IBM Workload Scheduler V9.5 Updates

Xavier Giannakopoulos
IWA EU specialist
Giannakopoulos@it.ibm.com

Domenico D'Alterio,
IBM Offering Manager
ddalteri@it.ibm.com

AGENDA

- Business challenge
- Z Workload Scheduler
  - What’s new in V9.5
- DWC improvements
- Z Service Automation Suite
  - Service Management Unite
- Links and events

AGENDA

- Business challenge
- Z Workload Scheduler
  - What’s new in V9.5
- DWC improvements
- Z Service Automation Suite
  - Service Management Unite
- Links and events

Digital transformation presents new challenges for operations teams

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

What is needed?

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**

Need to be able to add workload to the batch "on demand"

Need to keep SLA deadlines under control in despite of workload added "on demand"

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

Need the possibility to integrate different data sources in one view

Need to interact with "business applications" from a a single point of control, without requiring deep skills

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

Need a scalable scheduling tool to absorb additional workload

Need a modern and user friendly user interface to interact with Scheduling

AGENDA

- Business challenge
- Z Workload Scheduler
  - What’s new in V9.5
- DWC improvements
- Z Service Automation Suite
  - Service Management Unite
- Links and events

Z Workload Scheduler

IBM Workload Automation increase productivity and governance for enterprise business critical workloads

If a task is repeatable, IBM Workload Automation can automate it

IZWS Dynamic Workload Console

Connect and De-Risk your Business (35+ plugins)

Enable speed with control (DevOps, Docker, intuitive UX)

Integrates with new apps development models (REST API, IBM Cloud Private)

EMA named amongst the *Outstanding* capabilities of IBM Workload Automation :

- ★ **Breadth of Application & Database Support**
- ★ **Developers Schedule in Code (DevOps)**
- ★ **Self-Service Portal**
- ★ **Security**
- ★ **Comprehensive API**
- ★ **Container Deployment**
- ★ **Flexibility of Licensing Model**

What's new in Z Workload Scheduler v 9.5

Modelling/Monitoring	• Full control on late alerting and automatic actions	***Improved Control***
UI improvements	• New dashboard experience	***Improved User Experience***
Problem Determination	• Log analytics	***Faster problem determination***
Workload Optimization	• Smooth submission of jobs	***Cost control***
Deployment	• Containers for DWC and z-Centric Agent	***Improved Deployment Experience***

Announcement was on February 12th 219-010

GA on March 15th

Log Analytics

TIM
Administrator

- Workload Scheduling logs available to the **Analytic Engines** already in use in your Enterprise

Why we need new feature

- Analytic Engines have no agents to collect logs on z/OS
- Mainframe customers are already exploiting analytics on z/OS but no workload scheduling information is available

- Easily monitor ZWS specific messages in real-time through dashboards, getting **notifications** when needed
- Quick search for specific messages/log/content on **Big Data**
- Improve the ability to make fast and reliable **problem determination -** possibility to compare and match data from different subsystems (like DB2, IMS, MQ, CICS) **in one view**

CDP integration for Log Analytics

CDPz provides a streamlined method of capturing z/OS performance and operational data for use by analytics products. Input for CDPz can be SYSLOG/OPERLOG, JOBLOGs, SMF Records, NetView for z/OS logs, Unix System Services syslogd and files. CDPz can send extracted data to any target that can receive it over an IP port.

ZWS user scenarios:

- Easier access to ZWS AUDIT data
- ZWS error messages integrated with System Messages for problem analysis

ZWS- CDP Integration – Main flow

Controller writes a text message in the CDPz MLOGs each time an “interesting” JT or DB JT event or message is issued …

Controller

CDPz LOG forwarder and Data streamer are involved …

ZWS- CDP Integration – Data collected

The default messages tracked for CDP are in the following categories:

- Automatic recovery information
- Application ended in error
- Job late (old and new criteria)
- Waiting for special resources
- Failing of MCP update

All additional messages wished by customer can be logged by specifying CDP=YES (in SEQQMSG0)

```
EQQCP19 ' ' LINES=3 WTO=YES ROUTE=2 CDP=YES
'I CRITICAL PATH RECALCULATED FOR OPERATION &OPNUM'
'I IN APPLICATION &ADID WITH IA: &IA'
'I FOR JOB &JOBNAME THE TRIGGER WAS: &TRIGGER'
```

AGENDA

- Business challenge
- Z Workload Scheduler
  - What’s new in V9.5
- DWC improvements
- Z Service Automation Suite
  - Service Management Unite
- Links and events

IZWS v 9.5: New dashboard experience

New look and feel:

- *Easier navigation*
- *Task currently in use on the left menu*
- *Favorites customization*

Reduced pre-requisite SW stack (no longer JAZZ SM, DASH, Liberty option (instead of WAS) – Docker containers available

Dashboard easy to customize

- *"internal" data source – from monitoring query filter definition*
- *"external" data source*
  - *Through REST API*
  - *External web pages*

Graphical view

Simplified Software Stack

Version 9.x

Installation Manager

- Dynamic Workload Console
- DASH
- JazzSM
- Websphere Application Server
- IBM Java Virtual Machine
- Operating System

Version 9.5

Script-based installer

- Dynamic Workload Console
- Liberty
- OpenJ9
- Operating System
- Docker

Simplified deployment

Simplified High-availability configuration

- DWCs are sharing the same, unique, database
- Additional databases are supported
- Easier upgrade
- More standard way of creating clusters
- Load balancer

ORACLE DATABASE

Informix

IBM DB2

Apache Derby

Microsoft SQL Server

Renewed UI User Experience

IBM Workload Scheduler

Boards | Favorites | Administration | Design | Planning | Monitoring & Rep...

Search

Welcome page

Monitor Workload

Monitor Jobs

Monitor Critical Jobs

Monitor Jobstreams

Manage Workload...

Submit Predefine...

Manage Workload...

Manage Roles

Workload dashbo...

Welcome page

Welcome to the Dynamic Workload Console dwcadmin

This is your entry point to begin planning, automating and controlling the processing of your organization's entire business workload. Download and install your agents and then start defining your workload.

Manage Workload

Dynamic Workload Console

Gain control of your IBM Workload Scheduler environments.

Self-Service UIs

Quickly interact with your IBM Workload Scheduler environment from mobile devices.

Application Lab

Easily manage a set of simple business processes.

Renewed UI User Experience

Renewed UI User Experience

Renewed UI User Experience

Each widget is attached to a datasource.

Widget type are choosen according to the datasource type.

Renewed UI User Experience

IBM Workload Scheduler | Boards | Favorites | Administration | Design | Planning | Monitoring & Rep... | Search

Welcome page
My Custom Board
Manage Datasour...
Monitor Workload
Monitor Jobs

My Custom Board

Cancel | Save

Add New Widget

Datasource widgets | Static widgets

Select datasource

My custom RESTful datasource (dwcadmin)

- Available workstations (DWC System)
- Critical jobs by status (DWC System)
- Engine list (DWC System)
- Jobs count by status (DWC System)
- Jobs in error (DWC System)
- Jobs in late (DWC System)
- Jobs in maximum duration exceeded (DWC System)
- Jobs in minimum duration not reached (DWC System)
- Pending prompts (DWC System)
- Resources (DWC System)
- Unavailable workstations (DWC System)
- Z Engine list (DWC System)
- My custom Datasource (dwcadmin)
- My custom RESTful datasource (dwcadmin)

All widgets

PI | Table

Insert name

Cancel | Save

Some datasources are pre-filled (DWC Systems)

Renewed UI User Experience

Renewed UI User Experience

Parameters from the datasource are chosen and shown into the widget, according to widget type

Renewed UI User Experience

Renewed UI User Experience

Boards can be shared to other roles of the DWC.

They will be able to see the dashboard and copy it, if needed.

Renewed UI User Experience

Renewed UI User Experience

IBM Workload Scheduler

Boards | Favorites | Administration | Design | Planning | Monitoring & Rep...

Search

Welcome page

My Custom Board

Manage Datasour...

Monitor Workload

Monitor Jobs

Manage Datasources

Search

Add new plan query | Add new REST API

	Name	Owner	Type	Refresh interval
☐	Available workstations	DWC System	Plan Query	30
☐	Critical jobs by status	DWC System	Rest API	30
☐	Engine list	DWC System	Rest API	30
☐	Jobs count by status	DWC System	Rest API	30
☐	Jobs in error	DWC System	Plan Query	30
☐	Jobs in late	DWC System	Plan Query	30
☐	Jobs in maximum duration exceeded	DWC System	Plan Query	30
☐	Jobs in minimum duration not reached	DWC System	Plan Query	30
☐	Pending prompts	DWC System	Plan Query	30
☐	Resources	DWC System	Plan Query	30

Items for page: 10 | 1-10 of 14 items

1 of 2 pages

1

Renewed UI User Experience

IBM Workload Scheduler | Boards | Favorites | Administration | Design | Planning | Monitoring & Rep... | Search

Welcome page
My Custom Board
Manage Datasour...
Monitor Workload
Monitor Jobs

Manage Datasources

Engine: Auto-localhost
Object Type: Job
List Plans: current-plan

Query: @#/@/@.@ Edit Save Cancel

Datasource name:

Express output in numbers | Specify engine from board

General Filter

Periodic Refresh Options

Enable Periodic Refresh * (seconds) 30

Filter Criteria

Folder /*/
Job Name *
Job Stream Name *
Workstation (Job Stream) *
Login
Workstation (Job)

Late Job | Minimum Duration Not Reached | Maximum Duration Exceeded

Status

Status: Waiting, Ready, Running, Suppress, Successful, Error, Canceled, Held, Undecided, Blocked

Internal Status: READY, HOLD, EXEC, EXEC +, ABEND, BOUND, SUCC, CANCEL, DONE, USER STAT, CANCEL P, SUPPR, ADD, R JOB, FAILED, SUSP, WAIT, INTRO, INTRO +, WAIT D, SCHED, ABEND P, SUCC P, PEND, EXTRN, ERROR, FENCE

Select All | Clear Selection | Invert Selection

Rerun Instances

Show All | Show Only Last | Show All Regardless of Status

Recovery Options

Stop | Continue | Rerun | Ignore

Critical

Query-based datasource provide the same filters and capabilities of Monitor Workload.

The query can be easily copy and pasted in order to share it.

Renewed UI User Experience

IBM Workload Scheduler | Boards | Favorites | Administration | Design | Planning | Monitoring & Rep... | Search

Welcome page
My Custom Board
Manage Datasour...
Monitor Workload
Monitor Jobs

Manage Datasources

Datasource name
Must be between 1 and 52 characters
My new custom Datasource

Refresh time (seconds)
Must be between 30 and 1200 s
30

Method
GET

Insert URL
SCHEME :// HOST [":" PORT] [PATH ["?" QUERY]]
https://mytestapi.com/Resources

Headers

Authorization	:	dXNlcjpwd2RrbGRqYXNkamw=	Remove row
Header	:	10	Remove row

Add Authorization | Add row

Body

```
1 {}
```

RESTful API datasource allow the possibility to query any external services in order to integrate data from other sources into the Workload Automation dashboards

Renewed UI User Experience

Simplified **Roles** management

IBM Workload Scheduler | Boards | Favorites | Administration | Design | Planning | Monitoring & Rep... | Search

- Welcome page
- My Custom Board
- Manage Datasour...
- Monitor Workload
  - Monitor Jobs
  - Manage Roles

Manage Roles

Search

Name	Description	Entities	Pinned	Shared boards
Administrator	The administrator can access the security, the Workload Definitions, workload submission, forecast, SAP and the section Monitoring & reporting	1	1	2
Developer	The developer can access the workload definitions, SAP and can view the preproduction plan	0	1	2
Operator	The operator can manage the available plans, create a trial plan and a forecast plan. In addition can access workload and event monitoring	0	1	3
Analyst	The analyst can only manage the workload reports	0	1	2
Mobile User	The mobile user is allowed to access the SelfService Catalog, SelfService Dashboard	0	N/A	N/A

Items for page: 10 | 1-5 of 5 items

1 of 1 pages

Role list has been drastically simplified.

From this interface the Administrator can easily see how many entities (user, groups) are assigned to that role, the number of pinned pages and shared boards.

Simplified **Roles** management

Simplified **Roles** management

IBM Workload Scheduler | Boards | Favorites | Administration | Design | Planning | Monitoring & Rep... | Search

- Welcome page
- My Custom Board
- Manage Datasour...
- Monitor Workload
  - Monitor Jobs
- Manage Roles

Manage Roles

Pinned for: Administrator

Search

	Category	Section	Name
☐	Administration	Security	Manage Engines
☑	Administration	Security	Manage Workload Security
☐	Administration	Security	Auditing Preferences
☐	Administration	Security	Manage Settings
☐	Administration	Security	Manage Roles
☑	Design	Workload Definitions	Manage Workload Definitions
☐	Design	Workload Definitions	List Workload Definitions
☐	Design	Workload Definitions	Import Workload Application
☐	Design	Workload Definitions	Import Definitions
☑	Design	Workload Definitions	Create Event Rules
☐	Design	Workload Definitions	Manage Event Rules
☐	Design	Workload Definitions	Create Workstations
☐	Design	Workload Definitions	List Workstations
☐	Design	SAP	Manage Jobs on SAP

Cancel | Save

Simplified **Roles** management

Page grouping in drilldown and query preview

IBM Workload Scheduler | Boards | Favorites | Administration | Design | Planning | Monitoring & Rep... | Search

Monitor Workload
- Monitor Jobs
- Monitor Critical Jobs
- Monitor Workstations
- Monitor Jobstreams
- @#/RFT@/@JS@

Monitor Workload / Monitor Jobstreams

Monitor Workload (Owner: dwcadmin; Engine: Auto-localhost,Distributed)

Plan Name: Current Plan

@#/RFT@/@JS@

Jobs... | Dependencies... | Release Dependencies | Re-Submit... | What-if | Job Stream View | More Actions

Filter

Status	Internal Status	Folder	Job Stream	Workstation	Scheduled Time	Not Satisfied	Total Jobs	Successful Jobs	Jobs Limit	Priority
Held	EXEC	/RFT-FOLDERLEV1/	RFT_JS_AAA	EU-HWS-LNX30	3/1/19 12:36 PM UTC	0	3	0		0
Canceled	CANCEL P	/RFT-FOLDERLEV1/	RFT_JS_BBB	EU-HWS-LNX30	3/1/19 12:36 PM UTC	0	3	0		10
Running	EXEC	/RFT-FOLDERLEV1/	RFT_JS_TRAIN	EU-HWS-LNX30	1/2/18 2:14 PM UTC	0	3	0		10

AGENDA

- Business challenge
- Z Workload Scheduler
  - What’s new in V9.5
- DWC improvements
- Z Service Automation Suite
  - Service Management Unite
- Links and events

IBM Z Service Automation Suite v 1.1.0

Z Service Automation Suite is a ***new offering*** (new PID 5698-SA1) to provide **comprehensive support for Automation, Scheduling, and Network Management on Z**.

It has a new modern **Service Management Unite Dashboard** to provide ***at a glance overview on System Automation & Workload Scheduler managed resources*** (Applications, Operations, Workstations) and their status as well as **NetView tasks**.

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.

It is a **one-stop-shop for all relevant service automation needs** and allows flexible usage of components based on client needs.

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

Service Management Unite Highlights

A **modern, customizable Web UI consolidating data from OMEGAMON, System Automation and Workload Scheduler into a single environment**

Simpler for beginners, faster for experts!

- Offers a **single point of control** using **modern, customizable dashboards** to monitor and operate your applications and systems.
- **Drag&drop dashboard editor** with rich widget palette to create your own dashboards and integrate your own data
- See **at a glance** the health state of your environment and **drill down** to the underlying problem and get suggestions to restore service
- Use automation functions to **start, stop, recycle, or move business applications** running on IBM z Systems and beyond.
- Access **system logs** and **issue commands** on a z/OS system and immediately see the response
- **Integrates** with **other products** as well as your **own data**
- Supports **mobile access**

Internal labs test showed that for common MQ actions, using SMU resulted in;

- **60% fewer clicks**
- **70% less time**

Service Management Unite Enterprise Edition

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.

xplore Automation Domains

avigate 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.

Service Management Unite Enterprise Edition v 1.1.6

Service Management Unite EE

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

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

Drill-down capabilities to SA deep-dive dashboards

Drill-down capabilities to DWC deep-dive dashboards

New SMU v 1.1.6 (March2019)

Monitor resource utlization

Start/Stop IWS services through SA from overview dashboard

Z Workload Scheduler Overview Dashboard in SMU

At a glance overview on

- ZWS resources and their status (Job Streams, Jobs, Workstations)
- Job Status Statistics
- Critical Jobs Summary
- SA resources that control ZWS

Drill-down capabilities to graphical Job Stream views and to Dynamic Workload Console

Drill-down capabilities to SA deep-dive dashboards

Context Menu Actions:

- Start/Stop ZWS services through SA
- Set Status of Workstations, Jobs and Job Streams
- Link/Unlink Workstations
- Execute / Hold / Release a job

Drill-Down to DWC Job Streams View

In context drill-down into DWC Graphical ViewEasy

Easy access to ZWS job actions from Job Streams View

ZWS-SA integration: Job failed scenario (1/3)

1. A job ended in error

2. ... it is an „automation“ job

3. ... INGMOVE was the command submitted

4. ... return code available in the properties

ZWS-SA integration: Job failed scenario (2/3)

5. Drill down in the automation domain shows that the target system is unavailable

6. … resource was made Unavailable for maintenance

7 … change the status to available in this view

ZWS-SA integration: Job failed scenario (3/3)

8. Back to Job Stream view and rerun the job

9. Job completes successfully

AGENDA

- Business challenge
- Z Workload Scheduler
  - What’s new in V9.5
- DWC improvements
- Z Service Automation Suite
  - Service Management Unite
- Links and events

Z Automation

- Service Management Suite for z/OS info: ibm.biz/SMSzInfo
- Z Service Automation Suite info: ibm.biz/ZSASInfo
- Z Service Automation Suite Announcement: ibm.biz/ZSASAnnounce
- Z Workload Scheduler info: ibm.biz/IZWSInfo
- Z Workload Scheduler Announcement: ibm.biz/IZWS95Announce
- Workload Automation Community: http://www.workloadautomation-community.com
- System Automation for z/OS info: ibm.biz/SAzInfo
- Tivoli NetView for z/OS Info: ibm.biz/NVzInfo
- Zowe Project Community Site: https://zowe.org/
- Client video (Containers) : https://www.youtube.com/watch?v=LZoDeDU0mMs

IBM Z ITSM Newsletter ibm.biz/zITSMNewsletterSubscribe

IBM

HCL