

Intelligent Automation of Hybrid Data Center with Next Generation of Z System Automation

Z System Automation V4.4

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Presentation
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Abstract

Hybrid Data Centers have special needs for automation. Z System Automation (SA) has grown over years to a reliable and policy driven message automation product helping operators in almost any situation to operate a Sysplex.

It is an "automation tower in the Enterprise" reaching out even to other platforms, integrating with many different operation and automation solutions.

With "Z Web Automation Console" SA provides a modern Dashboard for managing the Enterprise IT systems. In this session we will provide an overview of the core strength of SA and introduce exciting new features such as integration with Kubernetes on Z provided in the latest release SA V4.4

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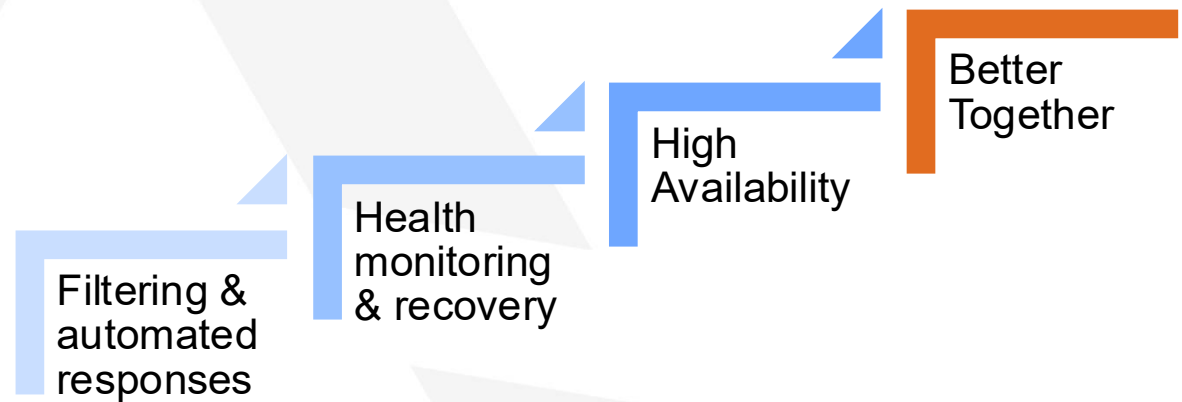




Z SYSTEM AUTOMATION BASICS

SA – Automated Operation Tasks

- **Event / message filtering** – reduce traffic to necessary minimum
- **Automated response** – fast and consistent reaction on application and system incidents
- **Simple Operator interface** – handle complex tasks in a consistent way with a single click
- **Continuous health monitoring and recovery** of the system and business critical applications
- **Failover of applications and systems** in case of planned and unplanned outages
- **Better Together Automation** – Integrate Inside and Out with best tools and solutions for your automation needs



Z System Automation Logical Components

IBM Z System Automation

Hardware Automation

Processor Operations

- Automate and control hardware operations (HMC / SE)
- Power on/off and reset processors
- Perform system IPL for z/OS, Linux, and VM
- Automate LPAR settings, e.g., weights and capping
- IBM Z Hardware event monitoring & INGALERT forwarding

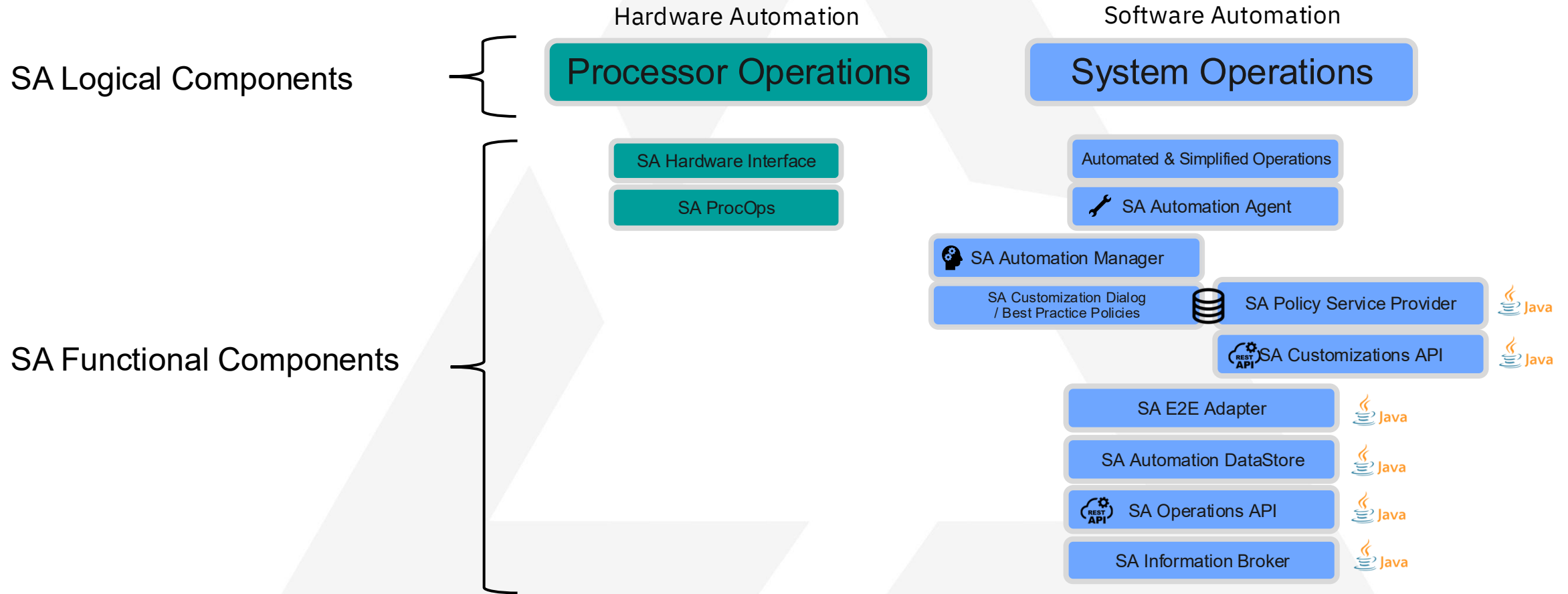
Software Automation

System Operations

- Automate applications
- Automate repetitive and complex tasks
- Monitor applications, messages, and alerts
- Simplifies complex operational tasks
- Ensures high availability
- Integrates w/ event management, scheduling, monitoring, and more

Runs on z/OS V2.3 or higher, requires NetView V6.3.0

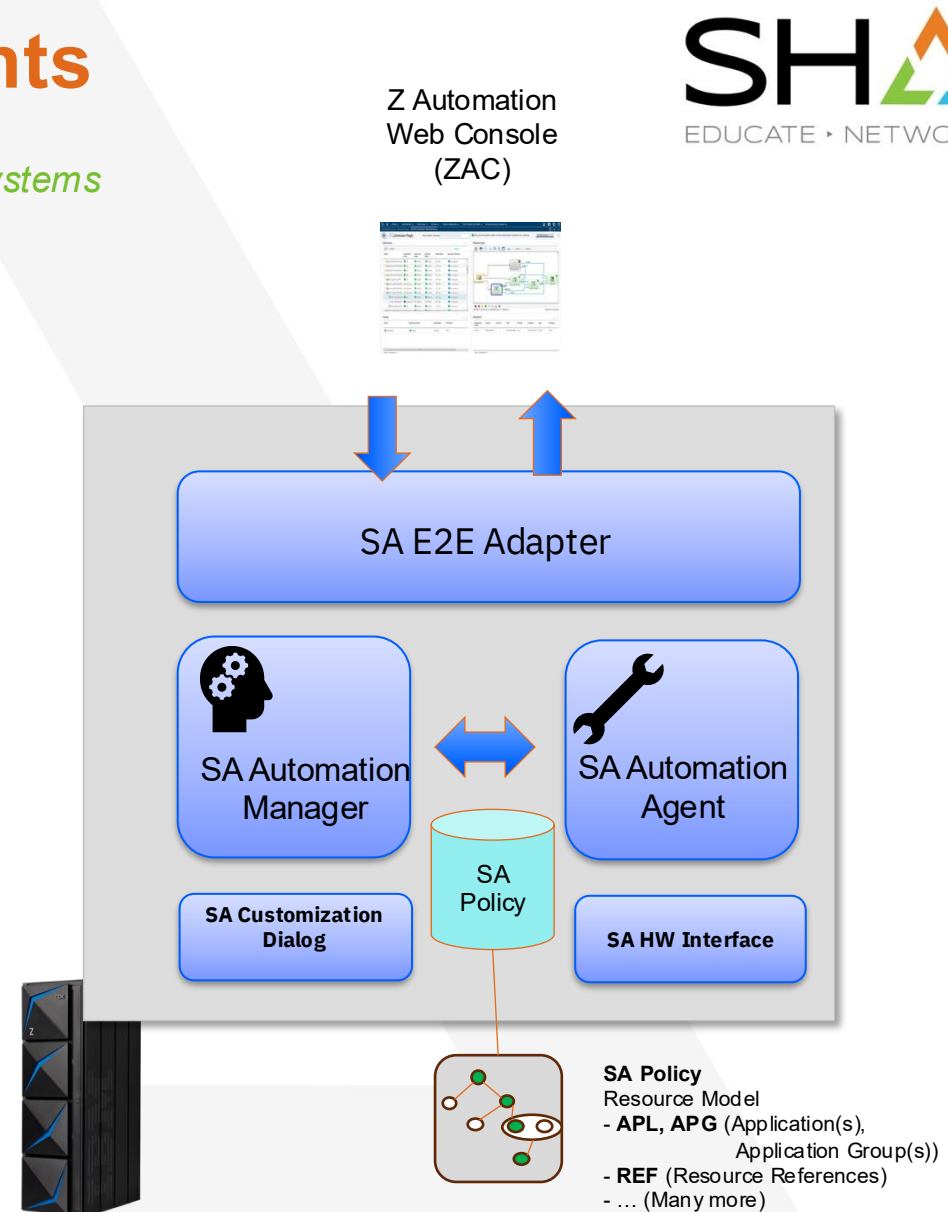
SA Logical & Functional Components



SA Core Components

*The SA core functions to do Message Automation to keep tasks and subsystems available is done by these **SA functional Components***

- The **SA Manager** does the automation decisions based on information provided by the **SA Agents** on each system and interact with the system by sending orders to the SA Agents.
- The **SA Policy** is a description / model that contains all required information of the actual environment to drive automation with above mentioned SA Manager and SA Agent. The SA Policy is being created and maintained with the **SA Customization Dialog**
- The **SA HW Interface** allows SA Users to interact with HW interfaces to get more information and control the (logical) HW setup on which the specific z/OS system is running. The **SA E2E Adapter** is the first interface developed years ago to interact with UI solutions running even outside the z/OS systems (aka “SMU”)



SA – Automation Cross Sysplex

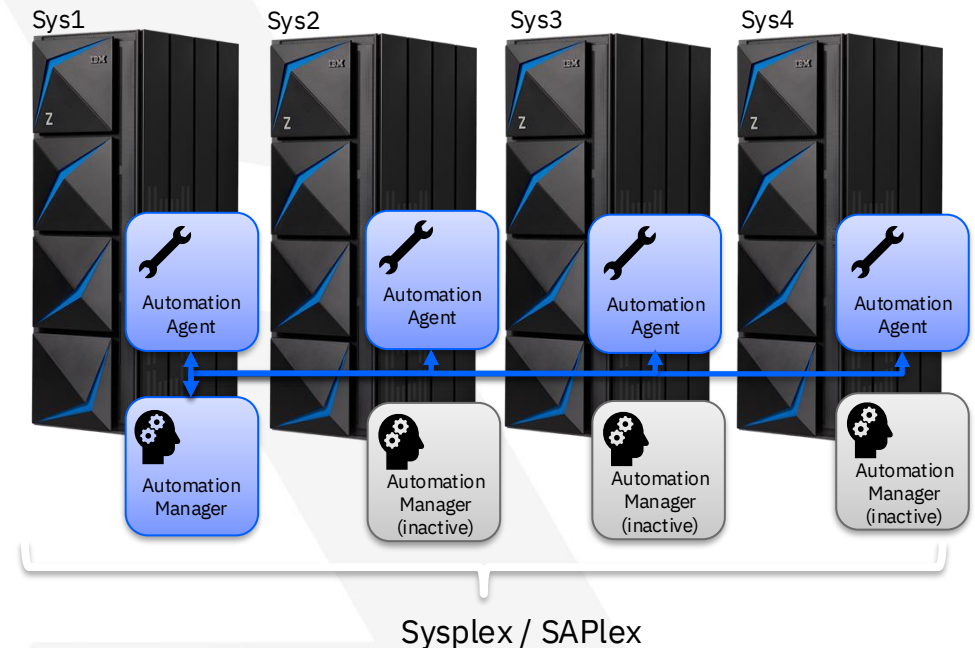
*The SA core functions to do Message Automation to keep tasks and subsystems available is done by these **SA functional Components***

SA Automation Manager and SA Automation Agent are the two main components taking care for your resources running on your Sysplex.

An **Automation Agent** runs on any system of your Sysplex. The Agent represents “eyes & fingers”. As the observing, reacting and doing part – an Agent knows how to start/stop your resource on a system and knows how to get its current status.

There is only one **active Automation Manager** in your Sysplex. It represents the “brain” of system automation and knows at any time the goal of any resource that needs to run or being stopped on any system of the Sysplex.

The **Automation Manager** gets informed by the Automation Agents about the current state of a resource – and instructs the Automation Agent, when this status has to be changed.

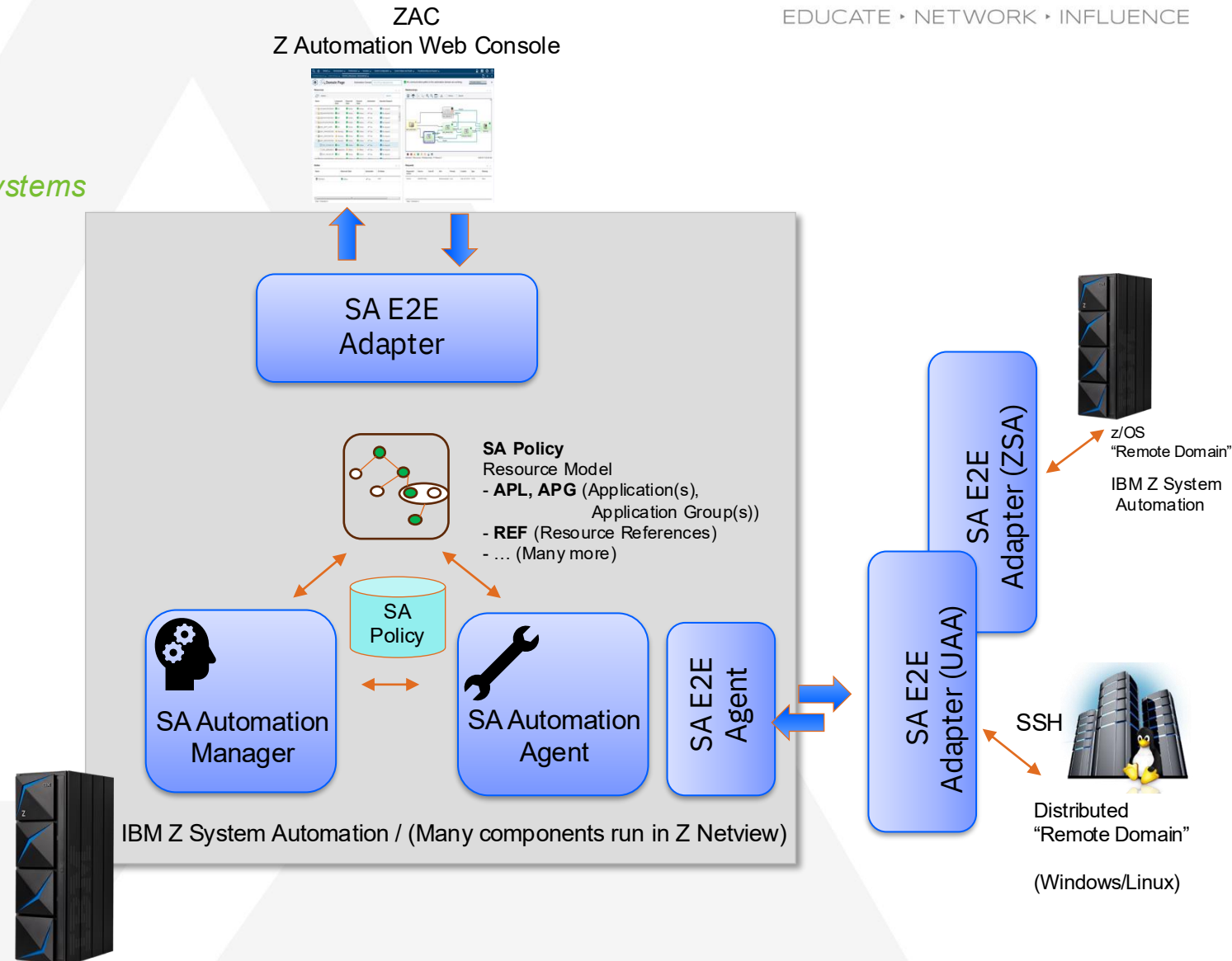


SA Extended Components for Hybrid IT

"E2E Protocol"

Over Time the SA Core Automation Functions have been enhance with more components to integrate SA through various Interfaces with other Products and Systems

- The **SA E2E Adapter and – Agents** implement a protocol for “E2E Automation” of resources running on other Sysplexes or on distributed systems.
- This protocol is being used
 - For the UI - by the Z Automation Web Console
 - Accessing remote automation domains and applications hosted there

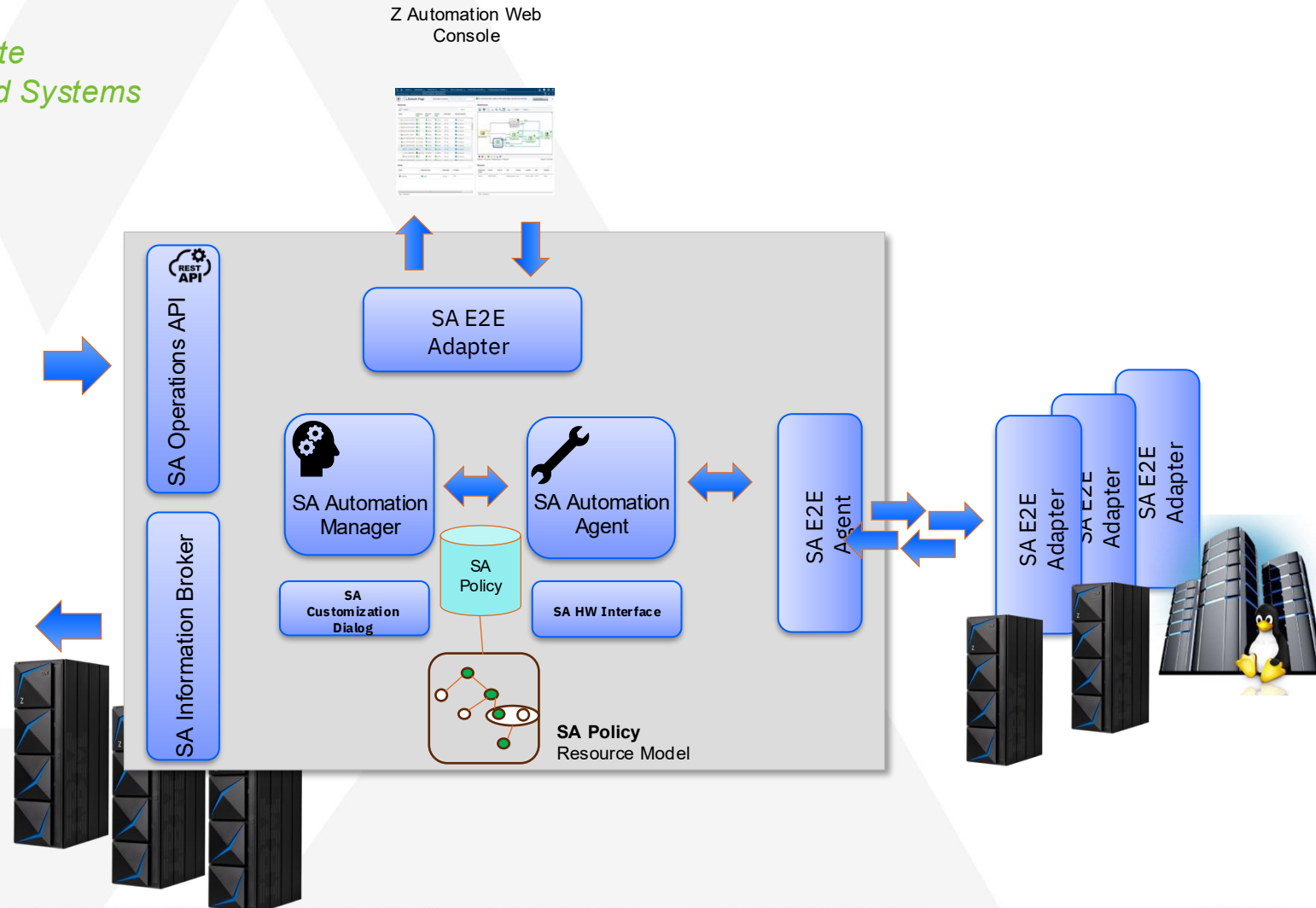


SA Extended Components for Hybrid IT

“RESTful API & KAFKA”

Over Time the SA Core Automation Functions have been enhance with more components to integrate SA through various Interfaces with other Products and Systems

- The **SA Operations API** is a **REST API** – the current standard in the hybrid IT world to mesh services together provided by servers running on different environments located anywhere
- The **SA Information Broker** delivers SDF events and user messages to Apache KAFKA™ for consumption by any KAFKA subscriber



SA User Interfaces

Netview Commands

Login panel to Netview
“NCCF” console with a
3270 console (“terminal
emulator”)

```

NN NN      EEEEE TTTTTT VV VV  EEEEE WW  WW TM
NNN NN  EEEEE TT TT  VV VV  II  EE  WW  W  WW
NNN NN  EEEE  TT  VV VV  II  EEEE  WW  WW  WW
NN NNNN  EE  TT  VV VV  II  EE  WW  WW  WW
NN NN  EEEEE TT  VV  II  EEEEE  WW  WW
NN NN      V

5697-WV © Copyright IBM Corp. 1986, 2019 - All Rights Reserved
U.S. Government users restricted rights - Use, duplication, or disclosure
restricted by GSA ADP schedule contract with IBM corporation.
Licensed materials - Property of IBM Corporation
Domain = CNM01 NetView V6R4 - NM

OPERATOR ID ==> or LOGOFF
PASSWORD ==>
PROFILE ==> Profile name, blank=default
HARDCOPY LOG ==> device name, or NO, default=NO
RUN INITIAL COMMAND ==> YES or NO, default=YES
Takeover session ==> YES, NO, or FORCE, default=NO

Enter login information or PF3/PF15 to logoff
    
```

Panels

```

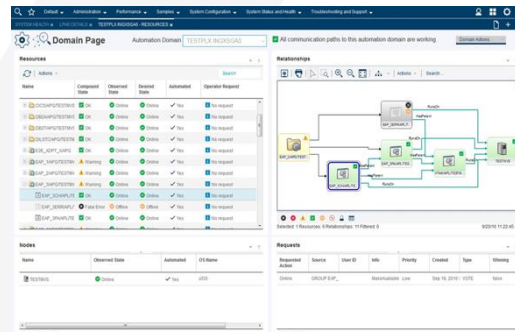
INQKYST0  Domain Id : INQ01  SA 2/OS  Command Dialog  Line 1 of 25
Operator Id : JMH  INQLIST  Sysplex : SHARPLEX  Time : 08:00:00
H DISPTR 0 Start C Step D INQRES E INQVOTE F INQINFO G Members
R Resume I INQSCHE J INQGROUP K INQICIS L INQIMS M DISPTR P INQPC
CHD Name  E Suspend T INQMS U User  K INQMY 7 scroll  Observed Nature
-----
AM  APL  S2  SATISFACTORY AVAILABLE AVAILABLE SERVER
AP  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
APC  APL  S2  SATISFACTORY UNAVAILABLE SOFTDOWN
ASCH  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
BASE SVS  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
JES2  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
LRA  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
LOOKASID  APL  S2  SATISFACTORY AVAILABLE AVAILABLE BASIC
NETAPPL  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
NETVIEW  APL  S2  SATISFACTORY AVAILABLE AVAILABLE BASIC
NETVST  APL  S2  SATISFACTORY AVAILABLE AVAILABLE BASIC
NETWORK  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
RESOLVER  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
RRS  APL  S2  SATISFACTORY AVAILABLE AVAILABLE BASIC
S2  SVS  S2  PROBLEM AVAILABLE PROBLEM BASIC
S2  SVS  S2  SATISFACTORY AVAILABLE AVAILABLE
TCPIP  APL  S2  PROBLEM AVAILABLE AVAILABLE BASIC
TESTARG  APL  S2  PROBLEM AVAILABLE AVAILABLE
TEST1  APL  S2  PROBLEM AVAILABLE HARDDOWN
TEST2  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
VLF  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
VSM  APL  S2  SATISFACTORY AVAILABLE AVAILABLE
ZFS  APL  S2  SATISFACTORY AVAILABLE AVAILABLE

Command ***
F1=Help F2=End F3=Return F4=DISPSTAT F5=Filter F6=Roll
F7=Help F8=Refresh F9=Previous F10=Next F11=Retrieve F12=Retrieve
41/010
    
```

Most SA commands
that can be typed-in
in the NCCF console
have a Panel view
like the INGLIST panel
you see in this example

Web Dashboard UI

The Z Automation WEB
Console (former known as
“SMU”) offers a more
graphical modern and full
customizable
User Interface not
only for SA.



Zowe CLI Plugin(s) (Zowe certified)

```

[bjost@ssm03 ~]$ zowe sa ls res --type=APL --observed=SOFTDOWN --should
name type system dynamic suspend compound desired observed id description
AP2 APL SAMA SATISFACTORY UNAVAILABLE SOFTDOWN wYyChR2HwTB Spare SA Automation Mar
AP2 APL SAMB SATISFACTORY UNAVAILABLE SOFTDOWN wYyChR2HwTC Spare SA Automation Mar
DEMOPES APL SAMB true DIR SATISFACTORY AVAILABLE SOFTDOWN wM0UtrF4mB19m4s4mg Josis NONMS test temp
DEMOPES1 APL SAMB true DIR SATISFACTORY AVAILABLE SOFTDOWN wM0UtrF4mB19m4s4mg Josis NONMS test temp
DMRES1 APL SAMB true DIR SATISFACTORY AVAILABLE SOFTDOWN wY2cx18mB19m4s4mg Josis NONMS test temp
ROTST1 APL SAMA SATISFACTORY UNAVAILABLE SOFTDOWN 2zb3xul38mB19m4s4mg Josis test application
ROTSTD APL SAMB true DIR SATISFACTORY AVAILABLE SOFTDOWN 2zb3xul38mB19m4s4mg Josis NONMS test temp
SAB8 APL SAMA SATISFACTORY UNAVAILABLE SOFTDOWN 4s4s4mB19m4s4mg Josis test application
SABO APL SAMA SATISFACTORY UNAVAILABLE SOFTDOWN 4s4s4mB19m4s4mg Josis test application
SARO APL SAMA SATISFACTORY UNAVAILABLE SOFTDOWN 4s4s4mB19m4s4mg Josis SA operations RES
    
```

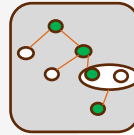


Extensions (“plugins”) for Zowe CLI
are available for NV and SA.

This CLI allows you direct access
to many Mainframe features
from the shell you are using
on your laptop.

It is being bundled together
with SA

SA Policy – “How an Application Becomes a Resource”



SA Policy
Resource Model

To add a new application to System Automation you must create and define a new Application policy object (a “Resource”) using the **SA z/OS customization dialog to the SA Policy**

With the customization dialog, you define how the new application should be automated by SA z/OS, for example:

- Specifying startup or shutdown commands for the application
- (Optionally) Specifying the appropriate monitoring routine
- (Optionally) Specifying relationships to correlate it with other applications
- Adding the application into an application group

```
MENU  HELP

Entry Type Selection

Option ==> APL

Enter number or entry type or use "BR <entry type>" for browse

1 ENT          Entry Name Selection          Row 1 to 30 of 37
2 GRP
3 SBG Entry Type : Application          PolicyDB Name : ROTEST
4 SYS          Enterprise Name : BJOST_43_A0C4PLEX
5 APG
6 APL          Action          Entry Name          C Short Description
7 EVT          ABC
8 SVP          AM          SA Automation Manager
9 TRG          AM2          Spare SA Automation Manager
10 PRO         C_AM          * Class for Automation Manager Definitions
11 MTR         C_APPL Entry Type : Application          PolicyDB Name : ROTEST
          C_CICS Entry Name : CICS1AR1          Enterprise Name : BJOST_43_A0C4PLEX
          C_CICS_C
          C_CICS_S
          C_CICS_T
          C_CICS_W
          C_CICS_X
          C_EMUL          Action          Policy Name          Policy Description
          C_NONMVS          DESCRIPTION          Enter description
          C_USS_AF          UPWARD CLASS          Select a class to inherit data from
          C_USS_F1          APPLICATION INFO          Define application information
          C_USS_PC          AUTOMATION FLAGS          Define application automation flags
          CICSDDT          APPLICATION SYMBOLS          Define application symbols
          CICSNC          TRIGGER          Select trigger
          CICSSTS          SERVICE PERIOD          Select service period
          CICS1AR1          PACING GATE          Select pacing gate
          CICS1TGE          RELATIONSHIPS          Define relationships
          CICS1TGM          MESSAGES/USER DATA          Define messages and us
          CICS1TOF          STARTUP          Define startup procedu
          CPSMCMAS          SHUTDOWN          Define shutdown proced
          THRESHOLDS          Define error threshold
          MINOR RESOURCES          Define application min
          SYSTEM ASSOCIATION          Define primary and sec
          -----RESOURCES-----
          GENERATED RESOURCES          List resources generat
```

```
Command Processing : STARTUP

Mixed case . . . NO (YES NO)

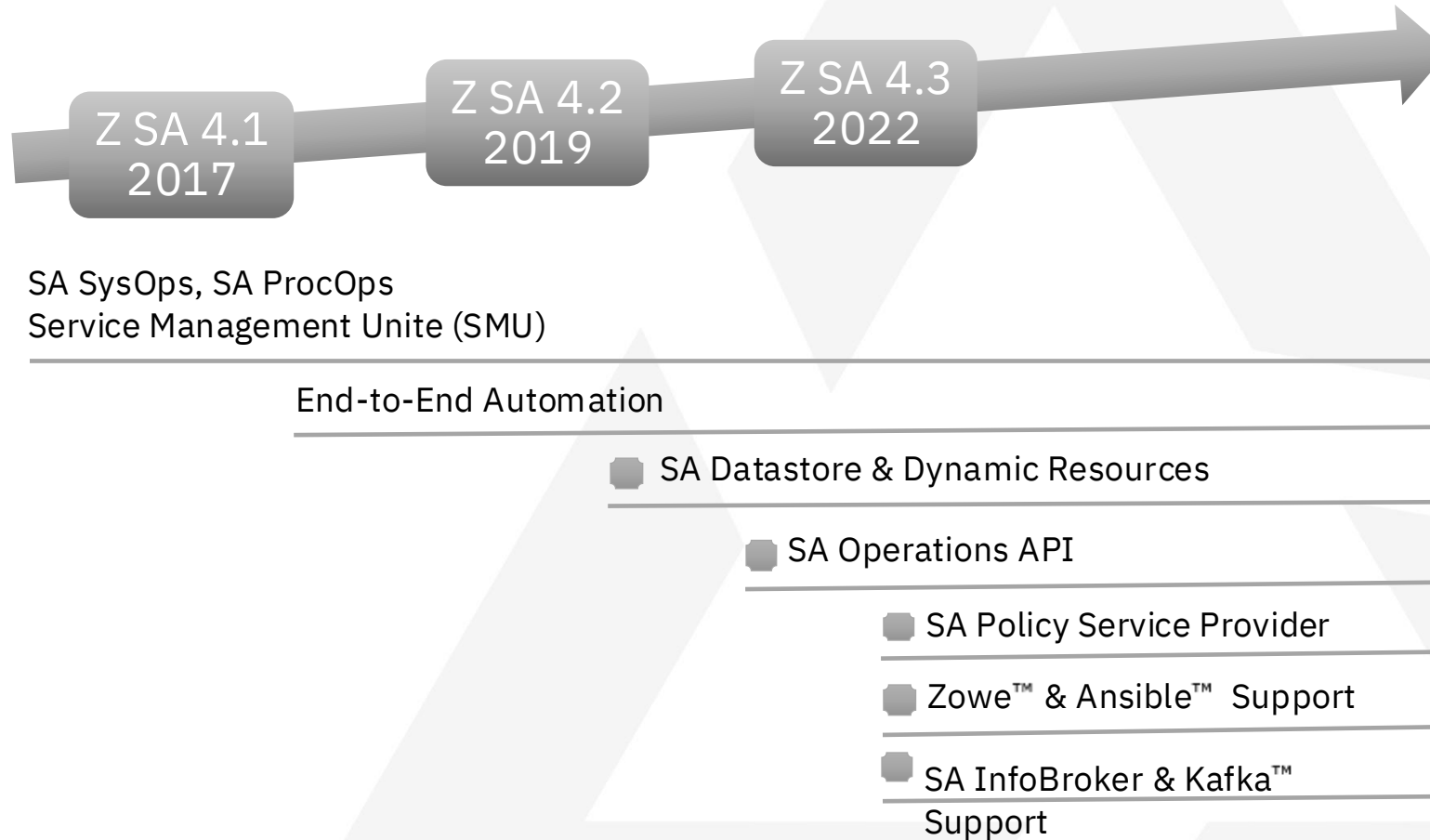
Cmd Type          AutoFn/*          Command Text
AUTO              MVS S &SUBSJOB,PARM='SI,START=AUTO&APPLPARMS'
COLD              MVS S &SUBSJOB,PARM='SI,START=COLD&APPLPARMS'
INITIAL          MVS S &SUBSJOB,PARM='SI,START=INITIAL&APPLPARMS'
NORM              MVS S &SUBSJOB,PARM='SI,START=AUTO&APPLPARMS'

***** Bottom of data *****
```

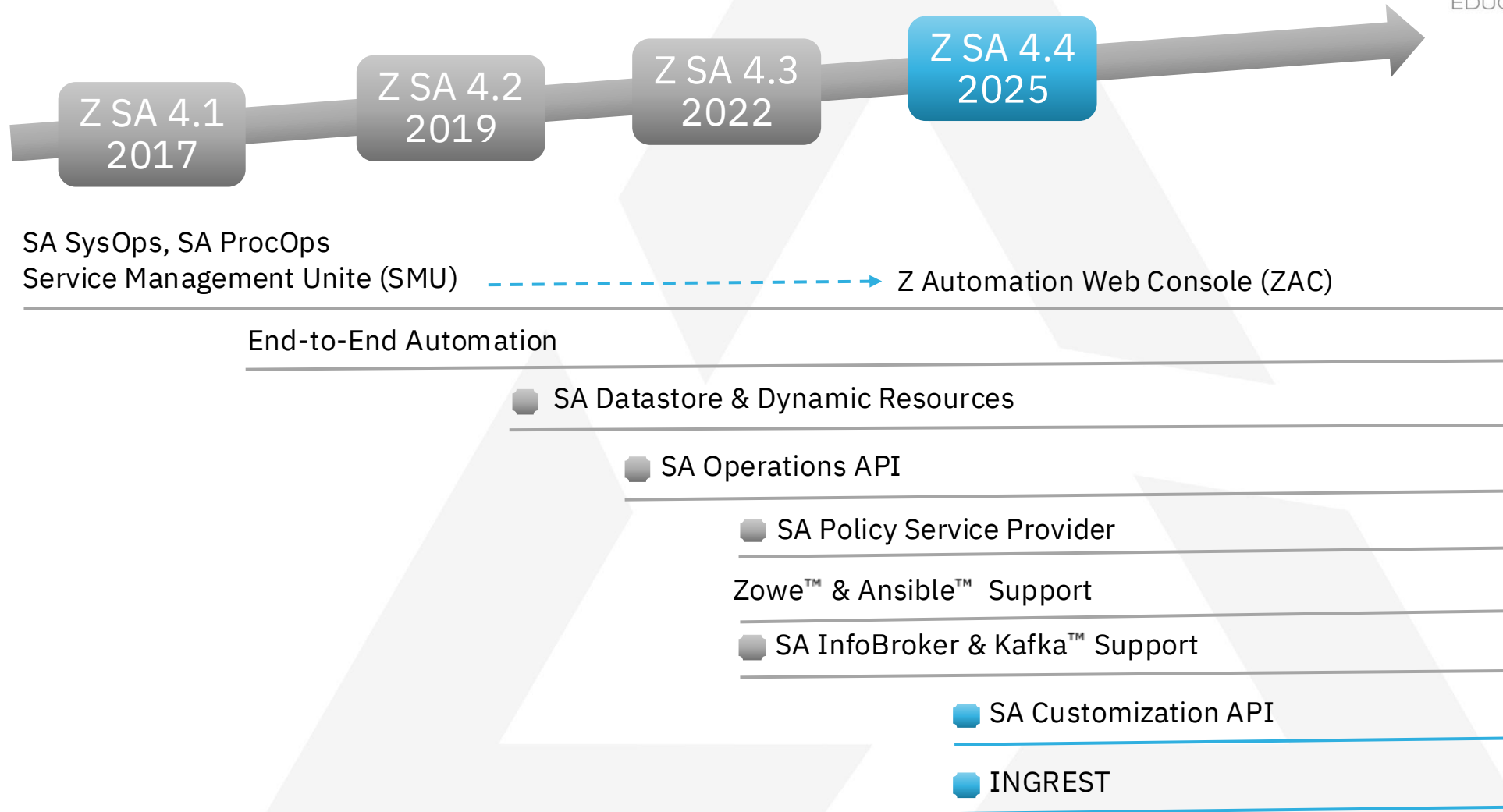


RECENT ADDITIONS TO SA

Z System Automation - Evolution



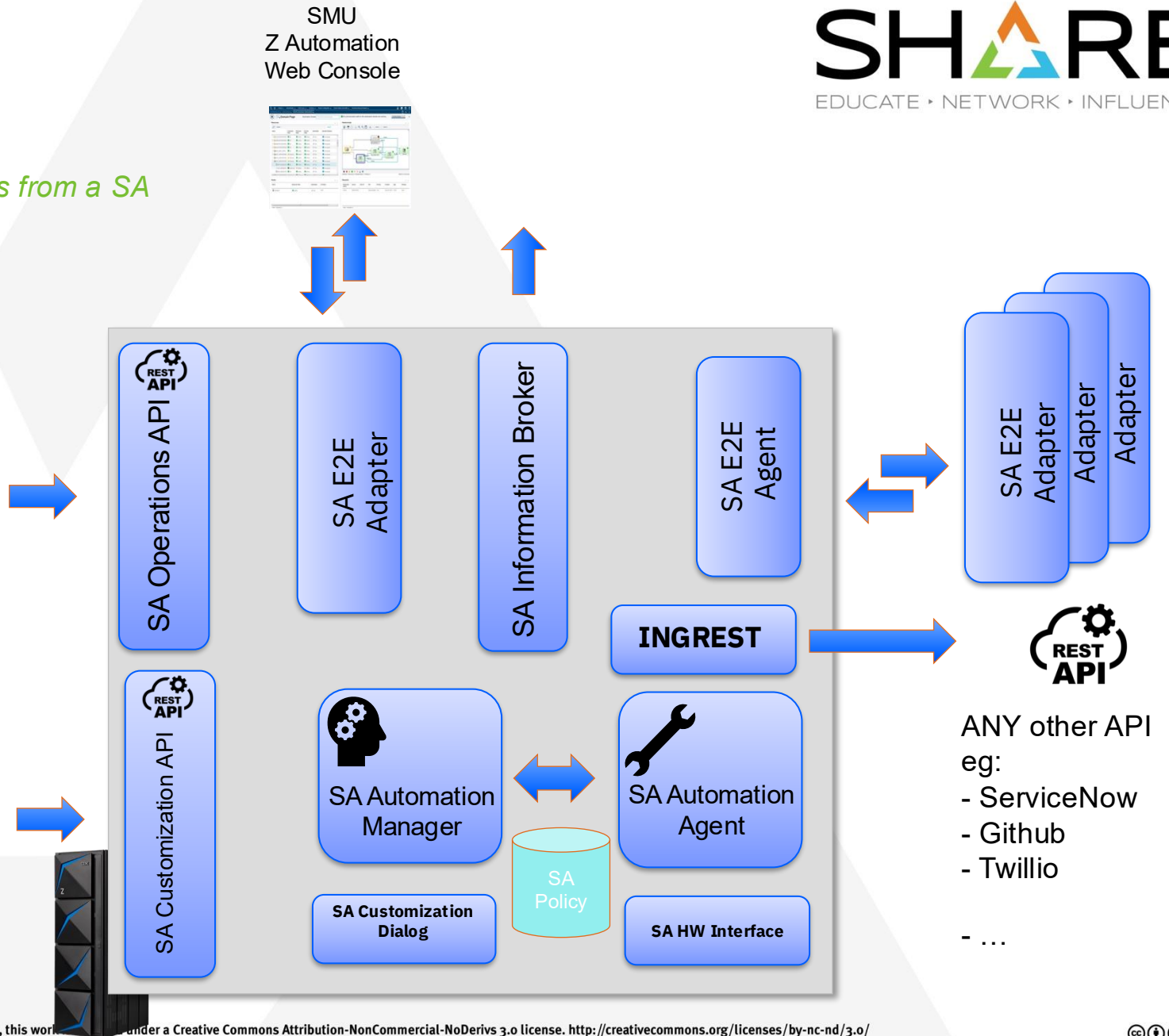
Z System Automation - Evolution



SA4.4 Addition: INGREST

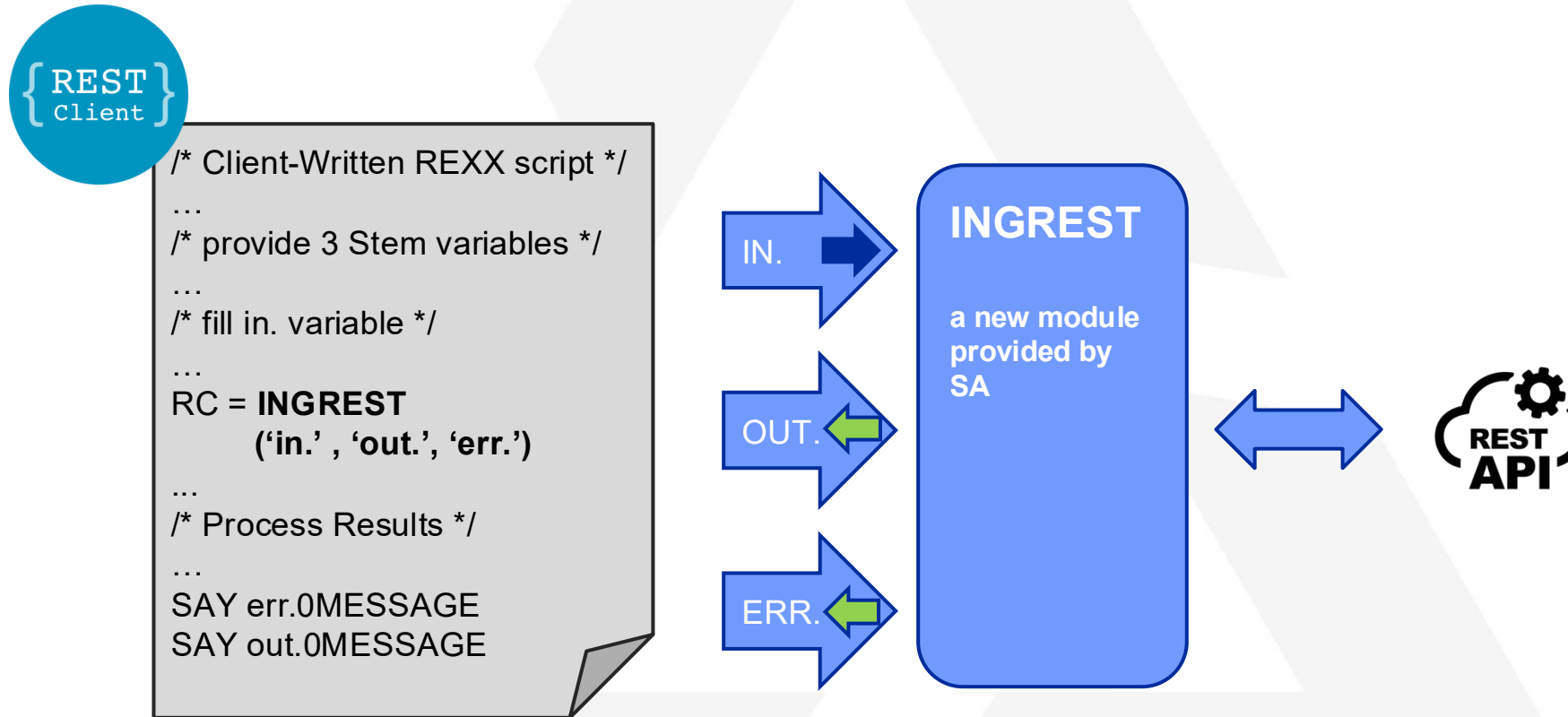
INGREST provides a way to call standard REST APIs from a SA issued REXX scripts running in Netview.

- With **INGREST** module SA offers an easy way to programmatically call ANY REST API from a REXX script issued by SA in Netview.



SA Programmable Module – “INGREST”

INGREST provides a way to call standard REST APIs from a SA issued REXX scripts running in Netview.

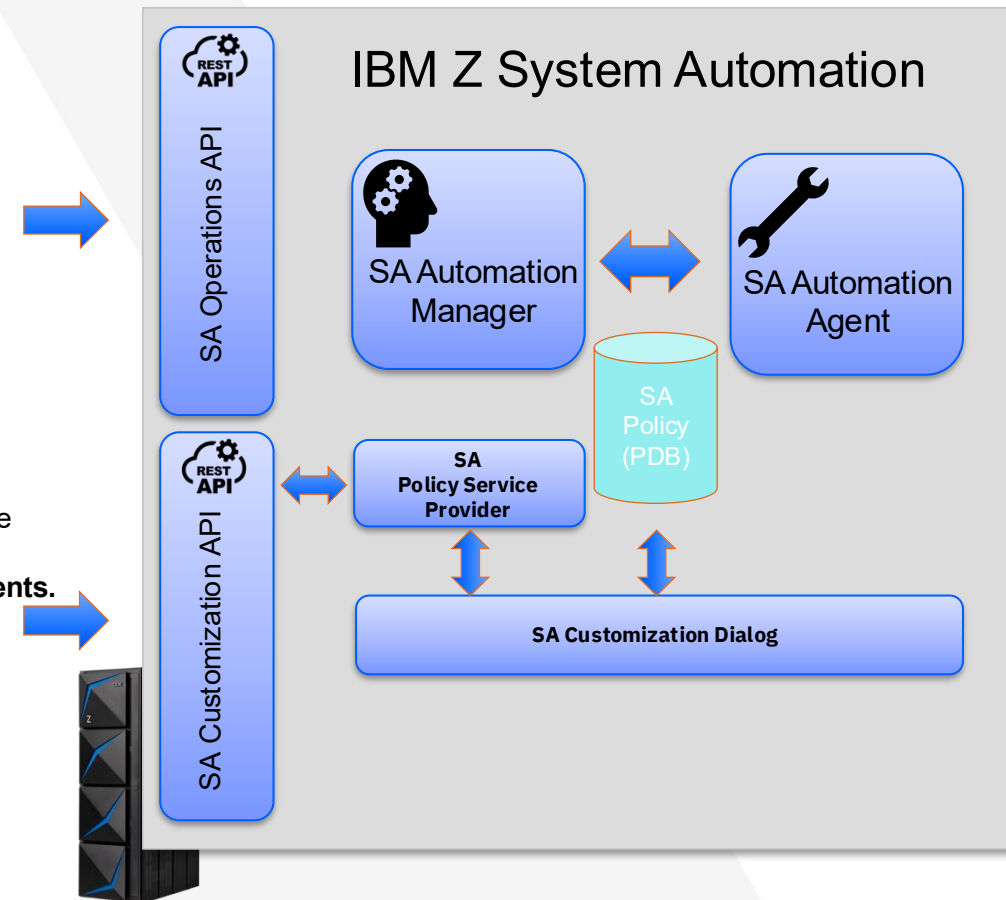


SA4.4 Enhancement: APIs & PSP

SA has been enhanced – more powerful RESTful APIs & policy build time with PSP

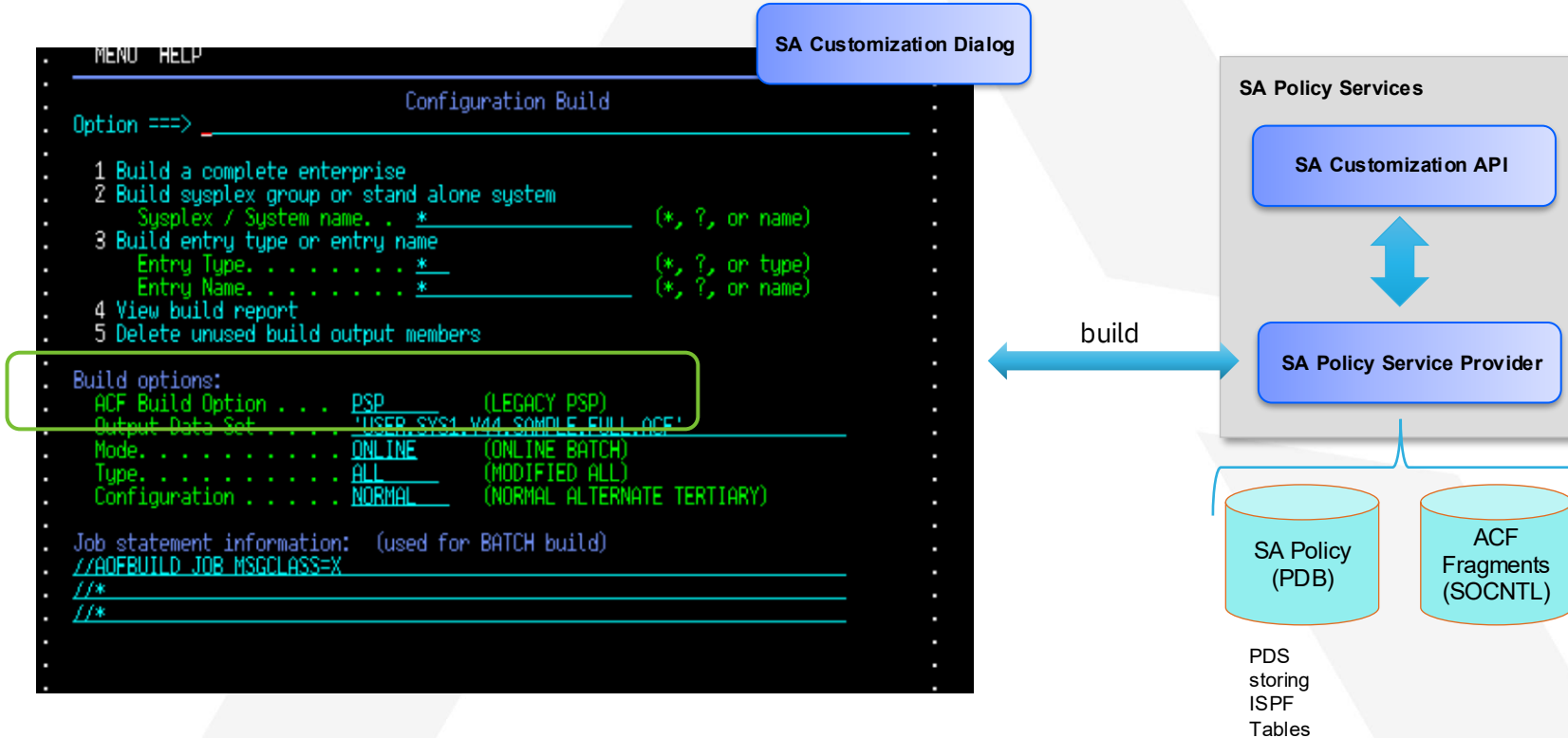
- **SA Automation Agents** and **SA Automation Manager** automate Subsystems, Tasks and USS Processes by reacting on Messages. The **SA Policy** customizes SA. It is created with the **SA Customization Dialog** describing resources, how messages need reaction and the relationship between them.
- The **SA Operations API** (has been introduced to allow integration of **SA** with other IT (management/automation) solutions to interact with resources (eg. starting/stopping) during runtime.
- The **SA Policy Service Provider** has been introduced already in SA4c3 to allow access to the SA Policy (PDB), used internally by the SA Customization Dialog to create a new type of policy report (JSON). **New ins SA4.4 it speeds-up the access to the Policy documents.**
- A new **SA Customization API** will be introduced to allow integration to Administration Tools and AI Scenarios to working similar as the SA Operations API it becomes now easier for other outside tools to create reports and will offer capabilities to create / change a first limited but growing set of entries in the policy.

Note: It will NOT replace the SA Customization Dialog !



SA4.4 Enhancement:

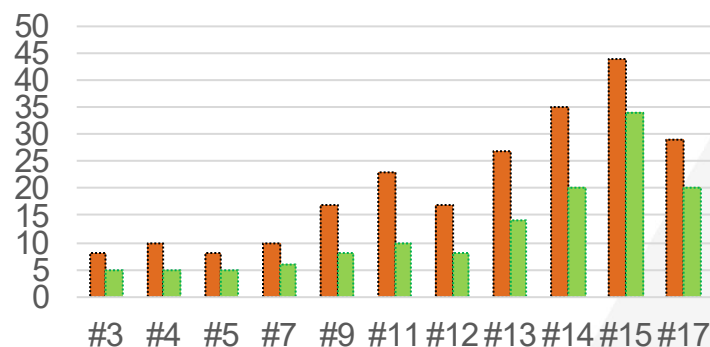
Customization Dialog with new Build Option



Speed-Up the Policy Build Time

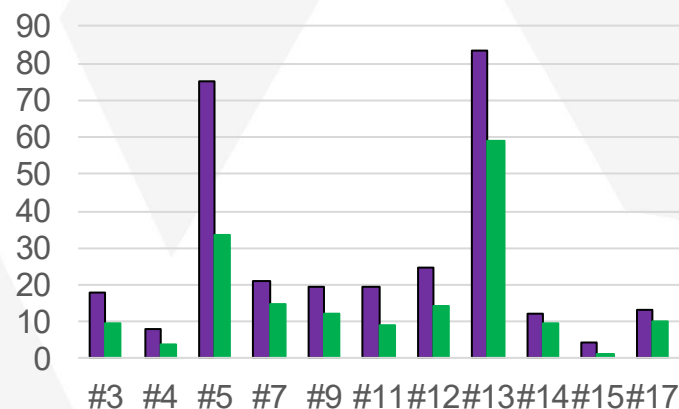
SA PSP now offers a faster way to build policies with SA Customization Dialog – Online & Batch Mode.

SA Policy Build – Total Time [sec]



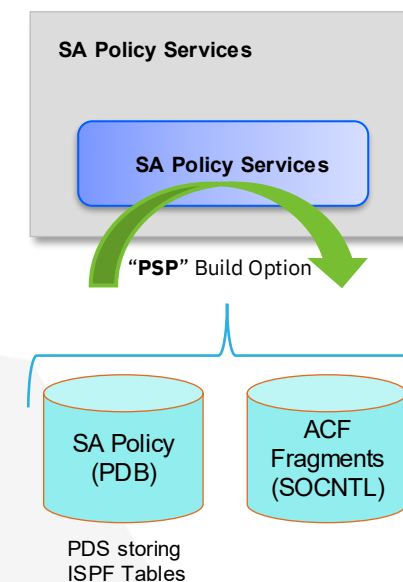
■ Total Legacy ■ Total PSP

SA Policy Build – CPU Time [sec]



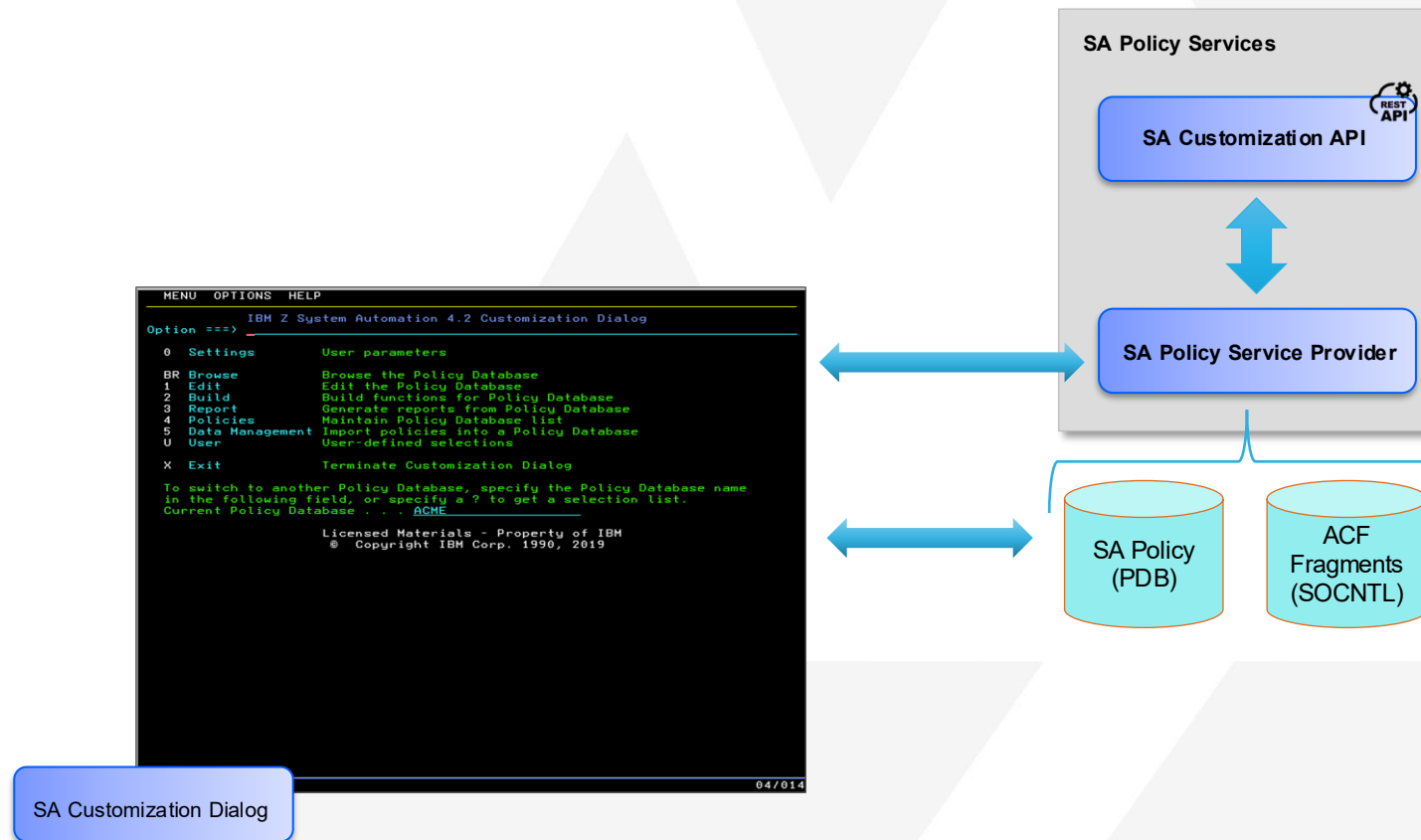
■ CPU Legacy ■ CPU PSP

Using the new “PSP build option” in batch builds of the SA Policy improves the build time.



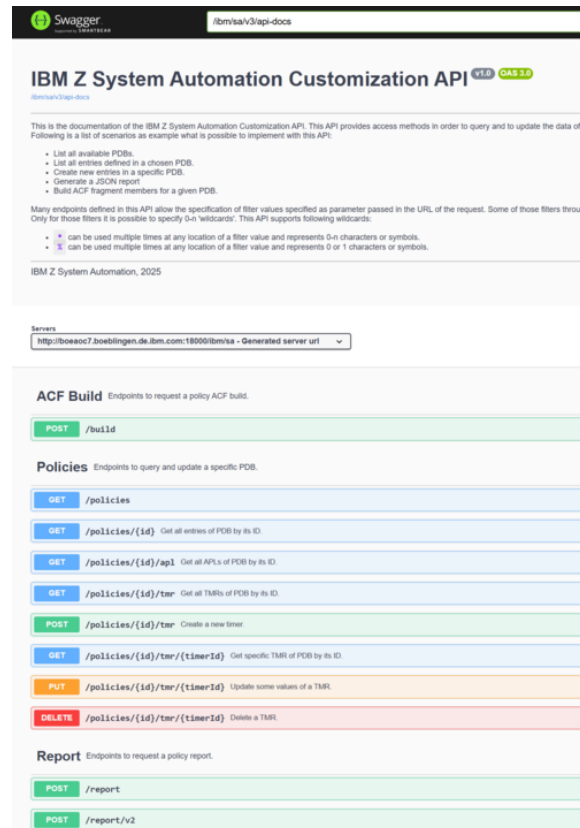
SA4.4 Addition: SA Customization API

The **SA Customization REST Server** is a new functional component and an addition using the **SA Policy Service Provider** that has been introduced in SA4.3



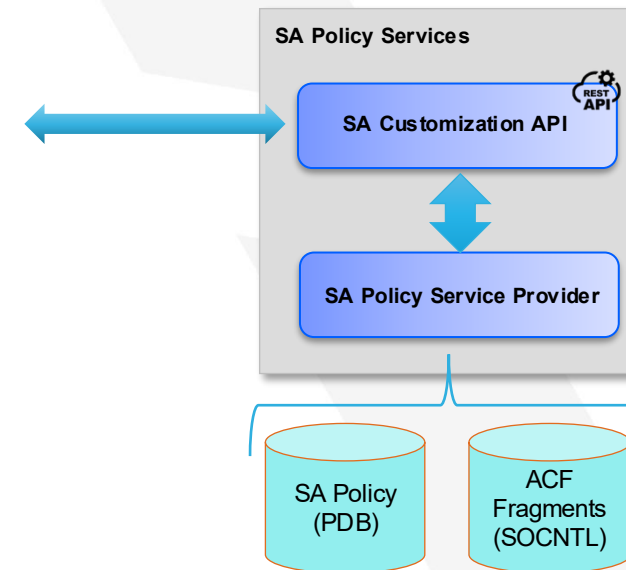
SA4.4 Addition: SA Customization API

The **SA Customization API** provides REST services to work with SA Policies stored in the SA Policy Database (PDB).

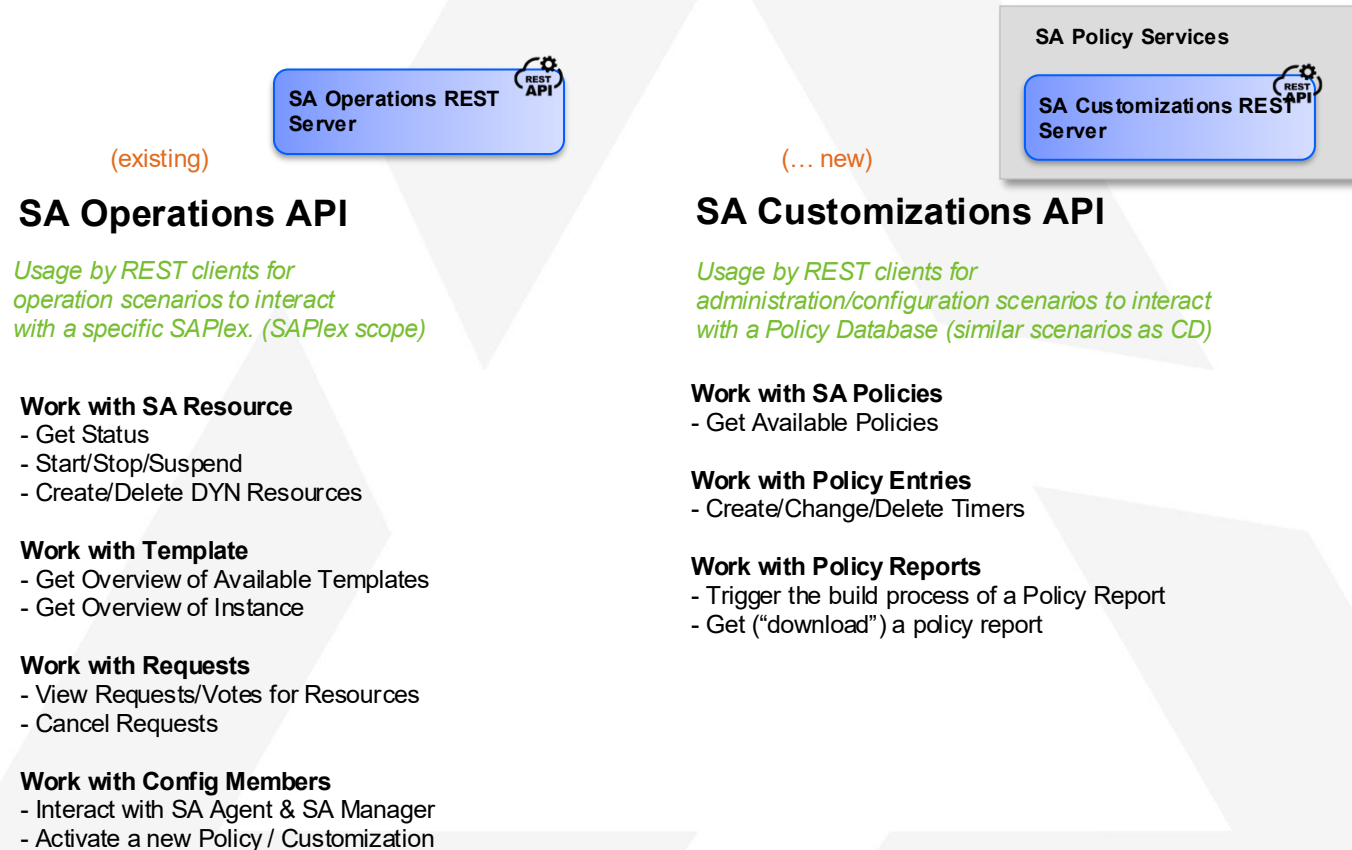


In this SA Release the API
provides Endpoints to:

1. Create / Change / Delete
Timer
2. Create Policy
Reports



SA APIs Compared



SA44 Enhancement:

Operations API with new Groups Endpoint

Groups

Service to access application groups ("APG") currently managed by IBM Z System Automation. Groups are resources that contain other resources and are defined in the current active automation policy. This endpoint can be used to get an overview about groups, get its members and group specific options. As groups are also resources - they can for example be started or stopped using the corresponding '*/v1/resources*' endpoints. Every returned group has links to the corresponding resource endpoints that can be used for example to start or stop it. A {groupId} is identical to a {resourceID}.

GET */v1/groups* Get all managed groups.

GET */v1/groups/{groupId}* Get a managed group and its members by its ID.

GET */v1/groups/{groupId}* Get a managed group and its members by its ID.

This call returns a specific group and its members known by IBM Z System Automation. The group is specified by a unique **groupId**.

Example(s):

GET */groups/ab1234cd567*

Parameters

Name	Description
groupId * required	Specifies the ID of a managed group.
string (path)	groupId



```
"scenario": "string",
"members": [
  {
    "id": "string",
    "name": "Example",
    "type": "APL",
    "system": "SYS",
    "availability": "AVAILABLE",
    "status": "AVOIDED",
    "suspended": "DIRECT",
    "preference": {
      "base": 700,
      "adjustment": 1,
      "adjusted": 701,
      "effective": 951
    },
    "action": "MA",
    "position": 99,
    "role": "OPERATOR",
    "boxed": true,
    "moveOverride": "OVERRIDE",
    "_links": {
```

SA44 Enhancement:

Zowe CLI Plugin uses new Groups Endpoint

```
bjost@IBM-PF45WEE5:~/sa-code$ zowe sa ls --help
```

DESCRIPTION

Query resources, templates, requests, active policies and configuration members defined in an SAplex

USAGE

```
zowe system-automation list <command>
```

Where <command> is one of the following:

COMMANDS

groups		grp	List groups
members		mem	List configuration members
policies		pol	List policies
requests		req	List requests currently added to resources
resources		res	List resources
templates		tmp	List templates

```
--showmembers (boolean)
```

Show the members of this group

Default value: false

With the new SA plugin for Zowe CLI groups and its members can be listed in various ways – and filters exist to limit the number of shown groups / members.

```
C:\Users\J...n>zowe sa ls groups --showmembers
name      type  system  dynamic suspend compound  desired  observed  description
AM_X      APG   SAMA    false  false    SATISFACTORY AVAILABLE WASAVAILABLE Automation Manager Group for Sysplex
└─ AM      APL   SAMA    false  false    SATISFACTORY AVAILABLE WASAVAILABLE
└─ AM      APL   SAMB    false  false    SATISFACTORY AVAILABLE AVAILABLE
└─ AM2     APL   SAMA    false  false    INHIBITED  UNAVAILABLE UNKNOWN
└─ AM2     APL   SAMB    false  false    SATISFACTORY UNAVAILABLE SOFTDOWN
BASE_SYS  APG   SAMA    false  false    SATISFACTORY AVAILABLE WASAVAILABLE Base z/OS, Network and Automation
└─ SYSVAPPL APL   SAMA    false  false    SATISFACTORY AVAILABLE WASAVAILABLE
└─ SYSVSSI  APL   SAMA    false  false    SATISFACTORY AVAILABLE WASAVAILABLE
BASE_SYS  APG   SAMB    false  false    PROBLEM    AVAILABLE PROBLEM      Base z/OS, Network and Automation
└─ GFBJOST  APL   SAMB    true   false    SATISFACTORY UNAVAILABLE UNKNOWN
└─ GUNNAR   APL   SAMB    true   false    SATISFACTORY AVAILABLE UNKNOWN
└─ SYSVAPPL APL   SAMB    false  false    SATISFACTORY AVAILABLE AVAILABLE
└─ SYSVSSI  APL   SAMB    false  false    SATISFACTORY AVAILABLE AVAILABLE
GRPAPP1   APG   SAMB    false  false    INHIBITED  AVAILABLE SYSGONE      This is the Group APP1
└─ REFAPP1B REF   DLNXAPP1 false  false    INHIBITED  UNAVAILABLE SYSGONE
└─ REFAPP1P REF   DLNXAPP1 false  false    INHIBITED  AVAILABLE  SYSGONE
MYGRP     APG   SAMB    false  false    SATISFACTORY AVAILABLE AVAILABLE      This is Josis test system group
└─ ROTEST2  APL   SAMB    false  false    AWAITING   UNAVAILABLE AVAILABLE
REFG_MV   APG   SAMB    false  false    INHIBITED  AVAILABLE  SYSGONE
└─ TSKREF1  REF   REMDOM1 false  false    INHIBITED  AVAILABLE  SYSGONE
└─ TSKREF2  REF   REMDOM1 false  false    INHIBITED  UNAVAILABLE SYSGONE
RO_X      APG   SAMA    false  false    SATISFACTORY AVAILABLE AVAILABLE      Josis Test Move APG
└─ ROTEST1  APL   SAMA    false  false    INHIBITED  UNAVAILABLE UNKNOWN
└─ ROTEST1  APL   SAMB    false  false    SATISFACTORY AVAILABLE AVAILABLE
└─ ROTEST2  APL   SAMA    false  false    SATISFACTORY AVAILABLE WASAVAILABLE
└─ ROTEST2  APL   SAMB    false  false    AWAITING   UNAVAILABLE AVAILABLE
```



SA44 Enhancement:

HW Automation Panels in Z Automation Console

Support for HW Information Panel for ZAC (fka “SMU”)

With the new Modules **ISQAPDG1**, **ISQARAW0**, **ISQATOP** – in this example changing the LPAR Weight

The screenshot displays the Z Automation Console interface. On the left, the 'Explore Automation Domains' sidebar shows a list of domains, with 'TIVLP17' selected. A context menu is open over 'TIVLP17', showing options like 'View LPAR Configuration'. The main panel is titled 'LPAR Configuration' and shows a table of logical partitions. The 'TIVLP17' partition is highlighted, and a modal dialog titled 'Initial Weight' is open, allowing the user to change the initial weight of the selected LPAR. The modal shows the current weight is 10 and the new weight is also 10. The background table lists the following data for TIVLP17:

Logical partition	Active	Defined capacity	Workload manager	Current weight	Initial	Minimum	Maximum	Current	Initial	Absolute capping	Dedicated processors	Not dedicated processors
TIVLP17	YES	0		10						NO	0	2



AUTOMATION IN HYBRID DATACENTER

“BETTER TOGETHER”

Integration

Functions, APIs and messages offered by SA

A strength of System Automation is to integrate core automation capabilities in own automation logic

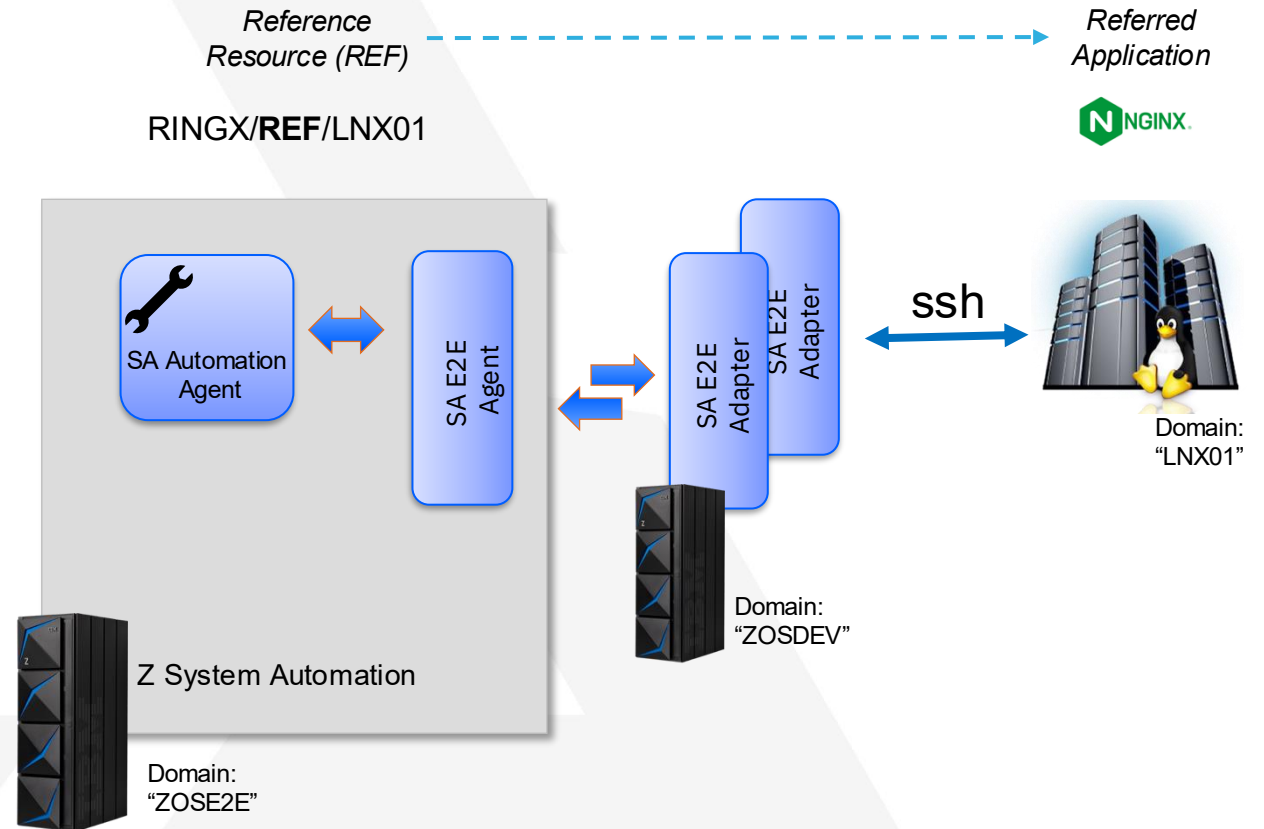
- Use it in self-written automation scripts running in TSO or in NetView and by adding own REXX code to exits at predefined automation exit points
- Use it by calling SA from external products / solutions with help of powerful SA APIs (RESTful)
- React on Events (EIF, or KAFKA)
- Enhance your automation scripts by calling other, public REST APIs



SA End-2-End Automation and Reference Resources

SA allows the integration of automated resources hosted on other SA Systems (of another SAPlex) or even hosted on distributed systems that are connectable via SSH.

It is possible to define resources of type “reference” (REF) to the automation policy.



APIs offered by SA



I - SA Operations API

*Usage by REST clients for **operation scenarios** to interact with resources or running functional components of a specific SAPlex.*

Work with SA Resource

- Get Status
- Start/Stop/Suspend
- Create/Delete DYN Resources

Work with Template

- Get Overview of Available Templates
- Get Overview of Instance

Work with Requests

- View Requests/Votes for Resources
- Cancel Requests

Work with Config Members

- Interact with SAAgent & SA Manager
- Activate a new Policy / Customization

II - SA Customization API

*Usage by REST clients for **customization scenarios** to work with SA Policies*



Work with SA Policies

- Get Available Policies

Work with Policy Entries

- View Policy Entries
- Create/Change/Delete Timers

Work with Policy Reports

- Trigger the build process of a Policy Report
- Get ("download") a policy report

Current Usage of APIs

ANSIBLE Collection & Zowe CLI

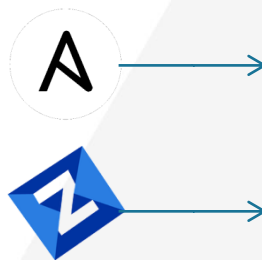
IBM Provides for SA supported and free downloadable extensions that make use of the SA Operations REST API.



Zowe CLI Plugin for SA & NV

The screenshot shows the npm package page for `@ibm/system-automation-for-zowe-cli`. The package is version 2.1.4, published 6 months ago. It has 0 dependencies and 0 dependents. The description states: "IBM Z System Automation Plug-in for Zowe CLI extends Zowe CLI to let you interact with IBM Z System Automation (SA) through its optional System Automation Operations API (REST). This solution is intended for operators and developers of applications running on zOS, automated by Z System Automation. With the CLI commands offered by this CLI these users can perform many daily tasks to manage these applications which are represented as resources by SA." The usage section shows the command `zowe sa --help`. A note at the bottom says: "Note: Depending on the version of the SA Operations Server you are connected to - some".

<https://www.npmjs.com/package/@ibm/system-automation-for-zowe-cli>



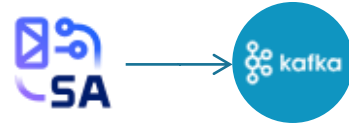
Ansible Collection for SA



The screenshot shows the Ansible Galaxy page for the `ibm_zos_sysauto` collection. The collection is version 1.0.1, released 7 months ago. It has tags for `ibm`, `z`, `zos`, `zos_sa`, `ibm_zos_sa`, and `system_automation`. The installation section shows the command `ansible-galaxy collection install ibm.ibm_zos_sysauto`. The description states: "The IBM Z System Automation collection includes roles and sample playbooks to access the IBM Z System Automation Operations REST server." The Red Hat Ansible Certified Content for IBM Z section is also visible.

https://galaxy.ansible.com/ibm/ibm_zos_sysauto

SA Info Broker



Connectors

Connect to other data sources
e.g. DB systems



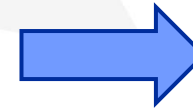
SA Info Broker

Producers



Applications that produce a stream of records to one or more so called „Topics“ provided by Kafka

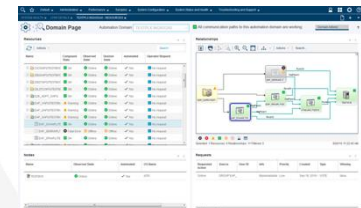
For those applications kafka provides a **Producer API** (Java)



Consumer

Applications that subscribes to one or more „Topics“ and consumes incoming messages.

For those applications kafka provides a **Consumer API**

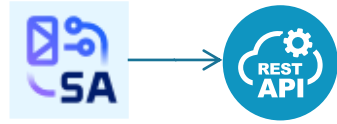


SA Dashboard (ZAC)

Stream Processors

Using an input stream of records (from multiple topics) combines / enriches them with information and writes this stream of messages to another topic

Using APIs



INGREST is a REXX callable module that allows from a script running in Netview to call any API provided by another REST Server.

```
BJOST.USER.REXX(SASTARTR) - 01.08 Columns 0000
RESID='2dbjxe' JwQ' /* ROTEST1/APL/SAMB */
AUTH64='Ympvc3' Q==
SAY "Starting resource with ID: "RESID

/** Required */
in.0PROTOCOL = 'http://'
in.0HOST = 'boesama.boeblingen.de.ibm.com'
in.0PORT = 3376
/** POST Request */
in.0METHOD = 'POST'
in.0ENDPOINT = '/ibm/sa/v1/resources/'RESID'/start'
/** Header Options */
in.0HEADEROPTIONS.0 = 3
in.0HEADEROPTIONS.1 = 'accept: */*'
in.0HEADEROPTIONS.2 = 'Content-Type: application/json'
in.0HEADEROPTIONS.3 = 'Authorization: Basic 'AUTH64

/** Body Data */
in.0BODYDATA = '{
  "priority": "LOW",
  "override": [
    "NO"
  ],
  "comment": "For Demo purposes",
  "scope": "ONLY"
}'

SAY "JSON: "in.0BODYDATA

000042 /*****
000043 /* Call INGREST.
000044 /*****
000045
000046 status_code = INGREST('IN.', 'OUT.', 'ERR.')
000047
000048 SAY "SASTARTR - Resp. Status: " || eir.0STATUSCODE
000049 SAY "SASTARTR - Resp Message: " || eir.0MESSAGE
000050 SAY "SASTARTR - Done."
000051
000052
000053 PIPE STEM out.0response. | CONS ONLY'
000054
```

Curl

```
curl -X 'POST' \
  'http://boeaoc5.boeblingen.de.ibm.com:3376/ibm/sa/v1/resources/1NVt1W3xYcHX02HB1sP0/start' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d '{
    "priority": "LOW",
    "override": [
      "NO"
    ],
    "comment": "For Demo purposes",
    "scope": "ONLY"
  }'
```

Provide Address, Endpoint
and Header Options

This POST request requires
a "body"

The 2 REXX stem variables "OUT." and "ERR." are returned
and provide results / feedback.

IBM Z System Automation



Automation and High Availability
in a Hybrid IT World

Today

- Z Web Automation Console
- Ansible
- Zowe
- Kubernetes & Docker
- Apache Kafka



Successful since
1990s

Legendary

- Industry leading on Mainframe
- Parallel Sysplex operation & Message Handling
- Declarative Automation Policy-based & Goal-Driven
- 24x7 High Availability
- Disaster Recovery with



AI & Intelligent Automation
“Better Together”

Emerging

- Declarative, Combined Automation of
 - Infrastructure
 - Configuration
 - Runtime HA&DR
- AI Assisted Setup for Automation Configuration Creation



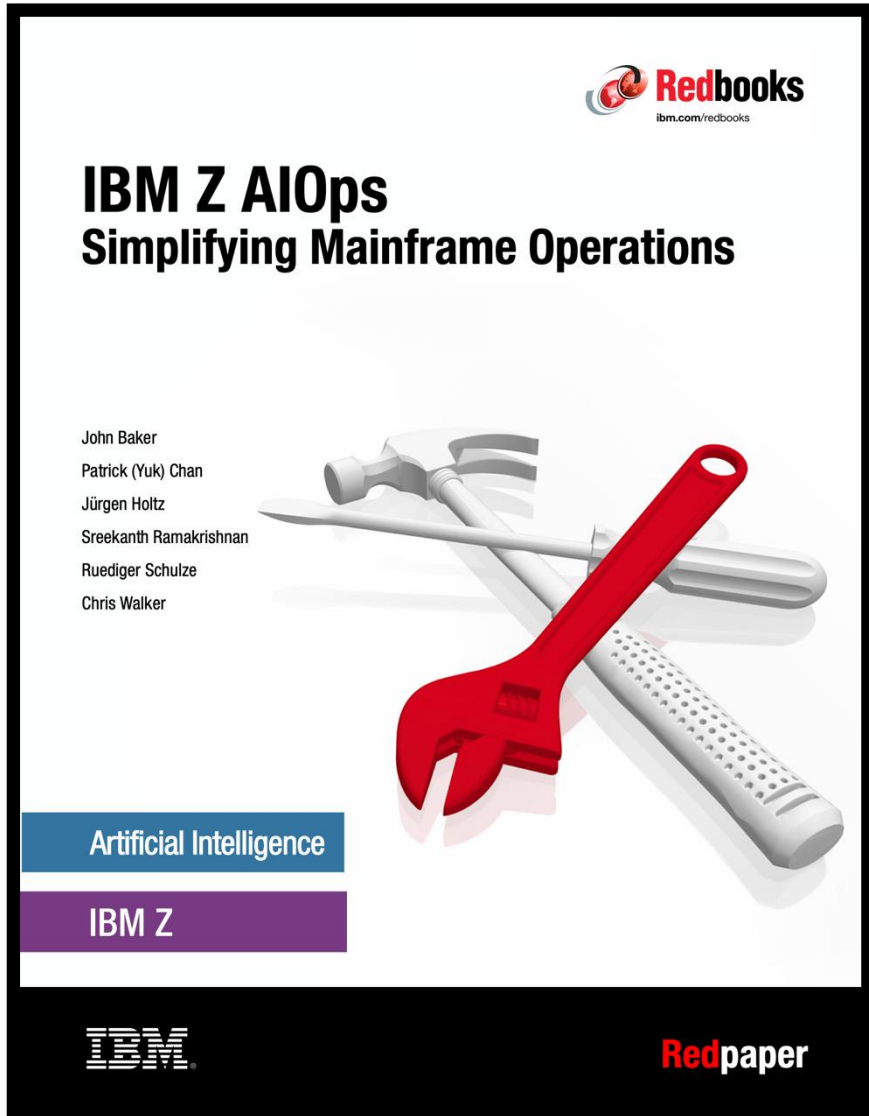
Observability and AIOps for IBM Z sessions at SHARE Orlando

Day	Time	Title	Featured Products
Monday	9:45 am	Data Center Automation - Z System Automation and Agentic AI	Z System Automation
	10:30 am	Using OpenTelemetry to Integrate the Mainframe Into Your Enterprise-Wide Observability Platform	Z Observability Connect, Instana
	1:15 pm	BYOD Lab: WXA4Z Agentic Hands-on Workshop	watsonx Assistant for Z
	1:15 pm	Intelligent Automation of a Hybrid Data Center With Next Generation of Z System Automation	Z System Automation
	2:30 pm	IBM Z NetView Technical Updates	Z NetView
	3:45 pm	Simplify Mainframe Operations with the Latest IBM Z OMEGAMON Enhancements	OMEGAMON
Tuesday	10:30 am	Stronger, Smarter Operations: How BPER Reinvented Data Resiliency Management with IZBR	Z Backup Resiliency
	2:30 pm	What's New in IBM Z Workload Scheduler V.10.2.x and Roadmap	Z Workload Scheduler
Wednesday	9:15 am	IBM Concert for Z, an AI-Powered Mainframe Resilience Platform: Solutions vs. Alerts	Concert for Z
	1:45 pm	BYOD Lab: AI Enabled Proactive Monitoring to Get the Most From Your System With IBM Concert for Z	Concert for Z
	2:30 pm	IBM Z Cyber Vault Explained - Soup to Nuts and Nose to Tail	Z Backup Resileincy
	3:45 pm	Using AI for Capacity Planning and Performance Management in Z	IntelliMagic
Thursday	10:30 am	IBM Z NetView Hints and Tips	Z NetView

Connect with IBM technical leaders and product management team:

Concert for Z	OMEGAMON	Z Observability Connect	NetView	Z System Automation	Z Workload Scheduler	IMS Tools
Domenico D’Alterio	Ash Mahay	Instana	Derrick Washington	Johannes Hausch	Domenico D’Alterio	Tracy Dean
Fabrizio Miatto		Chris Walker			Wolfgang Schaeberle	

New Redpaper



How can you simplify mainframe operations? To answer this question, this IBM Redbooks publication draws on Lean Thinking, which focuses on identifying waste and strain in any process.

By applying AI and machine learning technologies to mainframe operations, you can deliver improved efficiency and effectiveness.

37

Download your copy:

<https://ibm.biz/Redpaper-SMO-2025>



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Thank you !

