

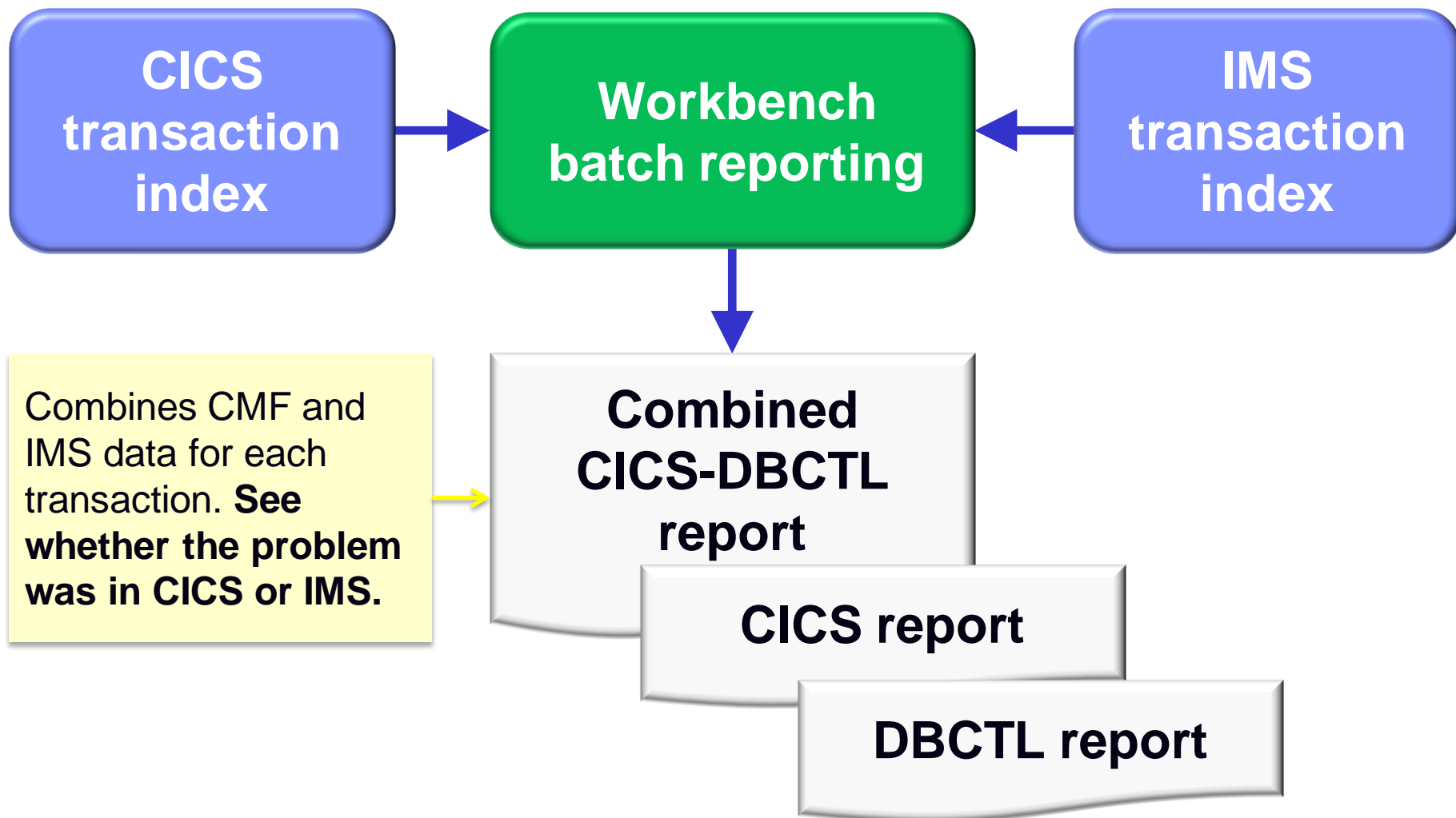
Additional Scenarios and Reports

CICS-DBCTL

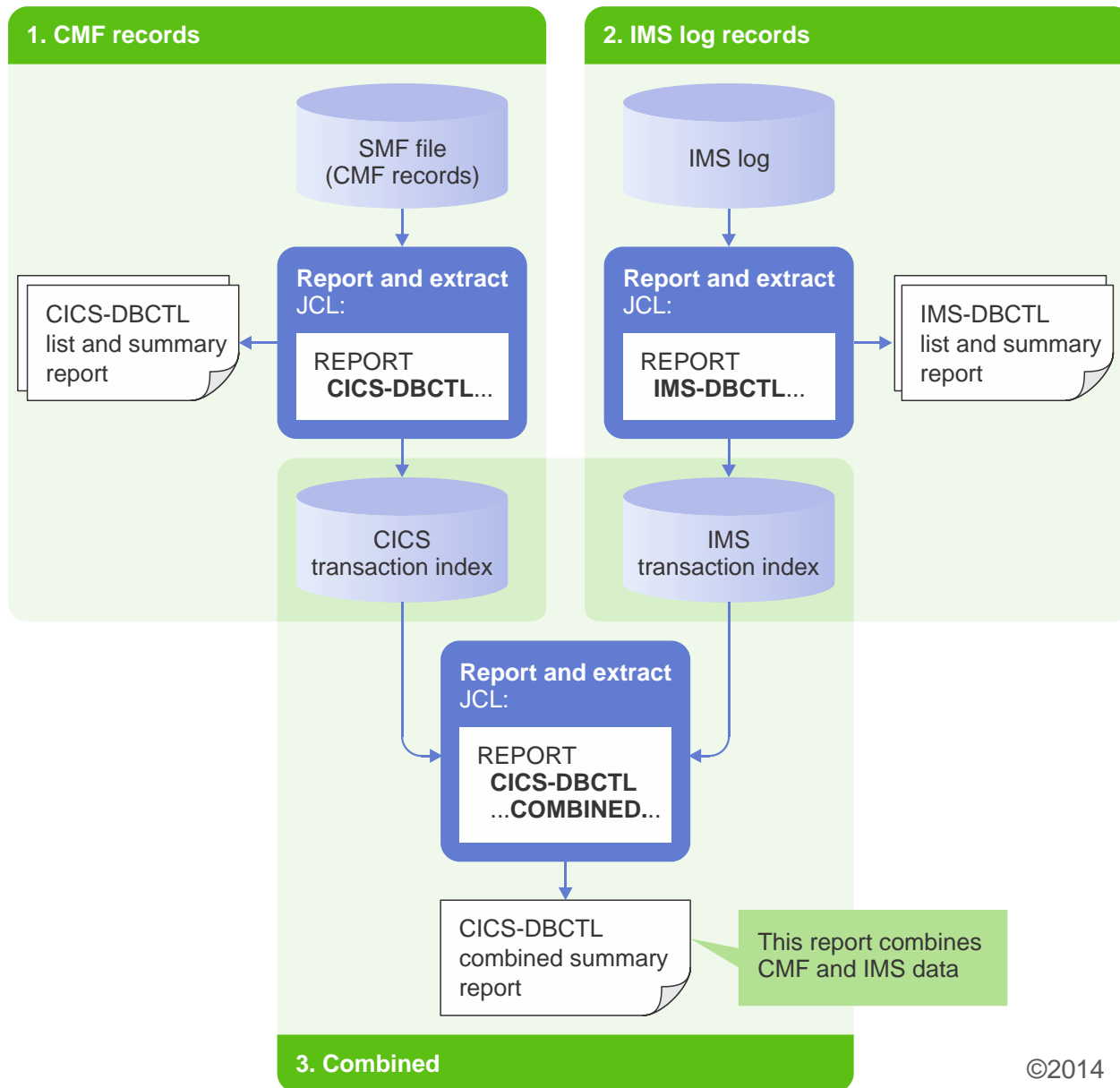
CICS DBCTL

- For all CICS transaction you can analyze CMF (SMF 110) records.
- However CMF records do not contain all of the details of the IMS events that are triggered by DL/I requests. Those details are in the IMS log.
- Transaction Analysis Workbench enables you to analyze CICS DBCTL transactions using:
 - CMF records
 - IMS log records
 - A combined view of both
- In particular Workbench enables you to analyze *exceptions*: CICS DBCTL transactions that abended or had a long response time.

Combined CICS-DBCTL exception reporting



Combining CICS and IMS performance data: 3 steps



Example CICS-DBCTL summary report

CICS

2014-03-26 Wednesday

CICS-DBCTL Summary

Page 1

| Tran | APPLID | CMF | Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
|------|--------|-----|-------|----------|----------|----------|----------|-------|----------|
| BANK | CICSP1 | | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

| IMS | | 08 Count | Elapsed | CPU Time | StaDelay | Schedule | IC Wait | PS Wait |
|------------|--|----------|----------|----------|----------|----------|---------|---------|
| | | 42 | 10.94999 | 0.004092 | 0.011668 | 0.000183 | 0 | 0 |

| 07 Count | DB call | DB Gets | DB Upds | IO Count | IO Time | LockWait |
|----------|---------|---------|---------|----------|----------|----------|
| 41 | 33 | 13 | 19 | 4 | 0.003438 | 3.980170 |

| FP Count | FP call | FP Gets | FP Upds | FP Wait | FP Fail |
|----------|---------|---------|---------|---------|---------|
| 41 | 19 | 7 | 11 | 0 | 7 |

| Synctime | Phase 1 | Phase 2 | FP PH2 | OTHRD |
|----------|----------|----------|----------|----------|
| 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 |

CICS-DBCTL combined summary report: CICS data (section 1)

2014-03-26 Wednesday CICS-DBCTL Summary Page 1

| Tran | APPLID | CMF Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
|------|--------|-----------|----------|----------|----------|----------|-------|----------|
| BANK | CICSP1 | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

Data from CICS monitoring facility (CMF) performance class (SMF type 110) records. The report is summarized by CICS transaction ID and APPLID. You can specify whether the report shows the actual CICS transaction ID or an application (“umbrella”) transaction ID.

| FP Count | FP call | FP Gets | FP Upds | FP Wait | FP Fail |
|----------|----------|----------|----------|----------|---------|
| 41 | 19 | 7 | 11 | 0 | 7 |
| Synctime | Phase 1 | Phase 2 | FP PH2 | OTTHREAD | |
| 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 | |

CICS-DBCTL combined summary report: CICS data

CICS

2014-03-26 Wednesday

CICS-DBCTL Summary

Page 1

| Tran | APPLID | CMF Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
|------|--------|-----------|----------|----------|----------|----------|-------|----------|
| ---- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| BANK | CICSP1 | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

The number of CMF records summarized in this section.

| Count | Elapsed | CPU Time | StaDelay | Schedule | IC Wait | PS Wait |
|-------|----------|----------|----------|----------|---------|---------|
| ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 41 | 0.000183 | | | | 0 | 0 |

| 07 Count | DB call | DB Gets | DB Upds | I/O Count | I/O Time | LockWait |
|----------|---------|---------|---------|-----------|----------|----------|
| ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 41 | 33 | 13 | 19 | 4 | 0.003438 | 3.980170 |

| FP Count | FP call | FP Gets | FP Upds | FP Wait | FP Fail |
|----------|---------|---------|---------|---------|---------|
| ----- | ----- | ----- | ----- | ----- | ----- |
| 41 | 19 | 7 | 11 | 0 | 7 |

| Synctime | Phase 1 | Phase 2 | FP PH2 | OTTHREAD |
|----------|----------|----------|----------|----------|
| ----- | ----- | ----- | ----- | ----- |
| 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 |

CICS-DBCTL combined summary report: CICS data

| CICS | | 2014-03-26 Wednesday | | CICS-DBCTL Summary | | | | Page 1 | |
|------|--------|----------------------|-------|--------------------|----------|----------|----------|--------|----------|
| Tran | APPLID | CMF | Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
| ---- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| BANK | CICSP1 | | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

Averages for the summarized transactions: response time, CPU time, number of DL/I requests issued, and IMS wait time.

Comparing the response time to the IMS wait time helps you to identify whether delays occurred in CICS or in IMS.

The IMS sections of the report (described later) show the types of IMS requests, and separate components of the IMS wait time, to help you identify the cause of long IMS wait times.

| Synctime | Phase 1 | Phase 2 | FP PH2 | OTTHREAD |
|----------|----------|----------|----------|----------|
| ----- | ----- | ----- | ----- | ----- |
| 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 |

CICS-DBCTL combined summary report: CICS data

2014-03-26 Wednesday CICS-DBCTL Summary Page 1

| CICS | | Tran | APPLID | CMF | Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
|------|------|------|--------|-------|-------|----------|----------|----------|----------|-------|----------|
| | | ---- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| | BANK | | CICSP1 | | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

The number of transactions that abended.
 This example shows that, of the 60 transactions summarized here (BANK transactions that ran on APPLID CICSP1), 10 abended.

| FP Count | FP call | FP Gets | FP Upds | FP Wait | FP Fail |
|----------|---------|---------|---------|---------|---------|
| ----- | ----- | ----- | ----- | ----- | ----- |
| 41 | 19 | 7 | 11 | 0 | 7 |

| Synctime | Phase 1 | Phase 2 | FP PH2 | OTTHREAD |
|----------|----------|----------|----------|----------|
| ----- | ----- | ----- | ----- | ----- |
| 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 |

CICS-DBCTL combined summary report: CICS data

CICS

2014-03-26 Wednesday

CICS-DBCTL Summary

Page 1

| Tran | APPLID | CMF | Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
|------|--------|-------|-------|----------|----------|----------|----------|-------|----------|
| ---- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| BANK | CICSP1 | | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

Number of transactions per second (for this transaction ID running on this APPLID).
A value of 0 indicates a rate of less than 1 transaction per second.

| 08 Count | Elapsed | CPU Time | StaDelay | PS Wait |
|----------|---------|----------|----------|----------|
| ----- | ----- | ----- | ----- | ----- |
| 41 | 33 | 13 | 19 | 4 |
| | | | | 0.003438 |
| | | | | 3.980170 |

| 07 Count | DB call | DB Gets | DB Upds | IO Count | IO Time | Lockwait |
|----------|---------|---------|---------|----------|----------|----------|
| ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 41 | 33 | 13 | 19 | 4 | 0.003438 | 3.980170 |

| FP Count | FP call | FP Gets | FP Upds | FP Wait | FP Fail |
|----------|---------|---------|---------|---------|---------|
| ----- | ----- | ----- | ----- | ----- | ----- |
| 41 | 19 | 7 | 11 | 0 | 7 |

| Synctime | Phase 1 | Phase 2 | FP PH2 | OTTHREAD |
|----------|----------|----------|----------|----------|
| ----- | ----- | ----- | ----- | ----- |
| 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 |

CICS-DBCTL combined summary report: IMS data (sections 2-5)

2014-03-26 Wednesday

CICS-DBCTL Summary

Page 1

| Tran | APPLID | CMF | Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
|------|--------|-----|-------|----------|----------|----------|----------|-------|----------|
| BANK | CICSP1 | | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

IMS

Section 2:

IMS thread elapsed and CPU times, and PSB schedule delays

| 08 Count | Elapsed | CPU Time | StaDelay | Schedule | IC Wait | PS Wait |
|----------|----------|----------|----------|----------|----------|----------|
| 42 | 10.94999 | 0.004092 | 0.011668 | 0.000183 | 0 | 0 |
| 07 Count | DB call | DB Gets | DB Upds | IO Count | IO Time | LockWait |
| 41 | 33 | 13 | 19 | 4 | 0.003438 | 3.980170 |
| FP Count | FP call | FP Gets | FP Upds | FP Wait | FP Fail | |
| 41 | 19 | 7 | 11 | 0 | 7 | |
| Synctime | Phase 1 | Phase 2 | FP PH2 | OTTHREAD | | |
| 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 | | |

CICS-DBCTL combined summary report: IMS data

2014-03-26 Wednesday

CICS-DBCTL Summary

Page 1

| Tran | APPLID | CMF | Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
|------|--------|-----|-------|----------|----------|----------|----------|-------|----------|
| BANK | CICSP1 | | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

IMS

| 08 Count | Elapsed | CPU Time | StaDelay | Schedule | IC Wait | PS Wait |
|----------|----------|----------|----------|----------|----------|----------|
| 42 | 10.94999 | 0.004092 | 0.011668 | 0.000183 | 0 | 0 |
| 07 Count | DB call | DB Gets | DB Upds | IO Count | IO Time | LockWait |
| 41 | 33 | 13 | 19 | 4 | 0.003438 | 3.980170 |
| FP Count | FP call | FP Gets | FP Upds | FP Wait | FP Fail | |
| 41 | 19 | 7 | 11 | 0 | 7 | |
| Synctime | Phase 1 | Phase 2 | FP PH2 | OTTHREAD | | |
| 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 | | |

Section 3:
Full
Function
database
DL/I call
activity
and delays

CICS-DBCTL combined summary report: IMS data

2014-03-26 Wednesday

CICS-DBCTL Summary

Page 1

| Tran | APPLID | CMF | Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
|------|--------|-----|-------|----------|----------|----------|----------|-------|----------|
| BANK | CICSP1 | | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

| IMS | | 08 Count | Elapsed | CPU Time | StaDelay | Schedule | IC Wait | PS Wait |
|----------|----------|----------|----------|----------|----------|----------|---------|---------|
| | | 42 | 10.94999 | 0.004092 | 0.011668 | 0.000183 | 0 | 0 |
| 07 Count | DB call | DB Gets | DB Upds | IO Count | IO Time | LockWait | | |
| 41 | 33 | 13 | 19 | 4 | 0.003438 | 3.980170 | | |
| FP Count | FP call | FP Gets | FP Upds | FP Wait | FP Fail | | | |
| 41 | 19 | 7 | 11 | 0 | 7 | | | |
| Synctime | Phase 1 | Phase 2 | FP PH2 | OTTHREAD | | | | |
| 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 | | | | |

Section 4:
Fast Path
database
DL/I call
activity
and delays

CICS-DBCTL combined summary report: IMS data

2014-03-26 Wednesday

CICS-DBCTL Summary

Page 1

| Tran | APPLID | CMF | Count | Response | CPU Time | IMS Reqs | IMS Wait | ABEND | Rate/Sec |
|------|--------|-----|-------|----------|----------|----------|----------|-------|----------|
| BANK | CICSP1 | | 60 | 11.12982 | 0.008967 | 35 | 4.256977 | 10 | 0 |

| IMS | | 08 Count | Elapsed | CPU Time | StaDelay | Schedule | IC Wait | PS Wait |
|----------|---------|----------|----------|----------|----------|----------|---------|---------|
| | | 42 | 10.94999 | 0.004092 | 0.011668 | 0.000183 | 0 | 0 |
| 07 Count | DB call | DB Gets | DB Upds | IO Count | IO Time | LockWait | | |
| 41 | 33 | 13 | 19 | 4 | 0.003438 | 3.980170 | | |
| FP Count | FP call | FP Gets | FP Upds | FP Wait | FP Fail | | | |
| 41 | 19 | 7 | 11 | 0 | 7 | | | |
| | | Synctime | Phase 1 | Phase 2 | FP PH2 | OTTHREAD | | |
| | | 0.011938 | 0.006555 | 0.005383 | 0.002232 | 0.017659 | | |

Section 5:
Syncpoint
elapsed
time
breakdown,
including
the async
Fast Path
OTTHREAD
overhead

Tracking a CICS DBCTL transaction in the log browser

Select the following three files for browsing:

- CICS transaction index
- IMS transaction index
- IMS log

```

File  Menu  Edit  Help
-----
                                Process Log Files                Row 1 of 298 More: < >
Command ==> _____ Scroll ==> CSR

Select a Log File to browse.                IMS Release 111 +      Zone +0800

/      Log File                                Rel + Filter + Zone
SS   'CICS.CMF.EXCEPT.EXTRACT'             ___  6E13  ___
      'IMS.DBCTL.EXCEPT.EXTRACT'           ___  CA01  ___
SS   'IMSA.SLDS'                             ___  08   ___
      _____                             ___  ___   ___

```


Tracking a CICS DBCTL transaction in the log browser (continued)

```

File  Mode  Filter  Time  Labels  Options  Help
-----
BROWSE  CICS.CMF.EXCEPT.EXTRACT +          Record 00017856 More: < >
Command ==> _____ Scroll ==> CSR
Slice . . Duration _____ Date 2011-04-06 Time 08.41.45.732610
Code Description < 00.00.00.000000 > 2011-04-06 Wednesday Time (Relative)
-----
-> TX 6E13 CICS Transaction TranCode=BANK Task=203          08.51.16.302265
      Program=BANKP1 Userid=JIM LTerm=VAPFUW2B Terminal=UW2B
      RecToken=CICSP1/C7945AC9E865D801 Resp=8.233590 CPU=0.005672 IMS=37
      ACCT=FTS3.VAPFUW2B.945AC9E865D8 Task=203 PSB=BANKPSB1
-----
___ CA01 IMS Transaction TranCode=BANK Task=203 PSB=BANKPSB1      +0.001923
      RecToken=CICSP1/C7945AC9E865D801 Region=0001
      CPU=0.004973 Process=8.228251 RegTyp=DBC DBCalls=36
-----
___ 08 Application Start TranCode=BANK Program=DFHTWM04          +0.001923
___ 5607 Start of UOR Program=BANKP1                               +0.001924
___ 50 Database Update Database=BANKDB21                          +3.245731
___ 50 Database Update Database=BANKDB22                          +3.246030
___ 50 Database Update Database=BANKDB23                          +3.246065
___ 50 Database Update Database=BANKDB24                          +3.246233
___ 50 Database Update Database=BANKDB25                          +3.246281

```

Tracking a CICS DBCTL transaction in the log browser (continued)

```

__ 50 Database Update Database=BANKDB26 +4.293974
__ 50 Database Update Database=BANKDB27 +4.294279
__ 50 Database Update Database=BANKDB28 +4.294315
__ 50 Database Update Database=BANKDB29 +4.294481
__ 50 Database Update Database=BANKDB31 +4.294527
__ 50 Database Update Database=BANKDB32 +7.177249
__ 50 Database Update Database=BANKDB33 +7.177533
__ 50 Database Update Database=BANKDB34 +7.177581
__ 50 Database Update Database=BANKDB35 +7.177792
__ 50 Database Update Database=BANKDB36 +7.177841
__ 5610 Syncpoint Start of Phase 1 +8.224356
__ 5950 FP Database Update Database=BANKFP3 +8.224384
__ 5950 FP Database Update Database=BANKFP4 +8.224387
__ 5950 FP Database Update Database=BANKFP5 +8.224388
__ 5950 FP Database Update Database=BANKFP6 +8.224391
__ 3730 Syncpoint End of Phase 1 +8.228253
__ 5937 FP Syncpoint Program=BANKPGM1 +8.229158
__ 56FA Transaction Statistics +8.229168
__ 07 Application Terminate +8.230174
__ 5612 Syncpoint End of Phase 2 Program=BANKPGM1 +8.233899
***** Bottom of Data *****

```

CICS Trace: tracking a DLI call

- Written to GTF; normally requires batch IPCS to format
- Just another data source for the workbench
- Can be merged and tracked against other data sources including the IMS log

```

File  Mode  Filter  Time  Labels  Options  Help
-----
BROWSE      FUNDIR.TRACE.D120329.T172825.FTS3.S1      Record 00035478 More: < >
Command ==>                                     Scroll ==> CSR
Navigate < 00.06.00.000000 >      Date/Time 2013-09-12 17.29.49.890485
/ Tracking ----- Thursday 2013-09-12 Time (Elapsed)
E AP 0330 DLIDP ENTRY DBCTL 00579 17.31.51.200624
  AP 0302 DLIDP EVENT ABOUT-TO-INVOKE-DFHERM 00579 0.000004
  AP 2520 ERM ENTRY APPLICATION-CALL-TO-TRUE(DBCTL) 00579 0.000006
  AP 2522 ERM EVENT PASSING-CONTROL-TO-QR-TRUE(DBCTL) 579 0.000006
  AP 0310 DBAT ENTRY APPLICATION 00579 0.000005
  AP 0311 DBAT EVENT ABOUT-TO-INVOKE-DRA 00579 0.000004
  AP 0304 DBSPX EVENT ABOUT-TO-ISSUE-WAIT 00579 0.000011
  AP 0305 DBSPX EVENT POSTED 00579 0.014295
  AP 0312 DBAT EVENT RECEIVES-CONTROL-FROM-DRA FOR 00579 0.000012
  AP 0313 DBAT EXIT DBAT-RESPONSE-CODE 00579 0.000005
  AP 2523 ERM EVENT REGAINING-CONTROL-FROM-QR-TRUE 00579 0.000006
  AP 2521 ERM EXIT APPLICATION-CALL-TO-TRU(DBCTL) 00579 0.000010
  AP 0303 DLIDP EVENT RECEIVES-CONTROL-FROM-DFHERM 00579 0.000007
  AP 0331 DLIDP EXIT DBCTL 00579 0.000006

```

Scenario: IMS-DB2 problem

Scenario: IMS DB2 problem

1. On the following slides, we present an example scenario: a user has reported a long transaction response time for an IMS transaction performing DB2 updates
 - The analysis is divided into two parts:
 1. The **first responder**:
 - Registers the problem in the Workbench session manager and collects the log files
 - Follows a process orientated script to assign problem to initial expert
 - Based on what is found
 2. The **subject-matter expert** performs a “deep dive” on the problem: reviewing the reports, and using interactive analysis to identify the specific log records for the cause of the problem

First responder: Creating a session

Create a session (main menu ▶ option 1 **Sessions** ▶ **NEW**).
 Select the environment (**template**) where the problem occurred.

```

File Help
-----
                                Session Details                                Row 1 to 3 of 3
Command ==> _____ Scroll ==> CSR
Key . . . . : 00000026
Description . IMS DB2 problem
Severity . . 4
Reference . . TICKET-127
Reported by . JOHN
Assigned to . JAMES
Status . . . OPEN
Template . . IMS+DB2 +

                                — When problem occurred —
                                YYYY-MM-DD  HH.MM.SS.TH
                                From 2012-06-24 15.20.00.00
                                To   2012-06-24 16.50.00.00
                                Zone LOCAL

Systems involved:

/ System +   Type +
— IADG     IMS
— DB3A     DB2
— FTS1     IMAGE
***** Bottom of data *****
  
```

The **template** (set up by the expert) populates the system list (where the problem occurred), as well as the workflow task list (preparatory jobs to select log files and create extracts)

Subject-matter expert: Exception candidate investigation

```

File  Mode  Filter  Time  Labels  Options  Help
-----
BROWSE  IMPOT01.SESSION7.TRANIX +          Record 00004609 More: < >
Command ===>                               Scroll ===> CSR
Navigate < 00.00.01.000000 >          Date/Time 2013-10-11 11.15.00.000000
                                           Friday 2013-10-11 Time (LOCAL)
                                           16.33.33.575325
TX CA01 Transaction
UTC=16.33.33.575316 TranCode=MQATREQ1 Program=MQATPGM Userid=FUNTRM15
LTerm=FUNTRM15 Terminal=SC0TCP15 Region=0004
OrgUOWID=IADG/C62D2CB467860940 IMSID=IADG IMSRel=101
RecToken=IADG/0000003600000000
CPU=0.041999 InputQ=0.000562 Process=0.497229
TotalTm=0.497791 RegTyp=MPP DBCalls=5
-----
CA01 Transaction 16.33.59.157812
UTC=16.33.59.157802 TranCode=MQATREQ1 Program=MQATPGM Userid=FUNTRM15
LTerm=FUNTRM15 Terminal=SC0TCP15 Region=0004
OrgUOWID=IADG/C62D2CCCD3E6F81 IMSID=IADG IMSRel=101
RecToken=IADG/0000003A00000000
CPU=0.013980 InputQ=0.000543 Process=0.424378
TotalTm=0.424921 RegTyp=MPP
-----
CA01 Transaction 16.34.30.389305

```

This display has been filtered to show **IMS transaction index (CA01) records** with a process time of greater than 0.4 seconds. Enter TX to show records related to a transaction

Transaction life cycle investigation

| File | Mode | Filter | Time | Labels | Options | Help |
|----------|----------|---|-----------|------------|-----------------|-----------|
| FUWPRBRF | | GXH.FUW.JCH1.FUW745.UPDATE.CICS.EXTRACT | | | Record 00000001 | More: < > |
| Command | ===> | | | | Scroll ===> | CSR |
| | Navigate | < 00.05.00.000000 > | Date/Time | 2013-05-31 | 16.27.24.275202 | |
| / | Tracking | | Friday | 2013-05-31 | Time (Relative) | |
| TX | 6E13 | CICS Transaction TranCode=FB66 Task=944 | | | 16.27.24.275202 | |
| ___ | 086 | Signon start | | DBA6 | +0.003469 | |
| ___ | 072 | Create thread start | | DBA6 | +0.003546 | |
| ___ | 112 | Thread allocate | | DBA6 | +0.003805 | |
| ___ | 073 | Create thread end | | DBA6 | +0.003830 | |
| ___ | 053 | SQL DESCRIBE/COMMIT/ROLLBAC SQLCODE=0 STMT=000158 | | DBA6 | +0.004096 | |
| ___ | 233 | SP entry FBOSP006 | | DBA6 | +0.005104 | |
| ___ | 015 | Index scan begin | | DBA6 | +0.005874 | |
| ___ | 018 | Scan end | | DBA6 | +0.006097 | |
| ___ | 055 | SQL set current SQLID | | DBA6 | +0.006188 | |
| ___ | 053 | SQL DESCRIBE/COMMIT/ROLLBAC SQLCODE=0 STMT=000281 | | DBA6 | +0.006209 | |
| ___ | 060 | SQL SELECT | | DBA6 | +0.006365 | |
| ___ | 017 | Sequential scan begin | | DBA6 | +0.006478 | |
| ___ | 006 | Read I/O begin | | DBA6 | +0.006582 | |
| ___ | 007 | Read I/O end | | DBA6 | +0.006950 | |
| ___ | 018 | Scan end | | DBA6 | +1.609979 | |
| ___ | 058 | SQL call completion SQLCODE=0 STMT=000344 | | DBA6 | +1.610035 | |
| ___ | 061 | SQL UPDATE | | DBA6 | +1.610336 | |
| ___ | 017 | Sequential scan begin | | DBA6 | +1.610463 | |
| ___ | 0020 | DB2 Unit of Recovery Control - Begin UR | | | +1.610733 | |
| ___ | 0010 | DB2 Savepoint | | | +1.610733 | |
| ___ | 0020 | DB2 Update In-Place in a Data Page | | | +1.610749 | |
| ___ | 018 | Scan end | | DBA6 | +1.610771 | |
| ___ | 058 | SQL call completion SQLCODE=0 STMT=000423 | | DBA6 | +1.611141 | |
| ___ | 233 | SP exit FBOSP006 | | DBA6 | +1.611397 | |
| ___ | 053 | SQL DESCRIBE/COMMIT/ROLLBAC SQLCODE=0 STMT=000196 | | DBA6 | +1.611448 | |

1. Start tracking a transaction (here, a CICS transaction)
2. See the transaction life cycle events from the related logs (here, an SMF file and a DB2 log), merged together with no preparation required
3. Notice the jump in elapsed time
4. In this case, the problem was caused by a table scan in a DB2 stored procedure.

A drill down of the DB2 trace was able to determine this.

Detail DB2 event data view using forms view

```

***** Top of data *****
+018C Code... 058   SQL Call completion          RC=0000 STMT=002896 DBA6
+0198 Date... 2012-11-21 Wednesday Time... 17.40.04.013647.813

Package
+0034 Location..... 'DB2ALOC'           Collection ID..... 'CSQ5L710'
+0056 Package name... 'CSQ5L710'       Consistency token... 193153A81425EA0D

+0072 SQLCA..... SQL communication area (SQLCA)
+0072 SQLCAID.... 'SQLCA'   SQLCABC.... +136       SQLCODE.... +0
+0082 SQLERRML... +0       SQLERRM.... ' '
+00CA SQLERRP.... 'DSN'     SQLERRD1... +0       SQLERRD2... +0
+00DA SQLERRD3... +0       SQLERRD4... FFFFFFFF   SQLERRD5... +0
+00E6 SQLERRD6... +0       SQLWARN0... ' '       SQLWARN1... 'N'
+00EC SQLWARN2... ' '       SQLWARN3... ' '       SQLWARN4... ' '
+00EF SQLWARN5... '1'       SQLWARN6... ' '       SQLWARN7... ' '
+00F2 SQLWARN8... ' '       SQLWARN9... ' '       SQLSTATE... '00000'

+00FC Statement number... +2896
+0106 Query command ID... 00000000       Query instance ID... 00000000

+0118 QW0058ID... Scantype
+0118 Data type... 'INDX'   Rows processed... +234       Rows examined.... +12
+012C Rows qualified... +7   After stage 1... +4       After stage 2.... +3
+0140 Rows inserted.... +17  Rows updated.... +12       Rows deleted..... +24
+0158 Pages scanned.... +76
+015C Pages scanned (RI)... +0       Rows deleted (RI)... +0
+0160 Pages scanned (LOB).. +0       Pages updated (LOB).. +0

+0188 QWHS..... Product section standard header
+0194 DB2 subsystem.... 'DBA1'

+01BC QWHSLWID... LUWID
+01BC Network ID... 'FTS1'       LU name.... 'DBA1LU'
+01C4 Uniqueness value... CA80E6B51165 Commit count... +1
***** Bottom of data *****

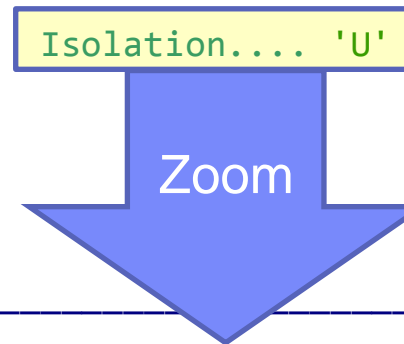
```

Program statement number 2896 caused an index scan that processed 234 rows in the table

Zoom to see more detail about log record fields

```

+002C QW0065..... IFCID data
      Package
+002C Location... 'DB2BLOC'   Collection ID.... 'MQATPGM'
+004E Package name... 'MQATPGM'
+0060 Consistency token.... 189E34F81745545D
      Statement
+006A Statement type... 91      Cursor name.... 'C1'
+0080 Reoptimization... 0000   Statement number... +835
+0088 Cursor scrollability... 40
+0089 Cursor sensitivity... 40
+008A Result table type.... 40  Close commit... D5
+0094 Query command ID... 0
  
```



Field Zoom

File Menu Help

```

BROWSE      JCH.FUW.P0000003.D130625.T094351.EXTRACT +           Line 00000000
Command ==>                               Scroll ==> PAGE
***** Top of data *****
+007F  QW0065I.... 'U'  Isolation level of the SQL statement.

Off    QW0065RR... 'R'  RR (repeatable read)
Off    QW0065RS... 'T'  RS (read stability)
Off    QW0065CS... 'S'  CS (cursor stability)
On     QW0065UR... 'U'  UR (uncommitted read)
Off    QW0065XR... 'X'  XR (Repeatable read with X lock)
Off    QW0065XS... 'L'  XS (Read stability with X lock)
***** End of data *****
  
```

Life cycle events: expanded summary view

| <u>F</u> ile | <u>M</u> ode | <u>F</u> ilter | <u>T</u> ime | <u>L</u> abels | <u>O</u> ptions | <u>H</u> elp |
|-------------------|---|----------------|--------------------------------------|----------------|------------------------------------|----------------|
| BROWSE Command | JCH.FUW.P0000003.D130625.T094351.EXTRACT ===> | | | | Record 00003251 Scroll ===> CSR | More: < > |
| / | Navigate < 00.00.01.000000 > | | Date/Time 2013-06-22 14.57.57.969312 | | | |
| — 380 | SP entry FBOSPM3C TranCode=FB0IAP42 Userid=FUNTRM06 ClientID=ICDG LUWID=FTS3/DBA6LU/CB8C9439E347/0001 | | Saturday 2013-06-22 | | DBA6 15.18.02.907449 | Time (Elapsed) |
| — 380 | SP exit FBOSPM3C TranCode=FB0IAP42 Userid=FUNTRM06 ClientID=ICDG LUWID=FTS3/DBA6LU/CB8C9439E347/0001 | | | SQLCODE=0000 | DBA6 | 0.444391 |
| — 003 | Thread accounting TranCode=FB0IAP42 Program=FB0IAP42 Userid=FUNTRM06 Region=0001 RecToken=ICDG/0000000100000000 ClientID=ICDG RESP=0.448242 CPU1=0.324230 CPU2=0.000791 I/O3=0.003360 Source=IMS_MPP GtPgRq=284 SyPgUp=6 Suspnd=0 DeadLk=0 TimOut=0 MxPgLk=2 Sel=4 Ins=0 Upd=0 Del=1 LUWID=FTS3/DBA6LU/CB8C9439E347/0002 | | | | DBA6 | 0.003521 |

***** Bottom of Data *****

Scroll right to show the records in expanded view with elapsed or relative times:
 Elapsed – time between log record events
 Relative – time since start of transaction (or other selected event)

Identifying events for review or collaboration

```

File  Mode  Filter  Time  Labels  Options  Help
-----
BROWSE  IMPOT01.SESSION7.TRANIX +          Record 00005399 More: < >
Command ==>                               Scroll ==> CSR
/      Navigate < 00.00.01.000000 >    Date/Time 2013-06-22 14.57.57.969312
/      Tracking _____          Saturday 2013-06-22 Time (Relative)
CA01 Transaction                      16.33.33.575325
      UTC=16.33.33.575316 TranCode=MQATREQ1 Program=MQATPGM Userid=FUNTRM15
      LTerm=FUNTRM15 Terminal=SC0TCP15 Region=0004
      OrgUOWID=IADG/C62D2CB467860940 IMSID=IADG IMSRel=101
      RecToken=IADG/0000003600000000
      CPU=0.041999 InputQ=0.000562 Process=0.497229
      TotalTm=0.497791 RegTyp=MPP DBCalls=5
-----
TAG  IMS DB2 transaction with long response time
-----
G 0020 DB2 Unit of Recovery Control - Begin UR
      Userid=FUNTRM15 IMSID=IADG URID=00002A4010EA
      LUWID=FTS3/DB3ALU/C62D2CB46A5A/0001
-----
0020 DB2 Update In-Place in a Data Page
      DBID=0105 PSID=0002 URID=00002A4010EA
-----

```

A DB2 expert can now use the [DB2 Log Analysis Tool](#) to investigate the associated DB2 table updates, based on the transaction's URID

Enter **FIND LUWID** on the command line.
 Enter **G** to “tag” (bookmark) this DB2 record.

Problem resolution: end of scenario

- **The cause of the IMS transaction problem has been narrowed down to a slowdown in DB2**
- **Sufficient information about the DB2 update activity has been collected and can be passed on to the DB2 DBA for further investigation**
- **Automatically locates log files for the problem time range for supported subsystems**
 - SMF
 - IMS log
 - DB2 log and trace
- **Enables a collaborative problem analysis:**
 - Between first responders and subject-matter experts
 - Between experts in different areas

SMF Reports

SMF reports

- **System events or constraints can affect transaction processing**
- **Workbench provides reports for selected SMF record types, specifically aimed at identifying performance-related issues**

System-related:

- SMF 30: Address Space activity; including CICS, IMS, DB2
- RMF 70-1: CPU usage
- RMF 76: Page data sets
- RMF 78-2: Virtual Storage

- SMF 42-6: DASD data set I/O
- SMF 64: VSAM data set I/O

Subsystem-related:

- SMF 33-2: APPC conversations
- SMF 88-1: System Logger

- SMF 101: DB2 accounting
- SMF 116: WebSphere MQ

SMF 30: Address Space activity

| -----Interval----- | | | System | | | | ----- CPU ----- | | |
|---------------------|----------|------|--------|---------|------|----------|-----------------|------|--|
| Start Date/Time | Duration | Type | Name | Jobname | Comp | TCB | SRB | %CPU | |
| 2011-03-04 15:37:01 | 00:01 | STE | MVS1 | IMSCTL1 | 0004 | 0.445357 | 0.023205 | 15.1 | |
| 2011-03-04 15:37:01 | 00:01 | STT | MVS1 | IMSCTL2 | 0004 | 0.445357 | 0.023205 | 15.0 | |
| 2011-03-04 15:37:06 | 00:01 | STE | MVS1 | IMSCTL3 | 0004 | 0.404175 | 0.011985 | 19.3 | |
| 2011-03-04 15:37:06 | 00:01 | STT | MVS1 | IMSCTL4 | 0004 | 0.404175 | 0.011985 | 19.2 | |
| 2011-03-04 15:43:24 | 00:01 | STE | MVS1 | IMSCTL5 | 0004 | 0.904357 | 0.046920 | 18.9 | |
| 2011-03-04 15:43:24 | 00:01 | STT | MVS1 | IMSVTL6 | 0004 | 0.904357 | 0.046920 | 18.9 | |
| 2011-03-04 15:44:05 | 00:01 | INT | MVS2 | CICSPR1 | 0000 | 7.966200 | 0.241357 | 15.2 | |
| 2011-03-04 15:44:58 | 00:01 | INT | MVS2 | CICSPR2 | 0000 | 0.141780 | 0.004335 | 11.2 | |

At regular intervals, every address space can be monitored for unusual spikes (or lulls) in system-related resource consumption including CPU and I/O.

| EXCPs /Sec | ----Storage----- | | | -Paging/Sec- | | |
|------------|------------------|-------|-------|--------------|-----|------|
| | <16M | >16M | 64bit | In | Out | Swap |
| 477 | 1M | 11M | 0M | 0 | 0 | 0 |
| 476 | 1M | 11M | 0M | 0 | 0 | 0 |
| 309 | 1M | 11M | 0M | 0 | 0 | 0 |
| 309 | 1M | 11M | 0M | 0 | 0 | 0 |
| 590 | 1M | 11M | 0M | 0 | 0 | 0 |
| 589 | 1M | 11M | 0M | 0 | 0 | 0 |
| 140 | 4M | 1366M | 0M | 0 | 0 | 0 |
| 100 | 0M | 12M | 0M | 0 | 0 | 0 |

SMF 33-2: APPC/MVS Conversation List report

| Start Time | Local LU Name | Direction | Partner UserId | Job Name | SyncLvl |
|-----------------|--------------------------------------|-----------|----------------|----------|---------|
| 18:16:47.624543 | MVSLU02 | Outbound | | TWM#RBAT | Syncpt |
| | ** Partner ** TPname=IADGEXP_PROFILE | | | | |
| 18:16:47.796620 | IADGAPPC | Inbound | | IADGMPPA | Syncpt |
| | *** Local *** TPname=IADGEXP_PROFILE | | | | |

APPC requests processed on z/OS are logged to SMF. These requests may end up being processed by an IMS or CICS transaction. A breakdown of processing inside MVS can identify bottlenecks and other performance related issues.

| InputQ | Time Process | Total | Bytes Received | Bytes Sent |
|---------|--------------|---------|----------------|------------|
| | .324737 | .324737 | 68 | 83 |
| .166232 | .154551 | .320783 | 83 | 68 |

SMF 42-6 DASD Data Set I/O report

DSN: IADJ.VA10.WADS9

```

-- I/O per sec -- ----- DASD response time breakdown (average) -----
  Reads   Writes  Response  Queuing  Pending  Connect  Disc Rd  Disc  Wrt
         0       120  0.000512  0.000000  0.000000  0.000384  0.000000  0.000000  0

---- Cache candidate rate per second -----  --- Cache I/O per sec ----
  Total Hits      Read Hits      Write Hits      Seq      RLC      ILC
         0  0%           0  0%           0  0%           120       0       0
  
```

Mission critical DASD data sets including online logs and databases require optimum DASD performance. This report analyzes the I/O performance (channel and DASD) of all data sets used in transaction processing systems.

```

-----  ---- Maximum ----
          DAO  Response Service
0.000000  0.001024  0.001024
  
```

SMF 64: VSAM Data Sets

| Close Date | Time | Data set name | --Splits-- | | |
|------------|----------|-----------------------------------|------------|----|-----|
| | | | CA | CI | Ext |
| 2011-02-02 | 16:00:01 | FUNDIP.OME.FTS1MVS.RKM2EDS3.DATA | 5 | 17 | 1 |
| 2011-02-02 | 16:00:01 | FUNDIP.OME.FTS1MVS.RKM2EDS3.INDEX | 0 | 5 | 1 |
| 2011-02-02 | 16:00:01 | FUNDIP.OME.FTS1MVS.RKM2EDS3.DATA | 5 | 18 | 1 |
| 2011-02-02 | 16:00:01 | FUNDIP.OME.FTS1MVS.RKM2EDS3.INDEX | 0 | 5 | 1 |
| 2011-02-02 | 16:00:32 | FUNDIP.OME.FTS1MVS.RKM2EDS3.DATA | 5 | 19 | 1 |
| 2011-02-02 | 16:00:32 | FUNDIP.OME.FTS1MVS.RKM2EDS3.INDEX | 0 | 5 | 1 |
| 2011-02-02 | 16:00:55 | FUNDIP.ANF.QUEUE.DATA | 0 | 0 | 1 |
| 2011-02-02 | 16:00:55 | FUNDIP.ANF.QUEUE.INDEX | 0 | 0 | 1 |

VSAM data sets are commonly used as databases in IMS and CICS.

As these data sets are re-opened (or extend), information about their I/O activity and general health (splits) is available.

| EXCPs | -----Calls----- | | | | -RLS Activity- | | |
|---------|-----------------|------|------|------|----------------|----|-------|
| | Get | Upd | Del | Ins | LSR | CF | DA SD |
| 3322 | 13 | 1 | 0 | 1314 | 0 | 0 | 0 |
| 1796 | 0 | 259 | 0 | 0 | 0 | 0 | 0 |
| 3378 | 13 | 1 | 0 | 1340 | 0 | 0 | 0 |
| 1850 | 0 | 261 | 0 | 0 | 0 | 0 | 0 |
| 3436 | 13 | 1 | 0 | 1353 | 0 | 0 | 0 |
| 1902 | 0 | 275 | 0 | 0 | 0 | 0 | 0 |
| 3754685 | 23K | 8658 | 4353 | 1602 | 0 | 0 | 0 |
| 3739616 | 13 | 0 | 0 | 0 | 0 | 0 | 0 |

SMF 70-1: RMF Processor activity

| - Interval Start -- | System | - %CPU Busy - | IO | |
|---------------------|--------|---------------|-------|--------|
| Date Time | Name | LPAR MVS | Rate | |
| 2010-08-17 23:45:00 | FTS1 | 68.75 | 87.42 | 2282.4 |
| | FTS2 | 4.07 | 4.50 | 9.4 |
| | FTS3 | 4.03 | 4.39 | 12.6 |
| 2010-08-18 00:00:00 | FTS1 | 61.15 | 72.16 | 1934.8 |
| | FTS2 | 4.15 | 4.72 | 8.4 |
| | FTS3 | 3.88 | 4.41 | 11.7 |

CPU constraints are one of the most common causes of a slowdown in performance, and often has flow-on effects including contention.

CPU Busy and **IO Rate** are the classical system performance indicators. Look for spikes that might indicate a slowdown.

| Number of Address Spaces | | | | | | | | |
|--------------------------|-----|------------|-----|-------------|-----|------------|-----|--|
| In | | -In Ready- | | -Out Ready- | | -Out Wait- | | |
| Avg | Max | Avg | Max | Avg | Max | Avg | Max | |
| 151 | 156 | 7 | 86 | 0 | 1 | 0 | 0 | |
| 77 | 80 | 1 | 15 | 0 | 0 | 0 | 0 | |
| 69 | 72 | 1 | 9 | 0 | 0 | 0 | 0 | |

Out Ready identifies the number of address spaces waiting for dispatching on the CPU

SMF 75: RMF Page Data Set activity

Date: 2010-08-17 Time: 23:45:00 SID: FTS1

| Page Type | ----- Alloc | Slots Min | Used Max | ----- Avg | % Full | Bad Slots | In Use | Trans Time | Number I/O Req | Pages Xferd | VIO |
|-----------|-------------|-----------|----------|-----------|--------|-----------|--------|------------|----------------|-------------|-----|
| PLPA | 44999 | 20078 | 20078 | 20078 | 45% | 0 | 0 | 0 | 0 | 0 | |
| Common | 89999 | 3129 | 3129 | 3129 | 3% | 0 | 0 | 0 | 0 | 0 | |
| Local | 1080K | 101K | 101K | 101K | 9% | 0 | 0 | 0 | 10 | 10 | Y |
| Local | 1080K | 102K | 102K | 102K | 9% | 0 | 0 | 0 | 10 | 10 | Y |
| Local | 1080K | 103K | 103K | 103K | 10% | 0 | 0 | 0 | 6 | 6 | Y |
| Local | 1080K | 109K | 109K | 109K | 10% | 0 | 0 | 0 | 13 | 13 | Y |

With the advent of large amounts of cheaper memory, Page data set performance is often less of a problem today, but none the less should be monitored occasionally for constraints.

Data Set Name

FUNDI1.FTS1.PAGE.PLPA
 FUNDI1.FTS1.PAGE.COMMON
 FUNDI1.FTS1.PAGE.LOCAL1
 FUNDI1.FTS1.PAGE.LOCAL2
 FUNDI1.FTS1.PAGE.LOCAL3
 FUNDI1.FTS1.PAGE.LOCAL4

SMF 78-2: RMF Virtual Storage activity

| - Interval | Start | -- System | | | ----- Usage ----- | | | |
|------------|----------|-----------|------|--------|-------------------|-------------|----------|-------------|
| Date | Time | Name | Type | Size | Min Time | | Max Time | |
| 2010-06-13 | 23:45:00 | FTS1 | CSA | 3364K | 612K | 23:44:59.60 | 612K | 23:44:59.60 |
| | | | ECSA | 384M | 131M | 23:44:59.60 | 131M | 23:48:49.24 |
| | | | SQA | 1744K | 444K | 23:44:59.60 | 444K | 23:44:59.60 |
| | | | ESQA | 47772K | 22120K | 23:47:19.06 | 22212K | 23:44:59.60 |
| | | FTS2 | CSA | 3364K | 376K | 23:44:59.60 | 376K | 23:44:59.60 |

IMS and CICS still use large amounts of CSA and ECSA for common storage. In the event that storage cannot be obtained, subsystems can stop or worse.

| ----- | |
|--------|------|
| Avg | Pct |
| 612K | 18.2 |
| 131M | 34.1 |
| 444K | 25.5 |
| 22177K | 46.4 |
| 376K | 11.2 |

SMF 79-15: IRLM Long Lock Detection

| Time | Cycle Number | Entry Type | IMS ID | Trancode | PSBname | PST | Reg Typ | Duration | Max Locks |
|--------------|--------------|------------|--------|----------|---------|-----|---------|------------|-----------|
| 08:51:47.440 | 25853771 | Wait | ISA2 | CI1CSAC3 | PCM0F0 | 49 | | 11.534336 | 0 |
| 08:51:47.440 | 25853771 | Block | ISA3 | CI1ESAE1 | PCM0F0 | 127 | | 111.149056 | 44 |
| 08:54:36.250 | 25854107 | Wait | ISA3 | CI1ESAE5 | PCM0F0 | 102 | | 11.534336 | 0 |
| 08:54:36.250 | 25854107 | Block | ISA4 | CI1FSAF3 | PCM0F0 | 40 | | 98.566144 | 44 |
| 15:25:31.580 | 25900783 | Wait | ISA1 | CI1ASAA2 | PRE0F0 | 90 | | 11.534336 | 26 |
| 15:25:31.580 | 25900783 | Block | ISA1 | CI1ASAA1 | PSA0F0 | 60 | | 11.534336 | 2 |

IMS database locks that are held by transactions for an extended period (several seconds) are logged to SMF; and can be analyzed to determine if there is an application problem.

| Recovery Token | Resource | CICS Task |
|---------------------------|----------|-----------|
| CI1CSAC3/C5BF632F08B62783 | HNMTRM01 | 000 88603 |
| CI1ESAE1/C5BF62D0456F8085 | | 000 36462 |
| CI1ESAE5/C5BF63D077B36503 | HNMTRM01 | 000 88040 |
| CI1FSAF3/C5BF637DEF1A2001 | | 000 32398 |
| CI1ASAA2/C5BFBB316C472003 | SHSECN08 | 000 13029 |
| CI1ASAA1/C5BFBB3166E1F584 | | 000 48273 |

SMF 88-1: System Logger Log Stream

| Logstream name | MVSID | Structure name | Group |
|-------------------------|-------|----------------|---------------|
| STC@CICS.CICSPR1.DFHLOG | FTS1 | *DASDONLY* | |
| ----- IXGWrites ----- | | | |
| | Count | Total Bytes | Average Bytes |
| | ----- | ----- | ----- |
| Total | 29862 | 19177K | 642 |
| Rate(/Sec) | 0 | 5 | 35 |
| Minimum | 0 | 0 | 0 |
| Maximum | 1322 | 862741 | 5480448 |

CICS and IMS both rely on log streams for critical services; including message handling and journaling. Problems can be avoided by monitoring their I/O and offload activity.

| First interval start | Last interval stop | Total Interval |
|-----------------------|-----------------------|----------------|
| 14:30:00.00 3/04/2011 | 16:00:00.00 4/14/2011 | 0985:30:00 |

| ----- DELETIONS ----- | | | |
|-----------------------|---------|---------|----------|
| Count | Count | Bytes | Bytes |
| With | Without | After | Int Stor |
| DASD | DASD | Offload | w/o DASD |
| Write | Write | w. DASD | Write |
| ----- | ----- | ----- | ----- |
| 24950 | 4075 | 102547K | 16691K |
| 0 | 0 | 29 | 5 |
| 0 | 0 | 0 | 0 |
| 1685 | 839 | 7032832 | 3436544 |

SMF 101: DB2 Thread Accounting

All transactions that use DB2 cut accounting records that show how DB2 performed in the application and across into DB2.

| DB2 SSID | Plan Name | ----- Connection Name | ----- Type | Thread Count |
|----------|-----------|-----------------------|------------|--------------|
| DB3A | CEXTPGM | IADG | IMS MPP | 68 |

| | | | | | |
|------------------------|-----------------------|--------------|---------------------|----------------|----------------------------|
| | | | | | Start: 2010-06-24 15:27:39 |
| | | | | | End: 2010-06-24 16:44:00 |
| | | | | | Interval: 01:16:20 |
| | | | | | Rate/sec: < 1 |
| Class1: Thread Time | Avg: Elapsed=70.43305 | CPU= .011006 | | | |
| | Max: Elapsed=2045.732 | CPU= .013724 | | | |
| Class2: In-DB2 Time | Avg: Elapsed= .015108 | CPU= .006035 | | | |
| | Max: Elapsed= .033537 | CPU= .008234 | | | |
| Class3: Suspend Time | Avg: Total = .008709 | I/O= .000000 | Lock/Latch= .002404 | Other= .006305 | |
| | Max: Total = .017377 | I/O= .000000 | Lock/Latch= .007199 | Other= .010178 | |
| Buffer Manager Summary | Avg: GtPgRq= 7.0 | SyPgUp= 3.0 | | | |
| | Max: GtPgRq= 7 | SyPgUp= 3 | | | |
| Locking Summary | Avg: Suspnd= .0 | DeadLk= .0 | TmeOut= .0 | MxPgLk= 1.0 | |
| | Max: Suspnd= 0 | DeadLk= 0 | TmeOut= 0 | MxPgLk= 1 | |
| SQL DML Query/Update | Avg: Sel= .0 | Ins= 1.0 | Upd= 1.0 | Del= 1.0 | |
| | Max: Sel= 0 | Ins= 1 | Upd= 1 | Del= 1 | |
| SQL DML 'Other' | Avg: Des= .0 | Pre= .0 | Ope= 1.0 | Fet= 9.0 | Clo= 1.0 |
| | Max: Des= 0 | Pre= 0 | Ope= 1 | Fet= 9 | Clo= 1 |

SMF 116: WebSphere MQ Accounting reports

MQACCT4 Printed at 10:50:30 2/03/2011 Data from 09:00:40 03/03/2010 to 09:59:52 03/03/2010

SSID: SYSB Type: CICS Name: CICSSYSP Tran: TRTI Threads: 2
 Other Avg Count 6.0 Avg Elapsed 0.000116 Avg CPU 0.000112

In-MQ Time (Total) Elapsed: 0.000233 CPU: 0.000224
 In-MQ Time (Average) Elapsed: 0.000116 CPU: 0.000112

SSID: SYSB Type: CICS Name: CICSSYSP Tran: TRTL Threads: 4

In-MQ Time (Total) Elapsed: 0 CPU: 0
 In-MQ Time (Average) Elapsed: 0 CPU: 0

Queue: APPLICATION_A_REQUEST

QType: LOCAL IType: NONE GDisp: Q_MGR QCount: 4

| | Count | Elapsed | CPU | Susp Elp | InlWrt Elp | PS Req's | PS Rd Elp | Ex |
|-------|-------|----------|----------|----------|------------|----------|-----------|----|
| OPEN | 15.0 | 0.000019 | 0.000009 | | | | | |
| CLOSE | 15.0 | 0.000002 | 0.000002 | | | | | |
| INQ | 15.0 | 0.000009 | 0.000008 | | | | | |

In-MQ Time (Total) Elapsed: 0.001861 CPU: 0.001222
 In-MQ Time (Average) Elapsed: 0.000465 CPU: 0.000305

Detailed MQ accounting can be requested to show the impact of MQ on transaction performance.

OPERLOG report: JCL

```

File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-----
VIEW          FUW110.WTWM.REPORTS(OPERLOG) - 01.03          Columns 00001 00072
Command ==> _____ Scroll ==> CSR
***** ***** Top of Data *****
000001 //OPERLOG  JOB ,CLASS=A,NOTIFY=&SYSUID
000002 /*JOBPARM  SYSAFF=FTS1
000003 //FUWBATCH EXEC PGM=FUWBATCH
000004 //STEPLIB  DD  DISP=SHR,DSN=FUW.SFUWLINK
000005 //SYSPRINT DD  SYSOUT=*
000006 //SYSIN    DD  *
000007 LOGSTREAM OPERLOG:SYSPLEX.OPERLOG
000008 START 2011-04-06-08.40.00.00  STOP 2011-04-06-09.00.00.00
000009 REPORT OPERLOG
000010 CODE(OPERLOG)
000011 COND TEXT(2) EQ 'DFS'
000012 COND TEXT(*) EQ 'BACKOUT'
000013 /*
***** ***** Bottom of Data *****

```

Note the LOGSTREAM command in the SYSIN data set, identifying the input log stream. The COND statements filter the reported OPERLOG records.

OPERLOG report: output

```

FTS3      2011096 08.41.42.57 STC36951 DFS2484I JOBNAME=IBB1#ARC
          GENERATED BY LOG AUTOMATIC ARCHIVING IBB1
FTS2      2011096 08.41.48.71 STC37128 DFS058I 08:41:48 START COMMAND IN PROGRESS ICDZ
FTS2      2011096 08.41.49.80 STC37128 DFS551I IFP REGION ICDZIFP1 STARTED
          ID=00001 TIME=0841 ICDZ
FTS2      2011096 08.41.49.89 STC37128 DFS551I MESSAGE REGION ICDZMPP1 STARTED
          ID=00002 TIME=0841 CLASS=001,000,000,000 ICDZ
FTS2      2011096 08.41.52.04 STC37128 DFS551I IFP REGION ICDZIFP3 STARTED
          ID=00003 TIME=0841 ICDZ
FTS3      2011096 08.47.36.05 STC36951 DFS554A FUWTCIC 00002 FUWTCIC DFHTWM04(3)
          000,0777 2011/096 8:47:36
          RTKN=FUWTCIC C79459EA853EFB03 IBB1
FTS3      2011096 08.47.51.05 STC36951 DFS968I DBD=DI21PART WITHIN PSB=DFHTWM04
          SUCCESSFULLY BACKED OUT IBB1
FTS3      2011096 08.47.51.05 STC36951 DFS980I BACKOUT PROCESSING HAS ENDED FOR DFHTWM04 IBB1

```

From the previous JCL request, it is simple to identify the IMS subsystem messages associated with the transaction failure.