

Tuning Year End Payroll Processes

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

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