

## Reducing elapsed time by concurrent processing – An overview

As the fiscal year draws near the end, we run some processes that we don't run regularly such as W2, 1099 and related information.

As we get ready to run those processes, we have to realize that we may need to look into database / SQLs to tune these processes just to improve its one-time performances. Here are some examples. The environment has 5 years history of employee base of over 100,000 +. (PeopleSoft 8.3 and DB2 7.1 for OS/390)

### 1. SQR **TAX910LD** : Load W-2 Data Records

This SQR does some major SELECTS against PS\_TAX\_BALANCE, PS\_EARNINGS\_BAL and PS\_DEDUCTION\_BAL.

The delivered indices are for regular processing and are on EMPLID. During year-end we process based on the year.

The following indices reduced the run time of this SQR from over 12 hours to less than 50 min.

#### Index on PS\_EARNINGS\_BAL :

COMPANY  
BALANCE\_ID  
BALANCE\_YEAR  
ERNCD  
SPCL\_BALANCE  
GRS\_YTD  
EMPLID  
BALANCE\_PERIOD

#### Index on PS\_TAX\_BALANCE :

BALANCE\_ID  
BALANCE\_YEAR  
TAX\_CLASS  
COMPANY  
EMPLID  
STATE  
LOCALITY  
BALANCE\_PERIOD

#### Index on PS\_DEDUCTION\_BAL:

COMPANY  
BALANCE\_ID  
BALANCE\_YEAR  
PLAN\_TYPE  
DEDCD  
DED\_CLASS  
DED\_YTD  
EMPLID

## BALANCE\_PERIOD

**Note : You may expect to get matching on 5, 4, 6 columns in the tables PS\_EARNINGS\_BAL, PS\_TAX\_BALANCE and PS\_DEDUCTION\_BAL respectively.**

### 2. SQR TAX911LD: Distribute W-2 Territory Data Records

If you have the liberty to change the delivered SQL, then this may be a good one to implement. The elapsed time saving in each SQL was over 6 hours.

The following delivered query will result in tablespace scan for the inner correlated query.

```
SELECT COUNT(*)
FROM PS_YE_EE A
WHERE A.CALENDAR_YEAR = 2003
AND A.TAXFORM_ID IN ('W','I','M','P','S')
AND 1 < (SELECT COUNT(*)
FROM PS_YE_EE B
WHERE A.COMPANY = B.COMPANY
AND A.EMPLID = B.EMPLID
AND A.CALENDAR_YEAR = B.CALENDAR_YEAR
AND B.TAXFORM_ID IN ('W','I','M','P','S')
);
```

The above query can be changed to :

```
SELECT SUM(CNT)
FROM (SELECT COUNT(*) AS CNT
FROM PS_YE_EE A
WHERE A.CALENDAR_YEAR = 2003
AND A.TAXFORM_ID IN ('W','I','M','P','S')
GROUP BY A.COMPANY
,A.EMPLID
,A.CALENDAR_YEAR
,A.TAXFORM_ID
HAVING COUNT(*) > 1
) AS TEMP;
```

Similarly,

```
SELECT DISTINCT QA.COMPANY, QA.EMPLID, QA.TAXFORM_ID
FROM PS_YE_EE QA
WHERE QA.CALENDAR_YEAR = 2003
AND QA.TAXFORM_ID IN('W','I','M','P','S')
AND 1 < (SELECT COUNT(*)
FROM PS_YE_EE QA1
WHERE QA.COMPANY = QA1.COMPANY
AND QA.EMPLID = QA1.EMPLID
AND QA.CALENDAR_YEAR = QA1.CALENDAR_YEAR
AND QA1.TAXFORM_ID IN('W','I','M','P','S'))
ORDER BY QA.COMPANY, QA.EMPLID, QA.TAXFORM_ID
;
```

can be changed to

```
SELECT DISTINCT QA.COMPANY, QA.EMPLID,QA.TAXFORM_ID
FROM (SELECT COMPANY, EMPLID
      FROM PS_YE_EE QA
      WHERE CALENDAR_YEAR = 2003
      AND TAXFORM_ID IN('W','I','M','P','S')
      GROUP BY COMPANY
      ,EMPLID
      HAVING COUNT(*) > 1
      ) AS TEMP
,PS_YE_EE QA
WHERE QA.COMPANY = TEMP.COMPANY
AND QA.EMPLID = TEMP.EMPLID
AND QA.CALENDAR_YEAR = 2003
ORDER BY QA.COMPANY, QA.EMPLID,QA.TAXFORM_ID
;
```

#### **About the Author**

Chinmay Bhatta is consultant, a certified IBM Solution Expert, DB2 for OS/390. He specializes in performance tuning of PeopleSoft Applications on DB2 for OS390.

If you want to discuss more on this topic, feel free to talk directly to our Principal Consultant by calling 866-DB2-PSADMIN. He can also be reached at [venkat@hewittandlarsen.com](mailto:venkat@hewittandlarsen.com).