

IBM Cognos Dynamic Query Analyzer
Version 11.1.0

User Guide



©

Product Information

This document applies to IBM Cognos Analytics version 11.1.0 and may also apply to subsequent releases.

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Introduction

IBM® Cognos® Dynamic Query Analyzer is a query visualization tool. With it you can visualize and troubleshoot the query logs generated when running dynamic query reports in IBM Cognos Analytics. In addition, Cognos Dynamic Query Analyzer includes Aggregate Advisor, a tool that analyzes the performance and structure of dynamic cubes and provides suggestions for the creation of aggregates to improve cube performance.

Audience

This document is intended to help report administrators use Cognos Dynamic Query Analyzer to analyze reports and find performance bottlenecks in dynamic query reports.

In addition, modelers and administrators can use the Aggregate Advisor to optimize dynamic cubes.

Finding information

To find product documentation on the web, including all translated documentation, access [IBM Knowledge Center](http://www.ibm.com/support/knowledgecenter) (<http://www.ibm.com/support/knowledgecenter>).

Forward-looking statements

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Accessibility Features

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products. IBM Cognos Dynamic Query Analyzer has accessibility features. For information about these features, see [Appendix A, “Accessibility features in Cognos Dynamic Query Analyzer,”](#) on page 17.

Chapter 1. What's new

This information will help you plan your upgrade, application deployment strategies, and training requirements for users.

For information about upgrading, see the *IBM Cognos Analytics Installation and Configuration Guide*.



For information about new features in this release of IBM Cognos Analytics, see the *IBM Cognos Analytics New Features Guide*.

To review an up-to-date list of environments supported by IBM Cognos products, including information about operating systems, patches, browsers, web servers, directory servers, database servers, and application servers, go to the [IBM Software Product Compatibility Reports page](http://www.ibm.com/support/pages/node/735235) (www.ibm.com/support/pages/node/735235).

New features in 10.2.2

In version 10.2.2, various improvements to IBM Cognos Dynamic Query Analyzer are available.

Logging out from and in to the Cognos Analytics server

You can now log out by using the **Log Out**  icon from the IBM Cognos Analytics Server from within Cognos Dynamic Query Analyzer. You can also log in by using the **Log In** icon  without the need to close and restart IBM Cognos Dynamic Query Analyzer.

Your log-in name is displayed next to the **Log Out** icon at the bottom of the Cognos Dynamic Query Analyzer user interface.

Aggregate Advisor results are now stored on the Cognos Analytics server

Advisor results are now stored on the IBM Cognos Analytics server instead of on the workstation that is running Cognos Dynamic Query Analyzer.

If you are upgrading from a previous version of Cognos Dynamic Query Analyzer, all Aggregate Advisor results stored on the workstation are moved to the Cognos Analytics server, including results of runs that used a different Cognos Analytics server.

To apply in-memory aggregate recommendations to a different server you can either create a deployment that contains the model, including in-memory aggregate definitions, and deploy it to the new server or you can use Cognos Dynamic Query Analyzer. You can still use a deployment as before but if you want to use Cognos Dynamic Query Analyzer then the procedure is different. For more information, see [“Apply Aggregate Advisor results to a different server”](#) on page 11.

Merging Aggregate Advisor in-memory recommendations from different runs

It is now possible to merge multiple in-memory recommendations into a single recommendation from the Aggregate Advisor that is published to the content store. For more information, see [“Merging in-memory recommendations”](#) on page 11.

In-database aggregates derived from other in-database aggregates

In-database aggregate recommendations can now be derived from other in-database aggregates. In this case, the sample SQL refers to columns from the sample SQL of the second in-database aggregate. If a derived in-database aggregate can be derived from multiple in-database aggregates, the sample SQL is generated from the in-database aggregate that provides the optimal solution. For more information, see [“Where are in-database aggregates derived?”](#) on page 6.

New Aggregate Advisor general option

A new query workload information option, **User Defined Only**, is available when you run Aggregate Advisor. You can use this option to include recommendations for user-defined in-memory aggregates.

For more information, see [“Optimize dynamic cube performance with Aggregate Advisor”](#) on page 5.

New features in 10.2.1.1

In version 10.2.1.1, various improvements to Aggregate Advisor are available.

Aggregate Advisor separated from query log files

Aggregate Advisor is now the main feature in IBM Cognos Dynamic Query Analyzer. Query log files are no longer shown by default. To view them, click **Window, Analyze logs**. For more information, see [“Analyzing query log files”](#) on page 11.

New Aggregate Advisor general options

There are now three query workload information options available when you run the Aggregate Advisor:

- **Cube structure and query workload information**
- **Cube structure only**
- **Query workload information only**

For more information, see [“Optimize dynamic cube performance with Aggregate Advisor”](#) on page 5.

Improvements to Aggregate Advisor results

By default, if there are previous results available, new Aggregate Advisor results are now shown at the top of the **Advisor results** view. Previously, new results were shown at the end of the **Advisor results** view.

You can now change the default title of a specific Aggregate Advisor result by using the **Set Description** option.

The name of the **Clear Aggregate Advisor Results** option has changed to **Delete Aggregate Advisor Results**.

The Aggregate Advisor result **Sort** option now contains more sort options. By default, results are now sorted by time in descending order. Previously, results were sorted by time in ascending order.

In-database recommendations, in-memory recommendations, and messages are now shown in a single window rather than under separate headings in the **Advisor results** view.

You can now select individual in-memory recommendations from a specific Aggregate Advisor result to apply to the content store. Previously, you were required to save all in-memory recommendations.

For more information about these improvements, see [“Aggregate Advisor results”](#) on page 10.

New features in 10.2.1

See the following topics for new features since the last release. Links to directly related topics are included.

HTTPS Support

You now have the ability to run the Aggregate Advisor with a IBM Cognos Analytics environment that has been configured for SSL. For more information, see the *IBM Cognos Analytics Installation and Configuration Guide*.

New features in 10.2.0

See the following topics for new features since the last release. Links to directly related topics are included.

Aggregate Advisor

Aggregate Advisor is a tool that analyzes the performance and structure of dynamic cubes and provides suggestions for the creation of aggregates to improve cube performance. For more information, see [“Optimize dynamic cube performance with Aggregate Advisor” on page 5](#)

For information about dynamic cubes and aggregates, see the *IBM Cognos Dynamic Cubes User Guide*.

DQM server logging on a report basis

You can now enable DQM server logging in IBM Cognos Dynamic Query Analyzer. Server logs are generated only for reports that are run in Dynamic Query Analyzer. Previously, trace logging had to be enabled for all reports run on the IBM Cognos Analytics server. For more information, see [“DQM server logs” on page 15](#).

Chapter 2. Getting started with Cognos Dynamic Query Analyzer

IBM Cognos Dynamic Query Analyzer is a tool that provides graphical representations for the query logs produced by dynamic query mode queries. In addition, Cognos Dynamic Query Analyzer has Aggregate Advisor, a tool that analyzes dynamic cubes and suggests aggregates that, when implemented, improve cube performance.

Important: You must configure Cognos Dynamic Query Analyzer before you can access the content store and query logs of your IBM Cognos Analytics server. For configuration instructions, see the *IBM Cognos Dynamic Query Analyzer Installation and Configuration Guide*.

Cognos Dynamic Query Analyzer

IBM Cognos Dynamic Query Analyzer includes an Eclipse-based client user interface. Data is presented in a series of visual components called views. You can perform operations on the data contained in the active view. The results of these operations affect the content of other views, or cause new views to be opened automatically.

Views are contained within tab groups.

A tab group contains **Minimize** and **Maximize** buttons and can also contain buttons required by the currently active view. A tab group can be resized by dragging the side next to another tab group.

When a view is opened, it is displayed in the same location where it was last opened, unless it is being opened for the first time, in which case it is opened in a default location. A view can be moved from one tab group to another, or detached as a separate window.

To move a view to a different tab group, drag the title bar to the new tab group, and release it. To detach a view as a new window, right-click the title bar, and click **Detached**. To drag an entire tab group to a new location, right-click the title bar, and click **Move, Tab Group**.

Optimize dynamic cube performance with Aggregate Advisor

Aggregate Advisor can analyze dynamic cubes and suggest aggregates that, when implemented, improve cube performance. Aggregate Advisor can also analyze previously run reports and suggest aggregates that correspond directly to these reports.

Aggregate Advisor makes two types of recommendations.

- **In-Memory Recommendations** are aggregate recommendations that can be applied by the IBM Cognos Analytics server the next time the cube is started. These aggregates are stored in the Content Store.
- **In-Database Recommendations** are aggregate recommendations that a database administrator can create and apply to the database. After the database has been updated, a modeler must model an aggregate cube for each created aggregate table in the database and redeploy the dynamic cube to the Content Store.

For more information about how in-database recommendations are derived, see [“Where are in-database aggregates derived?”](#) on page 6

Aggregate Advisor creates in-memory aggregate recommendations that are estimated to fit within the selected size limit for in-memory aggregates. It can also create in-database aggregate recommendations that are estimated to fit within the selected size limit for in-database aggregates.

When you run Aggregate Advisor, the following options are available.

Query Workload Information

Select **Cube Structure and Query Workload Information** to request Aggregate Advisor to consider information from the cube structure and workload logs when making recommendations.

Select **Cube Structure Only** to request Aggregate Advisor to consider information from the cube structure only when making recommendations.

Select **Query Workload Information Only** to request Aggregate Advisor to consider information from workload logs only when making recommendations.

Select **User-Defined Only** to request Aggregate Advisor to consider information only from user-defined in-memory aggregates when making recommendations. When you select any of the other options with in-memory aggregates, the recommendations for user-defined in-memory aggregates are included as part of the results. However, if you are interested only in recommendations for user-defined in-memory aggregates this option returns them faster.

In-memory aggregates

If selected, Aggregate Advisor makes aggregate recommendations that can be applied by the Cognos Analytics server when the dynamic cube is restarted. A size limit for in-memory aggregates can also be supplied.

In-database aggregates

If selected, Aggregate Advisor makes aggregate recommendations that can be applied by a database administrator. A size limit for in-database aggregates can also be supplied. The size limit for in-database aggregate recommendations refers to the uncompressed size of the database.

Advisor run time limit

If selected, Aggregate Advisor will end after the specified time and return the aggregate recommendations made at that time. If no recommendations are yet available, Aggregate Advisor continues to run until it has an initial set of recommendations and finishes.

When you run Aggregate Advisor, the following filter workload options are available.

Only consider the workload information that relates to any of the following

If any conditions are selected, workload information is used only from reports that satisfy the selected conditions. If more than one condition is selected, workload information from reports that satisfy any of the selected conditions is used.

And only consider workload information for the following periods

If any condition other than **All** is selected, only workload information from reports run in the specified time periods is used.

For more information about aggregates and how their use can improve the performance of dynamic cubes, see the *IBM Cognos Dynamic Cubes User Guide*.

Where are in-database aggregates derived?

Aggregate Advisor in-database aggregate recommendations can be derived from the fact table or other in-database aggregates. When derived from the latter, the sample SQL refers to columns from the sample SQL of the second in-database aggregate. If a derived in-database aggregate can be derived from multiple in-database aggregates, the sample SQL is generated from the in-database aggregate that provides the optimal solution.

In the following illustration, Diagram A shows in-memory and in-database aggregate recommendations that are based on in-database aggregate recommendations (A1 and A2) that are built from the fact table. Diagram B shows aggregate recommendations (B1 and B2) derived from the fact table but there are also in-database aggregate recommendations (B3 and B4) built on other in-database aggregates (B1 and B2).

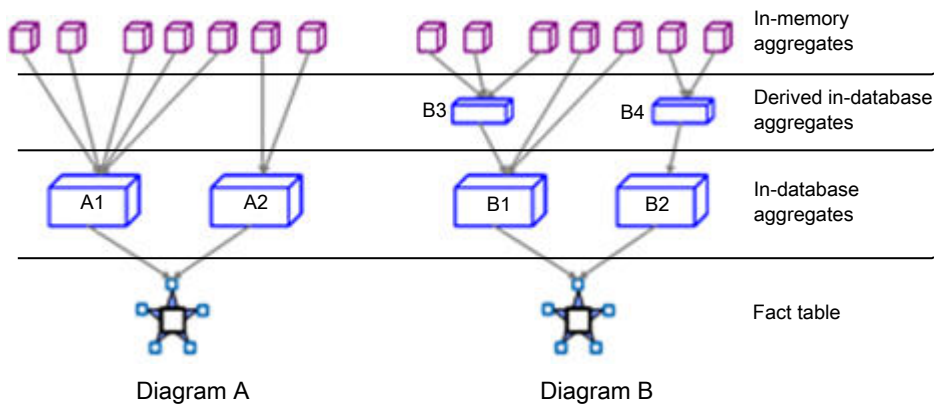


Figure 1. Aggregate recommendations derived from a fact table and from other in-database aggregates

Deriving in-database aggregates from other in-database aggregates provides these benefits:

- Improved loading of in-memory aggregates by populating them from relatively small in-database aggregates.
- Improved refresh of in-database aggregates by populating them from other in-database aggregates instead of the fact table.

The database administrator creates derived in-database aggregates and applies them to the database after creating and applying the base in-database aggregates.

The following extract of an Aggregate Advisor in-database recommendation has two in-database aggregates: one is derived from the fact table, the other derived from the first in-database aggregate. Note the following points about the extract:

- The prolog indicates how many in-database aggregates are recommended including the number that are derived from the fact table and other in-database aggregates.
- The prolog has instructions about creating in-database aggregates that are derivable from other in-database aggregates.
- The first recommended in-database aggregate is derived from the fact table. The SQL selects from the fact and dimension tables.
- The second recommended in-database aggregate is derived from the first recommended in-database aggregate. The SQL is much simpler since it queries only the aggregate table and does not need to join to other tables. The name that is chosen when creating the first in-database aggregate can be specified here.

Important: If the database administrator creates the in-database aggregate using different column names from what is in the sample SQL, the SQL for any derived in-database aggregates must be modified to match the column names used.

```

/*****
* Dynamic Cubes Aggregate Advisor
* In-Database Recommendations
*
* Cube: GoSales_AllEmp_en-us
* Start time: 2013-11-19 15:12:09.761 EST
*
* General options:
* - Do not use query workload logs
* - In-memory aggregates maximum size = 1000000 (bytes)
* - In-database aggregates maximum size = 10000000 (bytes)
* - Advisor run time limit: 60 (minutes)
*
* Summary:
* - Number of new database aggregates recommended: 2. Details are in
  the next section.
* - Number of new database aggregates derivable from the fact table: 1.
* - Number of new database aggregates derivable from recommended database
  aggregates: 1.

```

```

*****/

/*****
* Advisor recommended aggregates for the database. The recommendations are
  listed in the following sections.
*
* The DBA must create the appropriate aggregate tables.
* The modeler must define an aggregate cube for each created aggregate table.
*
* ...
*
* Following the textual description is an example of the SQL that can aggregate
  the data.
* For aggregates derivable from recommended database aggregates, the example SQL
  is constructed in the context of the optimal underlying aggregate table and uses
  a placeholder name for the table name.
*
* ...
*****/

/*****
* Aggregate: Month - Product type
*
* Dimension hierarchies with level they are aggregated at:
*
* Dimension          Hierarchy          Level
* -----
* Time               Time               Month
* Products           Product            Product type
* Retailer           Retailer (by Region) [All]
*
* Measures:
* -----
* Quantity
*
* Column            Data Type          Cube Model Relationship
* -----
* CURRENT_YEAR      SMALLINT
* QUARTER_KEY       INTEGER
* MONTH_KEY         INTEGER           Time -> Time -> Month
* PRODUCT_LINE_CODE INTEGER
* PRODUCT_TYPE_KEY  INTEGER           Products -> Product ->Product type
* Quantity          BIGINT           measure: Quantity
*
* This aggregate cannot be derived from any other recommended aggregates for
  the database.
*
* Number of recommended in-memory aggregates that this aggregate can cover: 4
*
* Estimated row count of this aggregate: 21500
*****/

SELECT
  "GO_TIME_DIM2"."CURRENT_YEAR" AS "CURRENT_YEAR",
  "GO_TIME_DIM2"."QUARTER_KEY" AS "QUARTER_KEY",
  "GO_TIME_DIM2"."MONTH_KEY" AS "MONTH_KEY",
  "SLS_PRODUCT_DIM"."PRODUCT_LINE_CODE" AS "PRODUCT_LINE_CODE",
  "SLS_PRODUCT_DIM"."PRODUCT_TYPE_KEY" AS "PRODUCT_TYPE_KEY",
  SUM("SLS_SALES_CLEAN_FACT"."QUANTITY") AS "Quantity"
FROM
  "GOSALESDW"."GO_TIME_DIM" "GO_TIME_DIM2"
  INNER JOIN "GOSALESDW"."SLS_SALES_CLEAN_FACT" "SLS_SALES_CLEAN_FACT"
    ON "GO_TIME_DIM2"."DAY_KEY" = "SLS_SALES_CLEAN_FACT"."ORDER_DAY_KEY"
  INNER JOIN "GOSALESDW"."SLS_PRODUCT_DIM" "SLS_PRODUCT_DIM"
    ON "SLS_PRODUCT_DIM"."PRODUCT_KEY" =
      "SLS_SALES_CLEAN_FACT"."PRODUCT_KEY"
GROUP BY
  "GO_TIME_DIM2"."CURRENT_YEAR",
  "GO_TIME_DIM2"."QUARTER_KEY",
  "GO_TIME_DIM2"."MONTH_KEY",
  "SLS_PRODUCT_DIM"."PRODUCT_LINE_CODE",
  "SLS_PRODUCT_DIM"."PRODUCT_TYPE_KEY"

/*****
* Aggregate: Quarter - Product line
*
* Dimension hierarchies with level they are aggregated at:
*

```

```

* Dimension          Hierarchy          Level
* -----
* Time              Time              Quarter
* Products          Product          Product line
* Retailer          Retailer (by Region)  [All]
*
* Measures:
* -----
* Quantity
*
* Column            Data Type          Cube Model Relationship
* -----
* CURRENT_YEAR      SMALLINT
* QUARTER_KEY       INTEGER            Time -> Time -> Quarter
* PRODUCT_LINE_CODE INTEGER            Products -> Product -> Product line
* Quantity          BIGINT            measure: Quantity
*
* This aggregate can be derived from any of the following other aggregates for
the database:
* Month - Product type
*
* Number of recommended in-memory aggregates that this aggregate can cover: 2
*
* Estimated row count of this aggregate: 4000
*
*****/

SELECT
  "CURRENT_YEAR",
  "QUARTER_KEY",
  "PRODUCT_LINE_CODE",
  SUM("Quantity") AS "Quantity"
FROM
  [Month - Product type]
GROUP BY
  "CURRENT_YEAR",
  "QUARTER_KEY",
  "PRODUCT_LINE_CODE"

```

Running Aggregate Advisor

You can run Aggregate Advisor in IBM Cognos Dynamic Query Analyzer to generate aggregate recommendations for a dynamic cube.

Procedure

1. Run a series of reports that are a representative workload against the dynamic cube.

This step is optional. If you are designing a dynamic cube, you may wish to run the Aggregate Advisor without using workload information.

 - a) Enable workload logging for the dynamic cube. For instructions, see the topic on dynamic cube configuration settings in the *IBM Cognos Dynamic Cubes User Guide*.
 - b) Run a series of reports that are a representative workload against the dynamic cube to gather data about the report execution characteristics.
 - c) Optionally, disable workload logging after the reports are run.
2. In Cognos Dynamic Query Analyzer, click **File, Run Aggregate Advisor**.
 - a) In the **Select the cube** screen, select the cube to run in Aggregate Advisor.
 - b) In the **Specify general options** screen, specify the general options described in [“Optimize dynamic cube performance with Aggregate Advisor”](#) on page 5.
 - c) If you selected **Query Workload Information** on the **Specify general options** screen, you can specify filtering options on the **Filter Workload Information** screen described in [“Optimize dynamic cube performance with Aggregate Advisor”](#) on page 5. If you specify filters, only workload data that relates to the specified reports, packages, and users, and that falls within the specified time period, are considered when making aggregate recommendations.

Filters are not available if you select the **Cube structure only** option.

While Aggregate Advisor runs, a graph displays progress as a function of time. The **Details** tab displays the same information as text. Click the **Run in Background** button to dismiss the progress display and continue to run the Aggregate Advisor in the background. You can end the Aggregate Advisor run and receive the recommendations made so far by clicking the **End** button. Click the **Cancel** button to end the run without receiving any recommendations.

When the slope of the graph starts to level out, further recommendations will not have much impact and the Aggregate Advisor run can be ended.

Tip: You do not need to keep Cognos Dynamic Query Analyzer open after you start an Aggregate Advisor run. While running, you can shut down Cognos Dynamic Query Analyzer, and restart it later to see the results of the Aggregate Advisor.

When Aggregate Advisor finishes, you can view the recommendations on the **Advisor results** tab. For more information on the recommendations, see [“Aggregate Advisor results” on page 10](#).


Aggregate Advisor results

When the Aggregate Advisor finishes, you can view the summary of Aggregate Advisor recommendations on the **Advisor results** tab.


Aggregate Advisor results are stored on the IBM Cognos Analytics server on which they were generated. To view them, Cognos Dynamic Query Analyzer must be connected to the Cognos Analytics server.

Procedure

1. Double-click an item in the **Advisor results** view for the detailed results.

Tip: To refresh the list of Aggregate Advisor results, click **Refresh Aggregate Advisor results** .

If there are previous Aggregate Advisor results, new results are shown first by default. To change the

order in which Aggregate Advisor results are shown, click **View Menu** , **Sort** in the **Advisor results** view. Select the required items on which to sort, and sort direction, and then click **OK**.

By default, the title consists of the cube name that is appended with a time stamp. To change the title of a specific result, click **View Menu, Set Description** in the **Advisor results** view. Type the new title and then click **OK**.

To delete results, click **View Menu, Delete Aggregate Advisor Results** in the **Advisor results** view. Select the results to delete, and then click **OK**.

A tabbed pane is displayed with more detail about the Aggregate Advisor results. The **General** tab contains a summary of the Aggregate Advisor results. The **In-database** tab describes the in-database recommendations in detail. The **Options** tab lists the options that are used for the Aggregate Advisor wizard run.

2. To clear previously applied in-memory recommendations, click **File, Clear In-Memory Recommendations**, and select the required cube.

Previously applied in-memory recommendations can be applied again later.

3. To save in-memory recommendations, click **File, Apply Selected In-Memory Recommendations**, and select which recommendations to apply.

The selected recommendations are automatically applied when the dynamic cube is restarted.

If you apply only a subset of the recommendations, a new result is added to the **Advisor results** view with the title "Saved to Server" followed by the cube name that is appended with a time stamp. This special result consists of only the **General** tab, which lists the subset of applied recommendations.

4. To save the in-database recommendations, click **File, Save In-Database Recommendations**, and select where to save the recommendations.

This file contains the information that is displayed in the **In-database** tab. The database administrator creates the aggregate tables, and the modeler models the aggregate cube for the in-database aggregate and redeploys the dynamic cube.

What to do next

If there are both in-memory and in-database recommendations, to get optimal in-memory load performance, create database aggregate tables and define aggregates cubes before saving in-memory aggregates and enabling the aggregate cache for the cube. Following this sequence of steps allows in-memory load queries to benefit from the coverage in-database aggregates can provide.

Merging in-memory recommendations

When you apply Aggregate Advisor results, you can merge in-memory recommendations from a different Aggregate Advisor run with the results that you are currently applying.

Important: Normally, you apply recommendations from a single Aggregate Advisor run. However, if you find a specific in-memory aggregate from a previous run that is useful, and it is excluded from the recommendations in the current result, you can include it with recommendations from the current run. If the additional in-memory aggregate was covered by an in-database aggregate from the other Aggregate Advisor run, you must ensure that it is still covered by an in-database aggregate in the current set of in-database aggregates, so that the added in-memory aggregate continues to load at comparable speeds.

Procedure

1. To merge results from a different run with the results you are processing, click **File, Apply Selected In-Memory Recommendations**.
2. Click **Add** and then select a stored result from the drop-down list. The in-memory recommendations from that run are added to the list of recommendations that are currently displayed but are not selected.
3. Select the check-box next to the **Name** of any recommendations you want to add.

Apply Aggregate Advisor results to a different server

Aggregate Advisor results are stored on the IBM Cognos Analytics server where they were generated.

The results are stored in the folder `<BI_server_installation_location>/logs/XQE/ROLAPCubes/<cube_name>/advisor/recommendations`

To apply in-memory aggregate recommendations to a different server you can either create a deployment that contains the model, including in-memory aggregate definitions, and deploy it to the new server or you can use Cognos Dynamic Query Analyzer.

To use Cognos Dynamic Query Analyzer, copy the results .xml file to the equivalent folder on the destination server. You can then connect Cognos Dynamic Query Analyzer to the new server and apply the results.

Analyzing query log files

You can view and analyze query log files in IBM Cognos Dynamic Query Analyzer. The graphical representation of the log files allows you to see performance bottlenecks.

Procedure

1. Run a report that uses dynamic query mode.
2. In Cognos Dynamic Query Analyzer, click **Window, Analyze Logs**.
3. Open the query log files.
4. Explore the query log files to find performance bottlenecks.

Running a report that uses dynamic query mode

You can run a report using the IBM Cognos Analytics web interface, or you can run it using IBM Cognos Dynamic Query Analyzer.

Before you begin

Before running the report, the query execution trace option of Query Service must be enabled. This option can be enabled in either of two ways.

- Your administrator can enable the query execution trace option in IBM Cognos Administration. This option is enabled for all reports run either through the Cognos Analytics web interface or through Cognos Dynamic Query Analyzer. For more information, see the topic on Query Service administration in the *IBM Cognos Analytics Administration and Security Guide*.
- You can enable query execution trace for reports run through Cognos Dynamic Query Analyzer. To enable this option, click **Window, Preferences**. On the **General** tab, check **query execution trace**. If logging is enabled through Cognos Dynamic Query Analyzer, the system administrator does not need to enable it on a server-wide basis.

If you are running reports through Cognos Dynamic Query Analyzer, the versions of Cognos Dynamic Query Analyzer and the Cognos Analytics server must be the same. Otherwise, the report may not run.

Procedure

Run a report that uses dynamic query in one of the following ways.

- Use any of the methods available through the Cognos Analytics web interface. For more information, see the *IBM Cognos Analytics - Reporting User Guide*.
- In Cognos Dynamic Query Analyzer, navigate to the report in the **Content Store** view. Right-click the report, and click **Run Report**. You cannot set prompts for a report when you run it using Cognos Dynamic Query Analyzer.

Results

You can now open and analyze the log files in Cognos Dynamic Query Analyzer.

Opening query log files

When you run a report, query log files are created if the **query execution trace** option is enabled. Log files are XML files that capture the native MDX queries executed during a report run, along with execution and waiting time metrics for query constructs.

The query log files are contained in a folder named `<time-stamp>_<report_name>` inside the XQE logs folder. This folder contains one or more profile files named `profilingLog-0.xml`, `profilingLog-1.xml`, and so on. If the report execution requires executing subqueries, there is a subfolder named `subqueries` that contains folders with profile files for each subquery.

After a report is run, you can open the query log files in IBM Cognos Dynamic Query Analyzer. You can browse and open log files using any of three methods.

Opening query log files from the Content Store view

You can use the **Content Store** view to browse and open query log files.

Procedure

1. If the **Content Store** view is not open, click **Window, Show View** and select the **Content Store** view.
2. In the **Content Store** view, navigate to the required report and click the arrow next to it.
The report entry expands to display the profile log files and subquery folders for the report.

3. Double-click a profile entry to open the file, or click the arrow next to a subquery folder, and Double-click a profile entry to open the file.

Results

For each open query log file, a graph displays the profile file. **Summary**, **Query**, and **Properties** views displaying data related to the active graph also open.

Opening query log files from the File menu

You can browse and open query log files using the **File** menu

Procedure

1. Click **File, Open log**.
2. You can browse query log files in the following ways.
 - Select **Previously opened** to see a list of log files that were previously opened and locally cached by IBM Cognos Dynamic Query Analyzer.
 - Select **From directory** to see a list of log files accessible from a file location.
 - Select **From URL** to see a list of log files accessible using the `http://` or `file://` web browser protocol.
3. Click the arrow next to a report folder to display the profile log files and subquery folders for the report.
 - Select the check box next to a profile log file to open that query log.
 - Select the check box next to a report folder to open all query log files contained in the folder.
 - Select multiple check boxes to open multiple query log files.

Opening many query log files at the same time can cause an out-of-memory error in Cognos Dynamic Query Analyzer.

Results

For each open query log file, a graph displays the profile file. **Summary**, **Query**, and **Properties** views displaying data related to the active graph also open.

Opening query log files from the Report Logs view

You can use the **Report Logs** view to browse and open query log files.

Procedure

1. If the **Report Logs** view is not open, click **Window, Show View** and select the **Report Logs** view.
2. In the **Report Logs** view, click the arrow next to the required report.

The report entry expands to display the profile log files and subquery folders for the report.
3. Double-click a profile entry to open the file, or click the arrow next to a subquery folder, and double-click a profile entry to open the file.

Results

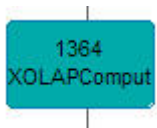
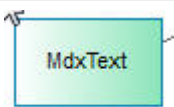

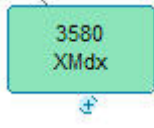
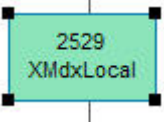


For each open query log file, a graph displays the profile file. **Summary**, **Query**, and **Properties** views displaying data related to the active graph also open.

Exploring query log files

When you open query log files in IBM Cognos Dynamic Query Analyzer, you can view and analyze the data in a number of ways.

Graph

The graph that is displayed when a query log file is opened shows a series of linked nodes. Each node represents an operation that occurred when the report was run or represents an attribute of an operation (such as the data being processed). The meaning of the different node representations is defined in the following table.

Node	Description
	Represents an operation that occurred when the report was run.
	Represents an attribute of an operation, such as the data being processed. By default, most of these nodes are suppressed in the graph. To display all of them, click Window, Preferences , and select Visualization, Node filtering .
	Represents a collapsed node. To display the hidden nodes, double-click the node, or right-click it and click Show Subtree .
	Represents a node that contains hidden children due to the Node filtering settings. To display the hidden nodes, right-click the node and click Expand Filtered .
	Represents the node that is currently selected. The properties of this node are displayed in the Properties view. You can select a node by clicking it.
	Represents a node that has subqueries that can be opened in another graph. To display the subquery graphs, right-click the node and click Open sub queries . Some subqueries do not have an associated node in the parent trace and can be opened using this option.
	Represents timing information for the node. The color red represents the time for the report spent in the node. The color yellow represents the proportion of time spent in the children of the node. The color gray represents the time spent outside the node and its children. If the node is selected, the times are also displayed in the Properties view.

Summary view

The **Summary** view provides information about the active graph.

The **Summary** section displays the name, package, and timestamp of the query. It also indicates whether the data source type is relational, OLAP, or DMR (Dimensionally Modeled Relational).


The **Timing** section displays timing information. It displays the working times and waiting times for each node that has timing information attached to it, in descending time order. If you click any node, the corresponding node in the graph is selected. Timing information for a query is not displayed if all the timing information is contained in subqueries.


The **Analysis** section shows information if the query planning trace option is enabled.

The **Node Shapes and Colors** section provides the meaning of node shapes and colors.

Query view

The **Query** view shows the MDX or SQL query used in this report.

You can link MDX commands in the **Query** view with nodes in the graph by using the **Link MDX to graph** icon . If you select an MDX command in the **Query** view and click the **Link MDX to graph** icon, the nodes in the graph where the MDX commands are executed are selected.


If the query is a SQL query, you can run the report again by clicking the **Execute Sql query** icon .

Properties view

The **Properties** view displays the properties for the currently selected graph node.

Navigation view

The **Navigation** view displays the graph as a tree structure. To open the **Navigation** view for the active graph, click **File, Show in Navigation**. You can have multiple **Navigation** views open, one for each graph.

To navigate quickly between a **Navigation** view and the corresponding graph, click the **Link with editor** icon . Clicking an item in the **Navigation** view selects the corresponding node in the graph, and vice versa.

DQM server logs

The **DQM Server Logs** view displays the dynamic query mode server logs. These logs contain information about the state of the query server. If you use SAP data sources these logs will log calls to the data sources. Dynamic cube logging information is also shown when cubes are started.

You can enable dynamic query mode server logs for reports run in IBM Cognos Dynamic Query Analyzer by enabling **Dynamic query logging** in the **General** tab of **Preferences**. To view server log entries for an active report, click **File, Show in Server Log**.

Server logs are organized by server session. Click the arrow next to a server session to see detailed logging information.

Appendix A. Accessibility features in Cognos Dynamic Query Analyzer

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products.

The major accessibility features are accelerators and command keys that you can use to navigate through IBM Cognos Dynamic Query Analyzer. You can also use keyboard shortcuts to move among graphs and views.

- You can use command keys, or shortcut keys, to navigate through Cognos Dynamic Query Analyzer. Shortcut keys directly trigger an action and usually make use of the Ctrl keys.
- Graphs use color to display timing information. However, if you select a node, timing information is also displayed in the **Properties** view.
- The **Details** tab of the Aggregate Advisor progress indicator displays the advisor progress as text.
- Colors and fonts used by Cognos Dynamic Query Analyzer can be modified on the **Colors and Fonts** tab of the **Preferences** window.

Keyboard shortcuts

This product uses the following keyboard shortcuts.

Action	Keyboard shortcuts
Display the list of open graphs.	Ctrl+F6
Display the list of supporting views for the active graph.	Ctrl+F7
Traverse nodes in graphs and in the Navigation view.	Arrow keys
Cycle through a list of graphs or views.	Arrow keys
Cycle through global toolbar commands and toolbar commands for the active view.	Tab key
Open the context-sensitive menu for a view or graph.	Alt+-
Open the context-sensitive menu for a node.	Shift+F10

IBM and accessibility

For more information about the commitment that IBM has to accessibility, see the [IBM Accessibility Center](http://www.ibm.com/able) (<http://www.ibm.com/able>).

Appendix B. Troubleshooting Cognos Dynamic Query Analyzer

This section provides information about potential problems you might encounter when using IBM Cognos Dynamic Query Analyzer and provides solutions and workarounds.

For troubleshooting information that is not specific to Cognos Dynamic Query Analyzer, see the Troubleshooting section of the *IBM Cognos Analytics Administration and Security Guide*. You can also refer to component-specific documents.

Unable to access query log files

If you are unable to access query log files stored on your IBM Cognos Analytics server, your server administrator might not have created a virtual directory for the log files location.

Create a virtual directory to access log files as described in the *IBM Cognos Dynamic Query Analyzer Installation and Configuration Guide*.

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