SoftBase Batch Analyzer

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SoftBase Systems, Inc

- Founded in 1987
- Located in Asheville, North Carolina
- IBM Partner in Development
- Leading provider of application testing and tuning solutions for IBM's DB2 for z/OS

SoftBase Products

- TestBase
- TestBase Data Slicer
- Batch Healthcare
  - Attach
  - Checkpoint
  - Batch Analyzer

TestBase

- Quickly retrieve manageable subsets of referentially intact data from various sources including DB2 UDB, VSAM & QSAM
- Allows definition of data manipulation to test specific conditions
- Compare Reporting Facility to provide quick verification of testing results
- Mandatory masking of fields through predefined rules

TestBase Data Slicer

- Build and maintain test data, easily extracting slices of production data
- Allows users to share or isolate data with total independence
- Multiple developers and testers can test together without affecting each other
- Eliminates the need for the DBA to maintain multiple test environments
- Can also extract data from VSAM and QSAM

SoftBase

Batch HealthCare Attach Facility

- Call Attach
- Auto-Commit
- Variable Commit Frequency
- ENQ Serialization
- SQL Monitoring

SoftBase

Batch HealthCare Checkpoint Facility

- Provides Checkpoint/Restart services
- Automatically repositions sequential files & RRS resources on restart, restoring working storage
- Flexible precompiler can convert most COBOL & PL/I programs
- Support for existing Quickstart™, AR/CTL™ & AdvantageGen™ Applications

SoftBase

Batch HealthCare Batch Analyzer

- A Performance Tool that can be used by DBA and application programmer - allowing drill down to actual SQL Text
- Data can be collected for all DB2 batch jobs 24x7 without any JCL or program changes
- SQL Hot-Spot detection, identifying the Job and SQL over-utilizing CPU and DB2 resources
- Helps find contention and timeout issues between DB2 batch jobs
- Helps identify jobs that do not COMMIT frequently enough or commit too frequently

What Problems?

- Finding SQL with excess utilization
- Finding where deadlocks and timeouts are occurring
- Finding potentially long ROLLBACKs
- Relating the problem to a job
- Making all this available with low overhead to developers and DBAs

Finding SQL

- Identifies job with high DB2 utilization
- Identifies SQL with high DB2 utilization
- Production & Test
- Easy to filter based on date/time, jobname, etc
- Instantly relate problem SQL to a particular job

Deadlocks & Timeouts

- Batch programs compete for resources 24x7
- Poor COMMIT frequency can increase the number of deadlocks & timeouts

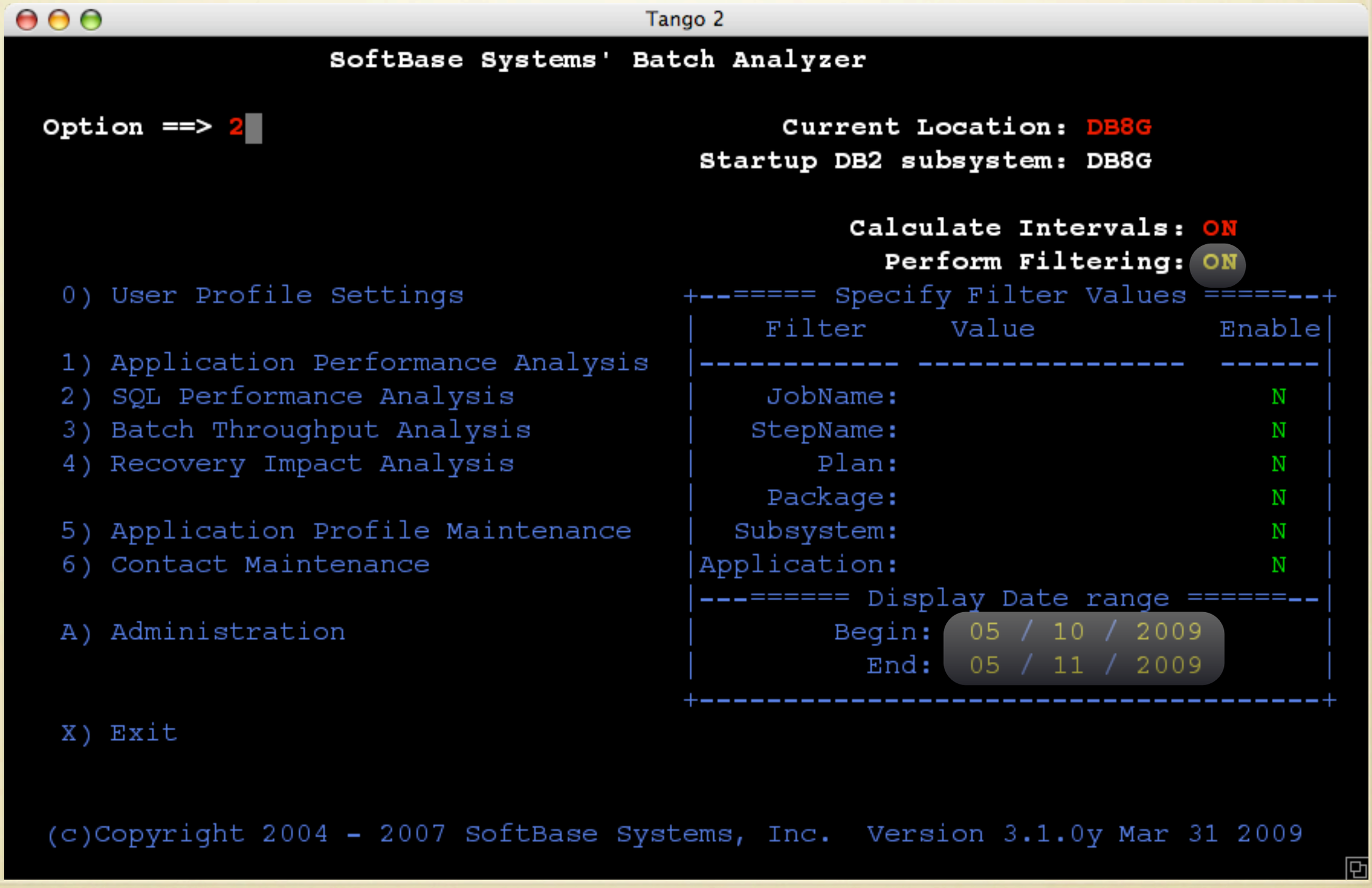
Long Rollbacks

- Poor COMMIT frequency can cause excessive ROLLBACK times
- ROLLBACK is at least 2x execution time
- Identifying those ROLLBACK exposures is essential
- Implementing the Checkpoint Facility can ease ROLLBACK exposure

Easy Implementation

- Collects data only for those DB2 batch jobs selected
- Overhead low enough to capture every DB2 batch job 24x7
- No JCL or program changes required for collection
- Data is available within 30 seconds after job completion
- No DB2 traces required

Filter 1 24-Hour period



Finding Bad SQL

Tango 2

```
                SoftBase Systems' Batch Analyzer

Option ==> 2                                        Current Location: DB8G
                                                  Startup DB2 subsystem: DB8G

                                                       Calculate Intervals: ON
                                                         Perform Filtering: ON
 0) User Profile Settings                    +--===== Specify Filter Values =====--+
                                             |    Filter     Value             Enable|
 1) Application Performance Analysis         |------------ ----------------  ------|
 2) SQL Performance Analysis                 |    JobName:                       N   |
 3) Batch Throughput Analysis                |   StepName:                       N   |
 4) Recovery Impact Analysis                 |       Plan:                       N   |
                                             |    Package:                       N   |
 5) Application Profile Maintenance          |  Subsystem:                       N   |
 6) Contact Maintenance                      |Application:                       N   |
                                             |---====== Display Date range ======--|
 A) Administration                           |        Begin:  05 / 10 / 2009         |
                                             |          End:  05 / 11 / 2009         |
                                             +---------------------------------------+

 X) Exit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```

Filter 1 24-Hour

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                 === SQL Performance Analysis (Jobs) ===
Command ===>                                              Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                                                                      ->
                        +--- RUN TIME ---+---CPU UTILIZED--+
             Job Start  |   Job    DB2 %  |    Job    DB2 %  |   DB2 CPU%   Total
 Jobname     Timestamp  | Elapsed of Et   |    CPU    of CPU | I all Jobs DB2 Cost
 -------- ------------ -------- ------   -------- ------  -- -------- --------
S DBP1001D 05/11 08:52 00:31:49   93.1   00:10:00   81.4   1     49.9 $ 488.66
_ DBP1001D 05/11 15:57 00:40:10   94.8   00:09:50   81.3   1     49.1 $ 480.84
_ HRP4001W 05/11 08:53 00:32:08    2.0   00:01:07    7.9   1      0.5 $   5.39
_ CSBJA    05/11 08:36 00:00:07    0.5     ~ 0:00    1.1   1      0.0 $   0.01
_ CSBJA    05/11 08:36 00:00:01    0.4     ~ 0:00    8.0   1      0.0 $   0.01
_ SBASTPRG 05/11 01:01 00:00:01    9.8     ~ 0:00   35.2   1      0.0 $   0.01
_ CSBJA    05/11 07:47 00:00:01    0.3     ~ 0:00    7.5   1      0.0 $   0.01
_ DBP1002W 05/11 08:53 00:23:37   57.5     ~ 0:00    9.2   1      0.0 $   0.01
_ CSBMX    05/11 08:57 00:01:43   45.6   00:00:02   11.4   1      0.0 $   0.31
_ CSBMA    05/11 08:59 00:00:07   22.0     ~ 0:00   15.4   1      0.0 $   0.05
_ CSBMX    05/11 09:09 00:01:18   27.6   00:00:02   11.0   1      0.0 $   0.30
_ CSBMA    05/11 09:10 00:00:11   11.6     ~ 0:00    9.5   1      0.0 $   0.07
_ CSBMX    05/11 09:29 00:00:04    0.5     ~ 0:00    6.3   1      0.0 $   0.01
_ CSBMX    05/11 09:31 00:00:02    0.1     ~ 0:00    4.4   1      0.0 $   0.01
_ CSBJX    05/11 09:37 00:00:33    4.6   00:00:01    7.5   1      0.0 $   0.10
```

Nearly 50%

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                 === SQL Performance Analysis (Jobs) ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                                                                        ->
                      +--- RUN TIME ---+---CPU UTILIZED--+
            Job Start |   Job    DB2 % |    Job    DB2 % |   DB2 CPU%   Total
 Jobname    Timestamp | Elapsed of Et  |    CPU   of CPU | I all Jobs DB2 Cost
 -------- ----------- -------- ------   -------- ------  -- -------- --------
S DBP1001D 05/11 08:52 00:31:49   93.1   00:10:00   81.4   1     49.9 $ 488.66
_ DBP1001D 05/11 15:57 00:40:10   94.8   00:09:50   81.3   1     49.1 $ 480.84
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_ CSBJA    05/11 08:36 00:00:01    0.4     ~ 0:00    8.0   1      0.0 $   0.01
_ SBASTPRG 05/11 01:01 00:00:01    9.8     ~ 0:00   35.2   1      0.0 $   0.01
_ CSBJA    05/11 07:47 00:00:01    0.3     ~ 0:00    7.5   1      0.0 $   0.01
_ DBP1002W 05/11 08:53 00:23:37   57.5     ~ 0:00    9.2   1      0.0 $   0.01
_ CSBMX    05/11 08:57 00:01:43   45.6   00:00:02   11.4   1      0.0 $   0.31
_ CSBMA    05/11 08:59 00:00:07   22.0     ~ 0:00   15.4   1      0.0 $   0.05
_ CSBMX    05/11 09:09 00:01:18   27.6   00:00:02   11.0   1      0.0 $   0.30
_ CSBMA    05/11 09:10 00:00:11   11.6     ~ 0:00    9.5   1      0.0 $   0.07
_ CSBMX    05/11 09:29 00:00:04    0.5     ~ 0:00    6.3   1      0.0 $   0.01
_ CSBMX    05/11 09:31 00:00:02    0.1     ~ 0:00    4.4   1      0.0 $   0.01
_ CSBJX    05/11 09:37 00:00:33    4.6   00:00:01    7.5   1      0.0 $   0.10
```

Drill Down

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                 === SQL Performance Analysis (Jobs) ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                                                                        ->
                      +--- RUN TIME ---+---CPU UTILIZED--+
            Job Start |   Job    DB2 % |    Job    DB2 % |   DB2 CPU%   Total
 Jobname    Timestamp | Elapsed of Et  |    CPU   of CPU | I all Jobs DB2 Cost
 -------- ----------- -------- ------   -------- ------  -- -------- --------
S DBP1001D 05/11 08:52 00:31:49   93.1   00:10:00   81.4   1     49.9 $ 488.66
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_ HRP4001W 05/11 08:53 00:32:08    2.0   00:01:07    7.9   1      0.5 $   5.39
_ CSBJA    05/11 08:36 00:00:07    0.5     ~ 0:00    1.1   1      0.0 $   0.01
_ CSBJA    05/11 08:36 00:00:01    0.4     ~ 0:00    8.0   1      0.0 $   0.01
_ SBASTPRG 05/11 01:01 00:00:01    9.8     ~ 0:00   35.2   1      0.0 $   0.01
_ CSBJA    05/11 07:47 00:00:01    0.3     ~ 0:00    7.5   1      0.0 $   0.01
_ DBP1002W 05/11 08:53 00:23:37   57.5     ~ 0:00    9.2   1      0.0 $   0.01
_ CSBMX    05/11 08:57 00:01:43   45.6   00:00:02   11.4   1      0.0 $   0.31
_ CSBMA    05/11 08:59 00:00:07   22.0     ~ 0:00   15.4   1      0.0 $   0.05
_ CSBMX    05/11 09:09 00:01:18   27.6   00:00:02   11.0   1      0.0 $   0.30
_ CSBMA    05/11 09:10 00:00:11   11.6     ~ 0:00    9.5   1      0.0 $   0.07
_ CSBMX    05/11 09:29 00:00:04    0.5     ~ 0:00    6.3   1      0.0 $   0.01
_ CSBMX    05/11 09:31 00:00:02    0.1     ~ 0:00    4.4   1      0.0 $   0.01
_ CSBJX    05/11 09:37 00:00:33    4.6   00:00:01    7.5   1      0.0 $   0.10
```

2 Steps

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                  === SQL Performance Analysis (Steps) ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                                                                        ->
                                  +-- RUN TIME --+-CPU UTILIZED-+     DB2
                       Step Start |  Step   DB2 %|  Step   DB2 %|    CPU%   Total
  Jobname  StepName     Timestamp  Elapsed  of Et   CPU     CPU   I Steps DB2 Cost
  -------- --------  ----------- -------- ----- -------- ----- -- ----- --------
S DBP1001D DB10011   05/11 08:52 00:31:49  93.1 00:10:00  81.4  1  99.9 $ 488.65
_ DBP1001D DB10012   05/11 09:24 00:00:01  13.8   ~ 0:00   3.4  1   0.0 $   0.01
```

10 minutes of CPU

Tango 2

```
SoftBase Systems       Batch Analyzer Version 3.1.0
                 === SQL Performance Analysis (Steps) ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                                                                        ->
                                  +-- RUN TIME --+-CPU UTILIZED-+    DB2
                       Step Start |  Step   DB2 %|  Step   DB2 %|    CPU%   Total
 Jobname  StepName  Timestamp  Elapsed  of Et   CPU     CPU   I Steps DB2 Cost
 -------- -------- ---------- -------- ----- -------- ----- -- ----- --------
S DBP1001D DB10011  05/11 08:52 00:31:49  93.1 00:10:00  81.4  1  99.9 $ 488.65
_ DBP1001D DB10012  05/11 09:24 00:00:01  13.8   ~ 0:00   3.4  1   0.0 $   0.01
```

99.9% of DB2 is in this step

Tango 2

```
SoftBase Systems       Batch Analyzer Version 3.1.0
                 === SQL Performance Analysis (Steps) ===
Command ===>                                              Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                                                                      ->
                                +-- RUN TIME --+-CPU UTILIZED-+    DB2
                     Step Start |  Step   DB2 %|  Step   DB2 %|    CPU%   Total
 Jobname  StepName  Timestamp  Elapsed  of Et   CPU     CPU   I Steps DB2 Cost
 -------- -------- ---------- -------- ----- -------- ----- -- ----- --------
S DBP1001D DB10011  05/11 08:52 00:31:49  93.1 00:10:00  81.4  1  99.9 $ 488.65
_ DBP1001D DB10012  05/11 09:24 00:00:01  13.8   ~ 0:00   3.4  1   0.0 $   0.01
```

Drill down

Tango 2

```
SoftBase Systems       Batch Analyzer Version 3.1.0
                 === SQL Performance Analysis (Steps) ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                                                                        ->
                                +-- RUN TIME --+-CPU UTILIZED-+    DB2
                     Step Start |  Step   DB2 %|  Step   DB2 %|    CPU%   Total
 Jobname  StepName  Timestamp  Elapsed  of Et   CPU     CPU   I Steps DB2 Cost
 -------- -------- ---------- -------- ----- -------- ----- -- ----- --------
S DBP1001D DB10011  05/11 08:52 00:31:49  93.1 00:10:00  81.4  1  99.9 $ 488.65
_ DBP1001D DB10012  05/11 09:24 00:00:01  13.8   ~ 0:00   3.4  1   0.0 $   0.01
```

SoftBase

Update took most of the CPU

Tango 2

```
 SoftBase Systems        Batch Analyzer Version 3.1.0
                       === SQL Performance Analysis ===
 Command ===>                                                  Scroll ===> PAGE
 Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                        Commands: S : Show SQL D : Dynamic SQL L : timeLine  ->
                                  Step Start    Stmt  Stmt      DB2 CPU %    Total
S Jobname    Plan     Package    Timestamp      Num  Type  I   All Stmts     Cost
- -------- -------- -------- ----------- ----- ----- --- --------- --------
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    670 UPDAT  -      97.9   $ 478.57
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    475 OPEN   -       1.2   $   6.02
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    603 INSRT  -       0.8   $   4.01
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    527 FETCH  -       0.0   $   0.05
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    710 DELET  -       0.0   $   0.01
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    746 COMMT  -       0.0   $   0.01
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    574 CLOSE  -       0.0   $   0.01
```

Tue 26 May 10:52

Scroll Right shows Execution Count, Elapsed time & CPU

Tango 2

```
 SoftBase Systems        Batch Analyzer Version 3.1.0
                      === SQL Performance Analysis ===
 Command ===>                                              Scroll ===> PAGE
 Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                                                                       <-
                                 Stmt Stmt     Stmt      Stmt  Execute DB2 CPU%
S JobName    Plan    Package     Num Type  Elapsed       Cpu    Count All Jobs
- -------- -------- -------- ----- ----- ------- ------- -------- --------
_ DBP1001D SBTBATCH SBTU001    670 UPDAT  1308.5   478.6      200     97.9
_ DBP1001D SBTBATCH SBTU001    475 OPEN     44.1     6.0        4      1.2
_ DBP1001D SBTBATCH SBTU001    603 INSRT   416.8     4.0  1000000      0.8
_ DBP1001D SBTBATCH SBTU001    527 FETCH     8.6     0.0  2000004      0.0
_ DBP1001D SBTBATCH SBTU001    710 DELET     0.4     0.0        1      0.0
_ DBP1001D SBTBATCH SBTU001    746 COMMT     0.0     0.0        1      0.0
_ DBP1001D SBTBATCH SBTU001    574 CLOSE     0.0     0.0        4      0.0
```

Tue 26 May 10:40

Drill Down

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                     === SQL Performance Analysis ===
Command ===>                                              Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                       Commands: S : Show SQL D : Dynamic SQL L : timeLine  ->
                                 Step Start    Stmt  Stmt      DB2 CPU %     Total
S Jobname    Plan     Package    Timestamp      Num  Type  I   All Stmts      Cost
- -------- -------- -------- ----------- ----- ----- --- --------- --------
S DBP1001D SBTBATCH SBTU001  05/11 08:52    670 UPDAT  -      97.9    $ 478.57
_ DBP1001D SBTBATCH SBTU001  05/11 08:52    475 OPEN   -       1.2    $   6.02
_ DBP1001D SBTBATCH SBTU001  05/11 08:52    603 INSRT  -       0.8    $   4.01
_ DBP1001D SBTBATCH SBTU001  05/11 08:52    527 FETCH  -       0.0    $   0.05
_ DBP1001D SBTBATCH SBTU001  05/11 08:52    710 DELET  -       0.0    $   0.01
_ DBP1001D SBTBATCH SBTU001  05/11 08:52    746 COMMT  -       0.0    $   0.01
_ DBP1001D SBTBATCH SBTU001  05/11 08:52    574 CLOSE  -       0.0    $   0.01
```

SoftBase

SQL IN OFFENDING STATEMENT

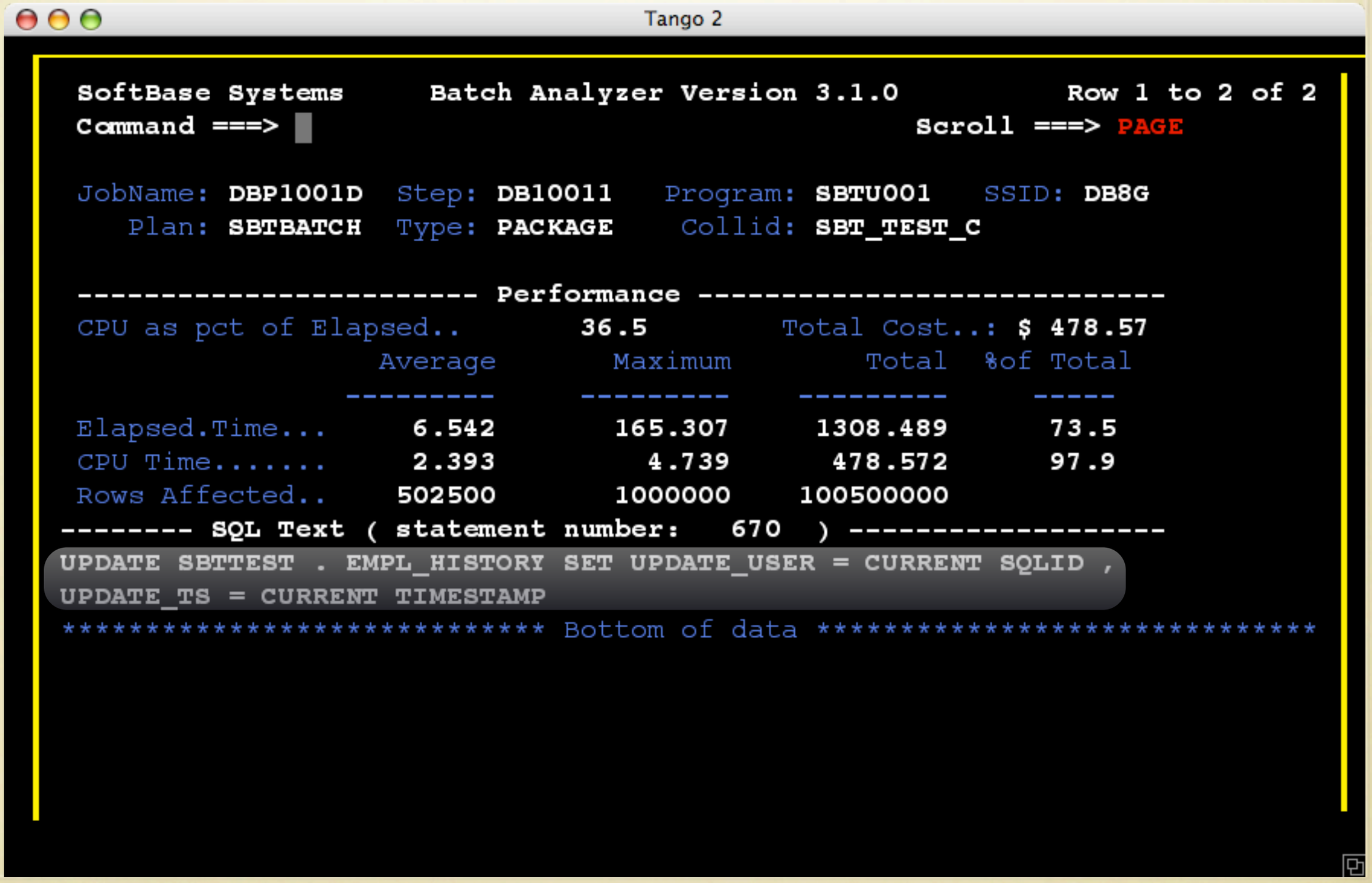
Tango 2

```
SoftBase Systems     Batch Analyzer Version 3.1.0          Row 1 to 2 of 2
Command ===>                                          Scroll ===> PAGE

JobName: DBP1001D  Step: DB10011   Program: SBTU001   SSID: DB8G
   Plan: SBTBATCH  Type: PACKAGE    Collid: SBT_TEST_C

------------------------ Performance -----------------------------
CPU as pct of Elapsed..       36.5        Total Cost...: $ 478.57
                   Average      Maximum        Total  %of Total
                 ---------    ---------    ---------     -----
 Elapsed.Time...     6.542      165.307     1308.489      73.5
 CPU Time.......     2.393        4.739      478.572      97.9
 Rows Affected..    502500      1000000    100500000
-------- SQL Text ( statement number:   670  ) -------------------
UPDATE SBTTEST . EMPL_HISTORY SET UPDATE_USER = CURRENT SQLID ,
UPDATE_TS = CURRENT TIMESTAMP
******************************** Bottom of data ********************************
```

No WHERE clause, updating every record



SoftBase

Statement location info

Tango 2

```
SoftBase Systems      Batch Analyzer Version 3.1.0          Row 1 to 2 of 2
Command ===>                                          Scroll ===> PAGE

JobName: DBP1001D  Step: DB10011   Program: SBTU001   SSID: DB8G
   Plan: SBTBATCH  Type: PACKAGE    Collid: SBT_TEST_C

------------------------ Performance ----------------------------
CPU as pct of Elapsed..       36.5       Total Cost..: $ 478.57
                  Average        Maximum         Total   %of Total
                ---------      ---------     ---------     -----
Elapsed.Time...     6.542        165.307      1308.489      73.5
CPU Time.......     2.393          4.739       478.572      97.9
Rows Affected..    502500        1000000     100500000
-------- SQL Text ( statement number:   670   ) ------------------
UPDATE SBTTEST . EMPL_HISTORY SET UPDATE_USER = CURRENT SQLID ,
UPDATE_TS = CURRENT TIMESTAMP
***************************** Bottom of data ********************************
```

SoftBase

On statement number 670

Tango 2

```
SoftBase Systems     Batch Analyzer Version 3.1.0          Row 1 to 2 of 2
Command ===>                                          Scroll ===> PAGE

JobName: DBP1001D  Step: DB10011   Program: SBTU001   SSID: DB8G
   Plan: SBTBATCH  Type: PACKAGE    Collid: SBT_TEST_C

------------------------ Performance -----------------------------
CPU as pct of Elapsed..       36.5        Total Cost...: $ 478.57
                   Average      Maximum        Total  %of Total
                 ---------    ---------    ---------     -----
 Elapsed.Time...     6.542      165.307     1308.489      73.5
 CPU Time.......     2.393        4.739      478.572      97.9
 Rows Affected..    502500      1000000    100500000
-------- SQL Text ( statement number:   670  ) -------------------
UPDATE SBTTEST . EMPL_HISTORY SET UPDATE_USER = CURRENT SQLID ,
UPDATE_TS = CURRENT TIMESTAMP
******************************** Bottom of data ********************************
```

AVERAGE OF UPDATE

Tango 2

```
SoftBase Systems    Batch Analyzer Version 3.1.0         Row 1 to 2 of 2
Command ===>                                          Scroll ===> PAGE

JobName: DBP1001D  Step: DB10011   Program: SBTU001   SSID: DB8G
   Plan: SBTBATCH  Type: PACKAGE    Collid: SBT_TEST_C

------------------------ Performance ---------------------------
CPU as pct of Elapsed..      36.5       Total Cost..: $ 478.57
                      Average     Maximum          Total  %of Total
                      ---------   ---------    ---------    -----
Elapsed.Time...          6.542     165.307     1308.489     73.5
CPU Time.......          2.393       4.739      478.572     97.9
Rows Affected..         502500     1000000    100500000
-------- SQL Text ( statement number:   670  ) -------------------
UPDATE SBTTEST . EMPL_HISTORY SET UPDATE_USER = CURRENT SQLID ,
UPDATE_TS = CURRENT TIMESTAMP
***************************** Bottom of data ******************************
```

SoftBase

Maximum of UPDATE

Tango 2

```
SoftBase Systems      Batch Analyzer Version 3.1.0          Row 1 to 2 of 2
Command ===>                                          Scroll ===> PAGE

JobName: DBP1001D  Step: DB10011   Program: SBTU001   SSID: DB8G
   Plan: SBTBATCH  Type: PACKAGE    Collid: SBT_TEST_C

------------------------ Performance -------------------------------
 CPU as pct of Elapsed..       36.5        Total Cost...: $ 478.57
                   Average      Maximum        Total  %of Total
                 ---------    ---------    ---------     -----
 Elapsed.Time...     6.542      165.307     1308.489      73.5
 CPU Time.......     2.393        4.739      478.572      97.9
 Rows Affected..    502500      1000000    100500000
-------- SQL Text ( statement number:   670   ) --------------------
UPDATE SBTTEST . EMPL_HISTORY SET UPDATE_USER = CURRENT SQLID ,
UPDATE_TS = CURRENT TIMESTAMP
******************************** Bottom of data ********************************
```

Totals of UPDATE

Tango 2

```
SoftBase Systems      Batch Analyzer Version 3.1.0          Row 1 to 2 of 2
Command ===>                                          Scroll ===> PAGE

JobName: DBP1001D  Step: DB10011   Program: SBTU001   SSID: DB8G
   Plan: SBTBATCH  Type: PACKAGE    Collid: SBT_TEST_C

------------------------ Performance -------------------------------
 CPU as pct of Elapsed..       36.5        Total Cost..: $ 478.57
                  Average      Maximum        Total  %of Total
                ---------    ---------    ---------     -----
 Elapsed.Time...     6.542      165.307     1308.489      73.5
 CPU Time.......     2.393        4.739      478.572      97.9
 Rows Affected..    502500      1000000    100500000
-------- SQL Text ( statement number:   670   ) -------------------
UPDATE SBTTEST . EMPL_HISTORY SET UPDATE_USER = CURRENT SQLID ,
UPDATE_TS = CURRENT TIMESTAMP
****************************** Bottom of data ********************************
```

Total percentages

Tango 2

```
SoftBase Systems      Batch Analyzer Version 3.1.0          Row 1 to 2 of 2
Command ===>                                          Scroll ===> PAGE

JobName: DBP1001D  Step: DB10011   Program: SBTU001   SSID: DB8G
   Plan: SBTBATCH  Type: PACKAGE    Collid: SBT_TEST_C

------------------------ Performance -------------------------------
 CPU as pct of Elapsed..       36.5        Total Cost..: $ 478.57
                   Average      Maximum        Total  %of Total
                 ---------    ---------    ---------    -------
 Elapsed.Time...     6.542      165.307     1308.489       73.5
 CPU Time.......     2.393        4.739      478.572       97.9
 Rows Affected..    502500      1000000    100500000
-------- SQL Text ( statement number:   670   ) --------------------
UPDATE SBTTEST . EMPL_HISTORY SET UPDATE_USER = CURRENT SQLID ,
UPDATE_TS = CURRENT TIMESTAMP
******************************** Bottom of data ********************************
```

SoftBase

Can view statements across all jobs

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                  === SQL Performance Analysis (Jobs) ===
Command ===> VIEW STMT                                    Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                                                                      ->
                        +--- RUN TIME ---+---CPU UTILIZED--+
             Job Start  |    Job    DB2 % |    Job    DB2 % |   DB2 CPU%   Total
 Jobname     Timestamp  | Elapsed of Et   |    CPU   of CPU | I all Jobs DB2 Cost
 -------- ------------ -------- ------   -------- ------  -- -------- --------
_ DBP1001D 05/11 08:52 00:31:49   93.1   00:10:00   81.4   1     49.9 $ 488.66
_ DBP1001D 05/11 15:57 00:40:10   94.8   00:09:50   81.3   1     49.1 $ 480.84
_ HRP4001W 05/11 08:53 00:32:08    2.0   00:01:07    7.9   1      0.5 $   5.39
_ CSBJA    05/11 08:36 00:00:07    0.5     ~ 0:00    1.1   1      0.0 $   0.01
_ CSBJA    05/11 08:36 00:00:01    0.4     ~ 0:00    8.0   1      0.0 $   0.01
_ SBASTPRG 05/11 01:01 00:00:01    9.8     ~ 0:00   35.2   1      0.0 $   0.01
_ CSBJA    05/11 07:47 00:00:01    0.3     ~ 0:00    7.5   1      0.0 $   0.01
_ DBP1002W 05/11 08:53 00:23:37   57.5     ~ 0:00    9.2   1      0.0 $   0.01
_ CSBMX    05/11 08:57 00:01:43   45.6   00:00:02   11.4   1      0.0 $   0.31
_ CSBMA    05/11 08:59 00:00:07   22.0     ~ 0:00   15.4   1      0.0 $   0.05
_ CSBMX    05/11 09:09 00:01:18   27.6   00:00:02   11.0   1      0.0 $   0.30
_ CSBMA    05/11 09:10 00:00:11   11.6     ~ 0:00    9.5   1      0.0 $   0.07
_ CSBMX    05/11 09:29 00:00:04    0.5     ~ 0:00    6.3   1      0.0 $   0.01
_ CSBMX    05/11 09:31 00:00:02    0.1     ~ 0:00    4.4   1      0.0 $   0.01
_ CSBJX    05/11 09:37 00:00:33    4.6   00:00:01    7.5   1      0.0 $   0.10
```

Multiple Statements

Tango 1

```
 SoftBase Systems        Batch Analyzer Version 3.1.0
                      === SQL Performance Analysis ===
 Command ===>                                                  Scroll ===> PAGE
 Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                        Commands: S : Show SQL D : Dynamic SQL L : timeLine  ->
                                  Step Start    Stmt  Stmt      DB2 CPU %    Total
S Jobname    Plan     Package    Timestamp      Num  Type  I   All Stmts     Cost
- -------- -------- -------- ----------- ----- ----- --- --------- --------
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    670 UPDAT   1      48.9    $ 478.57
_ DBP1001D SBTBATCH SBTU001   05/11 15:57    670 UPDAT   1      48.2    $ 471.57
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    475 OPEN    1       0.6    $   6.02
_ DBP1001D SBTBATCH SBTU001   05/11 15:57    475 OPEN    1       0.5    $   5.53
_ HRP4001W SBTBATCH HR40002   05/11 08:53    356 OPEN    1       0.5    $   5.33
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    603 INSRT   1       0.4    $   4.01
_ DBP1001D SBTBATCH SBTU001   05/11 15:57    603 INSRT   1       0.3    $   3.67
_ CSBJX    QDGF450  M3134000 05/11 16:21    490 DYNAM   1       0.0    $   0.22
_ CSBJX    QDGF450  R3700000 05/11 16:21    681 PREPR   1       0.0    $   0.13
_ CSBPPCPY YDGF450  M3134000 05/11 12:26    490 DYNAM   1       0.0    $   0.10
_ CSBMX    TDGF450  M3134000 05/11 09:09    502 DYNAM   1       0.0    $   0.08
_ CSBMX    TDGF450  M3134000 05/11 08:57    502 DYNAM   1       0.0    $   0.08
_ CSBJX    QDGF450  R3714000 05/11 16:21    478 PREPR   1       0.0    $   0.07
_ CSBPPCPY YDGF450  R3700000 05/11 12:26    681 PREPR   1       0.0    $   0.07
_ CSBMX    TDGF450  R3700000 05/11 08:57    681 PREPR   1       0.0    $   0.05
_ DBP1001D SBTBATCH SBTU001   05/11 15:57    527 FETCH   1       0.0    $   0.05
```

SoftBase

Across multiple jobs

Tango 1

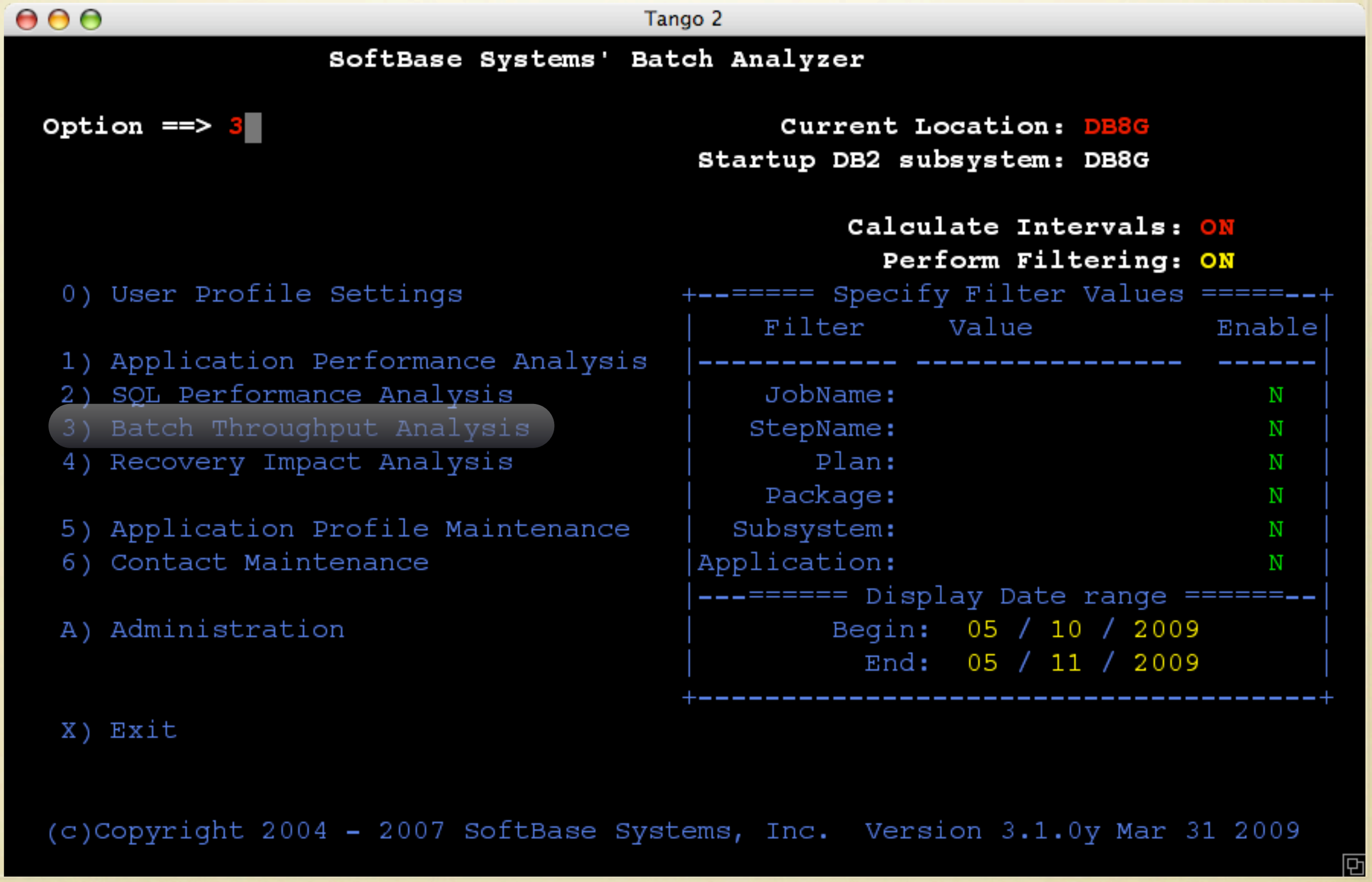
```
 SoftBase Systems        Batch Analyzer Version 3.1.0
                       === SQL Performance Analysis ===
 Command ===>                                                  Scroll ===> PAGE
 Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                        Commands: S : Show SQL D : Dynamic SQL L : timeLine  ->
                                  Step Start    Stmt  Stmt      DB2 CPU %    Total
S Jobname    Plan     Package    Timestamp      Num  Type  I   All Stmts     Cost
- -------- -------- -------- ----------- ----- ----- --- --------- --------
_ DBP1001D SBTBATCH SBTU001  05/11 08:52    670 UPDAT   1      48.9   $ 478.57
_ DBP1001D SBTBATCH SBTU001  05/11 15:57    670 UPDAT   1      48.2   $ 471.57
_ DBP1001D SBTBATCH SBTU001  05/11 08:52    475 OPEN    1       0.6   $   6.02
_ DBP1001D SBTBATCH SBTU001  05/11 15:57    475 OPEN    1       0.5   $   5.53
_ HRP4001W SBTBATCH HR40002  05/11 08:53    356 OPEN    1       0.5   $   5.33
_ DBP1001D SBTBATCH SBTU001  05/11 08:52    603 INSRT   1       0.4   $   4.01
_ DBP1001D SBTBATCH SBTU001  05/11 15:57    603 INSRT   1       0.3   $   3.67
_ CSBJX    QDGF450  M3134000 05/11 16:21    490 DYNAM   1       0.0   $   0.22
_ CSBJX    QDGF450  R3700000 05/11 16:21    681 PREPR   1       0.0   $   0.13
_ CSBPPCPY YDGF450  M3134000 05/11 12:26    490 DYNAM   1       0.0   $   0.10
_ CSBMX    TDGF450  M3134000 05/11 09:09    502 DYNAM   1       0.0   $   0.08
_ CSBMX    TDGF450  M3134000 05/11 08:57    502 DYNAM   1       0.0   $   0.08
_ CSBJX    QDGF450  R3714000 05/11 16:21    478 PREPR   1       0.0   $   0.07
_ CSBPPCPY YDGF450  R3700000 05/11 12:26    681 PREPR   1       0.0   $   0.07
_ CSBMX    TDGF450  R3700000 05/11 08:57    681 PREPR   1       0.0   $   0.05
_ DBP1001D SBTBATCH SBTU001  05/11 15:57    527 FETCH   1       0.0   $   0.05
```

Update - same statement 2 different times

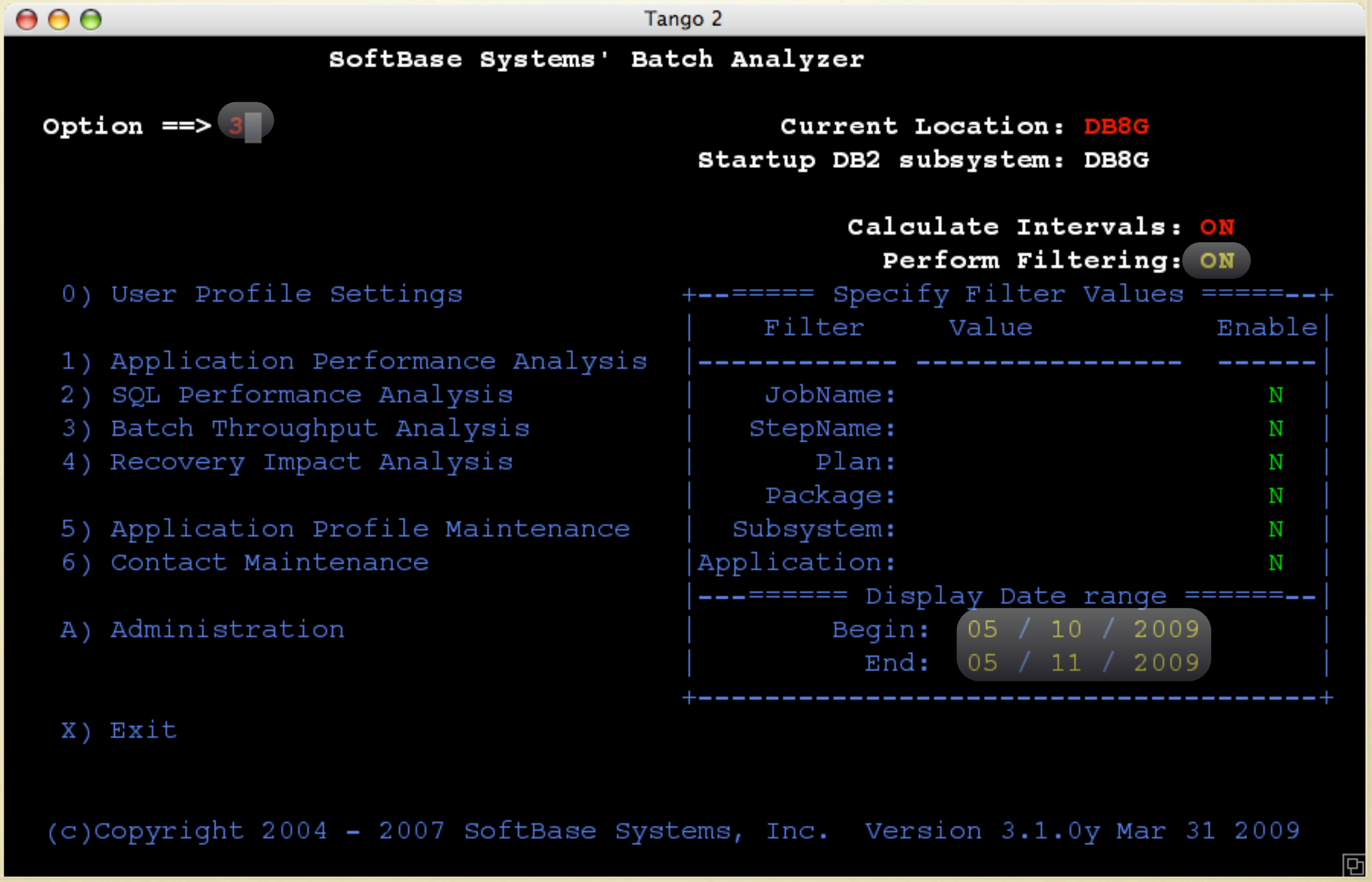
Tango 1

```
 SoftBase Systems        Batch Analyzer Version 3.1.0
                      === SQL Performance Analysis ===
 Command ===>                                              Scroll ===> PAGE
 Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
                        Commands: S : Show SQL D : Dynamic SQL L : timeLine  ->
                                  Step Start    Stmt  Stmt      DB2 CPU %     Total
S Jobname    Plan     Package    Timestamp      Num  Type   I  All Stmts      Cost
- -------- -------- -------- ----------- ----- ----- --- --------- --------
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    670 UPDAT   1      48.9   $ 478.57
_ DBP1001D SBTBATCH SBTU001   05/11 15:57    670 UPDAT   1      48.2   $ 471.57
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    475 OPEN    1       0.6   $   6.02
_ DBP1001D SBTBATCH SBTU001   05/11 15:57    475 OPEN    1       0.5   $   5.53
_ HRP4001W SBTBATCH HR40002   05/11 08:53    356 OPEN    1       0.5   $   5.33
_ DBP1001D SBTBATCH SBTU001   05/11 08:52    603 INSRT   1       0.4   $   4.01
_ DBP1001D SBTBATCH SBTU001   05/11 15:57    603 INSRT   1       0.3   $   3.67
_ CSBJX    QDGF450  M3134000 05/11 16:21    490 DYNAM   1       0.0   $   0.22
_ CSBJX    QDGF450  R3700000 05/11 16:21    681 PREPR   1       0.0   $   0.13
_ CSBPPCPY YDGF450  M3134000 05/11 12:26    490 DYNAM   1       0.0   $   0.10
_ CSBMX    TDGF450  M3134000 05/11 09:09    502 DYNAM   1       0.0   $   0.08
_ CSBMX    TDGF450  M3134000 05/11 08:57    502 DYNAM   1       0.0   $   0.08
_ CSBJX    QDGF450  R3714000 05/11 16:21    478 PREPR   1       0.0   $   0.07
_ CSBPPCPY YDGF450  R3700000 05/11 12:26    681 PREPR   1       0.0   $   0.07
_ CSBMX    TDGF450  R3700000 05/11 08:57    681 PREPR   1       0.0   $   0.05
_ DBP1001D SBTBATCH SBTU001   05/11 15:57    527 FETCH   1       0.0   $   0.05
```

Throughput Analysis



Filtering still applies



SoftBase

12 Timeouts, nearly 6 minutes between commits

Tango 2

SoftBase Systems Batch Analyzer Version 3.1.0

=== Batch Throughput Analysis (Jobs) ===

Command ===> Scroll ===> PAGE

Filter: ON Intervals: ON From: 05/10/09 To: 05/11/09 Loctn: DB8G

Jobname	Job Start Timestamp	Job Elapsed (RUN TIME)	DB2 % of Et (RUN TIME)	DB2 CPU	I	Deadlck Timeout	Comt Cnt	Chg Pct	Commit Freqncy
DBP1002W	05/11 08:53	00:23:37	57.5	~ 0:00	1	12	4	99.9	00:05:54
CSBMA	05/11 08:59	00:00:07	22.0	~ 0:00	1	1	14	4.5	<1
CSBJA	05/11 07:47	00:00:01	0.3	~ 0:00	1	0	1	2.4	00:00:01
CSBJA	05/11 08:36	00:00:07	0.5	~ 0:00	1	0	2	31.0	00:00:03
CSBJA	05/11 08:36	00:00:01	0.4	~ 0:00	1	0	1	2.1	00:00:01
DBP1001D	05/11 08:52	00:31:49	93.1	00:10:00	1	0	2	97.0	00:15:54
HRP4001W	05/11 08:53	00:32:08	2.0	00:01:07	1	0	16	0.0	00:02:00
SBASTPRG	05/11 01:01	00:00:01	9.8	~ 0:00	1	0	0	0.0	NO CMT
CSBMX	05/11 08:57	00:01:43	45.6	00:00:02	1	0	155	89.4	<1
CSBJA	05/11 07:47	00:00:04	2.4	~ 0:00	1	0	2	72.1	00:00:02
CSBMX	05/11 09:09	00:01:18	27.6	00:00:02	1	0	155	88.2	<1
CSBMA	05/11 09:10	00:00:11	11.6	~ 0:00	1	0	33	2.0	<1
CSBMX	05/11 09:29	00:00:04	0.5	~ 0:00	1	0	1	0.0	00:00:04
CSBMX	05/11 09:31	00:00:02	0.1	~ 0:00	1	0	1	0.0	00:00:02
CSBJX	05/11 09:37	00:00:33	4.6	00:00:01	1	0	45	12.6	<1

No Commit at all for this job

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                  === Batch Throughput Analysis (Jobs) ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G

                        +--- RUN TIME ---+
             Job Start  |   Job    DB2 %  |                 Deadlck Comt  Chg    Commit
 Jobname     Timestamp  | Elapsed of Et   | DB2 CPU   I  Timeout  Cnt  Pct   Freqncy
 --------  -----------|-------- ------ |-------- -- ------- ---- ----- --------
 DBP1002W  05/11 08:53 00:23:37   57.5    ~ 0:00   1       12     4  99.9 00:05:54
 CSBMA     05/11 08:59 00:00:07   22.0    ~ 0:00   1        1    14   4.5       <1
 CSBJA     05/11 07:47 00:00:01    0.3    ~ 0:00   1        0     1   2.4 00:00:01
 CSBJA     05/11 08:36 00:00:07    0.5    ~ 0:00   1        0     2  31.0 00:00:03
 CSBJA     05/11 08:36 00:00:01    0.4    ~ 0:00   1        0     1   2.1 00:00:01
 DBP1001D  05/11 08:52 00:31:49   93.1 00:10:00   1        0     2  97.0 00:15:54
 HRP4001W  05/11 08:53 00:32:08    2.0 00:01:07   1        0    16   0.0 00:02:00
 SBASTPRG  05/11 01:01 00:00:01    9.8    ~ 0:00   1        0     0   0.0 NO CMT
 CSBMX     05/11 08:57 00:01:43   45.6 00:00:02   1        0   155  89.4       <1
 CSBJA     05/11 07:47 00:00:04    2.4    ~ 0:00   1        0     2  72.1 00:00:02
 CSBMX     05/11 09:09 00:01:18   27.6 00:00:02   1        0   155  88.2       <1
 CSBMA     05/11 09:10 00:00:11   11.6    ~ 0:00   1        0    33   2.0       <1
 CSBMX     05/11 09:29 00:00:04    0.5    ~ 0:00   1        0     1   0.0 00:00:04
 CSBMX     05/11 09:31 00:00:02    0.1    ~ 0:00   1        0     1   0.0 00:00:02
 CSBJX     05/11 09:37 00:00:33    4.6 00:00:01   1        0    45  12.6       <1
```

SoftBase

Could be too many COMMITs

Tango 2

SoftBase Systems Batch Analyzer Version 3.1.0

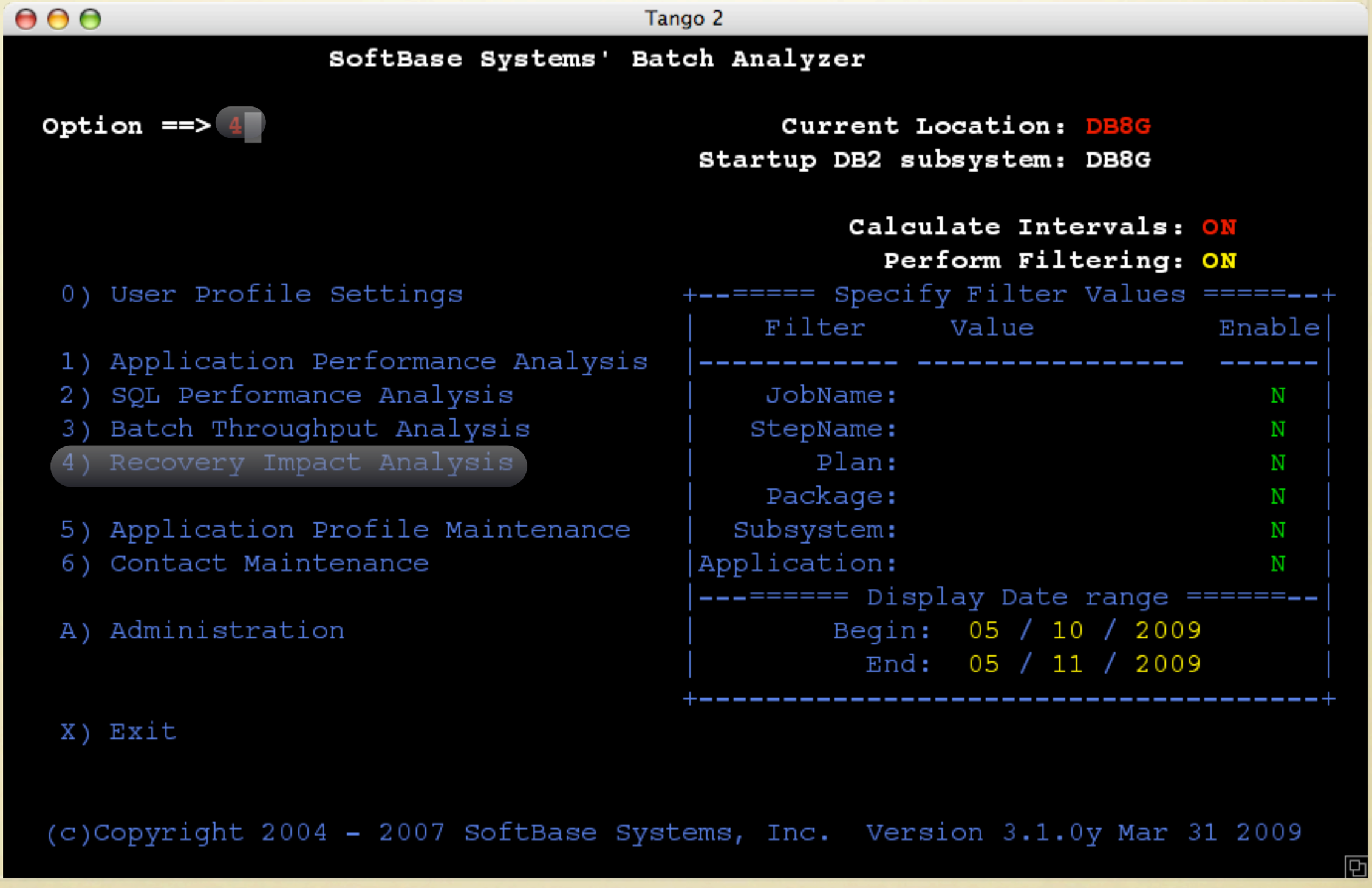
=== Batch Throughput Analysis (Jobs) ===

Command ===> Scroll ===> PAGE

Filter: ON Intervals: ON From: 05/10/09 To: 05/11/09 Loctn: DB8G

		+--- RUN TIME	---+						
	Job Start	Job	DB2 %			Deadlck	Comt	Chg	Commit
Jobname	Timestamp	Elapsed	of Et	DB2 CPU	I	Timeout	Cnt	Pct	Freqncy
DBP1002W	05/11 08:53	00:23:37	57.5	~ 0:00	1	12	4	99.9	00:05:54
CSBMA	05/11 08:59	00:00:07	22.0	~ 0:00	1	1	14	4.5	<1
CSBJA	05/11 07:47	00:00:01	0.3	~ 0:00	1	0	1	2.4	00:00:01
CSBJA	05/11 08:36	00:00:07	0.5	~ 0:00	1	0	2	31.0	00:00:03
CSBJA	05/11 08:36	00:00:01	0.4	~ 0:00	1	0	1	2.1	00:00:01
DBP1001D	05/11 08:52	00:31:49	93.1	00:10:00	1	0	2	97.0	00:15:54
HRP4001W	05/11 08:53	00:32:08	2.0	00:01:07	1	0	16	0.0	00:02:00
SBASTPRG	05/11 01:01	00:00:01	9.8	~ 0:00	1	0	0	0.0	NO CMT
CSBMX	05/11 08:57	00:01:43	45.6	00:00:02	1	0	155	89.4	<1
CSBJA	05/11 07:47	00:00:04	2.4	~ 0:00	1	0	2	72.1	00:00:02
CSBMX	05/11 09:09	00:01:18	27.6	00:00:02	1	0	155	88.2	<1
CSBMA	05/11 09:10	00:00:11	11.6	~ 0:00	1	0	33	2.0	<1
CSBMX	05/11 09:29	00:00:04	0.5	~ 0:00	1	0	1	0.0	00:00:04
CSBMX	05/11 09:31	00:00:02	0.1	~ 0:00	1	0	1	0.0	00:00:02
CSBJX	05/11 09:37	00:00:33	4.6	00:00:01	1	0	45	12.6	<1

Rollback Analysis



20 Minutes between Commits

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                  === Recovery Impact Analysis (Jobs) ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G

                        +-- RUN TIME---+
            Job Start   |   Job     DB2 %|    Deadlck  Chg  Comit  Commit  Rollback
 Jobname    Timestamp   |Elapsed   of Et| I Timeout   Pct   Cnt  Frequncy Estimate
 -------- -----------|-------- -----|-- ------- ----- ----- -------- --------
 DBP1001D 05/11 15:57 00:40:10  94.8  1       0    98.9     2 00:20:05 01:15:23
 DBP1001D 05/11 08:52 00:31:49  93.1  1       0    97.0     2 00:15:54 00:57:30
 CSBJX    05/11 16:21 00:09:29  81.7  1       0    91.7   386 00:00:01 00:14:11
 CSBBA    05/11 16:22 00:05:31  98.4  1       0    99.7     2 00:02:45 00:10:51
 DBP1002W 05/11 08:53 00:23:37  57.5  1      12    99.9     4 00:05:54 00:09:59
 CSBKA    05/11 16:01 00:01:47  93.8  1       0    99.9     4 00:00:26 00:03:21
 CSBMX    05/11 08:57 00:01:43  45.6  1       0    89.4   155       <1 00:01:23
 CSBMX    05/11 09:09 00:01:18  27.6  1       0    88.2   155       <1 00:00:37
 CSBPPCPY 05/11 12:26 00:01:18  11.2  1       0    46.7   257       <1 00:00:07
 CSBKX    05/11 16:17 00:00:07  40.6  1       0    33.9    14       <1 00:00:03
 CSBJA    05/11 08:36 00:00:01   0.4  1       0     2.1     1 00:00:01  ~ 0:00
 CSBMA    05/11 09:10 00:00:11  11.6  1       0     2.0    33       <1  ~ 0:00
 CSBMX    05/11 09:29 00:00:04   0.5  1       0     0.0     1 00:00:04  ~ 0:00
 CSBMX    05/11 09:31 00:00:02   0.1  1       0     0.0     1 00:00:02  ~ 0:00
 CSBJX    05/11 09:37 00:00:33   4.6  1       0    12.6    45       <1  ~ 0:00
```

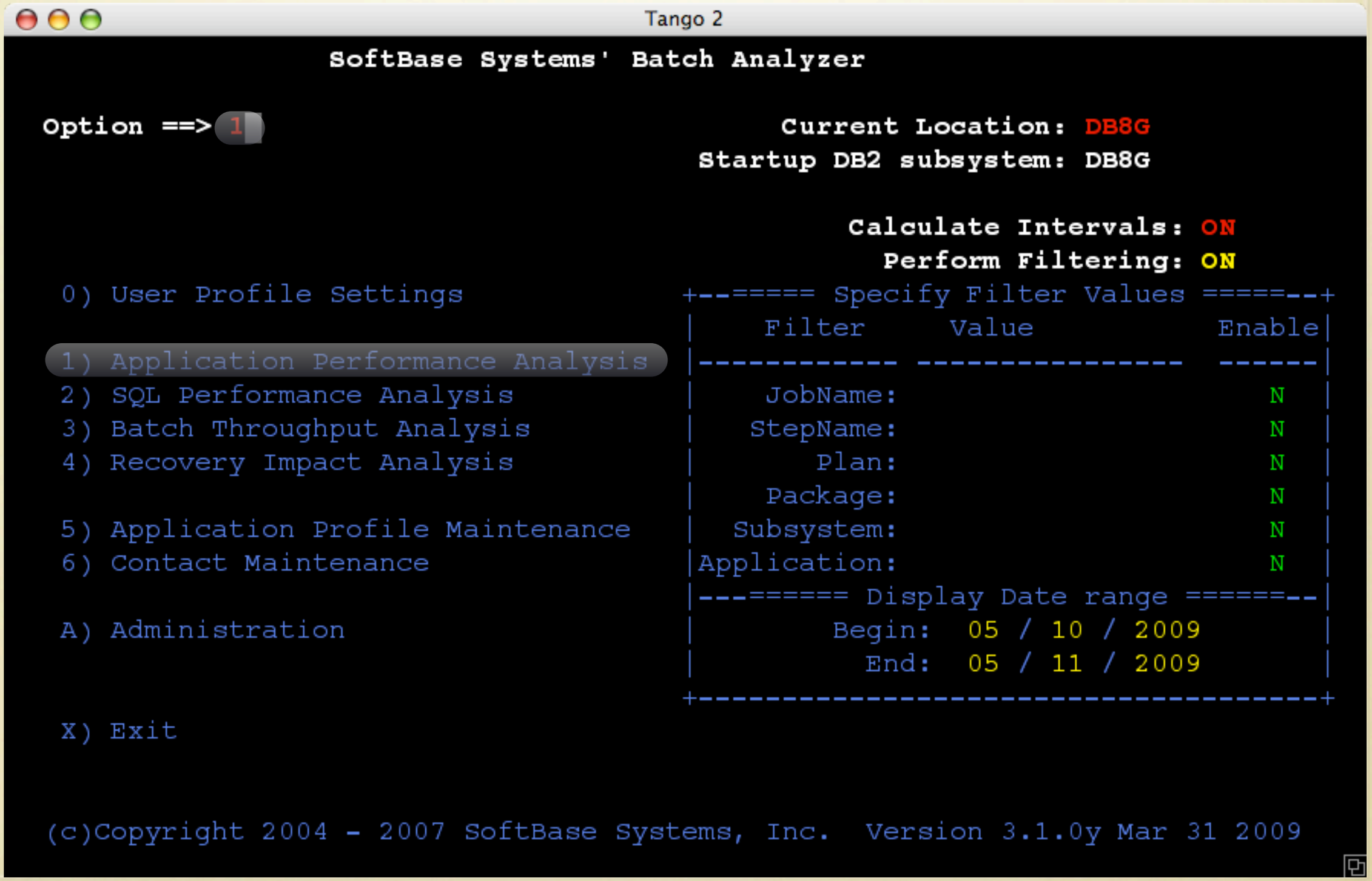
Rollback could take over an hour

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                  === Recovery Impact Analysis (Jobs) ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G

                        +-- RUN TIME---+
             Job Start  |   Job    DB2 %|    Deadlck  Chg  Comit  Commit  Rollback
 Jobname     Timestamp  |Elapsed   of Et| I Timeout   Pct   Cnt  Frequncy Estimate
 --------  -----------|-------- -----|-- ------- ----- ----- -------- --------
_DBP1001D 05/11 15:57 00:40:10  94.8  1       0    98.9     2 00:20:05 01:15:23
_DBP1001D 05/11 08:52 00:31:49  93.1  1       0    97.0     2 00:15:54 00:57:30
_CSBJX    05/11 16:21 00:09:29  81.7  1       0    91.7   386 00:00:01 00:14:11
_CSBBA    05/11 16:22 00:05:31  98.4  1       0    99.7     2 00:02:45 00:10:51
_DBP1002W 05/11 08:53 00:23:37  57.5  1      12    99.9     4 00:05:54 00:09:59
_CSBKA    05/11 16:01 00:01:47  93.8  1       0    99.9     4 00:00:26 00:03:21
_CSBMX    05/11 08:57 00:01:43  45.6  1       0    89.4   155       <1 00:01:23
_CSBMX    05/11 09:09 00:01:18  27.6  1       0    88.2   155       <1 00:00:37
_CSBPPCPY 05/11 12:26 00:01:18  11.2  1       0    46.7   257       <1 00:00:07
_CSBKX    05/11 16:17 00:00:07  40.6  1       0    33.9    14       <1 00:00:03
_CSBJA    05/11 08:36 00:00:01   0.4  1       0     2.1     1 00:00:01  ~ 0:00
_CSBMA    05/11 09:10 00:00:11  11.6  1       0     2.0    33       <1  ~ 0:00
_CSBMX    05/11 09:29 00:00:04   0.5  1       0     0.0     1 00:00:04  ~ 0:00
_CSBMX    05/11 09:31 00:00:02   0.1  1       0     0.0     1 00:00:02  ~ 0:00
_CSBJX    05/11 09:37 00:00:33   4.6  1       0    12.6    45       <1  ~ 0:00
```

Looks at sets of jobs



SoftBase

Lists by application group

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                  === Application Performance Analysis ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
     Report Summary Level(A/J/S): A  A - Application  J - Job  S - SQL
                                                                        ->
                        +--- RUN TIME ---+--CPU UTILIZED--+
                        |  Total    DB2 % |   Total    DB2% | Job DB2 CPU%  Total
 Application            | Elapsed of Et   |    CPU    of CPU| Cnt AllJobs DB2 Cost
 ---------------------- -------- ------   -------- ------ ---- ------- --------
   *Total of all jobs*  02:33:02    64.4   00:21:26    75.9   55   100.0  $ 977.41
 _ ALL                  02:33:02    64.4   00:21:26    75.9   55   100.0  $ 977.41
 _ Database Maintenance 01:35:37    85.0   00:19:51    81.3    3    99.1  $ 969.51
 _ Human Resources      00:32:08     2.0   00:01:07     7.9    1     0.5  $   5.39
 _ France demo            ~ 0:00     0.0     ~ 0:00     0.0    0     0.0  $   0.01
 _ CSBP                 00:01:18    11.2   00:00:04    10.6    1     0.0  $   0.49
 _ HR History             ~ 0:00     0.0     ~ 0:00     0.0    0     0.0  $   0.01
 _ Jane's Demo            ~ 0:00     0.0     ~ 0:00     0.0    0     0.0  $   0.01
```

Tue 26 May 10:45

Application Group Definition

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0          Row 1 to 3 of 3
                    === Application Profile Workbench ===
Command ===>                                                 Scroll ===> PAGE

                Application Information:
          Name: Database Maintenance
        Shared: Y
   Description: Database Maintenance
       Creator: CSB5

   Primary Contact                 Phone number   Email address
   ------------------------------- -------------- --------------------
   Scardo,Chip                     800-669-7076   chip@softbase.com

   Job Name Primary Contact                       Phone number   Email address
   -------- ------------------------------------- -------------- --------------------
   DB*      Lozins,Neal                           838-876-4321   neal@softbase.com
   DBP1001D Spires,Jim                            276-544-3366   jim@softbase.com
   DBP1002W Boulton,Jane                          303-123-4567   jane@softbase.com
********************************* Bottom of data ********************************
```

Tue 26 May 10:58

3 Jobs most expensive

Tango 2

```
SoftBase Systems        Batch Analyzer Version 3.1.0
                  === Application Performance Analysis ===
Command ===>                                                  Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
     Report Summary Level(A/J/S): A  A - Application  J - Job  S - SQL
                                                                        ->
                        +--- RUN TIME ---+--CPU UTILIZED--+
                        |  Total    DB2 % |   Total    DB2% | Job DB2 CPU%  Total
 Application            | Elapsed of Et   |    CPU    of CPU| Cnt AllJobs DB2 Cost
 ---------------------- -------- ------   -------- ------ ---- ------- --------
  *Total of all jobs*   02:33:02    64.4   00:21:26    75.9   55   100.0  $ 977.41
_ ALL                   02:33:02    64.4   00:21:26    75.9   55   100.0  $ 977.41
_ Database Maintenance  01:35:37    85.0   00:19:51    81.3    3    99.1  $ 969.51
_ Human Resources       00:32:08     2.0   00:01:07     7.9    1     0.5  $   5.39
_ France demo             ~ 0:00     0.0     ~ 0:00     0.0    0     0.0  $   0.01
_ CSBP                  00:01:18    11.2   00:00:04    10.6    1     0.0  $   0.49
_ HR History              ~ 0:00     0.0     ~ 0:00     0.0    0     0.0  $   0.01
_ Jane's Demo             ~ 0:00     0.0     ~ 0:00     0.0    0     0.0  $   0.01
```

Tue 26 May 10:45

SoftBase

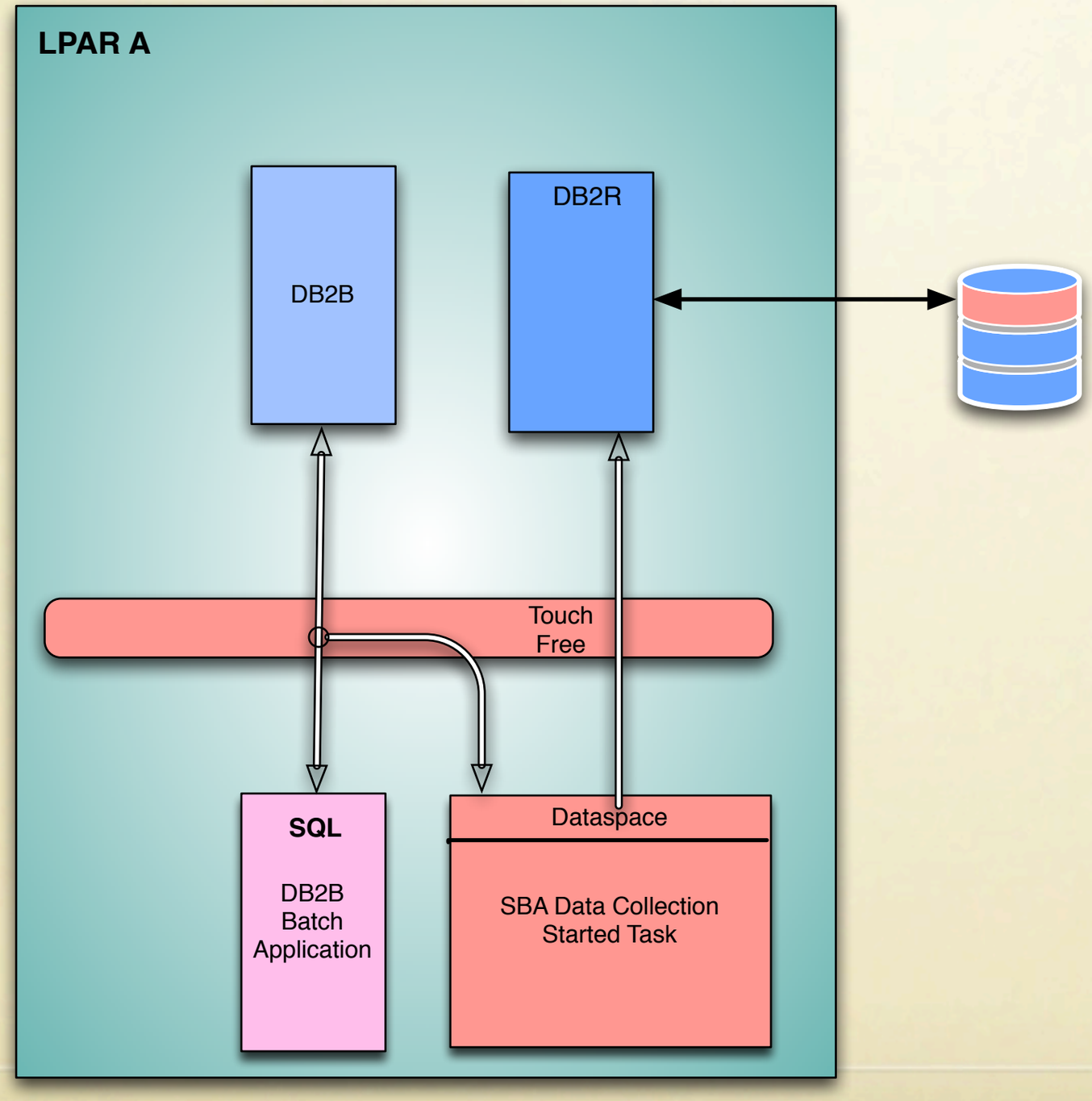
Another way to find this step

Tango 2

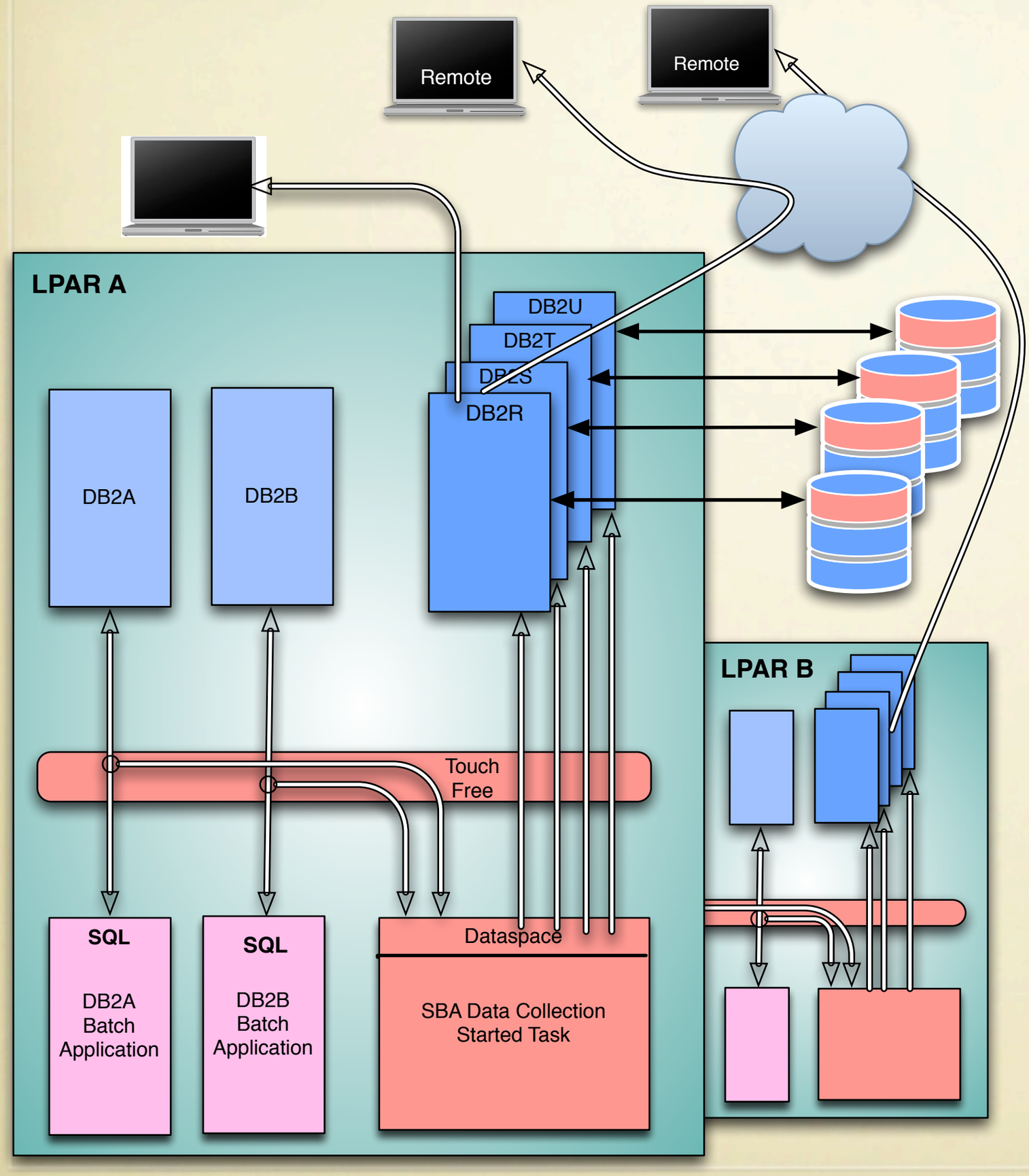
```
SoftBase Systems          Batch Analyzer Version 3.1.0
                 === Job Summary SQL Performance Analysis ===
Command ===>                                              Scroll ===> PAGE
Filter: ON  Intervals: ON  From: 05/10/09 To: 05/11/09 Loctn: DB8G
    Report Summary Level(A/J/S): J  A - Application  J - Job  S - SQL
 Database Maintenance                                                  ->
              +--- RUN TIME ---+---CPU UTILIZED--+
           Exec|   Job    DB2 % |    Job    DB2 % | DB2 CPU%   Total    Total
 Jobname   Cnt | Elapsed of Et  |    CPU   of CPU | this App DB2 Cost Job Cost
 -------- ---- -------- ------  -------- ------  -------- -------- --------
 DBP1001D    2 01:12:00   94.0  00:19:51   81.4      99.9 $ 969.50 $1191.00
 DBP1002W    1 00:23:37   57.5    ~ 0:00    9.2       0.0 $   0.01 $   0.11
```

Tue 26 May 01:27

Architecture



Monitors SQL for all applications and DB2s on this LPAR



Allows remote access, can record to multiple DB2s

Summary

- Low overhead allows data collection 24x7
- Ease of use allows programmers as well as DBAs to find bad SQL
- Jobname identification and statistics
- Powerful filtering
- Job data available within 30 seconds

Questions?

SoftBase Batch Analyzer

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http://softbase.com