

RITM0047174
RITM0048039
RITM0059825

Technical Release Q1.3 2015

Technical Specification

Created January 9, 2015
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Version History

Version #	Date	Revised By	Reason for Change
1.0	01/06/2015	Mary Meyer	Initial Draft
1.1	02/02/2015	Mary Meyer	Changed Testing requirements to include use of TESTONLY member in CARDLIB
1.2	02/24/2015	Mary Meyer	Removed PPHBNUPD and PPIDXUPD. These are included in Q1.2 Technical Release
1.3	03/05/2015	Mary Meyer	Added RITM0059825 for rush check

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1 Introduction

Service Now Ticket - RITM0047174

RITM0047174 requests that programs containing SQL statements 'Select *' be changed to list the column names and host variables and the insert statements using 'from' also be changed to list the column names and values.

Service Now Ticket – RITM0048039

RITM0048039 requests that the following changes be made, if not already present, at the same time the changes for RITM0047174 are being made:

- 1) Move the program name to 'DB2MSG-PGM-ID' in the Initialization section before any SQL statements are executed.
- 2) Populate DB2MSG-TAG just before each and every executable SQL request.

Service Now Ticket - RITM0059825

RITM0059825 fixes a bug related to current/prior year logic for rush checks. It also handles the case where a campus has no biweekly pay dates.

Background

- **Service Now Ticket - RITM0047174**

The DBA has requested that for efficiency and reduced over head, SQL statements containing 'Select *' be replaced by statements that list the column and host variable names. DBA provided a list of 'select *' from DB2P created in Mar 2011:



db2pSelAsteris
ck.txt

To get a more current program list, run: SPGRRR.JCL.CNTL(SELSTR). It takes a few hours to run.

This release does not contain any programs using the group 'insert' logic. Below is a list of programs requiring changes that will be addressd in a future release. However, for any programs where the 'select *' is being changed, check for 'insert' statements and correct them as well.



SQL shortcut
inventory.pdf

An example of an 'insert' statement that should be changed can be found in 'PAY.BASE.COBOL (PPACTUTW):

```
EXEC SQL  
    INSERT INTO PPPVACT2_ACT  
    VALUES (:ACT-ROW-DATA)  
END-EXEC.
```

After typing on command line: sql ins pb0da.PPPVACT2_ACT, the tool will replace it with this code:

```
*****
*_*_*_*_* SQL FOR TABLE PPPVACT2_ACT
*****

EXEC SQL
  INSERT INTO PPPVACT2_ACT
  (
    EMPLOYEE_ID
  ,APPT_NUM
  ,DIST_NUM
  ,ACTION_CODE
  ,ACTION_EFFDATE
  )
VALUES
  (
    :DCLPPPVACT2-ACT.EMPLOYEE-ID
  ,:DCLPPPVACT2-ACT.APPT-NUM
  ,:DCLPPPVACT2-ACT.DIST-NUM
  . . . . .
  ==>
  ,:DCLPPPVACT2-ACT.DIST-NUM
  ,:DCLPPPVACT2-ACT.ACTION-CODE
  ,:DCLPPPVACT2-ACT.ACTION-EFFDATE
  )
END-EXEC
*
*_*_*_*_* END OF SQL INSERTED CODE *_*_*_*_*
```

- **Service Now Ticket - RITM0048039**

RITM0048039 requests changes to improve error handling and facilitate debugging.

- 1) Move the program name to 'DB2MSG-PGM-ID' in the initialization section before any SQL statements are executed.
- 2) Populate DB2MSG-TAG just before each and every executable SQL request.
Do not put a period at the end of the statement.
Executable SQL statements are:
 - select
 - open cursor
 - close cursor
 - fetch
 - update
 - insert
 - delete

(Statements for declare, include do not required msg tags).

- **Service Now Ticket - RITM0059825**

Refer to tagged lines in PAYPXP.\$Z.COBOLE(PWRC10) for required program changes

2 Overview of System Modifications

For **RITM0047174**, changes will be made to 20 programs to replace 'select *' statements with the list of column and host variable names and to change the insert statements using 'from' to list the column names and values. . If the statement is a 'declare cursor', the 'fetch' statement will be changed to list the host variables.

For **RITM0048039** changes will be made to populate 'DB2MSG-PGM-ID' in the initialization section before any SQL statements are executed and to populate DB2MSG-TAG just before each executable SQL request.

For **RITM0059825** changes will be made to rush check to fix a bug related to current/prior year and also to handle the case where a campus has no biweekly pay dates.

Processes Impacted:

- Batch EDB Monthly Maintenance
- Batch EDB File Maintenance
- CTL Table Updates
- History table updates
- Rush Check

3 Design Considerations

3.1 Assumptions and Dependencies

- For this release, twenty programs were selected. The remaining programs will be changed in future Technical Releases. Some programs have been changed by R2160-Technical Release QTR4 2014, R2166 Technical Release JAN 2015 and R2176 Technical FEB 2015.
- The list of columns needed to replace "*" in a SELECT (or in re-coding an INSERT) must include all of the columns in the view being used and there will be no attempt made to remove columns that are not referred by the programs.
- Code review is required.
- Testing will include executing the SQL statements that were changed for RITM0047174.
- No testing is required for changes made for RITM0048039.
- RITM0047174 and RITM0048039 will remain open until the entire inventory is completed.
- No QA or UAT

5. Testing Considerations

This Section pertains to RITM0047174

- **DBA tool**

DBA provided a tool that looks up all the table's or view's column names from the DB2 catalog and inserts them in the cobol program..

The whole model SQL statement is written. You will need to edit it depending on requirements.

The advantage is that all the column names are copied in the right order for you.

Be sure to use the table or view as specified in the SQL statement. If it's a view and you use the table name, the column names may be incorrect.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
0001 SPGRRR.T.COBOL(TSTCOB1) - 01.00
Command ==> sql sel pb0da.pppper
012200 012200 MOVE ACTION-CODE (WS-IX1)
012300 012300 SKIP1
012400 012400 MOVE ACTION-EFFDATE (WS-IX2)
012500 012500 PERFORM CONVERT-DB2-DATE.
012600 012600 MOVE WSX-STD-DATE TO XACN-ACTION-DATE (WS-IX2, WS-IX3).
012700 012700 EJECT
012800 012800 DATE-CONVERSION-ROUTINES SECTION.
012900 012900 SKIP3
013000 013000
013100 013100 * * * * * END OF PPACAUTL * * * * *
    
```

Must be in EDIT on COBOL source code. On command line type SQL then the type of statement such as SEL or INS or DEL or UPD. followed by the schema-name.view-table-name. Then put the cursor where you want the code to be inserted and hit ENTER. The column names and pattern statement will be written using the correct format.

```

013001 *****
013002 *-*-*-*-* SQL FOR TABLE PPPPER
013003 *****
013004 EXEC SQL
013005     SELECT
013006         EMPLOYEE_ID
013007         ,EMP_NAME
013008         ,NAMESUFFIX
013009         ,BIRTH_DATE
013010         ,HOME_PHONE
    
```

This is just the beginning of what was written by 'SQL'.

- **CHECK COMPILE LISTINGS CAREFULLY**

Look at all messages from compile listing if return code is > 0 to ensure that they are not a result of changes you made.

Conditions that will cause return code 4 or 8:

- **“Deleted Columns”**

Some views still contain column names that are no longer used. For example, in PAY.BASE.INCLUDE(PPPVZDEP), DEP-INS-DEENROLL has been commented out and replaced by filler in the COBOL declaration:

```
*****10 DEP-INS-DEENROLL  PIC X(01).  
      10 DEP-FILLER        PIC X(01).
```

However, since it still exists in the DB2 view (PB0DA.PPPVZDEP_DEP), the tool will insert it as a column name.

This will become evident when you do a compile. You will get a warning that the column does not exist. You will then need to delete it from the list of names generated by the tool. To date, PPPVZDEP_DEP and PPPVZBEN_BEN (and other views associated with PPPDEP and PPPBEN) have been identified as containing “deleted” columns, but there could be others.

o Ambiguous References

There could be multiple ‘select *’ statements that have the same column name from different tables or views. This is not an issue for ‘select *’, but it will be a problem when all the host variable names are listed. The compiler will give an error that the referenced field name is ambiguous.

For example, PPEC705 contains these statements:

```
FETCH PAY_ROW INTO :PAY-ROW-DATA and FETCH DEP_ROW INTO :DUPE-DEP-ROW-DATA
```

The DBA tool will insert the host variable names like this:

```
FETCH PAY_ROW INTO  
  :EMPLOYEE-ID  
  ,:CITIZEN-CODE  
  ,:VISA-TYPE  ....
```

and

```
FETCH DEP_ROW INTO  
  :EMPLOYEE-ID  
  ,:DEP-NUM  
  ,:DEP-ADC-CODE  ....
```

The compiler will flag this as ambiguous. You will need to qualify the host variable names as follows:

```
FETCH PAY_ROW INTO  
  :PAY-ROW-DATA.EMPLOYEE-ID  
  ,:CITIZEN-CODE  
  ,:VISA-TYPE  ....
```

and

```
FETCH DEP_ROW INTO  
  :DUPE-DEP-ROW-DATA.EMPLOYEE-ID  
  ,:DEP-NUM  
  ,:DEP-ADC-CODE  ....
```

NOTE: Other references to the field in the code will already be qualified, for example, ‘MOVE EMPLOYEE-ID OF DUPE-DEP-ROW-DATA’, so you do not need to make any further changes.

6 Mainframe Design

6.1.1 Cobol Programs

For the programs listed below, make changes to list column names and host variables in place of 'select *' or insert statements as described in this document. Populate DB2MSG-TAG and DB2MSG-PGM- ID as required.

PPBKGUPD updates rows on the History PPPBKG table. One Insert statement to change.

PPCTLRTU updates the PPPLRT (Leave Accrual Rate -- Hourly) control table. One insert statement to change.

PPCTMCPU updates the PPPMCP (Merit Control Point) control table. One insert statement to change.

PPCTNGOU updates the PPPNGO (NACHA Gross-to-Net Organization) control table.
One insert statement to change.

PPCTPGTU updates the PPPPGT (Processing Group Table) control table. One insert statement to change

PPHDPUPD updates rows on the History PPPHDP table. One insert statement to change

PPHNRUPD updates rows on the History PPPHNR table. . One insert statement to change.

PPLEVUPD updates rows on the History PPPLEV table One insert statement to change.

PPPLICUPD updates rows on the History PPPLIC table. One insert statement to change.

PPLOFUTL reads all layoff rows from the EDB table PPPLOF for an employee and puts them into the layoff array.
One select statement to change.

PPLPHUTL retrieves the PPPLPH data for an employee into an array. One select statement to change.

PPLSCUTL retrieves the PPPLSC data for an employee into an array. One select statement to change.

PPLSCUTW is part of the EDB fetch complex that processes updates to PPPLSC rows. One insert statement to change.

PPLUCHST prepares rows for the History PPPLUCH table. One select statement to be changed.

PPOFFUPD updates rows on the History PPPOFF table. One insert statement to change.

PPPCDUTL retrieves and updates data for selected PCD database tables (PPPHDE and PPPSYS). One select and one Fetch statement to change.

PPRTNMGR is the routine manager for the EDB edit/update/maintenance processes. Two select statements to change.

PPSABUPD updates rows on the History PPPSAB table. One insert statement to change.

PPWRC10 is the screen processor for the RC10 function (Rush Check Opt1 Employee Data).

It will be modified to address a bug in the current/prior year logic as well as to handle campuses that have no biweekly pay dates.

7 Unit Testing Requirements

For RITM0047174:

For each of these programs, use debugger, display or some other method to **verify that each of the changed statements is executed**. You may have to set up test data to meet certain conditions in order to achieve that.

- Run **Batch EDB Monthly Maintenance** to test **PPRTNMGR**.

- Run **Batch EDB File Maintenance** to test:

PPLOFUTL
PPLPHUTL
PPLSCUTL
PPLSCUTW

- **CICS** – make updates using these functions, then exec **RUN742**:

EBCC to test **PPBKGUPD**
EDEP to test **PPHDPUPD**
EHON to test **PPHNRUPD**
ELVE to test **PPLEVUPD**
ELIC to test **PPLICUPD**
ELOF to test **PPOFFUPD**
ELVE to test **PPSABUPD**
Any of the above functions will execute **PPPCDUTL**

- **CTL Table Updates** – Run PPP004 member **TESTONLY** in **CARDLIB**. Doing so will execute these programs:

PPCTLRTU
PPCTMCPU
PPCTNGOU
PPCTPGTU

Review the report from PPP004 which should complete with good return code.

- **History Table Updates** – Execute **PPP741** to test **PPLUCHST**

For RITM0059825:

Create a rush check and verify that it defaults to current date of not entered on screen. Find a campus with no biweekly pay dates (or delete existing BW pay dates) and create a rush check. Verify that **MAX(CAD_DAY)** is set to '32'.