

IBM

To: Licensees of IBM Z Workload Scheduler, Version 9
Subject: Program Number 5698-T08 — Release 5, Modification Level
0 Features 5803, 5823, 5843, 5853, 5863

The material you have received is listed on the enclosed Packing List. Please review the Packing List to ensure you have received all items listed.

Attached to this memorandum:

- Summary of Changes.
- Interoperability.
- Additional Software.
- Known Problems.

Please refer to the attachment for further description.

IBM Software Manufacturing Solutions

Summary of Changes

The following new features have been included in IBM Z Workload Scheduler Version 9— Release 5, Modification Level 0:

- **Setting alerts or actions if an operation does not start or complete.**
 - In the **JTOPTS** initialization statement, you can enable the function that issues an alert or executes an action when an operation does not complete or start within its deadline or by the time that you specify. To enable the function, you must specify **JTOPTS NOTSTARTCOMP(Y)**. Once the function is enabled, the set of alert and actions at operation level is respected.
 - In the TIME SPECIFICATIONS panel, you set how you want to be notified about the operation completion or start, when it does not occur at expected time.
 - **Deadline and Action**
 - Deadline day and time for the operation to complete, related to the application start time. If the operation does not complete within this time setting, an alert is issued and, optionally, an action taken.
 - **Not Started Alert**
 - Day offset and time, related to the application start day, used to check if the operation has not yet started. If, by the time specified, the operation has not started, an alert is issued.
 - **Not Started Action**
 - Day offset and time, related to the application start day, used to check if the operation has not yet started. If, by the time specified, the operation has not started, an alert is issued and an action taken.
 - You can set a Deadline Action, Not Started Alert, and Not Started Action also through the following interfaces:
 - **Program interface (PIF) and Batch Command Interface (BCIT)**
 - The following segments and requests have been added or updated (see [Driving IBM Z Workload Scheduler](#)):
 - ADLAT
 - ADOP
 - ADVDD
 - CPLAT, Insert CPLAT, Delete CPLAT
 - CPOP, Insert CPOP, Modify CPOP
 - List CPOPCOM
 - **Workload Automation Programming Language (WAPL)**
 - The following segments and requests have been added or updated (see [Workload Automation Programming Language for Z User's Guide and Reference](#)):
 - ADLAT
 - ADOP
 - ADVDD
 - Insert CPLAT, Delete CPLAT
 - CPOP, Insert CPOP, Modify CPOP
 - List CPOPCOM
 - **Batch loader**
 - The following statements have been added or updated (see [Managing the Workload](#)):

- ADLAT
- ADOP
- ADVDD
- **REST APIs**
 - SELECT GET → `/{engine}/model/jobstream/{jobstreamId}`
 - INSERT POST → `/{engine}/model/jobstream/`
 - REPLACE PUT → `/{engine}/model/jobstream/{jobstreamId}`

Note: The object ID has now a new layout, Base64-encoded, that enables you to use the Swagger button.

- **Filtering operations that are late.**

- From the SELECTING OPERATIONS (EQQSOPFP) panel, you can browse and modify the operations in the current plan that are late according to the following criteria:
 - Their latest start time.
 - The day and time you specified in the Not Started Alert or Not Started Action field.
 - Either their latest start time, or by the day and time that you specified in the Not Started Alert or Not Started Action field.

- **Optimizing the workload through a smooth submission of the operations**

- In the **JTOPTS** initialization statement, you can better balance the submission of operations by prioritizing the jobs that are urgent (with priority 9) or that belong to a critical path. Furthermore, you can add a delay to the submission of the remaining operations or decide a maximum submission rate. This can be done using the new **JTOPTS** keywords
 - **SMOOTHSUBMISSION(Y|N)**
 - **SMOOTHSUBRATE(nnnnn|0)**
 - **SMOOTHCRITNET(Y|N)**
- With the Smooth Submission feature active, you can also set **SMOOTHSUBCONFLEVEL** and **SMOOTHSUBDELAY** in the **BATCHOPT** statement, to have the controller add a delay in submitting the remaining operations. This delay, however, will never exceed the operations' latest start time.

- **Integrating with IBM Common Data Provider for Z Systems**

- Nowadays, the complexity of data requires an effective way to rapidly understand information and operate on it. Analyzing operational data in near real-time and making it accessible across an enterprise is a major requirement. IBM Z Workload Scheduler can now integrate with IBM® Common Data Provider for Z to collect data that is valuable to you and distribute it to a variety of analytics engines, such as Splunk, IBM Z Operations Analytics, or Elastic Search.
- In the **OPCOPTS** statement, you enable the logging of data to be used with IBM Common Data Provider for Z by setting **CDP(YES)**, and specifying the required and optional settings in the other CDP-related parameters.

- **Specifying a return code for a completed operation in OPSTAT.**

- The TSO command **OPSTAT** now supports the parameter **COMPLCODE**, to specify a return code for a completed operation.

- **NOPing operations after that time dependencies and special resources are resolved**

- In the **JTOPTS** statement, you can set the **NOPWAIT** parameter to specify that an operation that

you are NOPing is actually NOPed after that time dependencies and special resources, if any, are resolved.

- **After migrating, old SSX writer queue is copied in the new SSX if the FMIDs are the same**
 - When you specify BUILDSSX(REBUILD) in OPCOPTS to rebuild the SSX at a new level, the event-writer queue from the old SSX is copied to the new SSX, if the FMIDs are the same
- **Automatic re-bind of shadow jobs after bind information change**
 - When you modify the remote job information in the current plan, an automatic re-bind of the shadow job is performed
- **New sample to verify Current Plan**
 - A new sample JCL named **EQQICVFY** is generated by the EQQJOBS dialog. This sample job verifies and that the CP records are not corrupted and if possible repairs them.
- **Batch Loader replace preserves duration value if not specified in ADOP**
 - If you are replacing an application and the duration parameter is not specified in the ADOP statement, the EQQYLTOP batch program does not override the original duration.
- **The Dynamic Workload Console has evolved**
 - The Dynamic Workload Console has evolved with a new graphical layout, features, and improved functionality.
 - The version 9.5 of Dynamic Workload Console has undergone both an architectural and web redesign. A more modern feature-rich intuitive interface on a new foundation of modern technology while maintaining your current workload logic and processes.
- **A brand new way to create a dashboard for monitoring your scheduling environment**
 - With the new infrastructure of the Dynamic Workload Console the way you create the dashboard for your scheduling objects has completely changed and improved.
 - Maintaining and keeping control of a scheduling can be challenging. The right solution, when monitoring different machines and environments, is to have everything in one place. That is why the new dashboard represents the best choice. You can choose to create and customize your own dashboard or use one of our custom dashboard.
 - The possibility to have customized data sources with information from internal plan or from external REST API, helps you in creating the perfect solution for monitoring. By creating boards and filling it with widgets, you will be able to control every scheduling objects; from the health of your machines until the list or the number of the critical jobs.
- **New reporting system**
 - With Dynamic Workload Console V9.5, the look and feel of the reporting system has renovated and you have the possibility to import the report templates created by using Business Intelligent Report Tool (BIRT), a new reporting system for the Dynamic Workload Console.
 - The reporting system is now organized in **predefined reports** and **personalized reports**. By using the predefined reports, you can still perform the same actions as in the previous versions, but with an improved user experience that makes it easier and more intuitive. You can still create tasks to generate reports about job run statistics, workstation workload summaries or custom SQL reports.
 - With **Personalized Reports** you can manage templates created with Business Intelligent Report Tool (BIRT) and use them to generate reports to retrieve data from the IBM Workload Scheduler database.

Interoperability

This section contains information about the interoperability of IBM Z Workload Scheduler Version 9 — Release 5, Modification Level 0 with:

- Dynamic Workload Console
- IBM Workload Scheduler Agent for z/OS

IBM Dynamic Workload Console

The IBM Z Workload Scheduler Version 9 — Release 5, Modification Level 0 engine requires the Tivoli Dynamic Workload Console version 9.5.0.

The Z Connector version 9.5.0 is automatically installed when you install the IBM Dynamic Workload Console version 9.5.0.

Note: For detailed information about the system requirements, see the *Detailed System Requirements for Dynamic Workload Console version 9.5* at the following link:

<https://www-01.ibm.com/support/docview.wss?uid=ibm10733054>

The z/OS customers can download the IBM Dynamic Workload Console and z/OS Connector software for the z/OS operating system from the following IWM link:

<https://www-01.ibm.com/marketing/iwm/iwm/web/dispatcher.do?source=swg-iwsdwc>

IBM Z Workload Scheduler Agent

For information about installing, upgrading, and uninstalling the IBM Z Workload Scheduler Agent, see [IBM Z Workload Scheduler: Planning and Installation Guide](#).

The Agent is distributed on Passport Advantage as:

IBM Z Workload Scheduler Agent 9.5 Multiplatform.

The Agent requires one of the following operating systems:

Operating system
<ul style="list-style-type: none">• AIX Versions 7.1, 7.2
<ul style="list-style-type: none">• HP-UX, Version 11i v3 Itanium

Operating system
<ul style="list-style-type: none"> • Microsoft Windows Server 2008 R1/R2: Standard, Enterprise, and Data Center (64 bit) • Microsoft Windows Server 2012 R1/R2: Standard and Data Center (64 bit) • Microsoft Desktop Windows 8 Enterprise, Standard and Professional • Microsoft Desktop Windows 8.1 Enterprise, Standard and Professional • Microsoft Windows 10 • Microsoft Windows 2016
<ul style="list-style-type: none"> • Linux System x Kernel 64 <ul style="list-style-type: none"> • RHEL 6.1, 7.0 • SLES 12, 15 • Ubuntu 14,16,18 • Oracle 6.7, 7 • Centos 7 • Linux System z <ul style="list-style-type: none"> • RHEL 6.1, 7.0 • SLES 12, 15 • Linux system POWER (Big Endian) <ul style="list-style-type: none"> • RHEL 6.1, 7.0 • SLES 12 • Linux System POWER (Little Endian) <ul style="list-style-type: none"> • RHEL 7.1 • Ubuntu 14,16,18
<ul style="list-style-type: none"> • Solaris Itanium 10, 11, • Solaris Sparc 10,11
<ul style="list-style-type: none"> • IBMi Version 7.2, 7.3

The following table shows which versions of IBM Z Workload Scheduler, IBM Dynamic Workload Console, Z Connector, and IBM Z Workload Scheduler agent, can work together:

IBM Z Workload Scheduler	DWC and Z Connector	IBM Z Workload Scheduler Agent	FTA
9.5.0	9.5.0	9.1.0, 9.2.0, 9.3.0, 9.4.0, 9.5.0	9.1.0, 9.2.0, 9.3.0, 9.4.0, 9.5.0
9.3.0	9.3.0, 9.4.0, 9.5.0	9.1.0, 9.2.0, 9.3.0, 9.4.0, 9.5.0	9.1.0, 9.2.0, 9.3.0, 9.4.0, 9.5.0
9.2.0	9.2.0, 9.3.0, 9.4.0, 9.5.0	9.1.0, 9.2.0, 9.3.0, 9.4.0, 9.5.0	9.1.0, 9.2.0, 9.3.0, 9.4.0, 9.5.0
9.1.0	9.1.0, 9.2.0, 9.3.0, 9.4.0, 9.5.0	9.1.0, 9.2.0, 9.3.0, 9.4.0, 9.5.0	9.1.0, 9.2.0, 9.3.0, 9.4.0, 9.5.0

Notes:

- The Z Connector version must be the same as the Dynamic Workload Console version.
- The Dynamic Workload Console version must be equal or later than IBM Z Workload Scheduler version.

Additional Software

This section contains information about the additional software distributed with IBM Z Workload Scheduler Version 9 — Release 5, Modification Level 0 via CD/DVD support:

- LCD7-6516-06 IBM Z Workload Scheduler 9.5.0 – TEP/ITM Integration and Reporting features

The installation CD contains the following directories:

- *Reporting*: contains the scripts used for DB2 reporting.
 - *TEP Integration*: contains the scripts used for TEP/ITM (Tivoli Enterprise Portal/ IBM Tivoli Monitoring) integration.
- LCD8-2759-00 IBM WebSphere Application Server Liberty (Archive install) 18.0.0.4, Multilingual
 - LCD7-6517-04 IBM Z Workload Scheduler 9.5.0 - Dynamic Workload Console, Z Connector for AIX
 - LCD7-6518-04 IBM Z Workload Scheduler 9.5.0 - Dynamic Workload Console, z/OS Connector for Windows X86-64
 - LCD7-6519-04 IBM Z Workload Scheduler 9.5.0 - Dynamic Workload Console, z/OS Connector for Linux X86-64
 - LCD7-6520-04 IBM Z Workload Scheduler 9.5.0 - Dynamic Workload Console, z/OS Connector for Linux on System z®
 - LCD8-2758-00 IBM Z Workload Scheduler 9.5.0 - Dynamic Workload Console, z/OS Connector for Linux X86-64 (Docker image)
 - LCD7-6521-04 IBM Workload Scheduler Batch Reports MultiPlatform
 - LCD8-2754-00 IBM® DB2® 11.1 Advanced Workgroup Server Edition Restricted Use Activation
 - LCD7-6545-01 IBM® DB2® 11.1 Advanced Workgroup Server Edition for 64-bit AIX®
 - LCD7-6548-01 IBM® DB2® 11.1 Advanced Workgroup Server Edition for Linux® on AMD64 and Intel® EM64T
 - LCD7-6549-01 IBM® DB2® 11.1 Advanced Workgroup Server Edition for Linux® on System z®
 - LCD7-6551-01 IBM® DB2® 11.1 Advanced Workgroup Server Edition for Windows® on AMD64 and Intel® EM64T systems (x64)

Known Problems

None

IBM

March 2019

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM program product in this publication is not intended to state or imply that only IBM's program product may be used. Any functionally equivalent program may be used instead.

© **Copyright International Business Machines Corporation 1991, 2016.**

© **Copyright HCLTechnologies Limited 2016, 2019.**

Note to U.S. Government Users — Documentation related to restricted rights — Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.