Product Owners

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Agenda

- Thread Terminator:

  - Reporting on new Db2 zParms

- Db2 Tools Suite:

  - Db2 Function Level M508 and our tools

- Log Analyzer:

  - Reporting on encryption key label (changes with DDL reports)

- Sysview for Db2:

  - Control the Frequency of SQL Statistic Collection
  - Enhanced Support for zHyperlink

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Please Ask Questions…

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Thread Terminator

Andrew Badgley

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Reporting on new Db2 zParms

z/Parms are missing from CA Thread Terminator

- Every release of Db2 adds new z/Parms (and removes some as well)

- CA Thread Terminator has not kept up with these z/Parm changes

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Updates to CA Thread Terminator 'View DSNZPARM Data'

- **PTF - SO15132**

- **Db2 12 parameters:**
  - AUTH_COMPATIBILITY
  - DDL_MATERIALIZATION
  - DEFAULT_INSERT_ALGORITHM
  - INDEX_MEMORY_CONTROL

- **Db2 11 parameters:**
  - DISALLOW_SEL_INTO_UNION
  - REMOTE_COPY_SW_ACCEL

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Thread Terminator Screen Shots

Any Questions…

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Db2 Tools Suite

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V12R1M508 Update

V12R1M508 update

- GA since 14th October 2020
  - Migration of multi-table table spaces to partition-by-growth universal table spaces (UTS)
  - No catalog level change
- We completed our phase 1 testing
  - Products work with the maintenance, catalog, and activated function level
  - The main purpose is to validate the products run without changes
  - Some of our product are sensitive even to the maintenance level
  - No requirement to support new features - need to watch future enhancements for particular product
- Minimal PTFs
  - SO15031, SO15235, SO15236, SO15237, SO15238
- Fixcat CA.TargetSystem-RequiredService.DB2.V12R1Mnnn
- Db2 version support documentation

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Any Questions…

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Log Analyzer

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Report on Encryption Labels

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CA Log Analyzer and encryption labels

Pervasive encryption was enabled with Db2 12 Function Level 502, where, among other configurations, you need to associate your Db2 objects with a KEY LABEL which provides encryption.

Where do I use this keyword?

- You can assign it by default using DFSMS routines. This will assign the proper value at Tablespace creation time.

- You can also assign a specific KEY LABEL on the following Db2 objects:
    - STOGROUPS
    - TABLES

- You can also use DDL ALTER to change the KEY LABEL at any time

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Reporting KEY LABELs with CA Log Analyzer

Given the importance of KEY LABELs, you should be able to report on changes in values or when an object is created using this attribute in SQL.

With PTF **SO15220**, the DDL report in CA Log Analyzer has been enhanced to recognize this field in the Db2 Catalog and report on its values for all DDL operations that use KEY LABELs.


```
FORMAT OPTIONS
Output Format    ==> D  ( R - Rept, D - Redo DDL, U - Undo DDL)
Level of Detail ==> D  ( S - Smry, D - Detail, T - Tot,  O - Object)
```

What can I see in the DDL report?

You'll notice KEY LABEL is reported for both CREATE and ALTER statements

```
CREATE TABLE SONMA03.TAB1 (COL1 INT)
  KEY LABEL "DB2ENC.KEY";
COMMIT;

ALTER TABLE SONMA03.TAB1
  NO KEY LABEL;
COMMIT;
```

```
SET CURRENT SQLID = 'SONMA03';

      CREATE TABLE SONMA03.TAB1
           (COL1 INTEGER
    WITH DEFAULT NULL
           )
   APPEND NO
   LOGGED
   DSSIZE 4G
   BUFFERPOOL BP1
   NOT VOLATILE CARDINALITY
   DATA CAPTURE NONE
   OBID 3
   AUDIT NONE
   CCSID EBCDIC
   COMPRESS NO
   TRACKMOD YES
   KEY LABEL "DB2ENC.KEY";

SET CURRENT SQLID = USER;

   COMMIT;

SET CURRENT SQLID = 'SONMA03';

      ALTER TABLE SONMA03.TAB1
   NO KEY LABEL;

SET CURRENT SQLID = USER;
```

No special filtering or no new option is required from your side, the DDL report will find changes if they have occurred.

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Any Questions…

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Sysview for Db2

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Control the Frequency of SQL Statistics Collection

Control the Frequency of SQL Statistics Collection

- SYSVIEW for Db2 collects subsystem statistics and SQL statistics with a frequency set by **HISTORY-STATS-TIME** parameter.

- Collecting SQL statistics as often as the subsystem statistics is not required.

- In the conditions where the amount of the SQL statistics is big, collecting SQL data less frequent would help to optimize CPU usage.

- A new data collector system parameter **HIST-SQL-MULTIPLE** is introduced with **PTF SO14923**

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Control the Frequency of SQL Statistics Collection
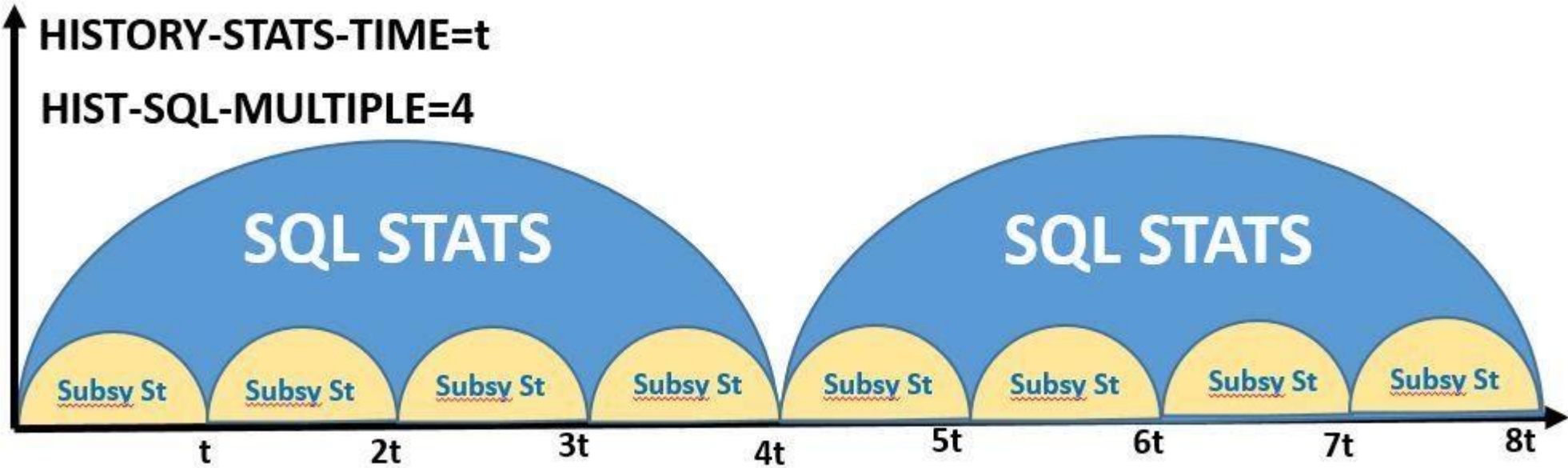
Control the Frequency of SQL Statistics Collection

.

✓ History and Archive Parameter : **HIST-STATS-RECS** Specifies the list of IFCID records to write to the statistics history file.

✓ If IFCID 316, 401, or both are stated for HIST-STATS-RECS parameter, review the size of your online statistics history file.

✓ **HISTORY-STATS-TIME** Specifies the interval, in minutes, at which the grabbed, non-event based Db2 trace records (specified in HIST-STATS-RECS) are collected and written to the online history statistics file.

✓ Specify the **HIST-SQL-MULTIPLE** system parameter

SQL statistics collection interval = HIST-SQL-MULTIPLE X HISTORY-STATS-TIME

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Control the Frequency of SQL Statistics Collection

✓ Defult Value is 1.

✓ Setting HIST-SQL-MULTIPLE to 0 behaves like 1

HISTORY-STATS-TIME=t

HIST-SQL-MULTIPLE=4

SQL STATS

SQL STATS

| Subsy St | Subsy St | Subsy St | Subsy St | Subsy St | Subsy St | Subsy St | Subsy St |

t   2t   3t   4t   5t   6t   7t   8t

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Enhanced Support for zHyperlink

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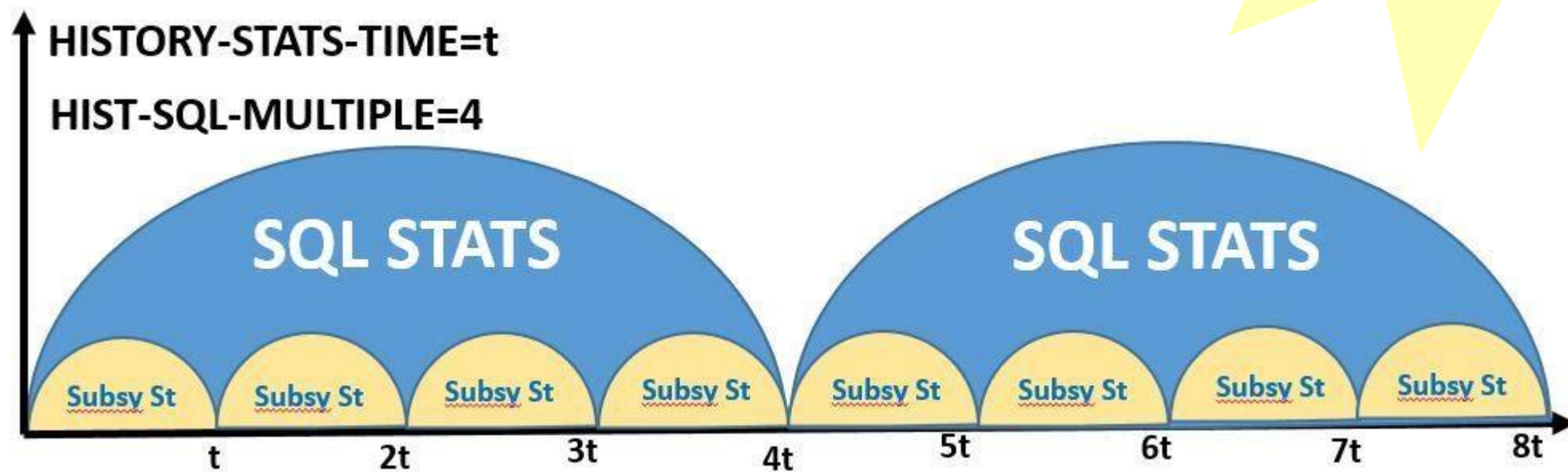
With zHyperlink Reduce the Transaction Latency!

Delivered Dataset I/O statistics (IFCID 199)

- New fields containing zHyperlink I/O delay information are now supported

Delivered Log write I/O with zHyperlink

- Eligible to use zHyperlink and successfully used Hyperlink
- Eligible to use zHyperlink but did not use zHyperlink

Delivered Report zHyperlink Utilization

- It is possible to monitor zHyperlink and make assessment with new values
- Analysis can be done : System Level
- Buffer Pools Level
- Thread Level

Delivered Read I/O zHyperlink Use

- Reports for a single Read I/O operation if data was found in the DASD subsystem cache (Cache hit) or not
- Reports for a single Read I/O operation if zHyperlink was used or not

Delivered Disk Cache Wait I/O and Disk Cache Hit not se zHyperlink

- Accumulated wait time for synchronous read I/O operations that resulted in Disk Cache hits.
- The number of synchronous read I/O operations which hit disk cache, but did not use zHyperLink

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Enhanced Support for zHyperlink

DISK-CACHE-IO-WAIT

Specifies the accumulated wait time for synchronous read I/O operations that resulted in disk cache hits.

IBM DB2 Field Name: QWACAWTD

DISK-CACHE-IO-COUNT

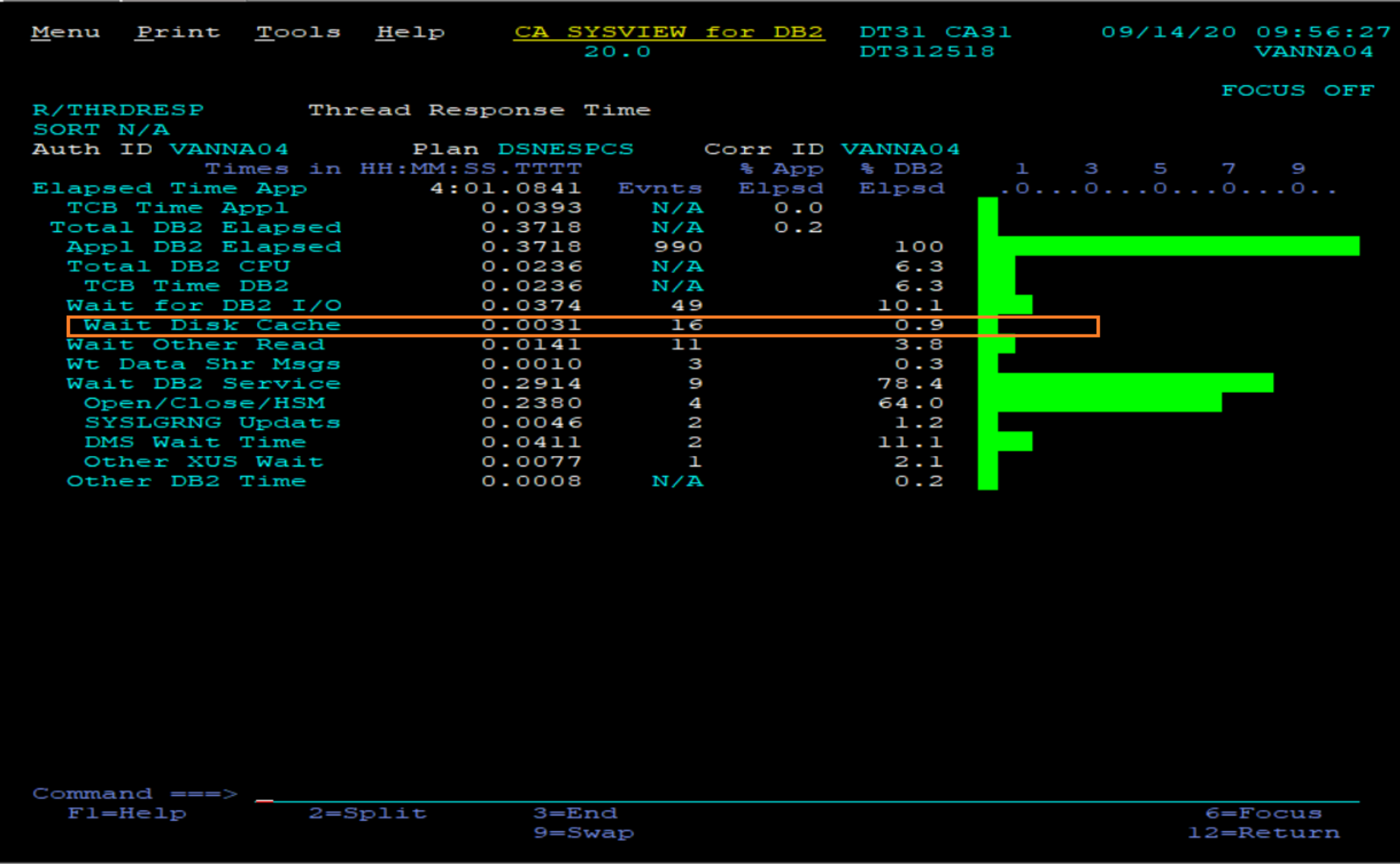Specifies the number of synchronous read I/O operations which hit disk cache, but did not use zHyperLink.

IBM DB2 Field Name: QWACAWCD

Updated Reports
- Thread Response time
- Probe Thread Summary Panel
- Thread Accounting Summary
- Accounting Summary for Plan Panel
- Connection Detail panel

✓ Real Time
✓ History
✓ History Summary
✓ Batch

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Updated Report Example: Thread Accounting

```
Menu   Print   Tools   Help        CA SYSVIEW for DB2    DT31 CA31         09/14/20 09:56:27
                                          20.0            DT312518                    VANNA04

                                                                               FOCUS OFF
R/THRDRESP         Thread Response Time
SORT N/A
Auth ID VANNA04           Plan DSNESPCS       Corr ID VANNA04
            Times in HH:MM:SS.TTTT                  % App   % DB2     1   3   5   7   9
Elapsed Time App          4:01.0841     Evnts   Elpsd   Elpsd     .0...0...0...0...0..
  TCB Time Appl              0.0393      N/A      0.0
 Total DB2 Elapsed          0.3718      N/A      0.2
  Appl DB2 Elapsed          0.3718      990              100
  Total DB2 CPU             0.0236      N/A              6.3
   TCB Time DB2             0.0236      N/A              6.3
 Wait for DB2 I/O           0.0374       49             10.1
  Wait Disk Cache           0.0031       16              0.9
 Wait Other Read            0.0141       11              3.8
 Wt Data Shr Msgs           0.0010        3              0.3
 Wait DB2 Service           0.2914        9             78.4
   Open/Close/HSM           0.2380        4             64.0
   SYSLGRNG Updats          0.0046        2              1.2
   DMS Wait Time            0.0411        2             11.1
   Other XUS Wait           0.0077        1              2.1
 Other DB2 Time             0.0008      N/A              0.2




Command ===> _
  F1=Help        2=Split        3=End                              6=Focus
                                9=Swap                            12=Return
```

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Updated Report Example: Thread Accounting Summary

```
39     Times in HH:MM:SS.T
40     Elapsed Time App  HH:MM:SS.T   Deadlocks  ####    Dynamic  #####  Getpages    ########
41     CPU Time Appl     HH:MM:SS.T   Timeouts   ####    Op Curs  #####  Sync Reads  #######
42      TCB Time Appl    HH:MM:SS.T   Max Pg Lks ####    Cl Curs  #####  Cach Reads  #######
43      TCB Time S.P.    HH:MM:SS.T   Lk Suspnds ####    Fetch    #####  Read Eff    #####.#
44      UDF TCB CPU      HH:MM:SS.T   Lat Suspnds ####   Select   #####  Bufr Updts  ########
45      zIIP Appl CPU    HH:MM:SS.T   Escaltn Shr ####   Insert   #####  Imm Writes  ########
46      WLM C1 SP zIIP   HH:MM:SS.T   Escaltn Exc ####   Update   #####  S Pref Req  ########
47      WLM C1 UDF zIP   HH:MM:SS.T   Unlock Reqs ####   Delete   #####  L Pref Req  ########
48      UDF Total Elap   HH:MM:SS.T   Query Reqs  ####    Merge   #####  Avg I/O     ##.####
49      Storeproc Elap   HH:MM:SS.T   Change Reqs ####   Truncat  #####  D Pref Req  ########
50      StProc Wait TCB  HH:MM:SS.T   Lock Reqs   ####    DDL/DCL #####  Pref Pages  ########
51      UDF Wait TCB     HH:MM:SS.T   Drain Reqs  ####    Inc Bnd #####  C Gpg Fail  ########
52      Local Storproc   HH:MM:SS.T   Drain Fails ####    Lk Tbl  #####
53      Local UDF        HH:MM:SS.T   Claim Reqs  ####    S SQLID #####  SES XI Data ######
54     Elapsed Time DB2  HH:MM:SS.T   Claim Fails ####    CALL    #####  SES XI NoData ####
55      UDF SQL Elapsd   HH:MM:SS.T   P-lock Reqs ####    StPrc Abnd ##   SES^Pg Data ######
56      Trigger Elap     HH:MM:SS.T   P-lock Chng ####    CALL Rjctd ##   SES^Pg NoData ####
57      Trig Elap Enclv  HH:MM:SS.T   P-lock Unlk ####    CALL Tmout ##   SES^Pg SupDir ####
58      Storeproc SQL    HH:MM:SS.T   PropXES Rqs ####                    SES Wr Chng ######
59     CPU Time DB2      HH:MM:SS.T   PropXES Chg ####   LogWrite ####   SES Wr Cln  ########
60      TCB Time DB2     HH:MM:SS.T   PropXES Unl ####                   Unreg Page  ########
61      Local S.P.       HH:MM:SS.T   Susp IRLM Gbl ##                   Explicit XI ######
62      Local UDF        HH:MM:SS.T   Susp XES Gbl ###                   Duplxd CmpCk #####
63      StorPr DB2 TCB   HH:MM:SS.T   False Cont  ####                   Pri-IXL Reqs #####
64      UDF SQL CPU      HH:MM:SS.T   Gbl Req Fail ###                   Sec-IXL Reqs #####
65      Trigger CPU      HH:MM:SS.T   Notify Sent ####                   GetPgs GBP Dep ###
66      Trig CPU Enclv   HH:MM:SS.T                                      Wr/Reg MultPg ####
67      zIIP DB2 CPU     HH:MM:SS.T                                      Wr/Reg One Pg ####
68      Trigger zIIP     HH:MM:SS.T                                      SpcMap Lk Req ####
69      Storproc zIIP    HH:MM:SS.T                                      Data Pg Lk Rq ####
70      UDF zIIP         HH:MM:SS.T                                      Idx Leaf LkRq ####
71      WLM C2 SP zIIP   HH:MM:SS.T                                      Unlock Reqs   ####
72      WLM C2 UDF zIP   HH:MM:SS.T                                      SpcMap Lk Sus ####
73      Nest Trig zIIP   HH:MM:SS.T                                      DataPg Lk Sus ####
74     (zIIP Not Used)   HH:MM:SS.T                                      Idx Lf Lk Sus ####
75     Wait for DB2 I/O  HH:MM:SS.T                                      XI SyncUp Wts ####
76     Wait Disk Cache   HH:MM:SS.T
77     Wait Local Lock   HH:MM:SS.T
78     Wait Other Read   HH:MM:SS.T
```

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Updated Report Example: Detailed Summary of Accounting Information Report

Any Questions…

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In Closing…

When is the next Community Update call?

- The last Tuesday of each month

- Our next call will be Tuesday November 24th, 2020

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Thank You

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