NetView for z/OS New Directions

Session 17786

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NetView for z/OS - IBM z Systems Service Management

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Agenda

- NetView v6 Review
- NetView v6.2.1 New Enhancements
  - Global Variable Name and Value Length
  - CNMSCATU
  - DBAUTO command
  - Message CNM493I
- Integration
  - GDPS Active/Active currency
  - IBM Operations Analytics for z Systems and NetView
  - Service Management Suite for z/OS
    - Service Management Unite and NetView
  - Service Management Unite, IBM Operations Analytics for z Systems and NetView

NetView v6 Review

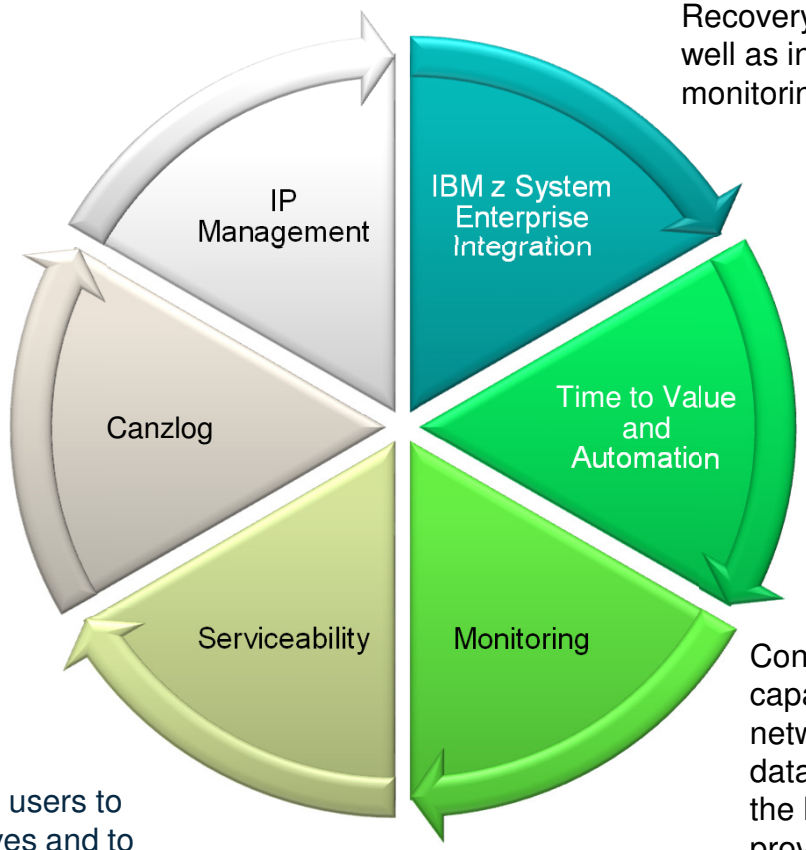
NetView for z/OS v6 GA Dates

NetView for z/OS v6.1	May, 2011
NetView for z/OS v6.2	October, 2013
NetView for z/OS v6.2.1	September, 2014

NetView v6 Focus Areas

Continue NetView's long history of providing management for the mainframe environment (including the operating system and its communications server) continues with enhancements to better manage IP networks.

Continue to provide advance integration solutions with other IBM z System components: Analytics, Disaster Recovery and Continuous Availability, as well as integration with automation, monitoring and scheduling solutions.



Logging and browsing functions are greatly enhanced to provide consolidated access to all NetView and system messages. A new consolidated log (Canzlog) browser includes expanded access to message attributes on individual messages, which provides improved visibility to system activities.

Continue to enhance the ability to get NetView running quickly and easily, as well as enhancing automation functionality.

Continue to provide tools to enable users to easily diagnose problems themselves and to provide proper information to support for problems.

Continue to expand NetView's monitoring capabilities, even beyond the typical network management scope. Monitoring data is provided in the TEP, as well as in the NetView 3270 console, which provides users with a programmable interface.

NetView v6 Enhancement Summary

Consolidated Logging

Canzlog
Consolidated NetView and System log with enhanced automation to provide faster problem determination
- Automated archiving
- Extensive filtering capability
- Ability to browse Canzlog log for one or more remote NetView programs
- Availability of early IPL messages for viewing and automation

IP Management Enhancements

Packet Trace
- Session analysis capability to pinpoint problems easily
- Ability to drop connections
- Multiple packet trace instances
- Ability to save trace data for future analysis by IPCS

OSA Support
- Support extended for OSA-Express4S and OSA-Express5S

DVIPA Enhancements
Hot Standby Forwarding Support
- Identifies distributed DVIPA targets defined as preferred or backup "Hot Standby" targets and displays status and rank of "Hot Standby" targets

Intrusion Detection
- Allow intrusion detection for additional DVIPA origin types

NETVIP
- New menu to access IP Management functions

SNMPv3
- AES encryption can be used for requests sent and received with SNMP command and traps encrypted with AES can be decrypted.

Serviceability

NVINFO
- Logs diagnostic information for support and provides optional capability to dump the NetView ASID and internal trace

LISTVAR
- Displays enabled sub-towers in addition to enabled towers

GLOBALV AUTO
- Enable or disable automation for global variable value changes by a REXX or NetView clist

Time to Value and Automation Enhancements

Modify Tower
- Easily add or remove functionality without editing an existing TOWER statement

Conditional Include (%INCLUDE)
- Include information based on enabled towers in a single statement

REXX Environments
- Define REXX command environments & function packages in a NetView CNMSTYLE user member. This removes the need to modify an Assembler/JCL member.
- Display of settings for current REXX environments (LIST REXXENV) and contents of REXX parameters (LIST REXXPARM)

Monitoring

Ability to monitor the following products when configured in certain environments (see GDPS Active/Active) [1]
- IBM Multi-site Workload Lifeline (Lifeline)
- IBM InfoSphere® Data Replication for DB2® for z/OS
- IBM InfoSphere Data Replication for IMS™ for z/OS
- IBM InfoSphere Data Replication for VSAM for z/OS

IBM z System Enterprise Integration

Analytics with zAware
- Samples interface with zAware server to generate a message that displays anomaly messages and counts. Automation can generate events and Canzlog can be used for further problem diagnosis.

GDPS Active/Active [1]
- Provides enablement and capabilities to support the GDPS Active/Active Continuous Availability solution. These include monitoring and automation of events and processes for the solution to reduce recovery time and increase efficiency in the use of system resources.

Service Management Suite for z/OS
- Provides enterprise network management from a single point of control, maximizes availability of business resources, and improves operational efficiency and performance of IT assets and staff

[1] Requires IBM Tivoli NetView Monitoring for GDPS

NetView v6.2.1: Configuration Enhancements

- Conditional %INCLUDE
  - The %INCLUDE statement is enhanced to allow a member or file to be included when the specified tower or subtower is enabled. The conditional %INCLUDE statement can be specified in any file that supports the %INCLUDE statement.
  - Example:

```
%INCLUDE +DVIPA.DVTAD MEMBER1 MEMBER2
```

  - The %INCLUDE statement is evaluated in the following manner:
    - MEMBER1 is included if DVIPA.DVTAD is enabled
    - MEMBER2 is included if DVIPA.DVTAD is not enabled
    - If MEMBER2 is not really a member in a data set, it will be treated as a comment

NetView v6.2.1: Configuration Enhancements (cont.)

- MODIFY.TOWER
  - Add or delete towers (including subtowers) in your CNMSTYLE user members
- Example CNMSTYLE statements:

  TOWER = *SA *AON *MSM *Graphics NPDA NLDM TCPIPCOLLECT

  *AMI *DVIPA *TEMA *IPMGT *NVSOA DISCOVERY

  TOWER.DISCOVERY = TELNET

  MODIFY.TOWER.Aa = +DVIPA.DVTAD – Discovery.TELNET

  MODIFY.TOWER.AB = + DVIPA
- The MODIFY.TOWER statements are evaluated in the following manner:
  - “Aa” (interpreted as “AA”) and “AB” are sort keys and is evaluated very early
  - The DVIPA DVTAD subtower is not enabled because the DVIPA tower is not yet enabled
  - The DISCOVERY TELNET subtower is disabled because both the DISCOVERY tower and its TELNET subtower were previously enabled
  - The DVIPA tower is enabled
- Note: Tower statements are evaluated first, followed by MODFY.TOWER statements

NetView v6.2.1: IP Management Enhancements

- Sysplex Management
  - Discovery Manager
    - Support has been added for OSA-Express5S.
- SNMP command
- Encryption using Advanced Encryption Standard (AES) can be used for SNMP version 3 (SNMPv3) requests sent and received using the SNMP command.
- Inbound SNMP trap processing
  - An SNMP trap automation task can decrypt SNMPv3 traps that were encrypted using AES.

NetView v6.2.1: Retired Functions

- MVS Command Management - This function is superseded by the Command Revision Table function.
- Visual BLDVIEWS (VBV) - This function is superseded by the RODM Collection Manager function in the NetView Management Console.
- Common Event Infrastructure Service - There are several alternatives to this function, including the use of Event Integration Facility (EIF) events, SNMP traps, and system messages.
- 4700 support facility (TARA) - This function has no replacement. The hardware it supported is no longer manufactured and is out of support.
- GDPS Active/Active Continuous Availability solution - Functionality in support of the GDPS Active/Active Continuous Availability solution has been removed from the NetView for z/OS product and is available in the NetView Monitoring for GDPS product.

New Enhancements in NetView for z/OS v6.2.1

Global Variable Name and Value Length

- APAR OA47872 – will be available by September 4, 2015
- Current
  - Global variable names limited to 31 characters
  - Global variable values limited to 255 characters
- Problem: Current limits are too small for many customers
- Enhancement:
  - Increase length limits for name to 250 and for value to 31000 characters
  - Applies to both common and task global variables
  - No changes planned for NetView CLIST language or VIEW command
  - Save/Restore: name+value length limited to 4000 characters
    - New sample CNMSJM15 provided for migration of the DSISVRT VSAM cluster

Global Variable Name and Value Length (cont.)

- Goal
  - Keep external interfaces the same as they are for migration reasons
- Examples of affected functions
  - QRYGLOBL
    - New LONGVAR keyword
      - Use for programming – value is not lined up in a static column
  - PIPE stages (VAR, VARLOAD, STEM)
    - Modified to support 250-character variable names
  - Automation table functions (ATFs: DSITGLOB, DSICGLOB)
    - Modified to support 250-character variable names
  - GLOBALV command (DEF, GET, AUTO, TRACE, PUT, SAVE, RESTORE, PURGE options)
    - Modified to support 250-character variable names

Command Authorization Definitions

- APAR OA48179 - available
- Current: CNMSCAT2 – NetView command authorization table
- Problem: User-defined authorization statements can be lost when PTF or new release is applied
- Enhancement:
  - Add new member CNMSCATU for user-defined command authorization, similar to DSIOPFU, CNMCMDU, CNMSTUSR
  - %INCLUDEd in existing CNMSCAT2
  - Simpler command table administration for user definitions

DBAUTO Command

- APAR OA48180 - available
- Function: Purge entries from your VSAM database, reorganize the database, switch to a secondary database, clear the database altogether
- Problem
  - If DBAUTO or a sub-process fails, current message(s) don't clearly indicate what failed.
- Enhancement:
  - Reflect actual (sub)-process that fails, not just overall command
  - Example: depending on specifics of the command, failing activity might be purge process, IDCAMS reorg process, or something else

DBAUTO: ALLOCATE NEW SPACx(2 1) TRACKS

DSI646I KEYWORD SPACX INVALID

DBAUTO: REORG FAILED

Message CNM493I

- APAR OA48181 – will be available by September 4, 2015
- Logs the entry of a command to NetView from automation processing
  - Current: **CNM493I *member : seqnum : commandtext***
- Problem: sequence number can change with every update to automation table
- New
  - **CNM493I *member : seqnum : label/group : commandtext***
  - Even though seqnum may change, label/group is constant
  - label/group insert will be one of the following:
    - Label or group name, if specified
    - Message id
    - (AUTOMATED MSU)
    - (NO MSGID)

New Enhancements Summary

- Delivery
  - Implement only on NetView v6.2.1
  - Ship in groups periodically through the year
- Customer input desired:
  - To review designs, provide feedback
  - To test new functions

IBM z Systems Enterprise Integration: GDPS Active/Active Currency

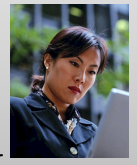
GDPS Active/Active Currency

- NetView Monitoring for GDPS and NetView for z/OS provided additional monitoring support for Multi-site Workload Lifeline v2.5 in December 2014. Support included:
  - Monitoring workloads and workload servers for workloads that utilize SNA applications for select SNA configurations
  - Monitoring workloads and workload servers that utilize applications on Linux on System z
  - Monitoring support is provided in the Tivoli Enterprise Portal (TEP) and the NetView 3270 console with the ACTVLIFE command
- APARs OA46519 and OA46516

IBM z Systems Enterprise Integration: IBM Operations Analytics for z Systems NetView for z/OS

The Challenge

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



404 ERROR

It's SLOW!!

Where do I start??

Centralized, Distributed, Cloud, Resilient Architectures Increase Data Volume

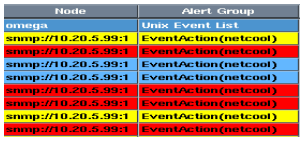
Everything is "green"

Logs, Traces,..

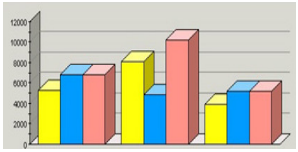
```
[10/9/12 5:51:38:295 GMT+ 05:30]
0000006a servlet E
com.ibm.ws.webcont
ainer.servlet.Servlet
Wrapper service
SRVE0068E:
010001100011100
001110011000111
110000110001
111111000110011
100011
```

Core files

Events



Metrics



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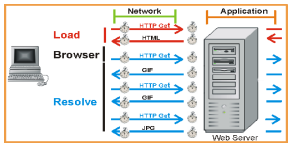
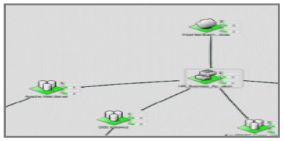


Config



IBM Operations Analytics for z Systems

Avoid outages and accelerate problem isolation and identification
Reduce mean time to repair

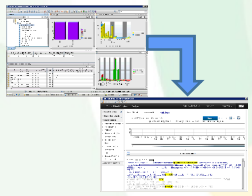
- **Analyze** various types data from multiple sources
- **Locate problems** from system, configuration, software logs and performance metrics using **machine learning** and **rapid index search**
- **Isolate issues** across various domains including OS, Middleware, applications, etc
- **Leverage Expert Advice** via links to support documentation and operations notes to resolve problems quickly
- **Visualize** search results with analytic tools to **rapidly determine root cause**
- **Out-of-the-box analysis and insights** for z/OS, WebSphere, DB2, CICS, IMS, MQ, Network
- **Fully customizable** to meet your needs

SEARCH

ANALYZE

RESOLVE

INTEGRATE



New **in 2015**

- Network Insights
- Event notification
- Hadoop Support

- Analysis of Performance Metrics (new SMF real time Data Provider)
- Integration with ITM/OMEGAMON and Netcool Operations Insight, Service Management Unite, Trouble Ticketing

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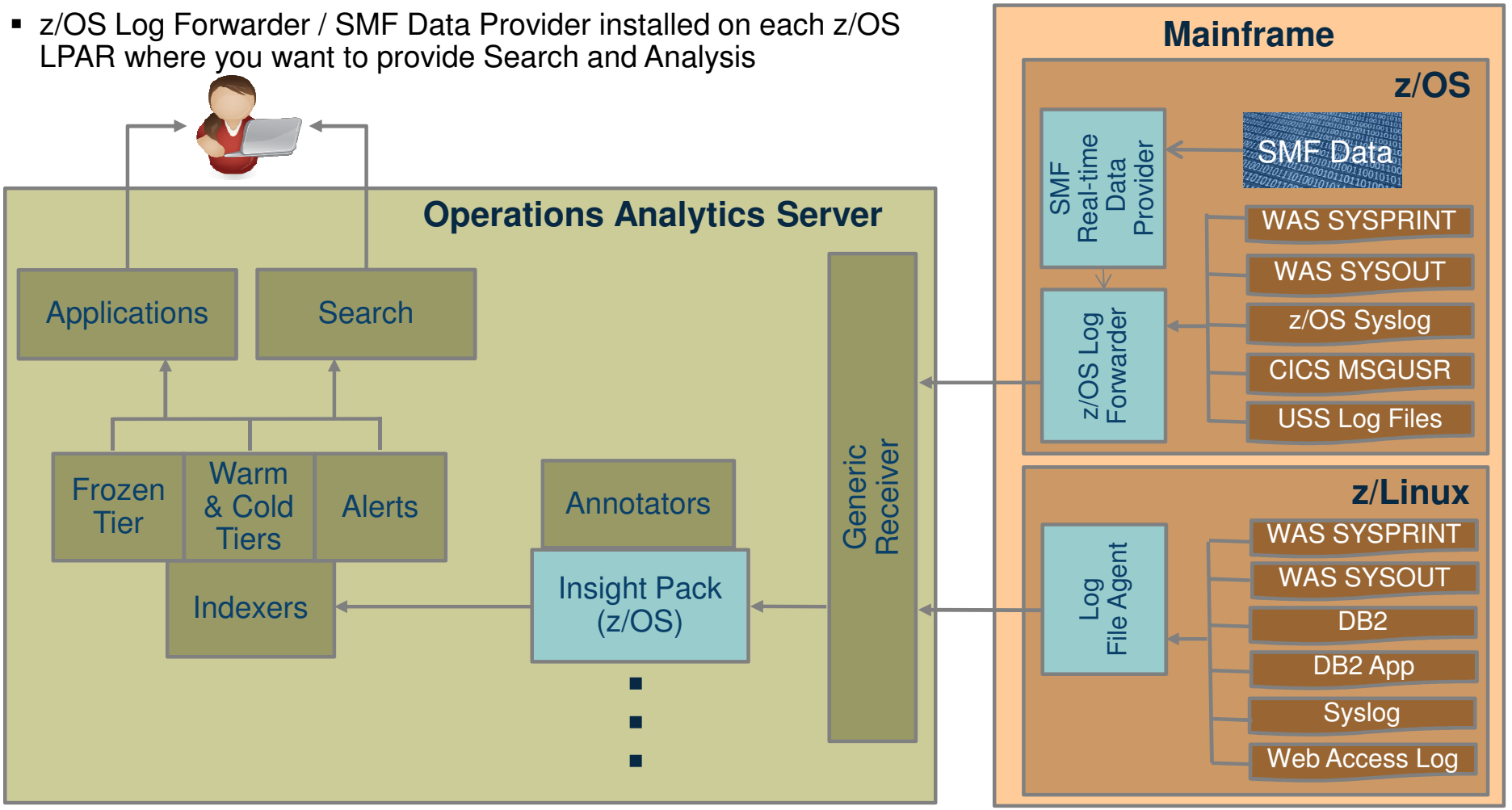
IBM Operations Analytics for z Systems (IOAz)

- 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
- z/OS Log Forwarder / SMF Data Provider installed on each z/OS LPAR where you want to provide Search and Analysis



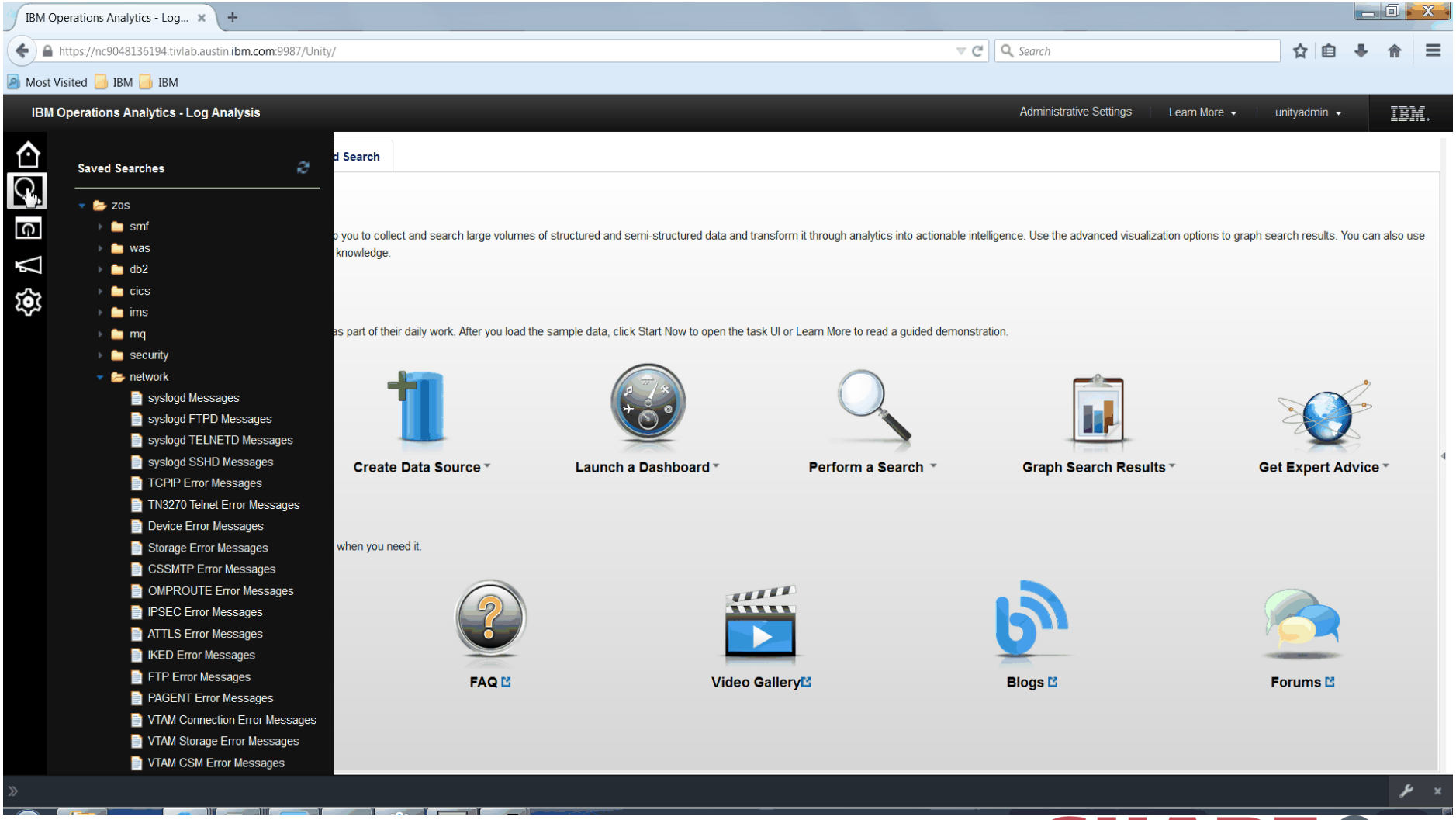
IOAz Network Insights Pack

- IOAz v2.2 announced a network insights pack in April 2015
- Helps analyze logs (including syslogd) for common network issues related to TCP/IP, FTP, TN3270, etc.
- This is a good compliment for those using NetView for z/OS and OMEGAMON XE for Mainframe Networks for IP management.
- The IOAz team has a requirement to consume the NetView network log for components such as automation and network management to its network insights pack
  - There is a beta running with this function
  - We would like your input!

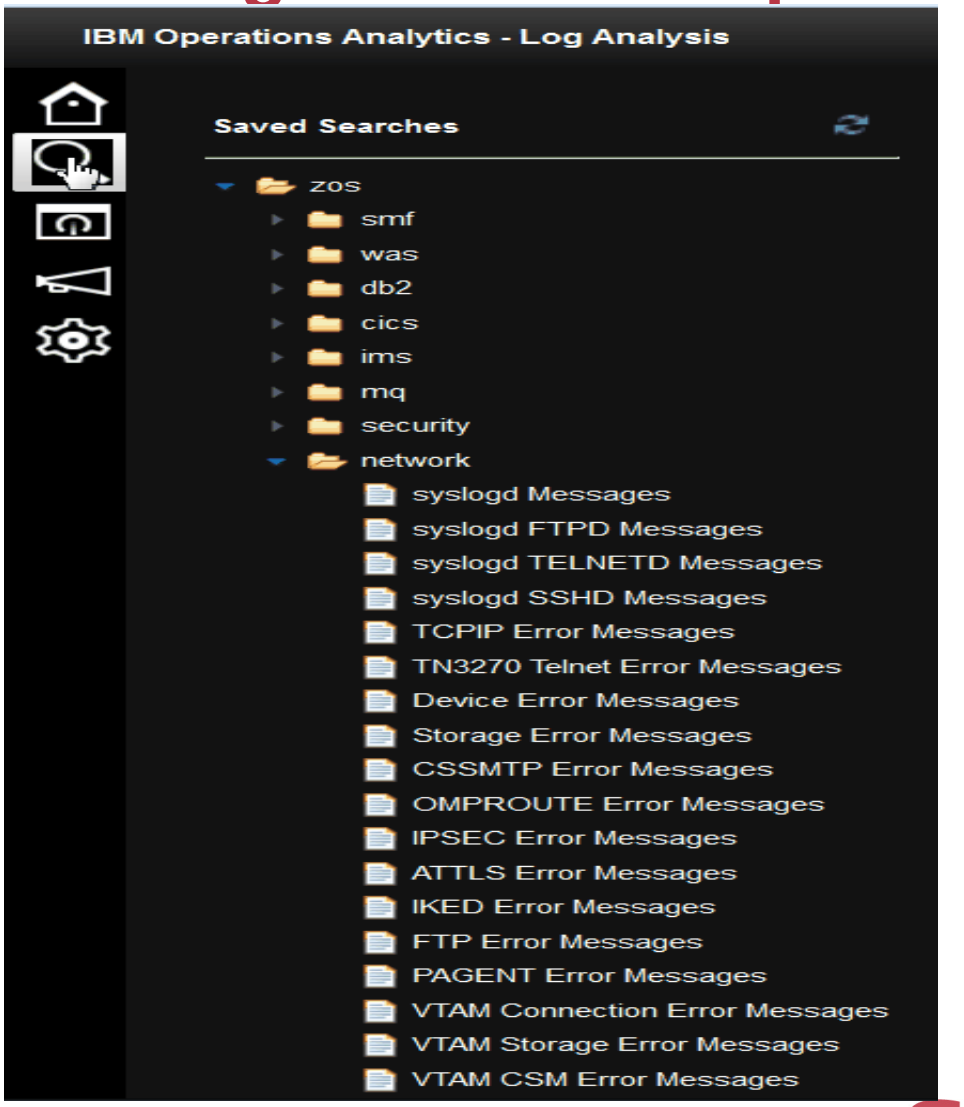
Scenario: IOAz and NetView

- Today IOAz consumes syslog messages
- Many “important” NetView messages are sent to an “authorized receiver”.
  - Depending on how you have this set up:
    - These messages will go to an operator that is logged on as an “authorized receiver” or they can go to syslog
- Let’s find a NetView “resource limit” message that went to syslog
- The search will start broadly, then be narrowed down to just NetView syslog messages.

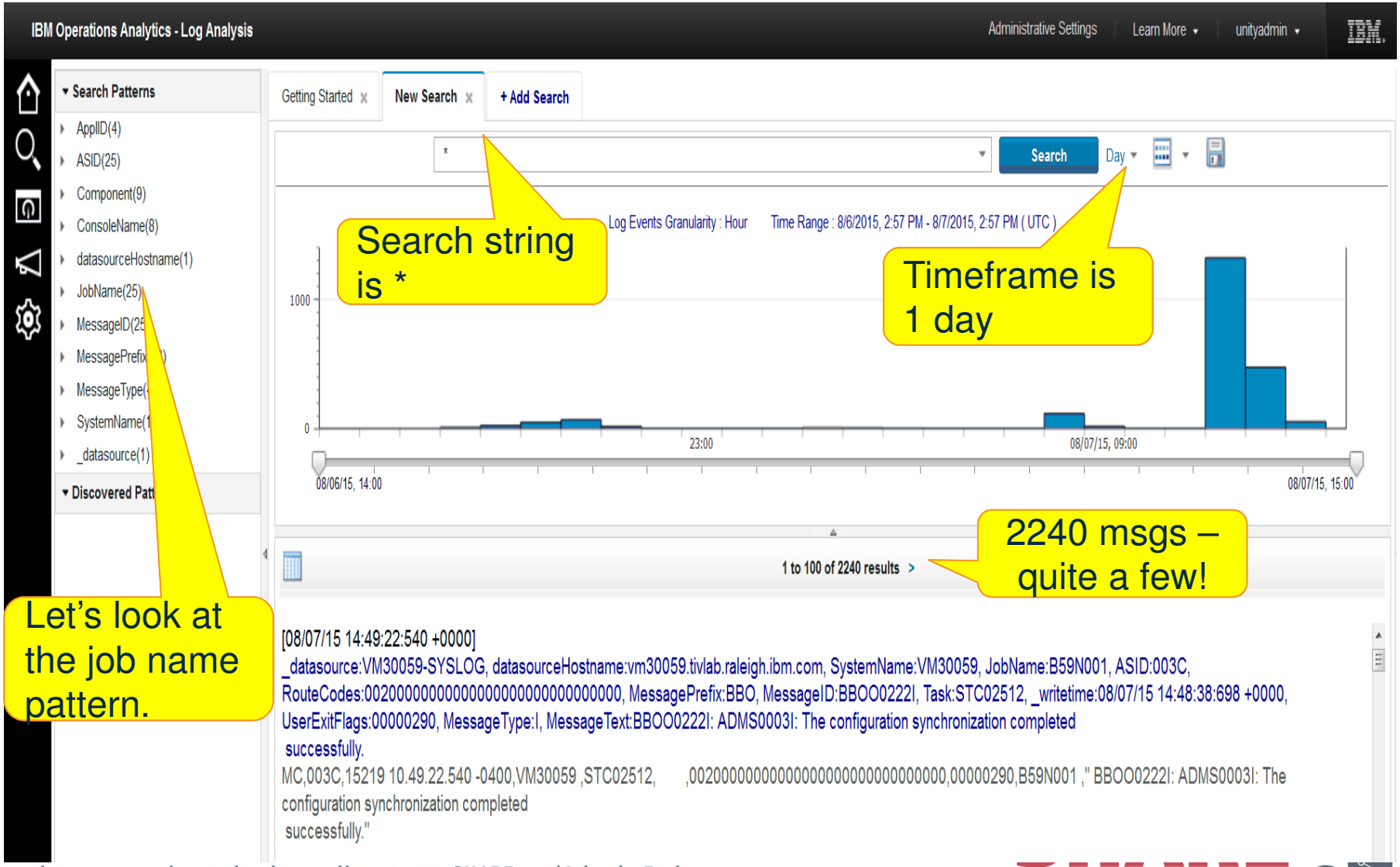
IOAz Navigation Tree from Search ICON



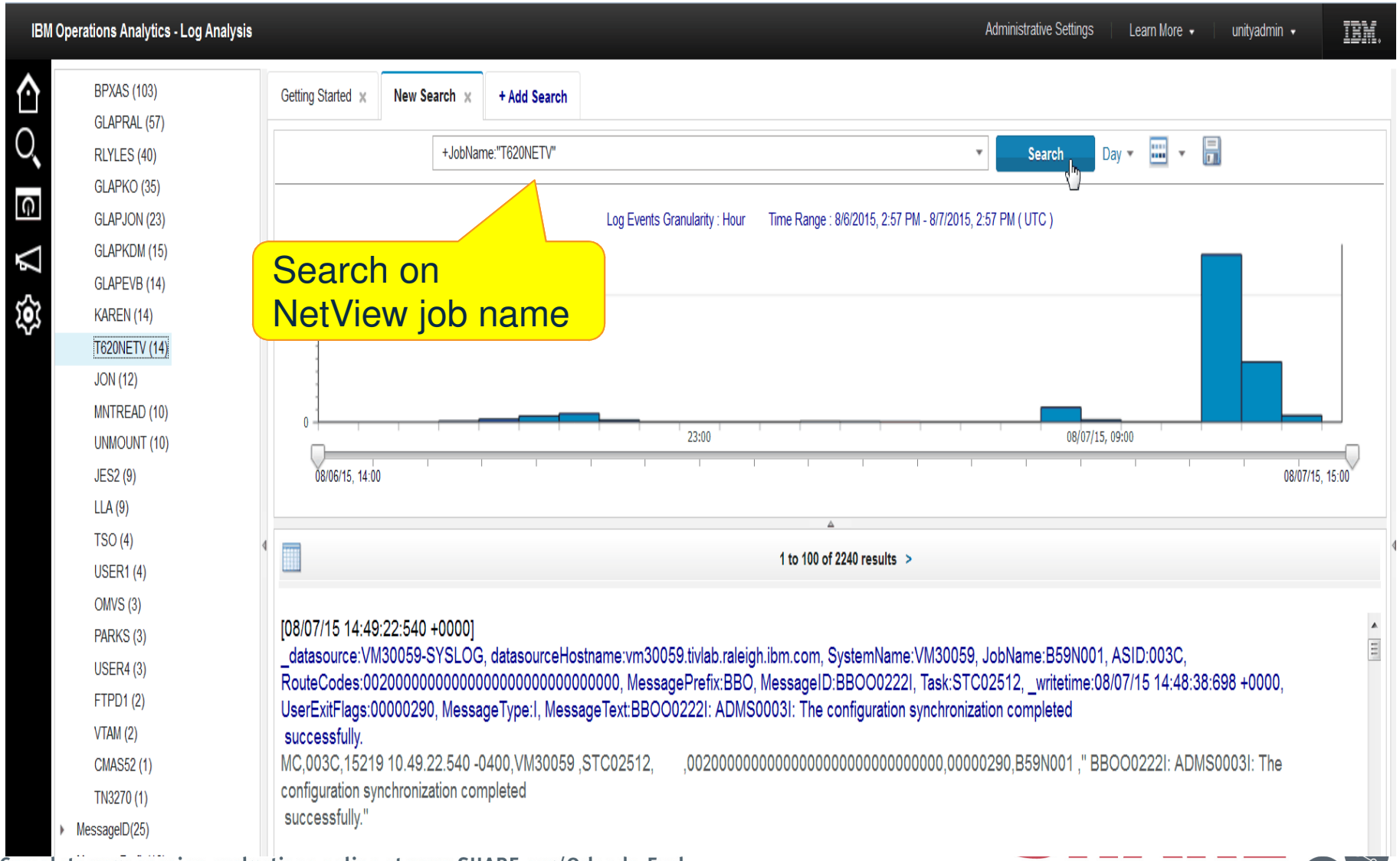
IOAz Network Insights Pack sample searches



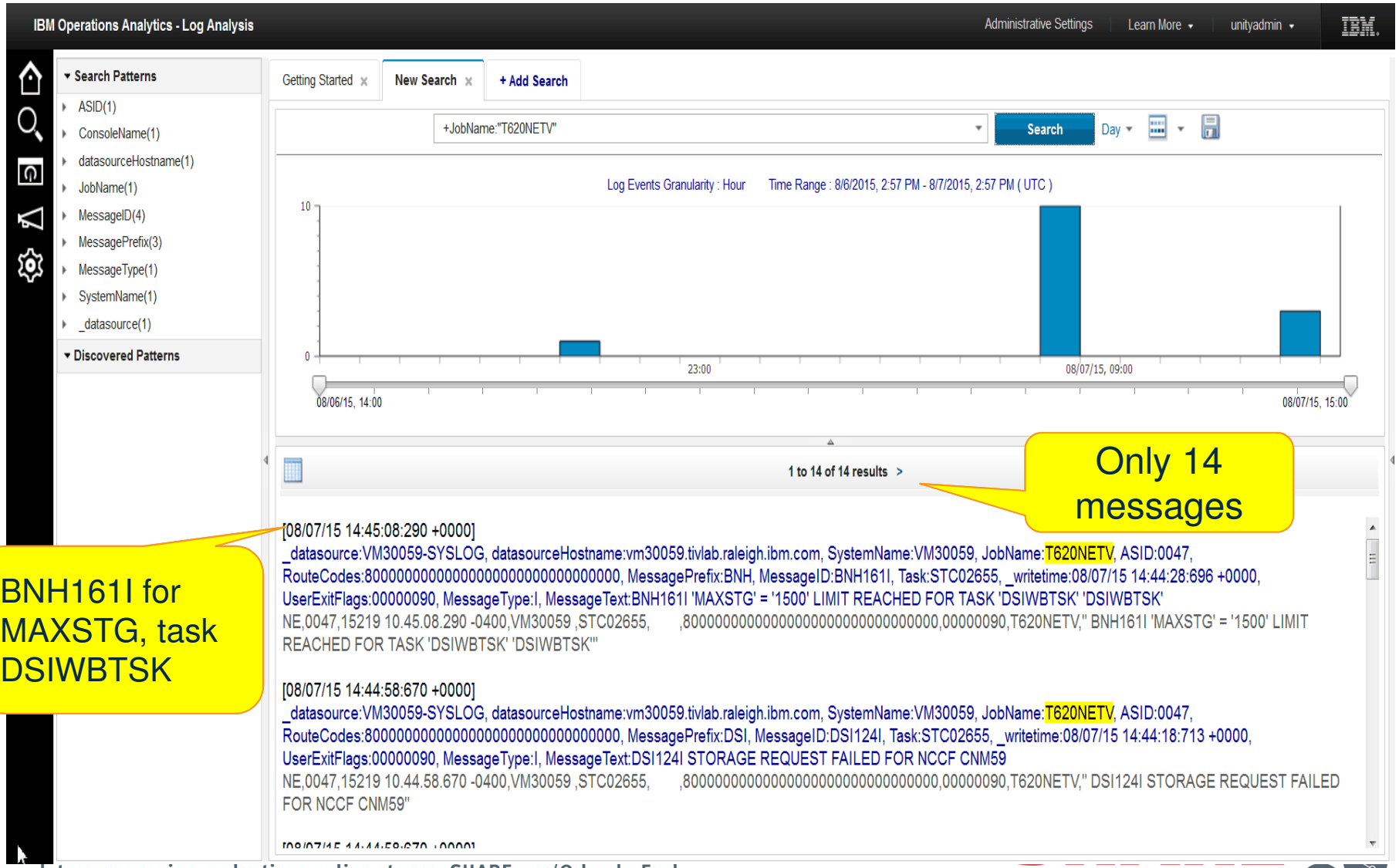
Searched Results for All Messages



Search by the NetView jobname



NetView Resource Limit Message



IOA for z Systems Early Access and Beta Program

A new **IBM Operations Analytics for z Systems Early Access and Beta Program** was announced on January 29, 2015.

In 2015, we will build on the strong foundation established over the past months as we develop and implement our product roadmap.

We are looking for customers and business partners worldwide who would like to help influence our roadmap and test new capabilities. The program is open-ended; interested participants may join at any time and stay on as long as they wish. That said, it is our desire to establish a set of “customer sponsor” relationships that will become instrumental in shaping the future of our offering.

To see the full program announcement, and to learn how to sign up, please visit us in our developerWorks community at:

https://ibm.biz/BdEkZV

IBM z Systems Enterprise Integration:
Service Management Suite for z/OS
Service Management Unite
NetView for z/OS

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

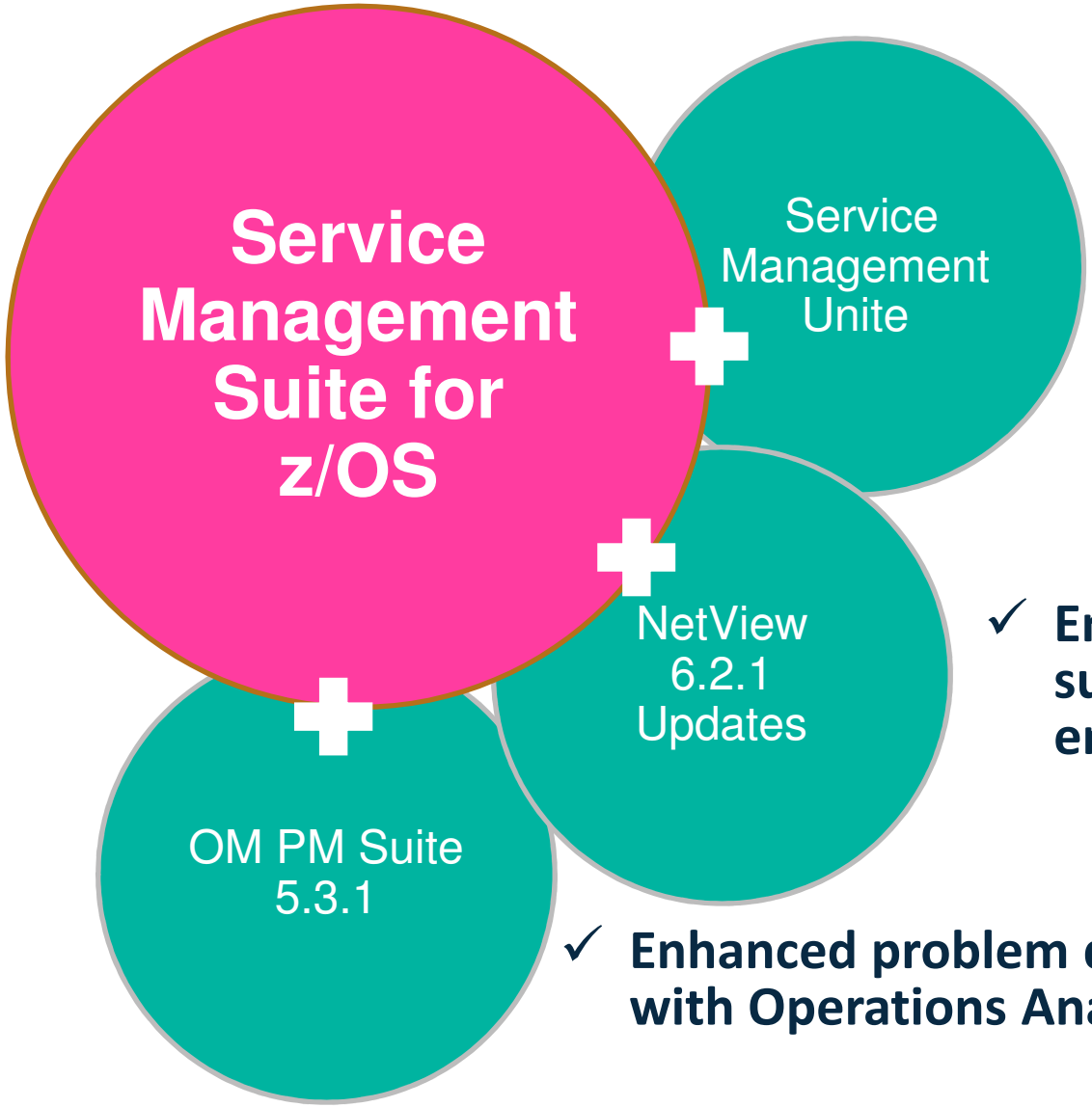
Asset Discovery

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

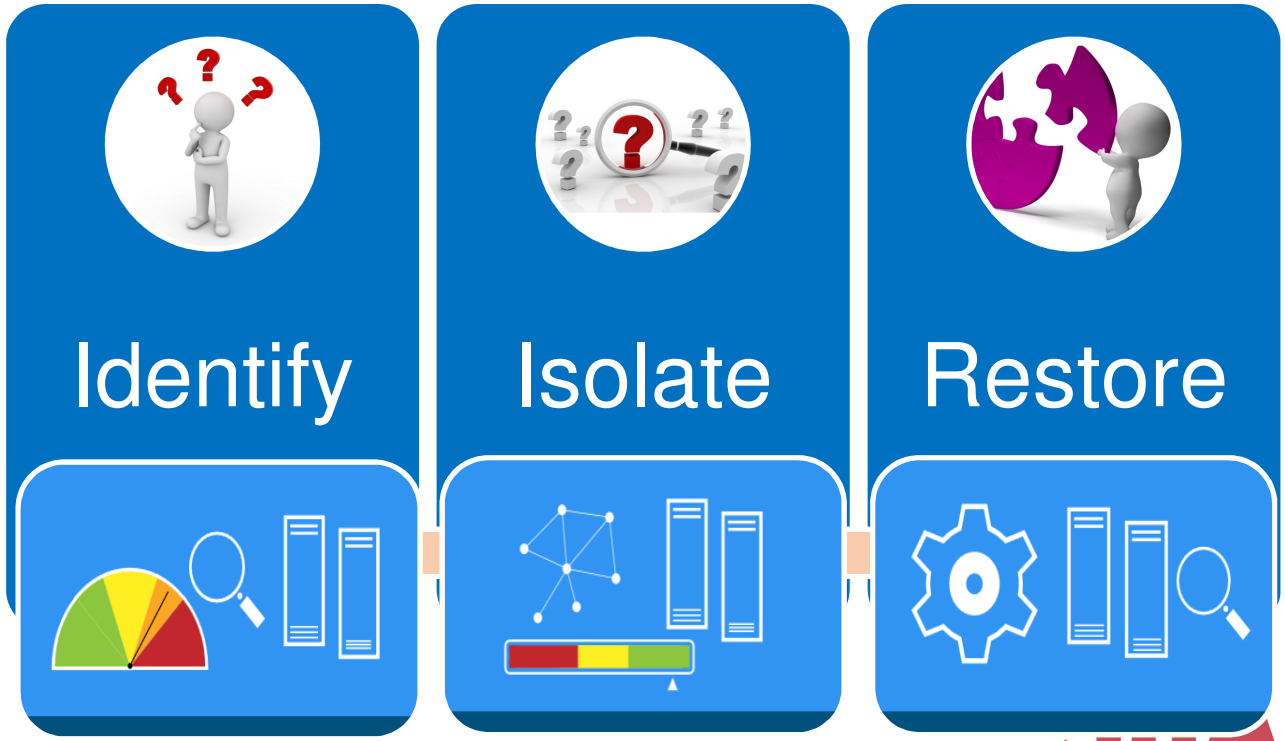
- ✓ OMEGAMON XE for DB2 PE V5.3.0
- ✓ OMEGAMON XE for Messaging on z/OS V7.3.0
- ✓ OMEGAMON XE for CICS V5.3.0
- ✓ OMEGAMON XE for IMS V5.3.0
- ✓ OMEGAMON Dashboard Edition on z/OS 5.3.0
- ✓ OMEGAMON XE for z/OS V5.3.0
- ✓ OMEGAMON XE for Mainframe Networks V5.3.0
- ✓ OMEGAMON XE for Storage V5.3.0
-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

Service Management Unite - What is it?

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



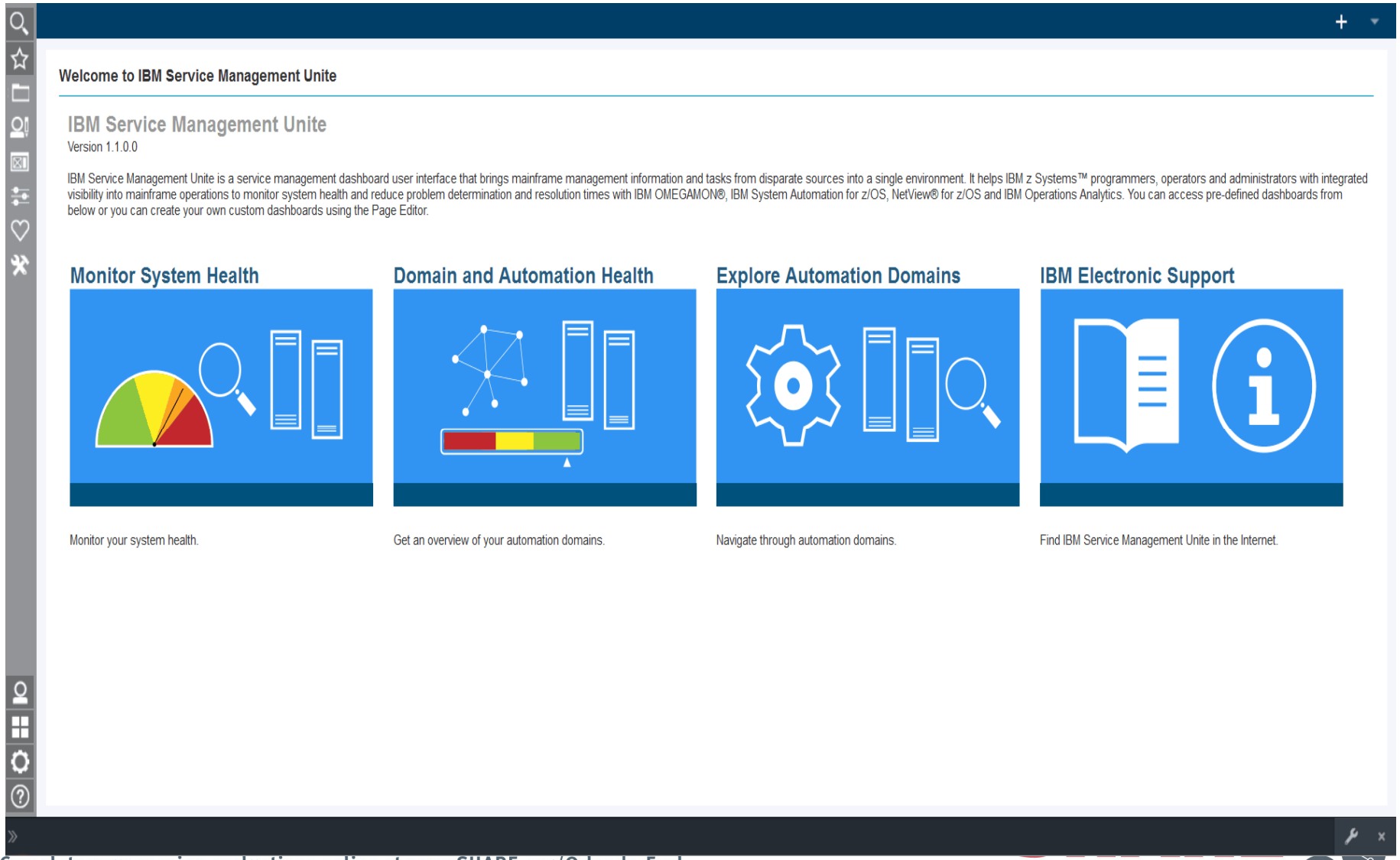
Service Management Unite and NetView

- NetView functions are a key part of Service Management Unite (SMU)
  - Automation
  - System Log
    - (NetView's Consolidated Audit, NetView, and z/OS log - Canzlog)
  - NetView command support
- You can also launch into IBM Operations Analytics for z Systems and use its capabilities to look for NetView messages across all applications:
  - System Automation for z/OS
  - IBM Workload Scheduler
  - GDPS
  - User-written applications

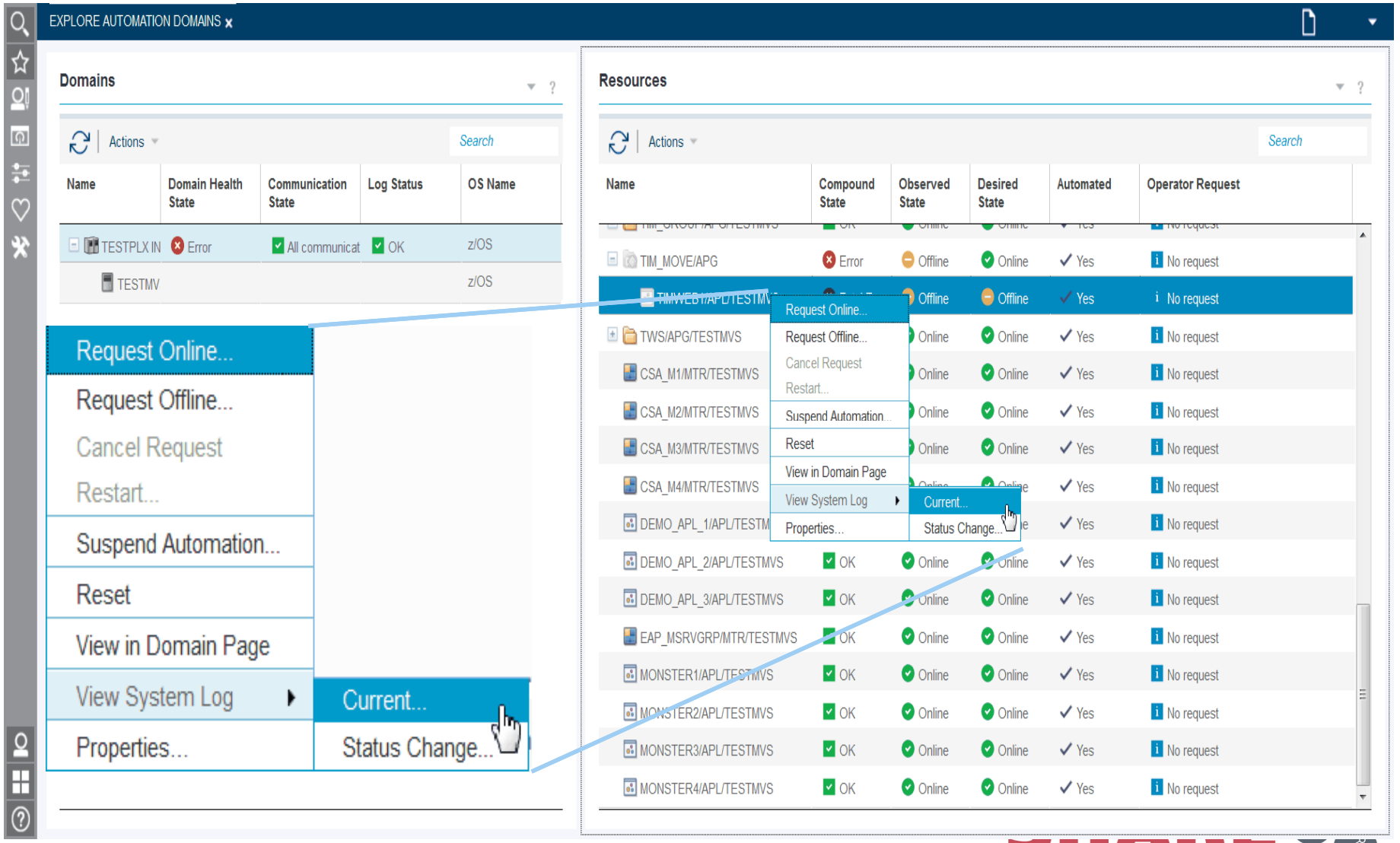
Scenario 1: SMU and NetView

- While looking at an error for a System Automation domain, you discover that NetView is “repeatedly” issuing failure messages for task DSIIPLOG.
- From SMU, we will see how to view the System Log (Canzlog) and issue a command to stop task DSIIPLOG.
- This is one of many commands that can be issued.

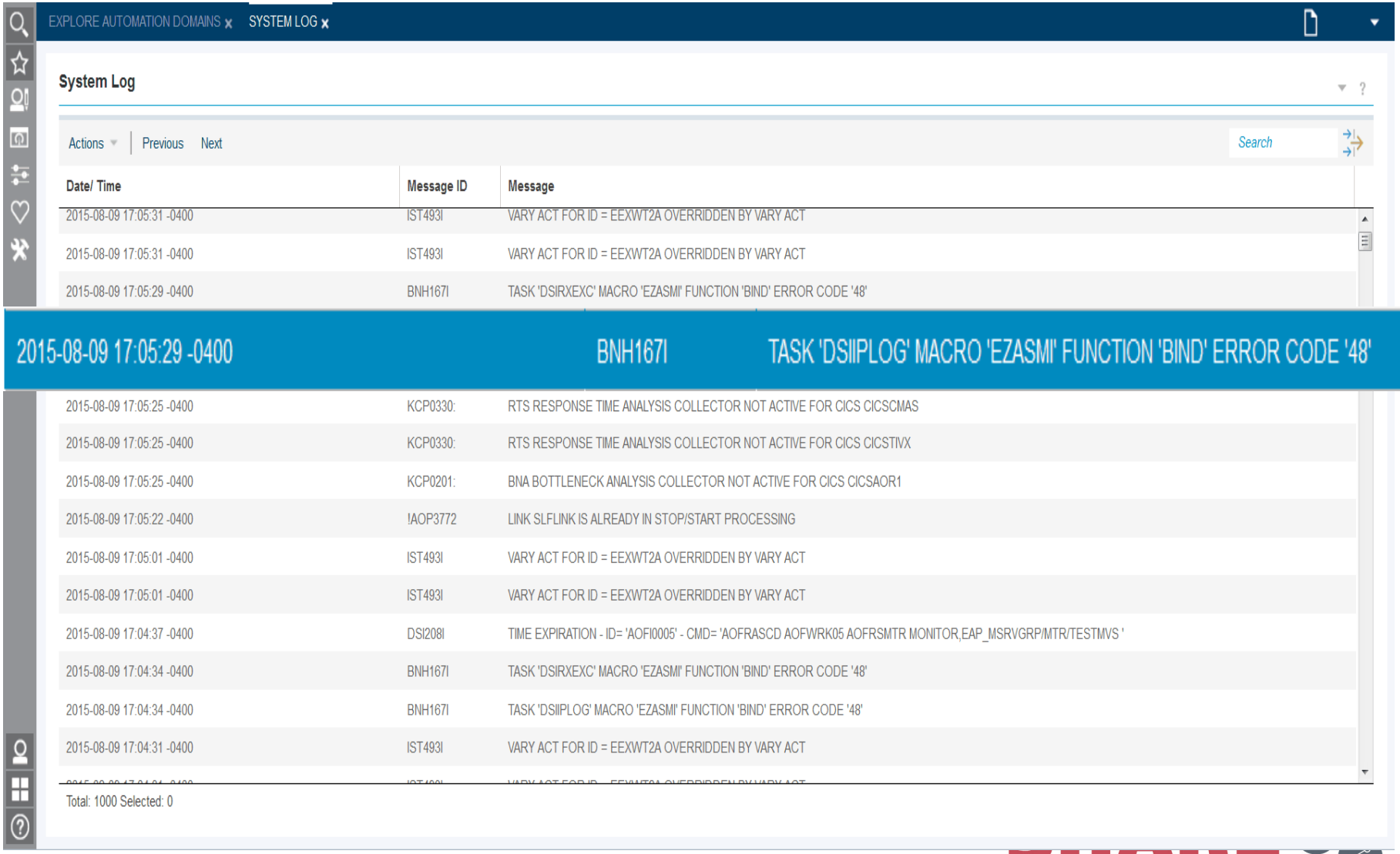
Service Management Unite Welcome Page



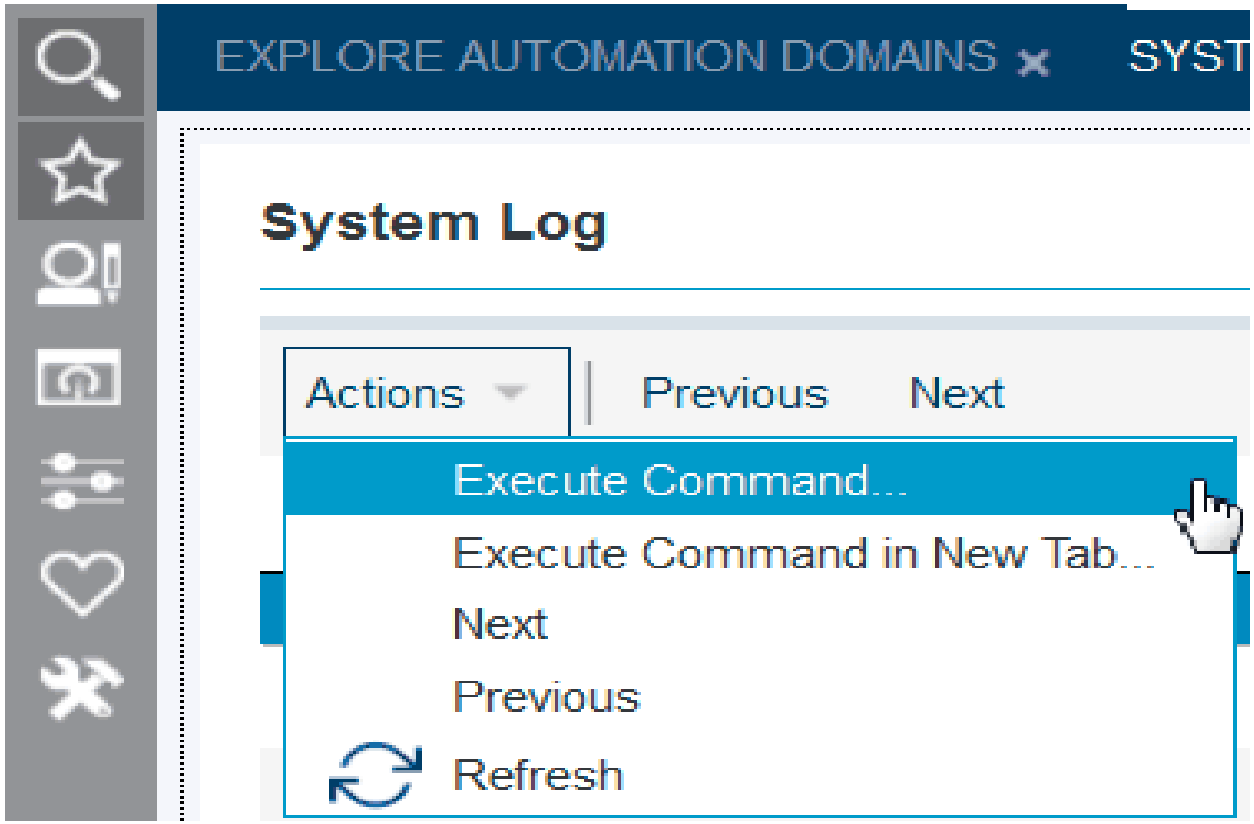
SMU: Explore Automation Domains



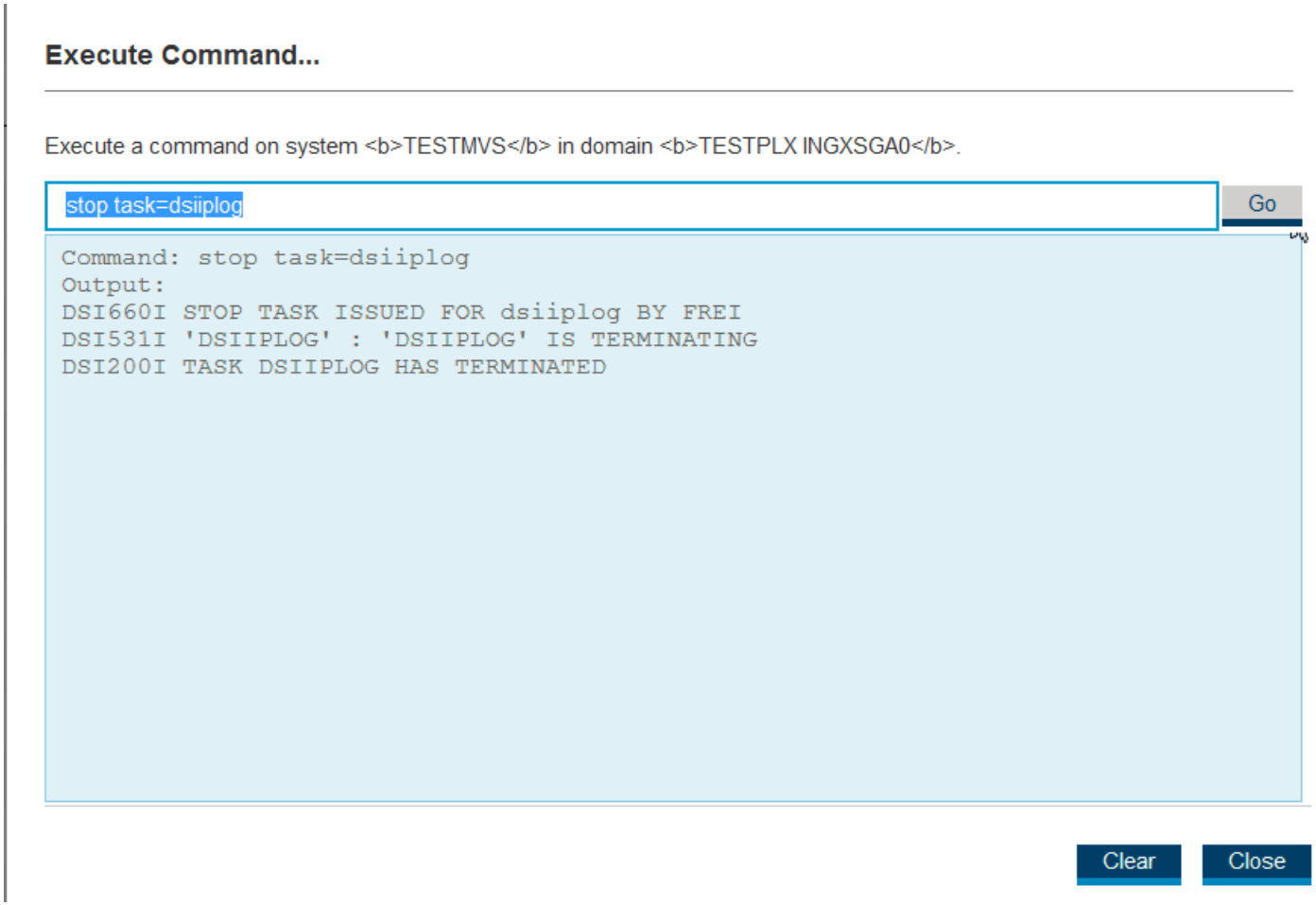
SMU: “View System Log” results



SMU: “Execute Command” Action



SMU: Stop task DSIIPLOG



IBM z Systems Enterprise Integration:
Service Management Unite
IBM Operations Analytics for z Systems
NetView for z/OS

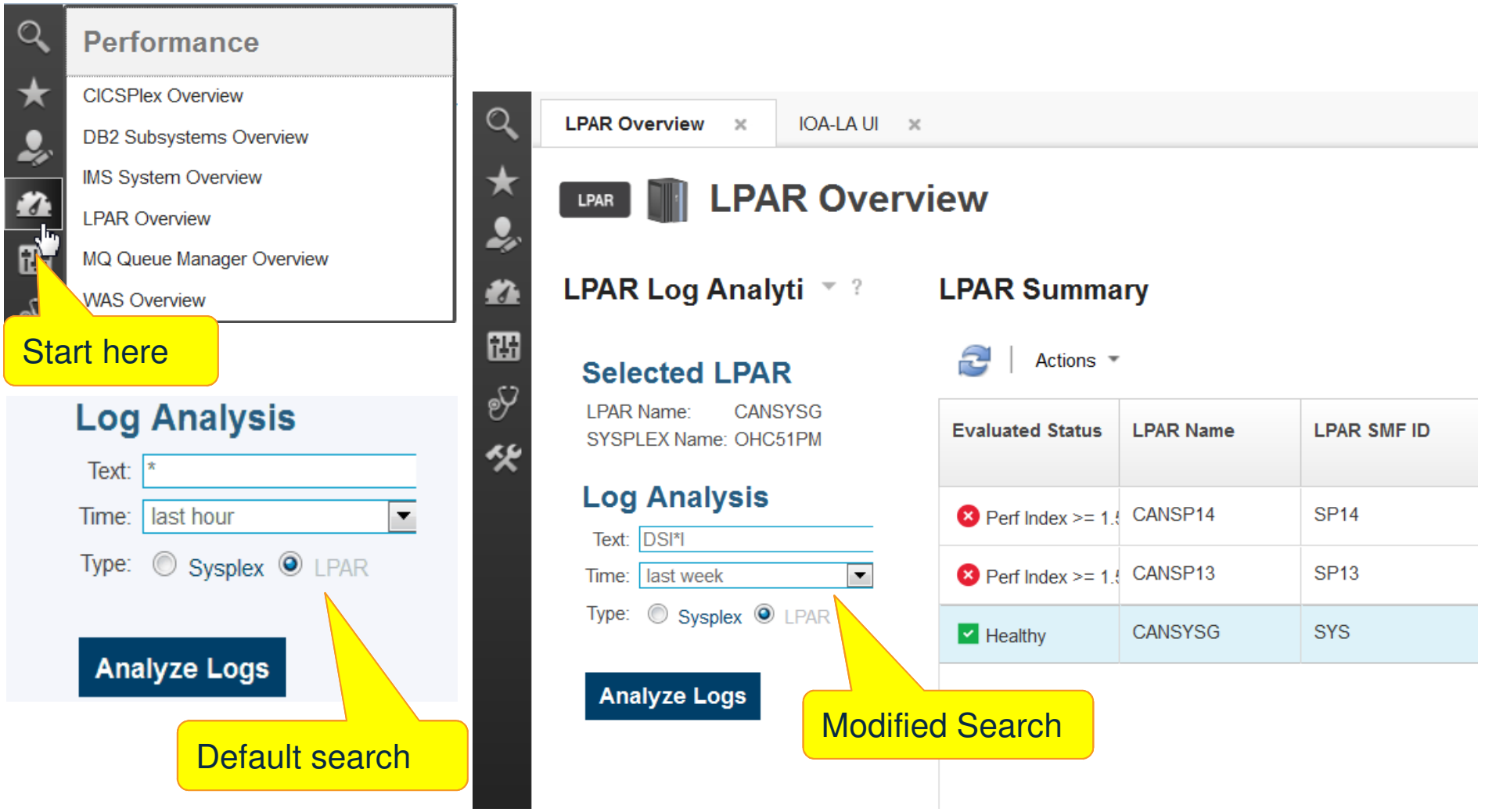
SMU, IOAz, and NetView

- We've shown you how to look for NetView messages in IOAz and how to look at Canzlog and issue NetView commands in SMU.
- You can now access these capabilities from a single user interface
- From the Performance icon, you can get to the OMEGAMON XE Overview views
- From the OMEGAMON XE Overview views, you can launch to IOAz to isolate messages related to problems quickly
- You can then use System Automation for z/OS and NetView log and command capabilities to resolve the problem

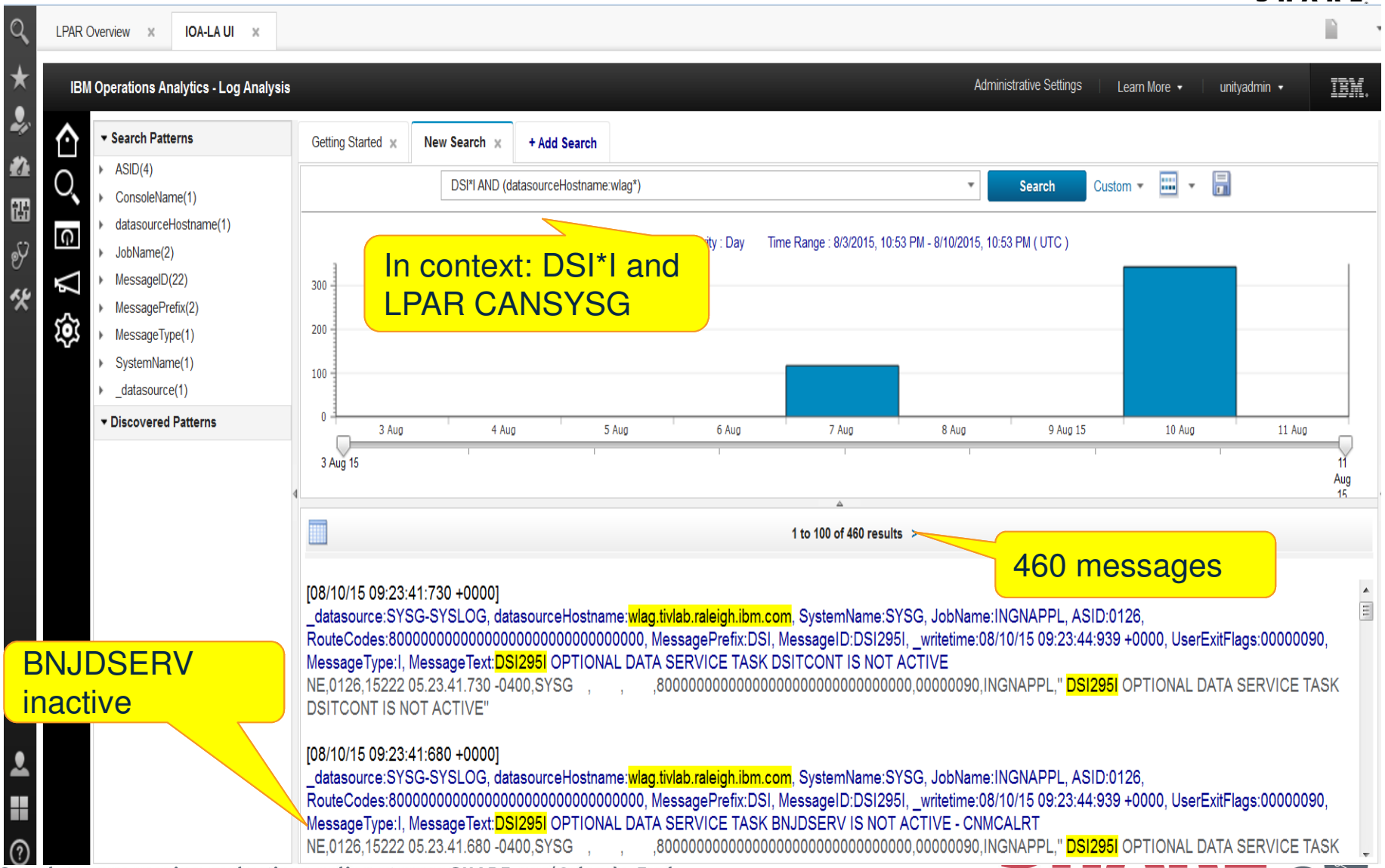
Scenario: SMU, IOAz, and NetView

- From the OMEGAMON LPAR Overview view, launch to IOAz to find DSI*I messages for LPAR CANSYSG
- There are 450+ messages which meet the criteria
- There are some optional NetView tasks that aren't active
  - If necessary, these can be started using the "Execute Command" Action from the LPAR Overview view.

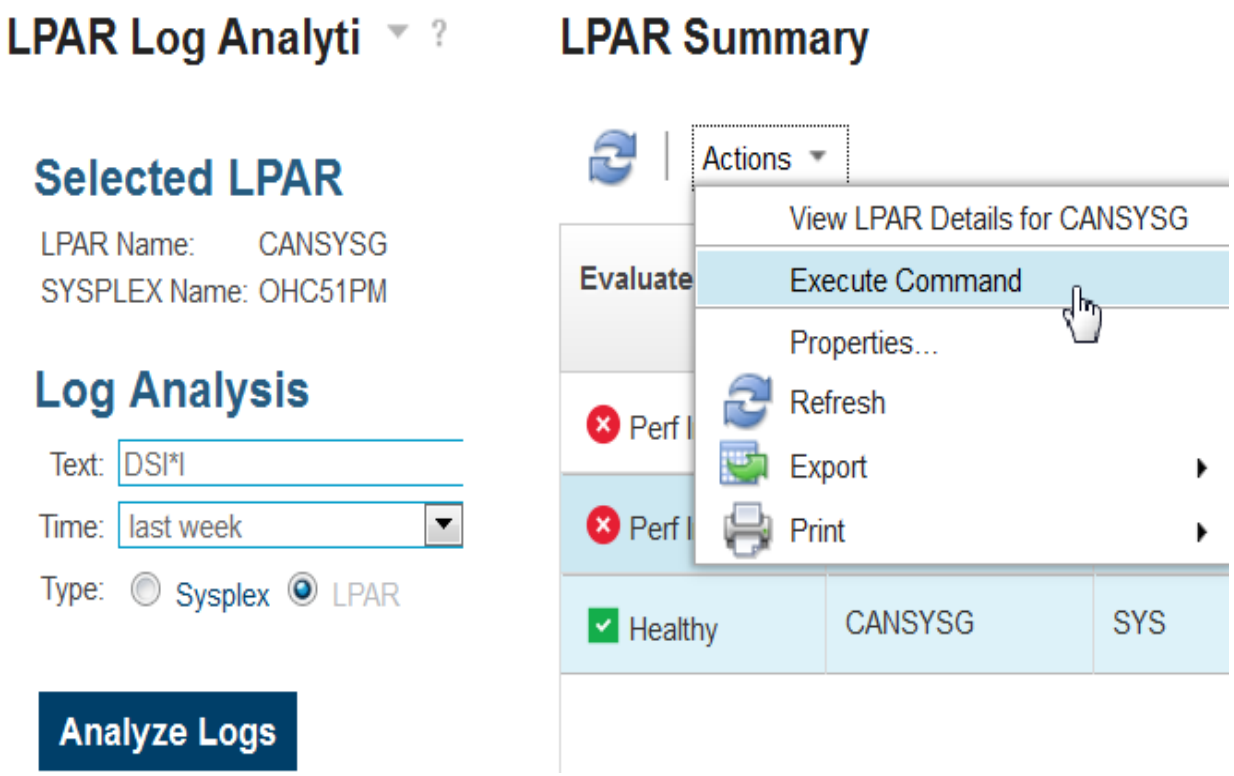
Launching to IOA from SMU with DSI*I



IOAz Search Results for DSI*I and CANSYSG



Issuing NetView Commands from OM SMU View



Summary

- NetView for z/OS:
  - Continues to provide enhancements for:
    - Ease of use
    - Time to value
    - Serviceability
    - Security
  - Continues to be an integral component in integration solutions with Canzlog, automation, and network management capabilities
    - Service Management Suite for z/OS
    - IBM Operations Analytics for z Systems
    - GDPS Active/Active and other GDPS services
  - Is part of IBM z Service Management, which is critical for Mobile, Cloud, and Analytics

More Information

- NetView website

  https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Tivoli System z Monitoring and Application Management/page/IBM NetView for zOS

- Service Management Suite for z/OS

  https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Wfb8610d29f30_4f81_802f_2b8d115202ec

- IP management with NetView for z/OS

  https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/Tivoli+System+z+Monitoring+and+Application+Management/page/Tivoli+NetView+for+zOS

- NetView customer forum

  http://tech.groups.yahoo.com/group/NetView/

- NetView documentation

  http://www-01.ibm.com/support/knowledgecenter/SSZJDU_6.2.1/com.ibm.itnetviewforzos.doc_6.2.1/netv621_welcome_kc.htm?cp=SSZJDU_6.2.1%2F0

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- 17594: Proactive Outage Avoidance with IBM Service Management Suite for z/OS – Monday, 08/10/15, Uwe Gramm
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- 17729: What Is Changing in IBM OMEGAMON Monitoring Your z Environment? – Monday, 08/10/15, Kevin Hosowaza
- 17736: Introduction to Mainframe Network Management – Monday, 08/10/15, Dean Butler
- 17536: How IBM Can Identify z/OS Networking Issues without Tracing - Wednesday, 08/12/15, Dean Butler and Ernie Gilman
- 17595: Exploiting IT Log Analytics to Find and Fix Problems Before They Become Outages – Thursday, 08/13/15, Paul Smith
- 17739: NetView for z/OS: IP Management Topics and Solutions – Thursday, 08/13/15, Pam McLean

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- Session # 17886
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