DB2 Query Monitor for z/OS V3.2 User's Guide - Tech Doc Updates

Abstract

Updates that apply to DB2 Query Monitor for z/OS V3.2 User's Guide (SC19-4143-01).

Content

The most recent update is listed first.

Update 1

Date of change: March 2015

Related APAR: PI27548

Change Description: Display of information about accelerator-eligible SQL

Location of update: New content describing this feature will be added to the "View Activity Summaries" and chapter of the user guide.

Update:

DB2 Query Monitor can help customers that are interested in an Analytics Accelerator but don't have an accelerator or are looking to attach an accelerator to a new DB2 subsystem to determine their return on investment. DB2 Query Monitor reports workloads as eligible that would run on the accelerator if one were available and also shows the true CPU and elapsed time savings if the queries were run there.

DB2 Query Monitor can report on the potential savings from the DB2 subsystem level down to the SQL statement and call level.

With this update, DB2 Query Monitor now reports:

- SQL workload that is eligible to be accelerated
- Potential real-world DB2 CPU time and elapsed time savings

System preparation

To evaluate static SQL statements using this feature, you must verify you have the correct zparm settings (this includes setting the new zparm, ACCELMODEL to YES). Refer to the IBM DB2 Analytics Accelerator documentation and the IDAA Accelerator Modeling APAR PM90886 for additional information.

You must also issue a BIND or REBIND PACKAGE for the DB2 packages. You may use option APREUSE(ERROR)with the REBIND PACKAGE command to make sure that the current access plan remains unchanged. ACCELMODEL=YES is required during BIND/REBIND only, not at static SQL statement execution time. For dynamically executed statements in packages, no BIND/REBIND is required.

New columns introduced with this update

The following columns have been added to some Operational Summaries panels and to the Activity by SQL Text panel:

- **Accel Elig Elapsed** – The amount of elapsed time saved if the statement or call was run on an accelerator.
- **Accel Elig CPU** – The amount of CPU time spent on a non-specialty engine that would be saved if the statement or call was run on an accelerator.
- **Accel Elig ZIIP** – The amount of CPU time spent on a specialty engine that would be saved if the statement or call was run on an accelerator.

These new fields will contain values only if the statement or call is eligible to run on an accelerator.

Updated ISPF displays for this enhancement

The following ISPF displays have been updated to include the new columns:

- **Operational Summaries Panels** – Select 1. View Activity Summaries and any of the Operational Summary options (1. Plan, 2. DB2, 3. DBRM/Package, or 4. AuthID). The new columns are present on all drill-downs except Delay Statistics, Lock Related Statistics, Miscellaneous Statistics, and Buffer Pool Statistics.
- **Activity by SQL Text** - Select 1. View Activity Summaries and any of the Operational Summary options (1. Plan, 2. DB2, 3. DBRM/Package, or 4. AuthID). Type S in the CMD field next to the SQL activity of interest to display the Activity by SQL Text panel.

By default, the new columns are displayed as the last three columns on the various panels.

Updated CAE Web Client displays for this enhancement

The following CAE Web Client displays have been updated to include the new columns:

- **Operational Summaries** – To access an Operational Summaries view in the CAE WebClient, go to the Activity Browser > Summaries perspective with any of operational summary initial summary options (plan, DB2, program, authid, corrid, section, call, wsuser, wsname, wstran, accel).
- **Summaries by SQL** – To access a Summaries by SQL view in the CAE WebClient, go to the Activity Browser > Summaries perspective. Select the SQL – S line command for the SQL activity of interest to display the activity by SQL text.

Note: If you use the "Custom Views" feature, new columns that are added in the maintenance stream (such as those introduced with this APAR) are not automatically added to your web user interface. If you have defined any custom views for use with the CAE Web Client and you want the new columns included in some of your views, you must edit those views to include the new columns.

Screenshots

The following screenshots illustrate the implementation of this feature.

Figure 1. Issue the Z (Accel) line command – DB2

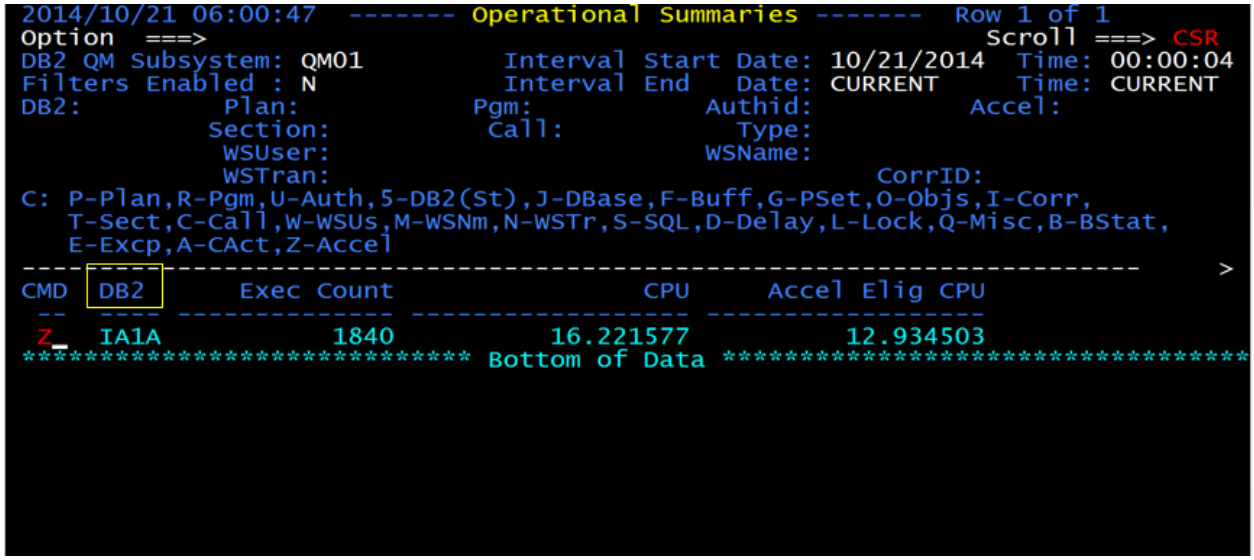


Figure 2. Accelerator Eligible CPU Time – DB2

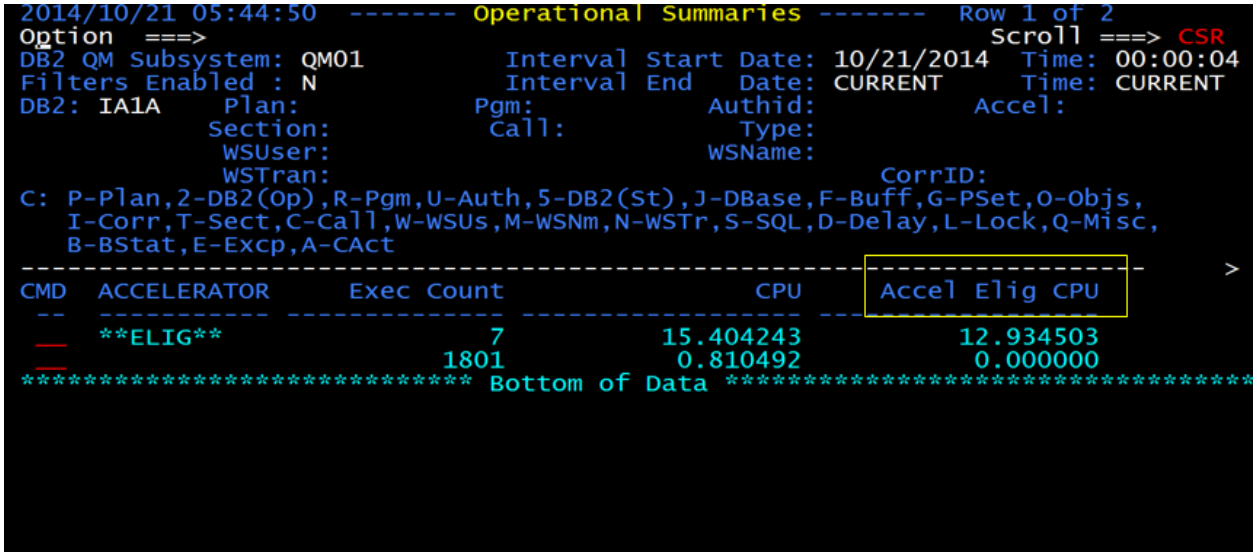


Figure 3. Accelerator Eligible Elapsed Time – DB2

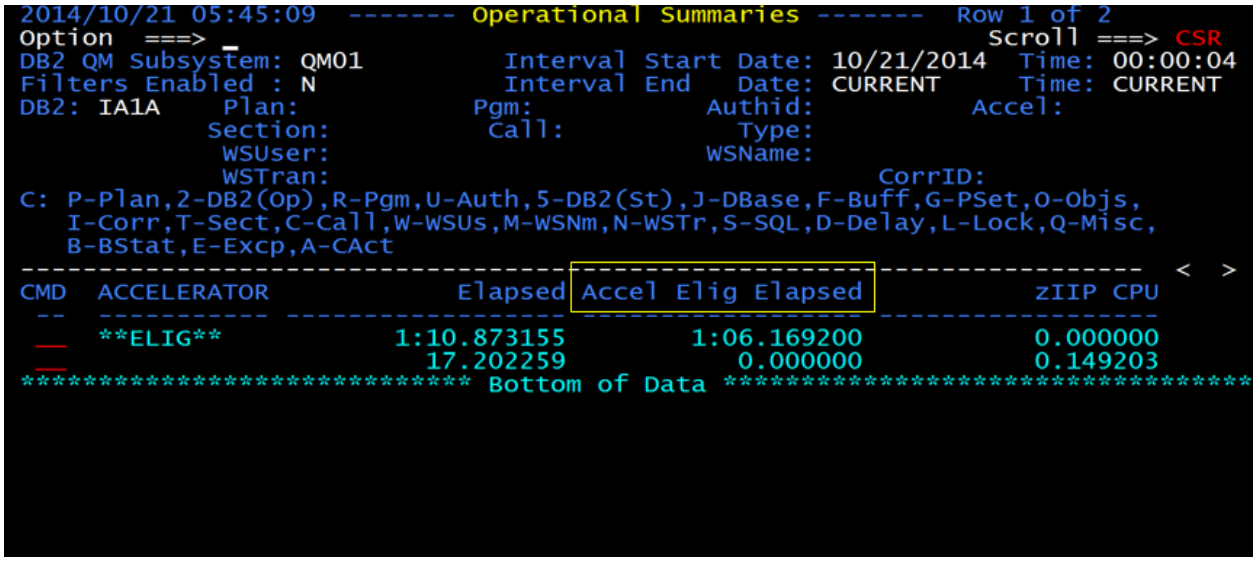


Figure 4. Accelerator Eligible CPU Time – SQL Text

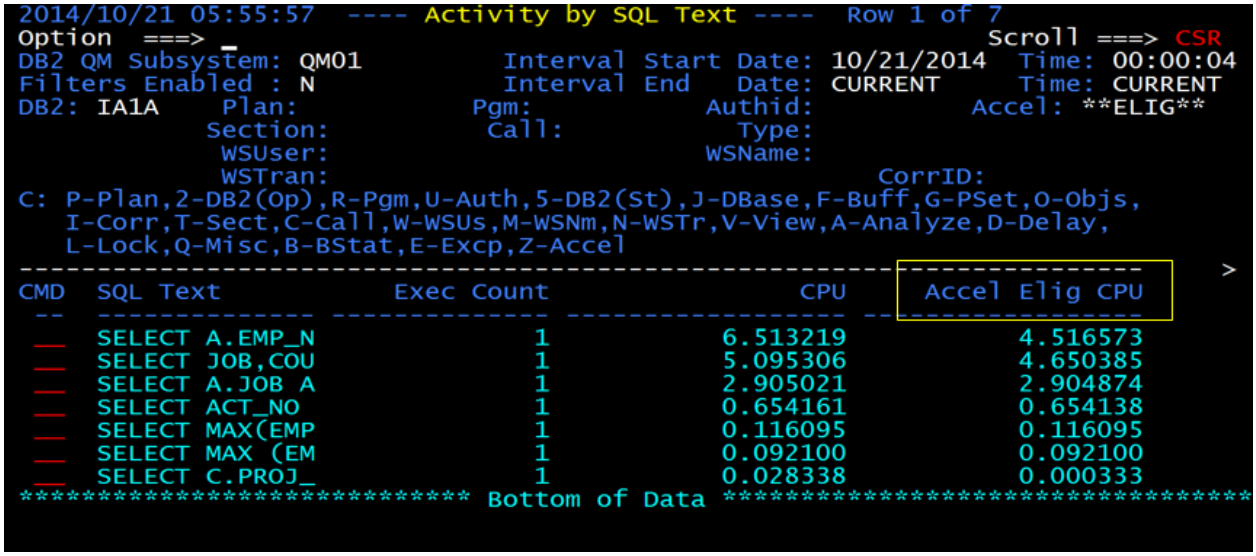
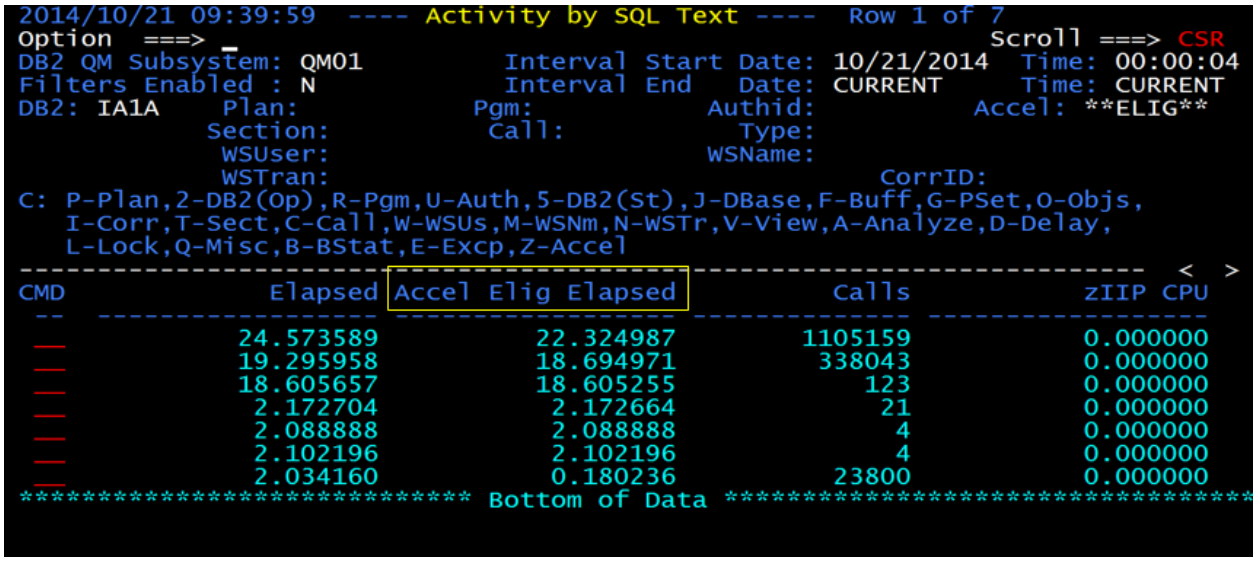


Figure 5. Accelerator Eligible Elapsed Time – SQL Text



Changes to performance history database schema

The following changes were made to the performance history database schema for the table CQM32_SUMM_METRICS:

- ACCEL_ELIGIBLE_ELAPSED DECIMAL(15,6) NOT NULL WITH DEFAULT - The amount of elapsed time saved if the statement/call was run on an accelerator.
- ACCEL_ELIGIBLE_CPU DECIMAL(15,6) NOT NULL WITH DEFAULT - The amount of CPU time spent on a non-specialty engine that would be saved if the statement/call was run on an accelerator.
- ACCEL_ELIGIBLE_ZIIP DECIMAL(15,6) NOT NULL WITH DEFAULT - The amount of CPU time spent on a specialty engine that would be saved if the statement/call was run on an accelerator.

Changes to TCz Process

No panel changes or changes to customization variables have been made. However, the templates for members CQMDDL and CQMCOMM in the SCQMDENU library have been updated to reflect the new offload fields:

```
  (CQMDDL) - 01.01   Columns 00001 0===>            Scroll ===>
  CREATE TABLE &CCQ_CQM_USER..CQM32_SUMM_METRICS       (SMFID
CHAR(04)     NOT NULL
    ,CQM_SUBSYSTEM          CHAR(04)     NOT NULL
    ,INTERVAL_NUMBER        INTEGER      NOT NULL
    ,INTERVAL_START         TIMESTAMP    NOT NULL
  -  -  -  -  -  -  -  -  -  -  -  -  -  -   163 Line(s) not Displ
    ,CURRENT_SCHEMA         VARCHAR(128) NOT NULL WITH DEFAULT
    ,ACCELERATOR            CHAR(08)     NOT NULL WITH DEFAULT
    ,DB2_VERSION_LONG       CHAR(04)     NOT NULL WITH DEFAULT
```

```
    ,ACCEL_ELIGIBLE_ELAPSED DECIMAL(15,6) NOT NULL WITH DEFAULT
    ,ACCEL_ELIGIBLE_CPU     DECIMAL(15,6) NOT NULL WITH DEFAULT
    ,ACCEL_ELIGIBLE_ZIIP    DECIMAL(15,6) NOT NULL WITH DEFAULT)

COMMENT ON &CCQ_CQM_USER..CQM32_SUMM_METRICS
     (SMFID           IS 'MVS SMFID'
     ,CQM_SUBSYSTEM   IS 'CQM subsystem id that created the interval'
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -   250 Line(s) not Displayed
     ,CURRENT_SCHEMA   IS 'The current schema of the user'
     ,ACCELERATOR      IS 'IBM DB2 Analytics Accelerator name'
     ,DB2_VERSION_LONG IS 'Version of DB2 subsystem for 4 bytes'
     ,ACCEL_ELIGIBLE_ELAPSED IS 'The amount of elapsed time saved if
the
statement/call was run on an accelerator'
     ,ACCEL_ELIGIBLE_CPU IS 'The amount of CPU time spent on a non-
speci
alty engine that would be saved if the statement/call was run on an
acce
lerator'
     ,ACCEL_ELIGIBLE_ZIIP IS 'The amount of CPU time spent on a
specialt
y engine that would be saved if the statement/call was run on an
acceler
ator');
```

Update 2

Date of change: March 2015

Related APAR: PI28893

Change Description: CORRNAME column added to the CQM32_SUMM_METRICS performance history database table

Location of update: New content describing this feature will be added to the “Loading DB2 Query Monitor data to DB2” and chapter of the user guide.

Update:

With this update, DB2 Query Monitor adds the CORRNAME column to the CQM32_SUMM_METRICS performance history database table.

Changes to performance history database schema

The following changes were made to the performance history database schema:

- The CORRNAME CHAR(8) NOT NULL WITH DEFAULT column was added to the CQM32_SUMM_METRICS table.

The new column is described as follows:

- CORRNAME – The correlation name.

The CORRNAME value is available if either OPTKEYS CORRID or CORRNAME is set. The CORRNAME value is obtained by parsing the CORRID value as follows:

DB2 Query Monitor breaks the correlation ID into parts by translating the correlation ID into two separate identifiers, the **correlation name** and the **correlation number.**

Note: The correlation number is not available until DB2 Query Monitor V4.1.

Unless it was changed in your installation, this translation is based on the connection type of the thread and is done as follows:

Table 1. The 12-Byte Correlation ID field and the default translation

Connection Type	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Batch	Correlation name: job name								Correlation number: blank			
TSO, DB2 call attach	Correlation name: original authorization ID								Correlation number: blank			
CICS	Correlation number: pool thread				Correlation name: transaction ID							
IMS	Correlation number: application PSBNAME				Correlation name: application PST							
RRS	Correlation name: the first 8 characters of the correlation ID provided by the application during sign on								Correlation number: the remaining 4 characters			

Update 3

Date of change: March 2015

Related APAR: PI28103

Change Description: New parameters for the CAE Server on USS and or the CAE Agent

Location of update: Reference > DB2 Query Monitor parameters

Scope of update:

The parameters described in this update are required to address specific network configuration issues that might occur when tuning workload with IBM Optim Query Workload Tuner (OQWT). If you do not tune workload with OQWT, or if you tune workload with OQWT and have not received any CQMC2540W errors, the parameters described in this update are not appropriate for use. Please review the error descriptions in APAR PI28103 for more information.

Update:

The following new CQMCAE started task parameter (defined in CQMCPRMS) has been added:

CALLBACK_ADDRESS(*<IP_ADDRESS or DNS_Name>*)

When present, this parameter causes the CAE Server to use the specified IP address or DNS name to identify the LPAR. The CALLBACK_ADDRESS is used for alerts, script execution, OQT and OQWT tuning, as well as for other internal CAE Server purposes. The value of CALLBACK_ADDRESS is used by the CAE Web Client's Activity Browser for workload tuning.

The following new CAE parameter for use with USS (defined in CQMCAESV STDENV DD) has been added:

CQM_OQWT_UNCHANGED_HOST_NAMES

Indicates whether or not the CAE Server attempts to convert IP Address (IPv4 or IPv6) to the corresponding DNS name in order to prevent the creation of multiple connection profiles in IBM DataStudio for one LPAR. If that transformation produces the wrong DNS name or the wrong IP Address (possibly due to network settings), then the user should set parameter to "true" to disable that transformation. Valid values are:

false – (Default) The CAE Server does not attempt to convert IP Address (IPv4 or IPv6) to the corresponding DNS name.

true – The CAE Server attempts to convert IP Address (IPv4 or IPv6) to the corresponding DNS name.

Note: This parameter is ignored if CALLBACK_ADDRESS is set for the CAE Agent.

The following new Java System Property is available for the CAE Server on Windows:

com.rocketsoft.nm.qm.ipc.oqwt.doNotuseCanonicalHostNames=true

Indicates whether or not the CAE Server attempts to convert IP Address (IPv4 or IPv6) to the corresponding DNS name in order to prevent the creation of multiple connection profiles in IBM DataStudio for one LPAR. If that transformation produces the wrong DNS name or the wrong IP Address (possibly due to network settings), then the user should set parameter to "true" to disable that transformation. Valid values are:

false – (Default) The CAE Server does not attempt to convert IP Address (IPv4 or IPv6) to the corresponding DNS name.

true – The CAE Server attempts to convert IP Address (IPv4 or IPv6) to the corresponding DNS name.

Note: This parameter is ignored if CALLBACK_ADDRESS is set for the CAE Agent.

Specifying CAE Server properties

To specify a Java System Property for the CAE Server on Windows, you must create a CAE Server properties file: rocket.kbm.server.properties. The file must be created in the directory that holds your CAE Server (for example, C:\Program Files\IBM\DB2 Query Monitor v3.2). After creating the CAE Server properties file, add the property to the file and save, for example:

com.rocketsoft.nm.qm.ipc.oqwt.doNotuseCanonicalHostNames=true

Note: If you already have a CAE Server properties file, you can add the parameter to the existing file.