Proactive Outage Avoidance with IBM Service Management Suite for z/OS (SMSz) V1.3

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Session #17594

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Agenda

- **Introduction**
- IBM Service Management Suite for z/OS
- Updates
  - IBM Service Management Unite
  - OMEGAMON Perf Mgmt Suite for z/OS 5.3.1
  - Operations Analytics
- Integration Value
- Summary

What happens at your site when a problem happens?

- All sites have different configurations and unique expectations
  - How do problems get communicated?
  - What type of alerting happens?
  - Are all your teams disparate groups?
  - Do you have “War Room” meetings?
  - How do you Identifying Complex Problems?
  - Are your teams challenged to do more with less?

  - How do you address these issues?

So …… What is being announced?

August 10, 2015 Announce

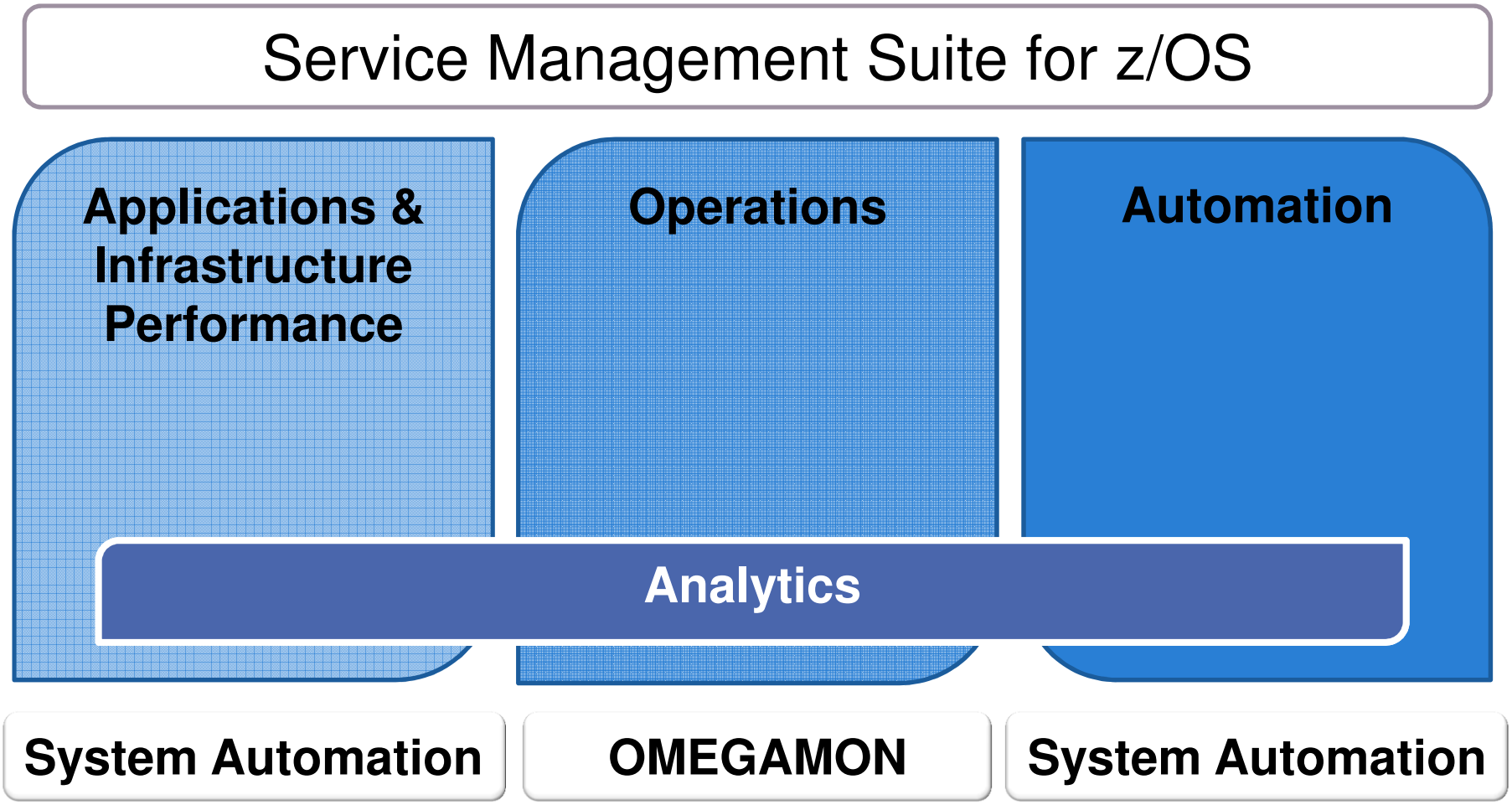
Suites:

- Service Management Suite for z/OS 1.3.0
- OMEGAMON Performance Management Suite for z/OS 5.3.1
- OMEGAMON for z/OS Management Suite 5.3.1

Individual Products:

- OMEGAMON XE for IMS on z/OS V5.3.0
- OMEGAMON XE for Mainframe Networks V5.3.0
- OMEGAMON Dashboard Edition on z/OS V5.3.0 (Interim Feature)

Service Management provides opportunities to Lower Costs and Accelerate Innovation



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- Introduction
- **IBM Service Management Suite for z/OS**
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  - NetView 6.2.1 Updates
- Integration Value
- Summary

Provides comprehensive service management capabilities for IBM z Systems

One Solution

Single offering that contains capabilities to manage z/OS and all key subsystems

High Availability & Automated Operations

Improve Service Levels and reduce system downtime

Network Management

Maintain the highest degree of availability of your z Systems networks

Performance Management

Real-time and historical performance and availability management

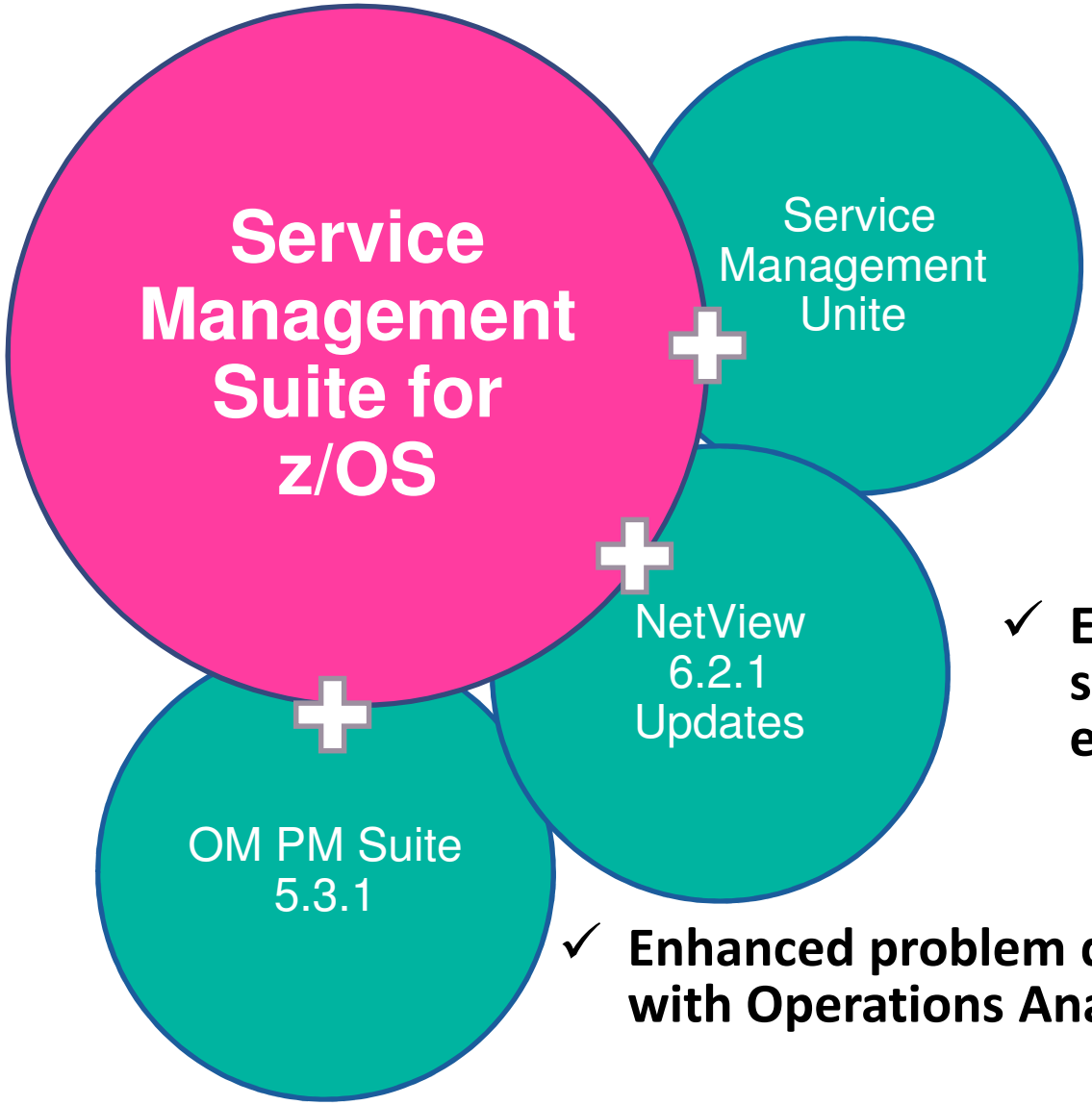
Asset Discovery

Who is using what, where and when

Dashboards

Single point of control to monitor and operate your applications

NEW: Service Management Suite for z/OS 1.3



- ✓ **Modern Web UI for automated operations of z and non-z Systems environments**
- ✓ **Enhanced automation to support larger environments**
- ✓ **Enhanced problem determination with Operations Analytics**

Service Management Suite for z/OS 1.3

Service Management Unite V1.1.0

System Automation for z/OS V3.5

NetView for z/OS V6.2.1

Tivoli Asset Discovery V8.1

OMEGAMON z/OS Perf Mgmt Suite

- ✓ OMEGAMON XE for DB2 PE V5.3.0
- ✓ OMEGAMON XE for Messaging on z/OS V7.3.0
- ✓ OMEGAMON XE for CICS V5.3.0
- ✓ OMEGAMON XE for IMS V5.3.0
- ✓ OMEGAMON Dashboard Edition on z/OS 5.3.0
- ✓ OMEGAMON XE for z/OS V5.3.0
- ✓ OMEGAMON XE for Mainframe Networks V5.3.0
- ✓ OMEGAMON XE for Storage V5.3.0
- ✓ ITCAM AD V7.1 (only ITCAM for WR component)
- ✓ Composite Application Manager for Web Resources on z/OS 7.1.0
- ✓ Operations Analytics Log Analysis
  - OMEGAMON z/OS Insight Pack

Financial Benefits & Business Value

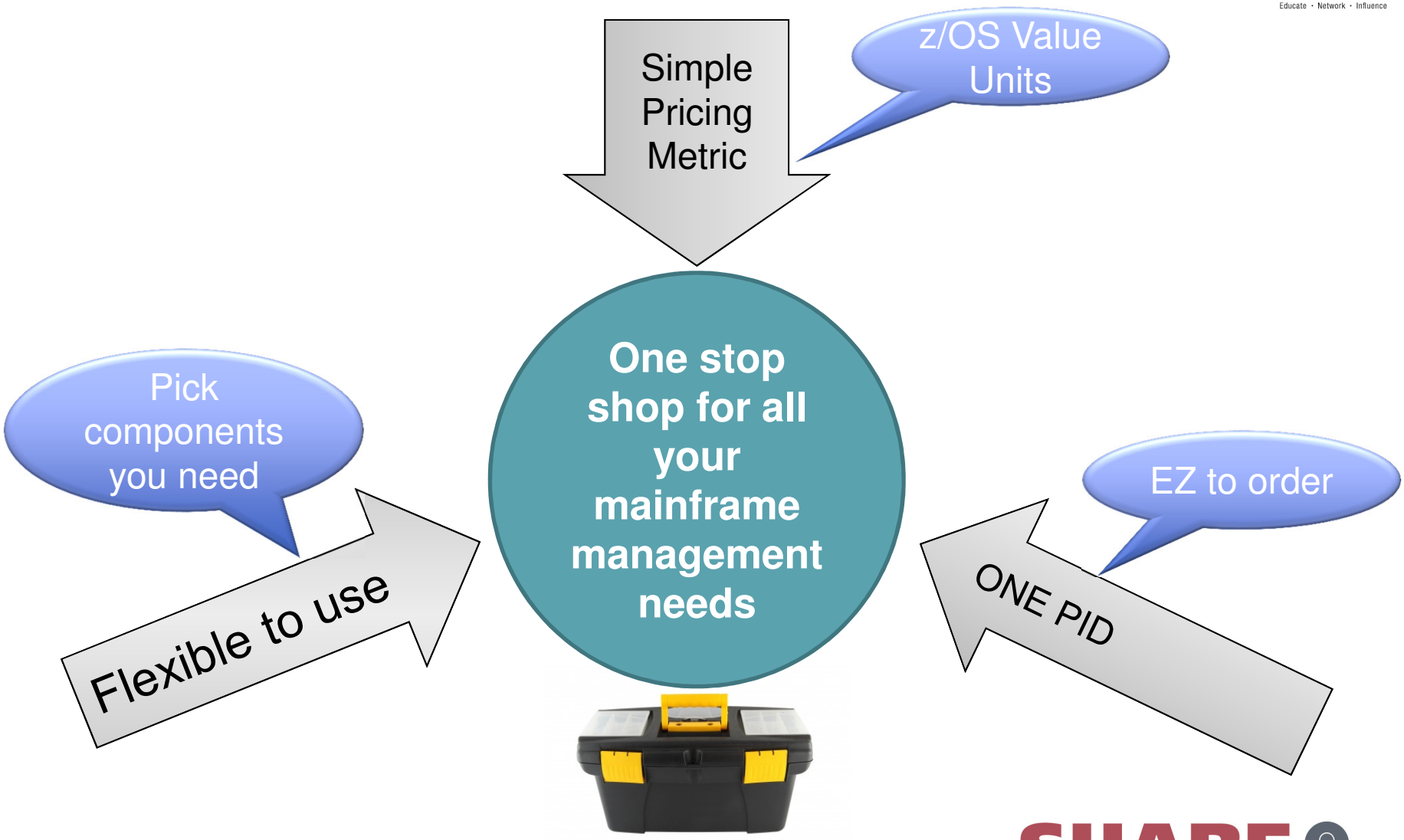


Image taken from FreeDigitalPhotos.net

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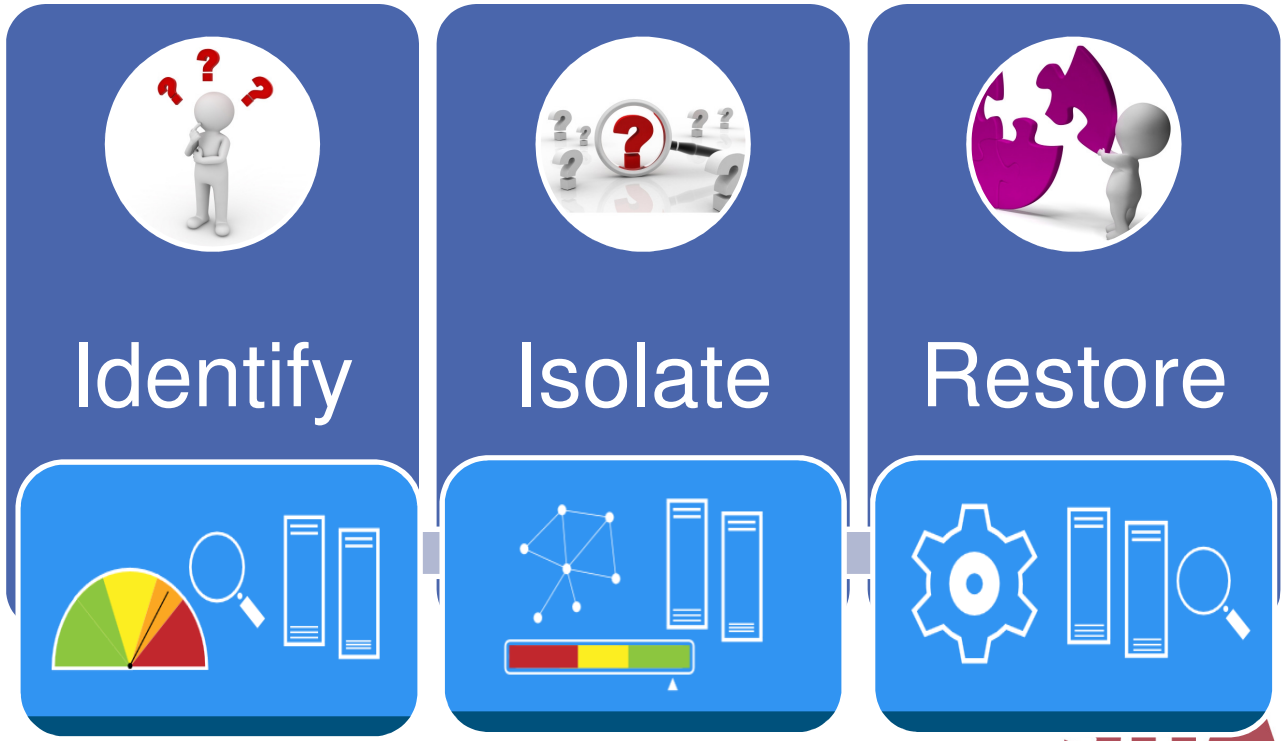
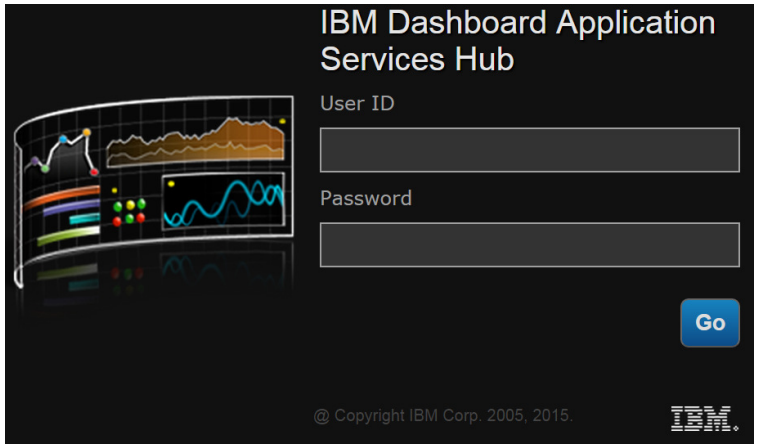
Service Management Unite - What is it?

A modernized, state-of-the-art service management dashboard for visibility and operations of IBM z Systems



Images taken from FreeDigitalPhotos.net

Service Management Unite – A new way to operate your mainframe

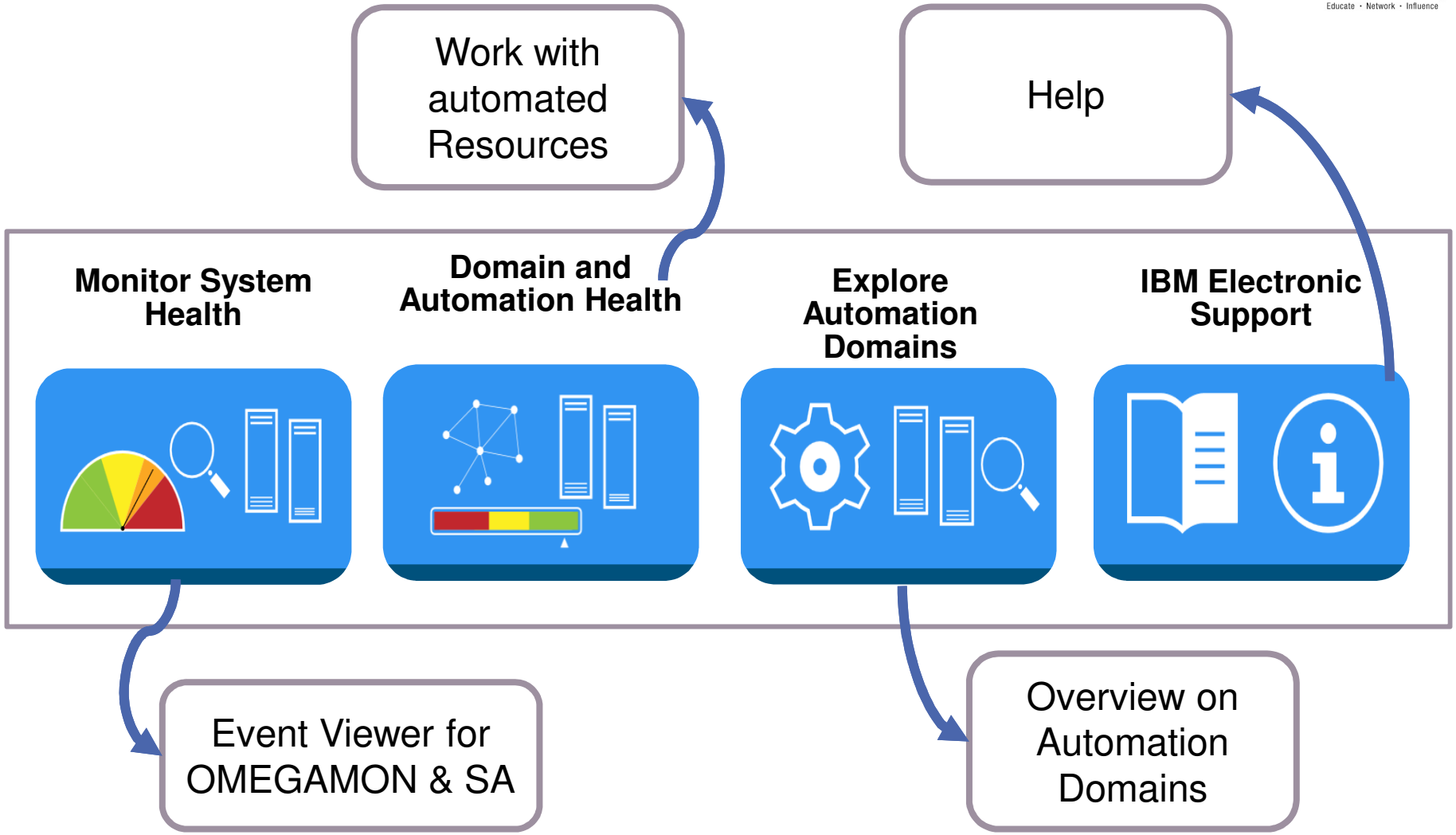


- Manage growing workload with the same operations team
- Customize your dashboards to maximize efficiency
- Drastically increase productivity through intuitive systems control
- Automate and control applications on z/OS and Linux on z

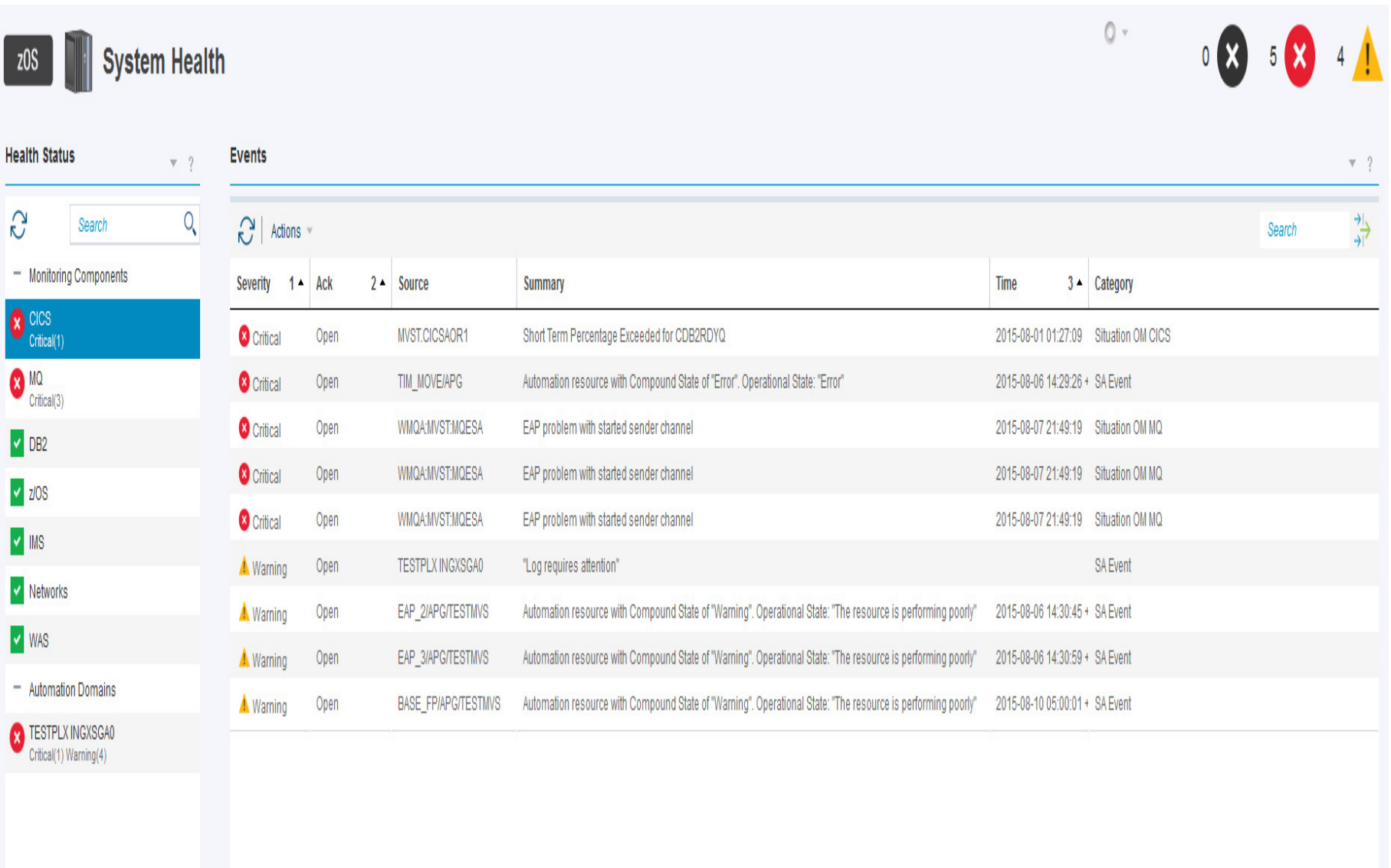
It's a real **WOW**
Isolate, analyze and diagnose problems twice as fast (*)

(*) based on initial measurements.

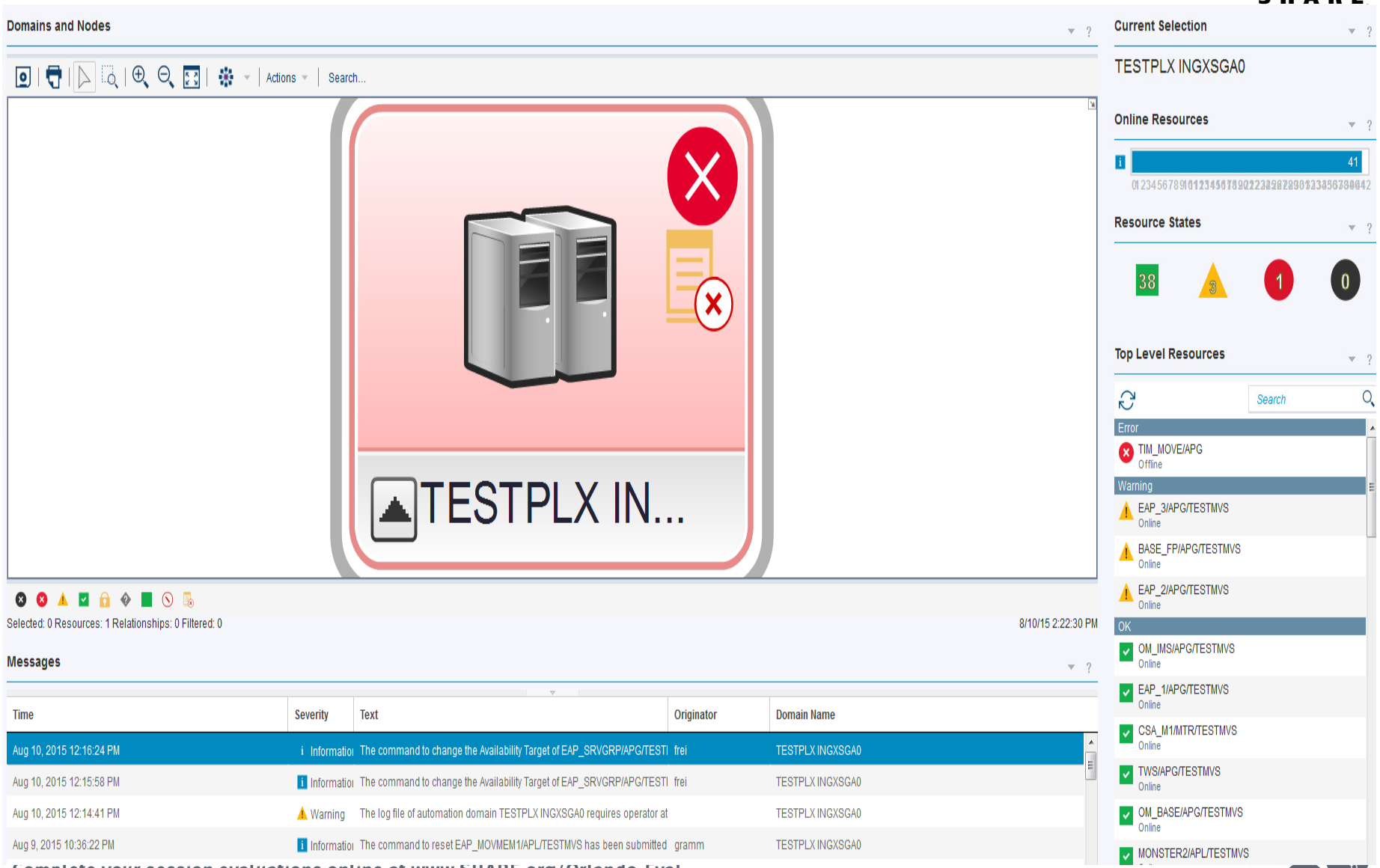
Service Management Unite - What is it?



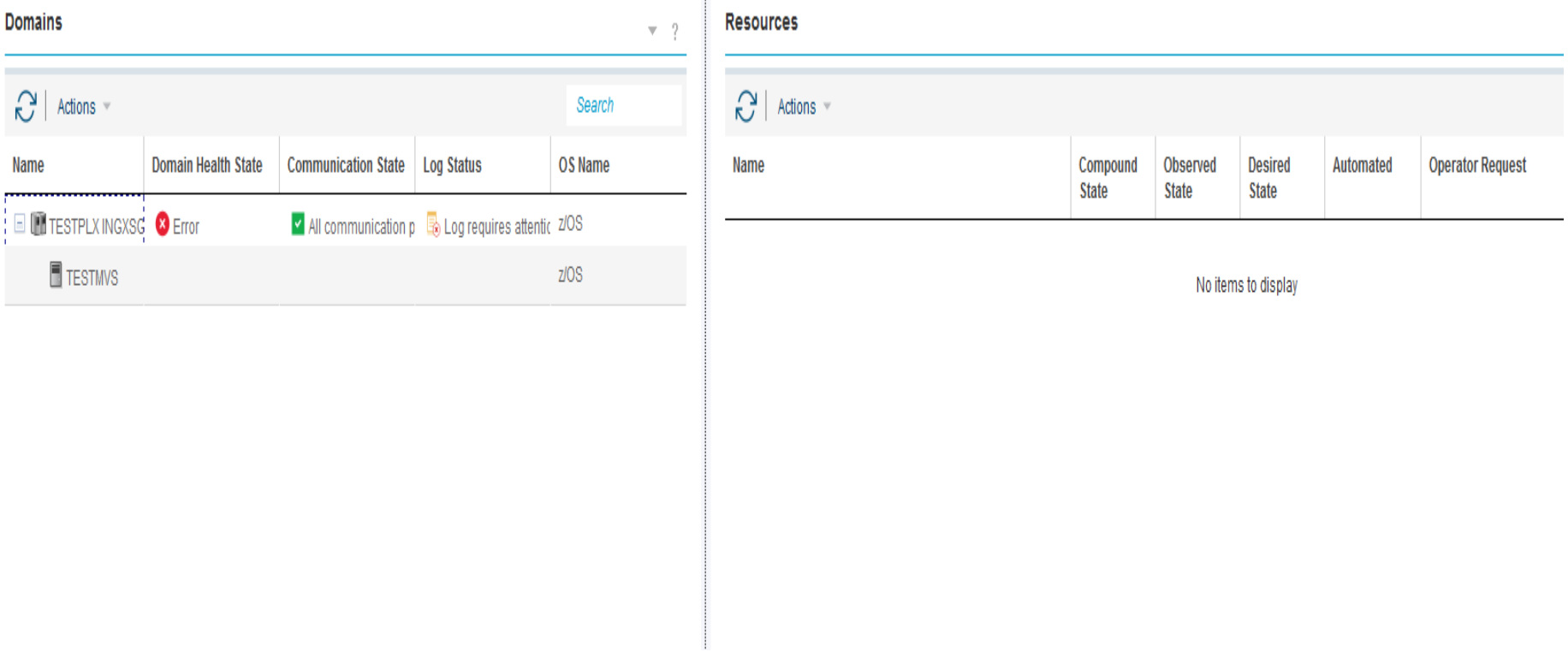
Monitor System Health



Domain and Automation Health

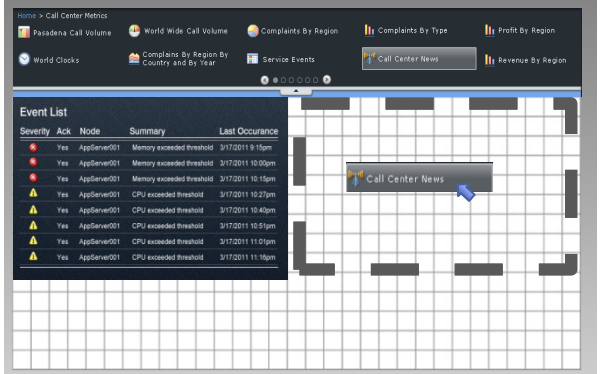


Explore Automation Domains



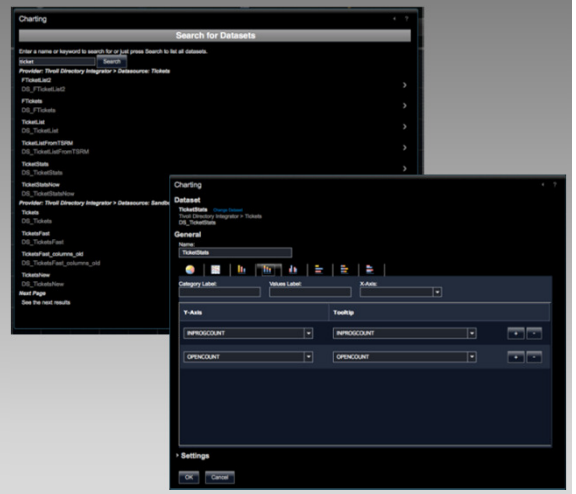
What is DASH?

- DASH (Dashboard Application Services Hub) is a common shared component (shipped as part of JazzSM)
- It provides integration of product and 3rd party data via a rich set of interactive widgets
- Hosts product UIs



- Create custom dashboards using drag & drop
- Integrated web-based editor

Create



- Assemble your own custom view
- Access data from IBM and 3rd party
- Use pre-defined product UIs

View

- Assign security to dashboards
- Provision the dashboards for Desktop and Mobile

Share

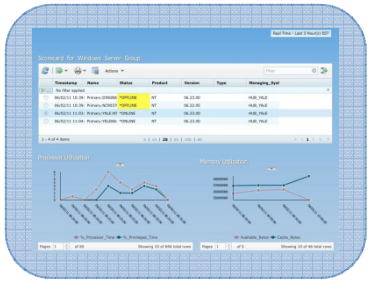
Common Data Access, Common Visualizations

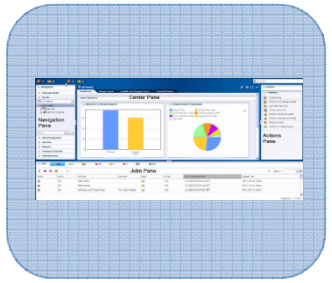
Solution Out-of-the-box Views

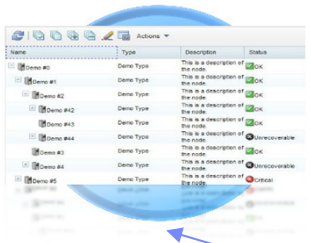
Customized Views for Clients

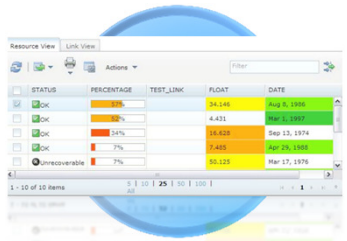
Widgets for Mobile

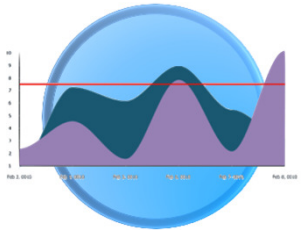
Purpose-built UIs

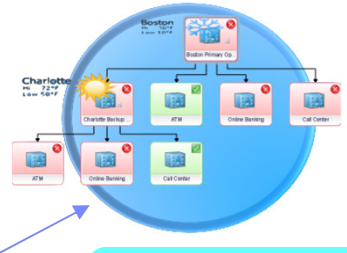










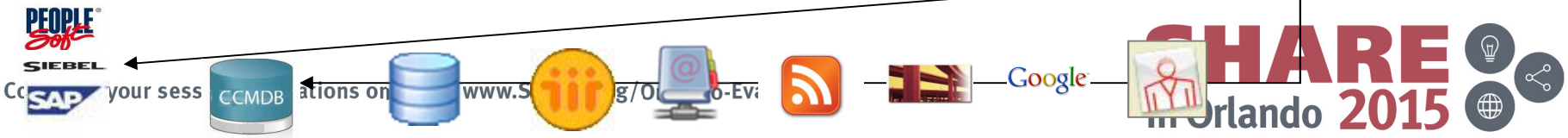


This allows you to integrate 3rd party data

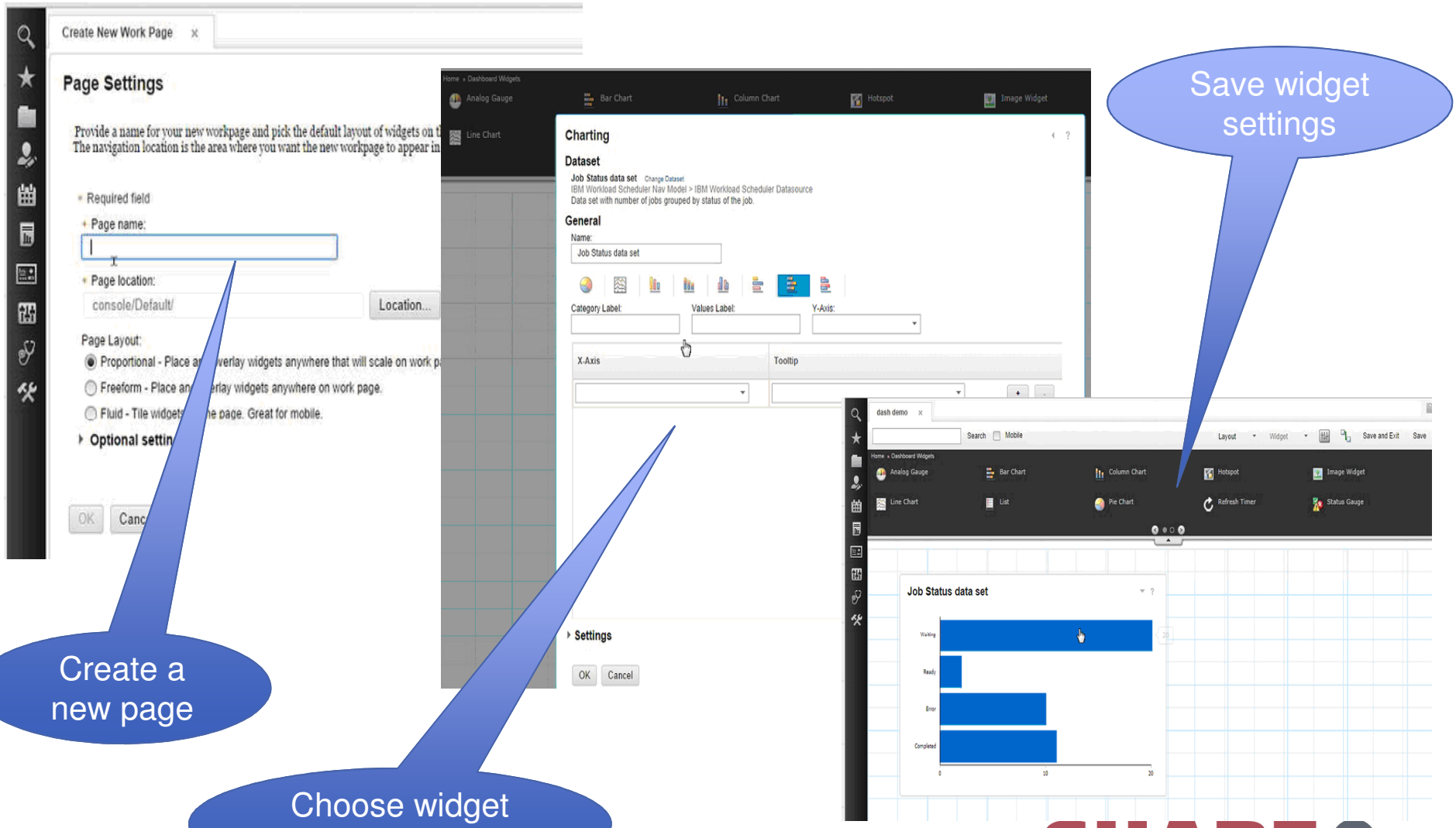
REST Interface

Data Provider	Data Provider	Data Provider	Data Provider	Data Provider	Data Provider	Data Provider
TPC	ITM	ITCAM/ APM	TBSM OMNIBUS	OMEGAMON	System Automation	TDI/ Impact

• • •



It's customizable: Build Custom Views using DASHBuilder



So …… How does it work?

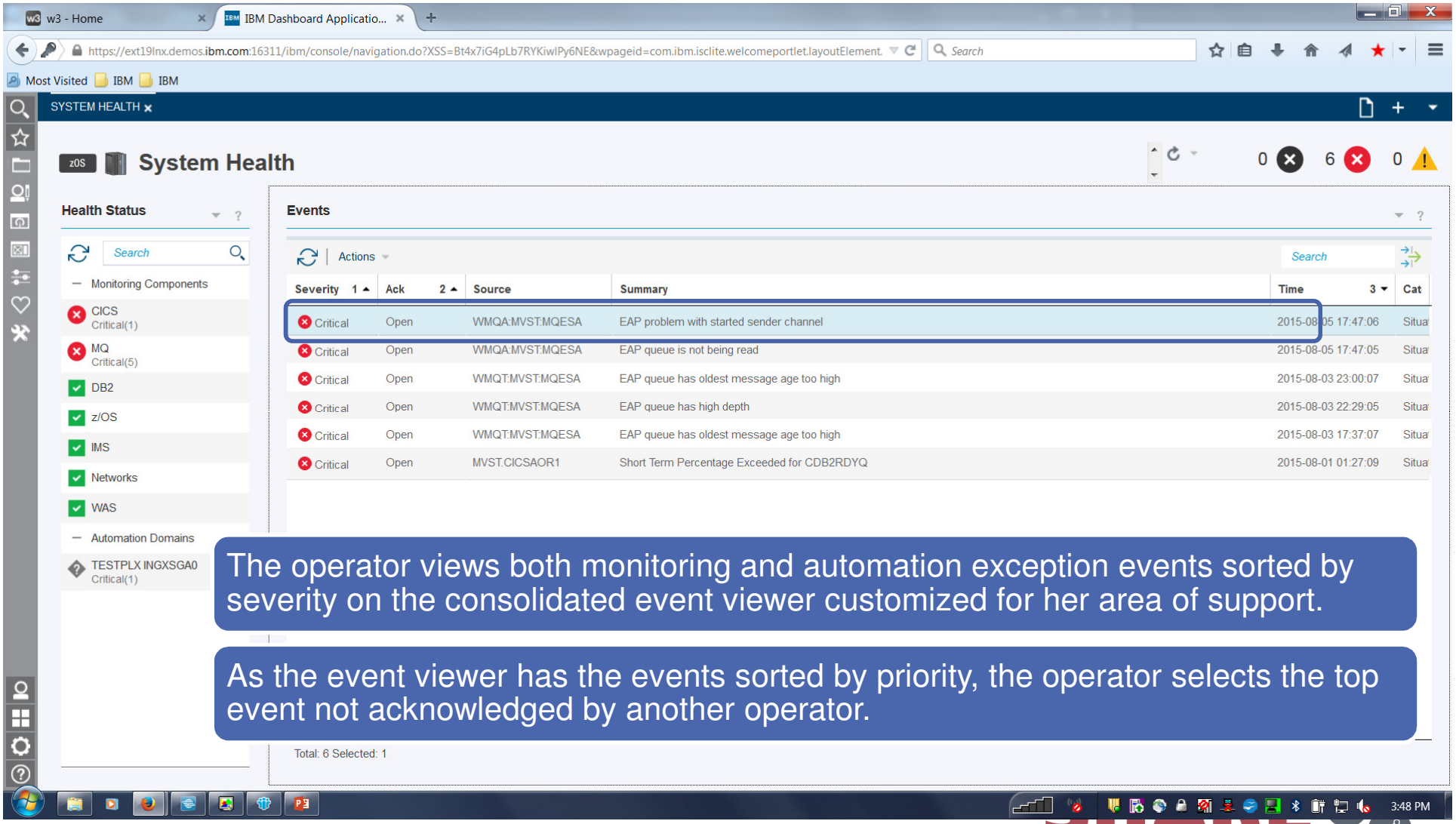
The following charts describe 3 typical problems that can be solved with Service Management Unite

Scenarios:

- MQ Channel Not Running
- Restore Service outage during maintenance
- Restore Service of degraded workload

Scenario 1: MQ Channel Not Running

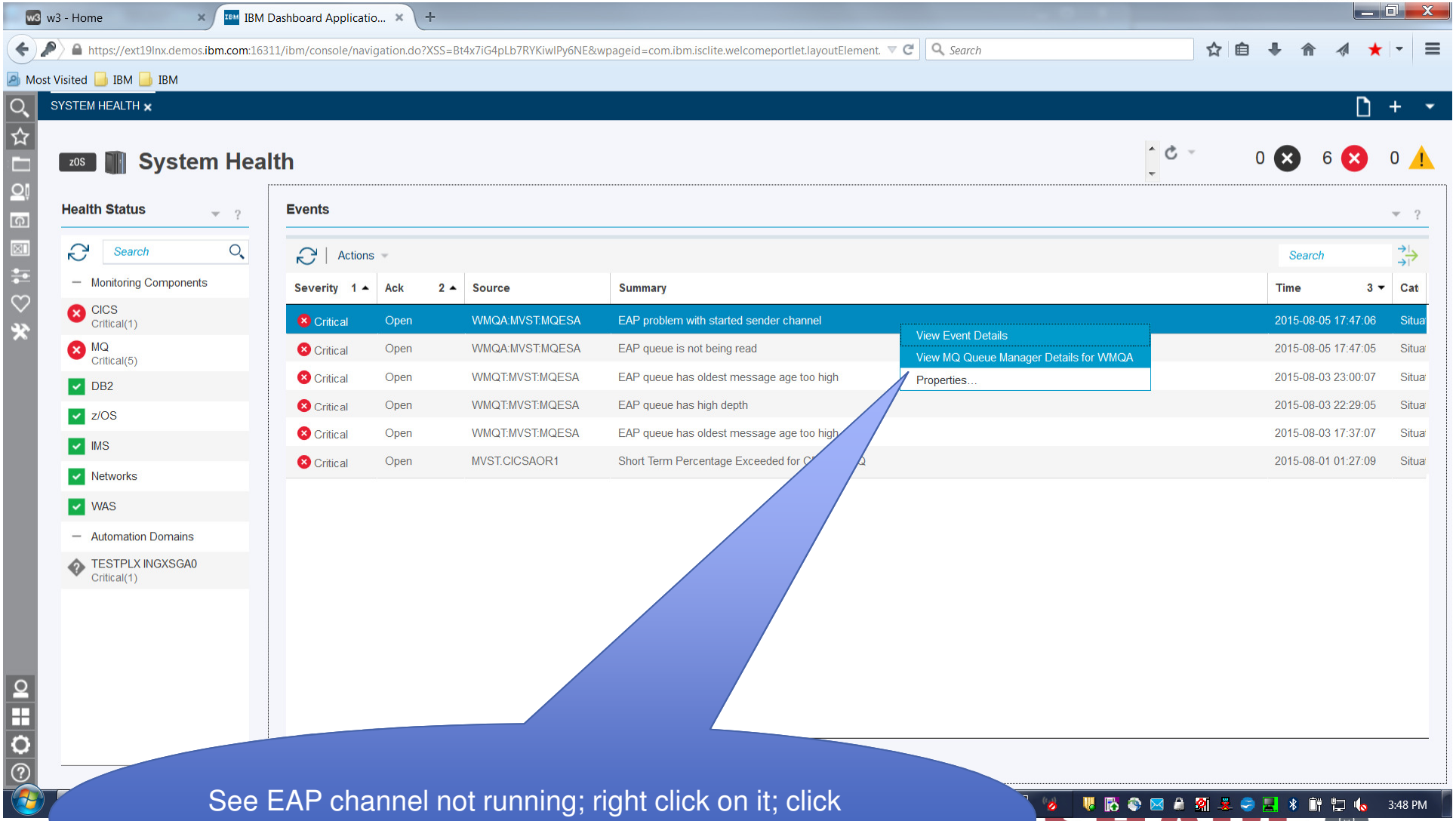
Receive a Critical MQ Event



The operator views both monitoring and automation exception events sorted by severity on the consolidated event viewer customized for her area of support.

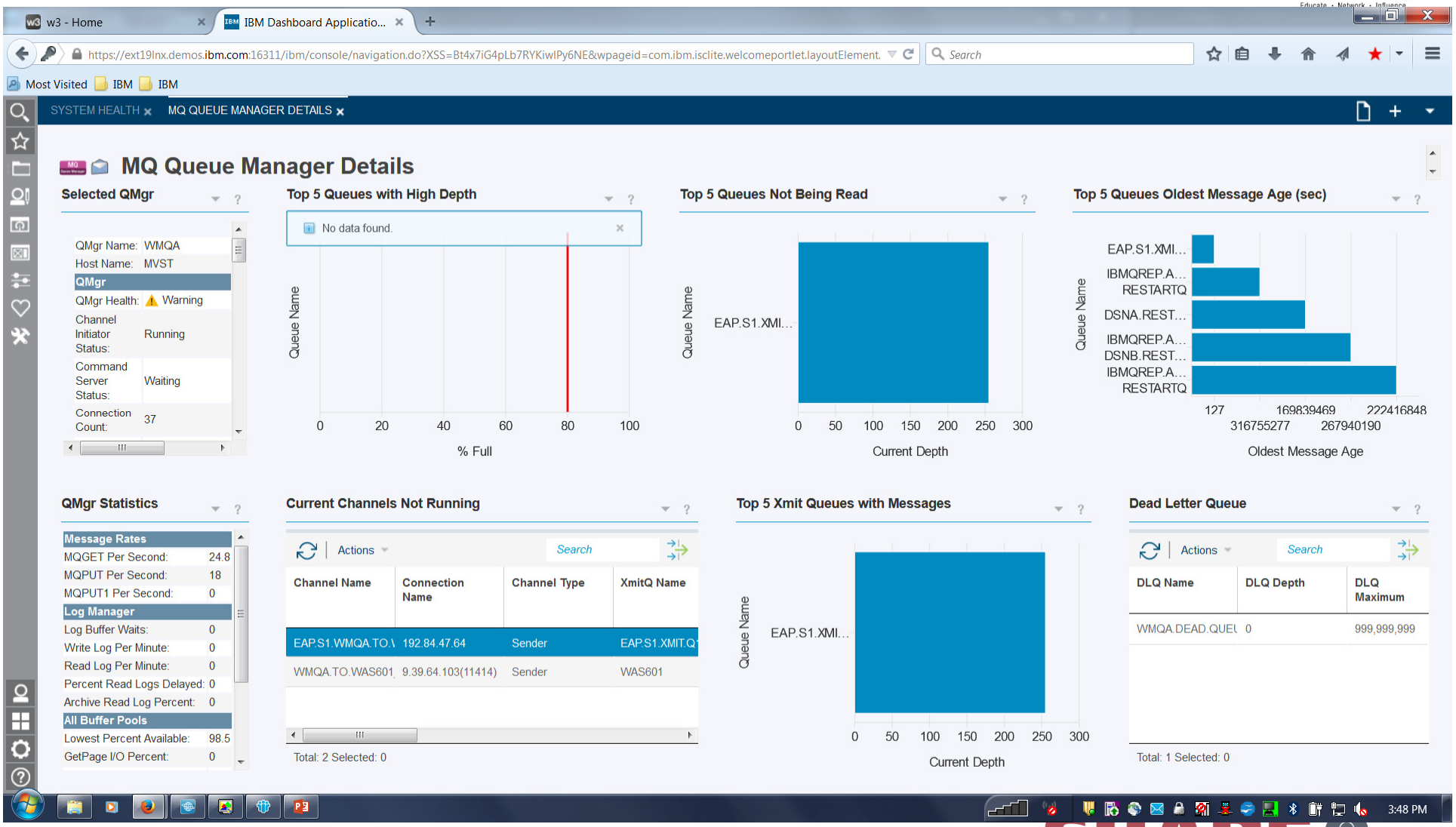
As the event viewer has the events sorted by priority, the operator selects the top event not acknowledged by another operator.

Open Event Details

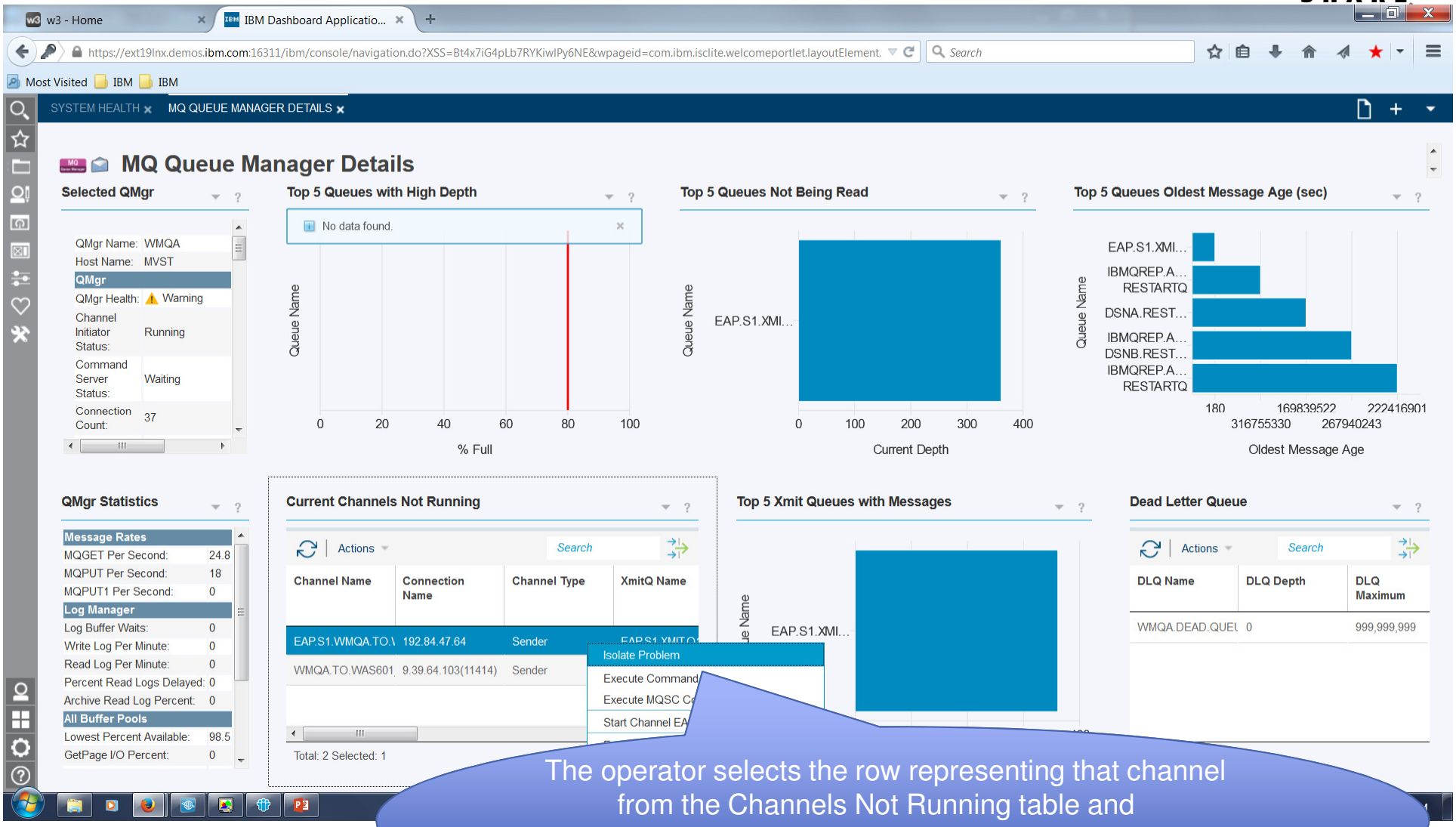


See EAP channel not running; right click on it; click on MQ Queue Manager Details (2 clicks)

View key performance graphs and tables



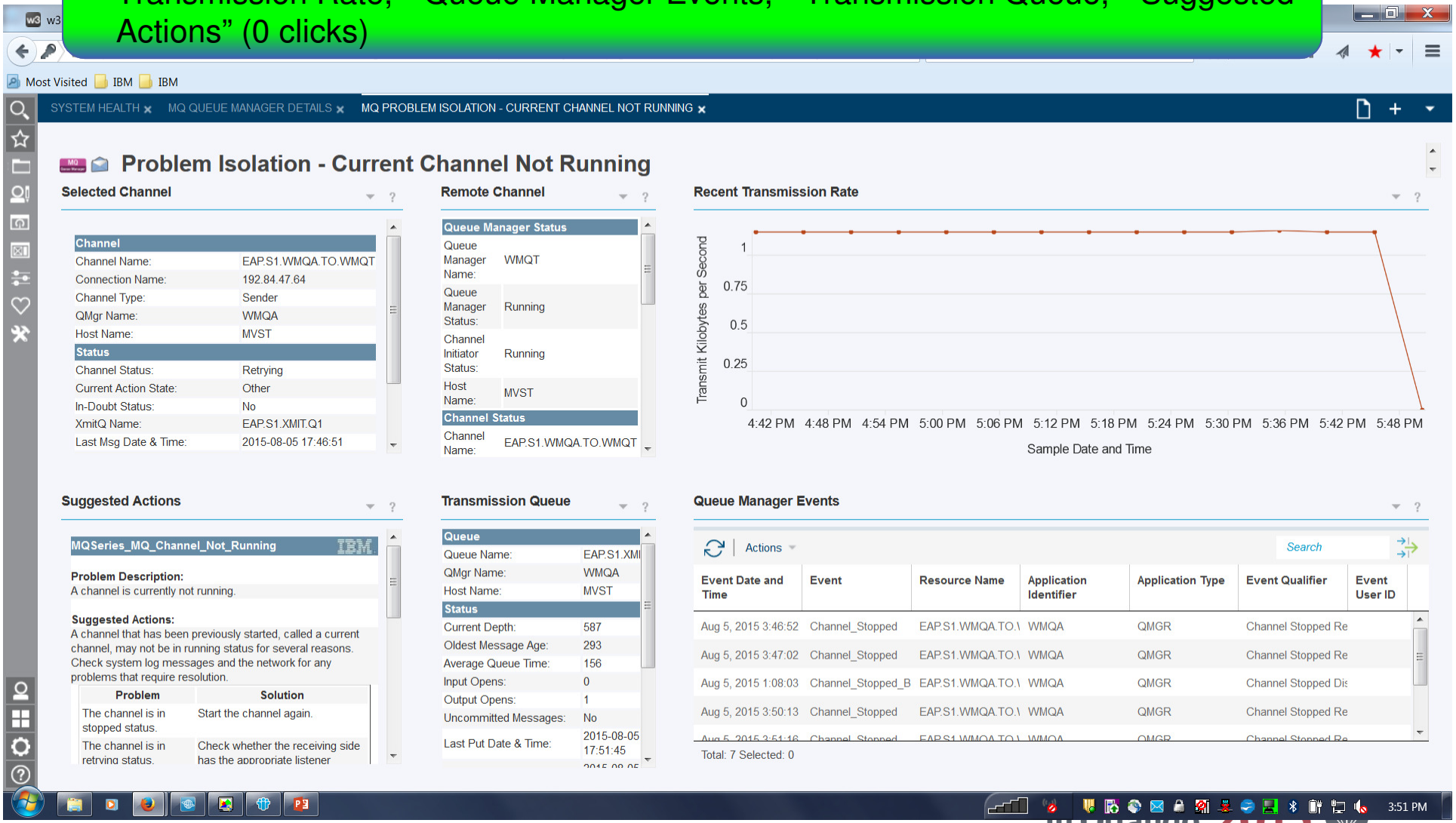
View key performance graphs and tables



The operator selects the row representing that channel from the Channels Not Running table and navigates to the Channels Not Running problem isolation page in context of the identified channel.

Isolate the Problem

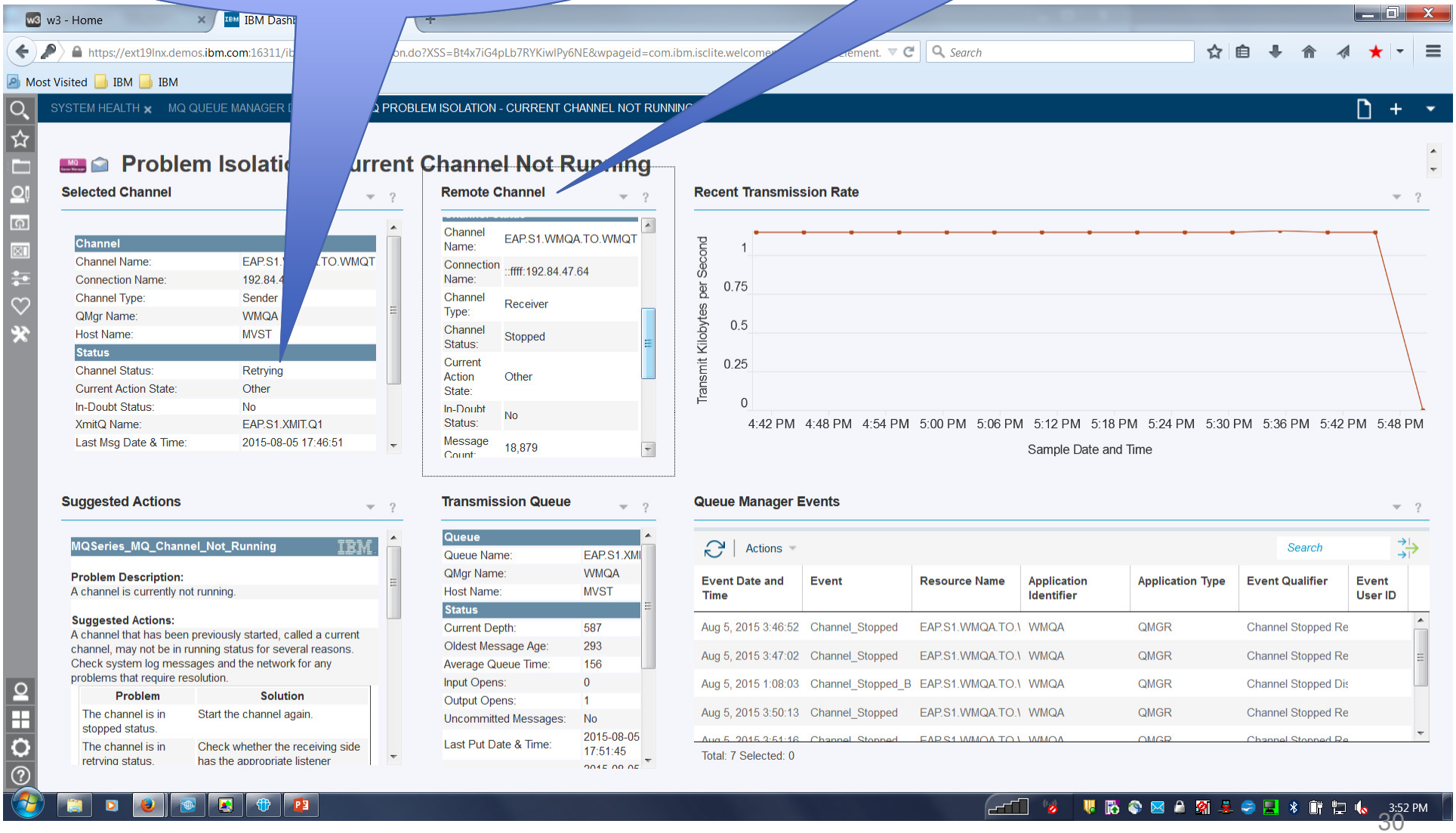
- View each widget on page: “Selected Channel,” “Remote Channel,” “Recent Transmission Rate,” “Queue Manager Events,” “Transmission Queue,” “Suggested Actions” (0 clicks)



Isolate the Problem

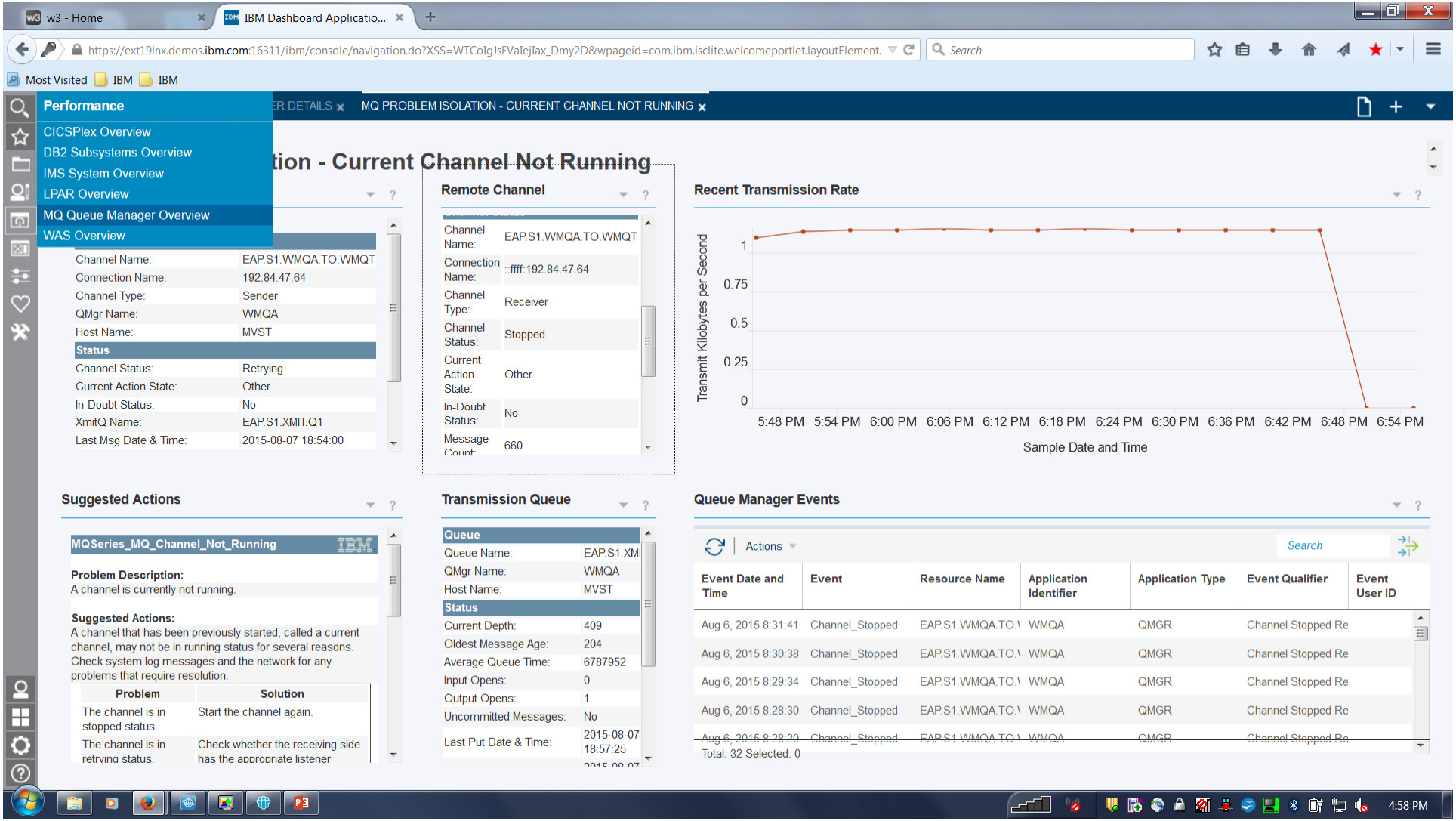
Selected Channel is in Retrying status

Need to see remote channel



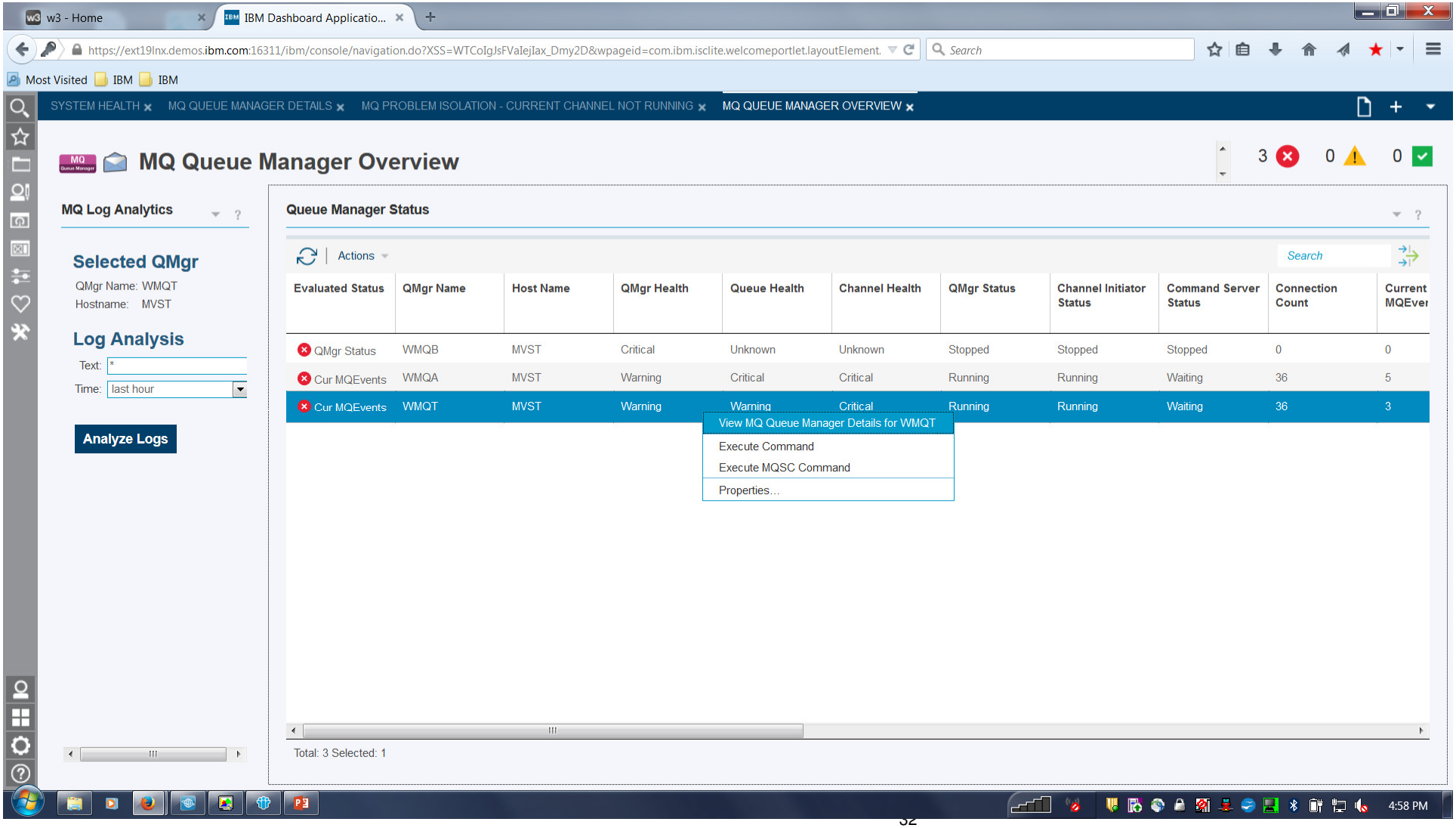
Isolate the problem

- Need to start stopped channel on remote queue manager WMQT; click on Performance button, then on MQ Queue Manager Overview



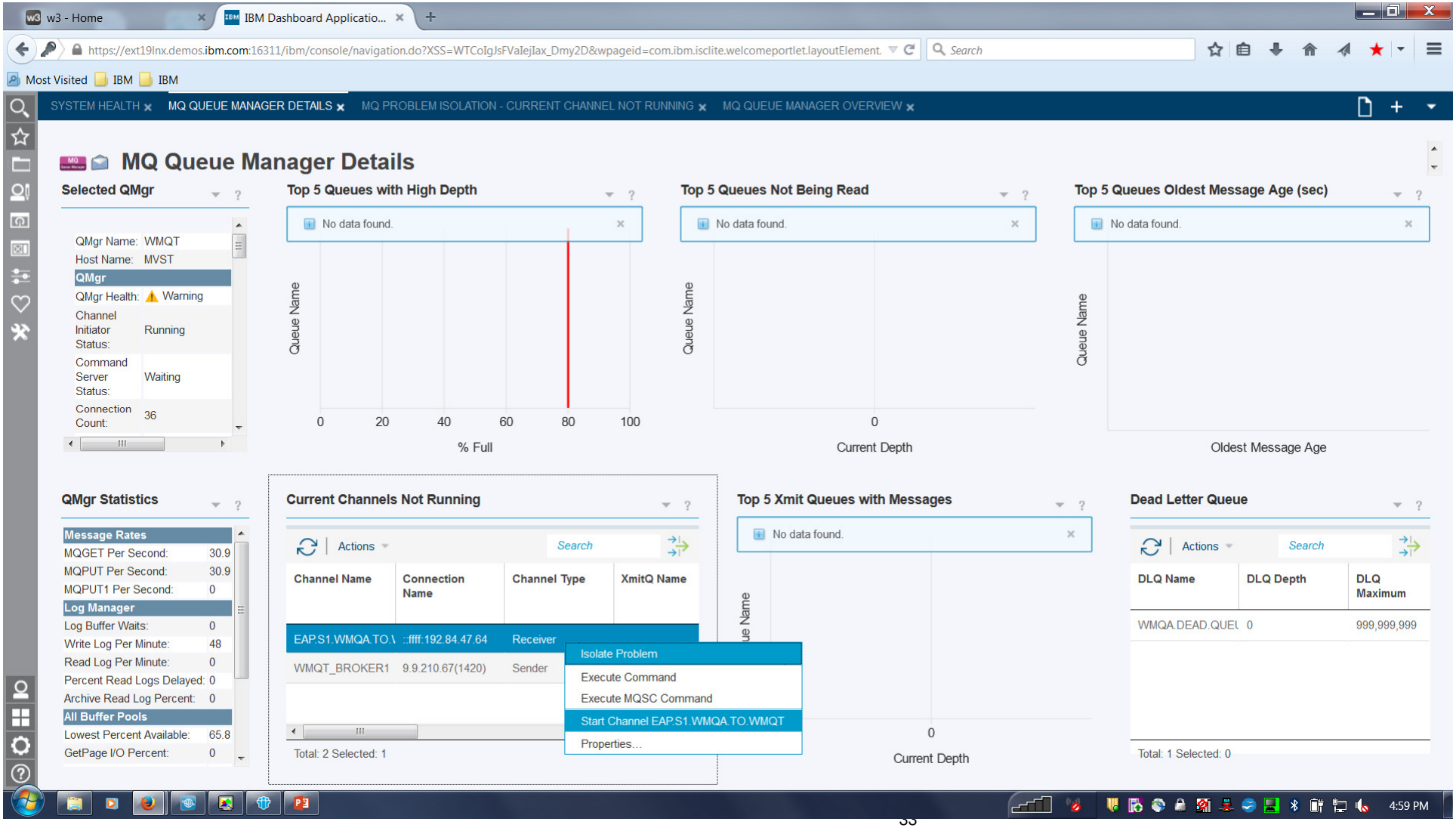
Isolate the problem

- See WMQT in list, right click on it and then click on MQ Queue Manager Details

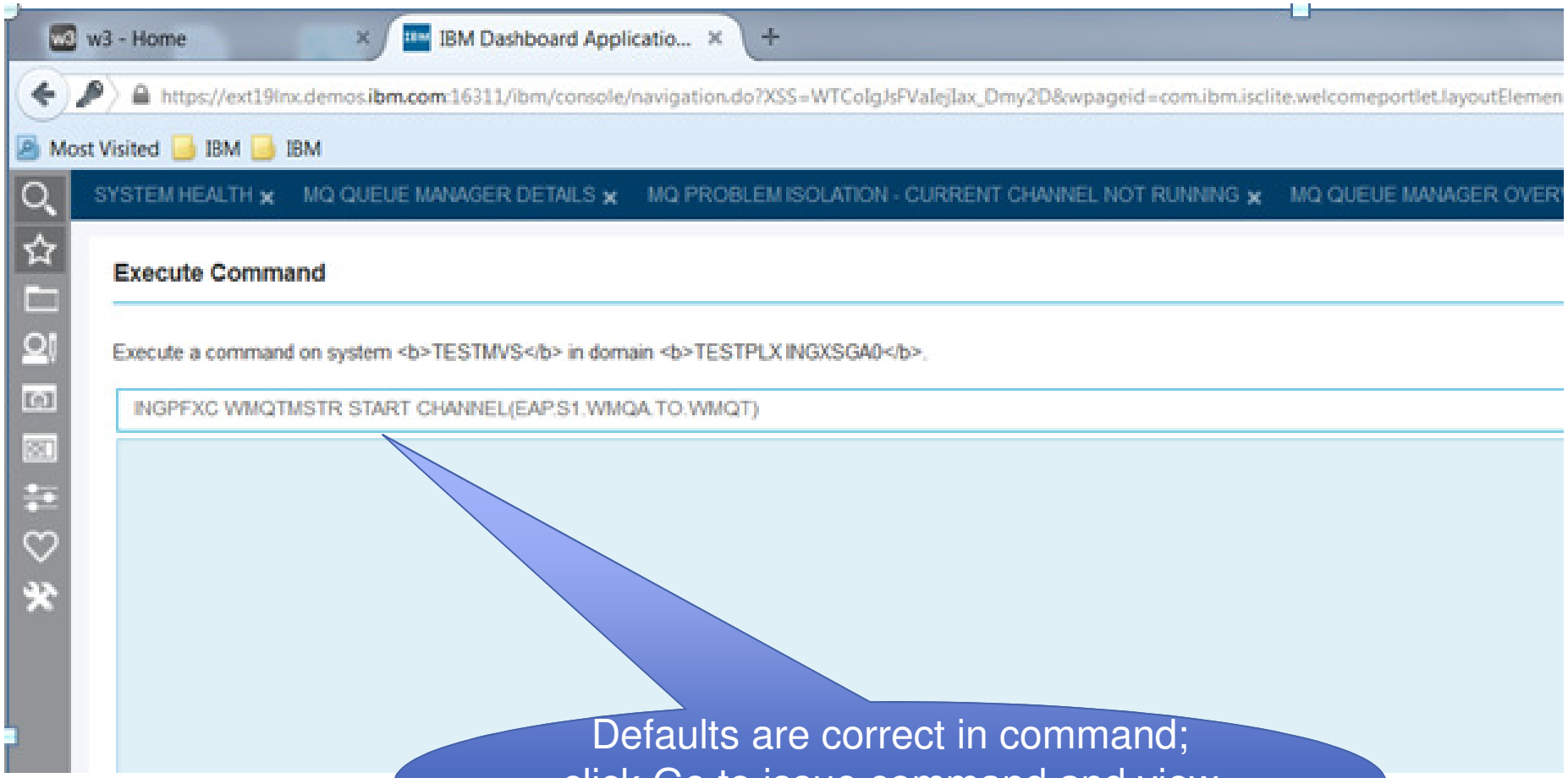


Start Channel

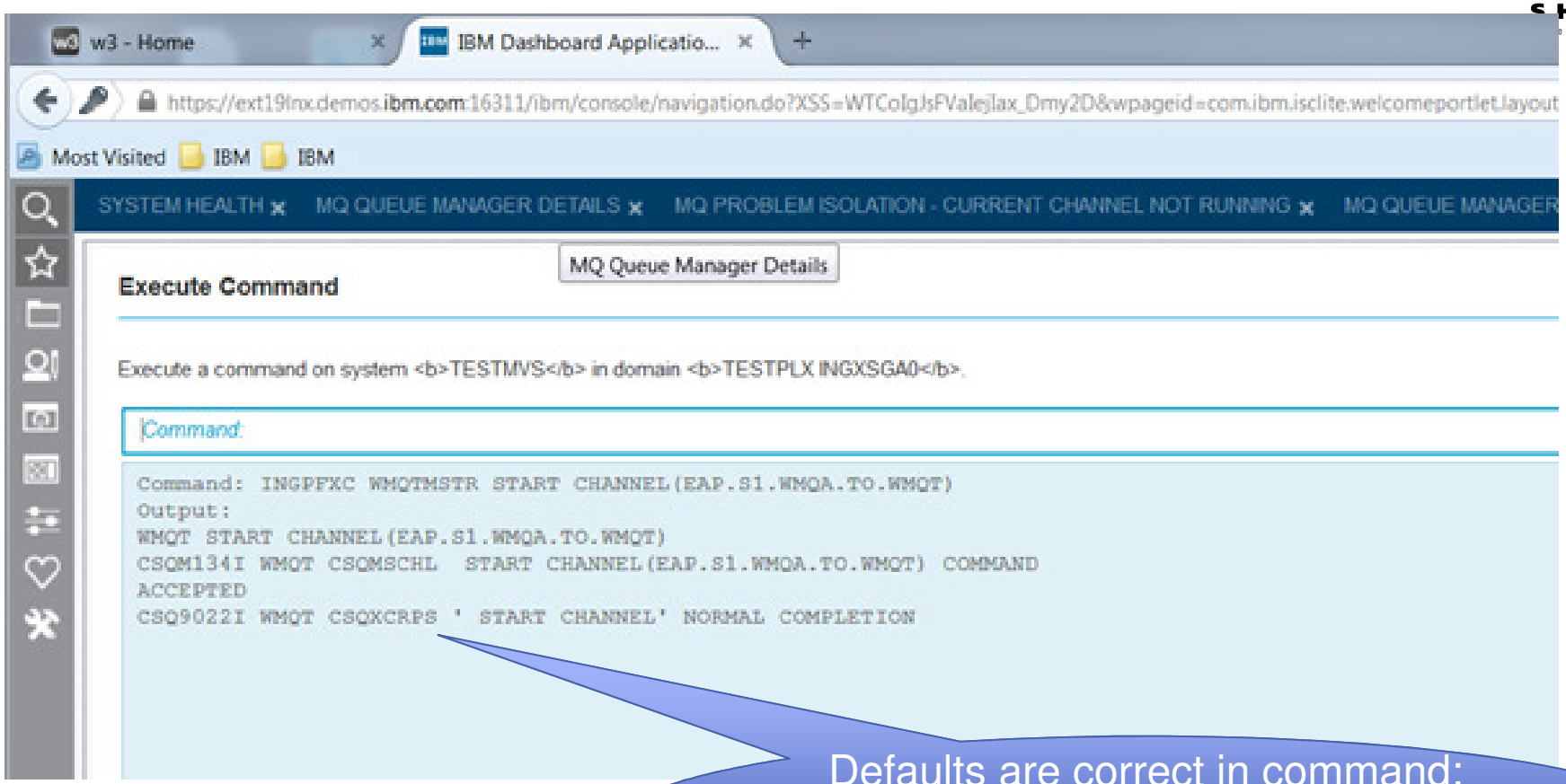
- See EAP channel not running (receiver), right click on it and click on Start Channel



Start Channel

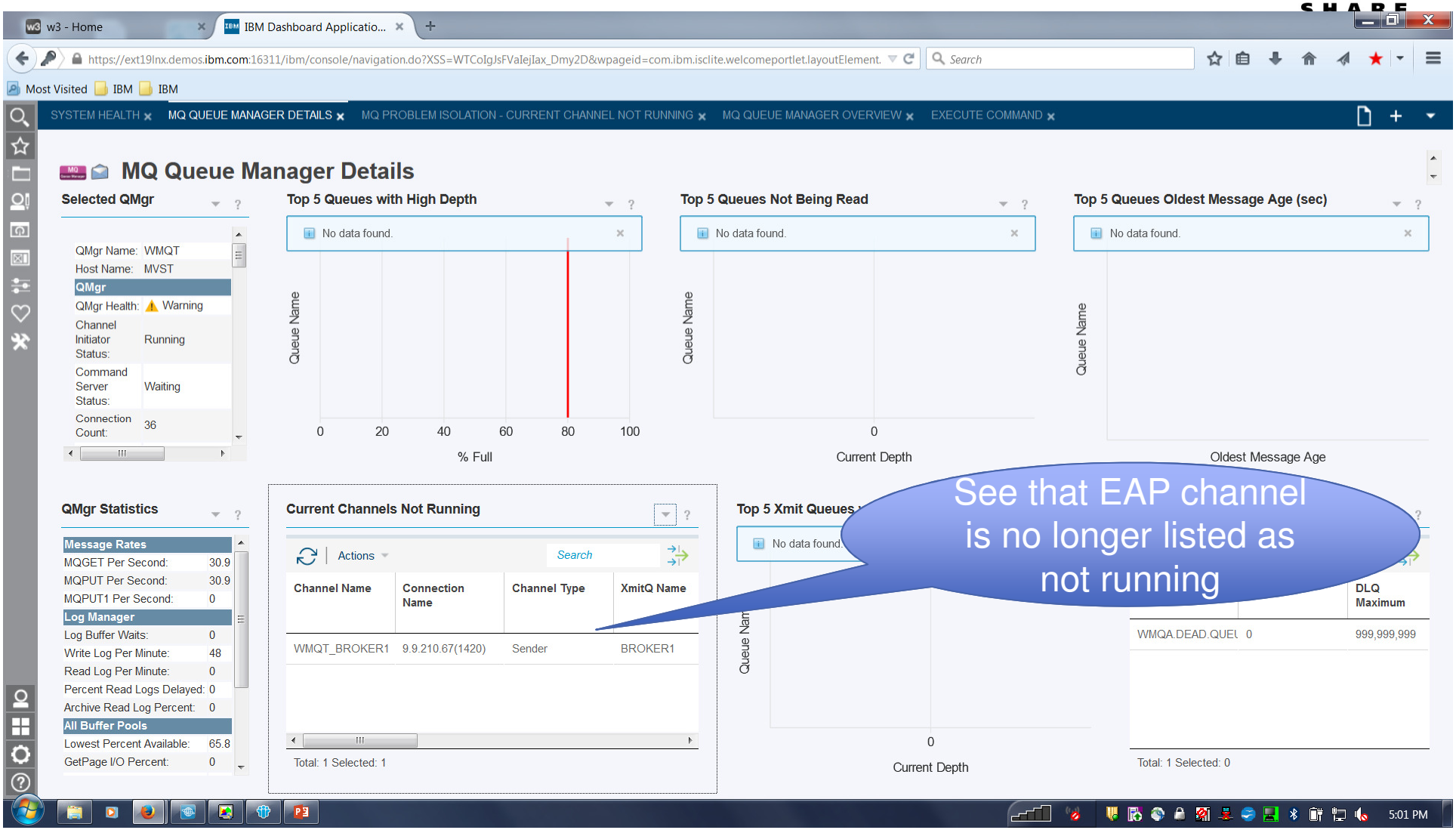


Start Channel: Execute Command

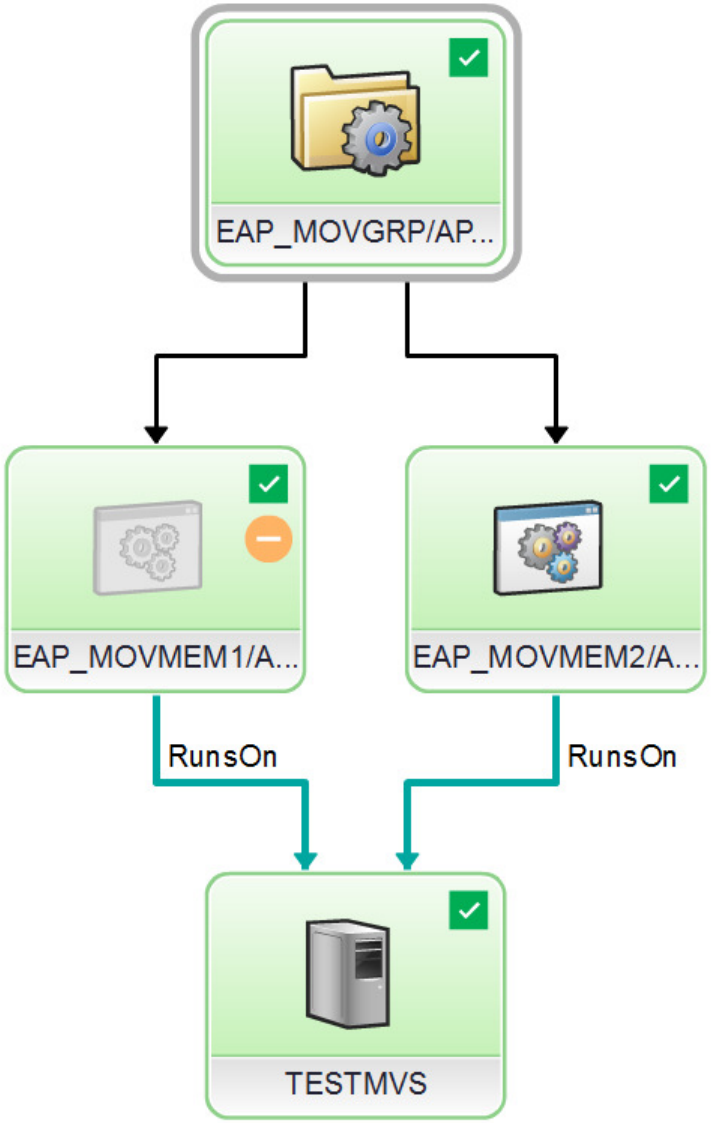


Defaults are correct in command; click Go to issue command and view response

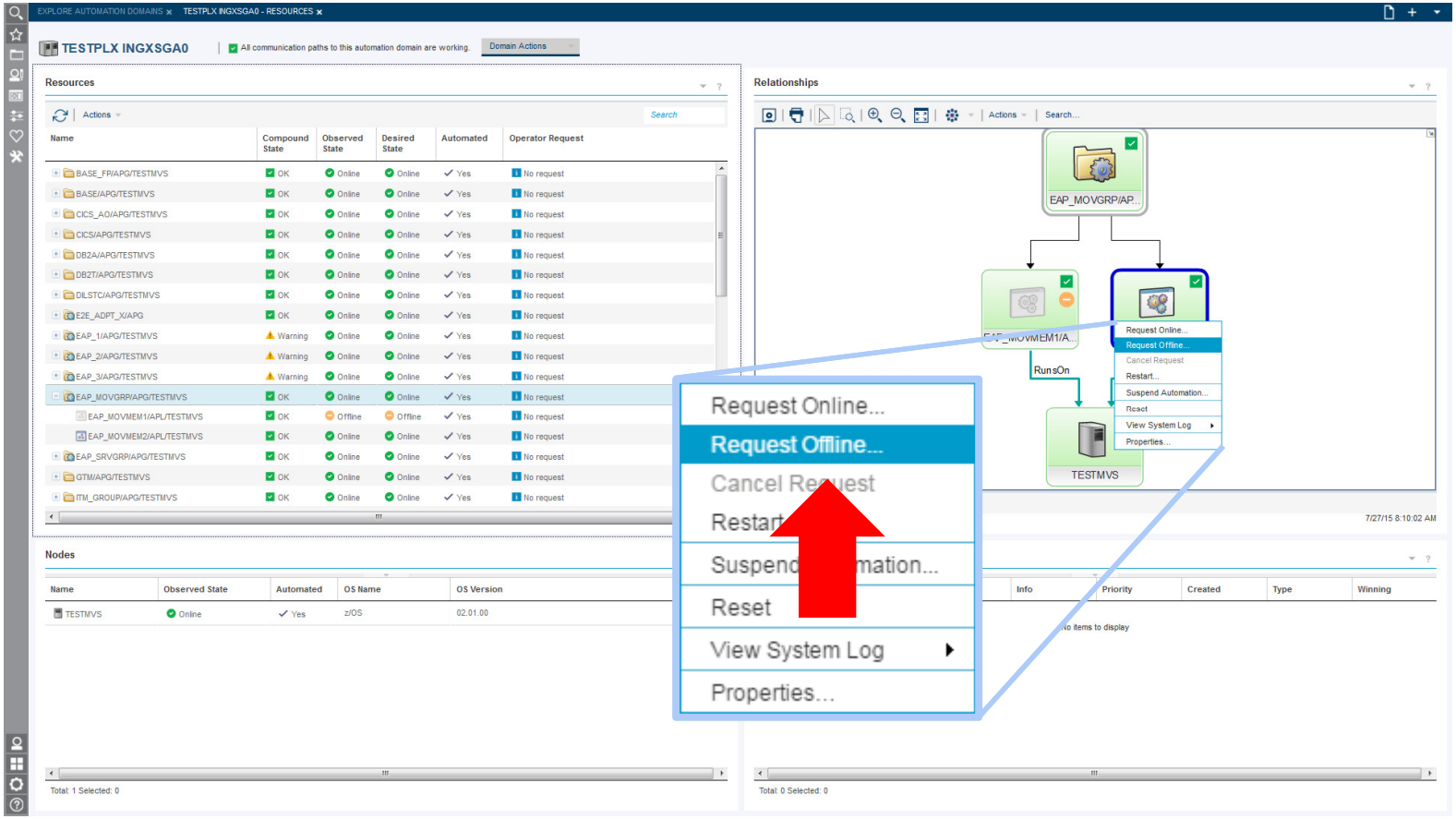
Problem Resolved: Channel Running



User Scenario 2: Restore Service outage during maintenance

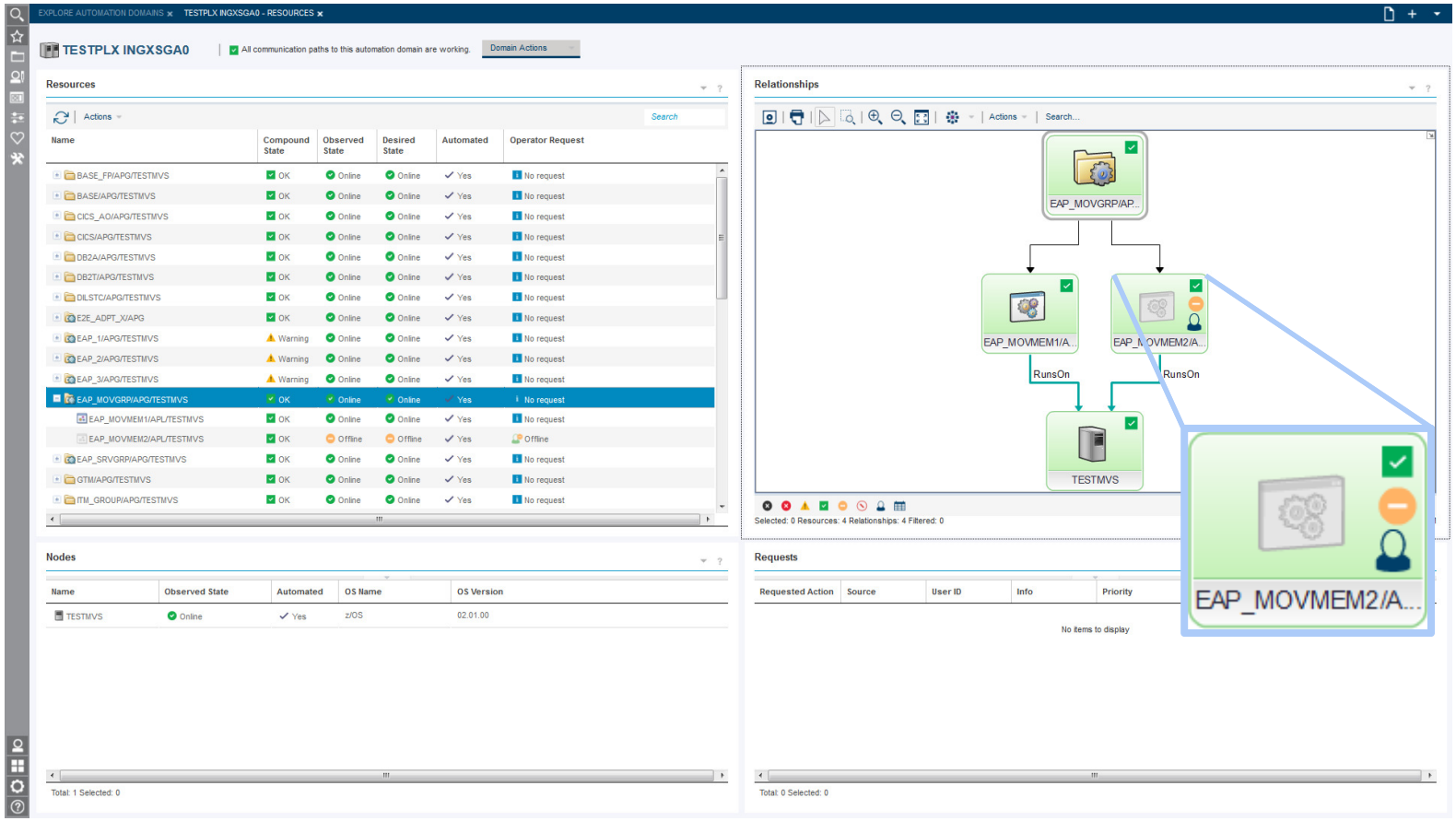


Shutdown Resource for maintenance



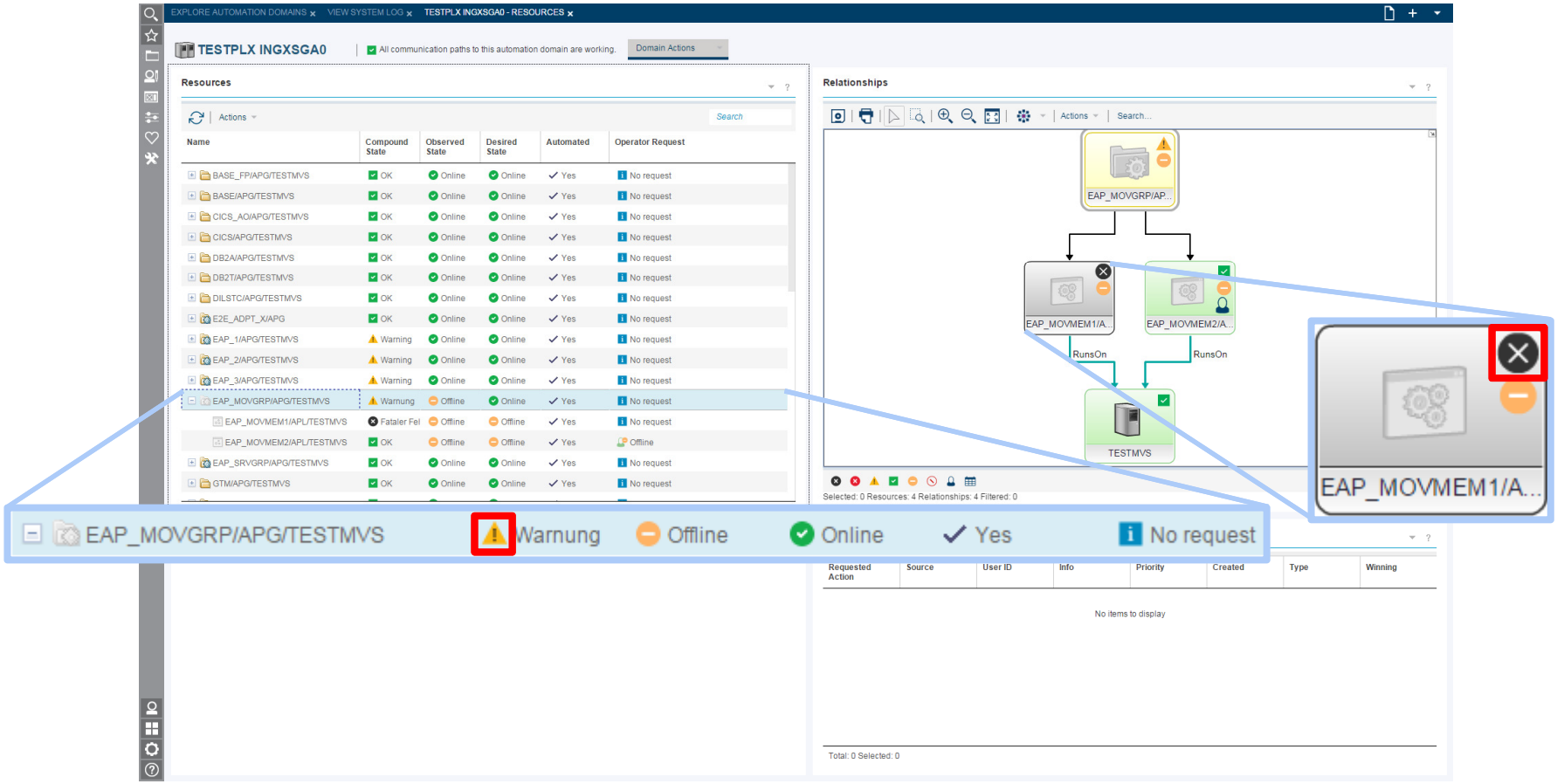
Shutdown Resource for maintenance

Resource stopped successfully



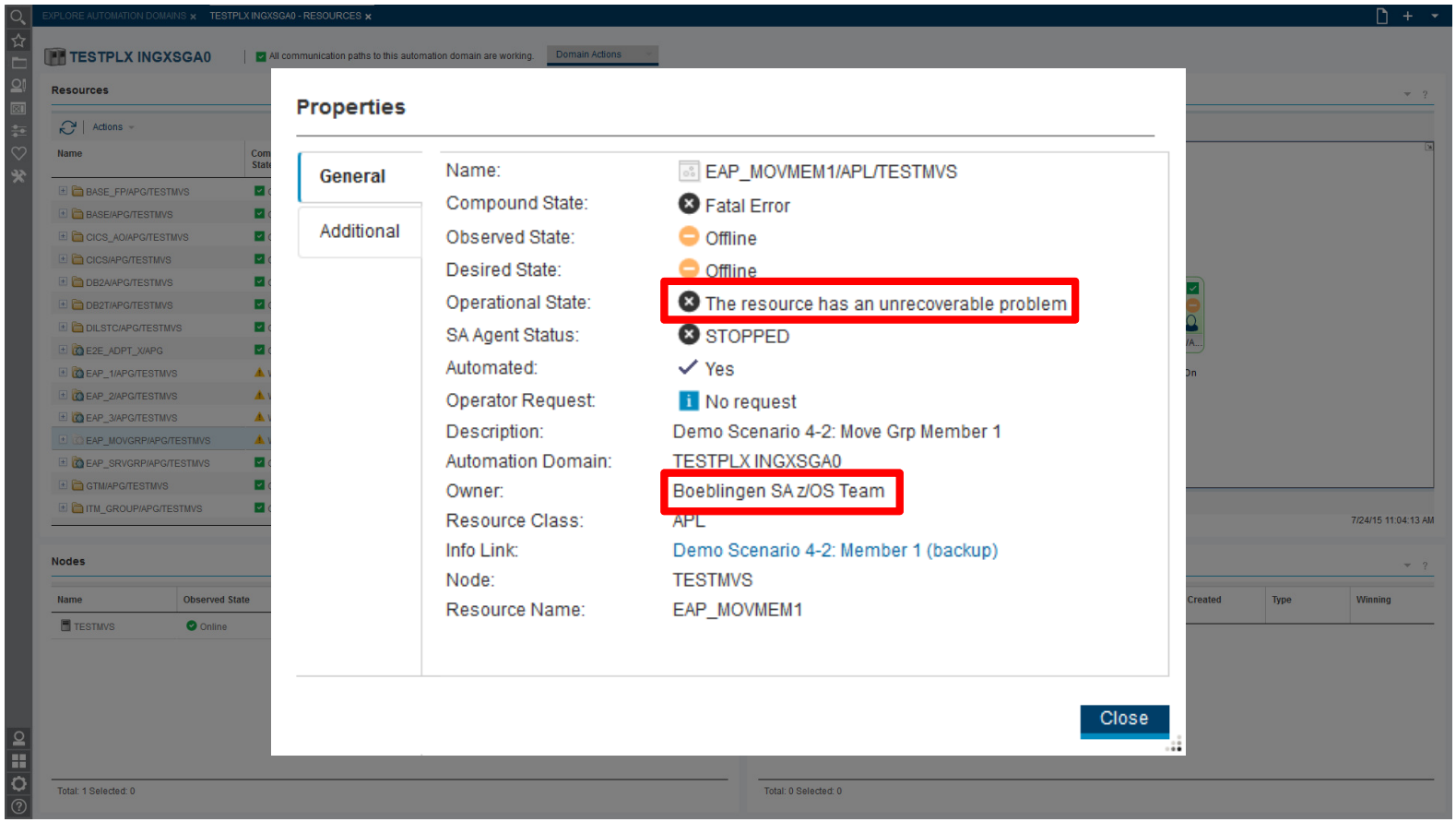
Shutdown Resource for maintenance

Problem: Backup resource crashes during startup



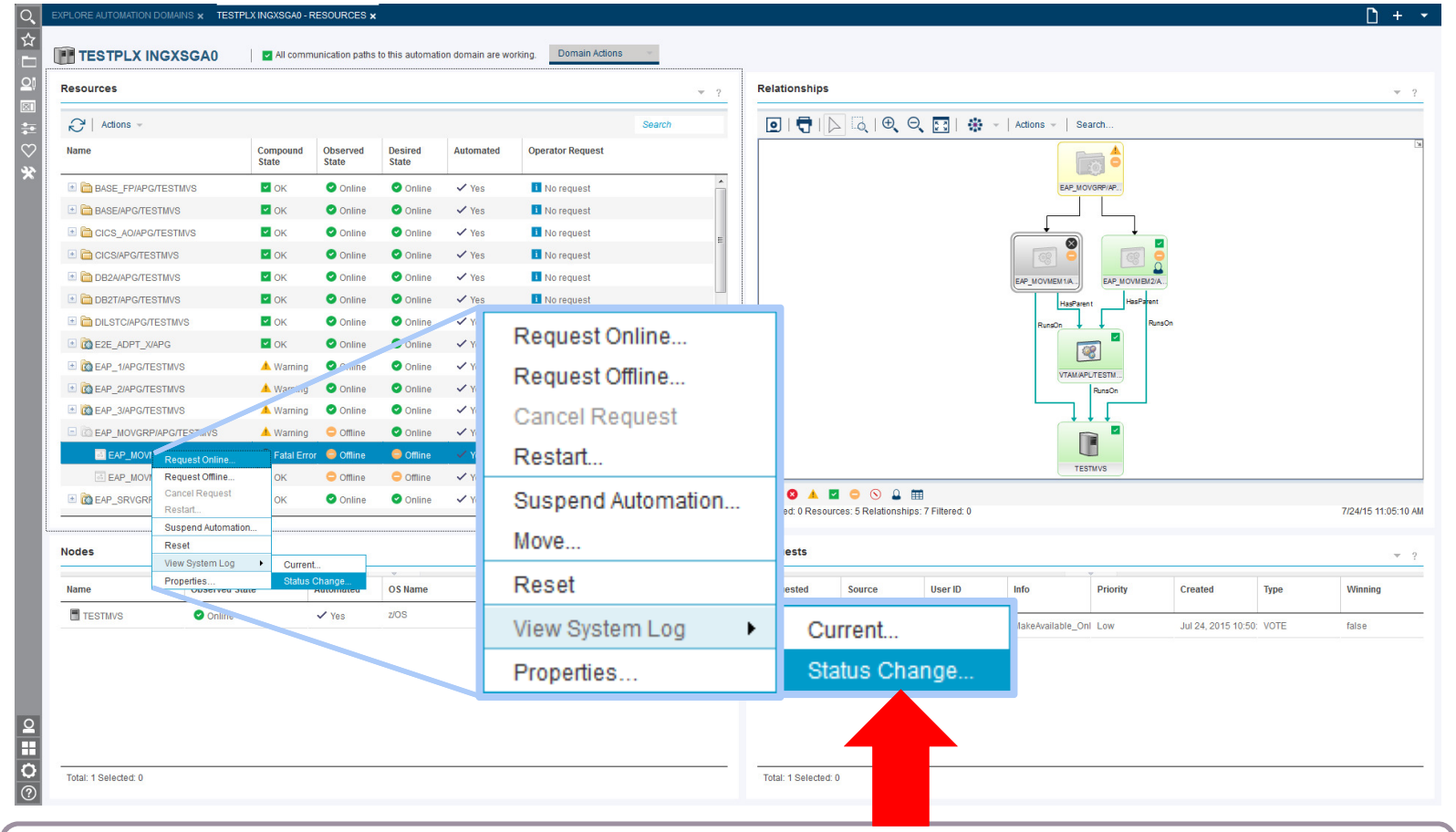
1. Identify the Problem

Check the properties of the backup resource



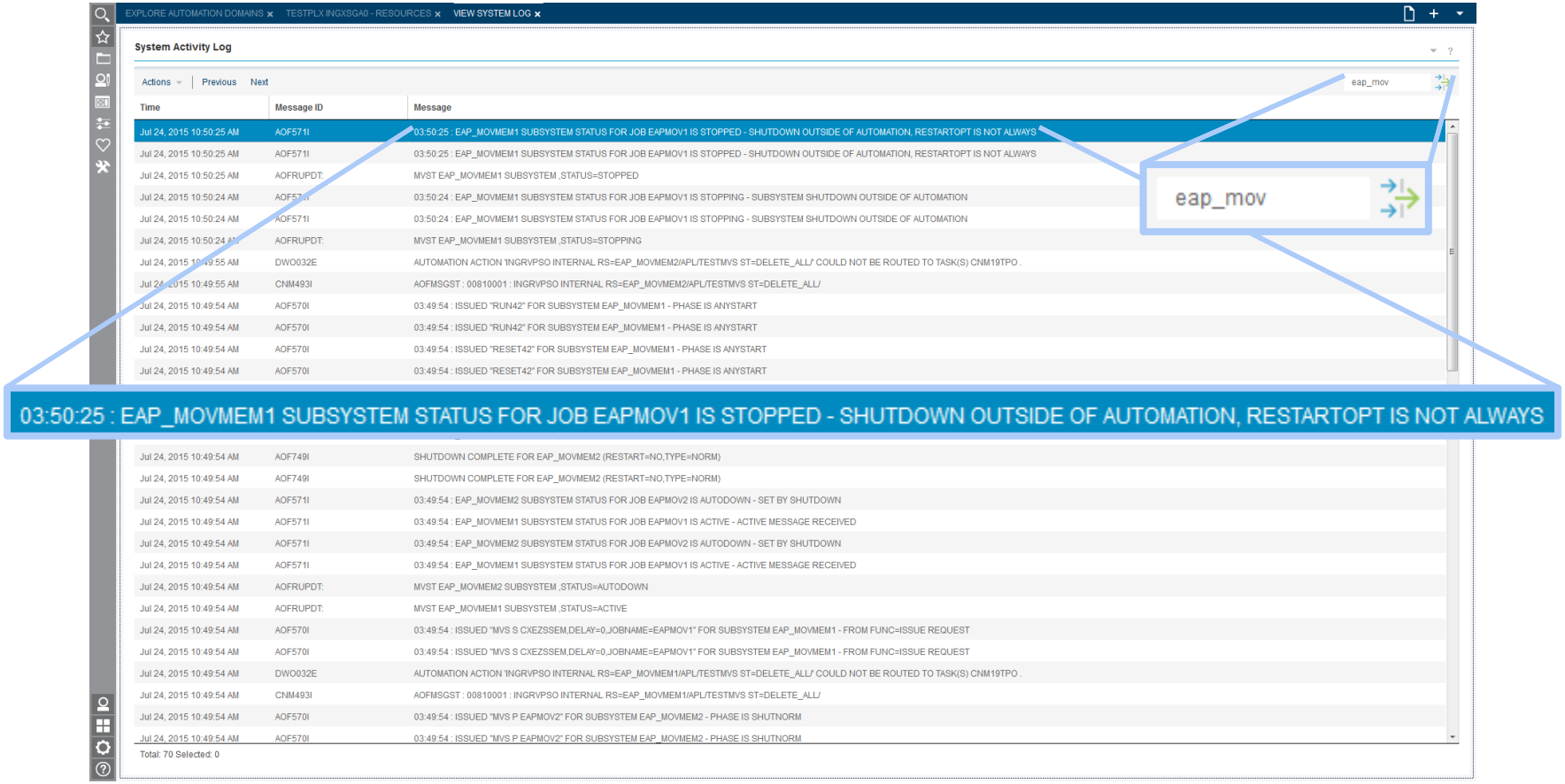
2. Isolate the Problem

Open the System Log to isolate the problem



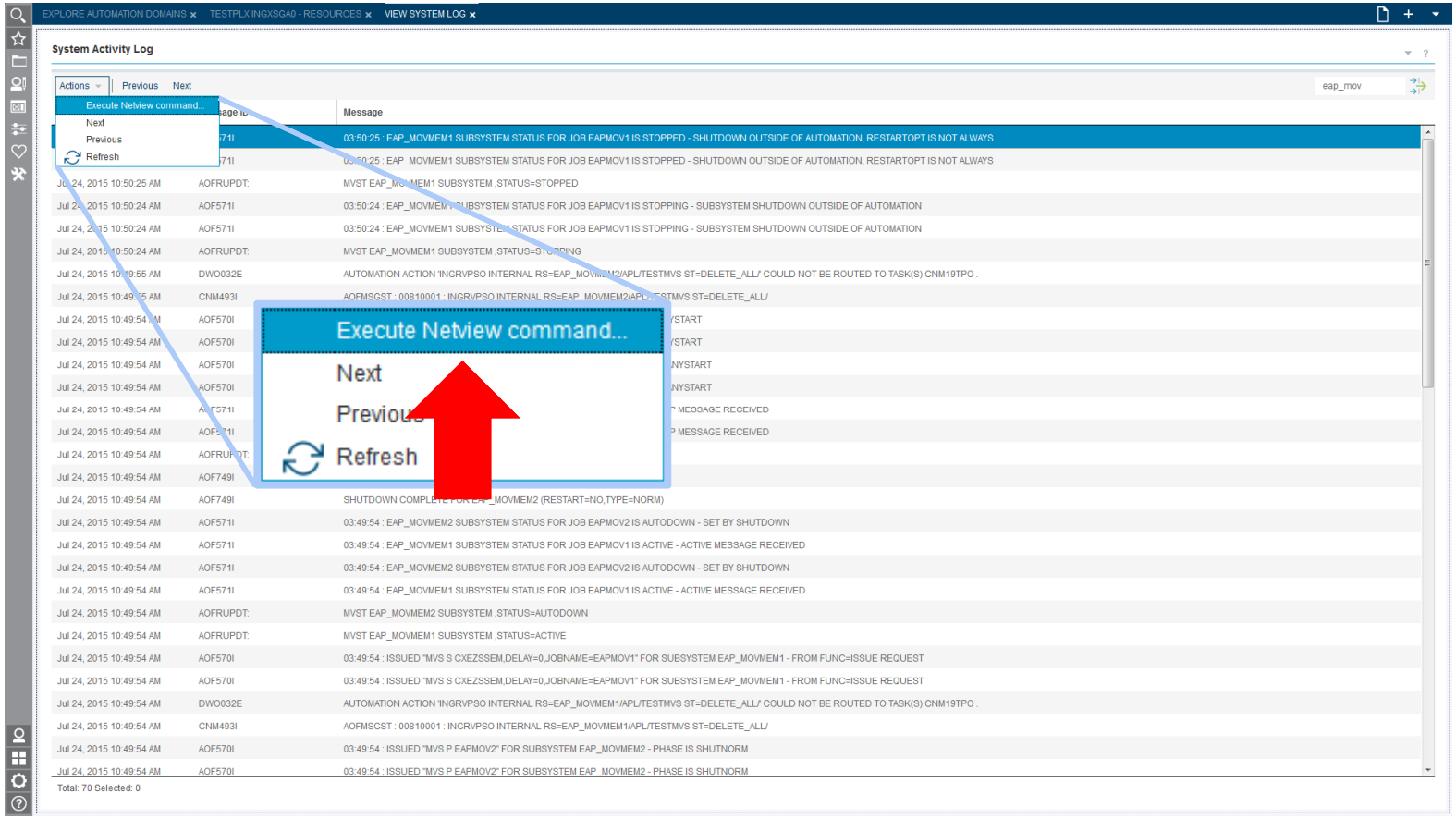
2. Isolate the Problem

Identify the reason for the crash



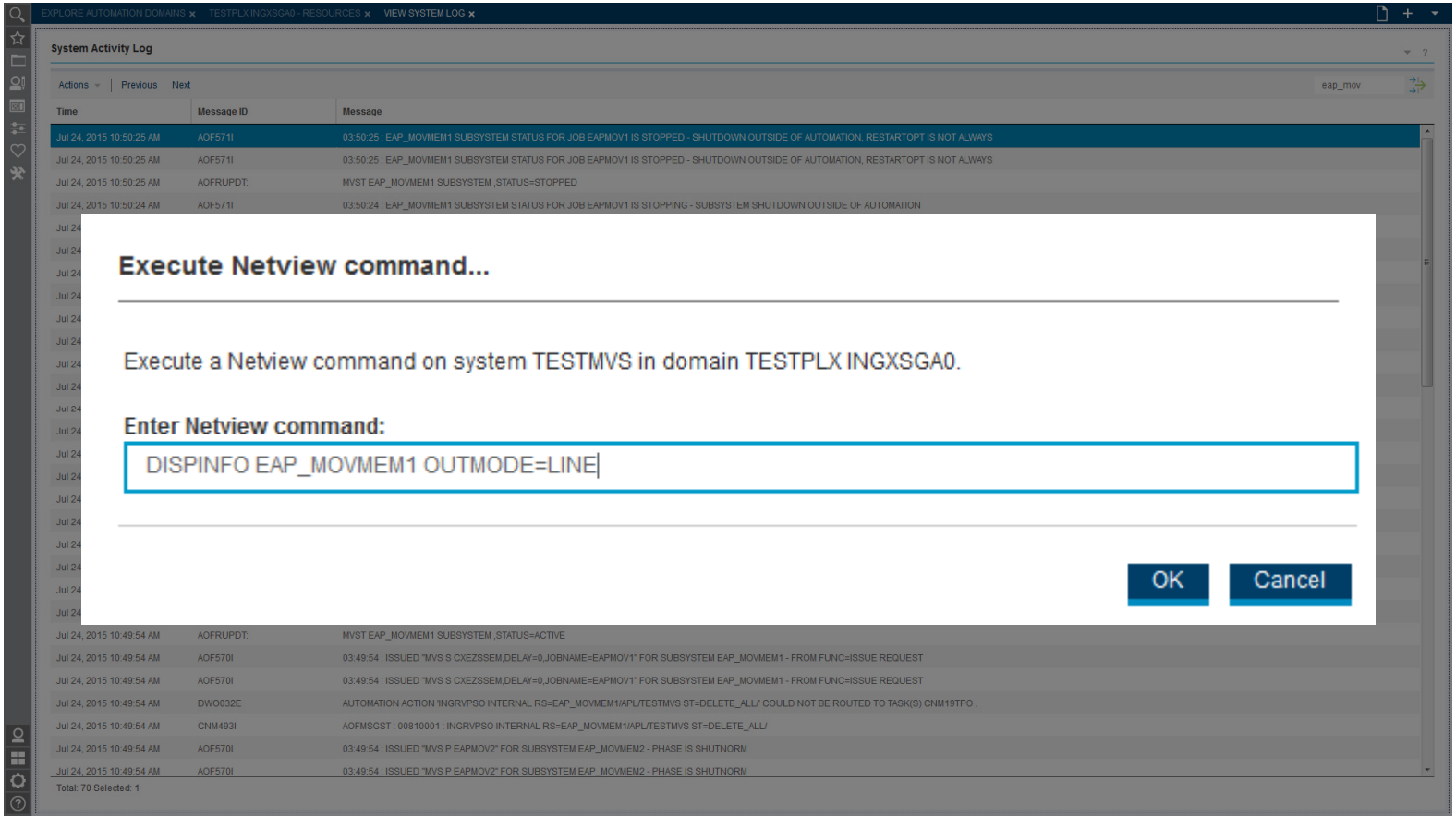
2. Isolate the Problem

Open a dialog to execute a command



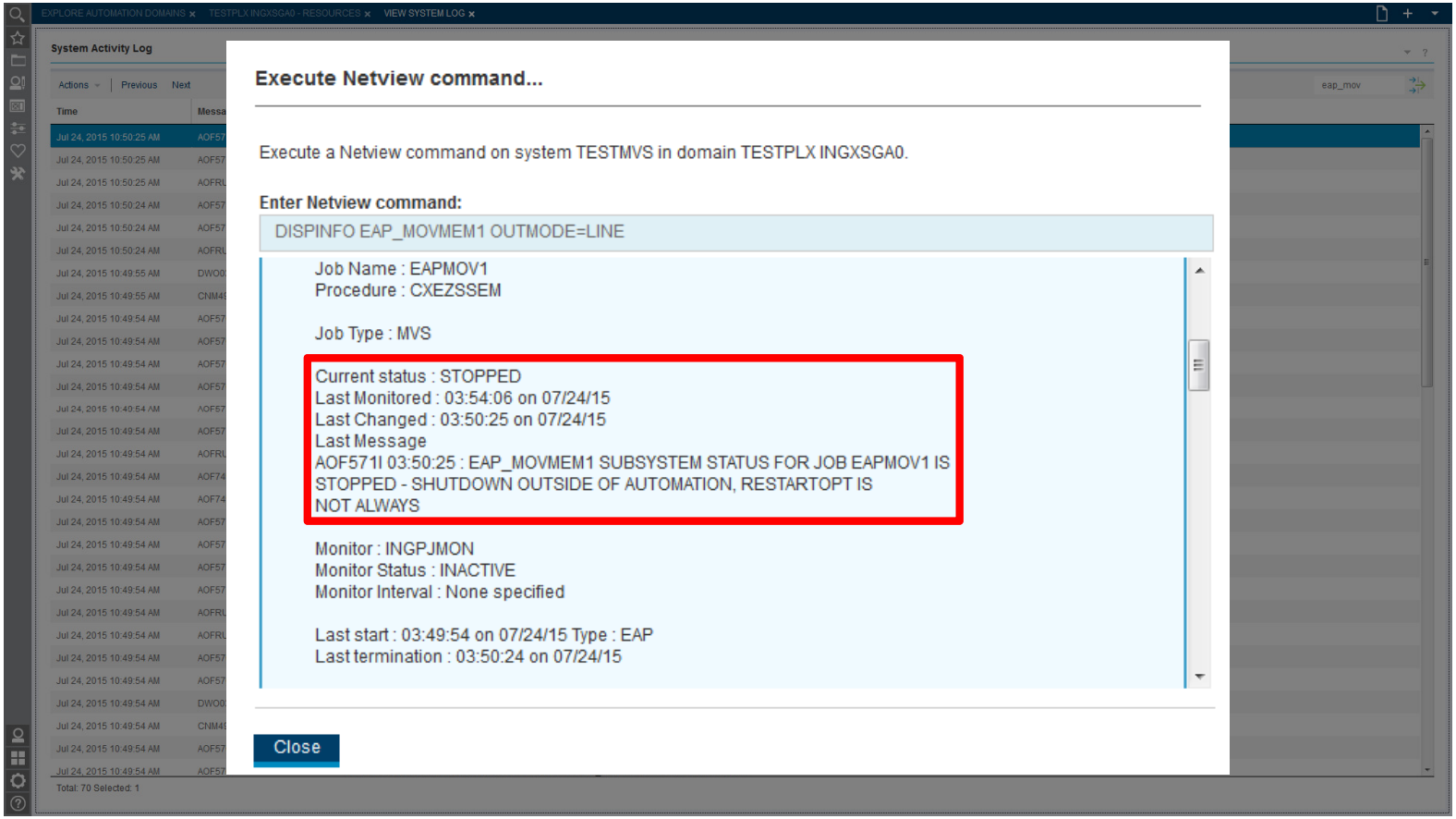
2. Isolate the Problem

Execute a NetView command for more information



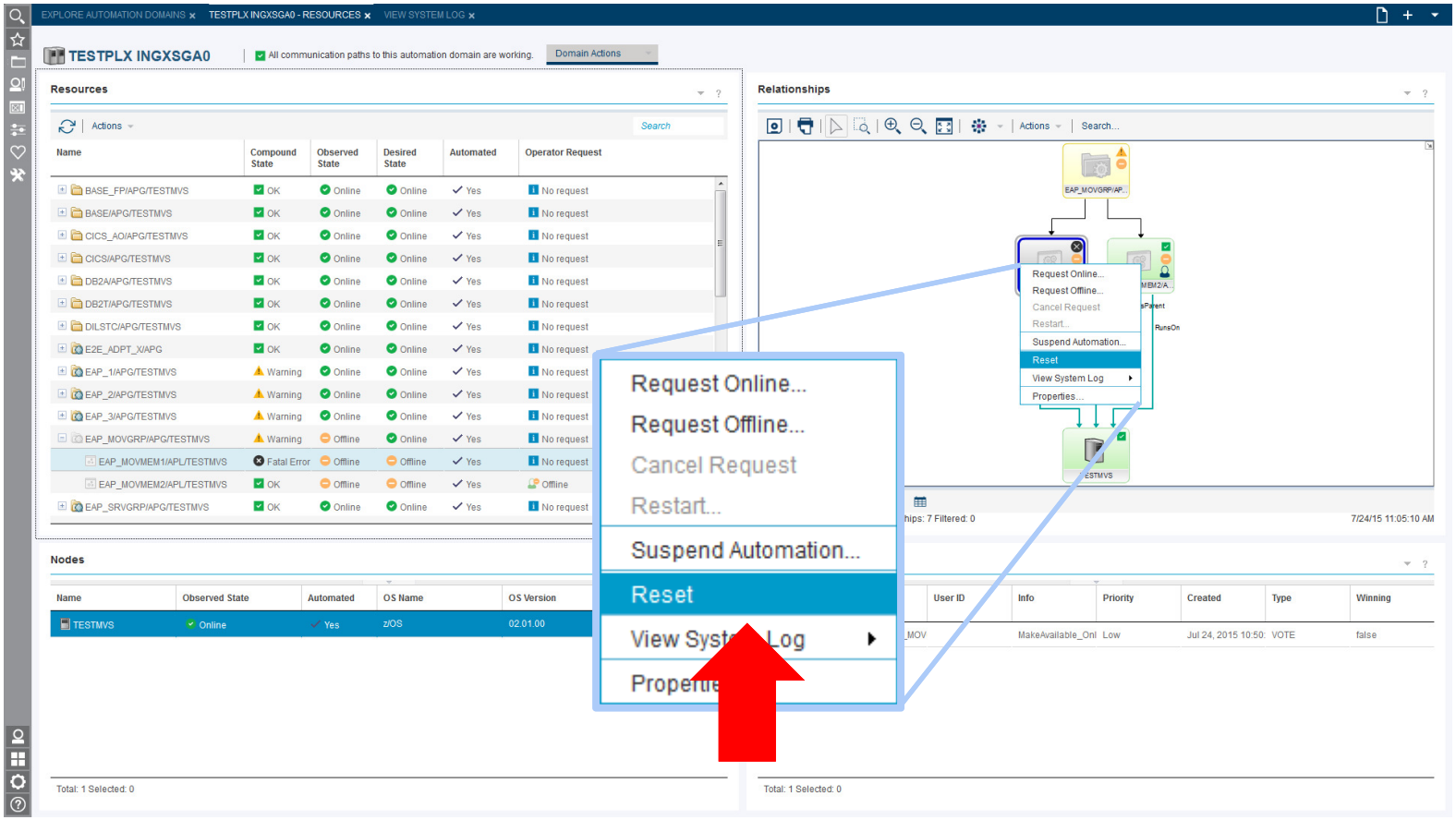
2. Isolate the Problem

Study the return of the NetView command



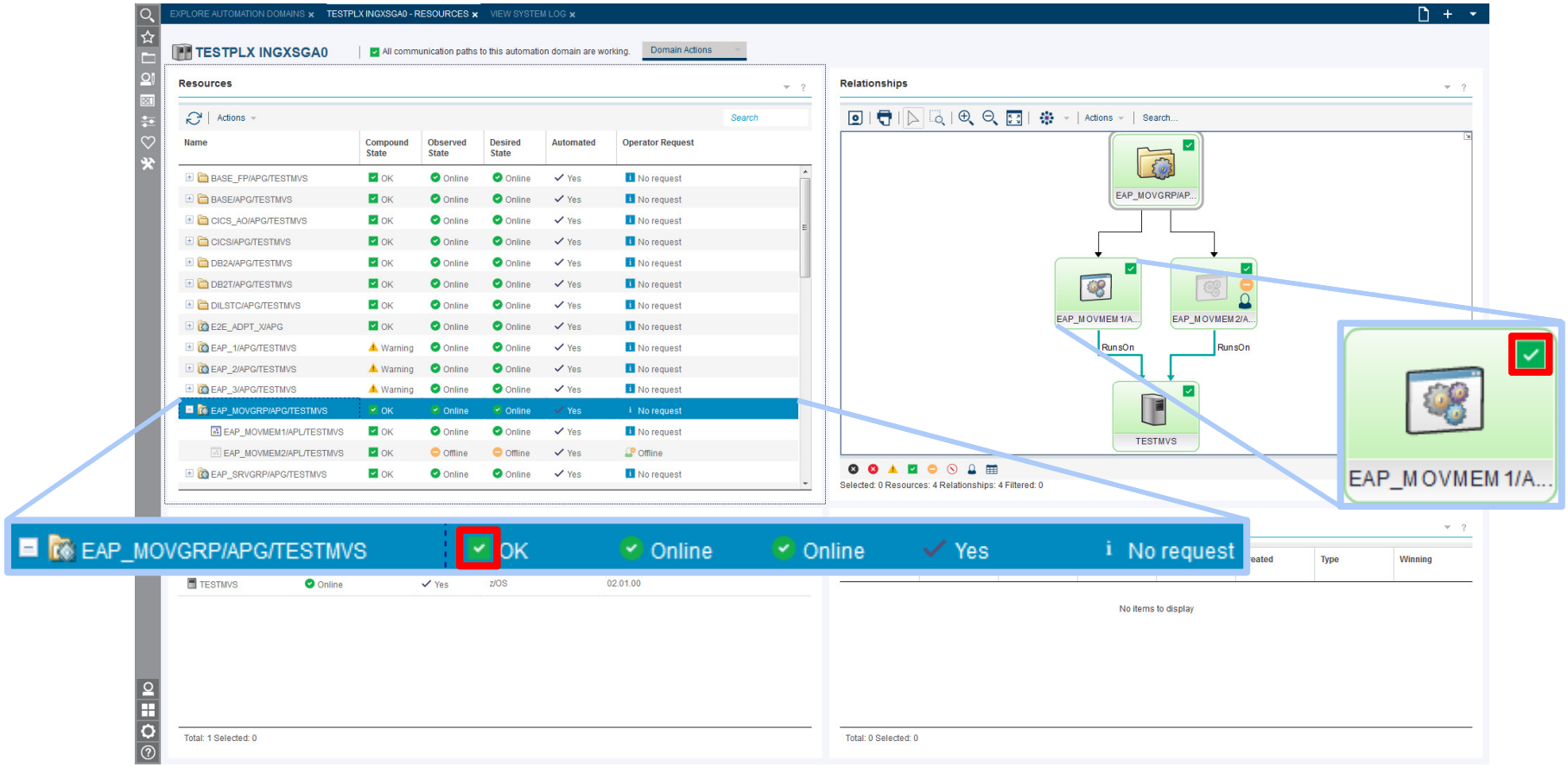
2. Isolate the Problem

Reset SA so it automates the backup resource again



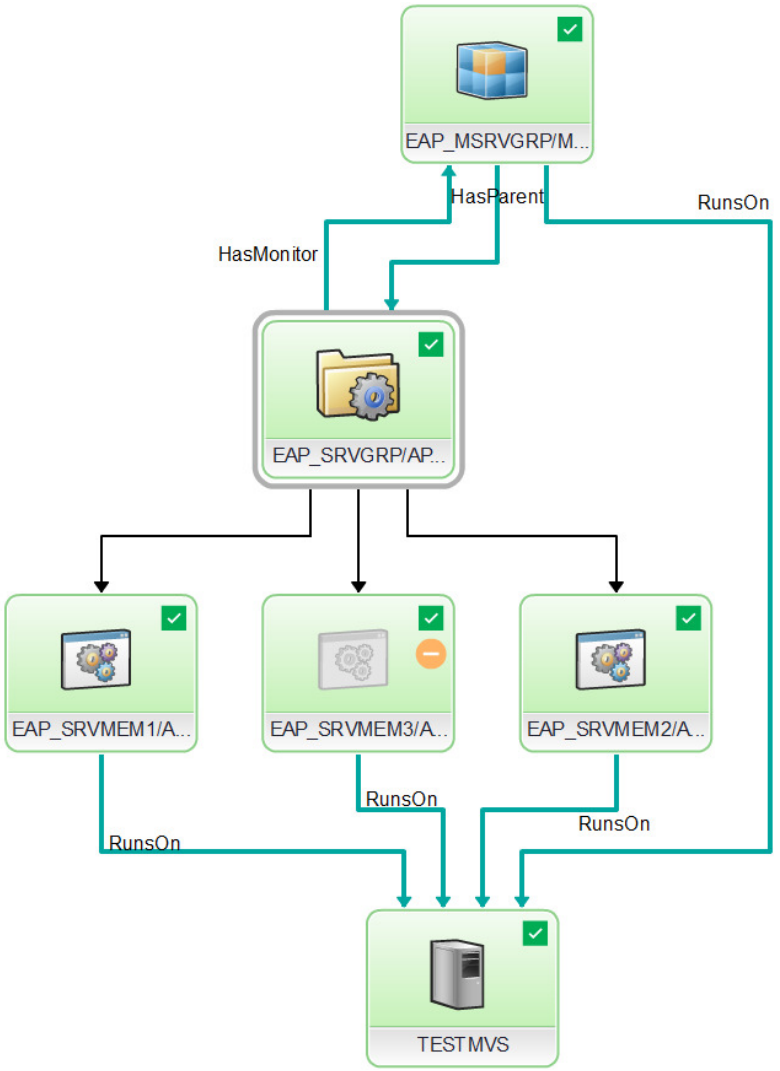
3. Solve the Problem

Check if the backup resource is running now

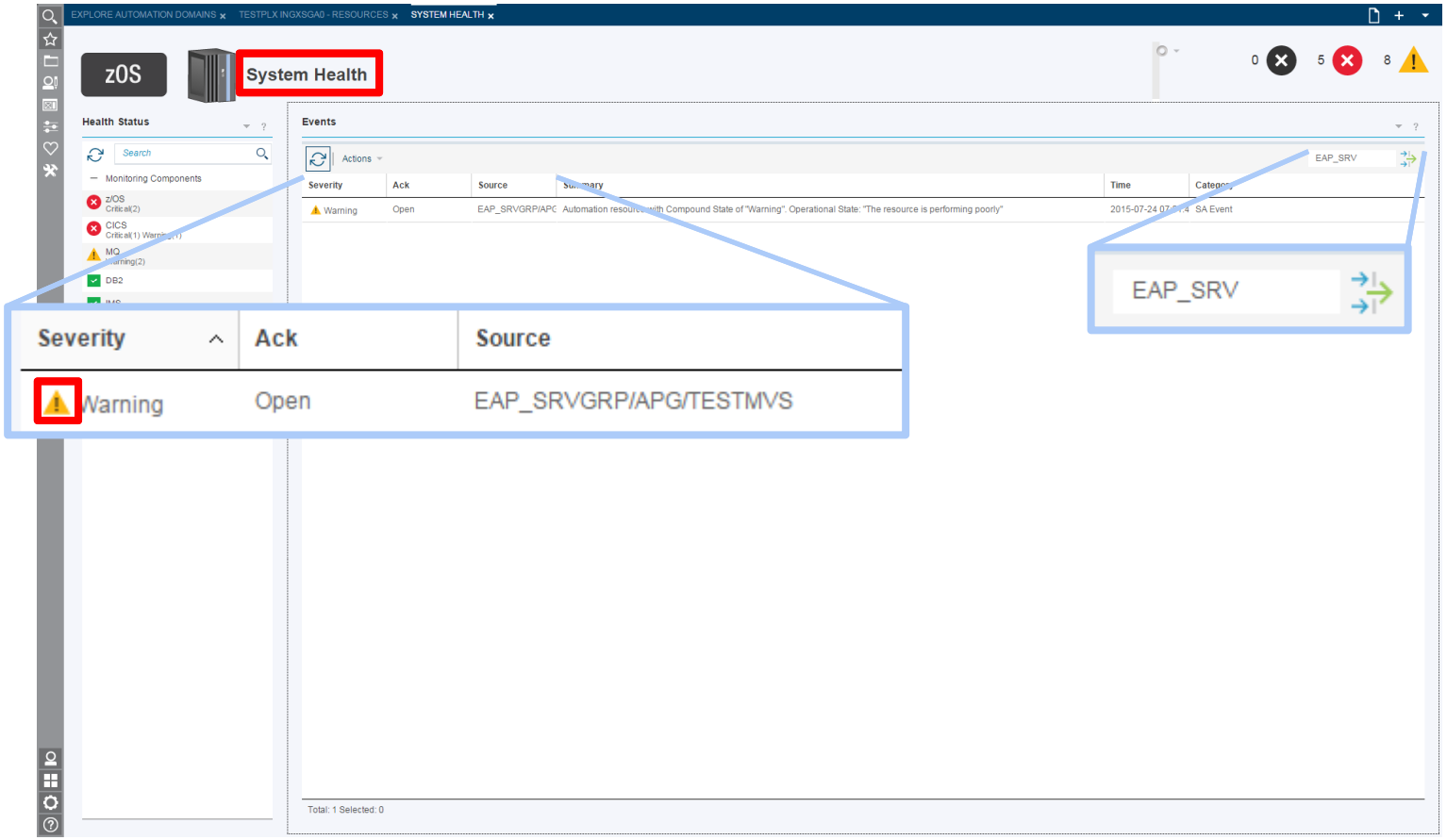


System Health restored

User Scenario 3: Restore Service of degraded workload

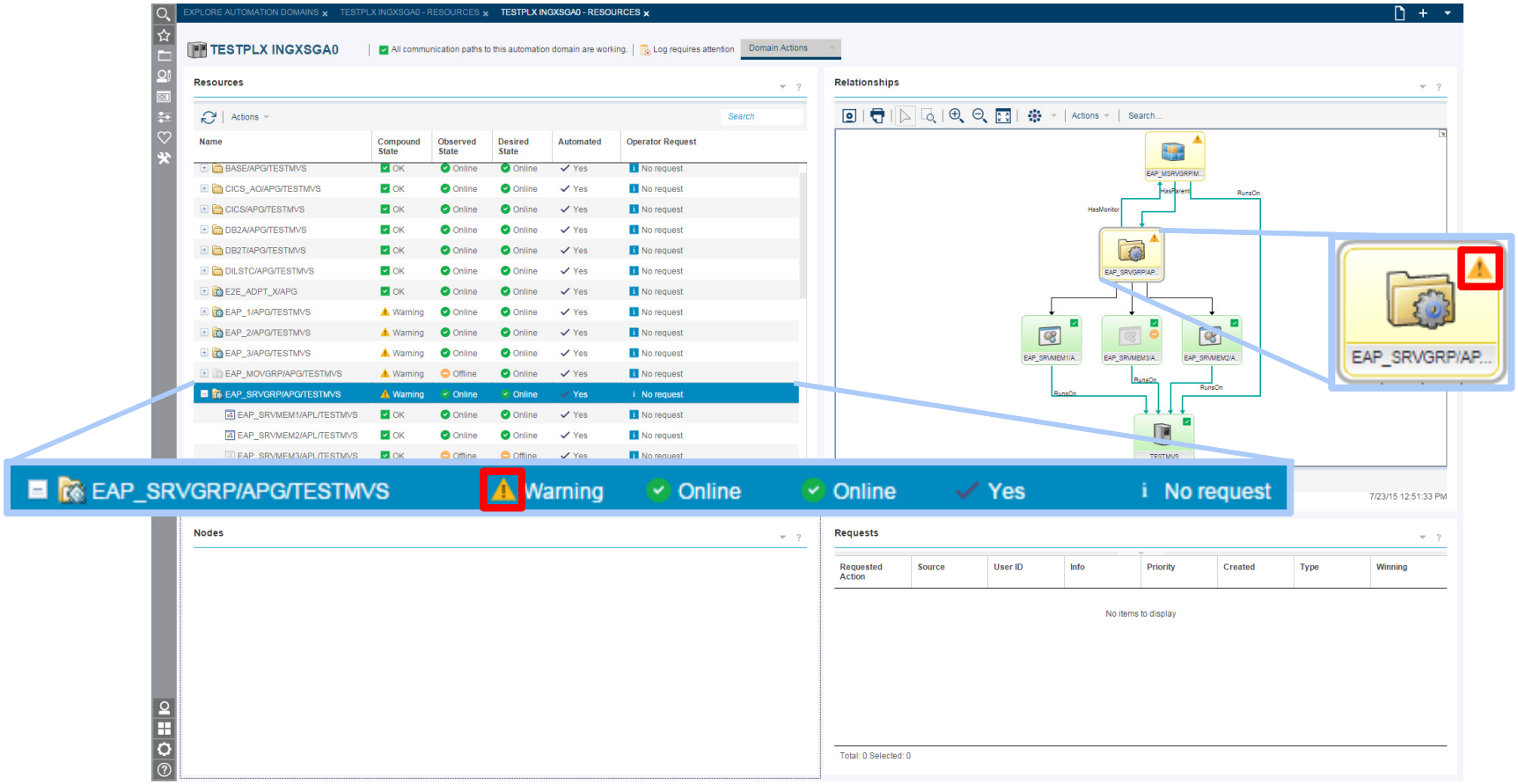


System Health: Warning appears



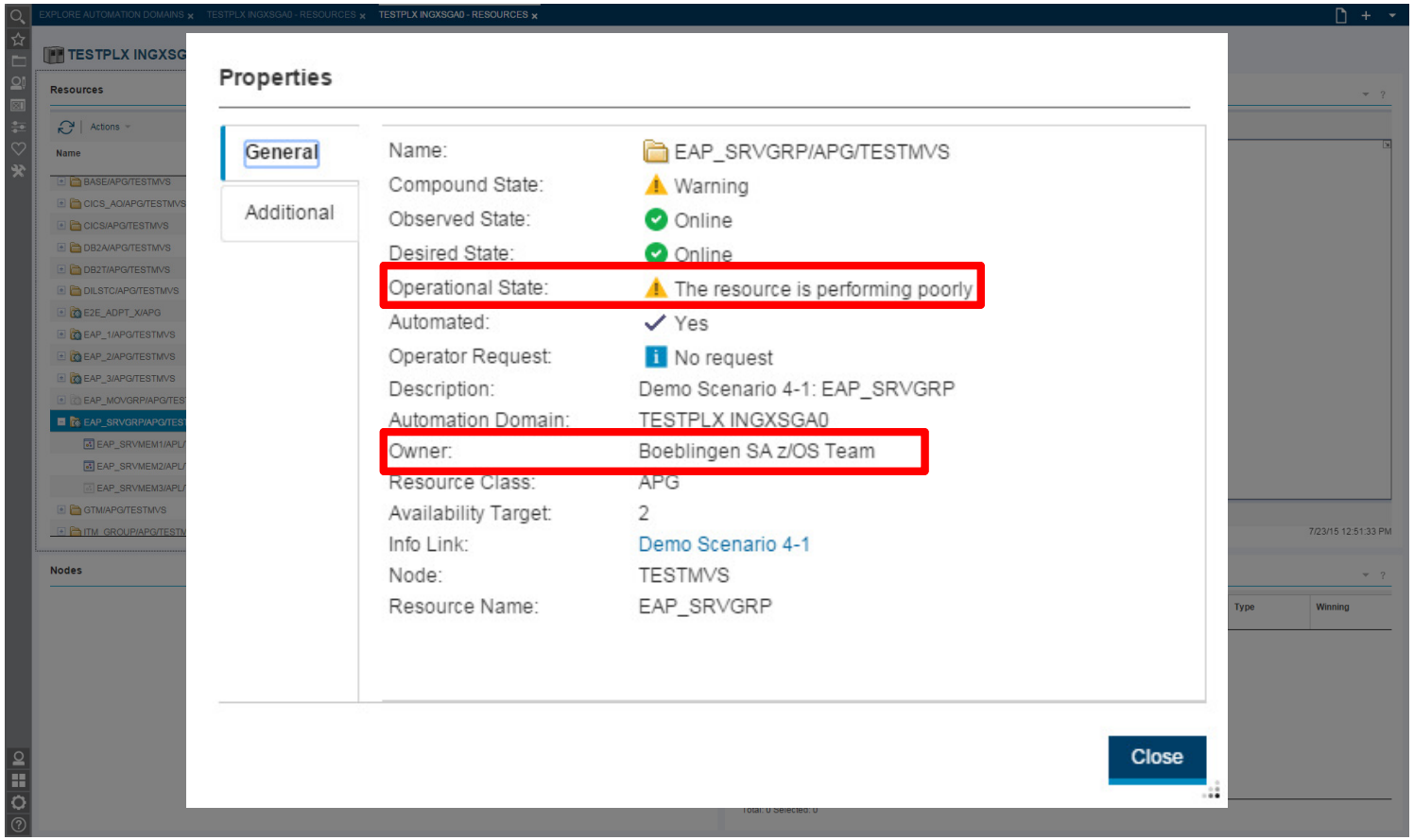
1. Identify the Problem

Locate the problem in the domain view



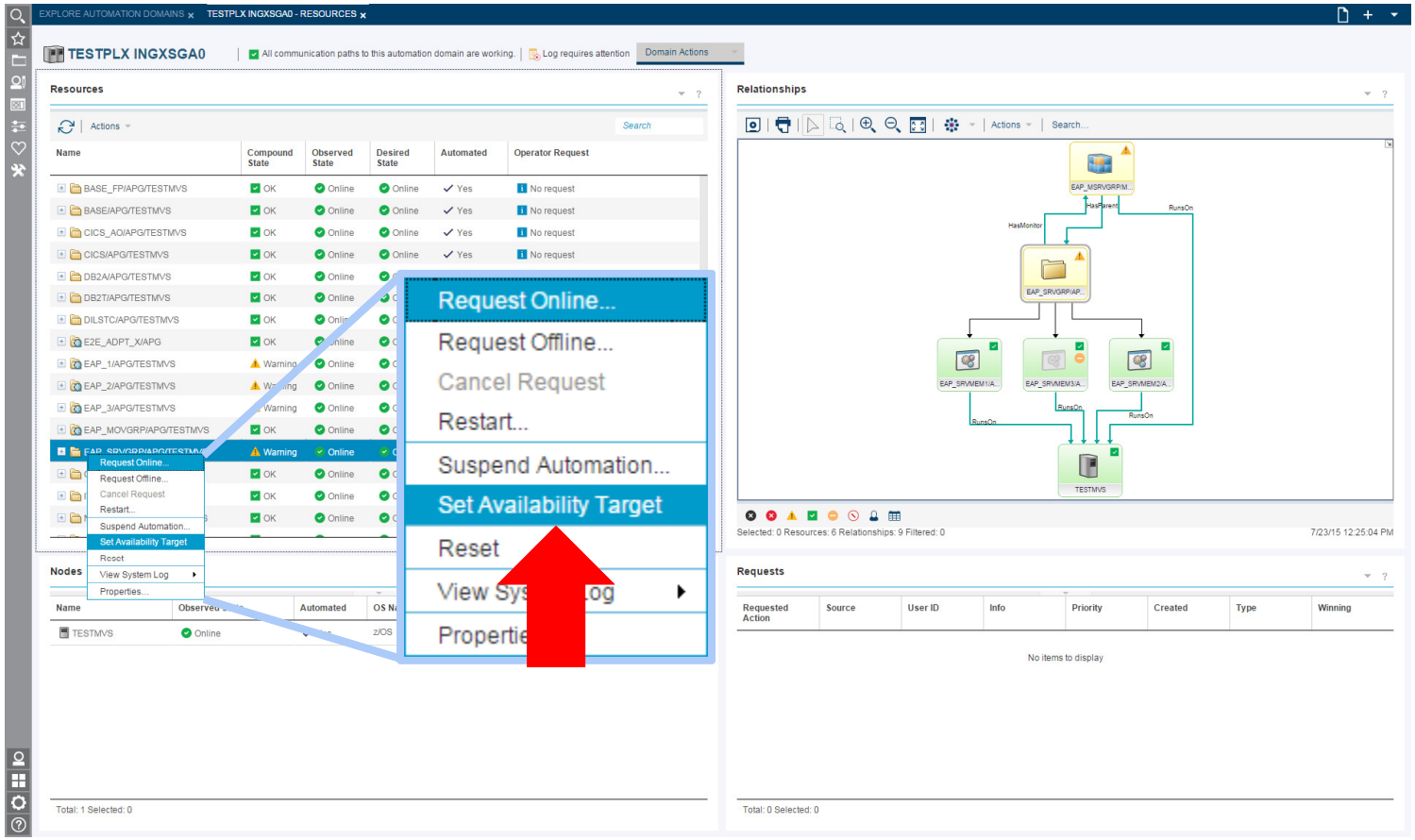
1. Identify the Problem

Check the properties of the resource



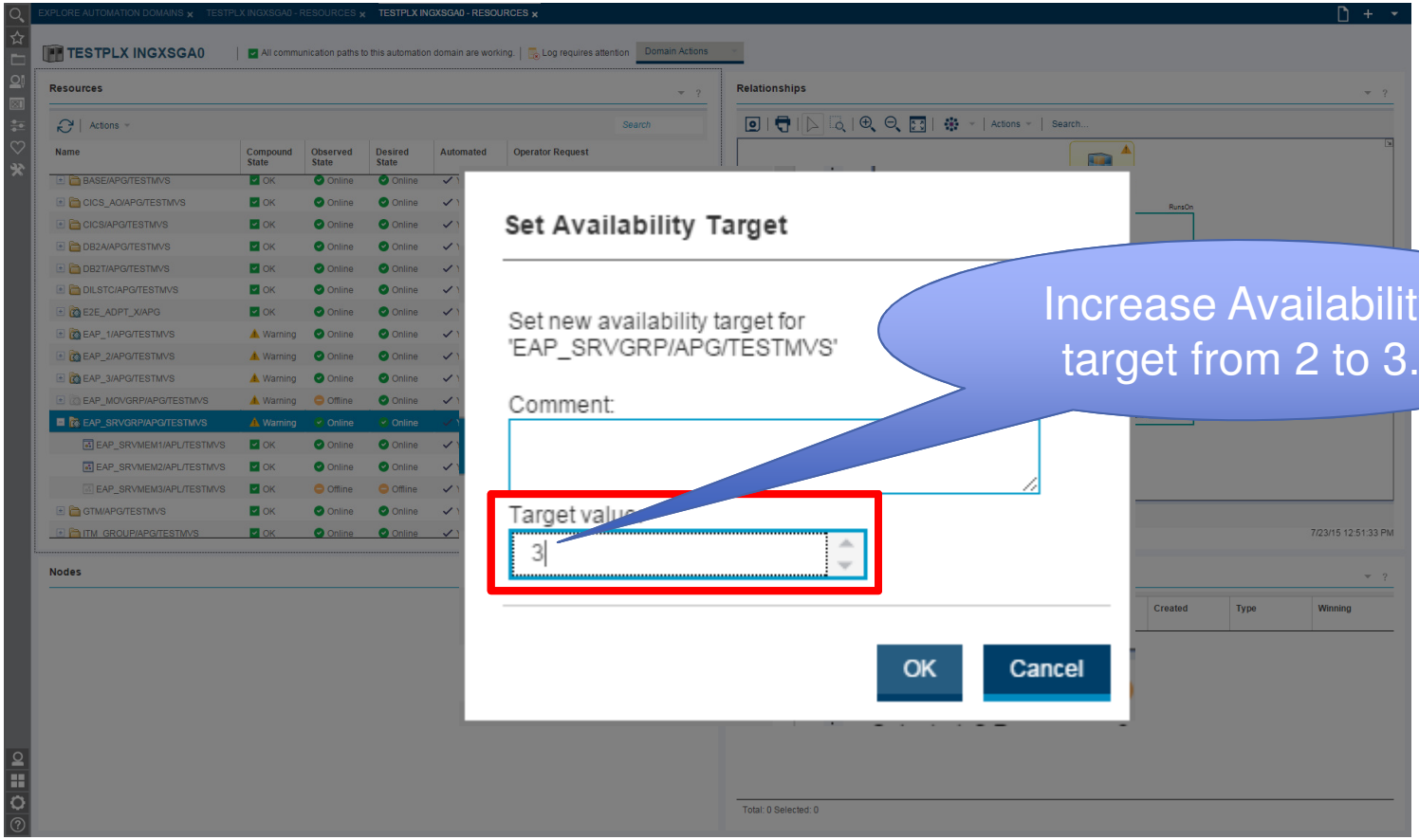
2. Isolate the Problem

Adjust the availability target to handle the workload



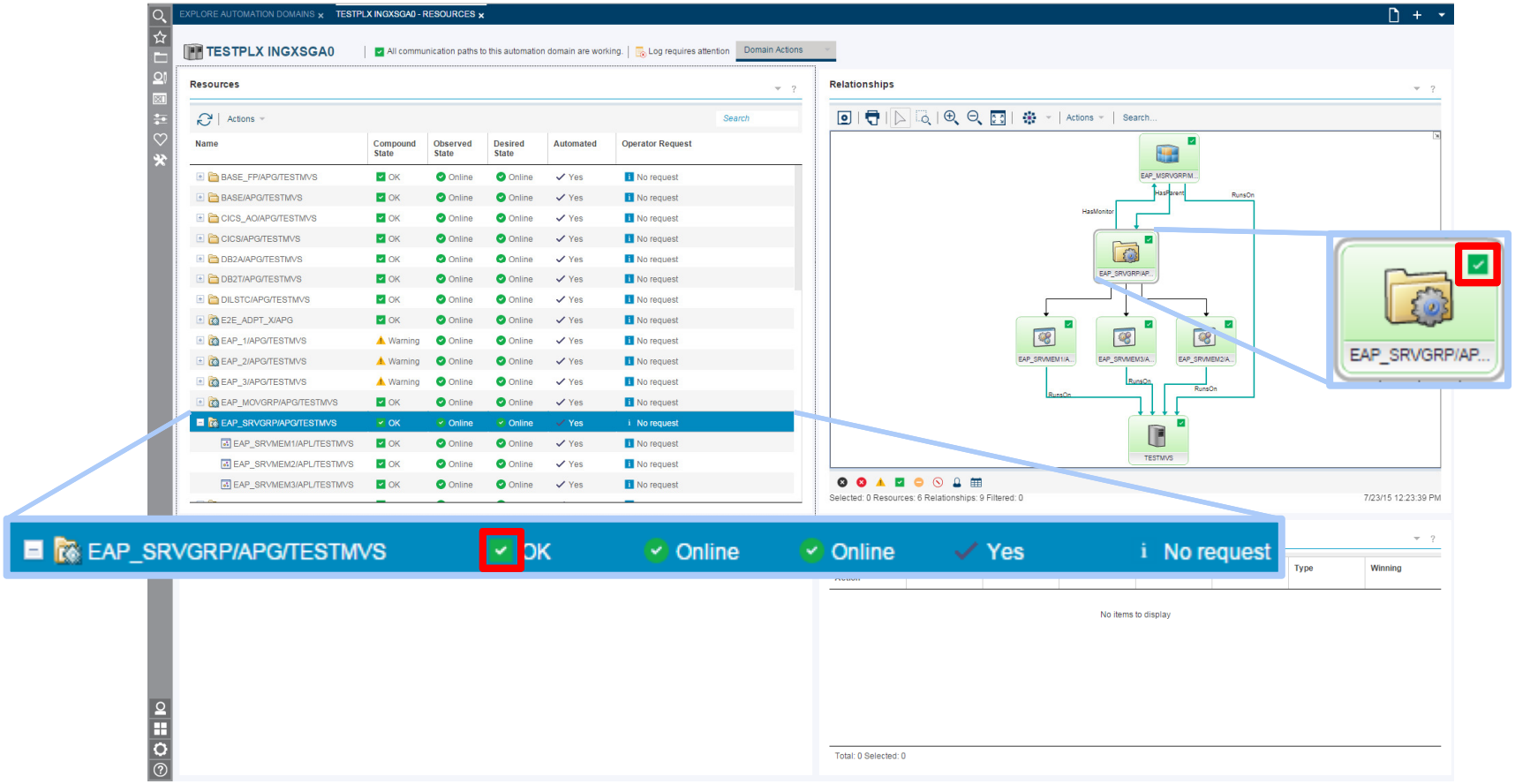
3. Solve the Problem

Increase availability target



3. Solve the Problem

Verify system availability and performance

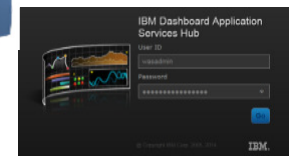


System Health restored

Extend Automation Scope of SMSz: End-to-End Operations

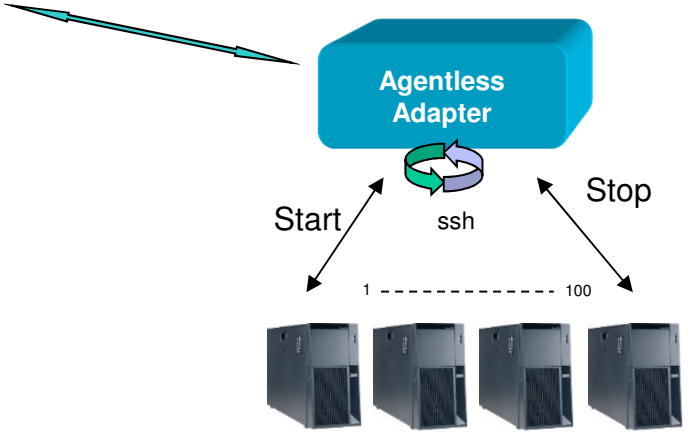
Wow !

Any Operator can control z/OS and even distributed workload on Linux on System z from one Console.



System Z
(Parallel Sysplex)

z/OS-To-Linux

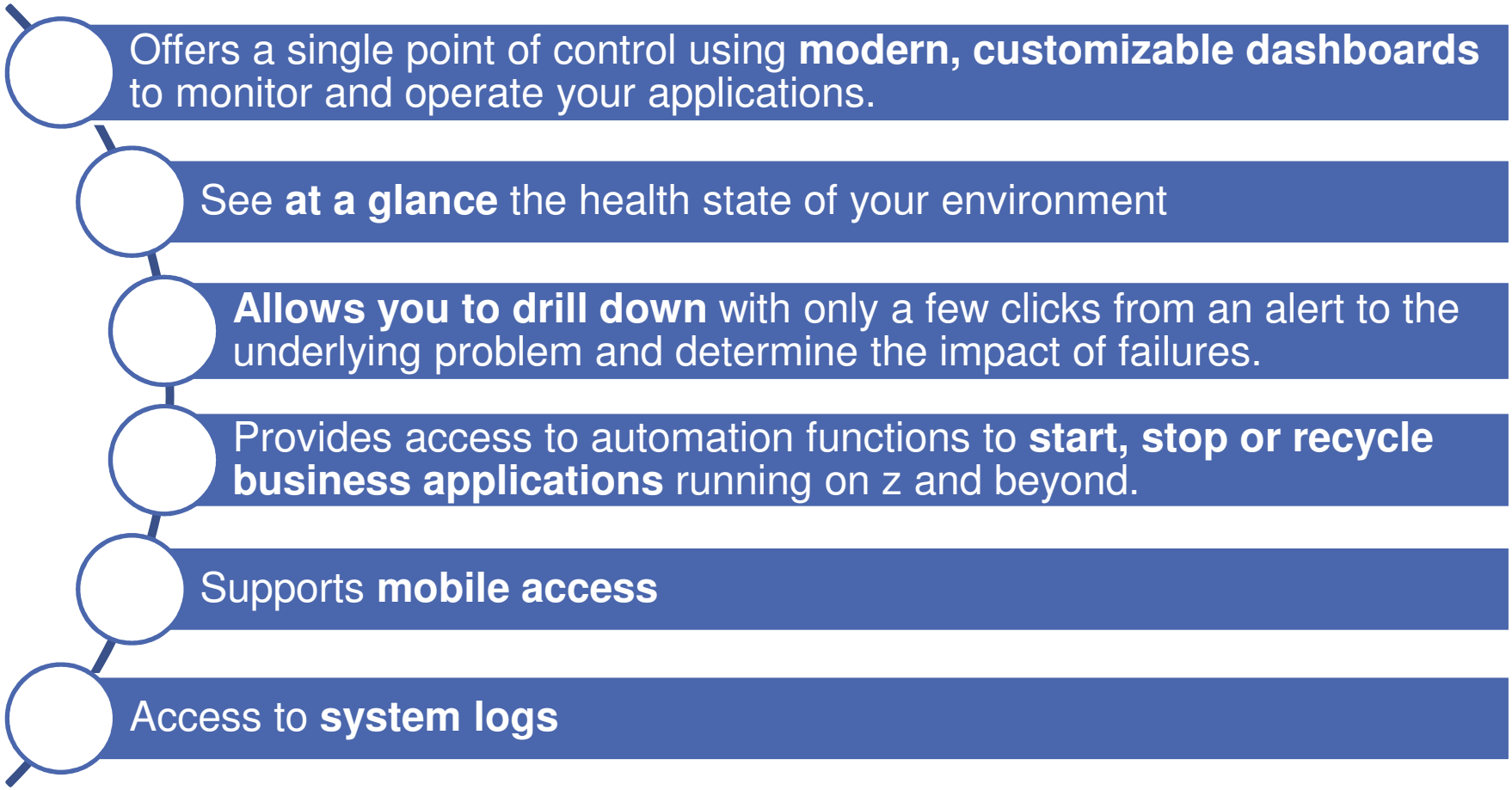


Non-clustered Systems
(Linux on System z)

Automated Operations for
- System of Records and
- System of Engagements

from one console.

Service Management Unite - Highlights

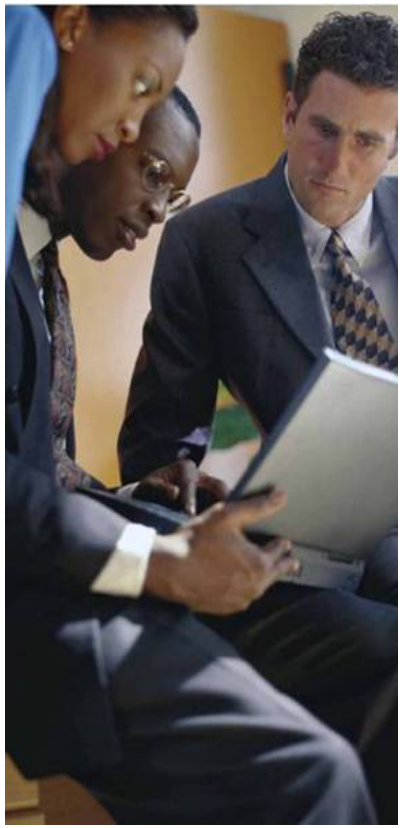


Agenda

- Introduction
- IBM Service Management Suite for z/OS
- **Updates**
  - IBM Service Management Unite
  - **OMEGAMON Perf Mgmt Suite for z/OS 5.3.1**
  - Operations Analytics
- Integration Value
- Summary

Integration the key to collaboration and efficiency

IBM Tivoli OMEGAMON Performance Management Suite for z/OS v5.3.1



Working as a team is vital to getting the job done and the same can be said about your systems management information

- **Greater Visualization, Control and Automation -** Integrate management Information from multiple IBM management products on a single workspace for of your enterprise views of IT resources

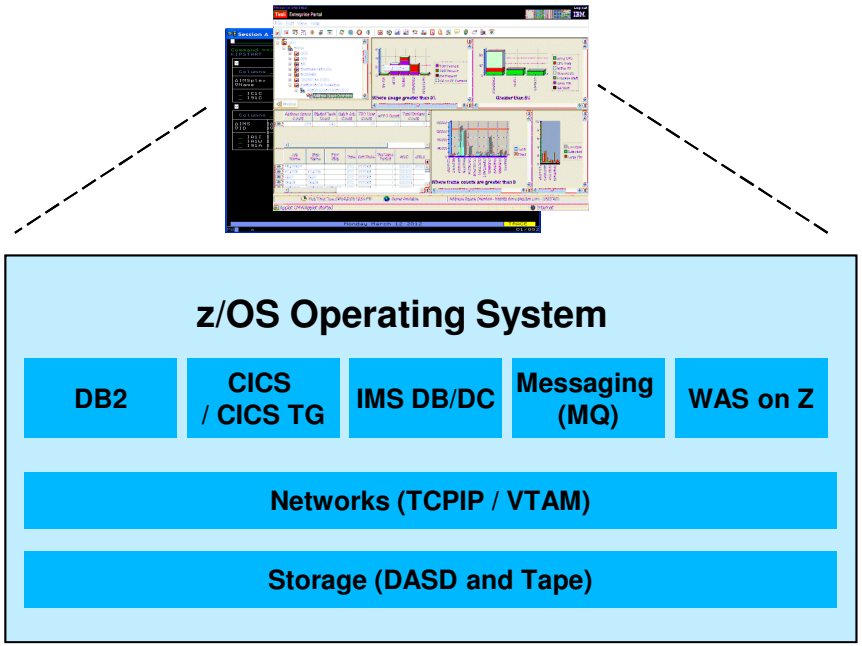
- **Reduce problem isolation time and correction -** Create consolidated alerts that represent all computing resources servicing your critical workloads to quickly isolate and aviod or correct problems

- **Reduce response times to problems and costs** - Utilize the policy feature to create sophisticated responses to the world class alerting/situations coming from the OMEGAMONs

OM Performance Management Suite for z/OS v5.3.1

Integrated management solution

Extensive capabilities to monitor & manage z/OS platform. Delivers increased problem identification and resolution, reduced costs, flexibility, and decreased TCO.



Updates to PM Suite:

- OM XE for IMS on z/OS V5.3.0
- OM XE for DB2 PE V5.3.0
- OM XE for Mainframe Networks V5.3.0
- OM DE on z/OS V5.3.0 (IF)
- Inclusion of IOAz (OM internal log analysis)
- Feature Codes for easy individual product downloads (in PM Suite, OMzMS, & SMSz)

Comprehensive z Systems Monitoring Solution

OMEGAMON Performance Management Suite for z/OS 5.3.1

- ✓ OMEGAMON XE for DB2 PE V5.3.0
- ✓ OMEGAMON XE for Messaging on z/OS V7.3.0
- ✓ OMEGAMON XE for CICS V5.3.0
- ✓ OMEGAMON XE for IMS V5.3.0
- ✓ OMEGAMON Dashboard Edition on z/OS 5.3.0
- ✓ OMEGAMON XE for z/OS V5.3.0
- ✓ OMEGAMON XE for Mainframe Networks V5.3.0
- ✓ OMEGAMON XE for Storage V5.3.0

- ✓ ITCAM AD V7.1 (only ITCAM for WR component)
  Composite Application Manager for Web Resources on z/OS 7.1.0

- ✓ Operations Analytics Log Analysis
  - OMEGAMON z/OS Insight Pack

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Operations Analytics: The Challenge

Find the right needle in one of many haystacks – QUICKLY!

404 ERROR

It's SLOW!!

Centralized, Distributed, Cloud, Resilient Architectures Increase Data Volume

Where do I start??

Everything is "green"

Logs, Traces,..

[10/9/12 5:51:38:295 GMT+ 05:30] 0000006a servlet E com.ibm.ws.webcontainer.servlet.ServletWrapper service SRVE0068E: 010001100011100 001110011000111 110000110001 111111000110011 100011

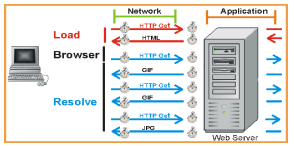
Core files

Events

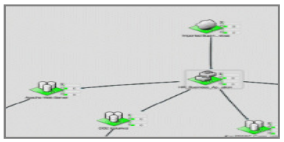
Node	Alert Group
omega	Unix Event List
snmp://10.20.5.99:1	EventAction(netcool)
snmp://10.20.5.99:1	EventAction(netcool)
snmp://10.20.5.99:1	EventAction(netcool)
snmp://10.20.5.99:1	EventAction(netcool)
snmp://10.20.5.99:1	EventAction(netcool)
snmp://10.20.5.99:1	EventAction(netcool)
snmp://10.20.5.99:1	EventAction(netcool)

Metrics

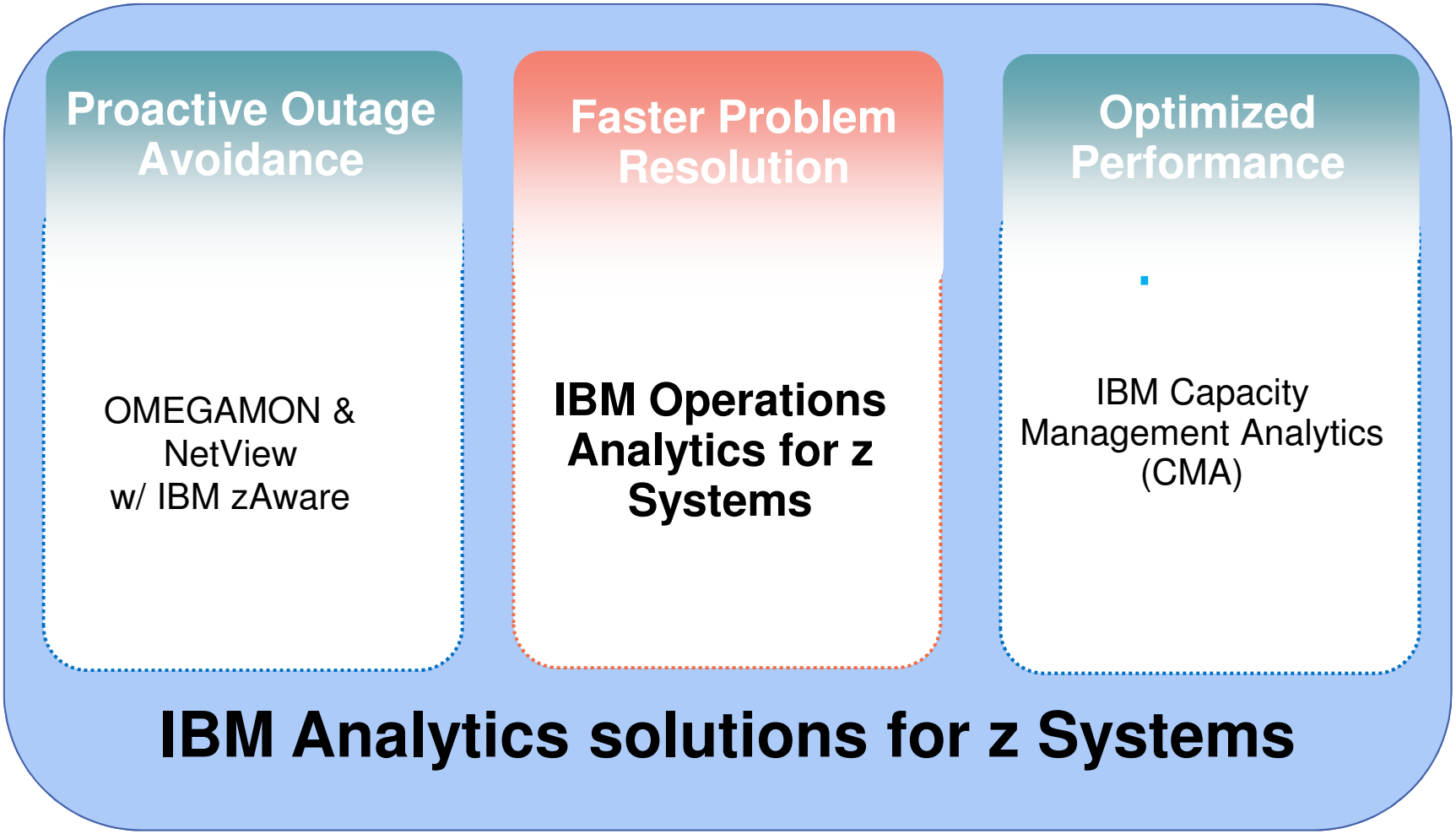
Transactions



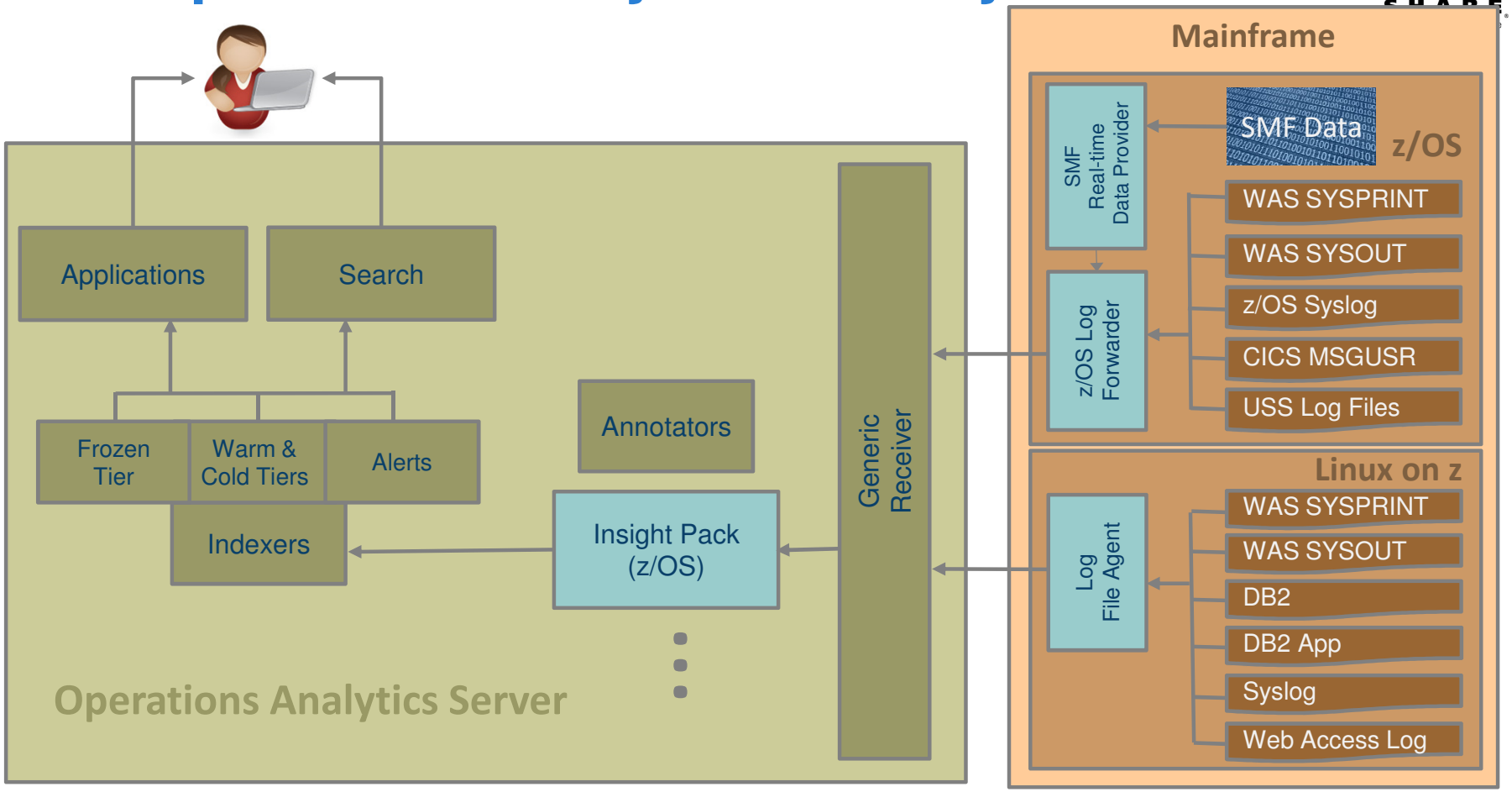
Config



End-to-End Analytics for improved performance and workload management



IBM Operations Analytics for z Systems



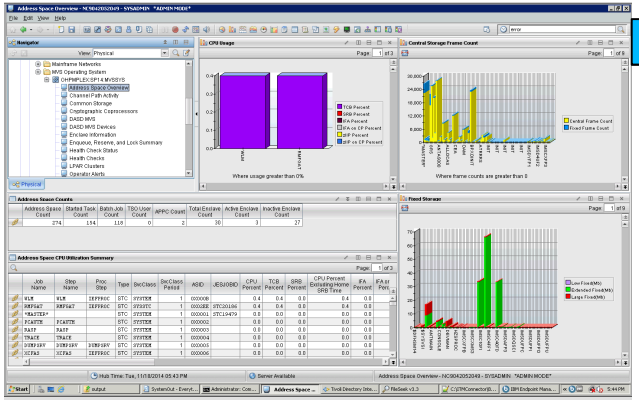
- z/OS Log Forwarder / SMF Data Provider installed on each z/OS LPAR where you want to provide Search and Analysis
- The IBM Operations Analytics server is installed on z System (or x System) running Linux (64 bit)
- z/OS Insight Packs are installed on the IBM Operations Analytics server

IBM Operations Analytics integration into TEP

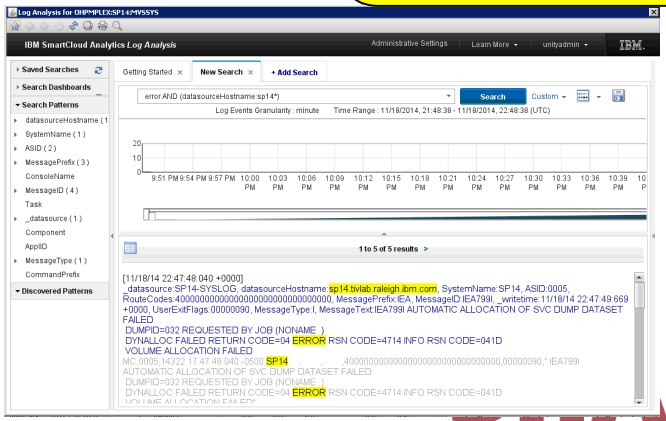
OMEGAMON + IBM Operations Analytics – Launch in Context from TEP

The **One Two – Punch**: Combine two very powerful tools to ensure performance and high availability of your enterprise.

- **Perform log analysis in context of OMEGAMON workspaces** – This approach enables OMEGAMON users to perform in-context log analysis while doing problem determination
  - From your OMEGAMON workspace, use the IOA search bar to search logs (using LPAR or Sysplex as the default context)
  - Easy to implement - Configure TEP to display the IOA search bar



Launch IOA from OMEGAMON performance monitoring workspaces to search logs in context



NetView for z/OS 6.2.1 Updates

2 NetView Sessions at Share:

- 17786: NetView for z/OS – New Directions
  Tuesday, August 11th, 3:15 pm (Room: Asia 2)

- 17739: NetView for z/OS – IP Management Topics and Solutions
  Thursday, August 13th, 8:30 am (Room: Asia 2)

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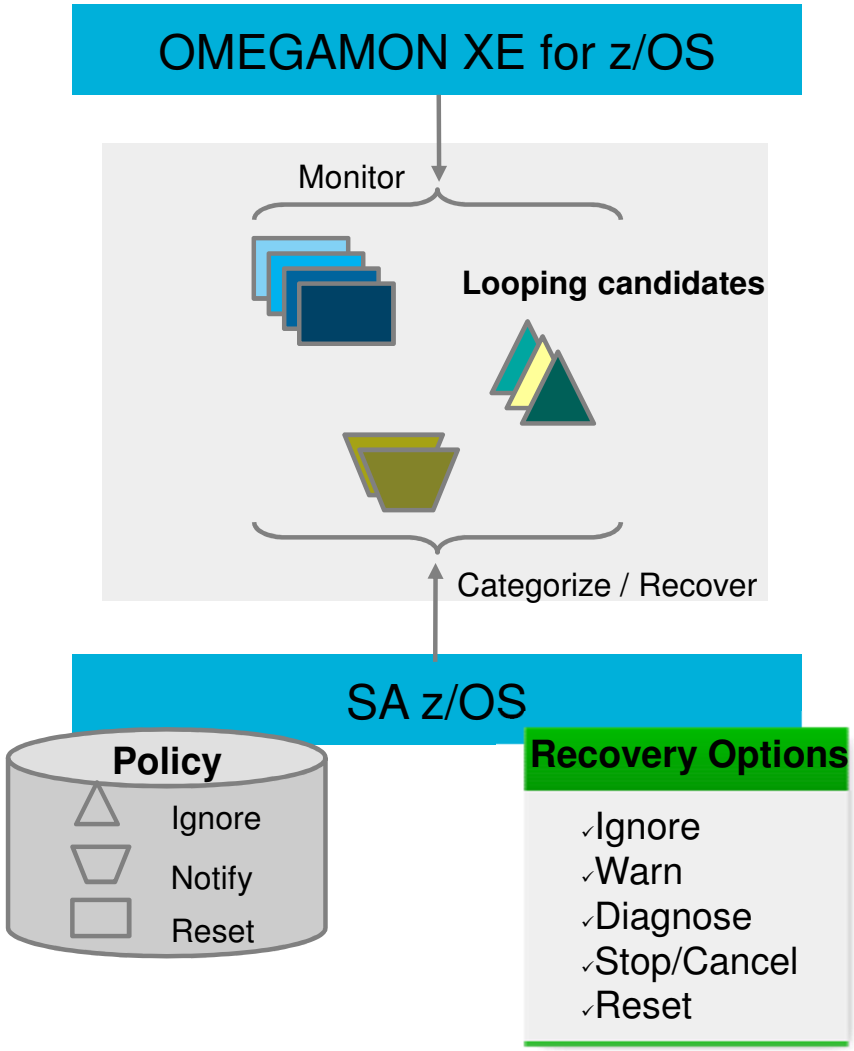
Service Management Suite scenarios

Scenario	OMEGAMON® Performance Management Suite	System Automation for z/OS	NetView® for z/OS	Tivoli® Asset Discovery for z/OS
Automating scan and import jobs		✓		✓
Detecting IMS performance problems	✓	✓	✓	
Managing looping address spaces	✓	✓		
Detecting network problems	✓	✓	✓	
Displaying recent z/OS performance data	✓	✓	✓	
Monitoring common storage usage	✓	✓	✓	

http://www-01.ibm.com/support/knowledgecenter/SSANTA_1.2.0/com.ibm.smsz.doc_1.2.0/smsz120_landing_scenarios.html?lang=en

OMEGAMON looping address space suppression



Situation

- The overall z/OS system utilization and also the utilization of individual started tasks / jobs is understood for normal and peak hours

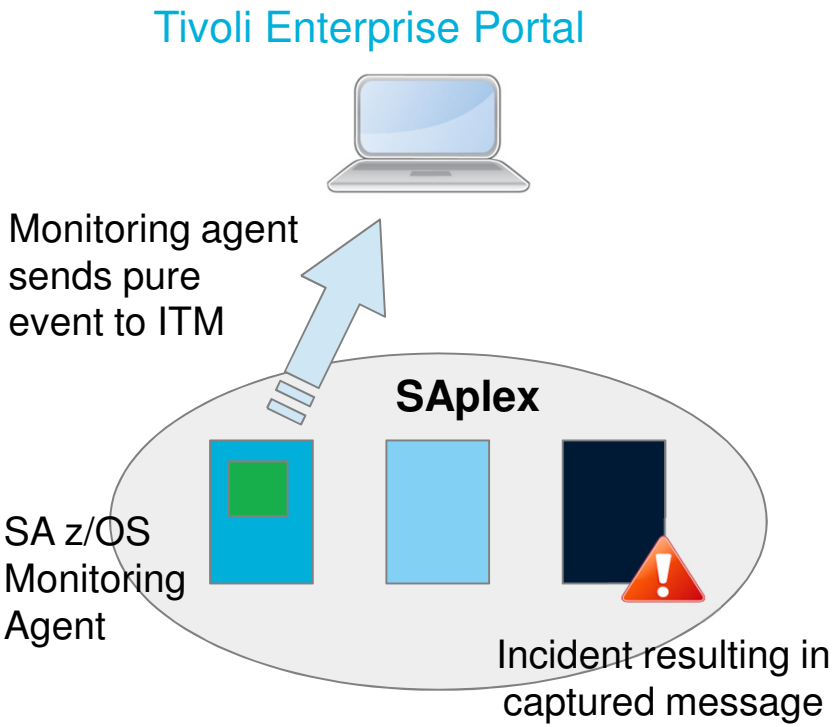
Problem

- Detect when started tasks / jobs show abnormally high CPU utilization
- Some jobs causing CPU to loop and are hard to detect
- Prevent that these types of work can dominate the system

Solution

- OMEGAMON XE for z/OS data is analyzed by System Automation for high CPU utilization
- System Automation can categorize different types of work and allows to define various recovery actions through policy – not programming!

Immediate message reporting on Tivoli Enterprise Portal



Situation

- Incidents happen all the time but luckily, with SA z/OS, they can also be recovered very quickly

Problem

- Customers using TEP as primary console for operations rely on **every** incident being reported as a situation
- However, short-lived incidents may remain undetected by situation sampling routines and hence are invisible to the operations team

Solution

- SA z/OS exploits ITM pure event situations
- So, in combination with its monitoring agent, SA z/OS allows to send selected exceptional messages immediately to TEP by means of **policy**

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Maximizing time and personnel

Why the Suites really work for companies

VISIBILITY

CONTROL

AUTOMATION

- ***Increase ability to meet SLAs*** by managing environment with intelligent alerting
- ***Increase staff productivity*** through managing by exception
- ***Maximize efficiency of staff*** with Common Tools and Processes
- ***Create collaboration*** through tool integration and information
- ***Efficiency in doing the day to day management*** - Link actions to situations
  - Automate problem responses
  - Capture expert knowledge
  - Common data and KPIs

Breaking down the Silos

- Is your environment managed by different teams that do not regularly work together – Integrate information
- When there is a problem, quickly identify the root cause.

Summary – Service Management Unite

SHARE
Educate · Network · Influence

- **End-to-End Operations**
  - A modernized, state-of-the-art service management dashboard for visibility and operations of z and non-z Systems environments
- **Customizable & Modern look and feel**
  - Customize your dashboards based on your preferences
- **Enterprise Health**
  - See at a glance the health state of your environment
- **Integrated console**
  - Operators can issue commands and restore service
- Available on your **Smartphone**
  - Mobile access for flexible and intuitive control
- It's a real **WOW**
  - Isolate, analyze and diagnose problems twice as fast