Managing IBM Db2 Analytics Accelerator by using IBM Data Server Manager

IBM® Data Server Manager is a web-based, integrated database management tools platform that manages IBM Db2® and IBM Db2 for z/OS® databases. With IBM Data Server Manager, you can manage and administer IBM Db2 Analytics Accelerator (Accelerator).

This IBM Redbooks® Analytics Support web document describes the various functions that are available in IBM Data Server Manager to manage the Accelerator server.

This document is targeted at database administrators who work with IBM Db2 Analytics Accelerator. It applies to IBM Data Server Manager Version 2.1.5 and later.

Overview

This document provides an overview of all Accelerator-related management and administration functions available in IBM Data Server Manager 2.1.5. IBM Data Server Manager is a simple and intuitive database administration (DBA) tool for monitoring, administering, and tuning IBM Db2 for z/OS databases. It can be installed easily in three clicks (as a non-root user), so IBM Data Server Manager can be up and running in a matter of seconds. A web browser serves as the client that gives users access to the databases. With the ability to also manage and monitor IBM Db2, IBM BigInsights®, and cloud databases, IBM Data Server Manager has become the core of the IBM database management platform.

Unlike the existing Eclipse-based Data Studio and the Accelerator studio that need to be installed on every client workstation, IBM Data Server Manager is installed on a web server. One installation can be accessed by multiple users through a web browser. IBM Data Server Manager connects to Db2 for z/OS by using a JDBC connection through the DDF port.

IBM Data Server Manager Base Edition can be downloaded at no charge and offers limited functionality for database administration, IBM Db2 Analytics Accelerator administration, and basic query tuning functionality. Full support for query tuning and configuration management can be added with product licenses for IBM Db2 Query Workload Tuner for z/OS V5.x and IBM DB2 Configuration Manager V4.1.x. Additional advanced capabilities for Db2 for z/OS users are available as one-time charge (OTC) offerings from various Db2 for z/OS tools and solutions.

Summary

The document provides an overview of these topics:

- Installation of IBM Data Server Manager
- IBM Db2 Analytics Accelerator administration
- Table and Query Dashboard for Accelerator

Installation of IBM Data Server Manager

Complete these steps to install IBM Data Server Manager:

1. Run `setup.bat` (Windows) or `setup.sh` (Linux), which are located in the `ibm-datasrvrmgr` directory.
2. Provide a user ID and a password to administer the product. This user ID is independent of the operating system user ID.
3. When the installation is complete, open a web browser and enter the following line in the address field to log in to the IBM Data Server Manager web user interface:
   `https://server_host_name_or_ip:https_port`

After you have logged in successfully, you can add a database for IBM® Db2® Analytics Accelerator administration. Figure 1 shows how to add a database connection to IBM Db2 for z/OS.

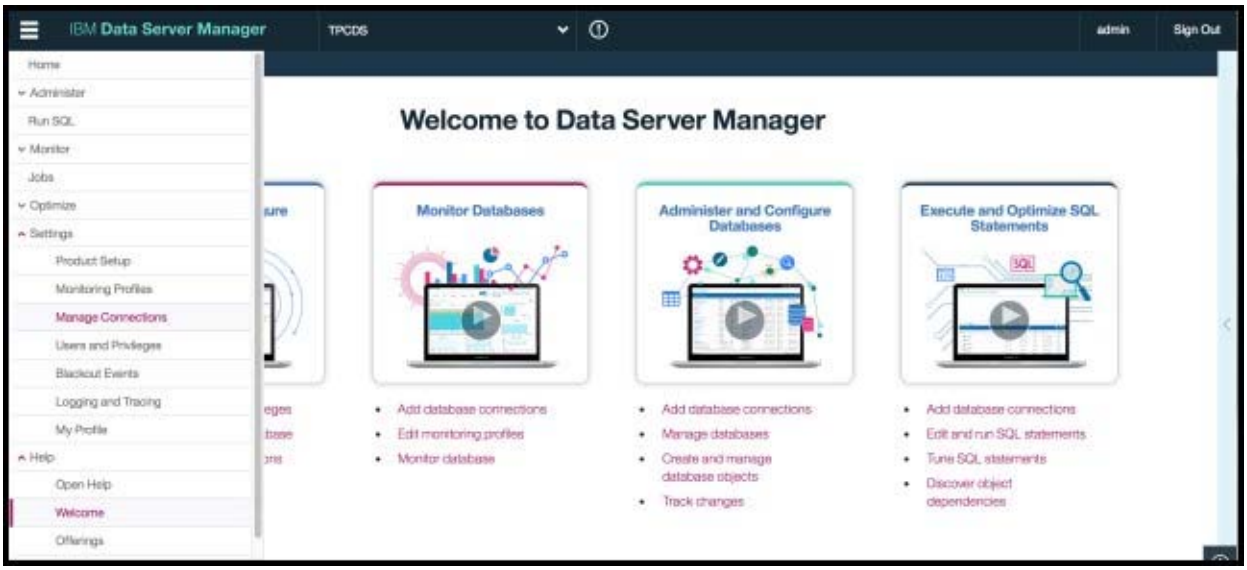

Figure 1. Manage Connections Menu

Figure 2 shows how to add database connection information, which is required to administer paired IBM Db2 Analytics Accelerators.

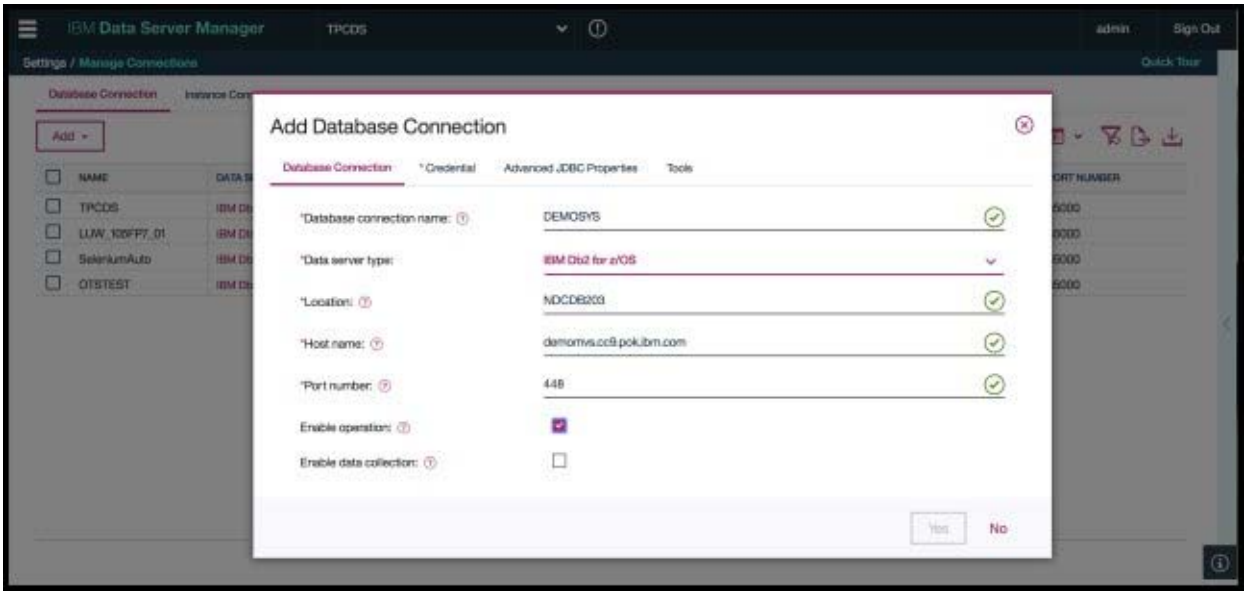

Figure 2. Add Database Connection page

Figure 3 shows where to provide the credentials that enable IBM Data Server Manager to communicate with the database. If the DBA wants the connection to be shared by multiple users based on the company policy, the DBA saves credentials to a repository, as shown in Figure 3. When credentials are saved to a repository, multiple users can connect with the saved credentials. If the DBA does not save the credentials, users who log into IBM Data Server Manager are prompted to enter their IBM RACF® credentials.

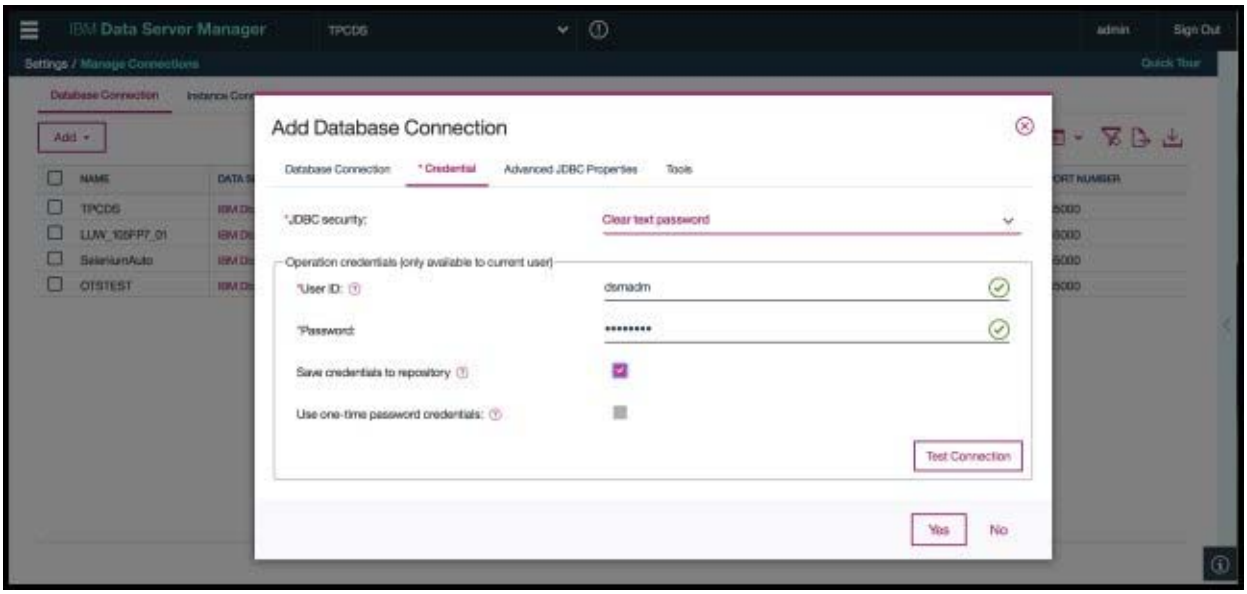

Figure 3. Add connection credentials

Establish a test connection to make sure that the provided credentials are correct. If the test connection is successful, save it by clicking **Yes**.

Click the **Home** option in the collapsible menu on the left to see the newly added connection in the grid. If it does not show, click the **Refresh** button at the top right. Figure 4 shows the Home page grid and the **Refresh** button.

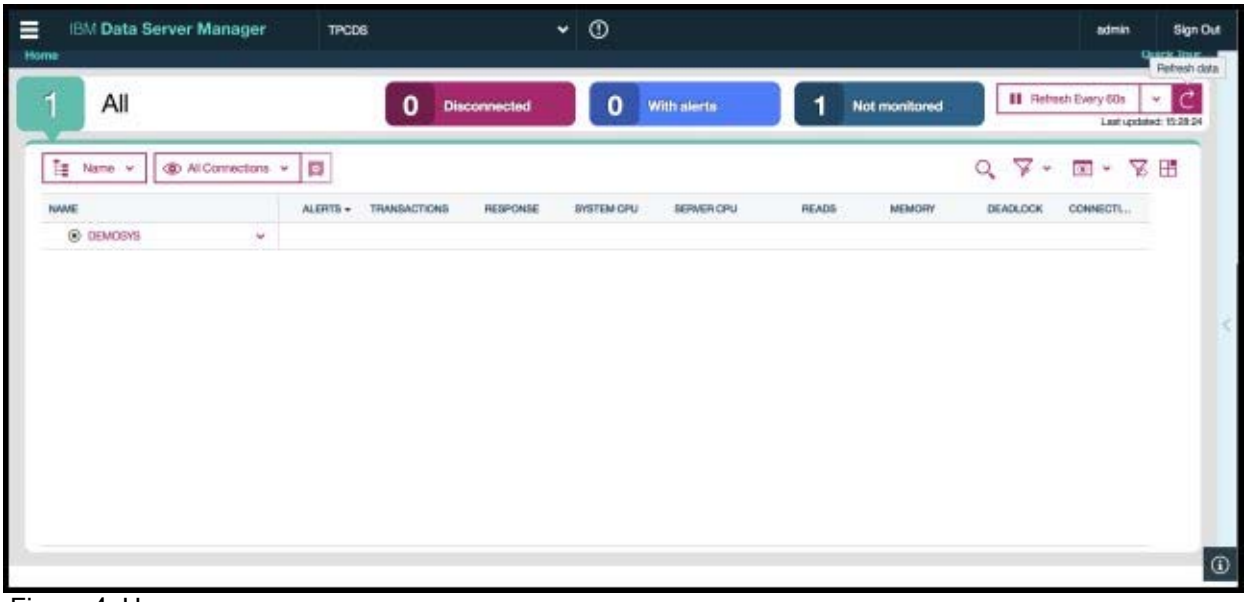

Figure 4. Home page

From the connection picker on the top bar, select the database connection, as shown in Figure 5.

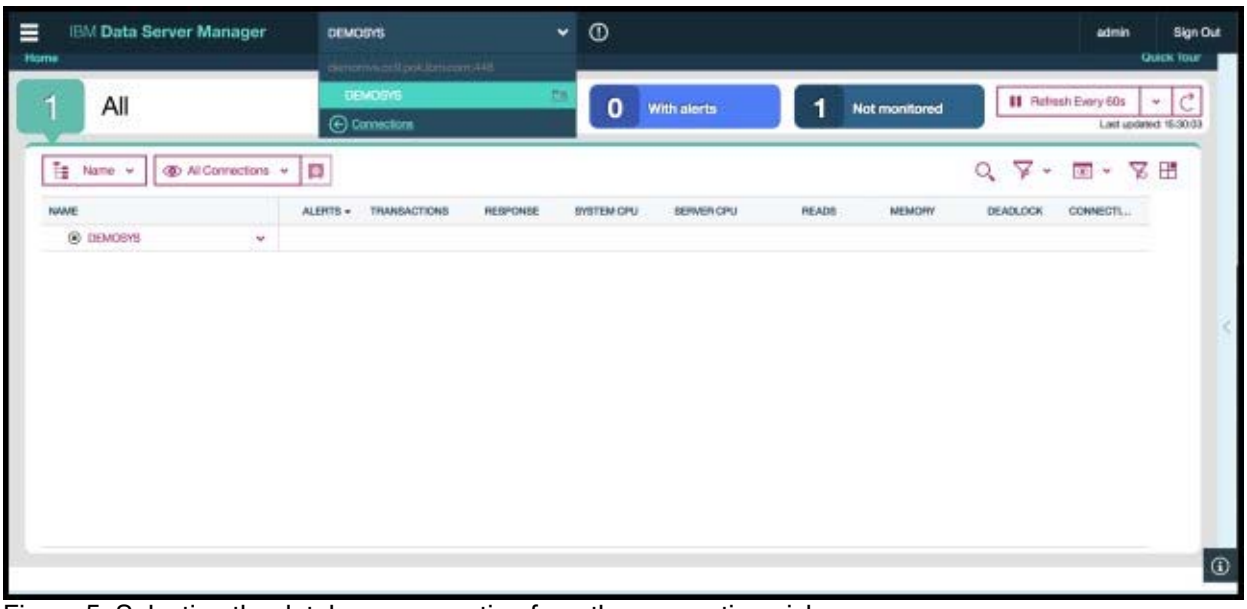

Figure 5. Selecting the database connection from the connection picker

IBM Db2 Analytics Accelerator administration

Figure 6 shows the menu item for IBM Db2 Analytics Accelerator administration.

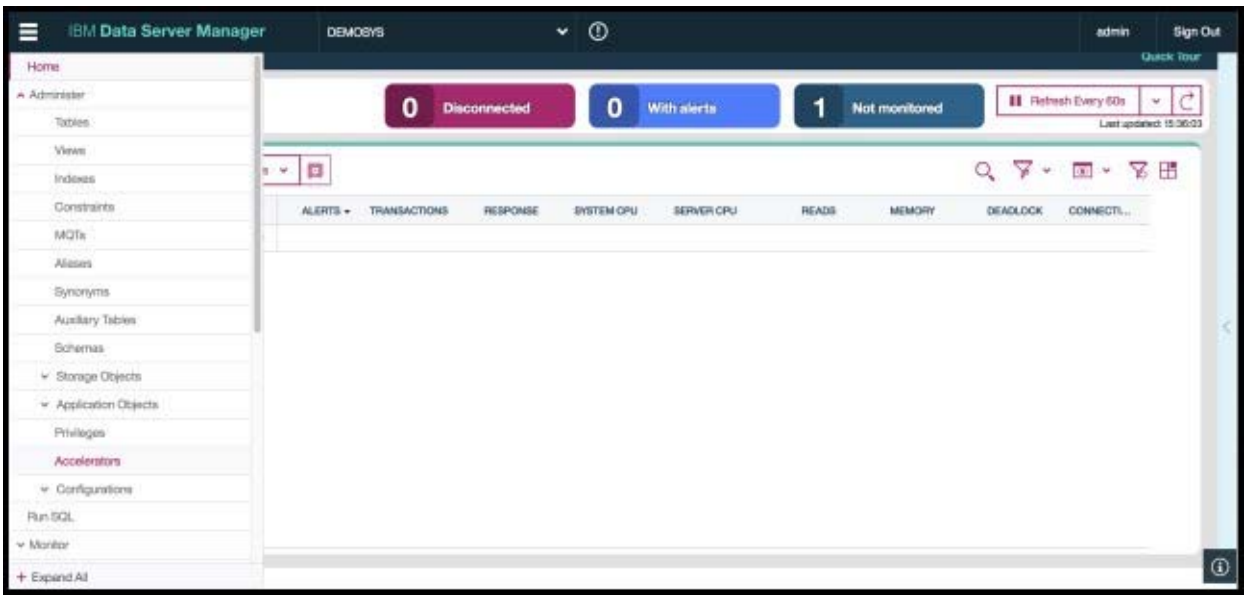

Figure 6. Accelerators menu

Selecting **Administer** -> **Accelerators** opens the Accelerator Dashboard, which lists all the Accelerators that are paired to a Db2 for z/OS subsystem. If an Accelerator is selected in the grid, information about that Accelerator is displayed in the Accelerator Dashboard as shown in Figure 7.

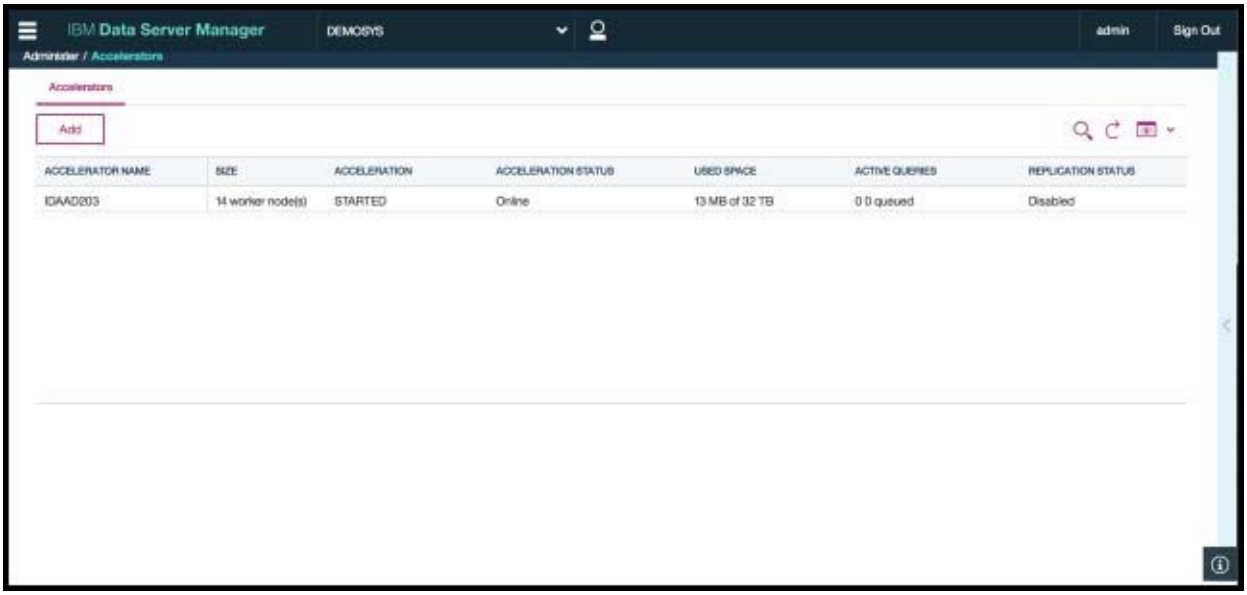

Figure 7. Accelerator Dashboard

From the Accelerator Dashboard, the Accelerators can be started or stopped. In addition, new Accelerators can be paired, and existing Accelerators can be unpaired or removed. Furthermore, a selected Accelerator can be managed. The option to manage Accelerators is described in more detail in the upcoming sections.

Figure 8 shows the details for the selected Accelerator.

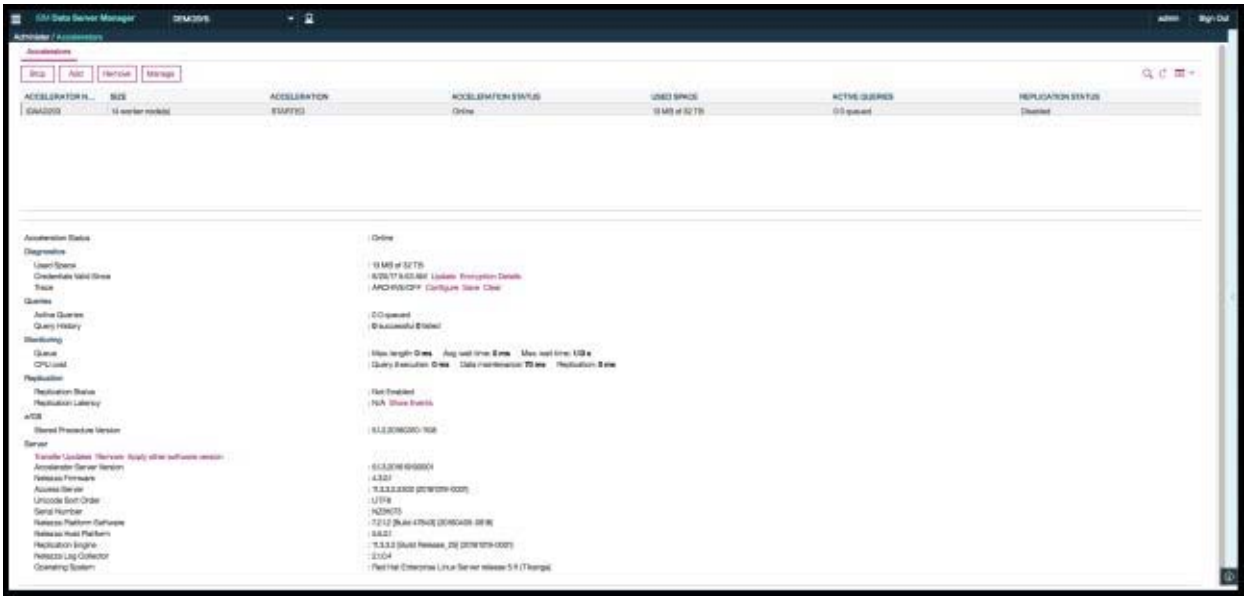

Figure 8. Accelerator details

From the Accelerator Details panel, the following activities can be started:

- Setting the tracing level for Accelerator stored procedures and the Accelerator server.
- Saving traces to the local system or, by using FTP, transferring it directly to a problem management record (PMR), as shown in Figure 9.

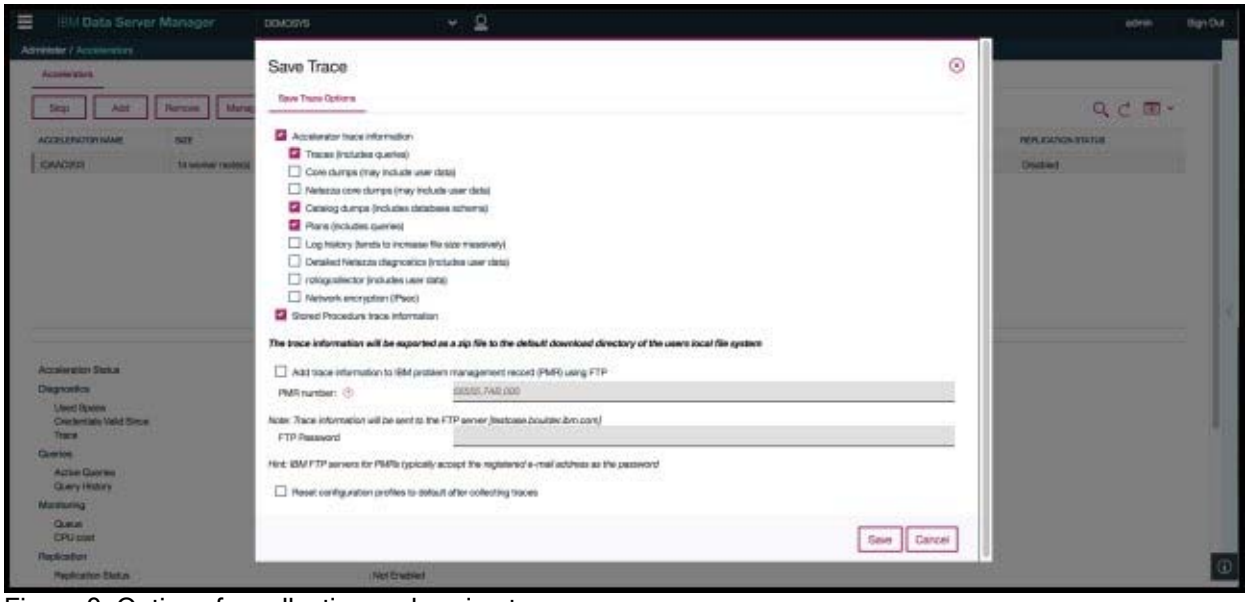

Figure 9. Options for collecting and saving traces

- Updating credentials and viewing encryption and certificate details.

- Starting and stopping incremental updates (replication) and viewing all replication-related events (Figure 10).

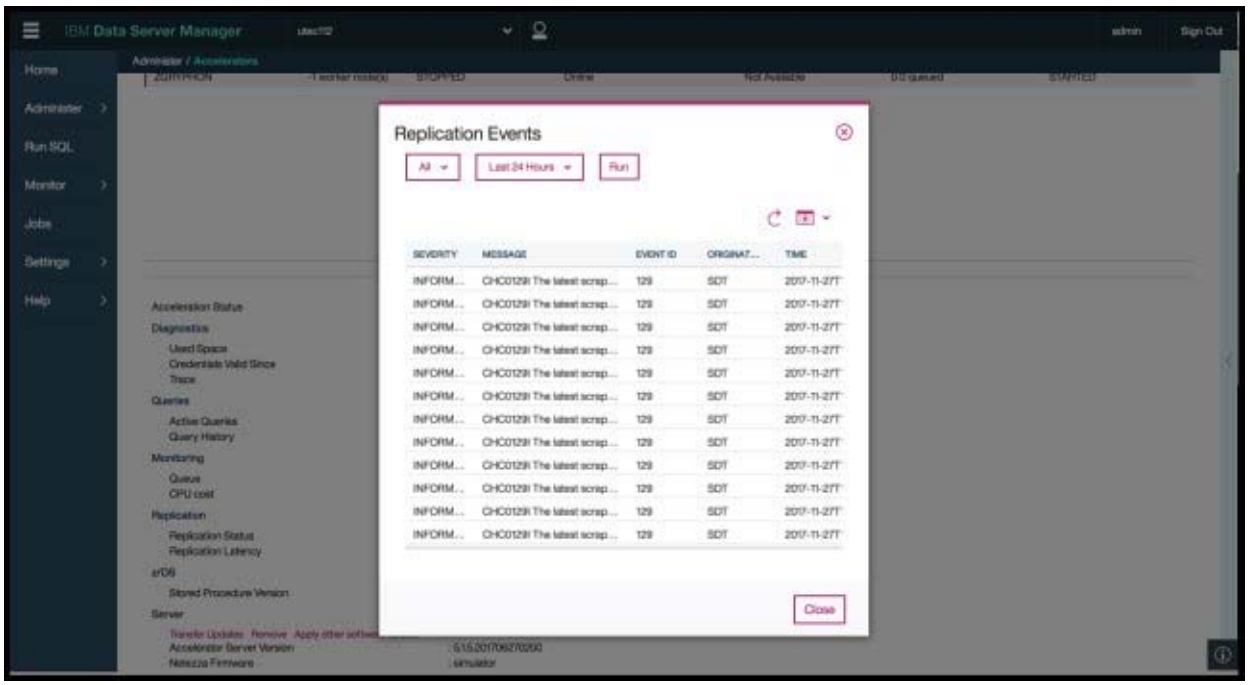

Figure 10. Viewing replication events

- Applying a different software version to the Accelerator server, removing a specific software version, and transferring software updates.

Table and Query Dashboard for Accelerator

If you click **Manage** for any selected Accelerator, you open the Tables/Queries dashboard.

Figure 11 shows the table dashboard for the selected Accelerator with the various actions that are currently supported for tables.

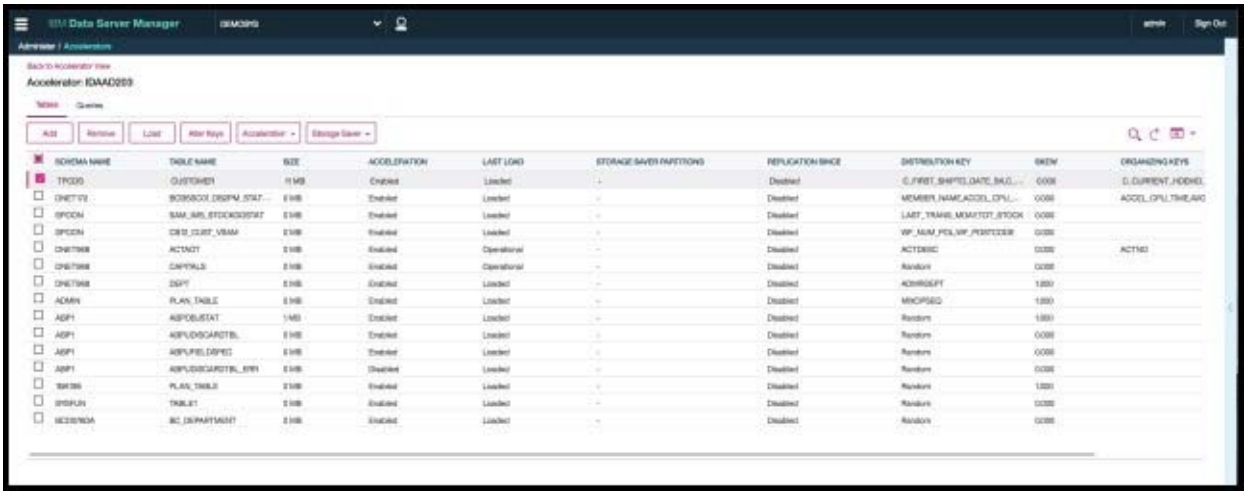

Figure 11. Table Dashboard with supported actions

The **Add Tables** option is always enabled. The dashboard lists all the tables that have been added to the Accelerator. Their current acceleration status is shown, along with the table size, the data load status, distribution and organization keys, the skew value, and the replication status.

Figure 12 shows how to add table references to an Accelerator. The list also highlights table columns that are not supported by the Accelerator. The **Search** option allows filtering the grid based on schema name and table name for easy access.

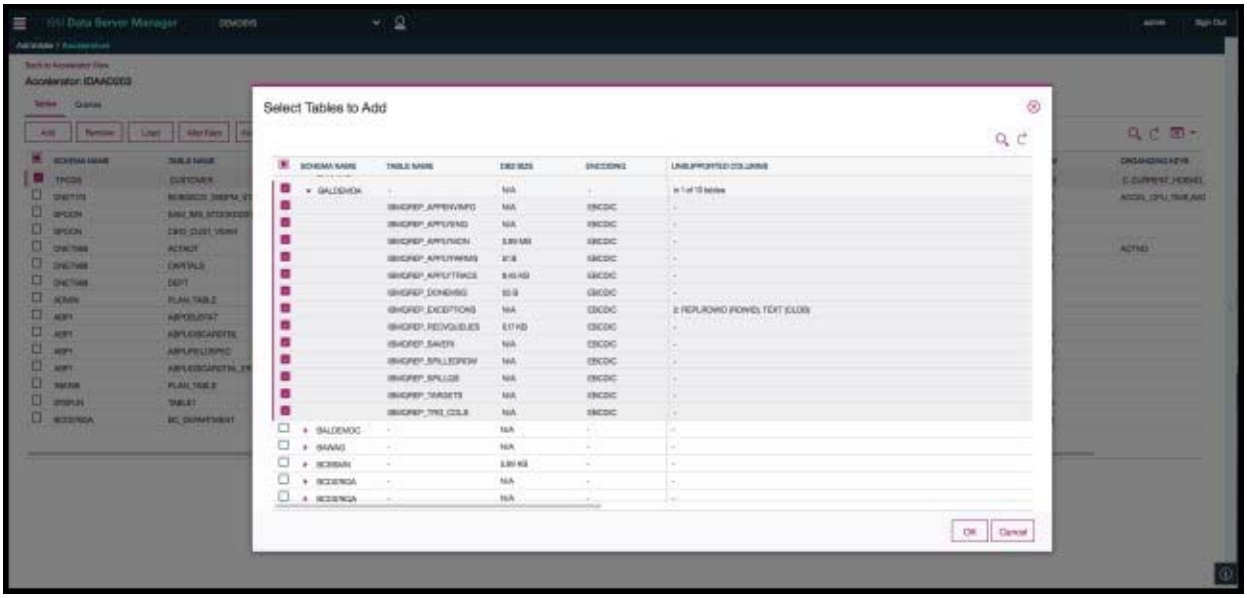

Figure 12. Table Add dialog

After a list of table references has been added, data can be loaded into these tables on the Accelerator, as shown in Figure 13. When a table reference is selected in the dashboard grid, the Load action is enabled. Clicking **Load** opens the Load Data dialog, which shows the partition status and load recommendations for the table.

Figure 13. Load Data dialog

Figure 14 shows how distribution and organizing keys can be selected for a table to improve query performance.

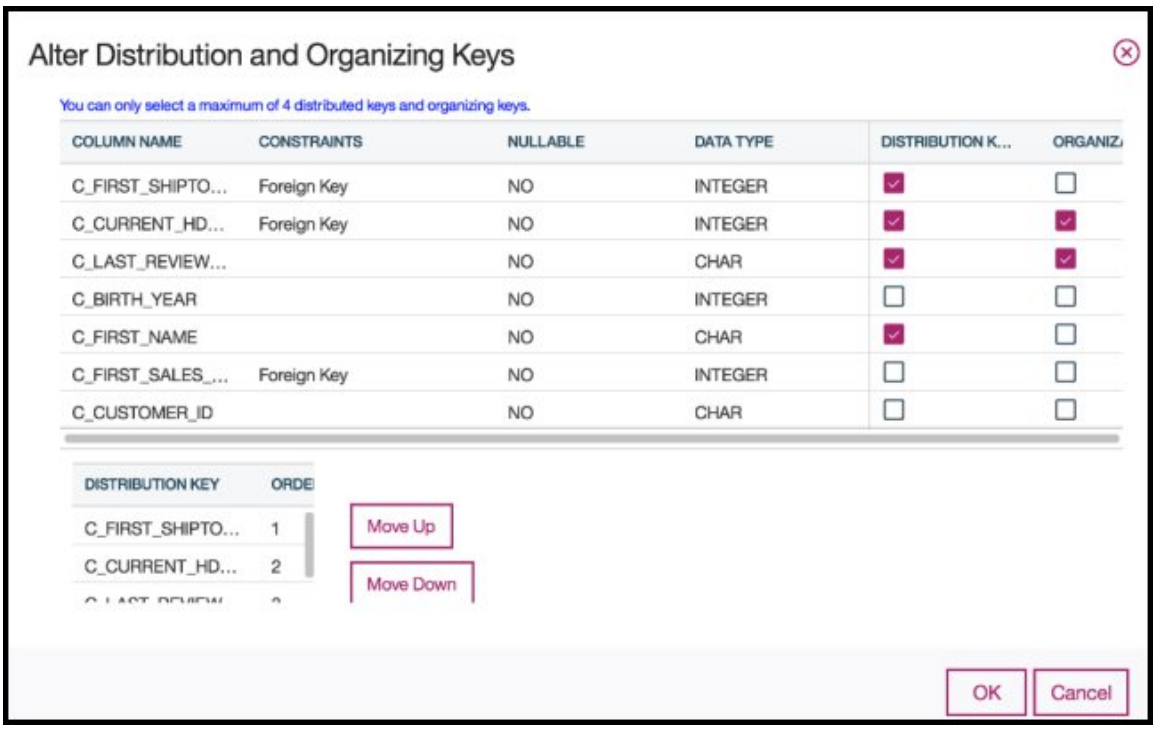

Figure 14. Alter Distribution and Organizing Keys dialog

Figure 15 shows how table partitions can be archived from the Accelerator.

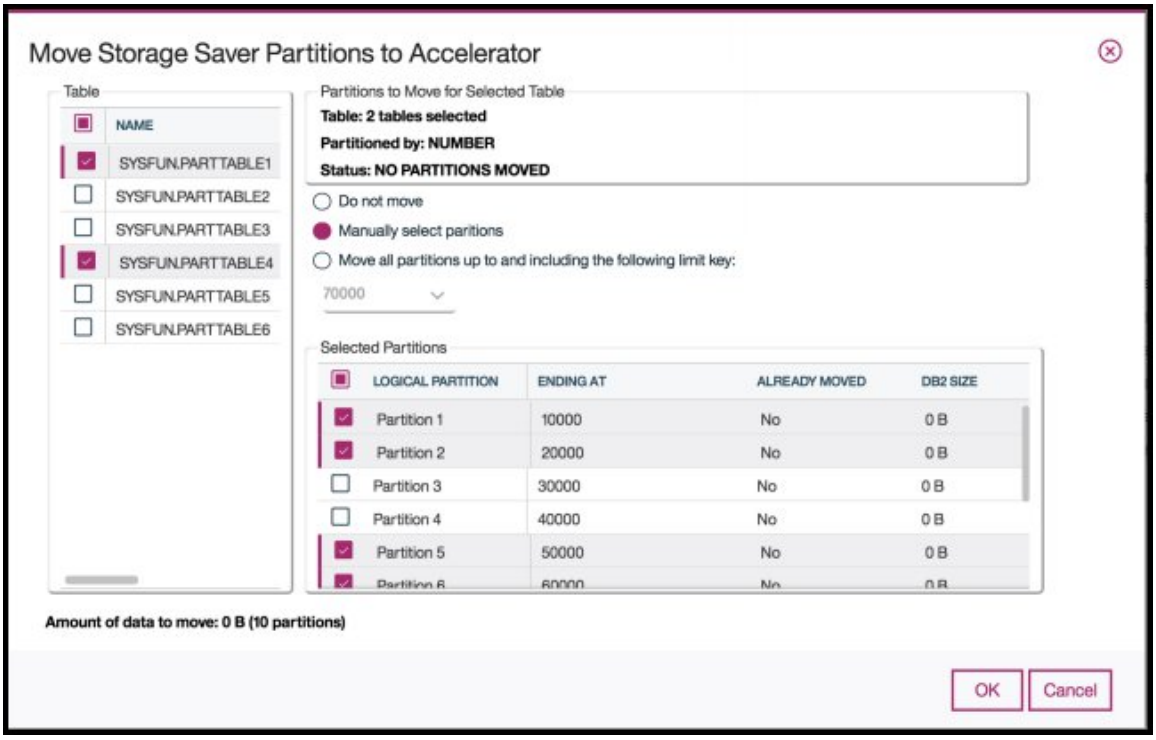

Figure 15. Move Storage Saver Partitions to Accelerator dialog

Figure 16 shows how table partitions can be restored from the Accelerator.

Figure 16. Restore Storage Saver Partitions to Db2 dialog

The List Tasks and Cancel Tasks dialog shown in Figure 17 enables users to cancel any currently running task.

Figure 17. List/Cancel Tasks

Tables in the Accelerator might no longer be in sync with base tables in Db2 for z/OS when there are structural changes to the base tables. These changes include altering the data type of a column, adding a new column, and so on. The Synchronize Schema for Tables dialog shown in Figure 18 enables users to synchronize Accelerator-shadow tables that went out of sync.

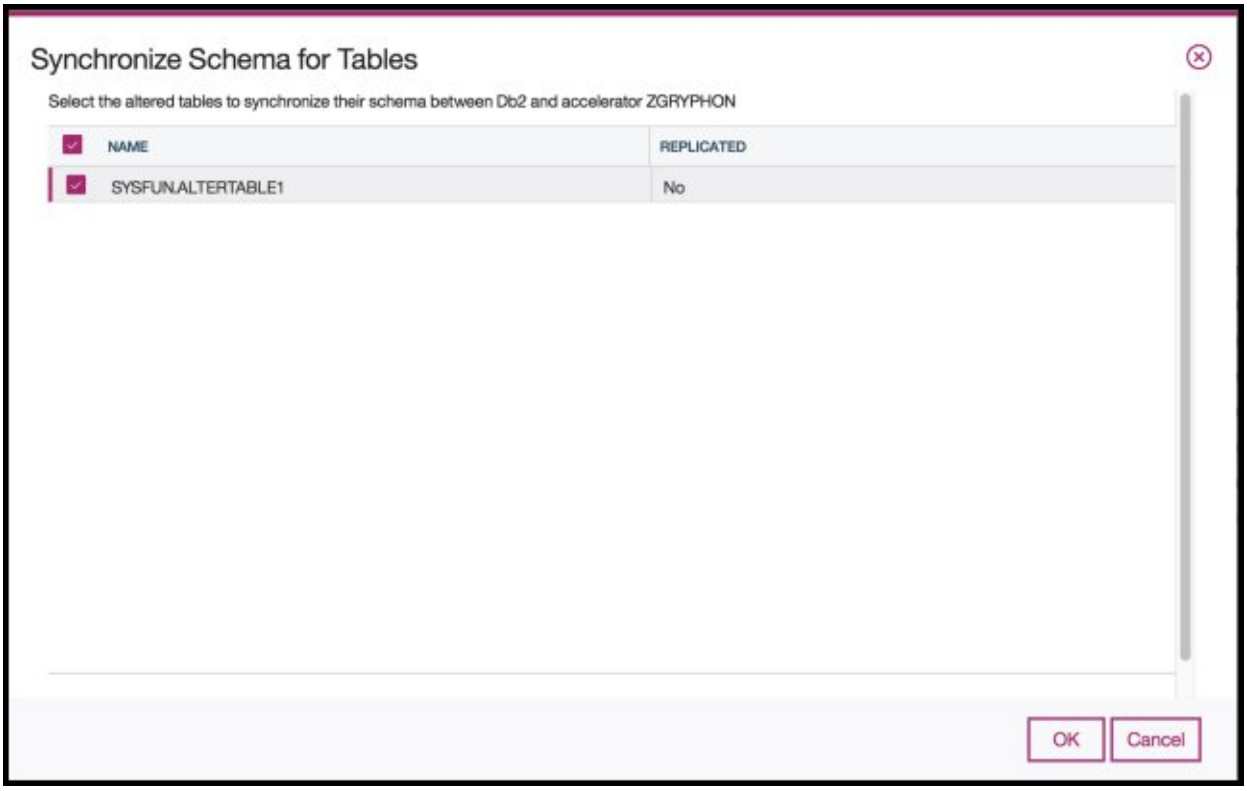

Figure 18. Synchronize Schema for Tables dialog

The Query Dashboard shows the status of all accelerated queries including important performance statistics. For each selected query, the full SQL text can be viewed. The query can be prepared for a rerun by posting it to the SQL Editor, and a Post Explain can be performed. The option to list and cancel running queries is always available on the dashboard, as shown in Figure 19.

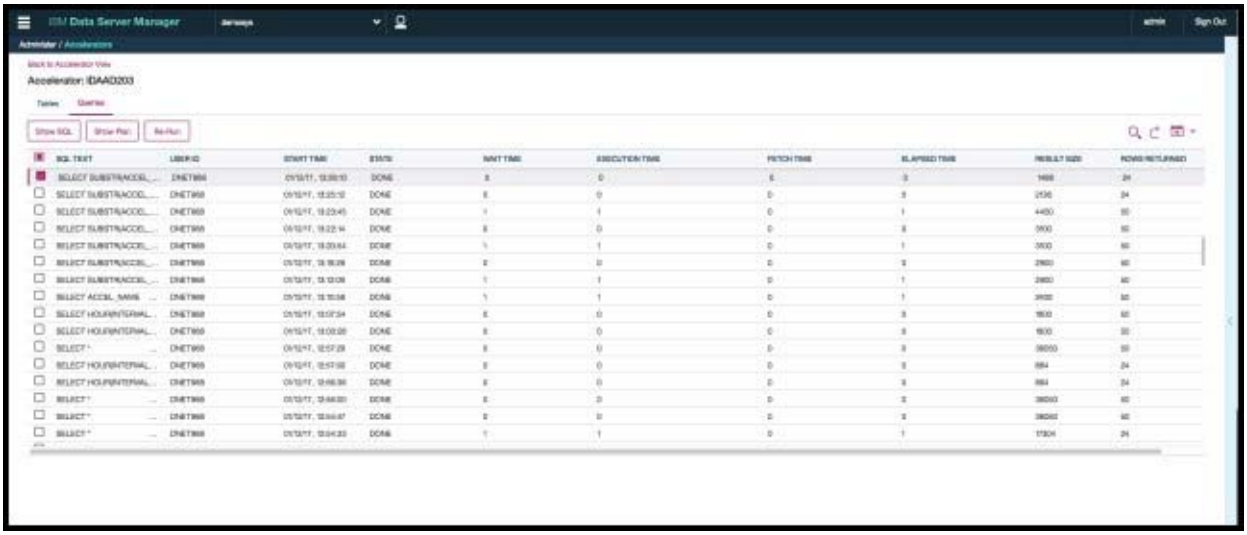

Figure 19. Query Dashboard

Figure 20 shows the entire SQL text for a select query.

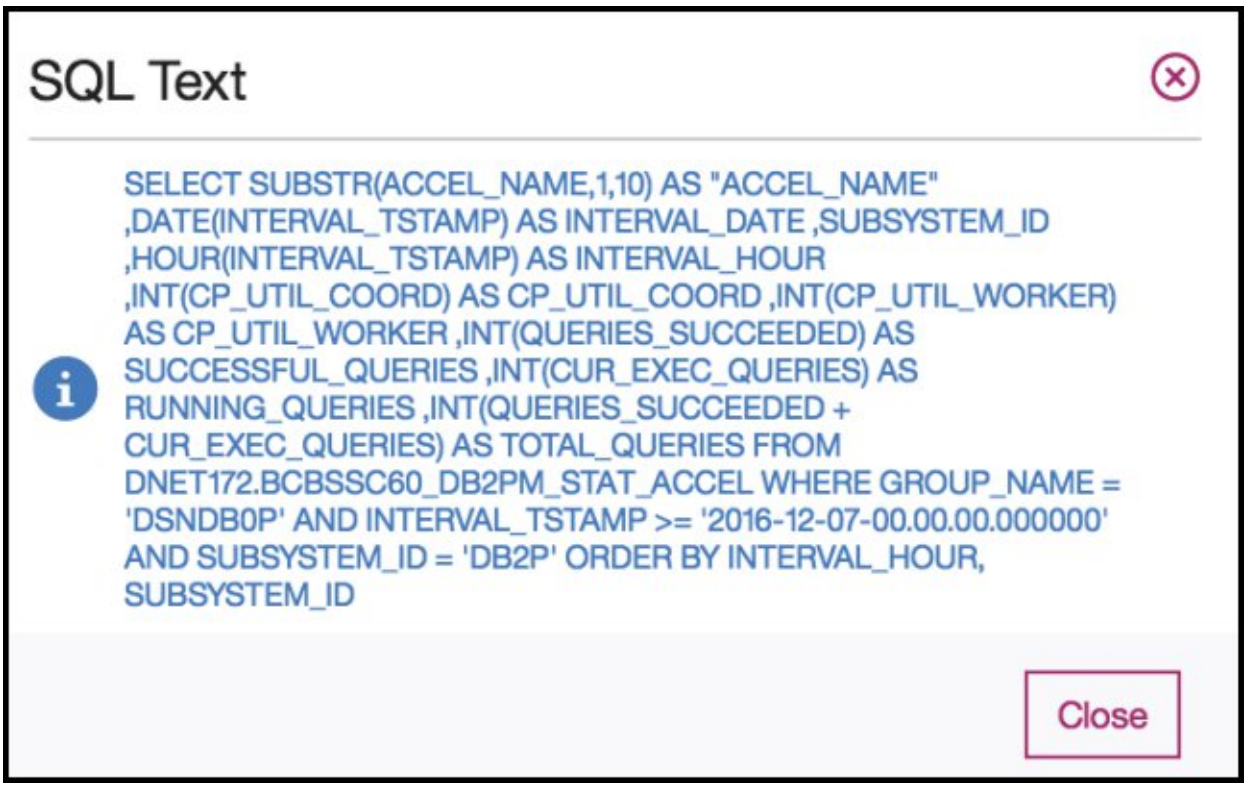

Figure 20. Show full SQL text

Figure 21 shows the post-execution Explain graph for a query.

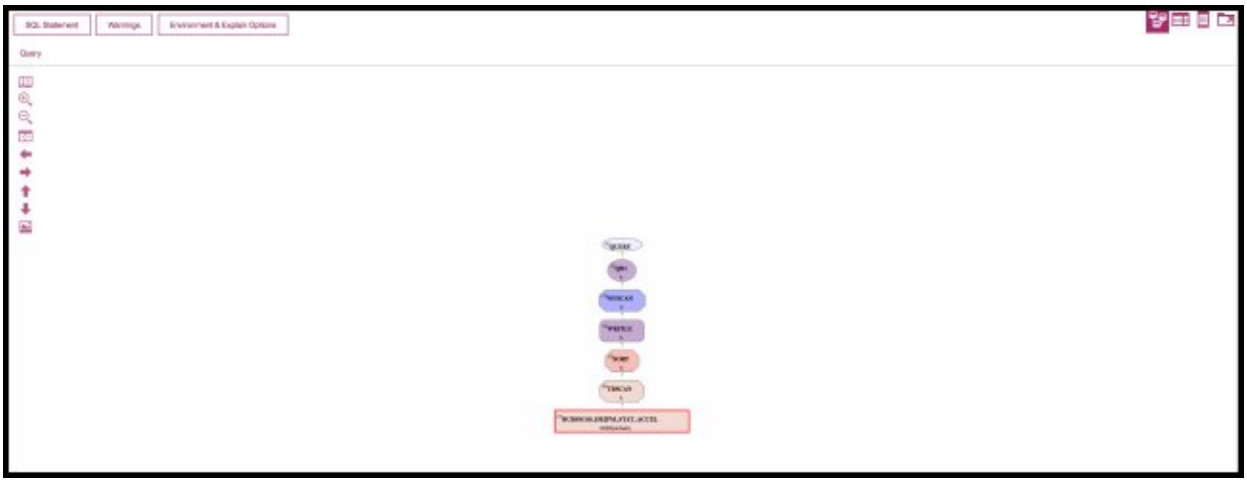
Figure 21. Post-execution Explain graph

Figure 22 shows the SQL editor prepared to rerun a selected query that was run on the Accelerator previously.

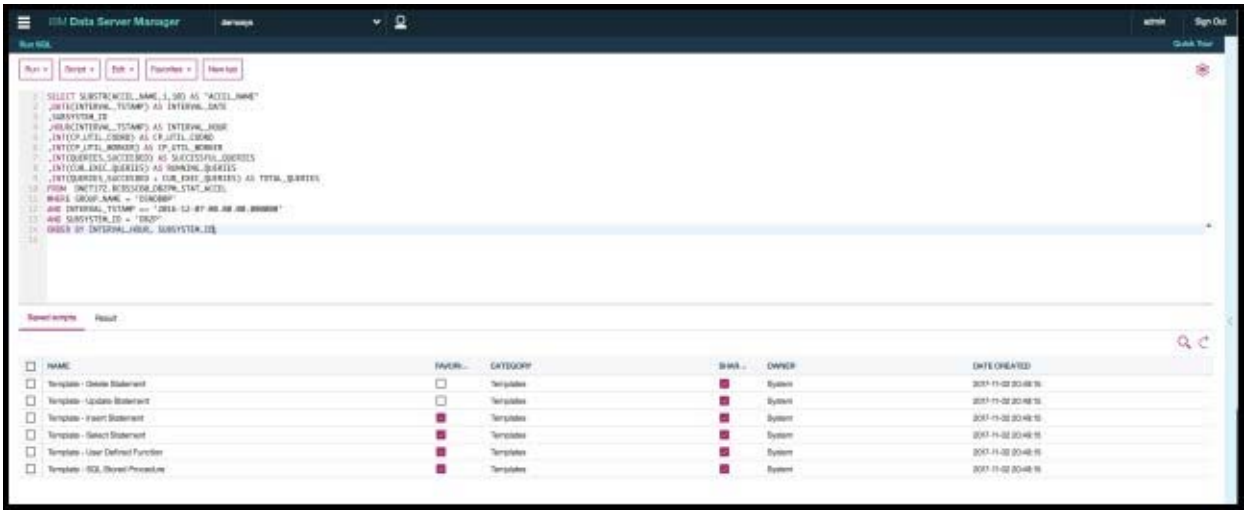

Figure 22. SQL editor prepared for query

The button to list and cancel queries is enabled on the Query Dashboard when there are queries that are in running state. This option, as shown in Figure 23, gives users the ability to list and cancel currently running queries.

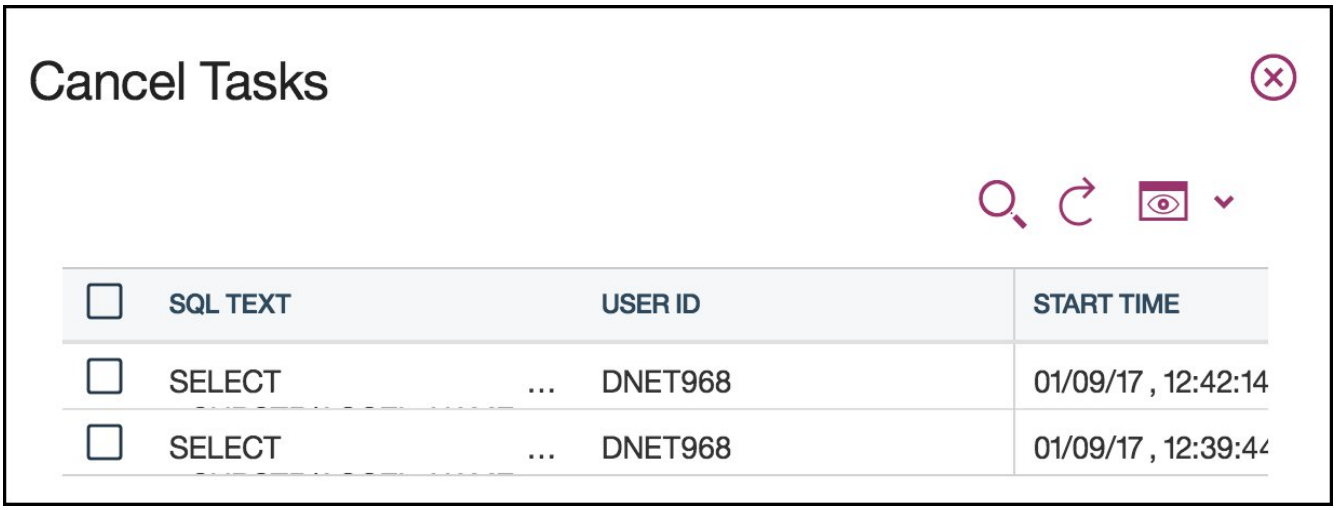

Figure 23. List/cancel queries

Useful links

- IBM Db2 Analytics Accelerator for z/OS documentation
  https://ibm.co/2BmhZb8
- IBM Db2 Analytics Accelerator for z/OS product support
  https://ibm.co/2Akddel

- IBM Data Server Manager at IBM Knowledge Center
  http://www.ibm.com/support/knowledgecenter/SS5Q8A/product_welcome.html
- IBM Data Server Manager community
  https://ibm.biz/dataservermanager

Notices

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

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.

The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions.

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.

Statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

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.

This document was created or updated on December 7, 2017.

Send us your comments in one of the following ways:

- Use the online **Contact us** review form found at:
  ibm.com/redbooks
- Send your comments in an e-mail to:
  redbooks@us.ibm.com
- Mail your comments to:
  IBM Corporation, International Technical Support Organization
  Dept. HYTD Mail Station P099
  2455 South Road
  Poughkeepsie, NY 12601-5400 U.S.A.

This document is available online at http://www.ibm.com/redbooks/abstracts/tips1356.html .

Trademarks

BigInsights®
Db2®
IBM®
RACF®
Redbooks®
Redbooks (logo)®
z/OS®