

IBM® Workload Scheduler
Developer's Guide: Driving IBM® Workload Scheduler
Version 10.2.1

Note

Before using this information and the product it supports, read the information in [Notices on page ix](#).

This edition applies to version 10, release 2, modification level 1 of IBM® Workload Scheduler (program number 5698-T09) and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

About this guide.....	v
What is new in this release.....	v
Accessibility	v
Technical training.....	v
Support information.....	v
Chapter 1. Introduction.....	7
Chapter 2. Driving IBM Workload Scheduler with REST APIs.....	8
Driving IBM Workload Scheduler with REST APIs..	
Notices.....	ix
Index.....	13

About this guide

Provides an overview of the guide, with information about changes made to it since the last release, and who should read it. It also supplies information about obtaining resources and support from IBM.

Developer's Guide: Driving IBM Workload Automation introduces you to the application programming interfaces available to drive IBM Workload Automation products from your own applications.

What is new in this release

Learn what is new in this release.

For information about the new or changed functions in this release, see *IBM Workload Automation: Overview*, section *Summary of enhancements*.

For information about the APARs that this release addresses, see the IBM Workload Scheduler Release Notes and the Dynamic Workload Console Release Notes. For information about the APARs addressed in a fix pack, refer to the readme file for the fix pack.

New or changed content is marked with revision bars.

Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully.

With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

For full information, see the Accessibility Appendix in the *IBM Workload Scheduler User's Guide and Reference*.

Technical training

Cloud & Smarter Infrastructure provides technical training.

For Cloud & Smarter Infrastructure technical training information, see: <http://www.ibm.com/software/tivoli/education>

Support information

IBM provides several ways for you to obtain support when you encounter a problem.

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

- Searching knowledge bases: You can search across a large collection of known problems and workarounds, Technotes, and other information.
- Obtaining fixes: You can locate the latest fixes that are already available for your product.
- Contacting IBM Software Support: If you still cannot solve your problem, and you need to work with someone from IBM, you can use a variety of ways to contact IBM Software Support.

For more information about these three ways of resolving problems, see the appendix about support information in *IBM Workload Scheduler: Troubleshooting Guide*.

Chapter 1. Introduction to driving IBM Workload Automation

Provides an overview of the entire publication.

Developer's Guide: Driving IBM Workload Automation describes the application programming interfaces which you can use to drive IBM Workload Automation products from your own applications.

Use the REST API application programming interface to create your own GUI or command-line interface to perform all the functions of the command-line programs composer, conman, and planman and the Dynamic Workload Console. This includes performing the following tasks in IBM Workload Scheduler and IBM Z Workload Scheduler:

- Modifying objects in the database
- Submitting workload
- Monitoring the plan
- Performing actions on the plan, such as remedial actions in the event that a job fails

The information about the application programming interfaces is organized as follows:

- [Driving IBM Workload Scheduler with REST API on page 8](#)

Chapter 2. Driving IBM Workload Scheduler with REST API

IBM Workload Scheduler provides a set of fully functional APIs that are implemented based on Representational State Transfer (REST) services. The REST API helps you easily integrate workload scheduling capabilities with external products and solutions. The same product functionality covered by the existing J2EE API is available with the REST API. The REST API is programming language independent and favors easier network configuration and firewall traversal. With the APIs, you can exploit heterogeneous environments and provide new automation opportunities with direct impact on productivity. The following are some examples or scenarios where the APIs can be implemented:

- Create your own graphical interface to create and modify scheduling definitions and update objects in the plan.
- Update definitions or plan objects within a script for integration or automation.
- When a specific event occurs within an external product, you can automatically submit a batch workload through IBM Workload Scheduler.
- In a managed file transfer solution, when a specific file arrives, you can submit one or more job flows that elaborate the file, closing the loop on your business process, whether it be bank transactions, a payroll process, or report generation. Your external managed file transfer product starts the business process and IBM Workload Scheduler takes care of the processing, assuring that it be monitored with the rest of the processes from a single point of control and eventually linked with other processes.

The IBM Workload Scheduler REST API provides several services to administer engines, event rules, workload modelling, plans, and security.

After installing your master domain manager or backup master domain manager, you can access the available REST API services by connecting to the following URL:

```
https://hostname:port_number/twsd
```

where,

hostname

The hostname of the master domain manager or the backup master domain manager.

port_number

The HTTPS port number of the master domain manager or backup domain manager. The default is 31116.

You can try out the REST API services and the operations available for each on Swagger Docs by connecting to https://MDM_IP_address:tdwbport/twsd/. Click **List Operations** to view the operations available with the service, and then click **Expand Operations** to view details such as, the implementation notes, parameters, and response messages for each method. At the end of the details you can find a **Try it out!** button to see the operation in action.

You can also access some IBM Workload Scheduler REST API samples here: [REST API samples](#).

Notices

This document provides information about copyright, trademarks, terms and conditions for product documentation.

© Copyright IBM Corporation 1993, 2016 / © Copyright HCL Technologies Limited 2016, 2023

This information was developed for products and services offered in the US. This material might be available from IBM in other languages. However, you may be required to own a copy of the product or product version in that language in order to access it.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive, MD-NC119
Armonk, NY 10504-1785
US

For license inquiries regarding double-byte character set (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan Ltd.
19-21, Nihonbashi-Hakozakicho, Chuo-ku
Tokyo 103-8510, Japan

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you provide in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Director of Licensing

IBM Corporation

North Castle Drive, MD-NC119

Armonk, NY 10504-1785

US

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

The performance data discussed herein is presented as derived under specific operating conditions. Actual results may vary.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to actual people or business enterprises is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

© (HCL Technologies Limited) (2023).

Portions of this code are derived from IBM Corp. Sample Programs.

© Copyright IBM Corp. 2023

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM® or other companies. A current list of IBM® trademarks is available on the web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

Adobe™, the Adobe™ logo, PostScript™, and the PostScript™ logo are either registered trademarks or trademarks of Adobe™ Systems Incorporated in the United States, and/or other countries.

IT Infrastructure Library™ is a Registered Trade Mark of AXELOS Limited.

Linear Tape-Open™, LTO™, the LTO™ Logo, Ultrium™, and the Ultrium™ logo are trademarks of HP, IBM® Corp. and Quantum in the U.S. and other countries.

Intel™, Intel™ logo, Intel Inside™, Intel Inside™ logo, Intel Centrino™, Intel Centrino™ logo, Celeron™, Intel Xeon™, Intel SpeedStep™, Itanium™, and Pentium™ are trademarks or registered trademarks of Intel™ Corporation or its subsidiaries in the United States and other countries.

Linux™ is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft™, Windows™, Windows NT™, and the Windows™ logo are trademarks of Microsoft™ Corporation in the United States, other countries, or both.



Java™ and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Cell Broadband Engine™ is a trademark of Sony Computer Entertainment, Inc. in the United States, other countries, or both and is used under license therefrom.

ITIL™ is a Registered Trade Mark of AXELOS Limited.

UNIX™ is a registered trademark of The Open Group in the United States and other countries.

Terms and conditions for product documentation

Permissions for the use of these publications are granted subject to the following terms and conditions.

Applicability

These terms and conditions are in addition to any terms of use for the IBM website.

Personal use

You may reproduce these publications for your personal, noncommercial use provided that all proprietary notices are preserved. You may not distribute, display or make derivative work of these publications, or any portion thereof, without the express consent of IBM.

Commercial use

You may reproduce, distribute and display these publications solely within your enterprise provided that all proprietary notices are preserved. You may not make derivative works of these publications, or reproduce, distribute or display these publications or any portion thereof outside your enterprise, without the express consent of IBM.

Rights

Except as expressly granted in this permission, no other permissions, licenses or rights are granted, either express or implied, to the publications or any information, data, software or other intellectual property contained therein.

IBM reserves the right to withdraw the permissions granted herein whenever, in its discretion, the use of the publications is detrimental to its interest or, as determined by IBM, the above instructions are not being properly followed.

You may not download, export or re-export this information except in full compliance with all applicable laws and regulations, including all United States export laws and regulations.

IBM MAKES NO GUARANTEE ABOUT THE CONTENT OF THESE PUBLICATIONS. THE PUBLICATIONS ARE PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE.

Index

A

- accessibility v
- application program interface
 - overview 8
 - REST 8

C

- Cloud & Smarter Infrastructure technical training v

D

- Dynamic Workload Console
 - accessibility v

E

- education v

R

- REST API
 - overview 8

T

- technical training v
- training
 - technical v