



New IBM Automation Control for z/OS - Replacing Manual Scripting with Policies

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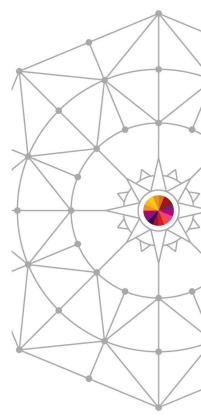
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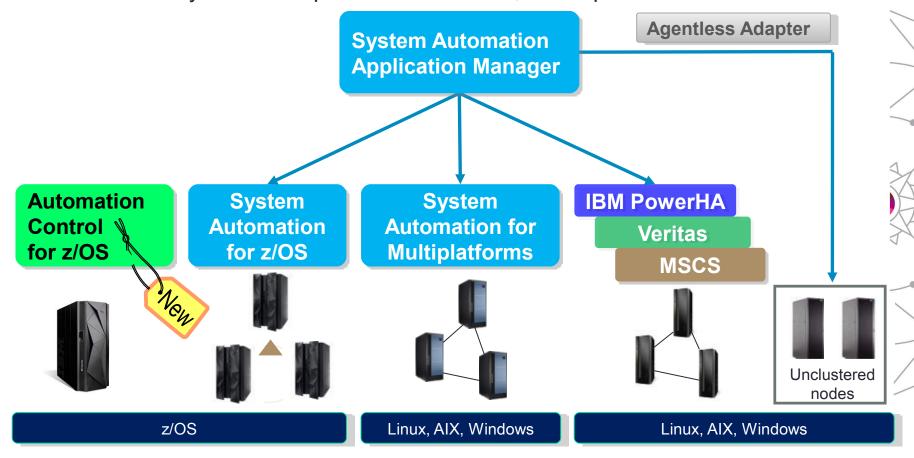




IBM System Automation family works together Enterprise-wide



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





Why Another Automation Product for z/OS?



Other products do not fit my needs...

- Too big for me
- Too many functions which I don't require
- Too expensive for my needs
- Too much effort to maintain my own scripts
- Too time consuming

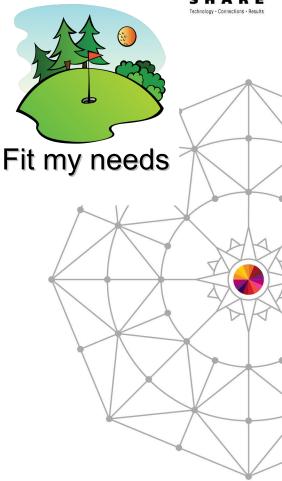






What is an Appropriate Low-end Automation Product for z/OS?

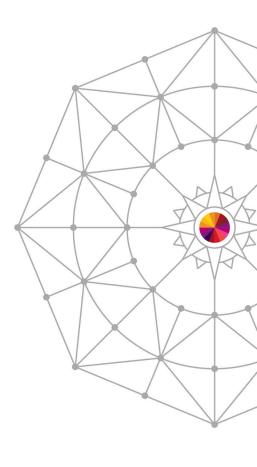
- Easy to install and configure
- Easy to administrate the automation
 - Policy-based, no scripting
- Easy to operate
 - Goal-driven through policy
- Easy to integrate with other IBM products
- Easy to migrate to premium class SA z/OS
- Priced for low-end z/OS installation
 - charged only once (OTC) without additional prerequisites



What Does All That Mean?



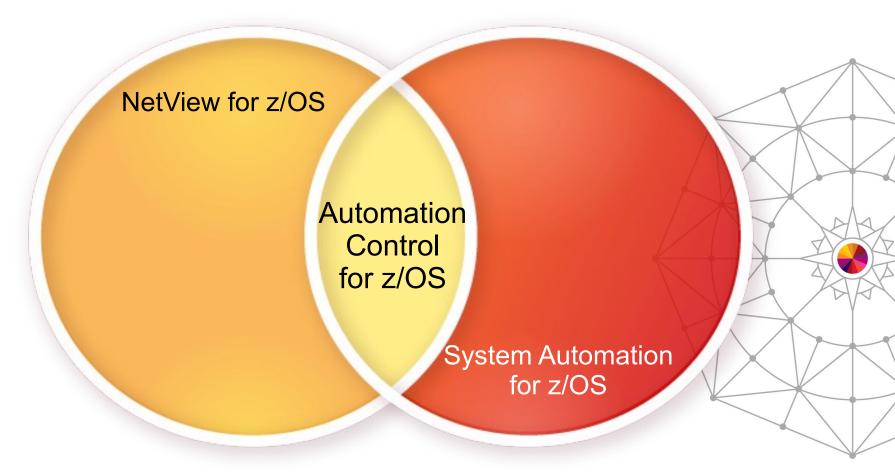






'Fit My Needs' - for Low-end z/OS Installations



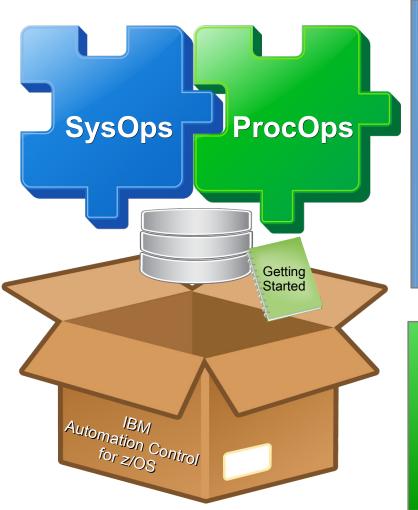


Combining the Strengths



Application Automation + Hardware Operations





- Automate repetitive and complex tasks in Single System 'Monoplex' Environments
- ✓ Policy-based automation administration Reduces automation implementation time and coding effort
- ✓ Goal-driven automated operation
 Increase availability and performance through proactive automation

- Automate and control hardware operations on local CPC
- Perform tasks available on HMC



Application Automation - SysOps

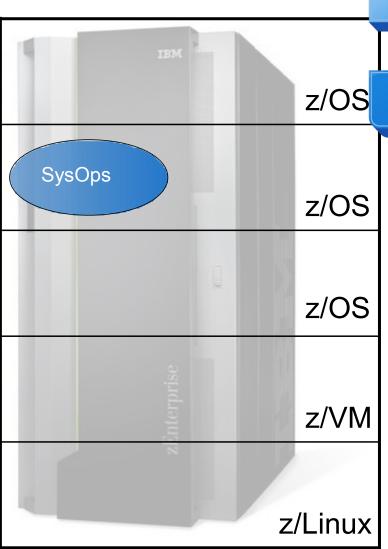
Within a Monoplex z/OS...

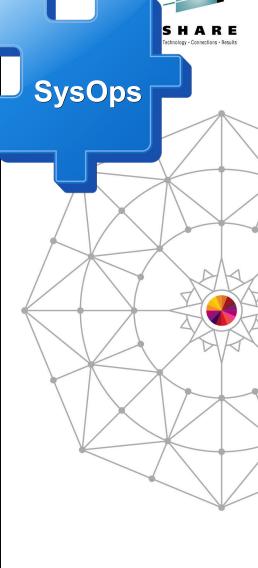
<u>Application Automation</u> (SysOps) controls:

- z/OS Address Spaces
- -- z/OS Applications
- -- USS Applications
- -- Monitors
- Groups of Applications
- Dependencies between applications, groups and monitors
- Schedules

SysOps provides:

- Easy Configuration
- Policy-based Administration
- Goal-Driven Operations
- SPOC for up to three z/OS's within a sysplex (requiring add. licenses)

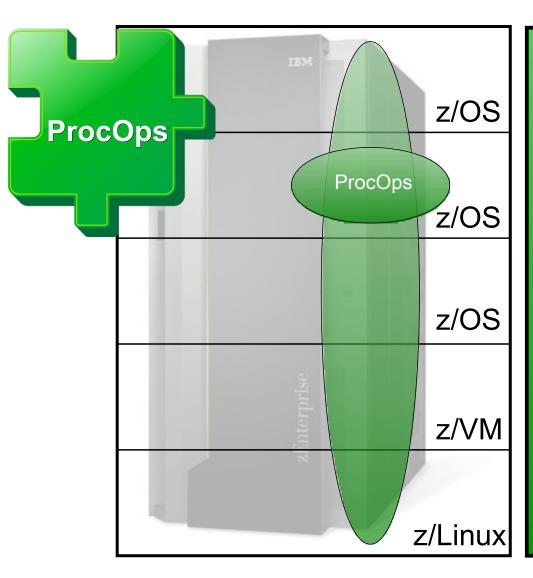






Hardware Operations - ProcOps





Within a local CPC ...

Hardware Operations (ProcOps) runs:

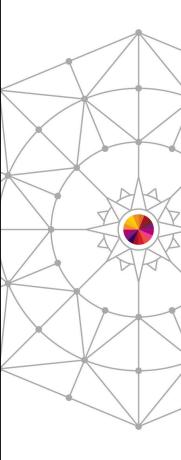
 on the z/OS-System where 'Automation Control for z/OS' is installed

ProcOps controls:

- CPC
- local LPARs
- local operating systems (z/OS, z/VM)
- Activation Profiles
- Capacity
- zBX Blades
- zBX Virtual Servers

ProcOps provides:

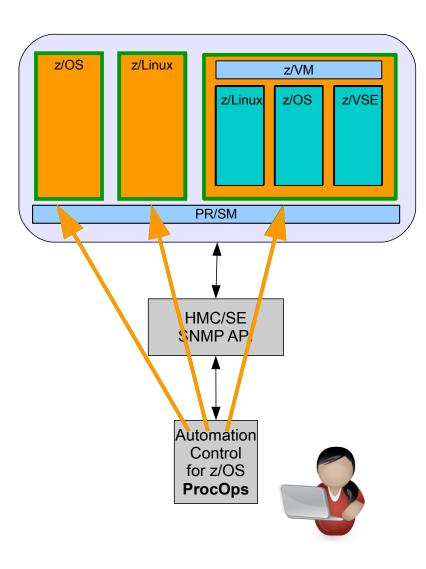
 Single Point of Control for the local hardware operations





ProcOps: Managing system z hardware



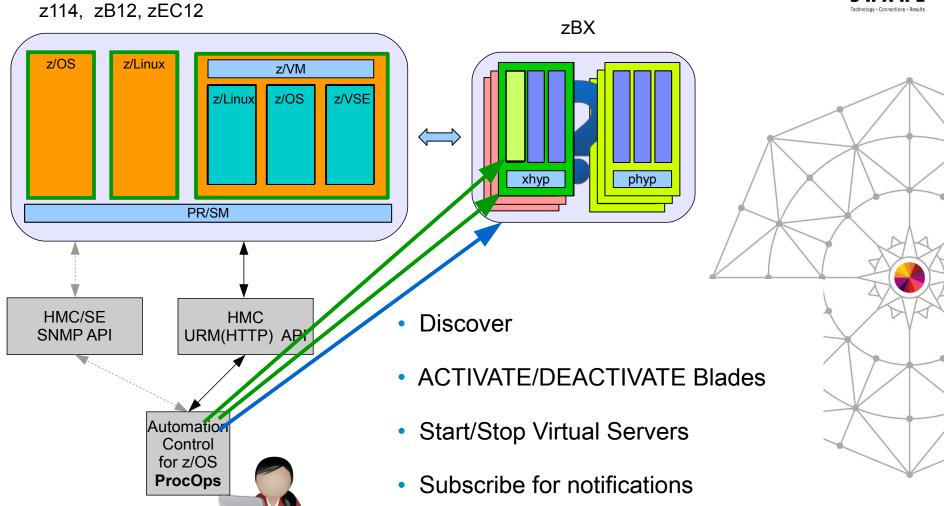


- SYSRESET and ACTIVATE an LPAR
- Load Image
- CPC control
 - Capacity backup
 - Capacity on demand
 - Powermod
- Maintain Activation Profiles
- Alerting on HW-Messages



ProcOps: Managing system z hardware

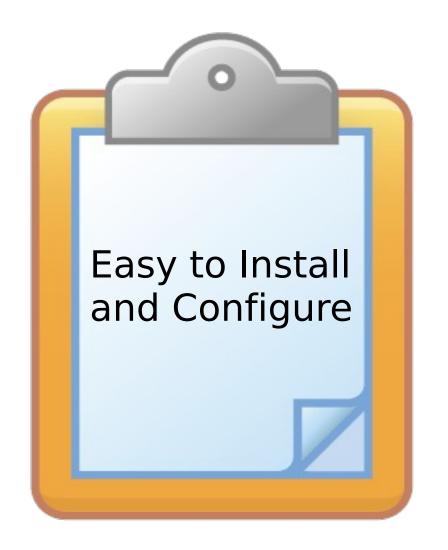


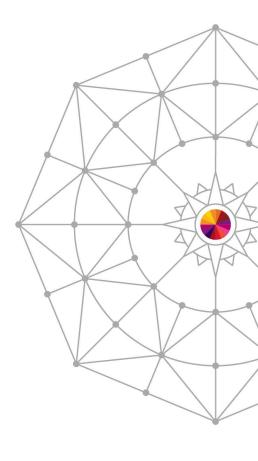




What Does All That Mean?









Product Packaging Information





Product packaging

- New FMIDs packaged together and delivered as single product number:
 5698-LSA
- Manual "IBM Automation Control for z/OS Getting Started"

Package includes (among others)

- FMID HSAL110: Base Automation Control automation component (SA)
- FMID HNVL11B: Base Automation Control automation infrastructure (NetView)

Installation

- SMP/E install process
- Single Program Directory explaining requirements and installation steps

Globalization

- Automation Control for z/OS is globalized similar to NetView for z/OS and System Automation for z/OS
- Translation to Kanji not planned for Automation Control for z/OS



Traditional Product Configuration (=post SMP/E Installation)



Sup 3. Allocate Data Sets for the ENT Dating 98 Sup 4. Chartonian SYSLE/RAMILE Members 99 Sup 4. Update ELAPETZ 99 Sup 5. Update ELAPETZ 99 Sup 5. Update ELAPETZ 99 Sup 6. Update Sup 6. Update 99 Sup 6. Up	Binding Capacity Change AFI Requests 82 Step 78: Updating Wewell Intermention 82 Connection protects (SMP 2002) Sep 78: Updating Wewell Intermediate 82 Step 18: Setting up the Enerodic Headware 82 Step 18: Setting up the Terredic Headware 82 Step 83: Setting up the Terredic 18: Setting 83 Automation 67: OS 83 Step 18: Setting up AFILS for the SSL secket 83 Step 18: Setting up AFILS for the SSL secket 83 Step 18: Setting up AFILS for the SSL secket 83 Step 18: Setting up AFILS for the SSL secket 83 Step 18: Setting up AFILS for the SSL secket 83 Step 18: Setting up AFILS for the SSL secket 83 Step 18: Setting up AFILS for the SSL secket 83 Step 18: Setting up AFILS for the SSL secket 83 Step 18: Setting up AFILS for the SSL secket 83 Step 18: Setting the VM PSM 83 Step 18: Setting AFILS for the SSL secket 84 Step 18: Setting AFILS for the SSL secket 84 Step 18: Setting AFILS for the SSL secket 84 Step 18: Setting AFILS for the SSL secket 84 Step 18: Setting AFILS for the SSL secket 84 Step 18: Setting AFILS for the SSL secket 84 Step 18: Setting AFILS for the SSL secket 84 Step 18: Setting AFILS for the SSL secket 84 Step 18: Set
28 and Earlier Versions)	Brabling Alart Notification via BF Brents. 100 Starting the Event/Automation Service. 101 Configuring the Global Initialization Bile 101 Configuring the NotView Mussage Adapter
Step 7D: Preparing the SE (Console Workplace 29 and Later Versions) 80	Service
III Gop yright IIIM Gorp. 1696; 2012	49

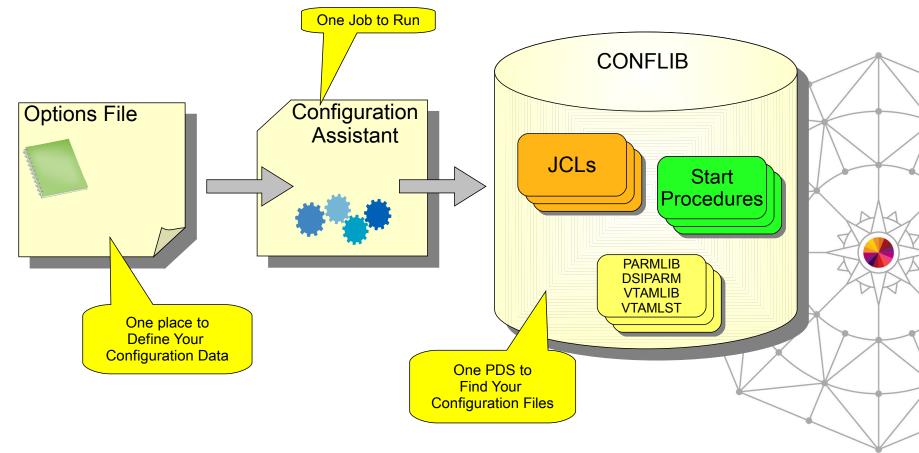
Read the Installation manual ...

- ... decide which of the many installation steps apply to your z/OS environment.
- Perform those steps by....
- ... adapting all the identified sample files and ...
- ... filling in your environmental data at multiple places spread across the sample files.



The Configuration Assistant Approach



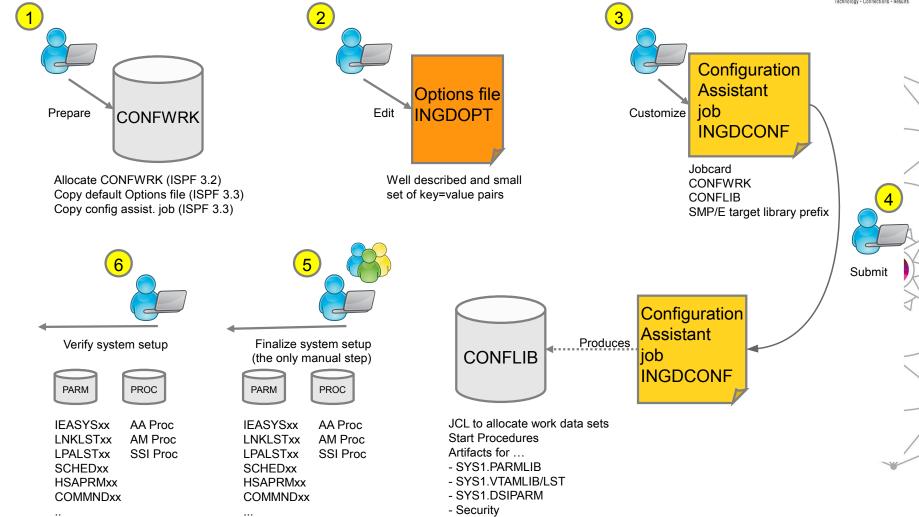


Generating Configuration Files for one system.



Configuration Steps







System Authorization Facility (SAF) support

SHARE

- The configuration assistant creates an SAF configuration:
- User roles (=SAF groups)
 - SuperUser
 - AutoOperator
 - Administrator
 - Operator
 - User
- Command profiles
- Role-to-Profile correlation
- User-to-Role correlation
- Allows you to review and adapt !!!





What Does All That Mean?

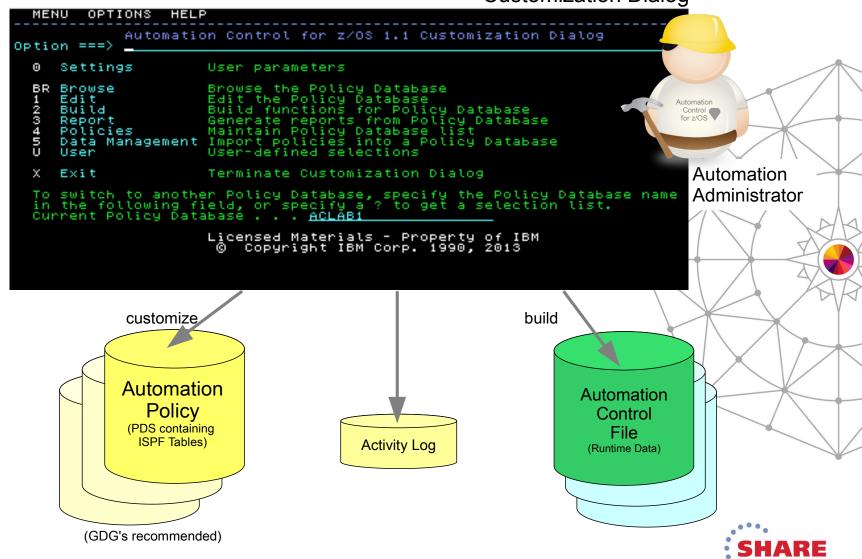




Easy to Administrate: Policy-based Automation



Customization Dialog



Policy-based Automation – Defining an Application

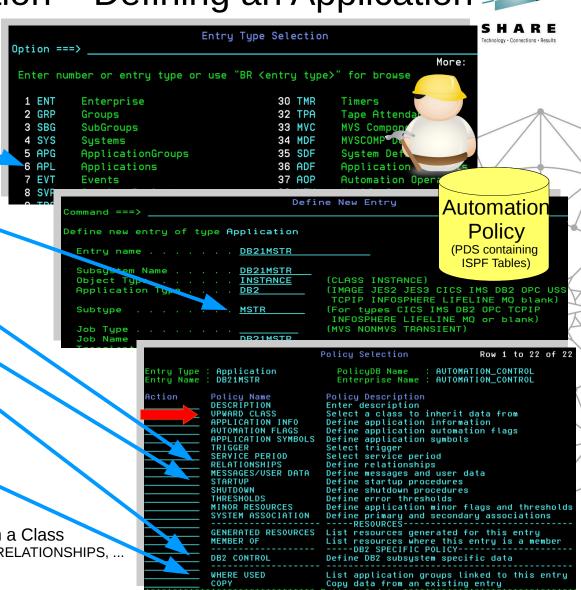


Adding the DB2 Master Addr. Space ==> 'DB21MSTR' <==

- Select Entry Type 'APL' and enter 'NEW DB21MSTR'
- Application Type: DB2 Subtype: MSTR
- Define further policy attributes
 - RELATIONSHIPS e.g. HasParent JES2 & RRS
 - STARTUP / SHUTDOWN Start and Stop Commands
 - DB2 CONTROL Subsystem-ID, Active Log Dataset
 - WHERE USED link DB21MSTR to a System

(through an Application Group (APG).

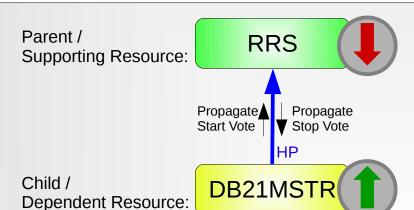
..or.. UPWARD CLASS to inherite from a Class DB2 CONTROL, STARTUP, SHUTDOWN, RELATIONSHIPS, ...



Policy-based Automation – Relationships

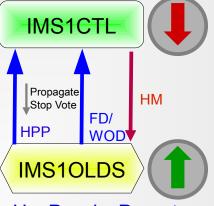






HasParent

- start DB21MSTR when RRS is up
- stop RRS when DB21MSTR is down
- Vote propagation to actively
- start the parent
- stop the child



HasPassiveParent

- + ForceDown/
 WhenObservedDown
- + HasMonitor
- Don't start IMS1CTL when starting IMS1OLDS
- But stop IMS1OLDS when stopping IMS1CTL
- Recycle IMS1OLDS if IMS1CTL fails
- propagates health state from IMS1OLDS to IMS1CTL

Policy-based Automation – Defining a Relationship



Define Relationships for Address Space 'DB21IRLM'

Select Entry Type 'APL', then select 'DB21IRLM,

Select Relationships

Define the Relationship type

- Several relationships types could be defined e.g. ...
 - MAKEAVAILABLE
 - MAKEUNAVAILABLE
 - PREPAVAILABLE
 - PREPUNAVAILABLE
 - HASPARENT
 - HASPASSIVEPARENT
 - HASMONITOR
 -
- Conditions like
 - WhenAvailable
 - WhenUnavailable
 - **–**





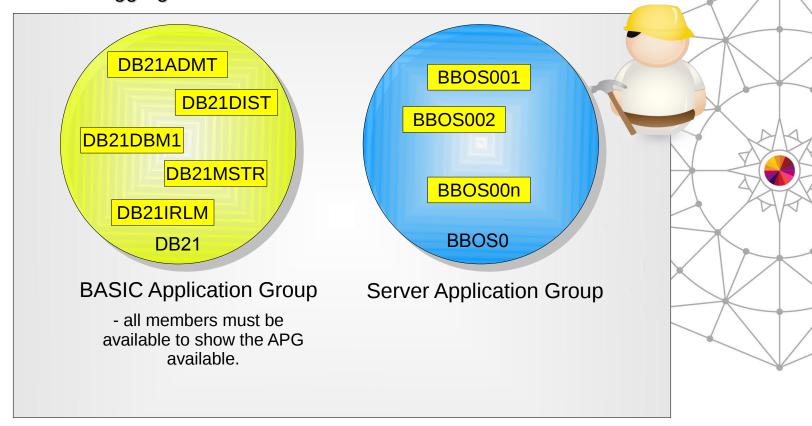
Policy-based Automation – Grouping to Reduce Complexity



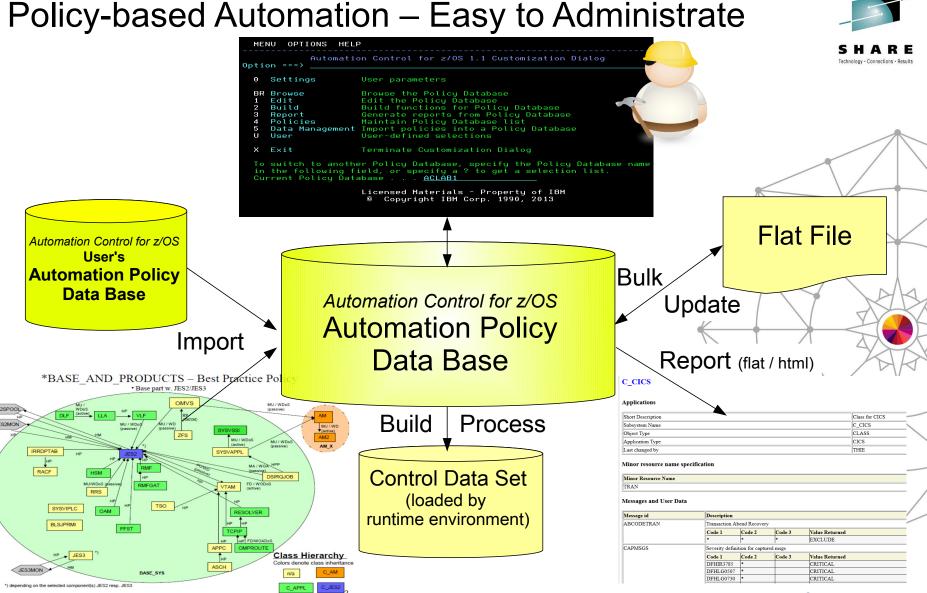
An Application Group (APG) with all its members can be managed as a single resource.

• Requests are propagated to its members.

• The APG shows an aggregated state derived from the states of its members.



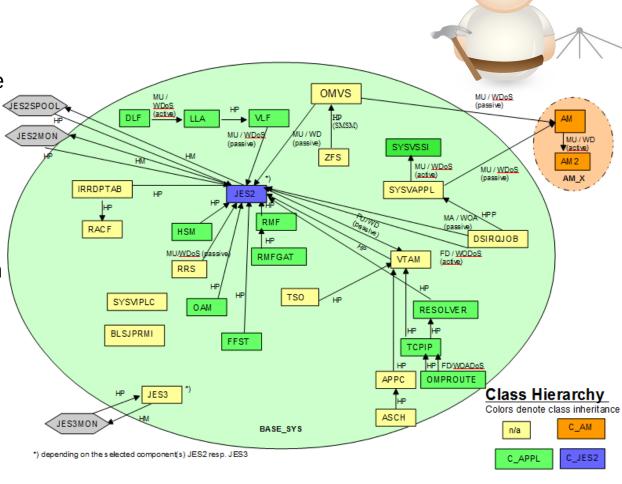






Policy-based Automation – Best Practices

- Best Practice Policy is delivered with Automation Control
- Shorter 'Time To Value'
 - Import Function available
- Used as Reference Policy
- Developed Tested Serviced
- Very Helpful when discussing Automation with Subsystem Owners
- Documented also as .pdf in /usr/lpp/ing/doc/policies





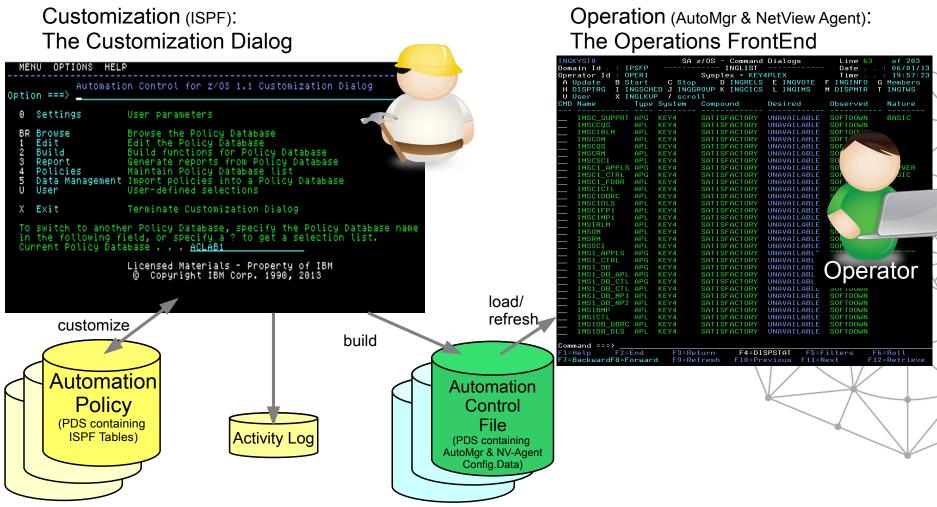
What Does All That Mean?





Easy to Operate: Goal-driven Automation





Recommended to use

Generation Data Groups (GDG)



Goal-driven Automation: What is a Goal

SHARE
Tachnology - Connections - Results

There is a Goal defined for each resource

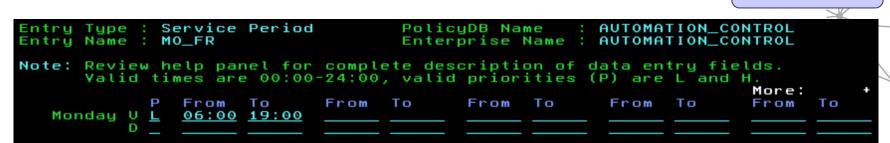
Desired Available
ALWAYS
ONDEMAND
ASIS



The Goal may vary over time according to the automation policy

Service Period

- Up or Down
- Monday ... Sunday, Weekday, Weekend or Daily
- From time
- To time



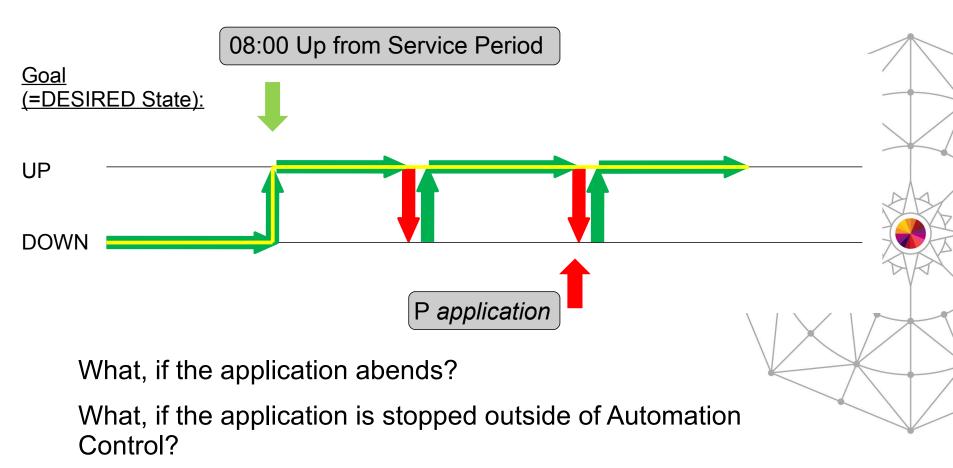


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Goal-driven Automation: Behavior



Assumption: By default the DESIRED state of this application is **DOWN**.

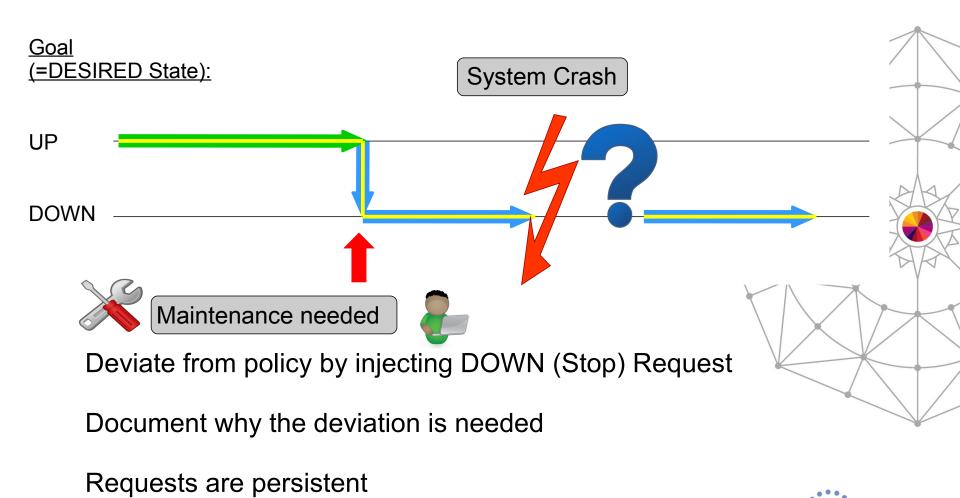




Goal-driven Automation: Persistent Requests



Assumption: By default the DESIRED state of this application is **UP**.



Goal-driven Automation: Summary

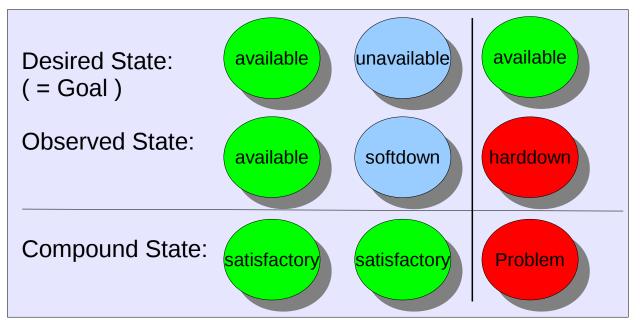


• It is duty of Automation Control to manage the resources according to the automation policy.

 The operator may overrule the policy driven automation by sending a <u>Request</u> to Automation Control to change the <u>Desired State</u> of a resource.

Automation Control for z/OS aims to enter & keep that Desired State.

Requests are <u>persistent</u>.
 It is good practice to remove injected requests to return to <u>policy driven automation</u>.





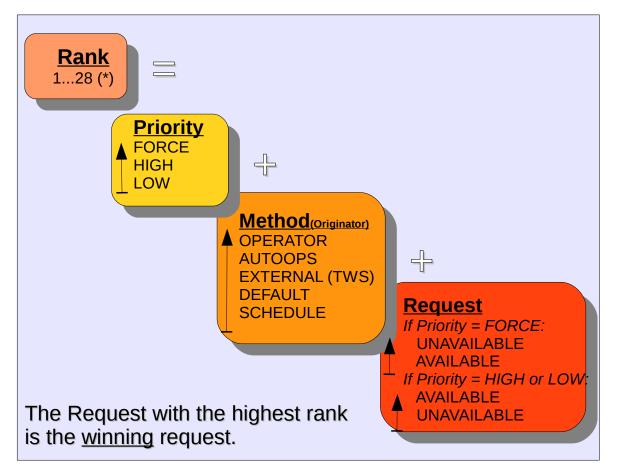


Goal-driven Automation: Request Ranking

SHARE

Requests can be injected by different Originators.

→ 'Ranking' instead of 'The last one wins'



OPERATOR: SCHEDULE: Request: Request: Make Make Unavailable Available **Priority: Priority:** low low APL Resource The OPERATOR request is winning. Both requests are injected persistently.

What if the OPERATOR request is

canceled?

(*) Force Priority is missing for Schedule



Goal-driven Automation: INGVOTE - Any Requests injected?



SHARE

```
Technology · Connections · Results
INGKYRQ2
                                     - Command Dialogs
                            SA z/0S
                                                              Line
Domain ID
            = IPUFM
                                     INGVOTE
                                                              Date = 06/02/13
Operator ID = OPER1
                                Sysplex = A0C7PLEX
                                                              Time = 19:16:41
      C Cancel request
                           K Kill request
                                               S Show details
                                                                  V Show votes
Cmd Name
                 Type System
                                Request Data
    APPC
                 APL
                      AOC7
                                Reg : MakeUnAvailable
                                At: 2013-06-02 19:16:36
                                Org : OPERATOR(OPER1)
                                Cmt : Down due to service. Will be up again at
                                      7:00 a.m. In urgent cases call ext. 2608
                                      Dave
                                Pri: 01720000 Should Be Down - Operator
                                Stat: Winning/Satisfied
Command ===> _
  PF1=Help
                PF2=End
                                PF3=Return
                                                                    PF6=Roll
                                                                   PF12=Retrieve
                                PF9=Refresh
```



Goal-driven Automation: INGVOTE - Any Requests injected?



```
SHARE
                                                                               Technology · Connections · Results
INGKYRQ2
                                  - Command Dialogs
                                                         Line
Domain ID
                                  INGVOTE
                                                         Date = 06/02/13
Operator ID = OPER2
                             Sysplex = A0C7PLEX
                                                         Time = 19:34:44
     C Cancel request
                         K Kill request
                                           S Show details
                                                             V Show votes
Cmd:
Cmd Name
               Type System
                             Request Data
    APPC
                    A0C7
                             Req : MakeUnAvailable
                                   2013-06-02 19:33:53
                             Ora : OPERATOR(OPER2)
                                   Service from 8:00 to 8:30 - Dave
                                 : 01720000 Should Be Down - Operator
                             Stat: Pending
    ASCH
                    A0C7
                             Req : MakeAvailable_Only
                                   2013-06-02 19:32:29
                             Ora : OPERATOR(OPER1)
                             Cmt : Must run todau !!!
                             Pri: 02740000 Must Be Up - Operator
                             Stat: Winning/Satisfied
       OPER2 wants to stop APPC, but failed. Why?
         Because OPER1 injected a high priority START
         against ASCH. ASCH depends on APPC.
```

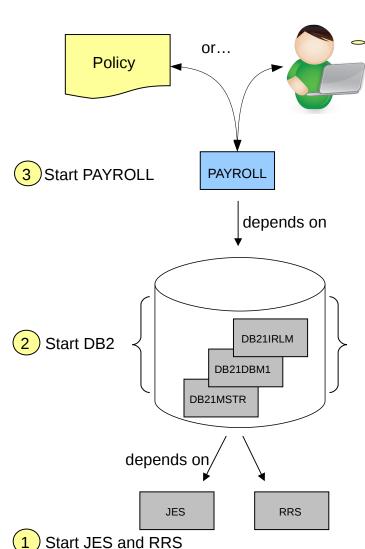




Starting an Application

Automation Control will start in order (if not already active) ...







Application PAYROLL uses a DB2-database to access employee data

DB2 itself consists of multiple address spaces. Required are:

- MSTR, master address space
- DBM1, services
- IRLM, lock manager

For transaction processing the Resource Recovery Services (RRS) address space is needed

Most address spaces depend on the JES subsystem

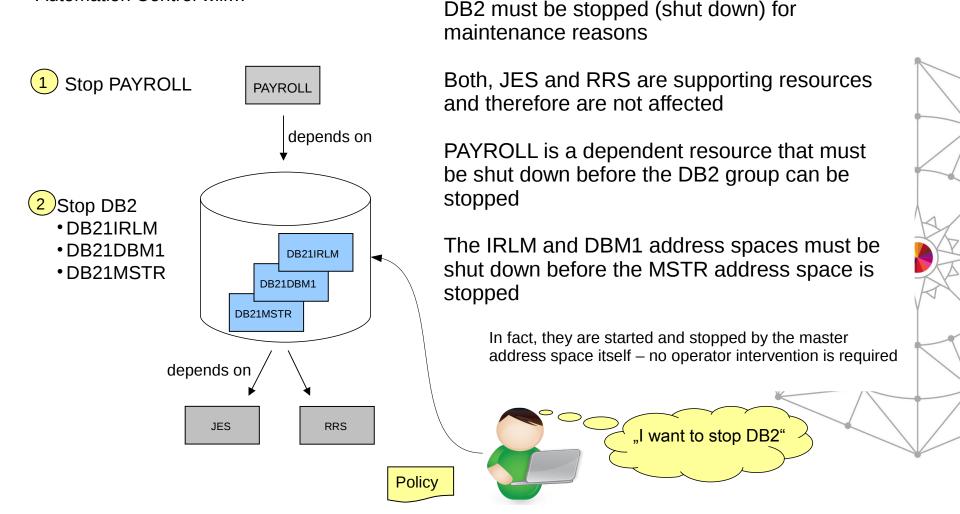
To ensure proper function of PAYROLL, these dependencies must be considered when PAYROLL is started



Stopping an Application



Automation Control will...





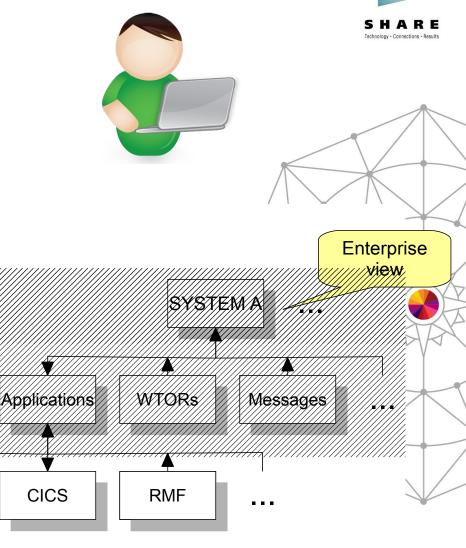
Operator Interface 'INGLIST'



Nam AM AM_ AM2								
AM_			System	n Compound	Desired	Observed \	Nature	
		APL	AOC7	SATISFACTOR	Y AVAILABLE	AVAILABLE		
ДМ2		APG		DEGRADED	AVAILABLE	DEGRADED	SEA FR	
		APL	AOC7	PROBLEM	UNAVAILABLE	HARDDOWN		
AOC.		SYG	AOC7	PROBLEM	AVAILABLE	PROBLEM	BASIC	
AOC.		SYS	AOC7	SATISFACTOR		AVAILABLE		
APP		APL	AOC7	SATISFACTOR		AVAILABLE		
ASC		APL	AOC7	SATISFACTOR		AVAILABLE		
		APG	AOC7	PROBLEM	AVAILABLE	PROBLEM	BASIC	
		APL	AOC7	SATISFACTOR		AVAILABLE		
CMD		APL	AOC7	PROBLEM	AVAILABLE	HARDDOWN		Fastpath
DLF		APL	AOC7	SATISFACTOR		AVAILABLE		other rur
		APL	AOC7	SATISFACTOR	Y AVAILABLE	AVAILABLE		other rur
FFS		APL	AOC7	SATISFACTOR		AVAILABLE		comman
FTP.		APG	AOC7	SATISFACTOR'	Y AVAILABLE	AVAILABLE	BASIC	Comman
		APL	AOC7	SATISFACTOR'		AVAILABLE		
FTP	S A	APL	AOC7	SATISFACTOR	Y AVAILABLE	AVAILABLE		
HSM	f	APL	AOC7	PROBLEM	AVAILABLE	HARDDOWN		
		APL	AOC7	SATISFACTOR		AVAILABLE		N X
INE	TD A	APL	AOC7	SATISFACTOR	Y AVAILABLE	AVAILABLE		
IRR		APL	AOC7	SATISFACTOR'	Y AVAILABLE	AVAILABLE		
JES:		APL	AOC7	SATISFACTOR	Y AVAILABLE	AVAILABLE		/ × \
JES:	2MON I	MTR	AOC7	SATISFACTOR	Y AVAILABLE	AVAILABLE		
		MTR	AOC7	SATISFACTOR		AVAILABLE		
LLA		APL	AOC7	SATISFACTOR		AVAILABLE		
OAM	f	APL	AOC7	SATISFACTOR	Y AVAILABLE	AVAILABLE		
OMV		APL	AOC7	SATISFACTOR		AVAILABLE		
RAC		APL	AOC7	SATISFACTOR		AVAILABLE		-
RDS		APL	AOC7	PROBLEM	AVAILABLE	HARDDOWN		
RES	OLVER A	APL	AOC7	SATISFACTOR		AVAILABLE		
RMF		APL	AOC7	SATISFACTOR	Y AVAILABLE	AVAILABLE		
	GAT A	APL	AOC7	SATISFACTOR		AVAILABLE		



- Status Display Facility
- Set of hierarchical panels





VTAM

System view

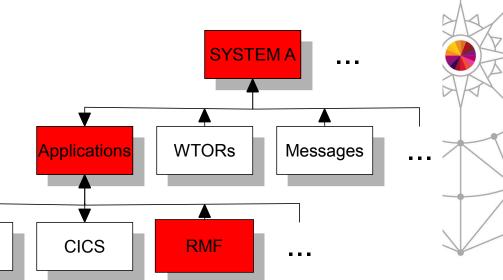
Application

view

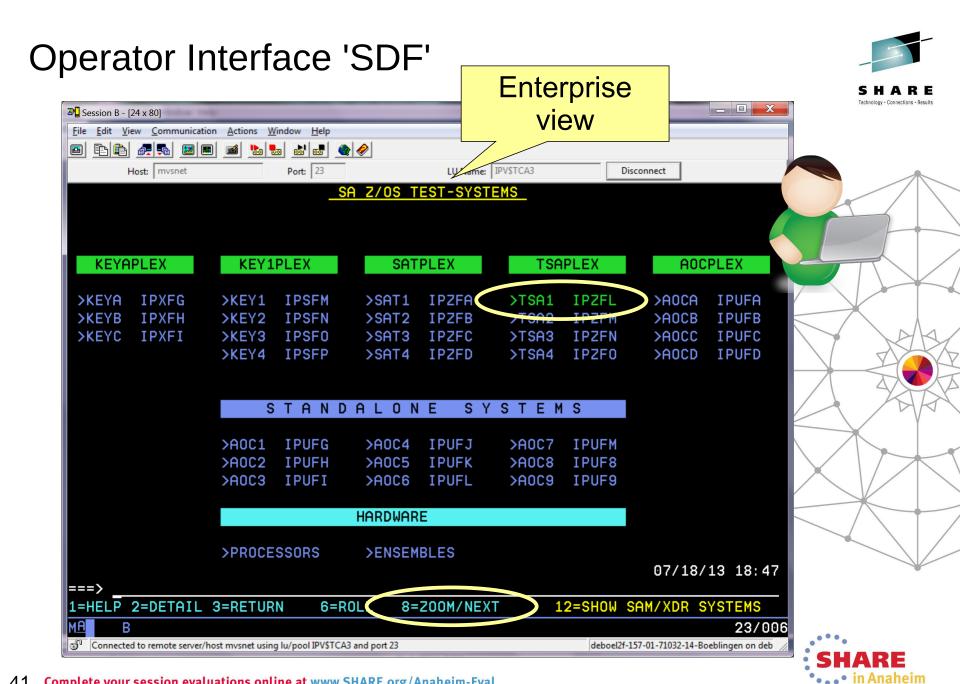
- Status Display Facility
- Set of hierarchical panels
- Show color-coded status conditions

VTAM

- Dynamically updated
- realtime Overview
- Problem cause analysis





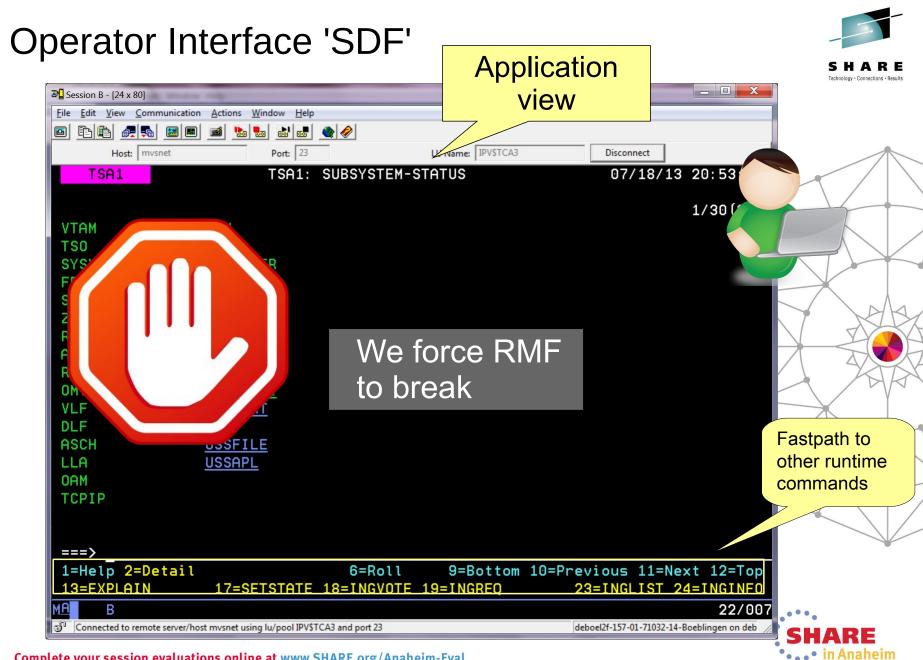


Operator Interface 'SDF' System view _ D X Session B - [24 x 80] File Edit View Communication Actions Window Help LU ame: IPV\$TCA3 Port: 23 Host: mysnet SUMMARY-STATUS 07/18/13 20:51:42 TSA1 TSA1 !-----! >APPLS >GROUPS >MONITORS !-----! >WTOR >MESSAGES !----- Special Items ----! >TWS >Tape Devices 1=Help 2=Detail 6=Roll 8=Zoom 12=Top

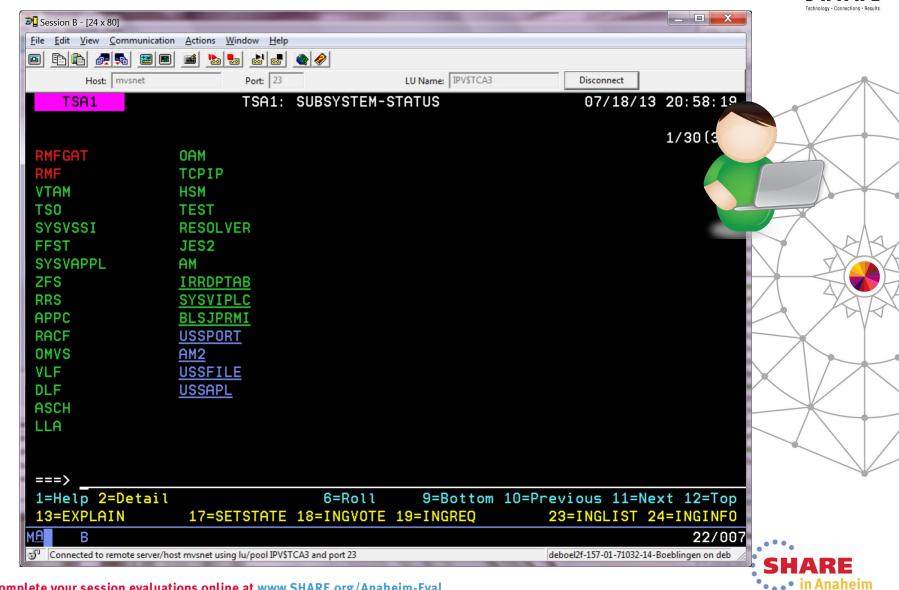
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deboel2f-157-01-71032-14-Boeblingen on deb

Connected to remote server/host mysnet using lu/pool IPV\$TCA3 and port 23



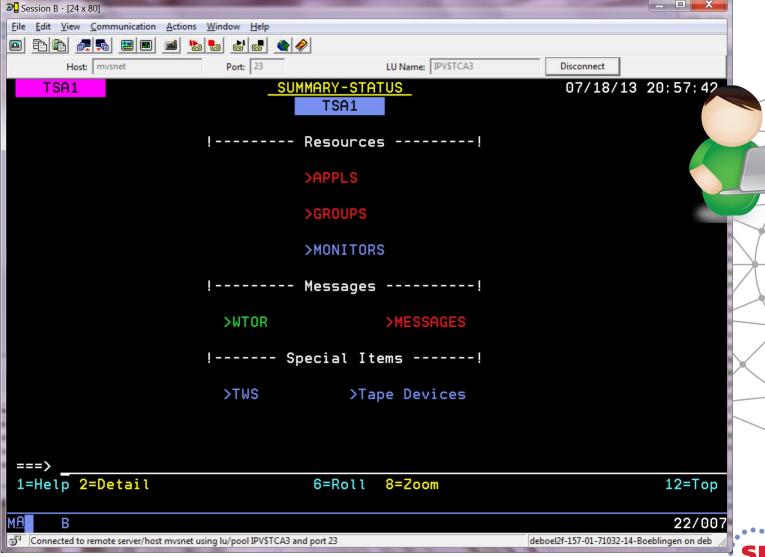




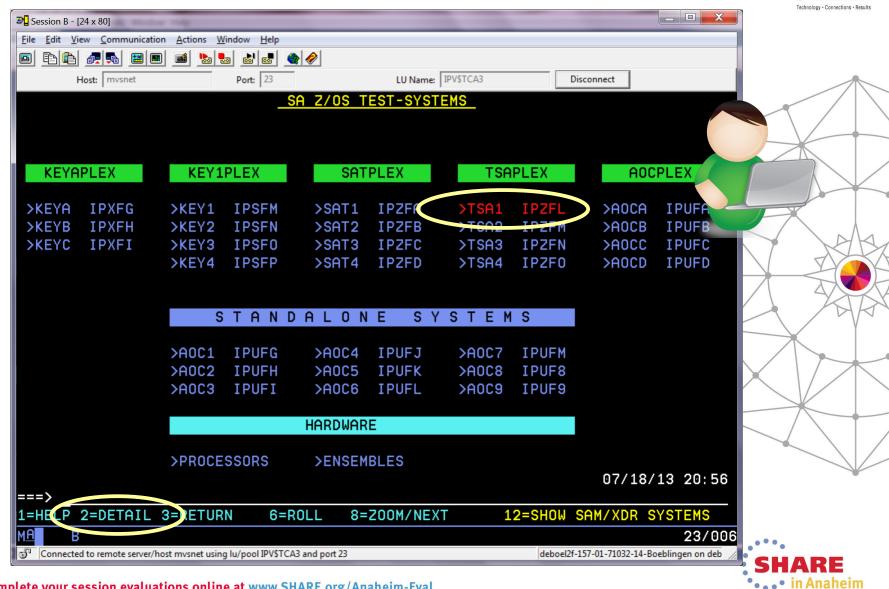


• • in Anaheim

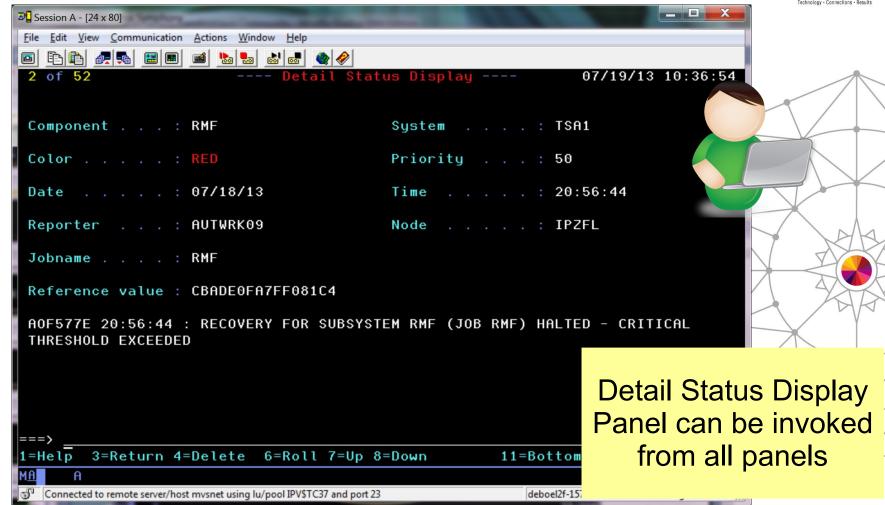
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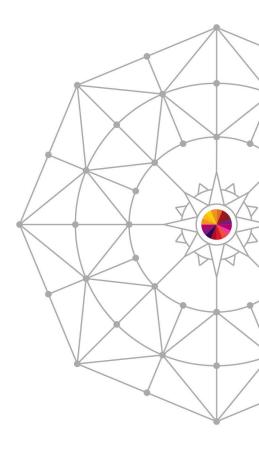




What Does All That Mean?



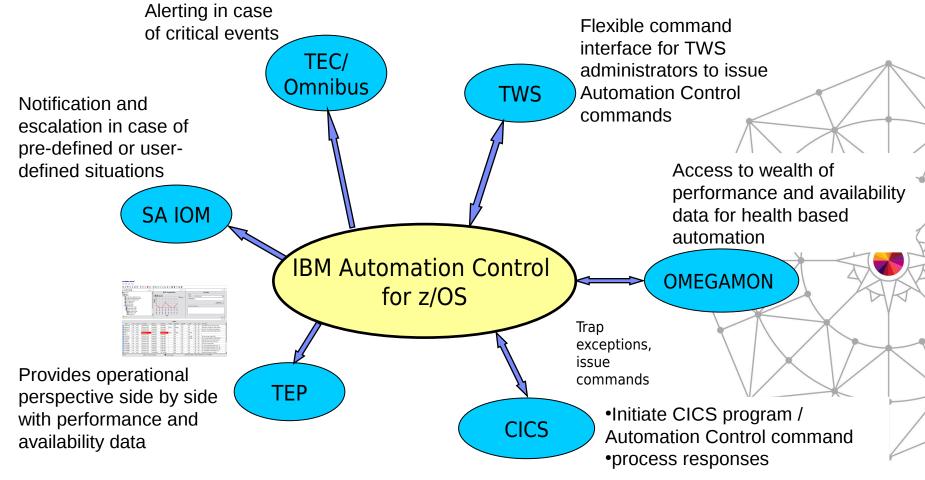






Integrating with Automation Control for z/OS



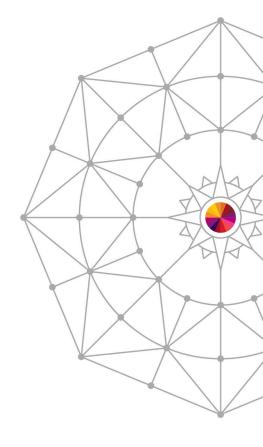




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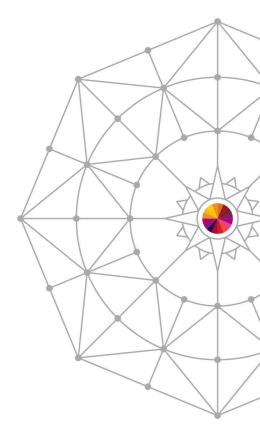






Easy to Migrate to NetView & SA for z/OS

- Same Administration & Operation
- Same Concepts
- Policies are upward compatible





Main Differences

	Automation Control for z/OS	System Automation for z/OS
NetView included (limited to automation)	•	
GDPS support		(a)
Sysplex scope of automation		(a)
Sysplex features		(4)
>3 systems connected to one SDF focal point		()
Processor Operations included	()	(a)
Automation Table customization	()	(a)
Message Revision Table (MRT) & Cmd Revision Table (CRT) support	● new	•
Policy based & Goal driven	•	(a)



Small Product Enhancements and APARs



	OA42054	APAR INTEGRATION AND GA FIXES • Toleration Support for new IBM zEnterprise BC12 and new IBM zEnterprise EC12 features		
	OA42059	 Among others Suppress logging of status updates No automatic uppercase translation of data during ACF REQ=REPL 		
	OA42063	APAR INTEGRATION AND GA FIXES		
	OA42206	RESHIP MONITORING AGENT APPLICATION SUPPORT JAR FILES WITH NEW CERTIFICATES		
	OA42313	IMS automation: ABEND0C4 IN EVIPVEX1 AT OFFSET '84C' ON A MVCL INSTRUCTION		
	OA42356	AUTODISCOVERY PROBLEM: preloader job INGEDPLD JOB ENDS WITH RC20		
	OA42497	INTEGRATION OF several APARs most fixes in Alerting area		
*	OA42827 + OA42903	MRT and CRT restrictions removed		
	OA43045	Among others • Several documentation changes		



IBM Automation Control for z/OS



Key capabilities

Monitor and automate z/OS
 Monoplex environments as well as local System z hardware resources



- Policy based and Goal driven automation to start, stop, monitor, and recover z/OS applications/resources
- Central view and management of critical business processes
- Easy Setup via Configuration Assistant

Automation Control for z/OS is an Easy to Operate solution without additional software pre-reqs







System Automation for z/OS: Beginner's Hands-On Lab

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Friday, March 14, 2014 14904





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