CA OPS/MVS Event Management and Automation 13.0 New Features

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Agenda

RELEASE OVERVIEW

INTEGRATION WITH OPERATIONAL INTELLIGENCE

MAINFRAME TEAM CENTER



Release Overview

CA OPS/MVS 13.0 Release Overview

- Incremental released on December 13 2016
- Complete GA Release on November 13 2017
 - This marks the end of new feature development



CA OPS/MVS 13.0 Features

- Sample Rexx to Generate Outbound Web Services
 - Member: OPRXREST
 - Framework to generate Web Services calls from OPS/MVS
 - Limitation in TCP interface prevents usage of HTTPS
- TOD Rule Processing
 - Directed to new TOD rule processing subtask
 - Allows other AOF rule types to be processed more quickly
 - Can now enable, disable, and display rules while TOD rules are running
- Support JSON for RESTful Web Services



BCPii Interface Updates

- Requires PTFs to HISRV 7.7 and OPS/MVS 13.0
- OPS/MVS Reason Codes will no longer be translated, instead HISRV Reason Codes will be used
- Documentation Updates
 - New attributes were documented in OPS/MVS doc set
 - Common CA HISRV return and reason code descriptions added
- New BCPii Attributes added

HWI_TIME_OFFSET_ DAYS	HWI_TIME_OFFSET_INCREASE	HWI_CROSS_ PARTITION_AUTHORITY	HWI_PROFILE_DESCRIPTION	HWI_CLOCK_TYPE
HWI_TIME_OFFSET_ MINUTES	HWI_GLOBAL_PERFORMANCE_D ATA_CONTROL	HWI_LICCC_VALIDATION_ENABLED	HWI_PROFILE_PARTITION_ID	HWI_LAST_USED_LOADADDR
HWI_TIME_OFFSET_HOURS	HWI_IO_ CONFIGURATION_CONTROL	HWI_LOGICAL_PARTITION_ISOLATION	HWI_OPERATING_MODE	HWI_LAST_USED_LOADPARM



SSM Policy Manager

Custom User Column Support

```
SSM Resource Policy Manager ----- CA11 -- O P S V I E W ----- Subsystem OPSL

Option ===>

D Discovery - Populate SSM policy data
R Resources - Define SSM policy by resource

UC User Columns - Select SSM user columns to include in policy

UI User Types - Define custom SSM resource types

Press END to return
```

Any non-default columns added to an SSM table will appear on this panel

When Added to Policy these columns can be managed through the SSM Policy Panels

Comman	olumn Administratio d ===> : <u>*</u>	n CA11 0 P S V	I E W	Row 1 to 5 of 5 Scroll ===> <u>PAGE</u>
Line C	ommands: A Add to	policy D Delete f	rom policy	? Help
SEL	User Column	Table	In Policy	Nessage
Filter				
l _	OHNER	JOESTC	γ	
	STARTTIME	JOESTC	H	
	STATUS	JOESTC	Y	
	BADCOL	JOEC1CS	Y	Table not SSM managed
	CICSTYPE	JOEC1CS	Y	Table not SSM managed
*****	******	***** Bottom of o	lata ******	*******



SSM Policy Manager

Custom User Column Support

New Panel added to allow for modification of data in custom user columns



SSM Policy Manager

UNLOAD Command



Unload commands gives the ability to remove resource from the **ACTIVE** STC Table while remaining in Policy Table



AOF Multi-system Rules Management

- Control rule enablement/disablement across multiple MSF connected systems to keep automation rules in sync after updates.
- OPSplex Routing Scope:
 - Single system
 - Non-sysplexed systems
 - Systems belonging to single sysplex
 - Systems belonging to multiple sysplexes



AOF Multi-system Rules Management

```
AOF CTRL - Rule List ----- CA11 --- LEHJ007.0PS121.BASE.RUL Row 1 to 20 of 25

Command ===> Scroll ===> PAGE

Line Commands: R EasyRule S ISPF Edit C Compile X Delete Compile

U View F Enable D Disable A Set Auto-Enable Z Reset Auto-Enable

HE Multi System Enable MD Multi System Disable

System: *LOCAL*

RuleName Status AE TYP VV NH Created Changed Size MOD ID

ARCHFAIL DISABLED N *** 01.00 13/08/22 13/08/22 13:05 28 0 0PS121

ARCHMSG DISABLED N *** 01.00 13/08/22 13/08/22 13:05 63 0 0PS121
```

```
CA11 ----- System Selection List ----- Row 1 to 3 of 3
Command ===>
                                                        Scroll ===> PAGE
  Use S in the SEL column to select system(s)
  or select current sysplex or All systems
  to perform: ENABLE BASE.ARCHFAIL
  _ Local Sysplex PLEXC1 OR _ All systems
                          Plexname Result
Sel Ident
          Hame
                  Status
   Local
          OPS11L
                  ACTIVE
                          PLEXC1
   Remote OPS31L FAILED
                          PLEXC1
   Remote OPS61L FAILED
```



Multi-system Global Variable Management

- Copy, Remove, Drop, and Delete Global Variables from a single location across MSF connected systems
- OPSplex Routing Scope:
 - Single system
 - Non-sysplexed systems
 - Systems belonging to single sysplex
 - Systems belonging to multiple sysplexes



Multi-system Global Variable Management



Multi-system RDF Table Management

- Copy, Transfer, and Delete Tables from a single location across
 MSF connected systems
- OPSplex Routing Scope:
 - Single system
 - Non-sysplexed systems
 - Systems belonging to single sysplex
 - Systems belonging to multiple sysplexes



Multi-system Table Management

```
B - Browse table C - Copy table
E - Edit table R - Rename table
I - Insert new table F - Free table enq
D - Delete table T - Inspecent table copy
MT - Multi system table delete MC - Multi system table copy
MT - Multi system table transfer

| D - Delete table | D - Multi system table copy
| MT - Multi system table transfer

| D - Delete table | D - Multi system table copy
| MT - Multi system table transfer

| Delete table | D - Multi system table copy
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| Delete table | D - Multi system table copy
| MT - Multi system table transfer
```

- Options available from both the Table Editor main panel (2.6) and the RDF Table List
- Working to expand capability to table columns

```
Use S in the SEL column to select system(s)
  or select current sysplex or All systems
  to perform: COPY CA11TBGAU2 TO TEMP SSMparm(N)
  _ Local Sysplex PLEXC1 OR _ All systems
                        Plexname Result
Sel Ident
                Status
                        PLEXC1
   Local
         OPS11K ACTIVE
   Remote MUSIIC INACTIVE N/A
   Remote MVS11E FAILED
                         H/A
   Remote MUSIIL FAILED
                        H/A
```



Misc. Updates

- Support for 8 Character UserIds
- Compatibility
 - z/Os 2.3
 - IMS 15.1
 - Tomcat 8.0.39
- Critical Path Monitoring
 - Updated to use CPM1602I and CPM1603I messages

- SSM Policy Manager support for NULL Start and Stop Commands
- Best Practice Video Series
- New Best Practice and Tuning Guide



Integration with Operational Intelligence

Work in Progress

Automated Remediation—Problem Avoidance/Prediction

Use Case & Solution Concept

PERSONA:



- Operations,
- Systems Programmer,
- Network Engineer,
- Automation Administrator

USE CASE:

Sherman, Debbie, Fred, and Anders have deep experience and skills in their respective areas. They want to reduce the number of system problems that requires them to be directly involved in the remediation. They would like the system to automatically correct problems with known root causes and work arounds. Thus reducing customer facing outages and allowing them to work on projects to achieve business objectives.

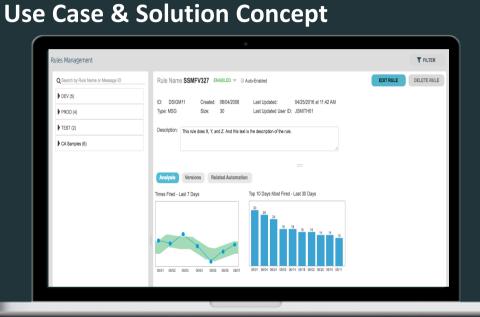
PROBLEM

- "Detect and remediate issues before becoming customer problems"
- "Increasing MTTR do to time spent on repeat issues"
- "Support and Engineering stretched beyond limits"



Automated Remediation – Problem Avoidance/Prediction







SOLUTION

- Detect anomalies & trigger automated corrective scripts
- Leverage historical data to analyze automation patterns to further increase efficiency
- Simplified U/X browser access & designed for collaboration

BOTTOM LINE

- High Availability
- Problem avoidance
- Reduced MTTR
- Reduce SME dependence for problem remediation



Automated Events Timeline

Intelligence Engine generates Remedial Action Scripts

Intelligence Engine suggests remedial action based on historical analysis

Link Intelligence Engine
Events to existing
Automated Events

Automatable
Events

Mainframe Team Center – Operations Intelligence suggests can be automatically transformed into OPS/MVS scripts for automated remediation

Mainframe Team Center – Operations Intelligence suggests possible remedial actions allowing user to select best appropriate response

Mainframe Team Center – Operations Intelligence One Click link into Mainframe Team Center – Automation to display existing automated remedial scripts

Mainframe Team Center – Operations Intelligence generates OPS/MVS API Events for detected anomalies



OPS/MVS API Event Definition

- 3 Unique Event Id's
 - OIEVNT001 Alarm Started
 - OIEVNT002 Alarm Severity Changed
 - OIEVNT003 Alarm Cleared
- API.TEXT
 - Contain base alarm information
- API.EXTRA
 - Up to 30k of additional information about the alarm
 - Information varies based on alarm



OPS/MVS API Examples

Remaining Text will be variable based on the Alarm Triggered

- UNDER, LAST SEV = LOW | METRIC_TYPE=RAW | METRIC_CATEGORY=z/OS System | METRIC_PATH=z/OS System:CA31>z/OS | Workload | Manager:RPTCLASS.ONLTEST.1.3>WLMPI | ALARM_STARTED=1482348898000 | EVENT_CODE=0 | METRIC_VALUE=11.3
- O000001482349798000N000000999 STATIC THRESHOLD EVENT FOR MSU4HAVG ON ******* ALARM NEW SEV TYPE
 OVER, CURR SEV = HIGH | METRIC_TYPE=DERIVED | DERIVED_TYPE=LPAR_GROUP_METRIC |
 LPAR_GROUP=TSO1,TSO2,CA01 | AGGREGATION_TYPE=SUM | METRIC_CATEGORY=z/OS System | METRIC_PATH=z/OS
 System:******>MSU4HAVG | ALARM_STARTED=1482348898000 | EVENT_CODE=1 | METRIC_VALUE=184.34



How will Operational Intelligence know Remedial Actions?



- Data Mining from:
 - OPSLOG
 - SMF Data
 - Product Metrics
 - Correlation between Event Begin/End and System Actions
- Will require multiple iterations through the same event to develop the pattern
- Multiple suggested actions could be presented each with a confidence score.



Suggested Resolution Prototype

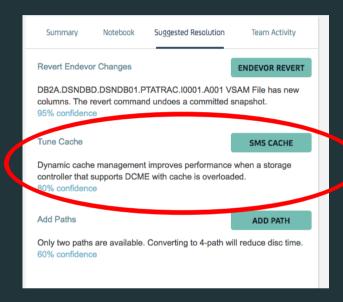


Suggested Resolution Summary Notebook Team Activity Revert Endevor Changes ENDEVOR REVERT DB2A.DSNDBD.DSNDB01.PTATRAC.I0001.A001 VSAM File has new columns. The revert command undoes a committed snapshot. 95% confidence Tune Cache SMS CACHE Dynamic cache management improves performance when a storage controller that supports DCME with cache is overloaded. 80% confidence Add Paths ADD PATH Only two paths are available. Converting to 4-path will reduce disc time. 60% confidence

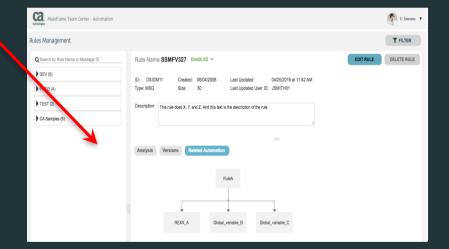
- Develop Suggested Resolutions based upon analysis of OPS/MVS OPSLOG and relevant data feeds
- Based upon frequency and correlation to metric resolution a confidence percentage is assigned
- Manually execute



Turn into Automated Scripts



Once comfortable with Resolution, automatically generate the OPS/MVS Script that will take this action whenever the metric trends abnormal





Expected Life Cycle for Automated Remediation

- MOI learns how a metric is returned to normal within your environment
- Suggested Remediation's are presented with various confidence levels
- Sheila will manually execute Suggested Remediation over multiple incidents to gain confidence
- Generate Automated Remediation script
 - MOI will indicate metric has Automated Remediation
- Future incidents are automatically corrected



Mainframe Team Center

Modern tools & views – Management / Insight

Use Case & Solution Concept

PERSONA:



- Automation Administrator,Operations

USE CASE:

Anders and Debbie have a need to understand what automation is currently in place and where it has been deployed. Additionally Anders needs any easy way to manage and deploy automation routines. They would like these processes to be contained within a single tool spanning the entire mainframe environment instead of being single system or sysplex centric.

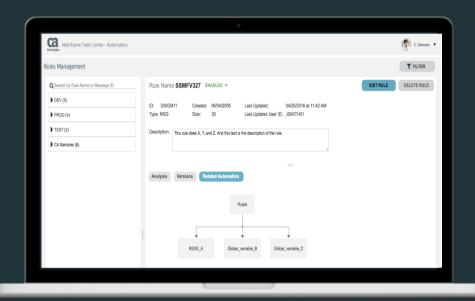
PROBLEM

- "Understanding our automation footprint is a manually intensive exercise. An automation product should be able to automate this process."
- "Managing automation at an individual system level is to time consuming. We need to develop once and deploy everywhere applicable."



Modern tools & views — Management / Insight Use Case & Solution Concept





SOLUTION

- All Automation scripts in a single location
- Detailed Analytics around code management and relationships
- Integrated search and filter for quick access to automation scripts
- Simplified U/X browser access & designed for collaboration

BOTTOM LINE

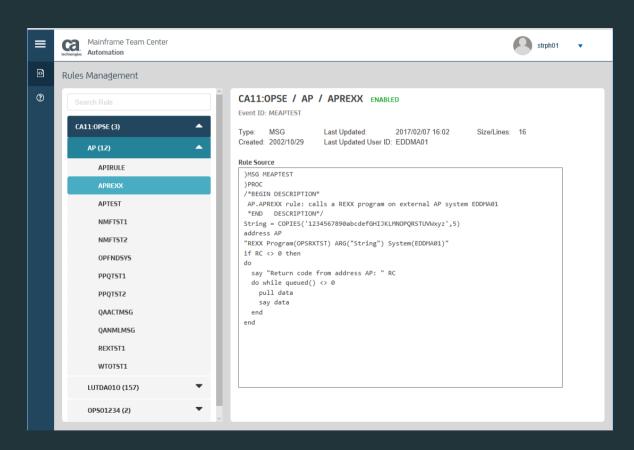
- Problem avoidance
- Reduced research and deployment time
- In context Integration within Mainframe
 Operations Intelligence



RULES MANAGEMENT

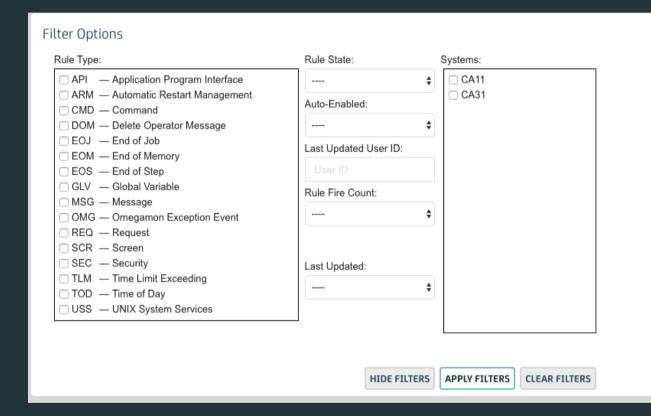
- View rules from all yourLPARs in a single location
- Quick Search Capabilities

- Installed in USS
- Uses CA Common Services communication to expand beyond SYSPLEX





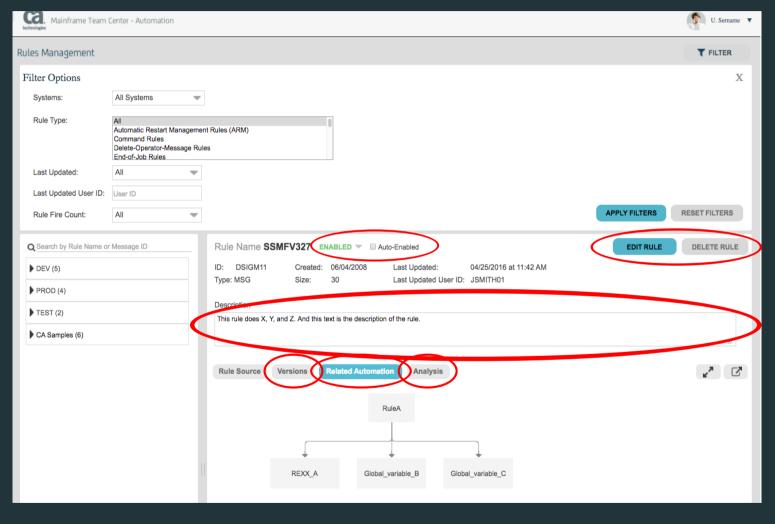
Rules Filtering



- Rule Type Limit display to specific types of Rules
- Systems Limit to a subset of systems
- Rule State Enabled / Disabled?
- Auto-Enabled Yes / No?
- Last Updated User Id Who changed it?
- Rule Fire Count Greater or Less than a value
- Last Updated Specific Date,
 Before, After, or Range



What's Planned for MTC - Automation?



- Filtering of Source List based on multiple factors
- Description pulled directly from Source
- Ability to change rule status across multiple systems
- Add, Delete, Edit Source across multiple systems
 - Advanced Editing using Jquery
 - Point and Click Option for easy development
- Graphical Display of Source Call Trees
- Display when Source is Out of Sync across multiple systems
- Historical Analysis of Product Performance



MTC –Automation Futures



- OPSLOG
 - Direct Link to AOF and SSM
- System State Manager
 - Operational View
 - Administrative
- Global Variables
- Parameters



MTC-A OPSLOG Wireframe

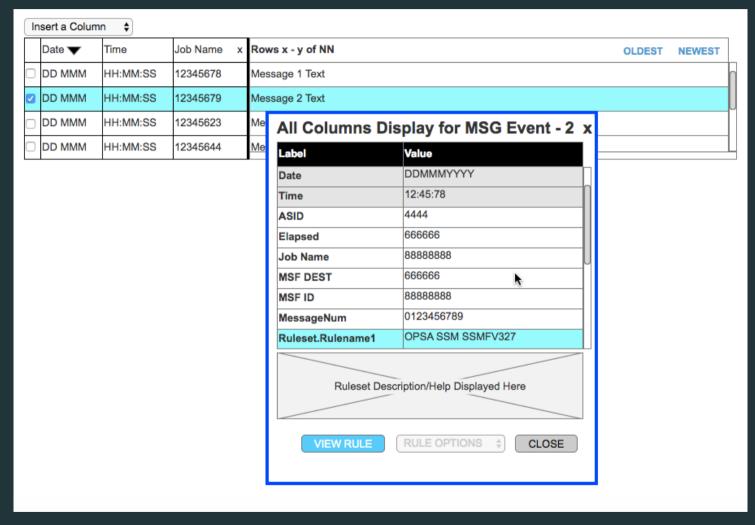


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MTC-A OPSLOG Wireframe







MTC-A OPSLOG Wireframe



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Questions?





Influencing Our Roadmap

CA Communities Ideation

- Submit your ideas on communities.ca.com
- Vote & comment on ideas that are important to you
- CA Product Management reviews ideas and updates status as they move through the lifecycle
- "Currently Planned" idea status indicates inclusion in Agile Backlog or Product Roadmap

Customer Validation

- Register to participate in:
- Live Demos/End-of-Sprint Reviews
- Private Members Only Online Community
- Pre-Release Onsite Testing and Support (Beta)
- Upgrade Support from SWAT Team
- How to register: https://validate.ca.com





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