Adding IBM DB2 Analytics Accelerator for z/OS to the DB2 for z/OS environments has enabled companies in a variety of industries — from major banks and retailers to IT services and healthcare providers — to significantly improve query processing and increase analytics capabilities. Providing efficiency and cost-effectiveness, DB2 Analytics Accelerator can process certain types of eligible queries, especially business intelligence queries, faster than DB2.

Overview

This tutorial provides the basic steps for setting up your DB2 subsystem to send queries to DB2 Analytics Accelerator.

Installing DB2 Analytics Accelerator for z/OS

Before you install DB2 Analytics Accelerator, make sure your system meets the hardware and software requirements.

You can find detailed installation and configuration instructions in the DB2 Analytics Accelerator product documentation. When you install DB2 Analytics Accelerator, make sure that you install and configure the stored procedures that enable the accelerator to work with DB2 for z/OS.

See the Resources section for links to the hardware and software requirements and the DB2 Analytics Accelerator product documentation.

Setting up your DB2 subsystem

After you install and configure DB2 Analytics Accelerator, you can configure your DB2 subsystem to support query acceleration. The three main steps are:

1. Creating the database objects that DB2 Analytics Accelerator uses
2. Setting up the subsystem parameters, special registers, and bind option that enable DB2 to send queries to an accelerator server
3. Identifying and starting the accelerator servers that are available

Create the database objects DB2 Analytics Accelerator uses

DB2 Analytics Accelerator uses the following database objects:

- A database
- A table space
- Tables
- Indices

You create these objects by configuring and running sample job DSNTIJAS in the SDSNSAMP library. See Resources for information about job DSNTIJAS.

Set the DB2 subsystem parameters, special registers, and bind options

Next, specify the following subsystem parameters, special registers, and bind options that enable DB2 to send queries to an accelerator server. In DB2 11 for z/OS, you can set the values for the subsystem parameters on panel DSNTIP82. See Resources for a link to information about panel DSNTIP82.

Table 1. DB2 subsystem parameters, special registers, and bind options that enable query acceleration

<table>
<thead>
<tr>
<th>DB2 subsystem parameters</th>
<th>Purpose</th>
<th>Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCEL</td>
<td>Specifies whether accelerator servers can be used</td>
<td>NO, COMMAND, or AUTO</td>
</tr>
<tr>
<td>QUERY_ACCELERATION</td>
<td>Specifies under what conditions dynamic queries are accelerated and what happens when acceleration fails</td>
<td>ENABLE, ENABLE_WITH_FAILBACK, ELIGIBLE, or ALL</td>
</tr>
<tr>
<td>QUERY_ACCEL_OPTIONS</td>
<td>Specifies the other types of SQL queries that can run on an accelerator server</td>
<td>NONE, 1, 2, 3, or 4</td>
</tr>
<tr>
<td>GET_ACCEL_ARCHIVE</td>
<td>Specifies whether a query uses archived data if the query references a table that is archived on the accelerator server</td>
<td>NO or YES</td>
</tr>
</tbody>
</table>

Special registers

| CURRENT QUERY ACCELERATION   | Specifies under what conditions dynamic queries are accelerated and what happens when acceleration fails | ENABLE, ENABLE WITH FAILBACK, ELIGIBLE, or ALL |
| CURRENT GET ACCEL_ARCHIVE    | Specifies whether a query uses archived data if the query references a table that is archived on the accelerator server | NO or YES                                     |

Bind options

| QUERYACCELERATION            | Specifies under what conditions a static SQL query is bound for acceleration | NONE, ENABLE, ENABLEWITHFAILBACK, ELIGIBLE, or ALL |
| GETACCELARCHIVE              | Specifies whether a static SQL query bound for acceleration retrieves archived data on the accelerator server | NO or YES                                      |
The default value for each of the special registers is set by the corresponding DB2 subsystem parameter, unless a value is explicitly specified by a SET statement. For example, the QUERY_ACCELERATION subsystem parameter sets the default value for the CURRENT QUERY ACCELERATION special register if a value is not set by the SET CURRENT QUERY ACCELERATION statement.

The order of precedence for setting the values of these special registers is:

1. An explicit SET statement
2. The corresponding bind option, if specified
3. The corresponding DB2 subsystem parameter

Start accelerator servers

Identify and start accelerator servers by issuing the -START ACCEL command. You can start all of the accelerator servers available or you can start only specific ones.

Whenever you add an accelerator server to the SYSACCEL.SYSACCELERATORS table, you need to issue the -START ACCEL command.

Alternatively, you can manage accelerator servers by using the DB2 Administration Tool or IBM Analytics Accelerator Studio. Both of these products can invoke certain commands, such as -START ACCEL and -STOP ACCEL, on a DB2 subsystem. See Resources for more information about these products.

Conclusion

Using DB2 Analytics Accelerator to process eligible DB2 queries is a cost-effective way to improve performance and increase analytics. By following these basic steps, setting up your DB2 subsystem for query acceleration with DB2 Analytics Accelerator is a manageable task that results in significant benefits.
Resources

Learn

- **Prerequisites and Maintenance for IBM DB2 Analytics Accelerator for z/OS 4.1** provides hardware and software requirements.
- The **DB2 Analytics Accelerator product documentation** in IBM Knowledge Center provides installation and configuration instructions.
- "Creating database objects that support query acceleration" in the DB2 for z/OS product documentation explains how to configure and run sample job DSNTIJAS in the SDSNSAMP library.
- "Query accelerator preferences panel: DSNTIP82" in the DB2 product documentation explains how to set subsystem parameters.
- "Using DB2 Analytics Accelerator" provides information about using the DB2 Administration Tool to customize parameters and manage accelerator servers.
- The following IBM Redbooks publications provide detailed information about how you can use DB2 Analytics Accelerator to improve query processing and analytics:
  - "Reliability and Performance with IBM DB2 Analytics Accelerator V4.1"
  - "Hybrid Analytics Solution using IBM DB2 Analytics Accelerator for z/OS V3"
  - "Optimizing DB2 Queries with IBM DB2 Analytics Accelerator for z/OS"
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Mary Parker Swanson is a professional writer with more than 10 years of experience developing information about DB2 for z/OS and related products.

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