 Information Center](#)

– [SAUsers Discussion Forum](#)

– [System Automation Education](#)

– Annual User Conference
  - [2010 Conference Summary](#)
  - [2011 Conference Plans](#)

Portfolio Information

– [Business Continuity Process Manager web site](#)

– [Business Continuity Process Manager demo](#)

– [System Automation Application Manager web site](#)

– [System Automation for Integrated Operations Management web site](#)

– [System Automation for Multiplatforms web site](#)

– [System Automation for Multiplatforms demo](#)

– [GDPS web site](#)

SAUsers Discussion Group: Home Page

SAUsers Discussion Group: Files

SAUsers Discussion Group: Opinion Polls

SAUsers Discussion Group: Event Calendar

SAUsers Discussion Group: User Profile

THE Critical Position of Automation

ACTIVITY VOLUME

Infrastructure Management & Data Protection

Storage Mgt.
TPC

Monitoring
ITM, Omegamon

EAM
Maximo

Backup & Receover
TSM

System Automation
TWS, SA

Identity & Access Management
TIM, TAM

Network Management
Netview

Event Management
Omnibus

Application Mngt
ITCAM

ISM for Data Centers

Business Service Management

Service Assurance
SNQM

Change & Configuration
CCMDB

Provisioning Management
TPM

Transaction Mngt
ITCAM

ISM for Design and Delivery

Business Service Delivery
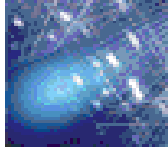
Service delivery
TSAM, Cloudburst

RELATIVE SCOPE AND COMPLEXITY

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Service Management Center for System z Landing Page
http://www-01.ibm.com/software/tivoli/solutions/zsmc/

#1 in Google search
(non-paid links)

Embeddable 'Widget'
Updated automatically

Tivoli System z Community: Why? To Share Information

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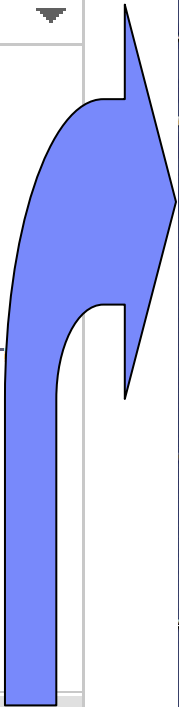
Tivoli Service Management for System z

https://www-950.ibm.com/communities/service/html/communityview?communityUuid=9051592f-7640-466e-8524-6ae7dcc20c79

Join the Community
- Create UserID/PW
- Create Profile

Expert Video playlist

Blogs – Expert tips and news

Articles, Events

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Thanks for Your Participation

Need More Information?

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Additional Information

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System Automation High Availability and Resiliency Solutions

Automated alert and escalation management

Business continuity workflow process management

SA IOM

BCPM

Adjunct to automation and high availability solutions for remote management, alerting, and escalation

Complex application automation for heterogeneous clustered and stand-alone servers

SA AppMan

- **Provides automated solutions to improve business resiliency**

- **Leverages automation technology for service management and business continuity**

Distributed server clustering with heterogeneous platform support

- **Extends high availability across clusters and heterogeneous environments**

- **Integrates operational capabilities end-to-end**

SA MP

SA z/OS

- **Standalone high availability for distributed platforms**

- **Integrated high availability across platforms**

Event automation for z/OS

Foundational z automation technology

GDPS: The Right Level of Protection for Your Business

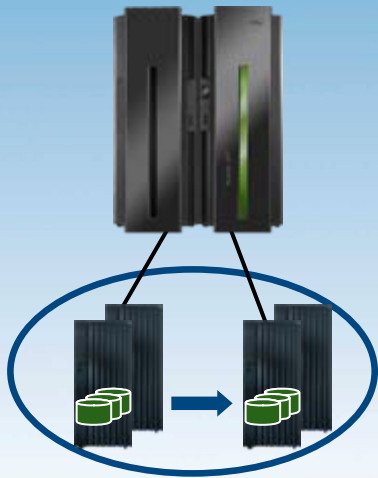| Continuous Availability of Data within a Data Center	Continuous Availability & Disaster Recovery Metropolitan Region	Disaster Recovery at Extended Distance	Continuous Availability Regionally and Disaster Recovery Extended Distance
Single Data Center Applications remain active **Near-continuous availability to data**	**Two Data Centers Systems remain active** **Automated D/R across site or storage failure No data loss**	**Two Data Centers** **Automated Disaster Recovery "seconds" of Data Loss**	**Three Data Centers** **Data availability No data loss Extended distances**

GDPS/PPRC HM

**GDPS/ PPRC HM
GDPS/PPRC**
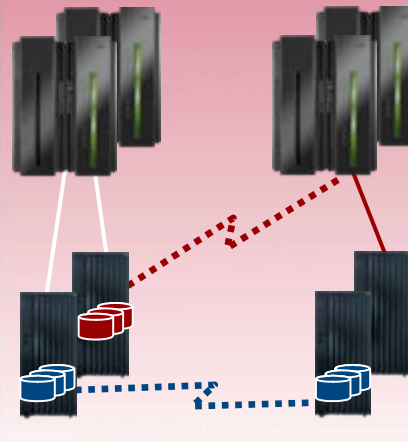
**GDPS/GM (blue line)
GDPS/XRC (red line)**
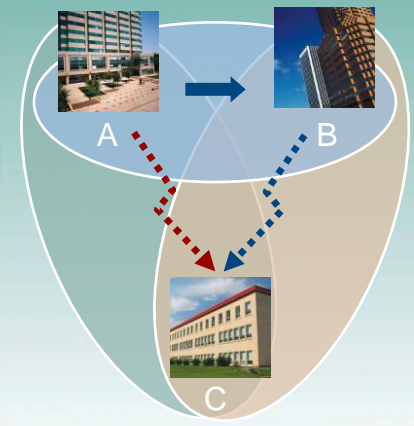
**GDPS/MGM
GDPS/MzGM**

System Automation for Multiplatforms
System Automation Application Manager

SA AM
SA MP

Adapter

MSCS

Adapter

SA MP

Linux
on PCs,
BladeCenter

SA MP

Windows

Adapter

HACMP

AIX

Veritas Cluster Server

Solaris
HP-UX

Adapter

SA MP

Linux
on POWER (p,i)

SA MP

AIX

Adapter

SA z/OS

z/OS
on zSeries

Adapter

SA MP

Linux
on zSeries

PCs (Windows / Linux) | UNIX (AIX, Linux, Solaris, HP-UX) | zSeries (z/OS, zLinux)