Z Automation portfolio overview

Your Domenico D'Alterio
Your IBM

November 2019
Session OA

Agenda

- Market view and evolution
- Challenges, needs and opportunities
- IBM Z Automation portfolio overview
  - Service management Unite
  - NetView
  - System Automation
  - Workload Scheduler
- Use cases

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Market view and evolution

Journey to Cloud and Digital Transformation

Cloud accelerates business transformation

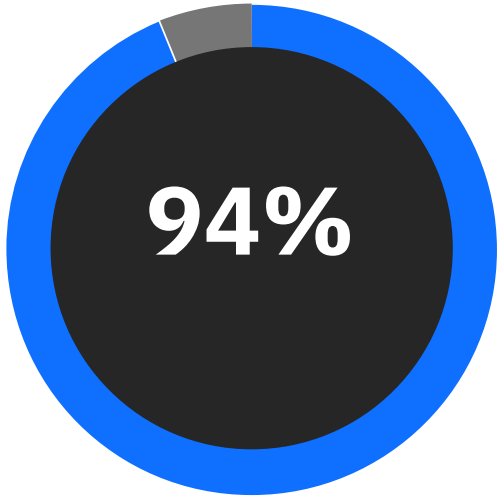
- Innovate with the latest technology from any source
- Access more types of data, analytics & AI, anywhere
- Improve return on existing investments

Yet to date, less than 20% of enterprise workloads have moved. Why?

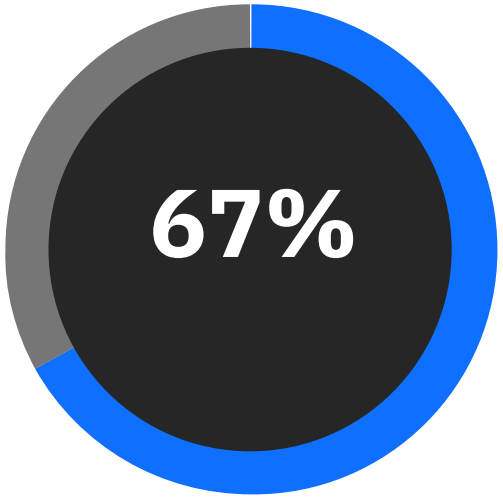
The market is entering a new chapter in cloud and digital

Chapter 1	Chapter 2
Consumer-driven innovation	Enterprise-driven innovation
Digital/AI experimentation	Digital/AI embedded in the business at scale
“User applications”	“Mission critical” workloads
Public cloud	**Hybrid cloud**

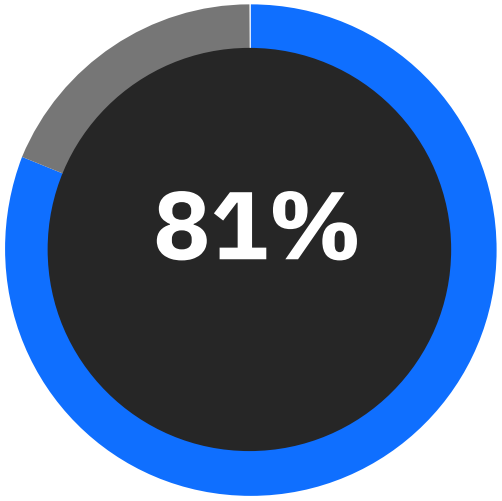
Today we live in a hybrid, multi-cloud reality



Share of enterprise customers using multiple clouds



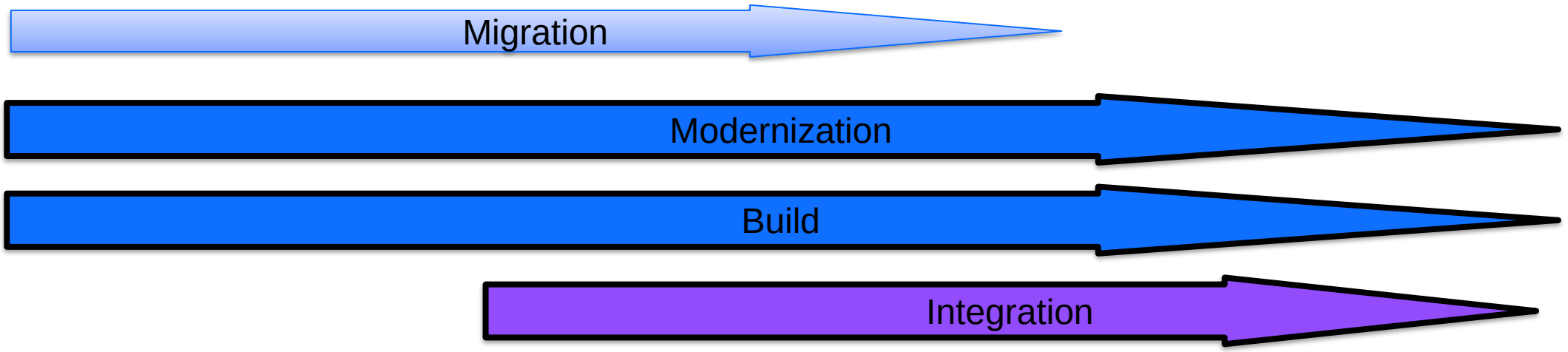
Share of enterprise customers using more than one public cloud provider



Use a combination of private and public clouds

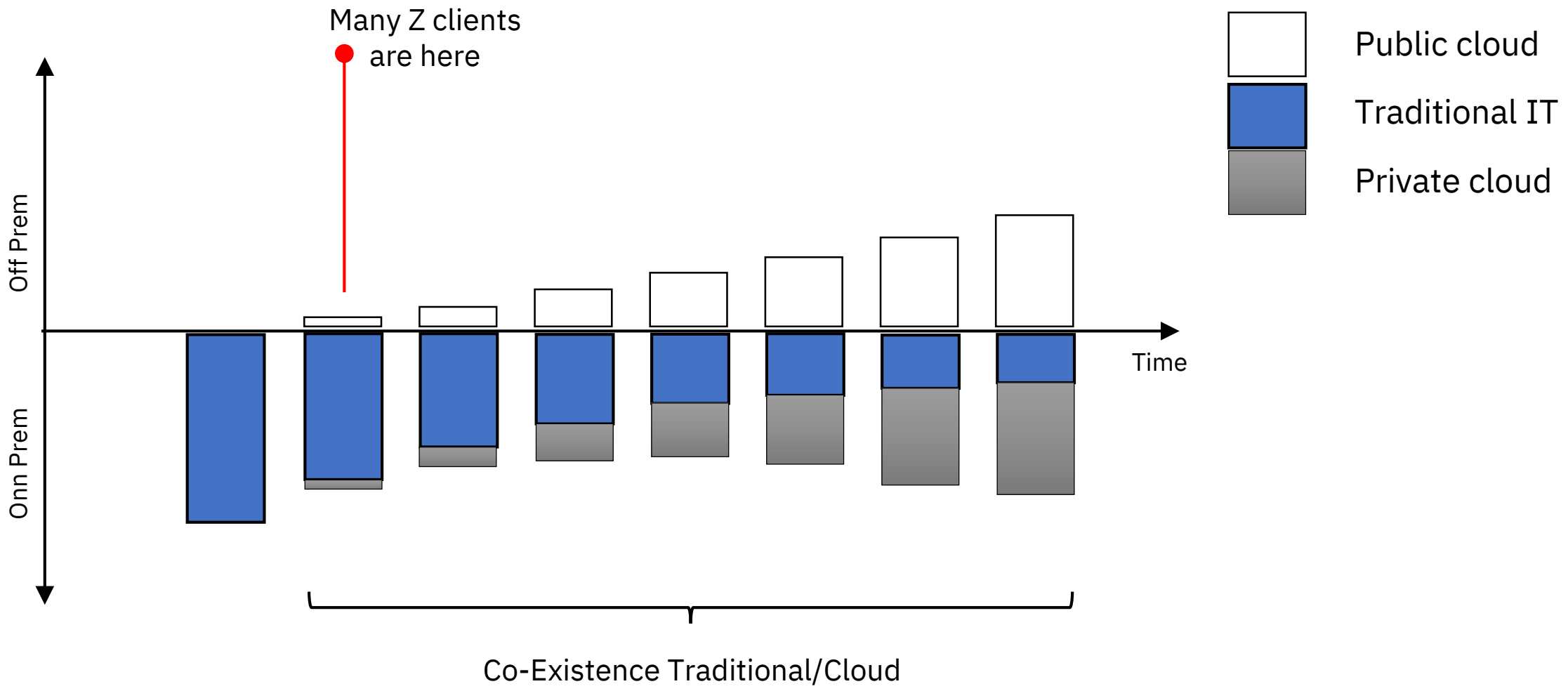
Changing focus for moving workloads to cloud

Chapter 1 **Chapter 2**



Modernize without undermining current functionality.
Build cloud native applications with agility.

The Evolution of Enterprise Workloads



Challenges, needs and opportunities

Driven by the Journey to Cloud and Digital Transformation

Challenges

Velocity of change is increasing and workloads are increasingly unpredictable

- **Risk of outages** increases as the **rate of change accelerates** and operational complexity increases
- New workload volumes can be **unpredictable**

Growth of hybrid cloud applications is increasing complexity

- **Mapping** between business applications and mainframe resources are unclear
- **Silos** inhibit SLA attainment and increase time to problem resolution

IT operation environment is increasingly strained

- Organizations face **skills issues** as they go through a generational shift
- **Reduce cost,** maintain operational integrity under increasing transactional volume

Silos inhibit SLA attainment and increase time to problem resolution

Tools to enable collaboration and cross-discipline interaction are needed to avoid silos

Source: Beyond Philosophy: https://beyondphilosophy.com/how-to-overcome-organizational-silos/

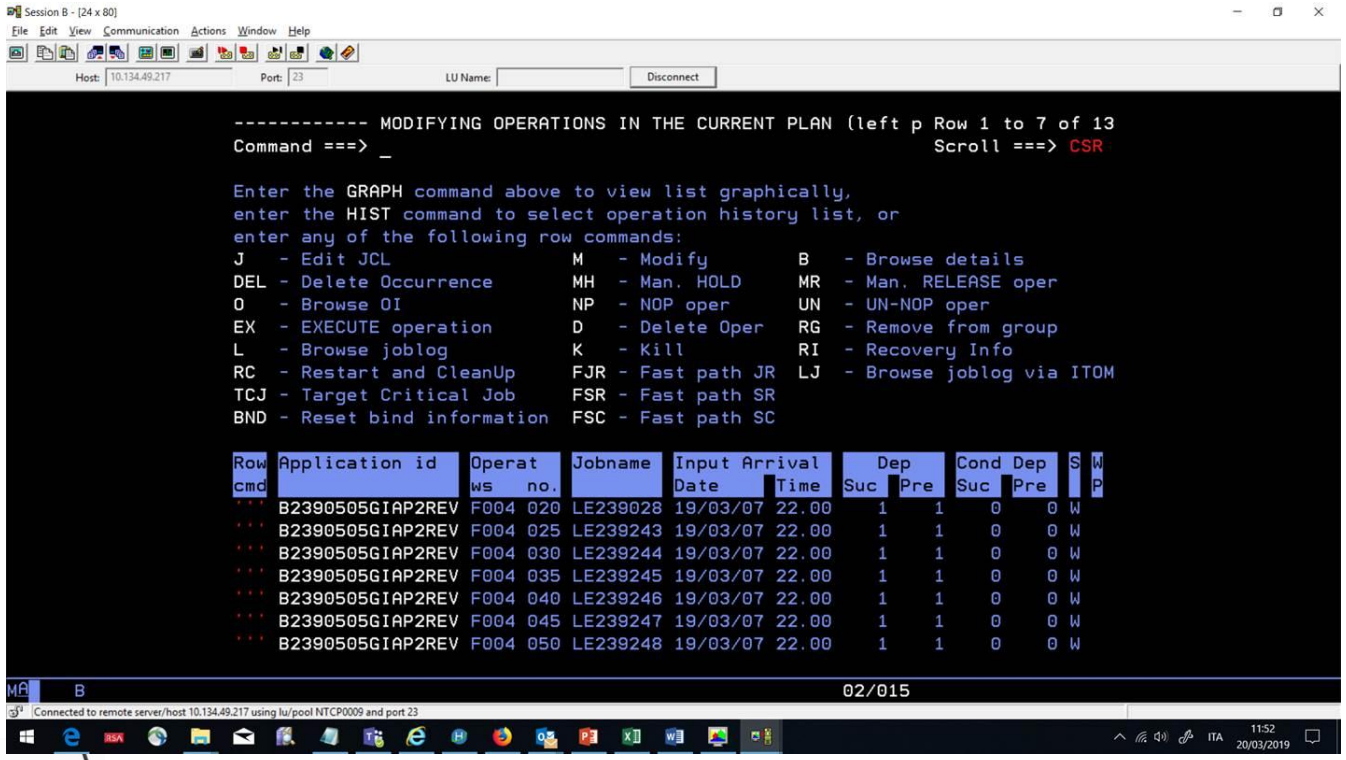
Generational shift

Skilled people are retiring

‘Tribal knowledge’ is disappearing

Junior people facing with mainframe … a real story

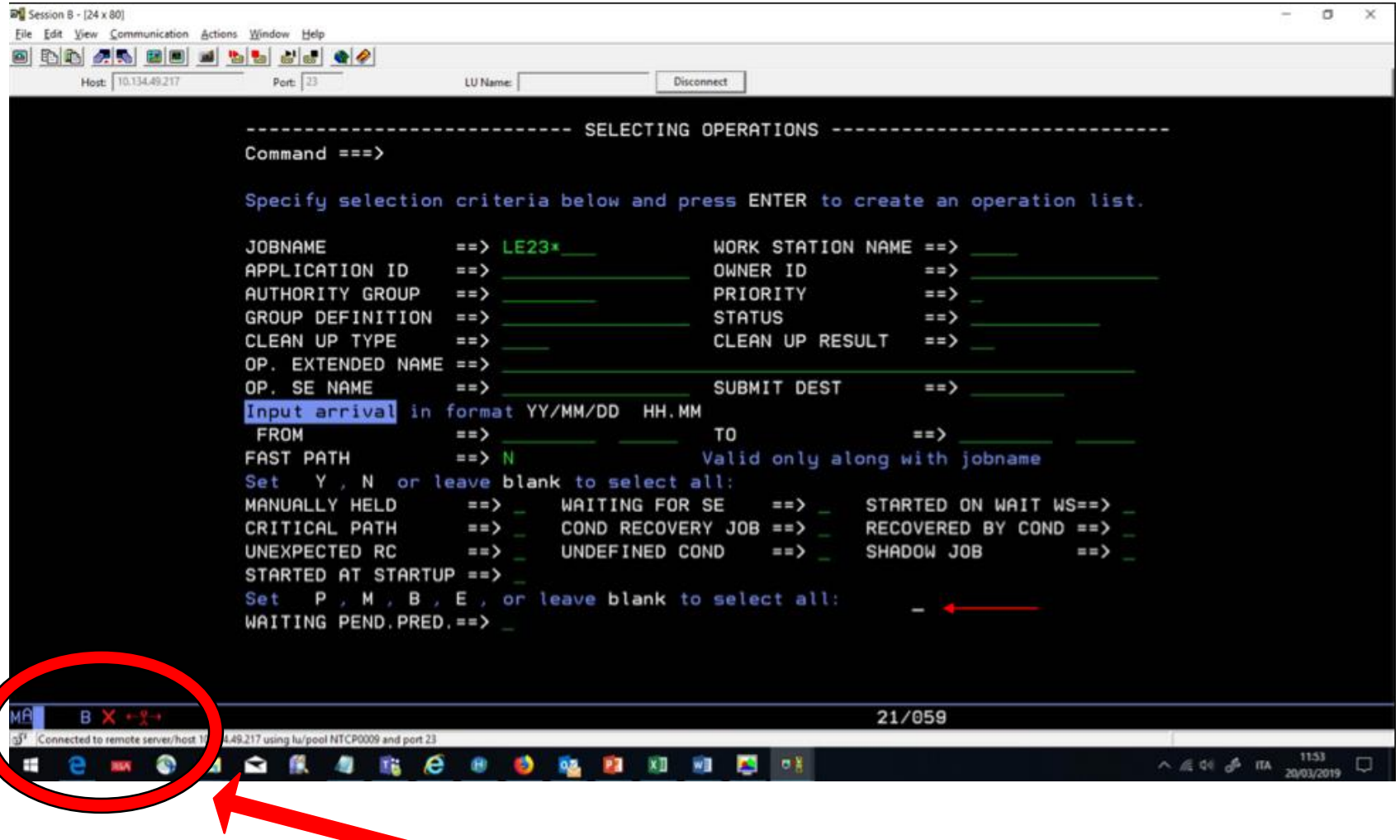
“We hired a young guy … he looked like he was 12 years old … likely he was 20”



“He started working on 3270 using the mouse !!!

… and he was very slow …

Junior people facing with mainframe … continues



"At a certain point he was puzzled … why he was not able to type the command he wanted to type… "

"… no way to see the **red x** at the bottom of the page …. "

Junior people facing with mainframe … through a Web User Interface

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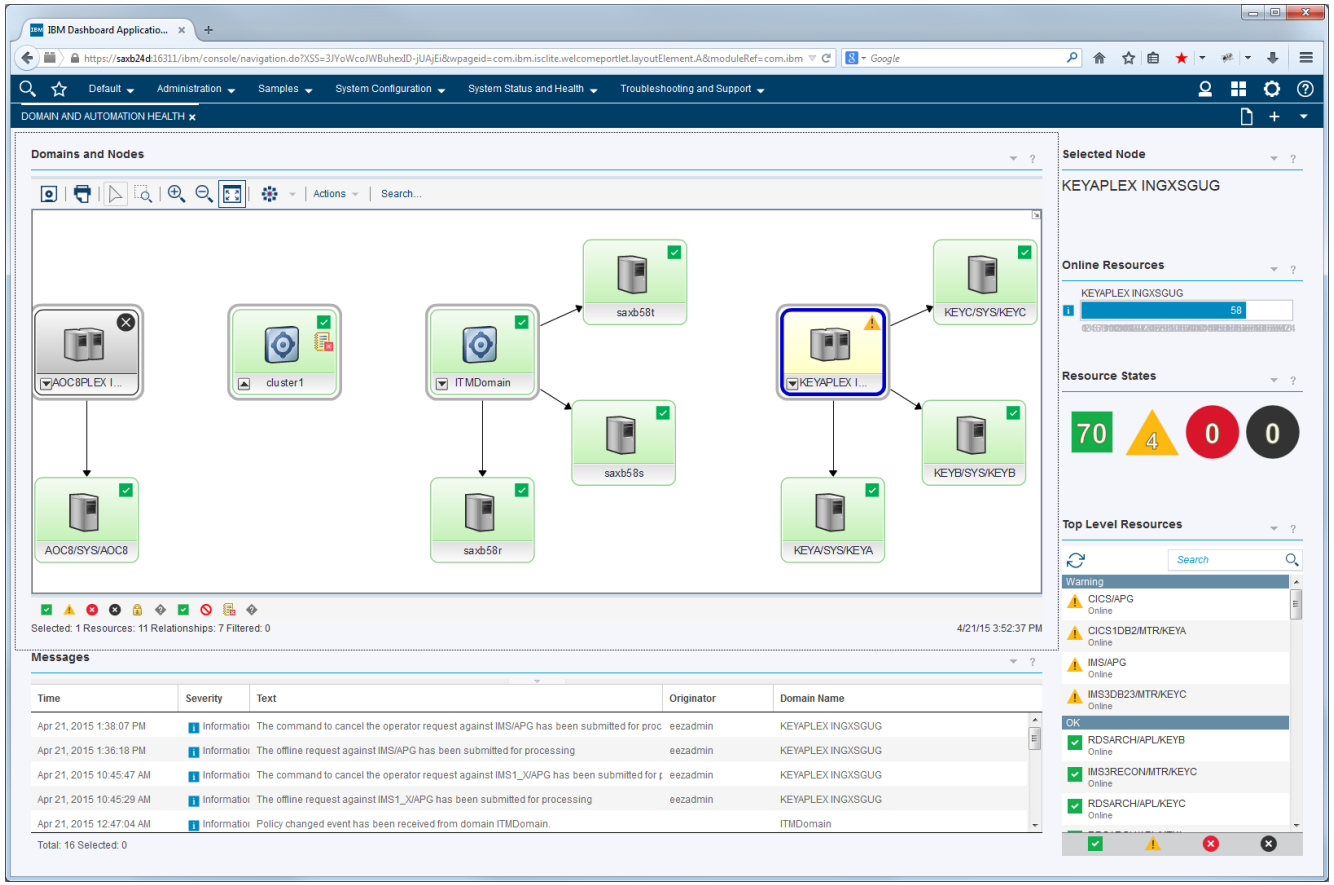
"Then we adopted a Web UI to manage mainframe … and … "



" … he was more relaxed, proud of what he was able to achieve and fast … "

Industry Example: motivation for using SMU

California Department of Technology
Office of Technology Services

- Make **Mainframe** platform **more approachable**
- Provide management tools to **more personnel**; **less experience required**
- 3270 screens can be overwhelming to new users: PF keys, navigation thru panels and memorization required
- **Save training time** with intuitive SMU interface Fewer key strokes, fewer views (less is best) and commands are pre-built and in context
- SMU **modern graphics** has advantages over 3270 (e.g. **topology**)
- Leverage and extend existing z/OS back-end and management tooling. Complements 3270 and TEP – data matches, single collections, fewer clicks, easier access to consolidated information
- Increased visibility to automation states in place for mainframe
- “Many” more folks asking for access to mainframe information after initial deployment of SMU

Needs and opportunities

Need: Ensure **availability** of IT resources supporting business application, enabling **quick and safe changes** to the environment

Opportunity: make System Automation part of devOps journey to react faster to changes

Need: Hybrid/Multi cloud environments requires easy **Integration** of hybrid cloud application with Service Management tools

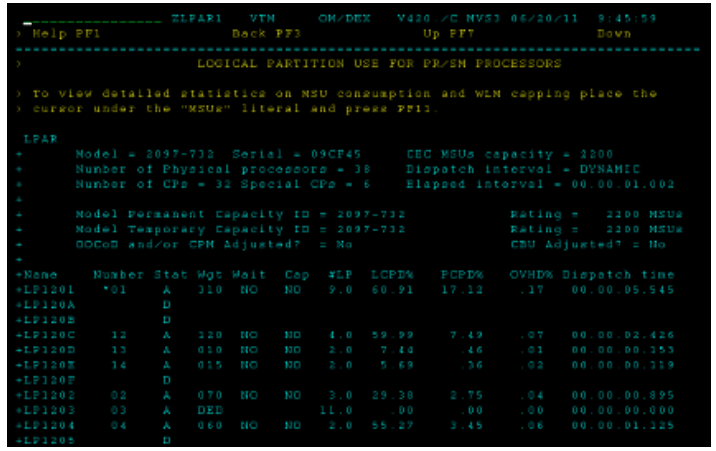
Opportunity: open **standard access** to mainframe resources and data

Need: Modernize and improve Usability of the Service Management tools

Opportunity: Leverage modern an **standard** tool to **reduce TCO** and to enable **faster on-board** of young talent

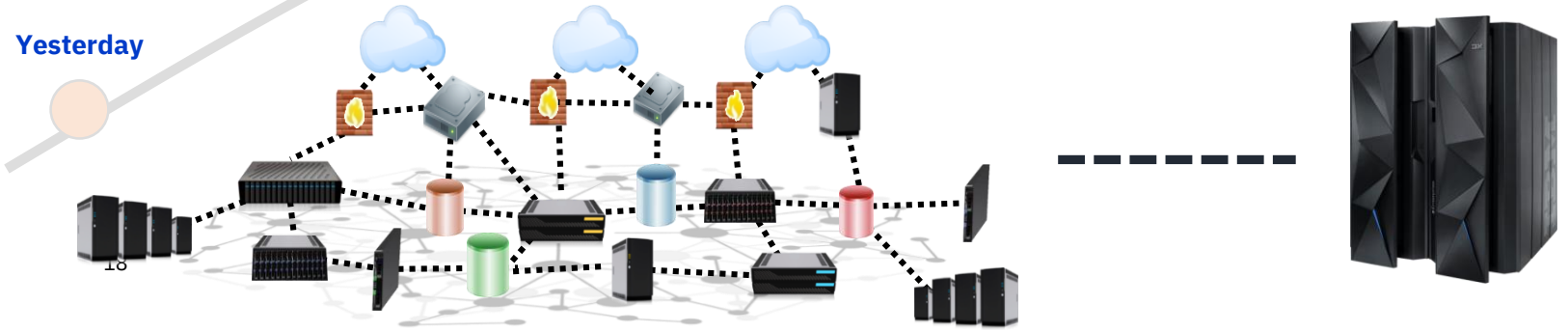
Legacy Mainframe Management Challenges

- Lack of **integration** with the broader enterprise
- Deep z/OS **skills** required
- Many full time employees (FTE's) needed to resolve issues



Operating in Siloed teams

Mainframe is a black box



IBM Z Operations Transformation

Optimization through Integration

Integration of the mainframe with commonly used enterprise wide tooling leveraging Standard access and latest technology updates

Today

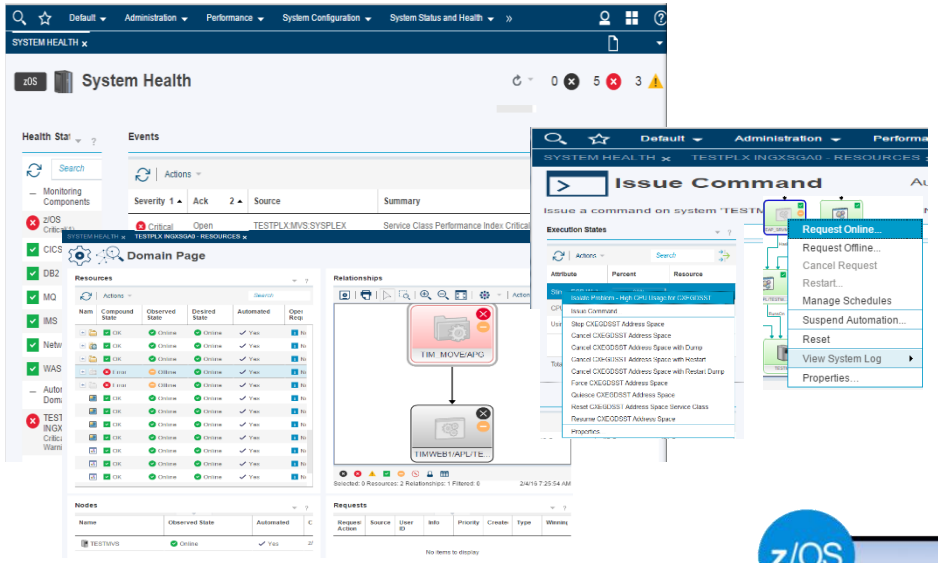
APPDYNAMICS

splunk>

IBM

elastic

API



docker

z/OS
IBM z/OS®
Container Extensions - zCX

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IBM Z Automation portfolio overview

Latest news just announced

Announcement on October 1st

Announcements: 219-394 and 219-484

Z Service Management Suite V1.6

Service Management Unite Enterprise Editionv 1.1.7

- SMU Performance Management (OM Dashboards)
- SMU Automation (SA/NV Dashboards)
- SMU Workload Scheduler (ZWS Dashboards)

- NetView 6.3
- System Automation 4.2
- Tivoli Asset Discovery for zSystems
- OMEGAMON for CICS
- OMEGAMON for IMS
- OMEGAMON for Messaging
- OMEGAMON for DB2 PE
- ITCAM for AD
- OMEGAMON on z/OS
- OMEGAMON for Networks
- OMEGAMON for Storage
- OMEGAMON for JVM
- OMEGAMON DE

Z Service Automation Suite V1.2

Service Management Unite Enterprise Edition v 1.1.7

- SMU Performance Management (OM Dashboards)
- SMU Automation (SA/NV Dashboards)
- SMU Workload Scheduler (ZWS Dashboards)

- NetView 6.3
- System Automation 4.2
- Workload Scheduler 9.5

Z System Automation 4.2

SMU for Automation v 1.1.7

- SMU Automation (SA/NV Dashboards)

- System Automation

Z NetView 6.3

SMU for Automation v 1.1.7

- SMU Automation (SA/NV Dashboards)

- NetView

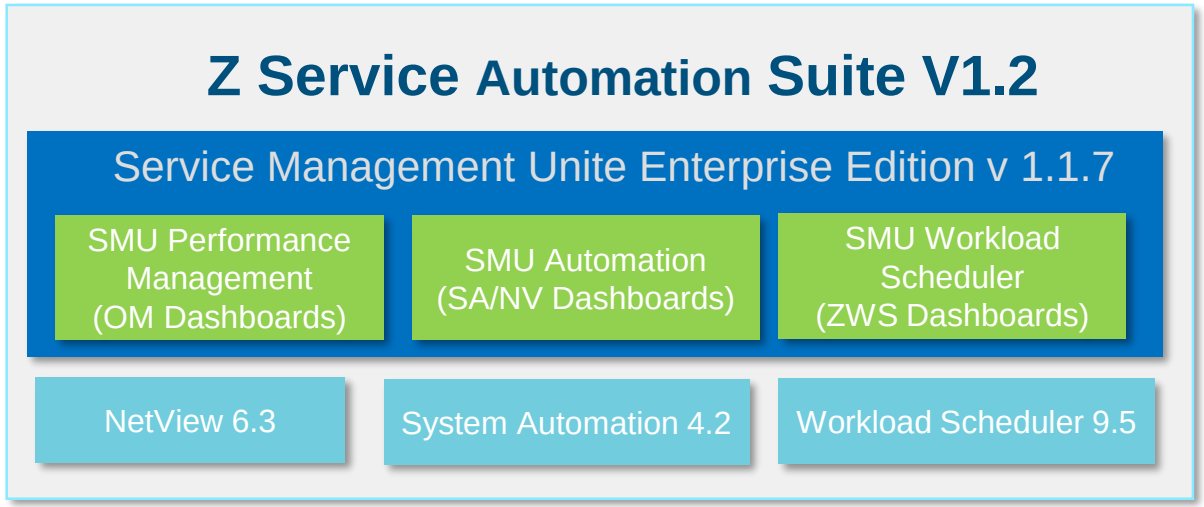
IBM Z NetView for Continuous Availability V6.3

GA on December 6th

Suites commonalities and differences

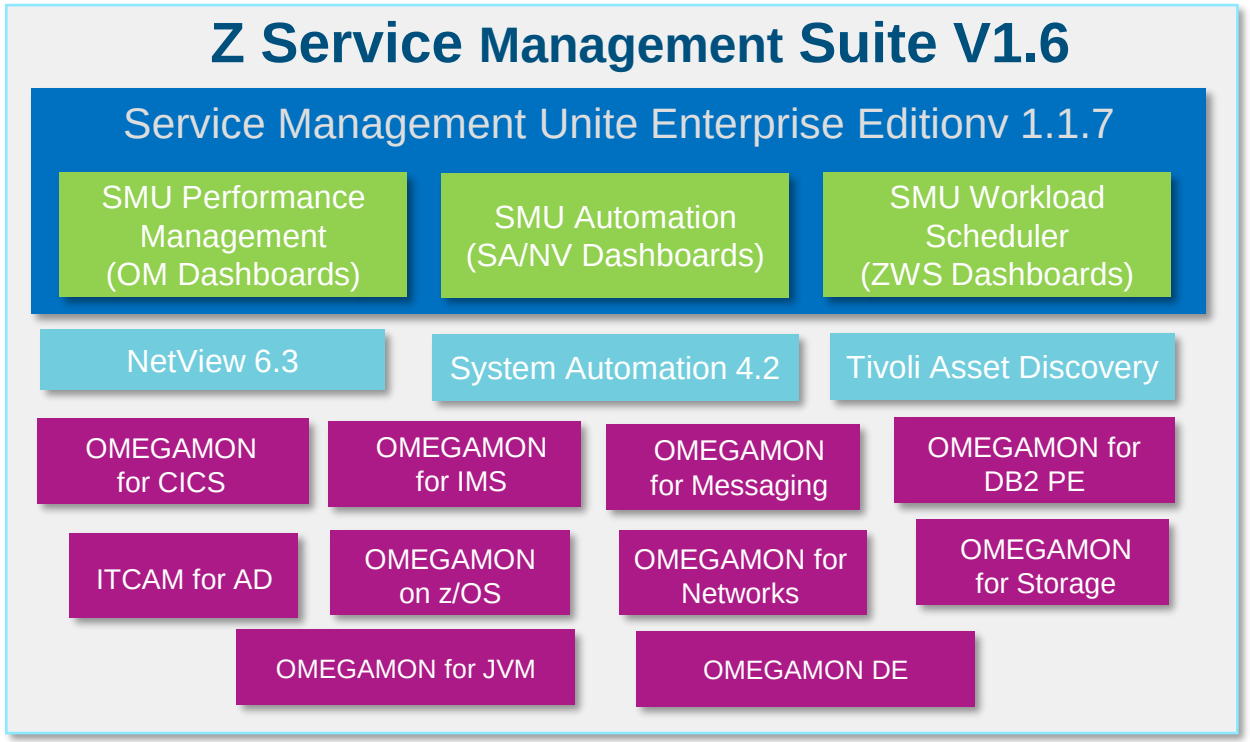
Commonalities: Service Automation Suite and Service Management Suite share

- **Service Management Unite Enterprise Edition** with Automation, Performance Management and Sceduling dashboards
- **System Automation** and **NetView**



includes **IBM Z Workload Scheduler**

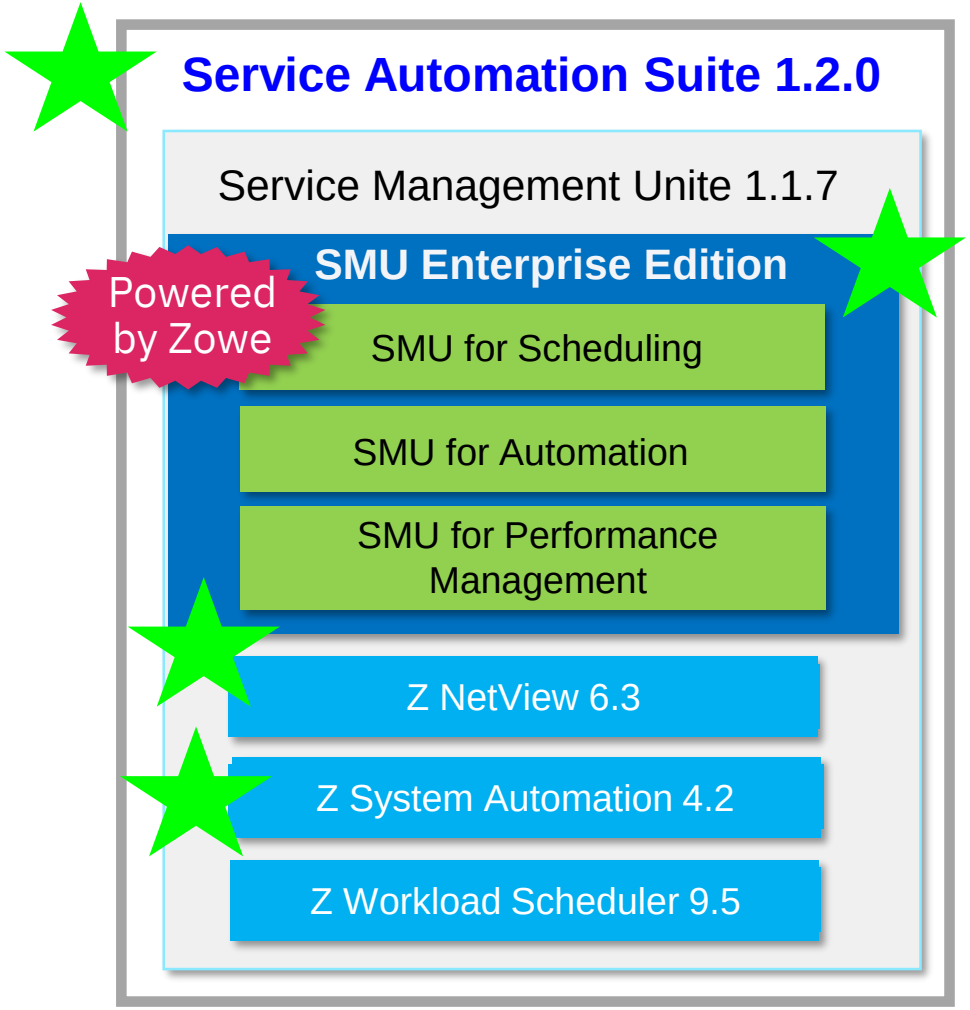
For Clients with a need for **a comprehensive automation solution (System, Applications and Batch)**



includes **Tivoli Asset Discovery** and **Omegamon's**

For Clients with a need for **a comprehensive monitoring solution**

Optimizing enterprise management



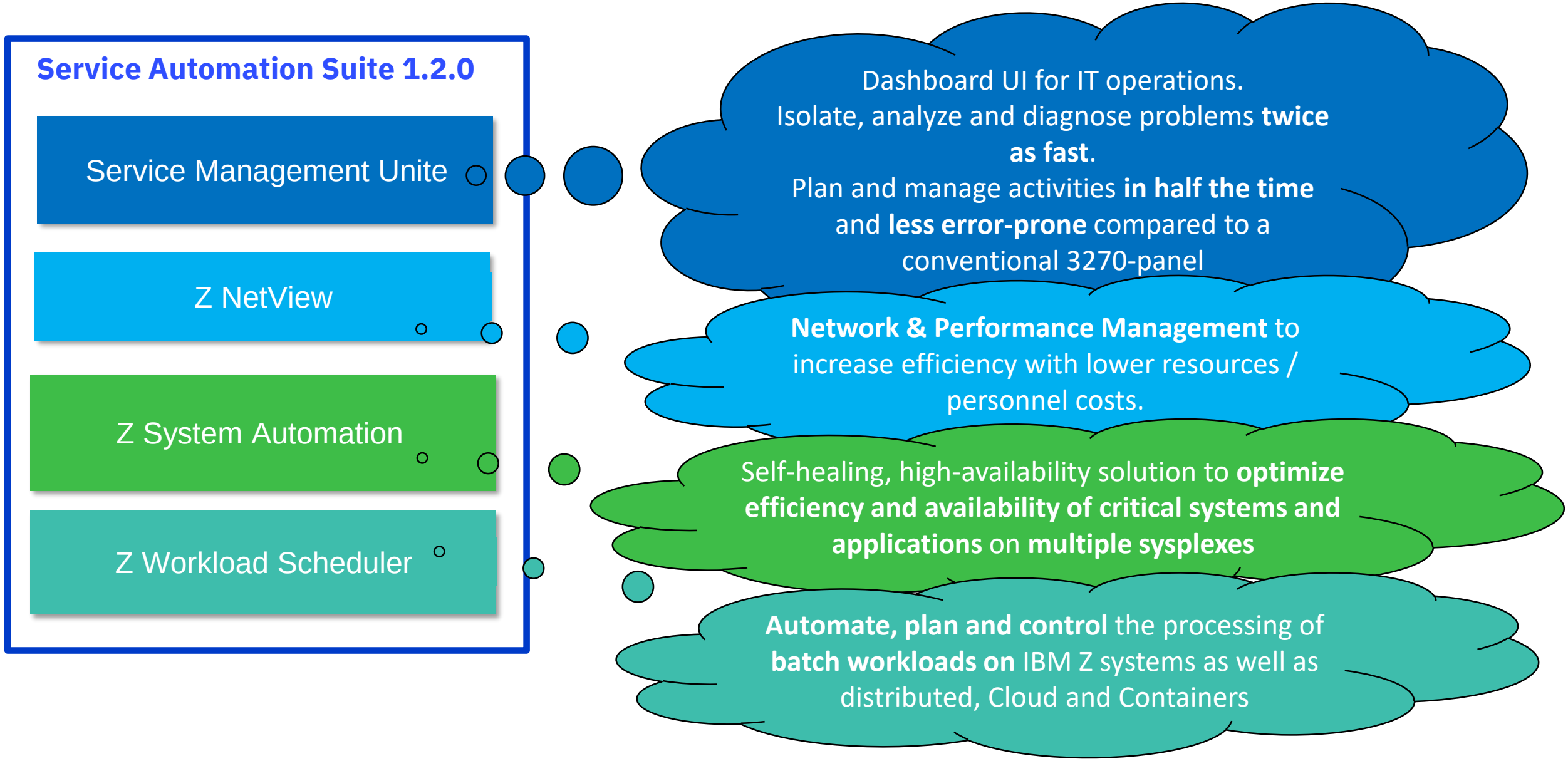
Service Automation Suite is a ***new offering*** that provides ***at a glance overview on System Automation. Workload Scheduling and Network Management on Z managed resources***.

Zowe Conformant

Clients have unmatched visibility into their defined systems management environments ***with guided problem identification, isolation, and resolution workflows*** to keep the workload up and running.

"Showing the status of workstations together with the System Automation resources for the Workload Scheduler infrastructure will be very helpful for operators."

IBM Z Service Automation Suite v 1.2.0



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Service management Unite

A modern, intuitive and customizable Web UI

SMU: Key user personas & pain points

Annette
Operations Analyst

Josh
Junior Operations Analyst

Annette and Josh are responsible to keep the systems running with the desired set of applications and features.

Zach
System Programmer

Doug
IT Operations Manager

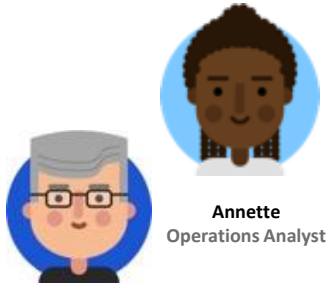
Marnie
Scheduler Admin

Michael
Automation Administrator
Michael is responsible to keep the systems running with the desired set of applications and features.

Jim
Subject Matter Expert
Jim handles any complex problems that operators cannot directly solve

1. **Overwhelming complexity caused by growing amount of data, systems, and applications**
2. **High amount of manual work in order to be compliant with mandatory change management processes**
3. **Growing demand for dynamic application provisioning results in high administrative and coding effort to put new automation in production.**
4. **Growing risk for service and system outages caused by increasing skill shortage in datacenters.**
5. **Operations inefficiency through lack of standards in Z service management.**

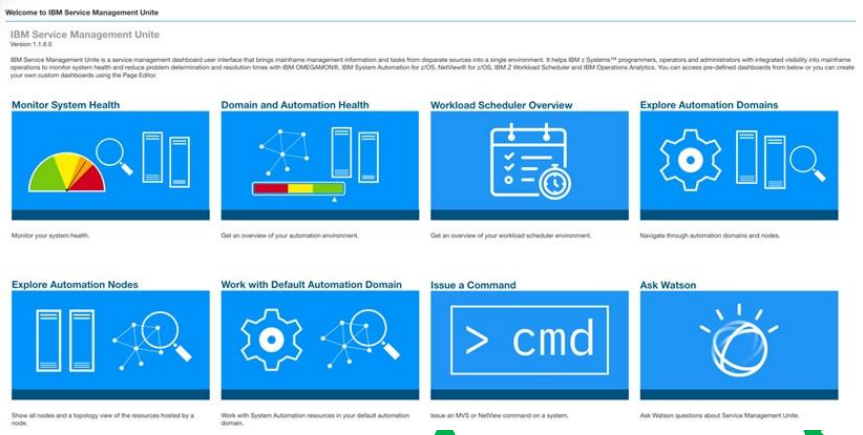
Service Management Unite



SMU Integrated Dashboards support Mainframe Operations. Customizable dashboards for a cross-domain consolidated view, less data, requires less skill and experience

Zowe Conformant

Analytics (IZOI)



Automation (System Automation and NetView)

Performance (OMEGAMON)

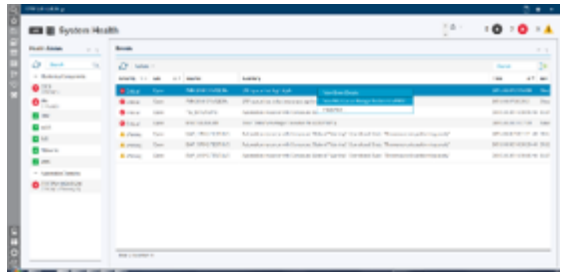
Zowe APIs, Apps

Scheduling (Dynamic Workload Console)

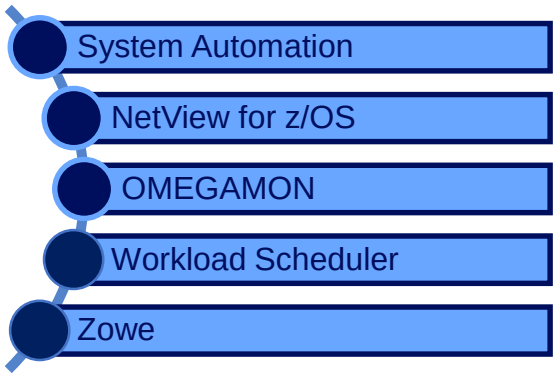
Time saving Integrated Web Dashboards built for mainframe Operations!

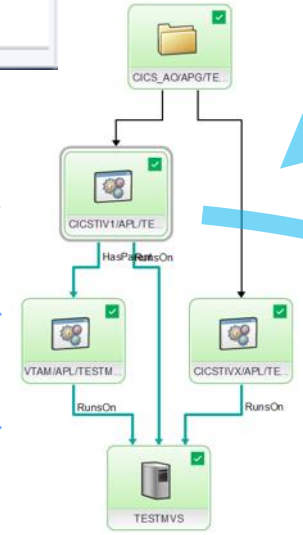
docker

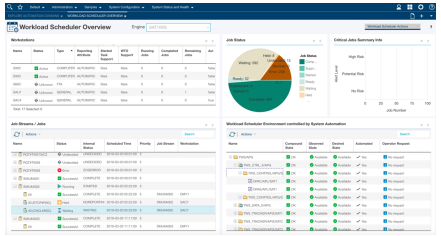
Resolve Problems with modern Dashboards



- See at a glance the health state of your environment
- Manage growing workload with the same operations team
- Customize your dashboards to maximize efficiency
- Improve productivity through intuitive systems control
- Enable faster on-boarding of young talent







Relationship between SMU and deep analysis tools

Operators: SMU Primary Users

- Assisted problem identification, isolation and triage
- Use alarms or alerts from monitoring, automation and job scheduling operational tooling
- Work across many domains; limited access
- Streamline their workflows with focused data before handoff to others for deeper analysis. Able to fix simple issues; limited access
- Operate automated applications and ensure scheduled workload runs as defined

Doug
IT Operations Manager

Annette
Operations Analyst

Service Management Unite

Seamless integration: UI, data, APIs, same context

Subject Matter Experts (SMEs): SMU Secondary Users:

- SMEs use SMU as well as deep dive tools
- Use maximum amount of performance data and tooling capabilities for critical, deep-dive
- Create and administer resource automation and scheduler batch workload for large environments
- Increase the degree of automation and administer using automation tasks to avoid manual tasks.
- System Programmers with deep skills and experience in a particular domain; Full access to issue commands
- Application developers familiar with COBOL, Java, C/C++, SQL and uses Eclipse and other IDEs with focused data

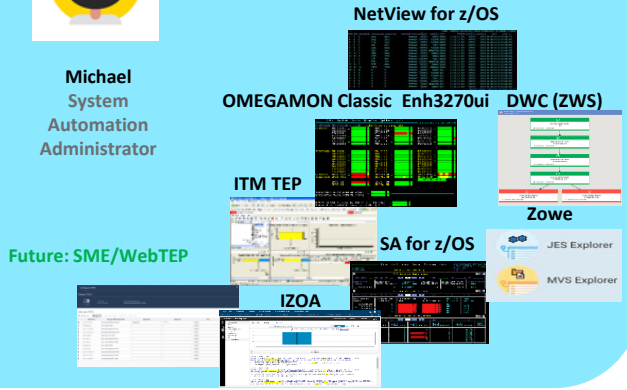
Marnie
Scheduler Admin

Jim
Subject Matter Expert

Zach
System Programmer

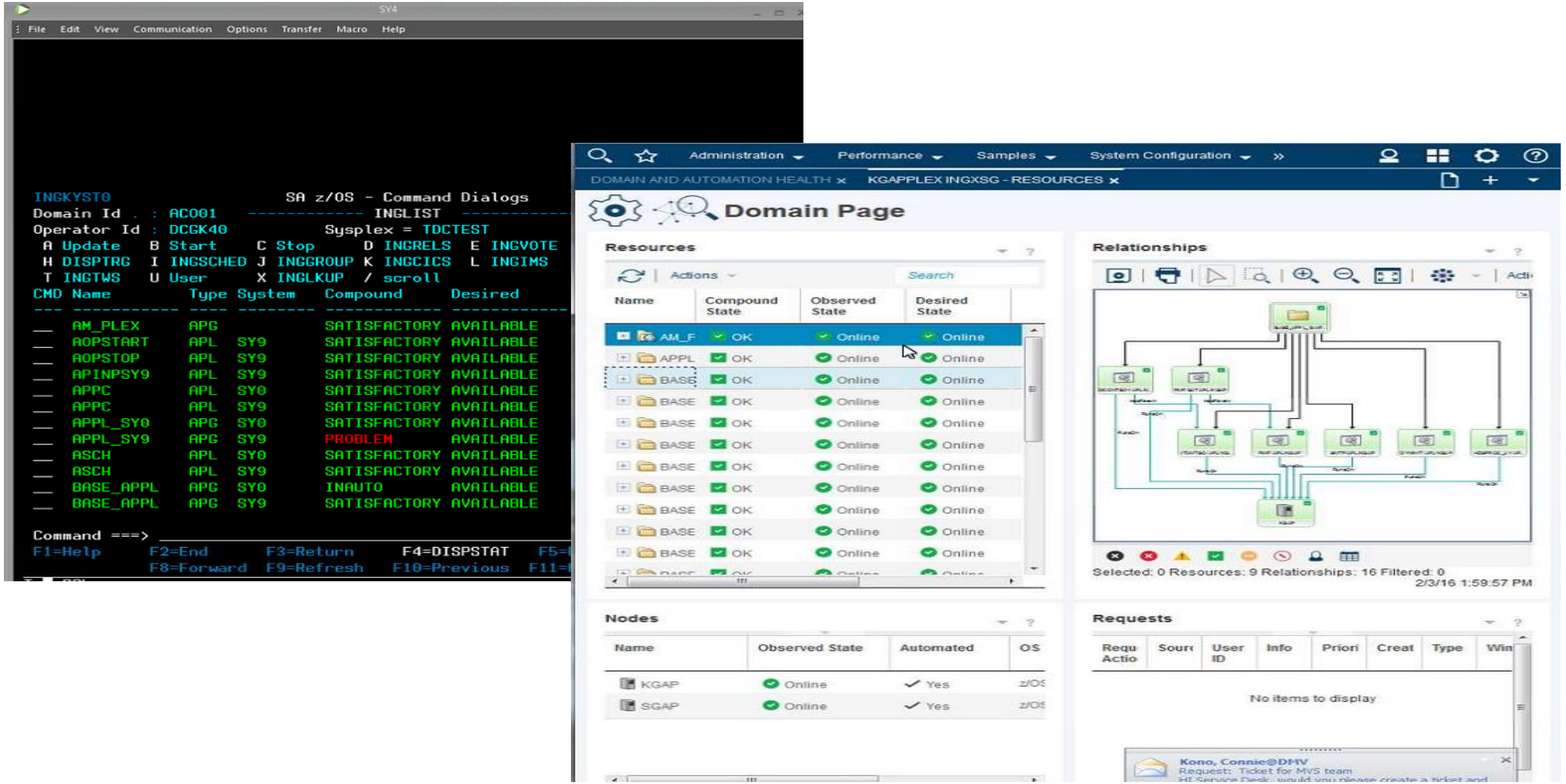
Michael
System Automation Administrator

SMU Complements Deep Dive Service Management Tools



Future: SME/WebTEP

Modern and intuitive user interface



SMU: Functional overview

SMU Performance Management

Consolidated System Health Dashboard

Problem Identification Dashboards

Overview pages with drill-down to details pages showing key metrics

- z/OS
- MQ
- CICS
- Networks
- DB2
- IMS
- WAS
- Java VM
- Storage

Problem Isolation Dashboards

Guided analysis for key problem areas and suggested actions to restore service.

- MQ
- z/OS
- Java VM

SMU Workload Scheduler

ZWS Overview Dashboard

- Job Streams
- Workstations
- Job Status
- Related SA resources
- Drill-down to DWC or SA Views

Execute **ZWS operational tasks** (set status, run a job, …)

SMU Automation

NV Domain Overview

View/Control **NV tasks** and their metrics

View **DVIPA metrics**

Administer Automation Statements

View **Canzlog**

Issue MVS/NV **commands**

NetView

Domain and Automation Health Dashboard
Overview of automation domain and system topology showing status summaries and events.

Graphical view of SA relationships

Manage schedules using a calendar widget

Control automated applications

- Start/Stop/Restart
- View/Cancel votes and requests
- Reset
- Suspend/Resume automation

Control appl. groups

- View/Modify group details and automation behavior
- Move to other systems
- Set availability/satisfactory target
- Trigger Rolling Recycle
- Exclude/Avoid systems

Captured messages

Exceptional messages

WTORs

Problem Isolation

End-to-End Automation (Cross-Sysplex, Cross-Platform)

System Automation

Zowe

Zowe JES Explorer

Zowe MVS Explorer

New in SMU 1.1.7

Service Management Unite

Welcome to IBM Service Management Unite

IBM Service Management Unite

Version 1.1.6.0

IBM Service Management Unite is a service management dashboard user interface that brings mainframe management information and tasks from disparate sources into a single environment. It helps IBM z Systems™ programmers, operators and administrators with integrated visibility into mainframe operations to monitor system health and reduce problem determination and resolution times with IBM OMEGAMON®, IBM System Automation for z/OS, NetView® for z/OS, IBM Z Workload Scheduler and IBM Operations Analytics. You can access pre-defined dashboards from below or you can create your own custom dashboards using the Page Editor.

Monitor System Health

Monitor your system health.

Domain and Automation Health

Get an overview of your automation environment.

Workload Scheduler Overview

Get an overview of your workload scheduler environment.

Explore Automation Domains

Navigate through automation domains and nodes.

Explore Automation Nodes

Show all nodes and a topology view of the resources hosted by a node.

Work with Default Automation Domain

Work with System Automation resources in your default automation domain.

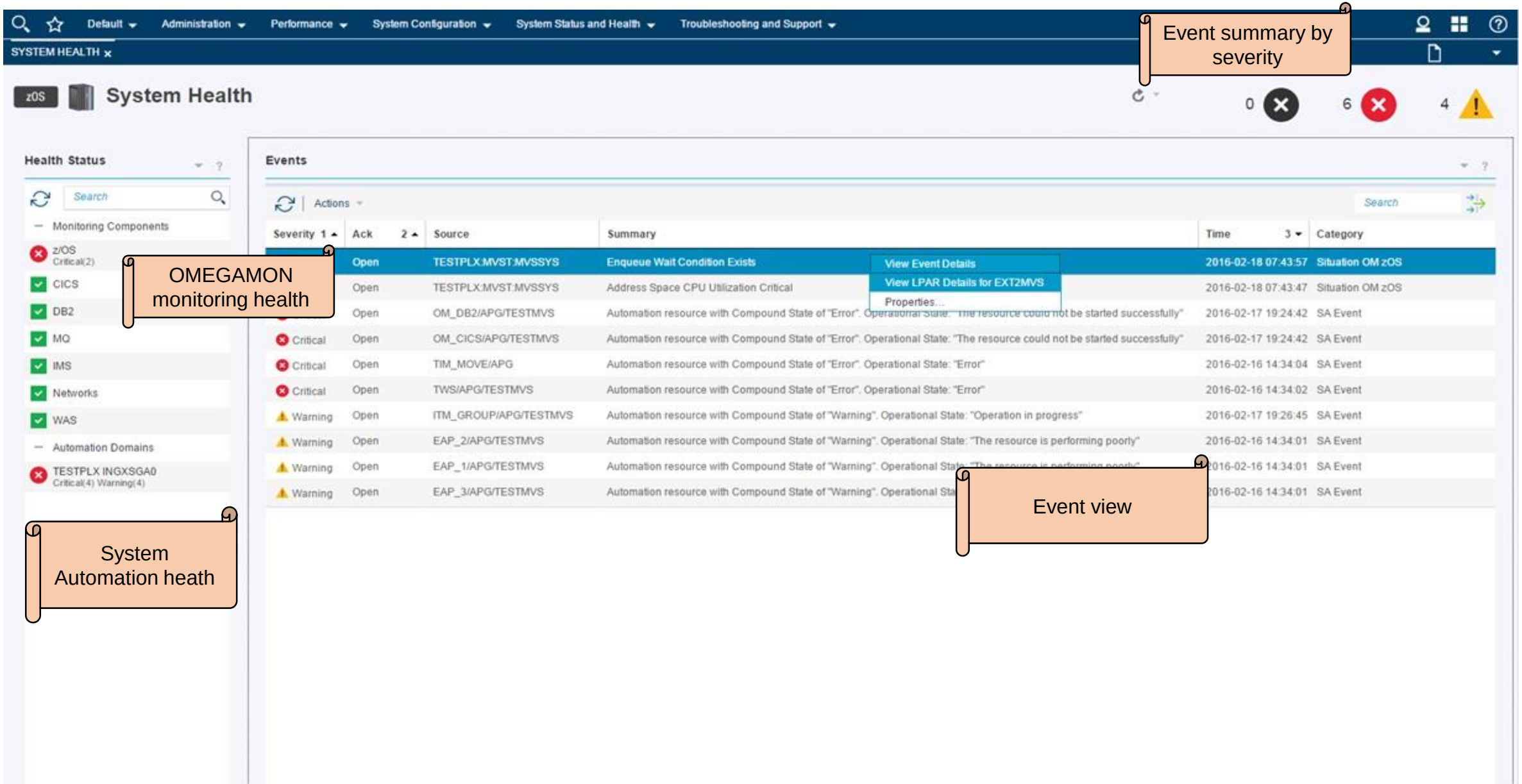
Issue a Command

Issue an MVS or NetView command on a system.

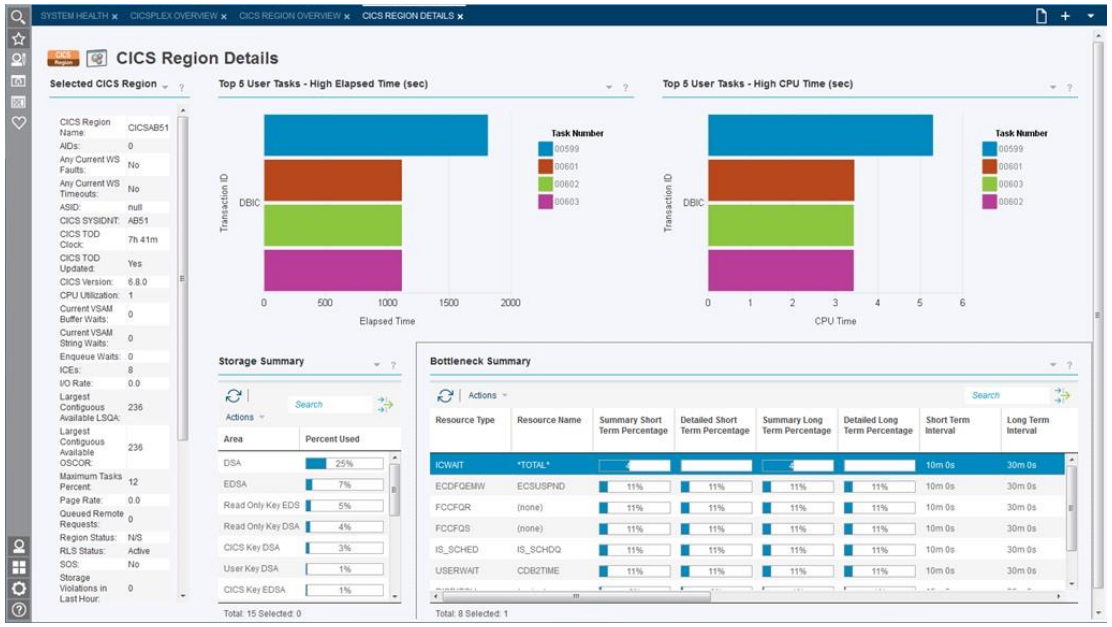
Ask Watson

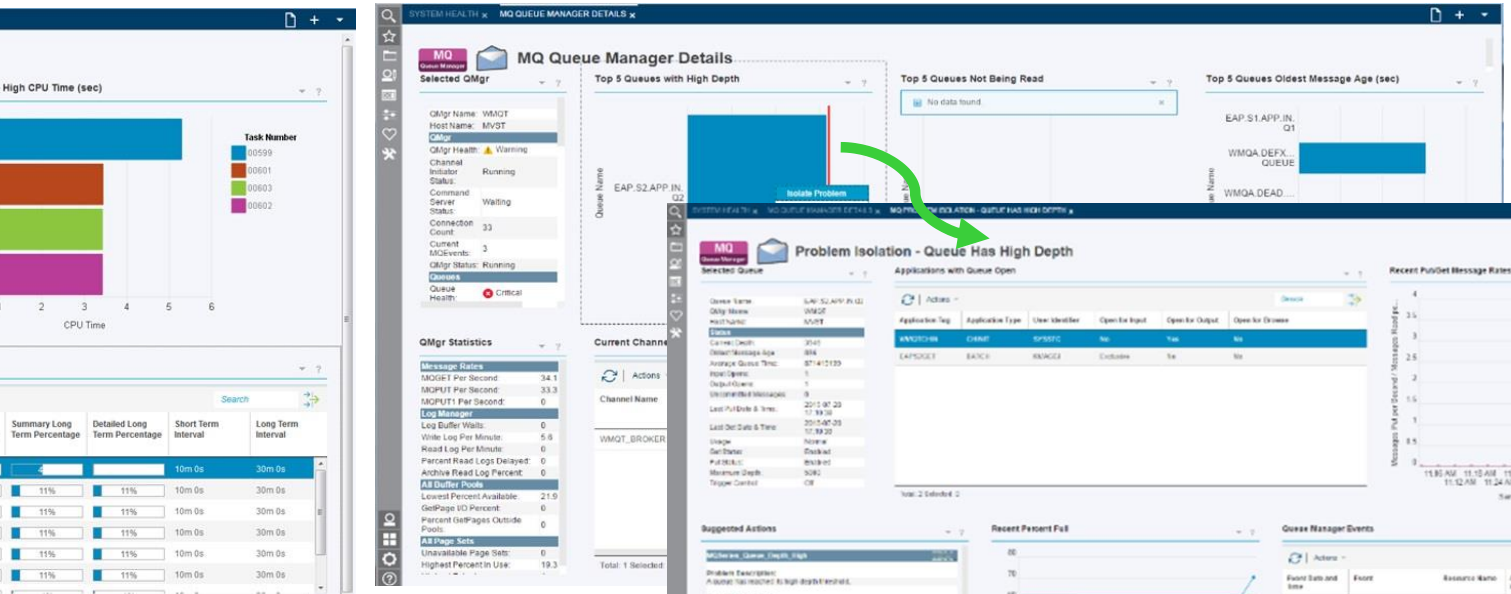
Ask Watson questions about Service Management Unite.

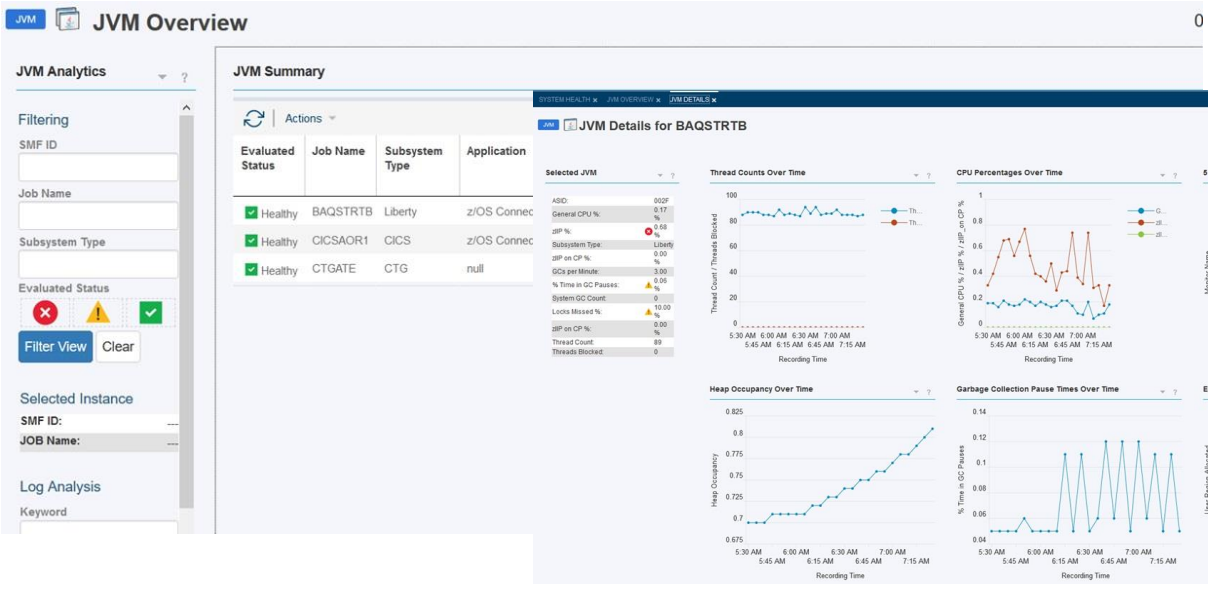
SMU: System Health dashboard

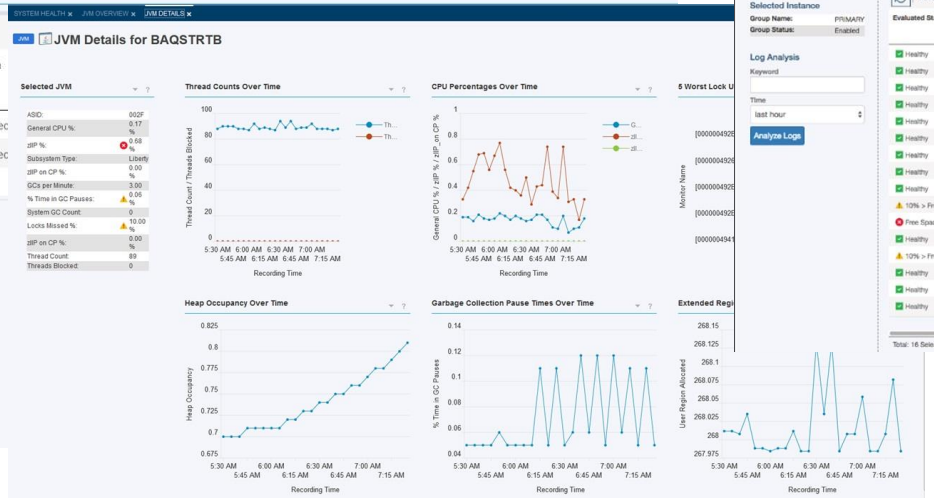


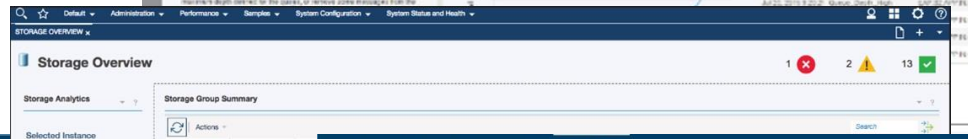
Performance Monitoring SMU Dashboards

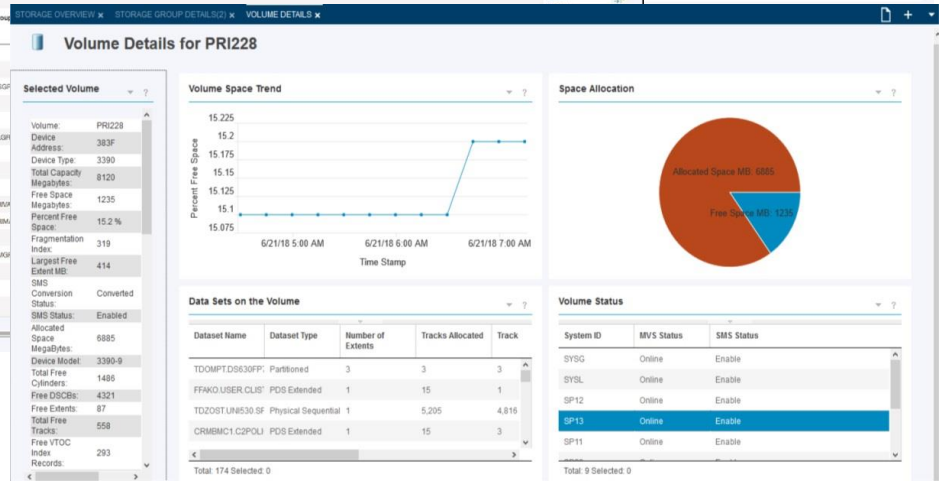




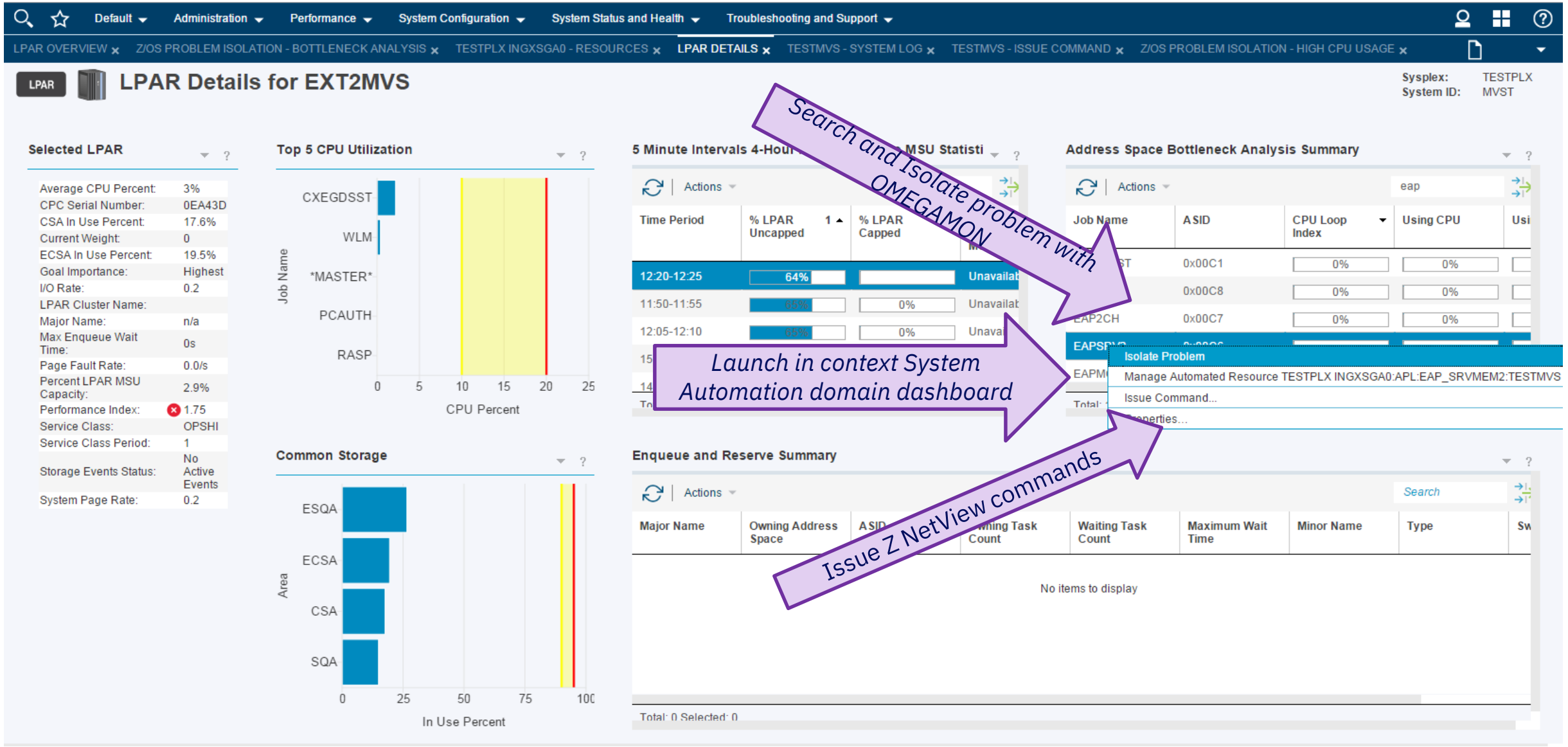






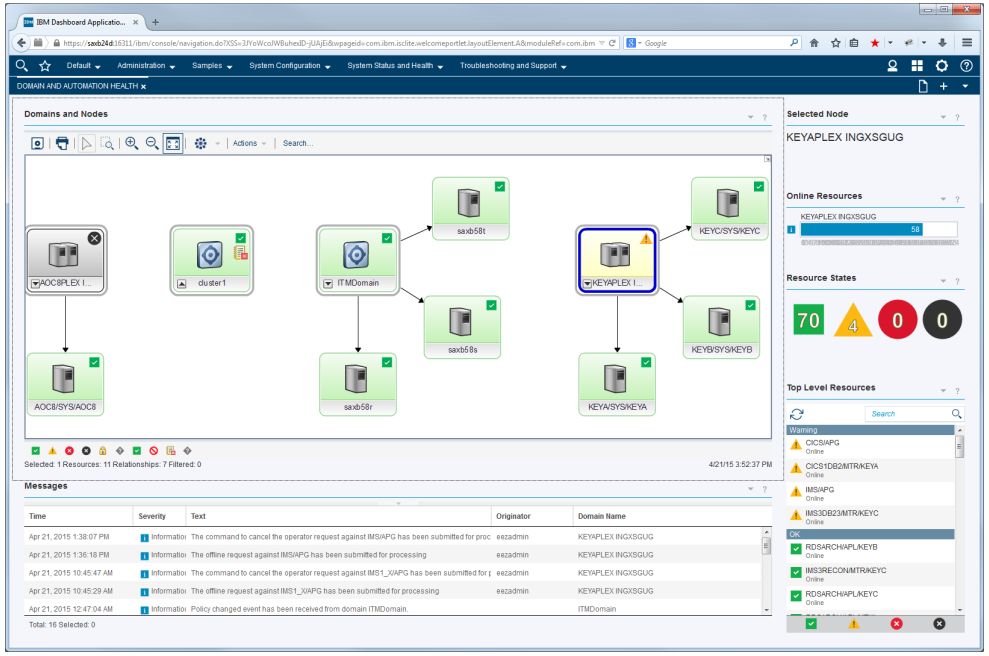


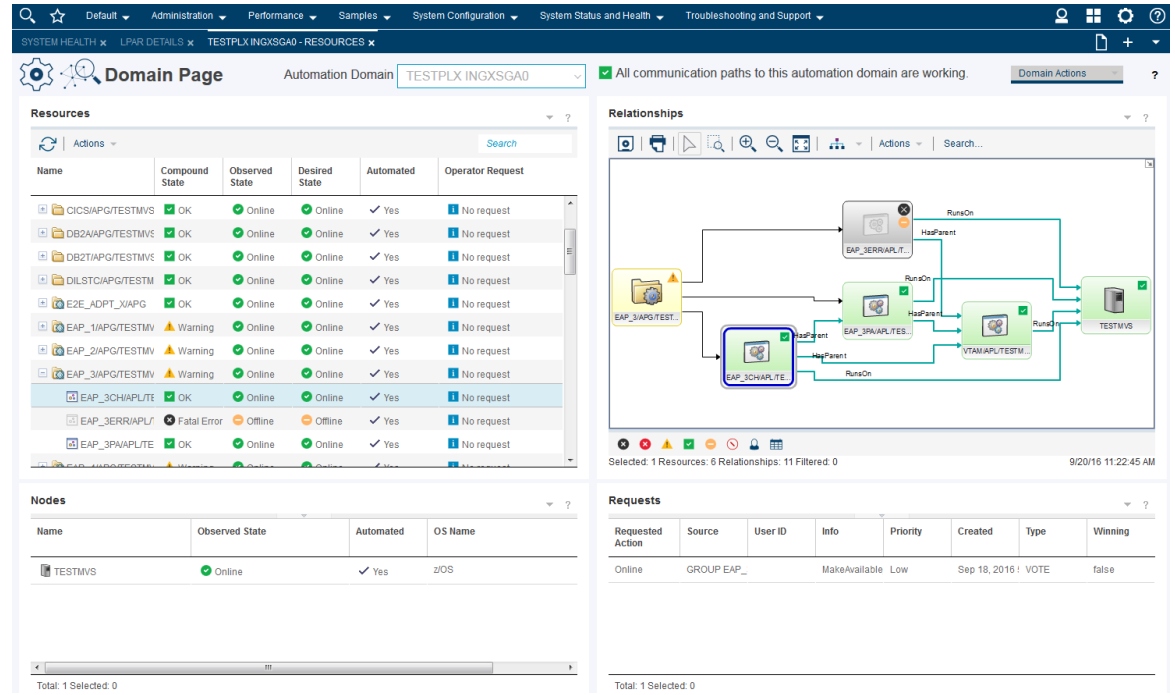
Integration cross domains

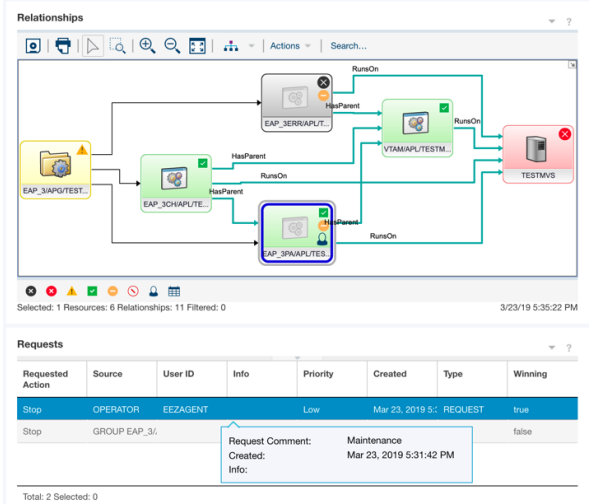


Automation Dashboards

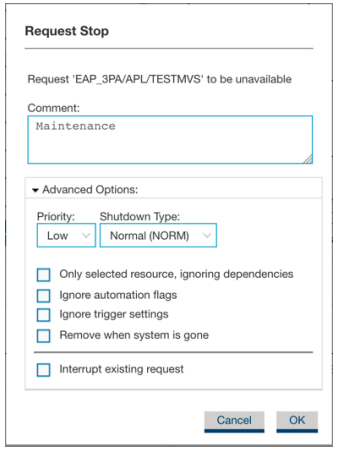
Overview of connected automation domains

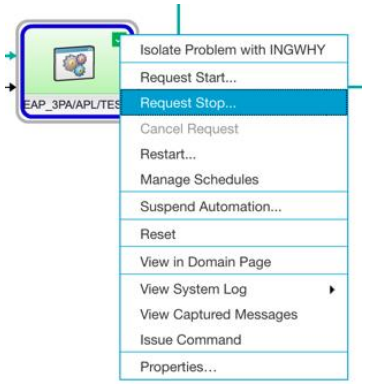






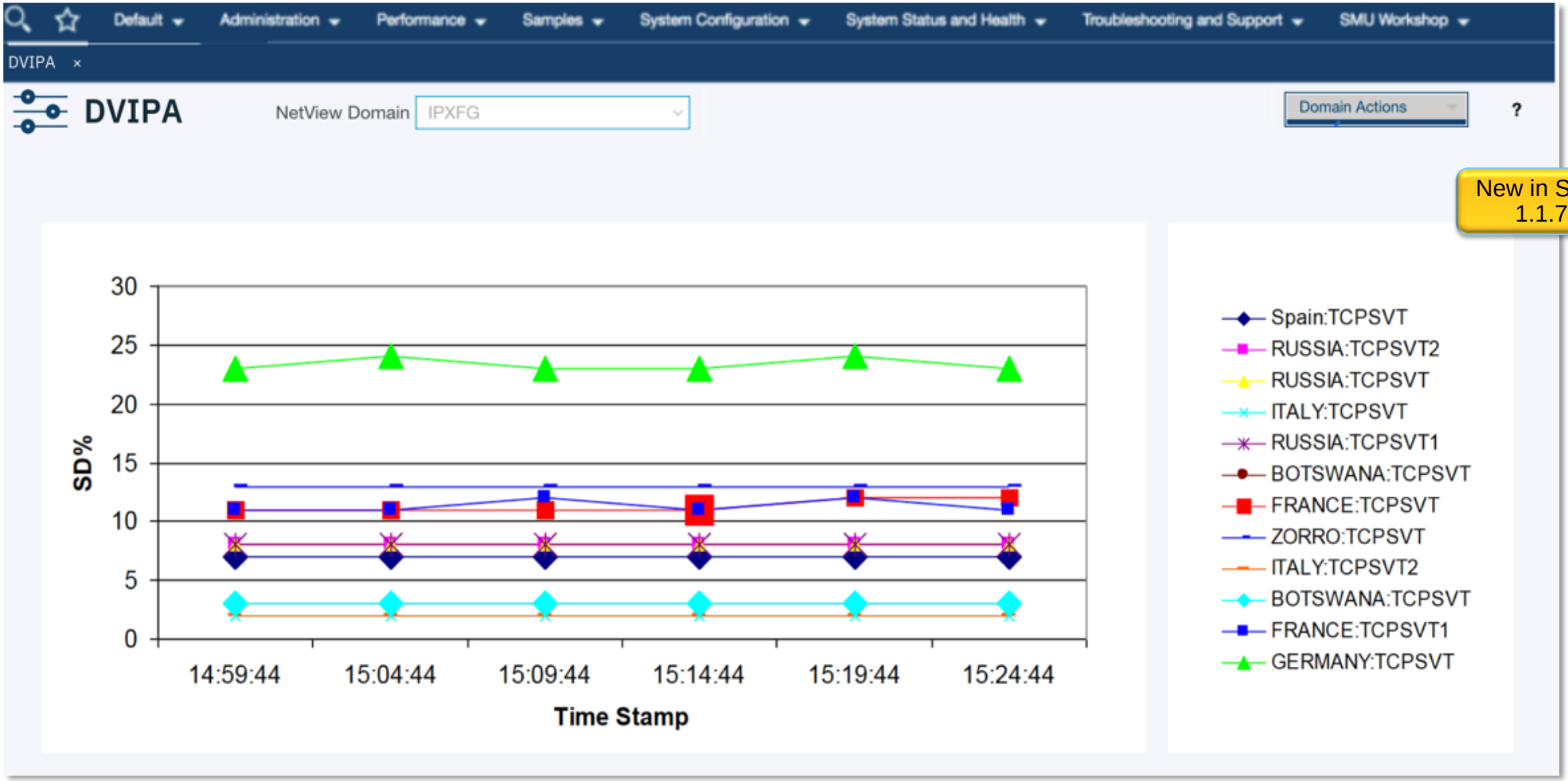
View of actions executed



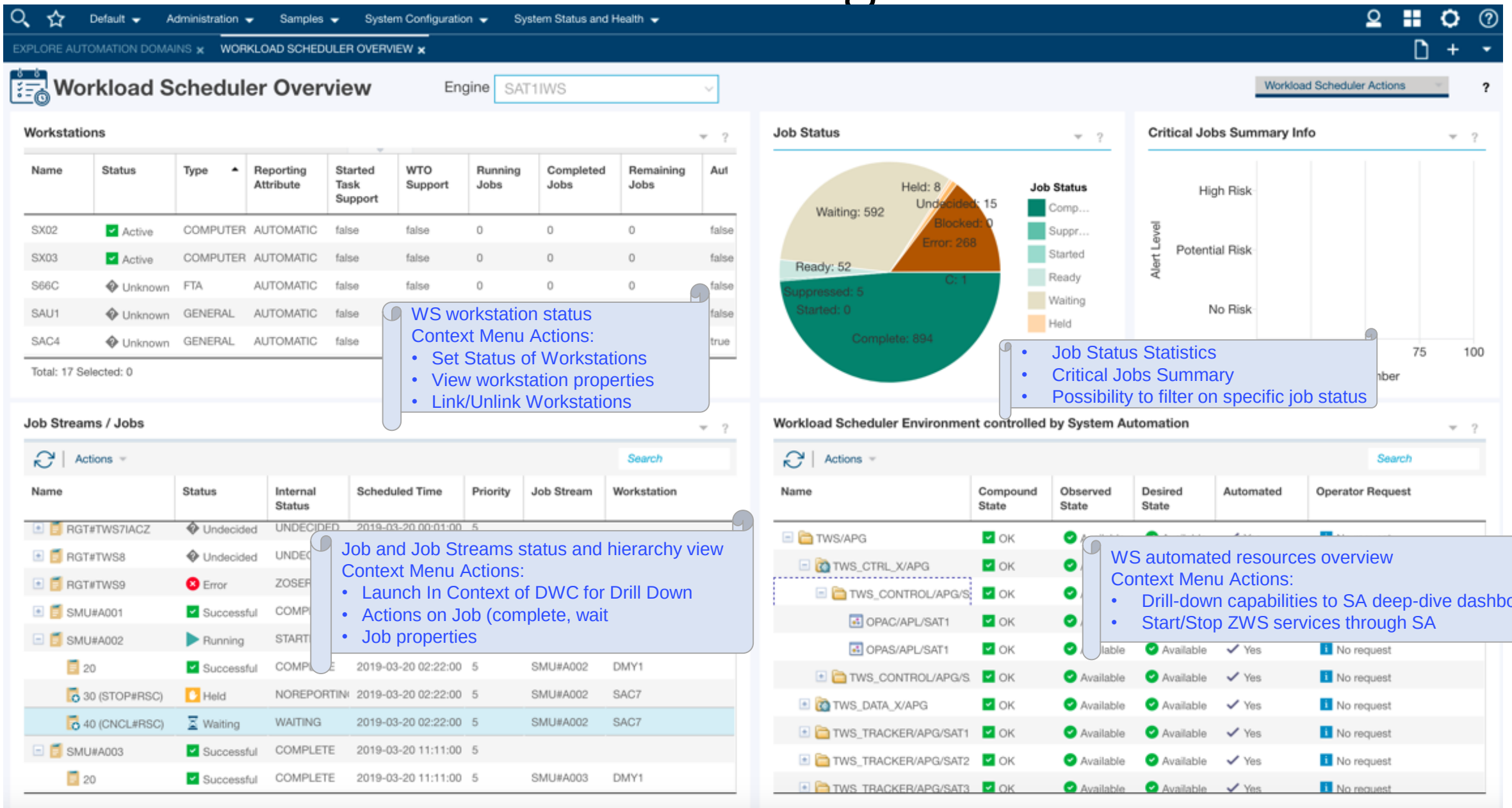


Take actions on specific resources

Network Details: Distributed DVIPA Statistics



SMU: Overview scheduling dashboard



SMU cross domain navigation

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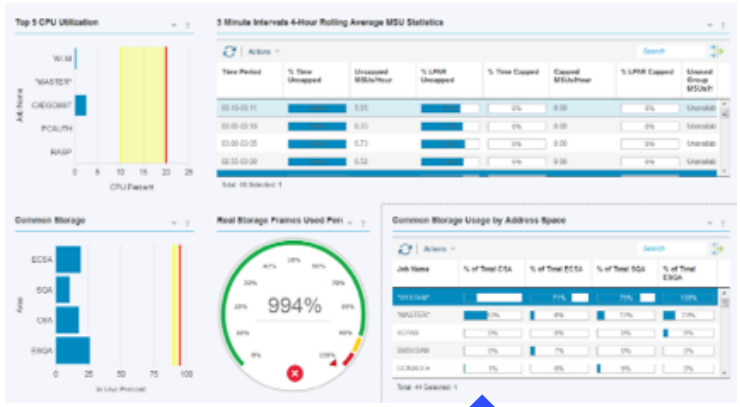
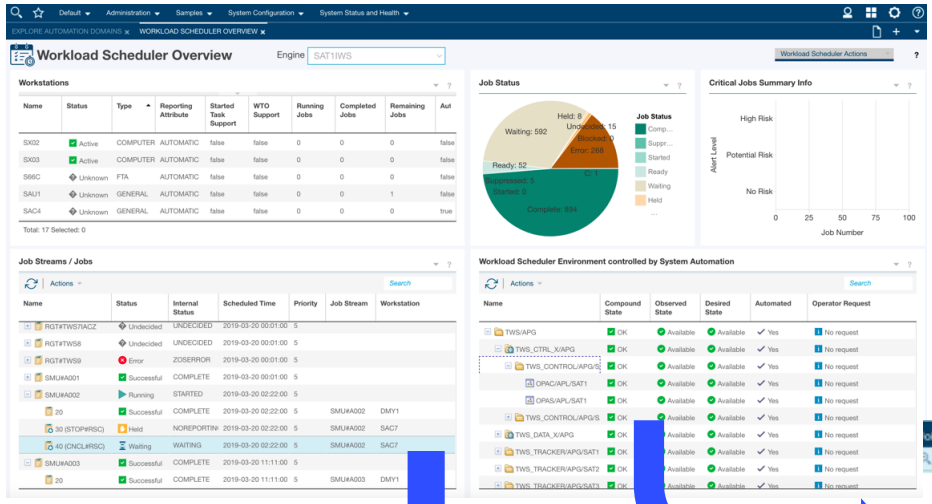
Service Management Unite EE

- SMU for Scheduling
- SMU for Automation
- SMU for Performance Management

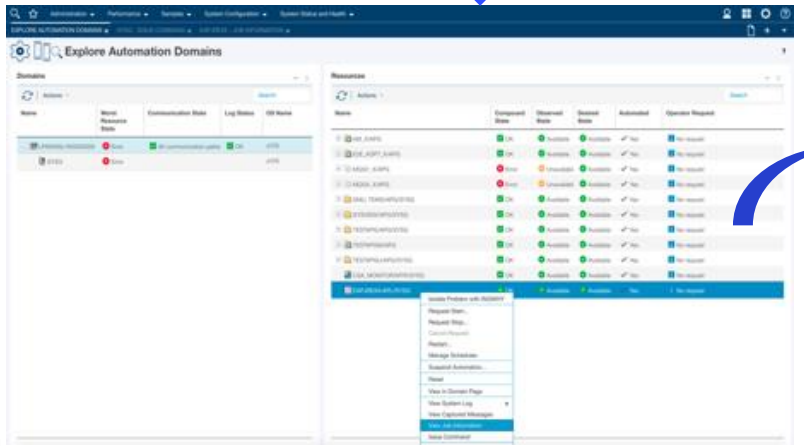


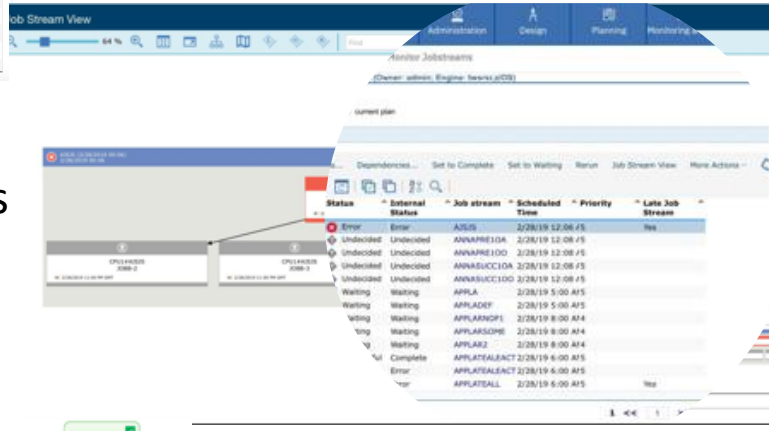
Monitor resource utlization



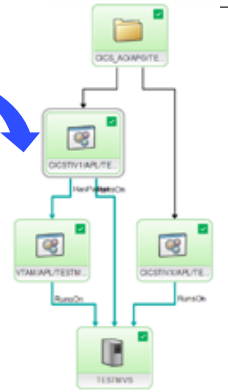
Drill-down capabilities to SA deep-dive dashboards

Drill-down capabilities to DWC deep-dive dashboards



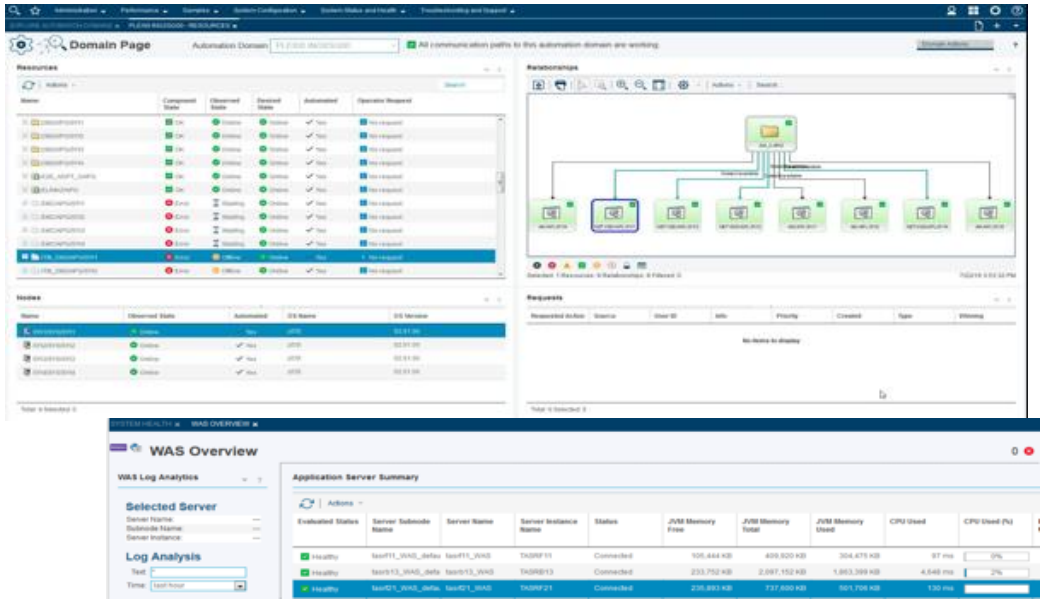


At a glance overview on IZWS resources and their status (Applications, Operations, Workstations) with **seeamless navigation in Dynamic Workload Console**



Start/Stop IZWS services through SA from overview dashboard

APIS IT creates integrated monitoring and automation for complex networks using IBM Service Management software



Business Need:

- APIS IT had numerous heterogeneous systems, including mainframe and other types of servers. Plus, like many companies, APIS IT's IT environment was becoming increasingly complex. The company needed to find a comprehensive monitoring solution so it could integrate monitoring data from multiple systems to provide a single view into its IT operations.

Solution:

- APIS IT uses IBM® Service Management Suite for z/OS® software and IBM Service Management Unite software to gain a comprehensive view into its IT operations. The two applications provide a single point of control for systems management, so APIS IT can gather monitoring data from all of its systems, including hardware and software resources.

"We are under current revised service level agreements and we are achieving 99.91% of availability while at the same time system is constantly changing and growing, and new services are coming in."

Dražen Zadro, Systems Engineer, APIS IT d.o.o.

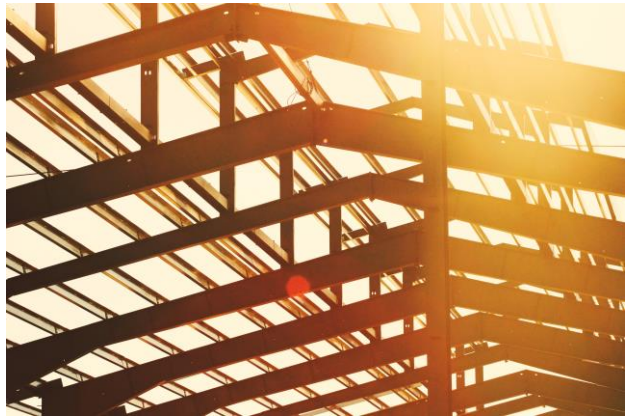
Client Benefit:

- Using the IBM software, APIS IT has achieved 99.91 percent availability under revised service level agreements (SLAs), even as it continues to change its IT environment and add to it. APIS IT has stated that the solutions ultimately help the government service its citizens better.

Introducing Zowe

GSE GUIDE SHARE EUROPE UK REGION

is a new **open source software framework** that provides solutions that allow **development** and **operations** teams to **securely**, **manage**, **control**, **script** and **develop** on the **Mainframe** like any other cloud platform.



A framework of software services

A simple, intuitive environment

An open source community

Zowe is the first open source project based on z/OS

ca technologies

Rocket

IBM

Zowe Vision Statement

Attract new people

- ✓ Demystify the Z platform
- ✓ Enhance integration and consumability
- ✓ Promote Open community of practice

Reduce learning curve

- ✓ Improve productivity
- ✓ Modern, platform-neutral interfaces
- ✓ Command Line Interface to enable Cloud-like Access to the Mainframe

Simplify architecture

- ✓ Reduce operational overhead
- ✓ Improve co-existence
- ✓ Enable rich ecosystem of free and commercial solutions
- ✓ REST APIs

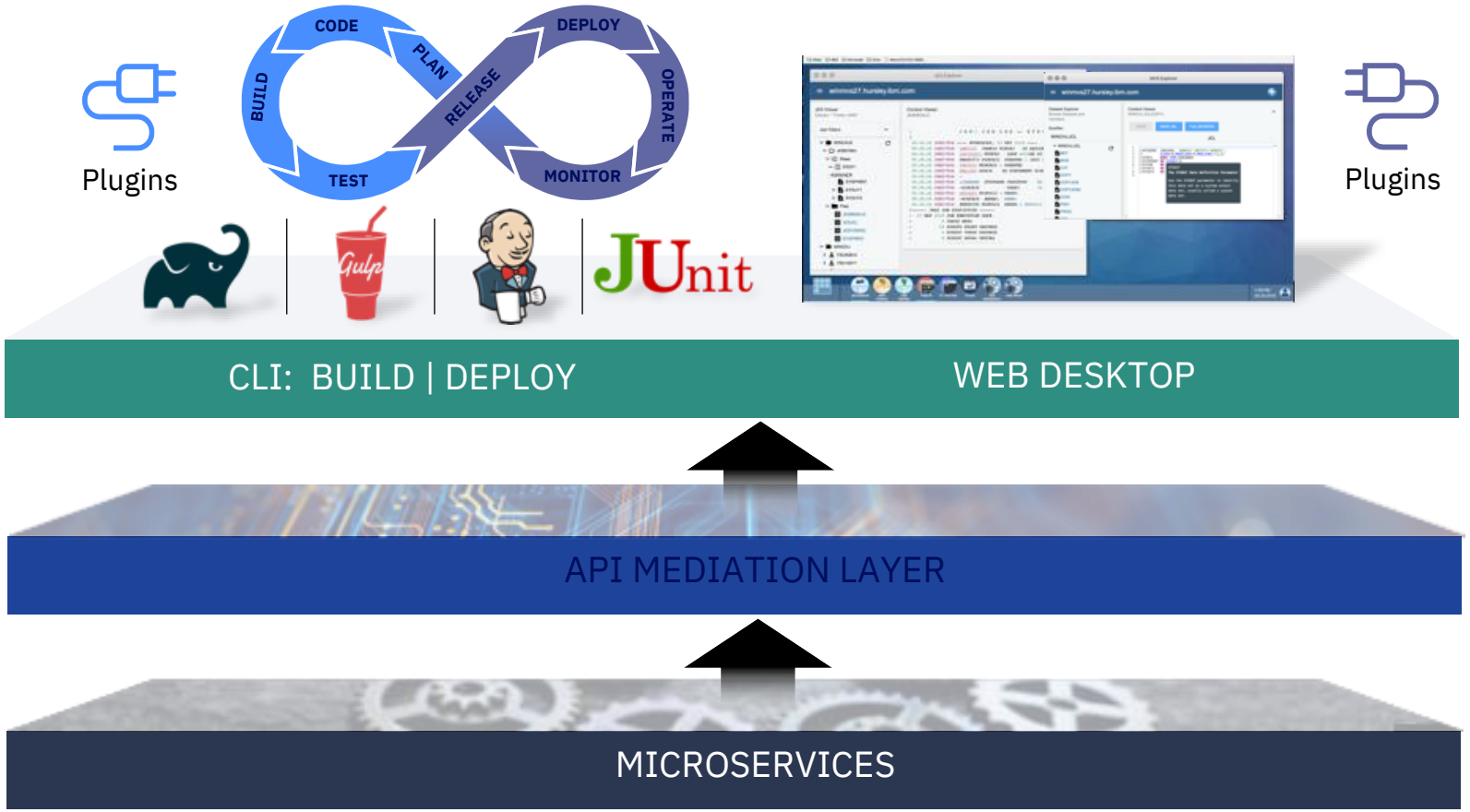
What is Zowe

Core Zowe includes

✓API Mediation Layer

✓Command Line Interface (CLI)

✓Web User Interface



Join the Zowe Community @
https://zowe.org/home/

SMU provides a Zowe application plug-in

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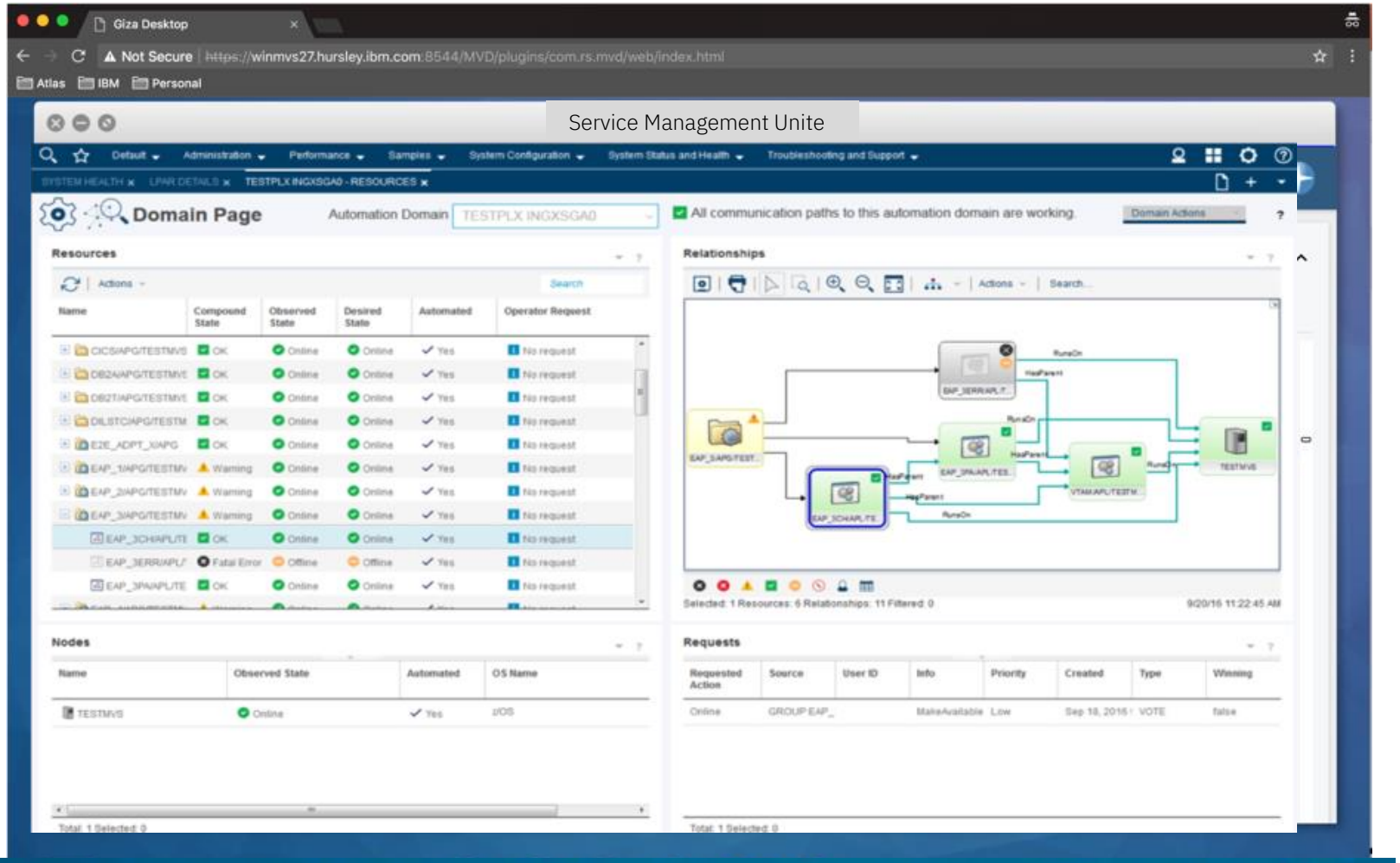
Zowe Conformant

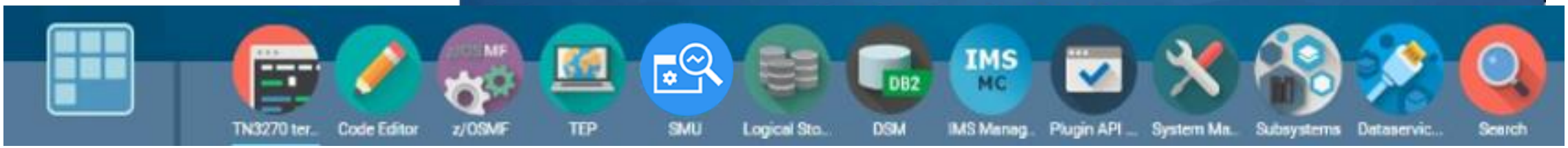
APP FRAMEWORK - 2019

Service Management Unite is an “app” on Zowe Desktop

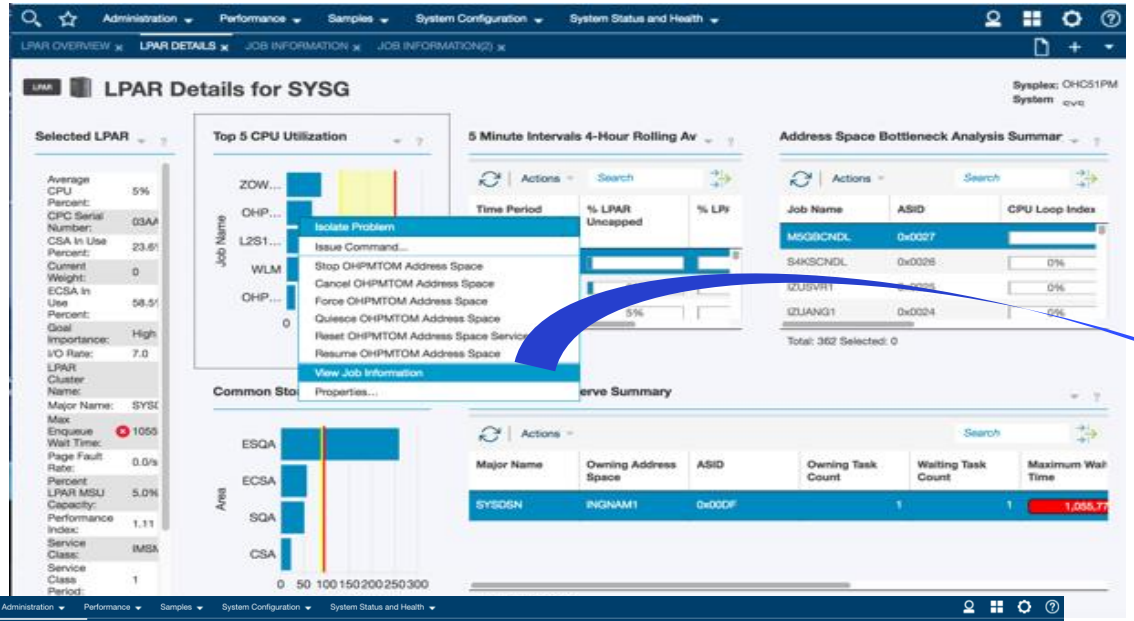
Leveraging this as a portal for operations for monitoring and automation

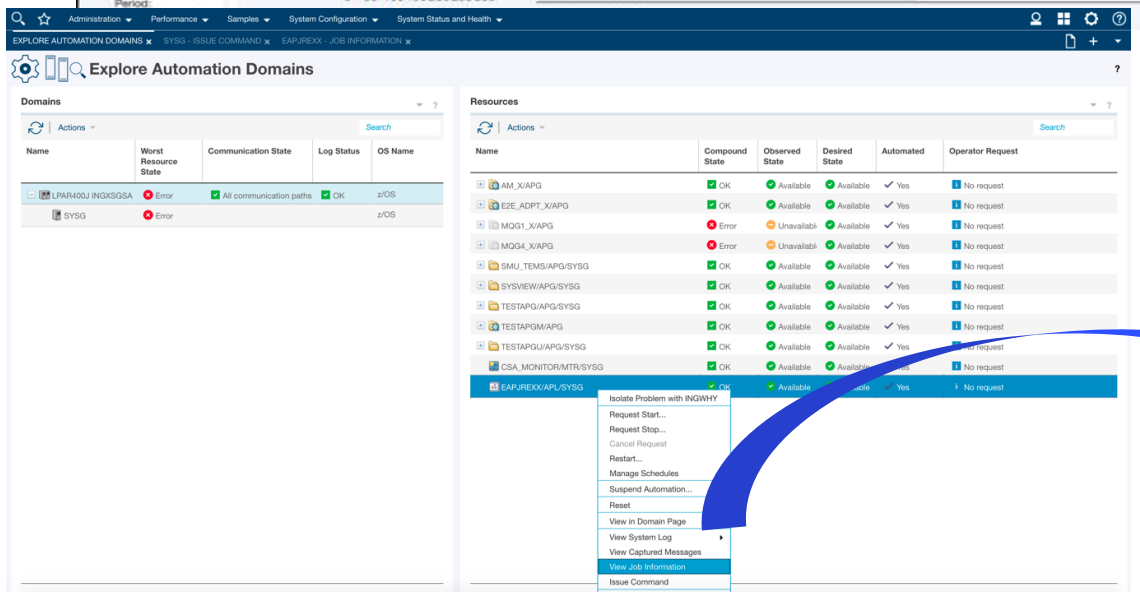
Deeper analysis through new Zowe-based domain specific applications, dashboards and workflows



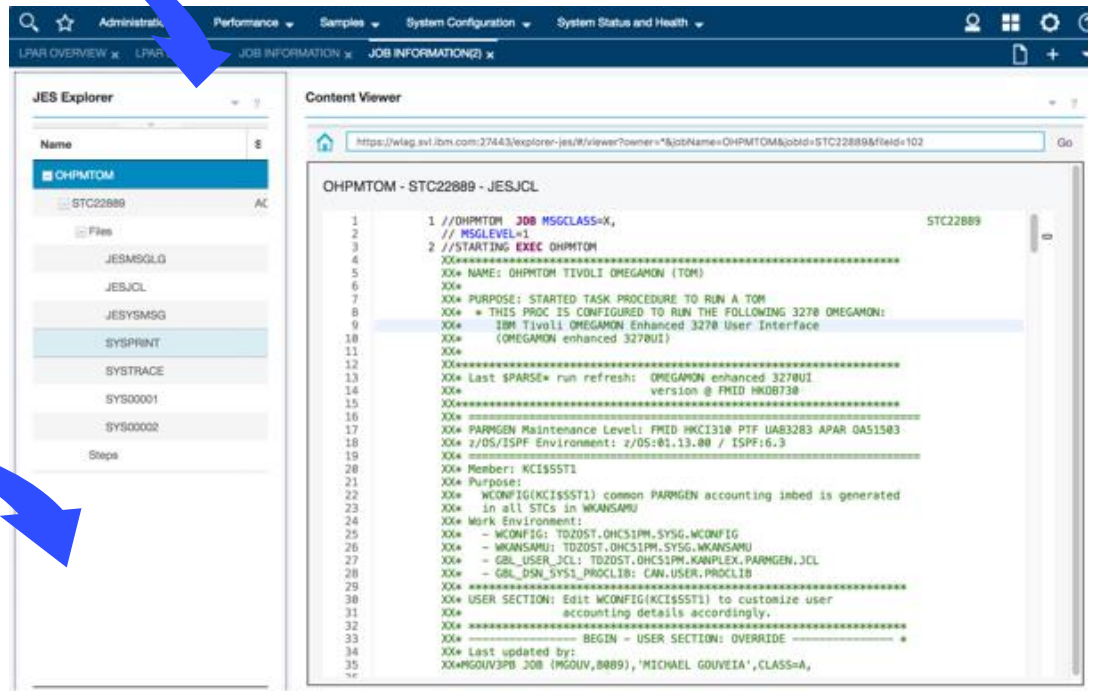


SMU integration with Zowe JES Explorer





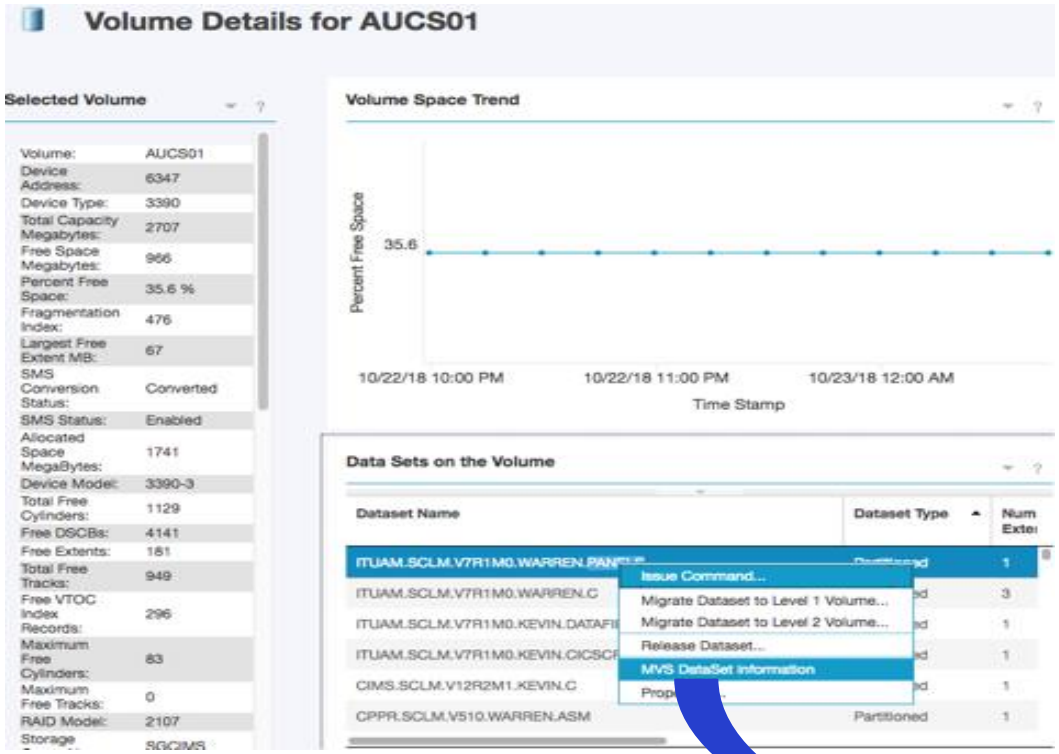
Enable the mainframe operators to isolate environmental issues by offering **seamless navigation into Zowe's JES Explorer** to view any job content without the need to switch the application or even use another terminal

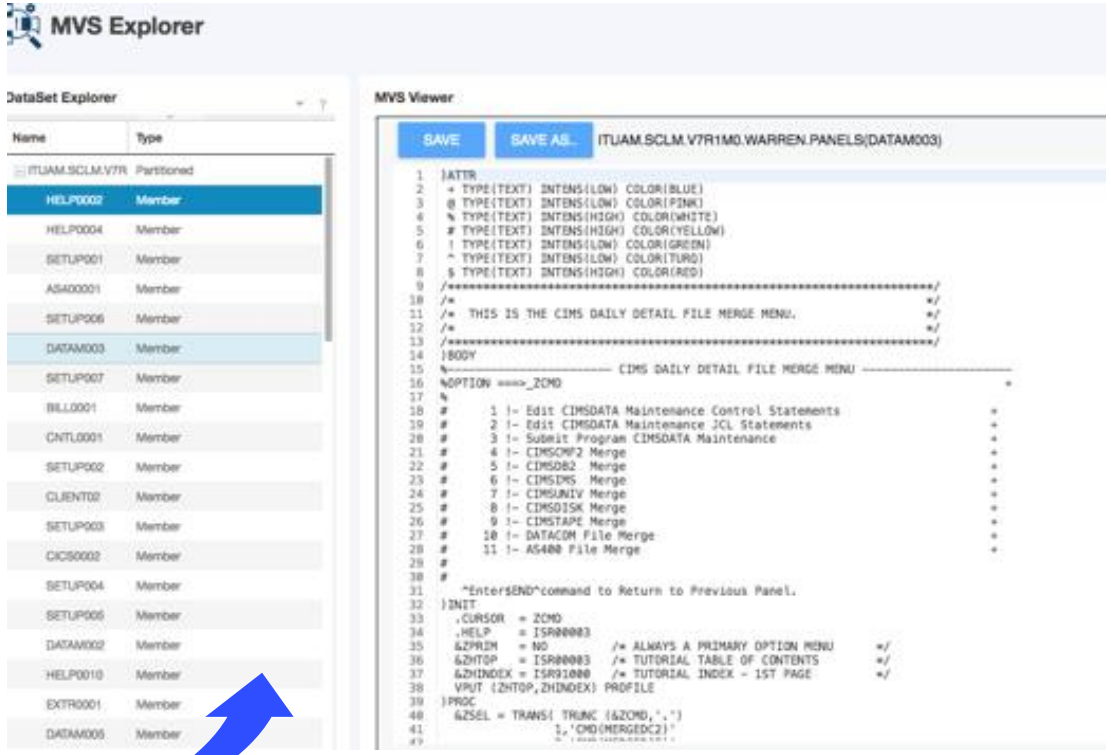


SMU integration with Zowe MVS Explorer

Seamless navigation from SMU Storage monitoring into Zowe MVS Explorer to

- View/Edit Data Set Member or sequential Data Set content
- View Data Set attributes, like blksize, LRECL and so on.
- Enable/Disable Explorer page according to Data Set type





Service Management Unite v 1.1.7

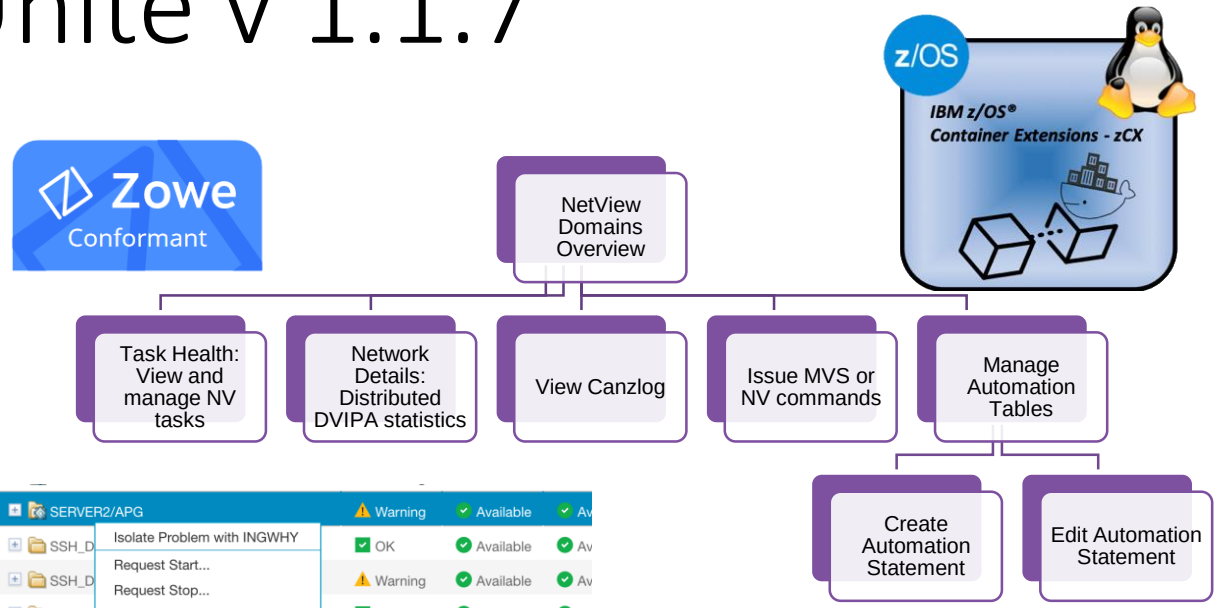
SMU running on native z/OS: SMU Docker image that can be deployed to a **z/OS Container Extension** (zCX) environment in z/OS V2.4

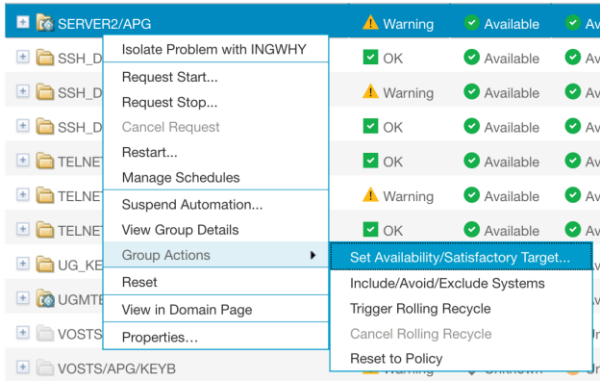
New dashboards and **dialogs** to view and work with **IBM Z NetView**

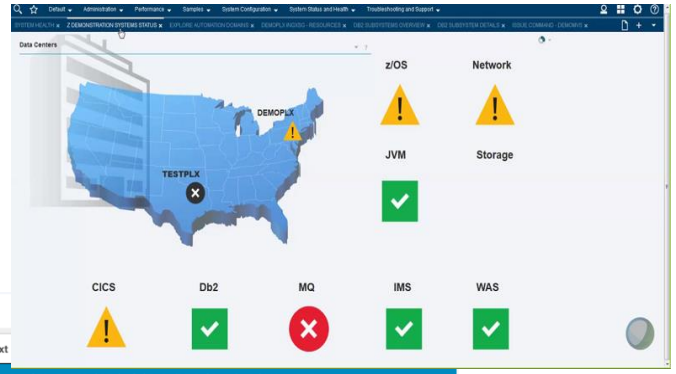
New dashboard that enables **operators to view and manage critical messages** and outstanding operator replies (**WTORs**).

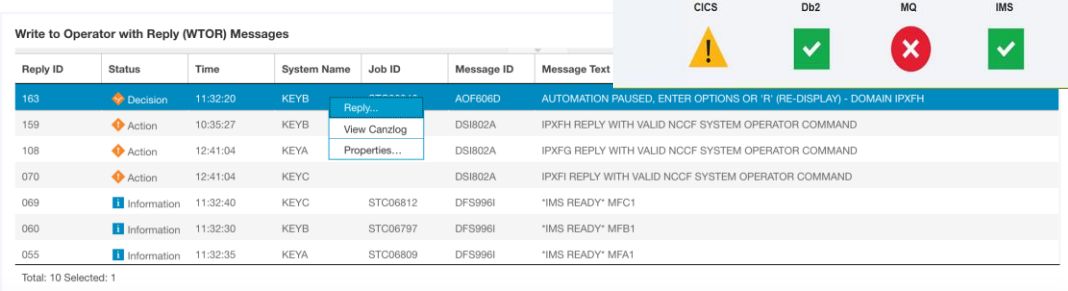
Enhanced **System Automation group management** views

Capability to view consolidate event, threshold alarm data **in single Service Management Unite** health view dashboard **from up to six multiple OMEGAMON TEMS/TEPS** Server monitoring environments









Wednesday 11:45 - 12:45 Sessions OH & NH (Catalunya): Service Management Unite

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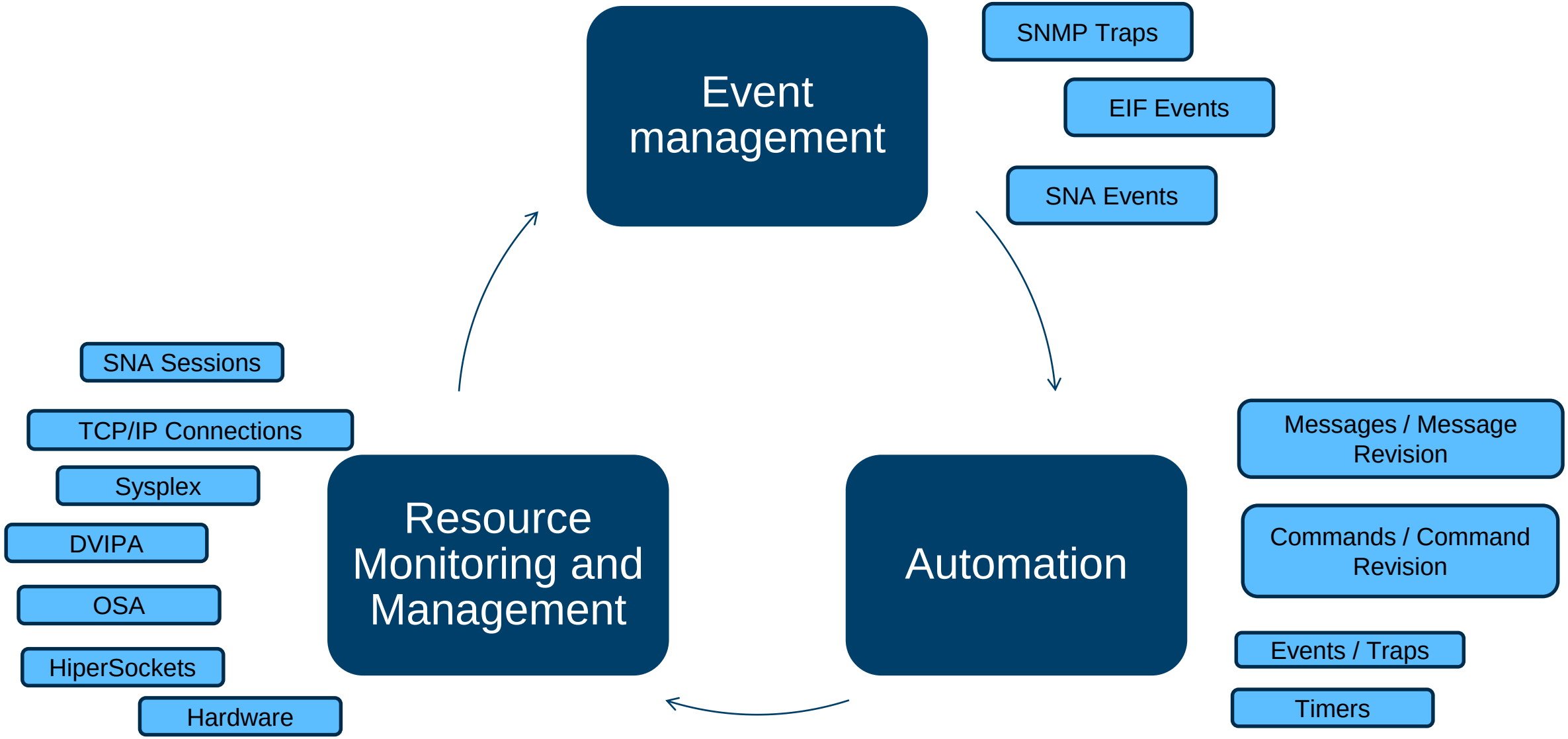
NetView

Network Monitoring and Management as well as basis for System Automation

NetView at a glance



Z NetView V6.3

Formerly known as *IBM Tivoli NetView for z/OS*, it is ***not only*** a name change …

… it is a ***modernization*** of IBM Tivoli NetView for z/OS in order to

- Open the product to hybrid cloud application integration
- Provide modern and user-friendly interface for junior operators and administrators
- Enable analytics on NetView data

October 1st

What's new in Z NetView V6.3

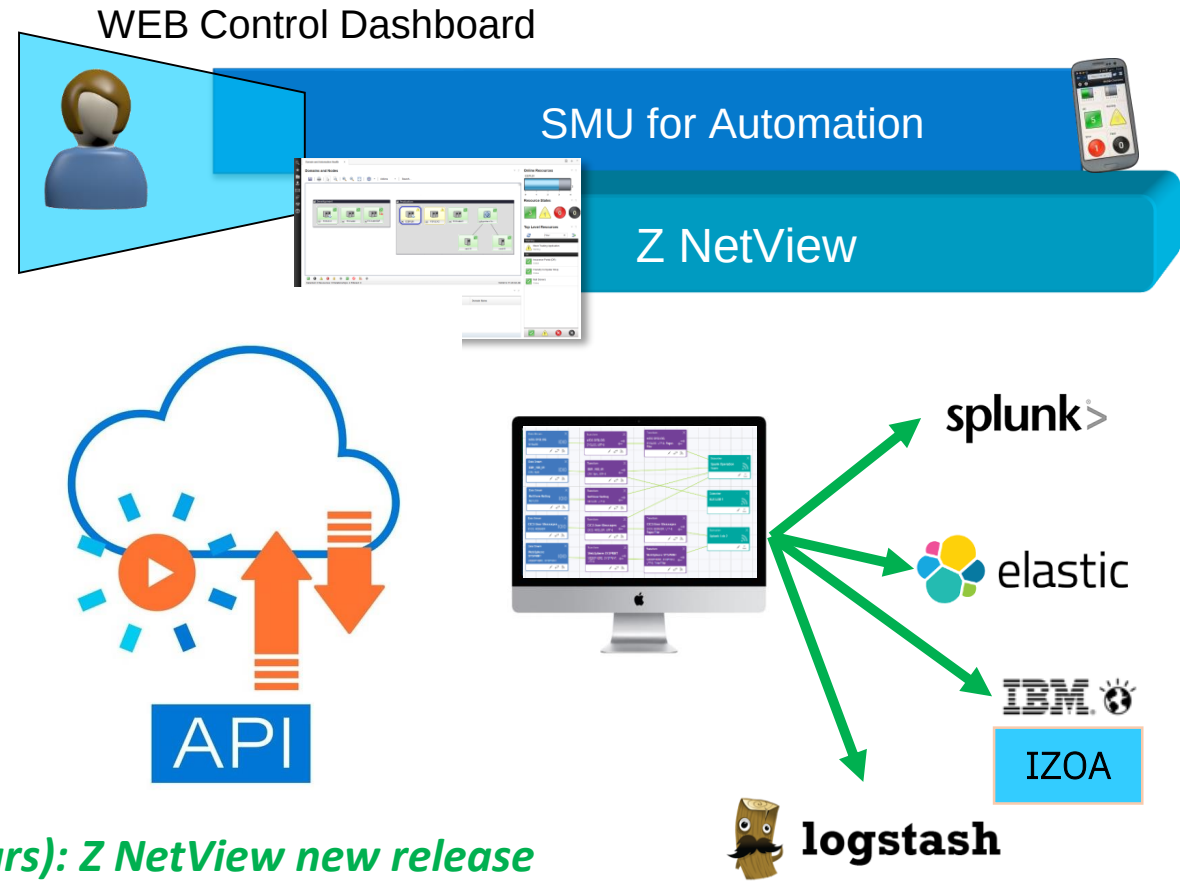
Zowe Conformant

modernization of IBM Tivoli NetView for z/OS through Zowe

the exposure of **RESTful API** to interact with the product, gather data as manage Automation Table statements from your hybrid cloud application (with or without **Zowe**)

the extension of **Service Management Unite** for Automation with NetView specific health and detailed dashboards, DDVIPA dashboard and specific dialog for NetView administrator

the integration with **IBM Common Data Provider for z Systems** to enable data streaming to analytics platform



Thursday 9:00 - 10:00 Session OM (Magny Cours): Z NetView new release

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System Automation

Policy based automation for HW and SW

Z System Automation

Policy-based automation allows to **easily incorporate business goals into an automation framework,** using simple policy statements, **with no program scripting or special education required**

MONITOR

- Hardware components
- Software products and applications
- Automated processes
- Messages and alerts

Best practices automation are provided out of the box:

- **244 applications and application classes**
- more than **600** additional **messages**

Automation

Automate many repetitive and complex tasks

- Take actions to control conditions
- Guarantee continuous availability of IT resources
- React to errors and unscheduled events

✓ **Policy-based**
✓ **Goal-oriented**
✓ **Scalable**

Goal-driven automation greatly simplifies operations

IBM Z System Automation 4.2

GUIDE SHARE EUROPE UK REGION

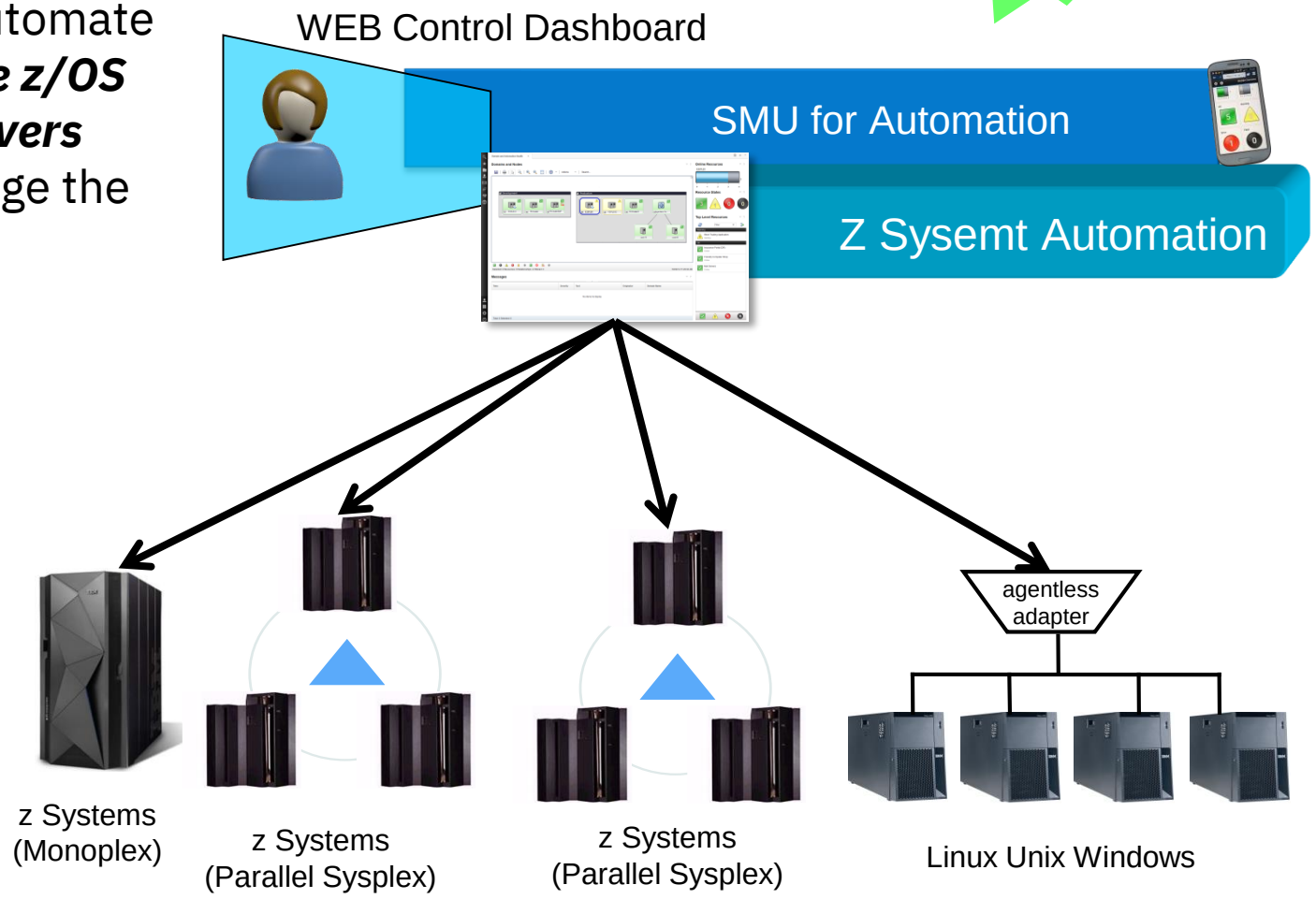
October 1st

Full End-to-End automation to manage and automate **multi-tiered applications** running on ***multiple z/OS sysplexes or on Linux, Unix and Windows servers*** from **a single console** without having to manage the cross-platform dependencies

Introduction of **Dynamic Resources** concept: it enable a real **devOps** scenario with the possibility to define resources templates, that are instantiated @ runtime with a simple command (*no need to change/build belonging policy*).

IBM z15 exploitation: support for activating a temporary capacity record in support of **System Recovery Boost**

Usability improvements and modernization for **Group and Event management**.



Wednesday 13:45 - 14:45 Session OJ (Magny Cours): Z System Automation new release

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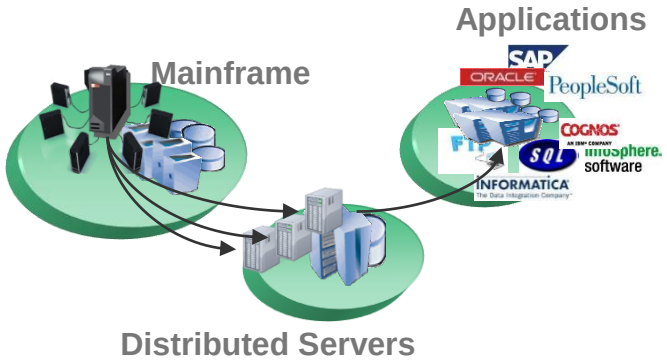
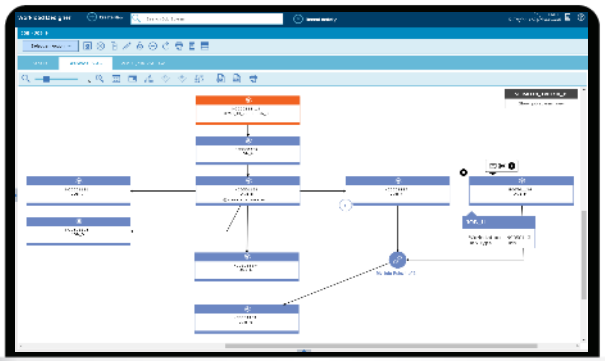
Workload Scheduler

Batch Automation in a multi-cloud environment

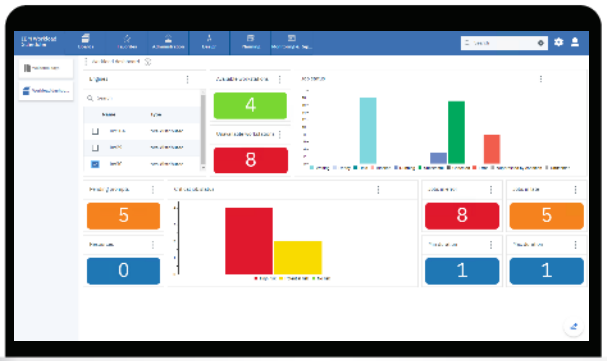
Z workload Scheduler



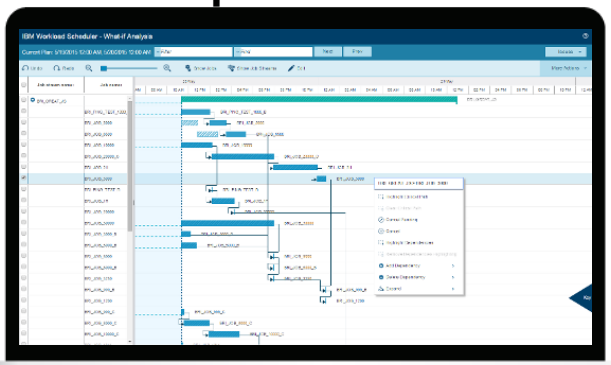
Connect & De-Risk



Control



Optimize



Connect & de-risk your Business Processes
(Design jobs & dependencies, through Graphical views, Plan execution policies against time & events conditions).

Control workload execution with Live Dashboards and graphical views, query-based monitoring views, and leverage embedded reporting and auditing.

Optimize your workload execution with trends and predictive analysis, and track critical jobs and what-if simulations in intuitive experiences.

Z Workload Scheduler V 9.5

Analytics on Batch log:
Learn and optimize your scheduling with **analytics engines** like **Splunk and ElasticSearch**

splunk> elastic

User Experience improvements: enable business control

Additional time specifications to trigger automatic actions

Workload optimization:
Optimize the submission of jobs that are **urgent** or belong to a **critical path**

Time to Value improvements:
Deployment of Dynamic Workload Console as Docker image

docker

Get the Best out of Containers: Manage workload in **containerized applications**

kubernetes

Tuesday 10:45 - 11:45 Session NA (Catalunya): Discover IBM Z Workload Scheduler V9.5 features and strategic roadmap

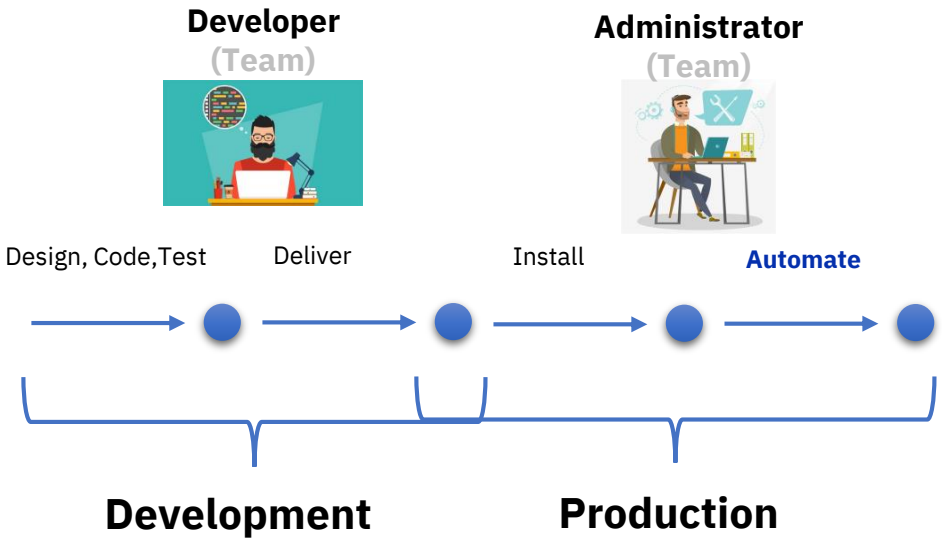
Use cases

Where I can leverage the new features?

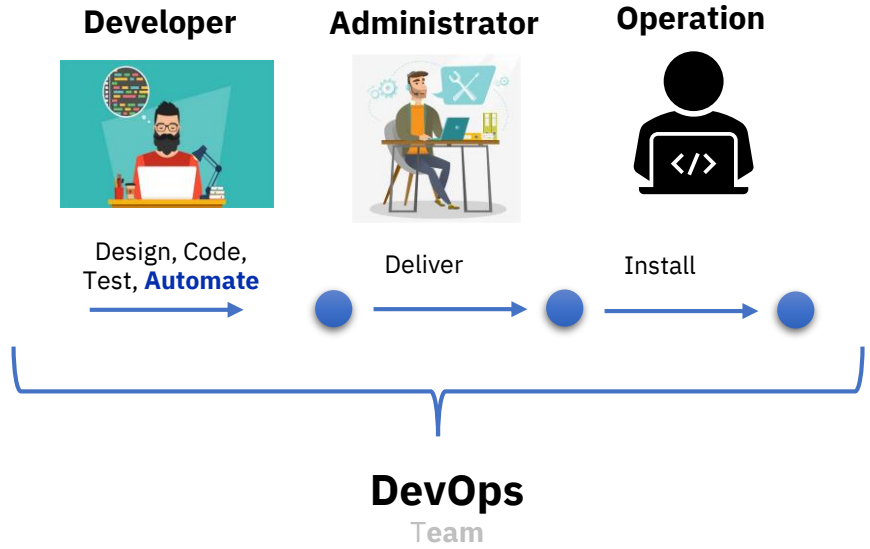
Enterprises adopting devOps methodology

What: Introduction of **Dynamic Resources** concept that allows to define resources templates, that are instantiated @ runtime with a simple command

no need to change/build/distribute policy to automate a new resource



Z System Automation V4.2



Benefit:

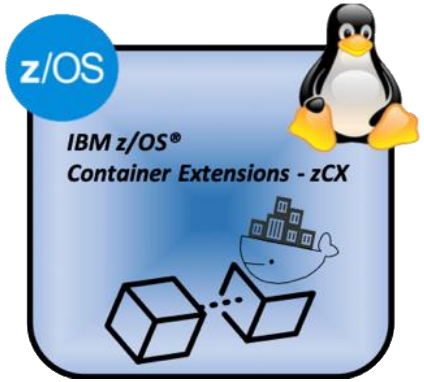
- Ability **to quickly and safely** react to change request
- **No** longer need to **wait for change window** to instantiate a new automated resource

Wednesday 13:45 - 14:45 Session OJ (Magny Cours): Z System Automation new release

Enterprises adopting z/OS V2.4 and/or z15

What:

- Day 1 **support** for the **new hardware**
- **SMU running on native z/OS:**
  - SMU Docker image that can be deployed to a **z/OS Container Extension** (zCX) environment in z/OS V2.4
- System Automation **IBM z15 exploitation:**
  - support for *activating a temporary capacity record* in support of **System Recovery Boost**



Benefit:

- Maintain **operational control** in the data center with the **new z15 hardware/software,** leveraging the **latest feature** made available

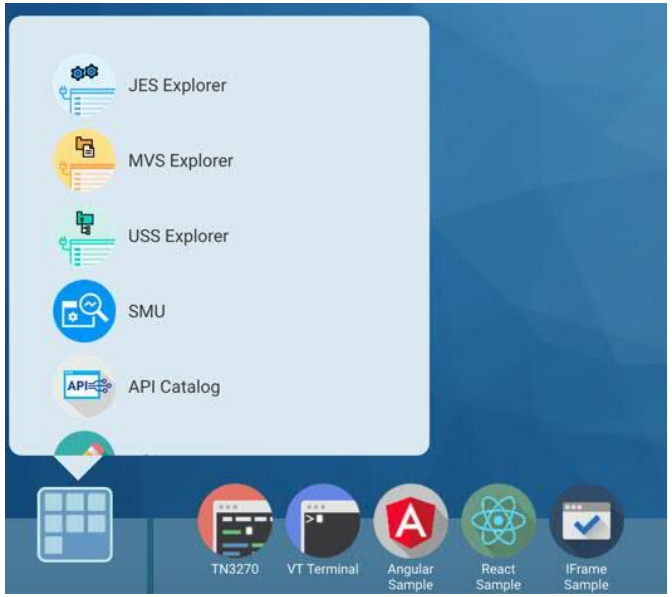
- **No longer need to provision a Linux Server** to run SMU (up to **months** of saving)
  - SMU managed completely from Z IT team *(Linux skills no longer required)*

Wednesday 11:45 - 12:45 Sessions OH & NH (Catalunya): Service Management Unite

Wednesday 13:45 - 14:45 Session OJ (Magny Cours): Z System Automation new release

Enterprises facing generational shift

Clients** that are concerned about the **cost of running IT
Ops on Z** and/or facing with **generational shift



What:

- Provide **modern** and **intuitive** user interface to Service Management tools: **Service Management Unite**
- SMU plugin in **ZOWE** WebDesktop (*Zowe Conformant certified*)
- NetView **RESTful APIs** (*Zowe Conformant certified*)
  - For easy integration in Hybrid cloud applications

Benefit:

- Leveraging open source components that are easier to learn and standardized
- RESTful APIs to enable integration with hybrid cloud applications
- Potential cost saving from MLC - OTC conversion for NetView moving to one o the Suites (Service Automation Suite or Service Management Suite)

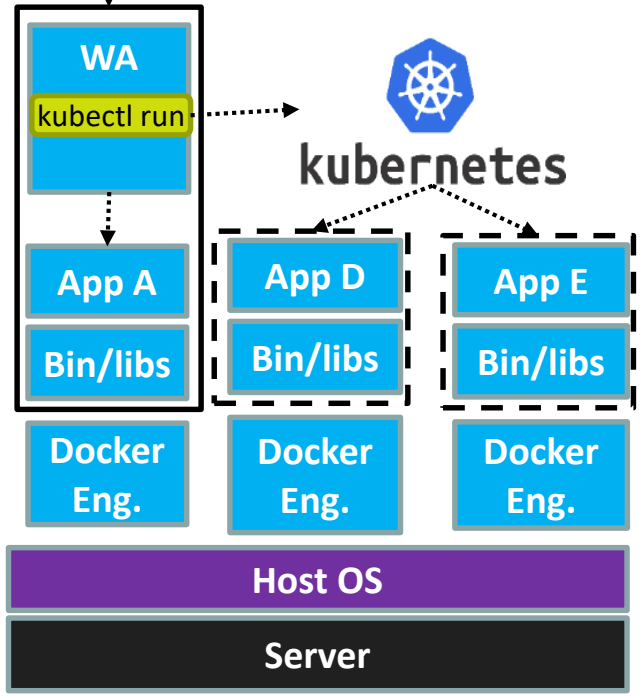
Wednesday 11:45 - 12:45 Sessions OH & NH (Catalunya): Service Management Unite
Thursday 9:00 - 10:00 Session OM (Magny Cours): Z NetView new release

Enterprises looking to homogeneous management of heterogeneous environment

IZWS Controller

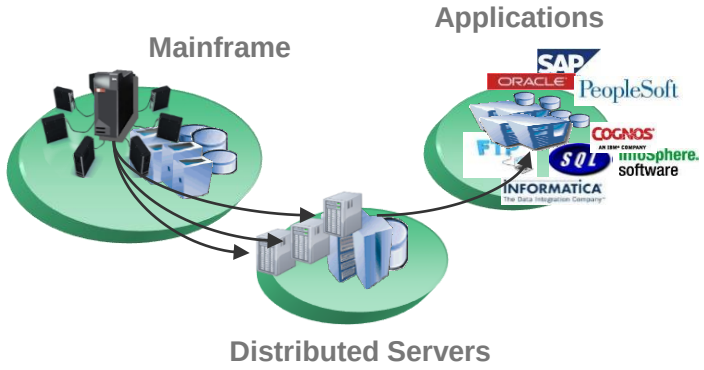
What:

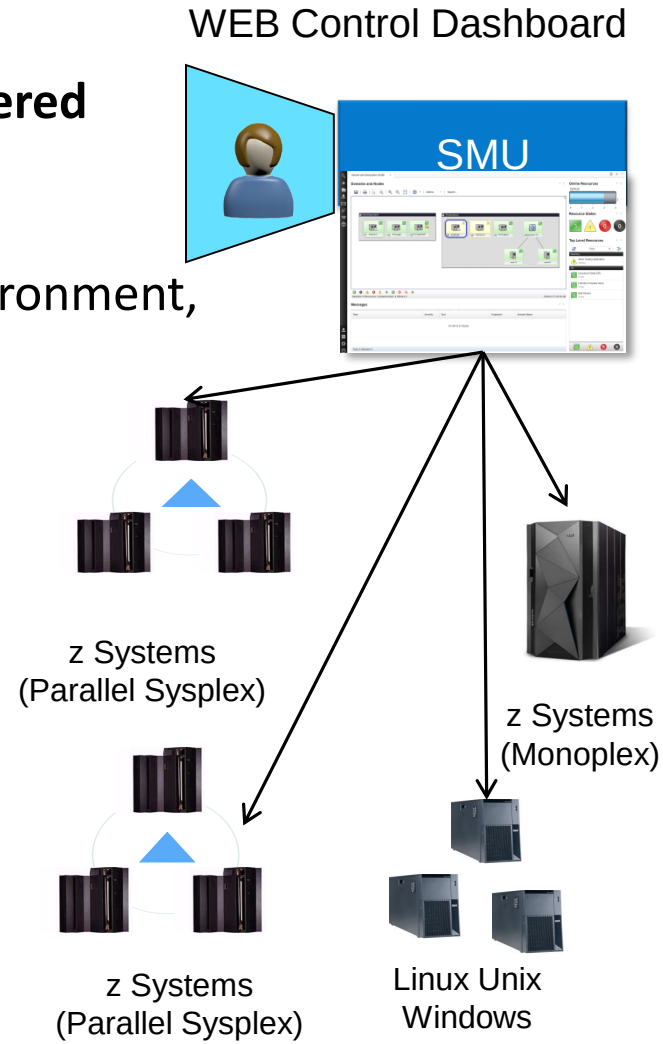
- **Full End-to-End system automation** to manage and automate **multi-tiered applications** running on ***multiple z/OS sysplexes or on Linux, Unix and Windows servers*** from **a single console (Service Management Unite)**
- **Full End-to-End Batch automation and control** across multi-cloud environment, including **containerized and not-containerized** applications from Z.



Benefit:

- Ability to manage **multi-cloud and end-to-end environment from a single point of control** (SMU)
- Ability to automate and control **batch execution across multi-cloud environment from Z**



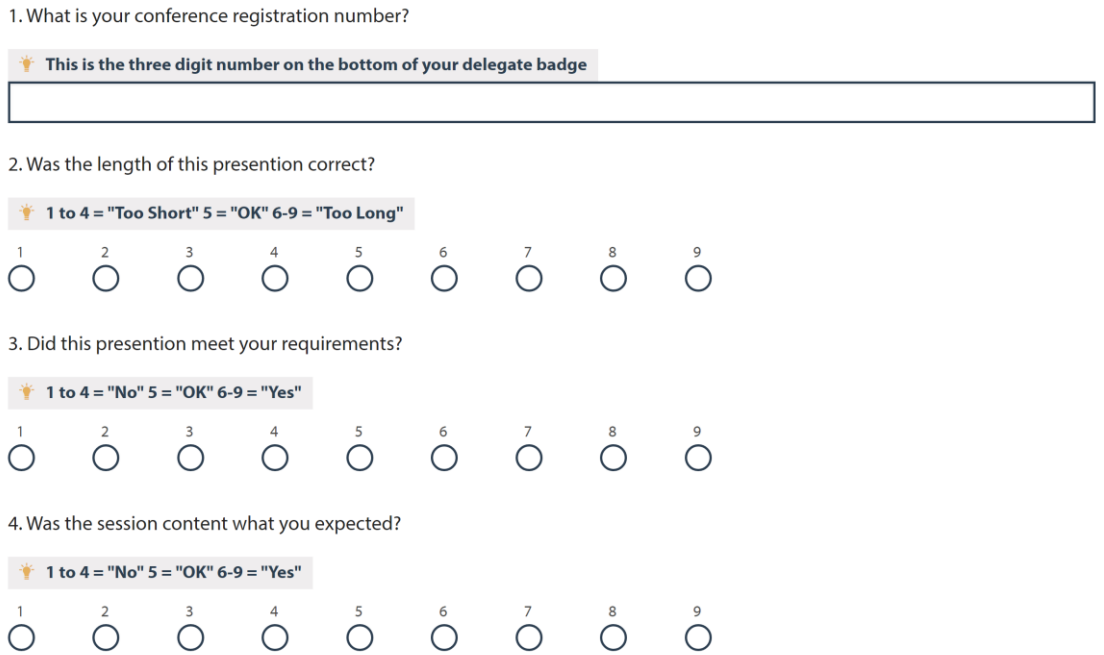


Wednesday 13:45 - 14:45 Session OJ (Magny Cours): Z System Automation new release

Ask
Questions

Please submit your session feedback!

- Do it online at http://conferences.gse.org.uk/2019/feedback/oa
- This session is **OA**



感謝你
Danke
Gracias
Grazie
Merci
Thanks!
THANK YOU!