Service Request 12852

Service Request 12852 requested modification of the Payroll/Personnel System (PPS) to properly process data in the next century. Recent improvements in technology allowed us to submit all PPS code for a compliance review. Based on this review, there are several areas of the system where potential problems related to the handling of dates still exist.

This release addresses the areas of the system where any such significant potential problems were found; areas where the concerns should be addressed before the programs are executed in the new year. Other areas will be addressed in releases early next year or have been marked for cleanup the next time the programs involved are released.

Programs

PP1730
This program compares two six byte date fields, XPAR-PERIOD-END-DATE and WM-YY-MM-DD, in paragraph 43220-GROUP-C. This code is exercised in both program run modes ('Interface Mode' and 'Treasurer Mode'). Paragraph 43220-GROUP-C sets up a new Distribution on a UCRS record. WM-YY-MM-DD has been set with the values in XPAR-PAY-END-YR, XPAR-PAY-END-MO, and zero (e.g. 991200). When the XPAR-PERIOD-END-DATE is less than WM-YY-MM-DD then ‘2’ is moved to UCRS-RETRO-INDICATOR otherwise ‘0’ is moved.

With this release, WM-YY-MM-DD has been expanded to eight bytes and XPAR-PERIOD-END-DATE has been expanded to CCYYMMDD format utilizing PPS date conversion routines.
PPLOFFET
This program compares LOF-NOTICE-DATE (an ISO date from Copy Member CPWSELOF) against WS-LAYOFF-NOTICE-DATE (a working storage Layoff Notice Date field in YYMMDD date format). The Working Storage Layoff-Notice Date has been converted to an ISO date prior to comparing the DB2 ISO Layoff Notice Date.

PPROVPY
This program compares ORCA-PAY-END-DATE (format YYMMDD, defined in copy statement CPWSORCA and loaded from PAY-CYCLE-END-DATE taken from PPPVZEUD) to ORIC-LAST-EFF-DATE (format YYMMDD, defined in copy statement CPWSORIC and currently containing the value '930630') to determine which retirement rates to use in its calculation of retirement deductions and reductions. If ORCA-PAY-END-DATE is less than or equal to ORIC-LAST-EFF-DATE, the program uses historical rates from CPWSORIC. Otherwise, the retirement rates are taken from the BRT.

This date comparison as is will lead to the use of the wrong set of rates for Overpayment transactions against Current Activity PARs generated after 01/01/2000. For this release, the comparison has been changed so that the date values being compared are both in ISO format.

PPP300
This program used a comparison of MMDDCCYY date with a MMDDYY date in paragraph GENERATE-FORMAT-01-6100. This has been changed to convert both dates to ISO format before the comparison.

PPP541
This program uses a routine in paragraph 0400-DATES-FOR-CAL-ACCESS that tests the month and 2-digit year in XEDR-RCD1-END-DATE in order to arrive at the Fiscal Year beginning month and year. Since century is not included in this routine, the program will ABEND when the year is 2000. The routine has been changed to include century.

PPP544
This program uses several MOVE statements that change the contents of GL-OUT-DATE, part of the output GL-Interface file (DDNAME=GLCSER). Paragraphs 4000-CREATE-GL-REC-FROM-RVRS and 4105-CREATE-GL-OFFSETS-PER-LOC contain incorrect MOVE's that cause the left-most digit of a two-digit date to be placed in the GL-OUT-YEAR, not the right-most digit. These statements have been corrected to MOVE the right-most digit.

PPP742
This program performs MOVE statements and IF conditions using IHDE-OBS-DATE, an 8-byte date in the CCYYMMDD format. These routines date from the program's initial release, and are executed only when a SPEC-DATE is used to override the current date for processing ECF's that use obsolete HDE elements. Moreover, this can only be done when a single ECF is used, not when concatenating multiple ECF's.

These statements have been changed to convert ISO format dates to CCYYMMDD format before the dates are moved to or compared with IHDE-OBS-DATE.

PPP744
This program performs the same MOVE statements and IF conditions as found in the PPP742 program. As with PPP742, these statements have been changed to convert ISO format dates to CCYYMMDD format before the dates are moved to or compared with IHDE-OBS-DATE.
PPP760
Program PPP760 is the Mass Dues program. This program is not validating Spec Card Effective dates correctly. For example, the date 023099 would be allowed while 022800 would not be. With this release, this program now uses CPPDXDC3 date conversion routines to validate the Spec Card effective date.

PPP851
This program loads the DB2 control tables from the VSAM version. Many of the control tables contain a "date last updated" field. Unfortunately, there is no consistency from table to table; some store this date in MMDDYY format, others in YYMMDD format. PPP851 contains a routine that attempts to decide which format the date is in, and then converts appropriately to an ISO date for storage in the DB2 tables. This routine works well until next year, when the format determination will fail.

A permanent fix to the problem in PPP851 would require extensive code modifications, on a table-by-table basis. Since PPP851 is scheduled to be obsolete in 2000, with the implementation of direct DB2 update of the control tables, a temporary patch to PPP851 has been made. This patch will allow the correct format determination for last update dates through the end of 2000.

PPP860
This program includes a group MOVE statement from SORT-HIRE-DATE (of format CCYY/MM/DD) to WS-HIRE-DATE (of format MM/DD/CCYY). This has been changed to replace this group MOVE with an elemental MOVE of each corresponding month, day, and year.

PPP861
The changes to this program are identical to the changes to PPP860. The program includes a group MOVE statement from SORT-HIRE-DATE (of format CCYY/MM/DD) to WS-HIRE-DATE (of format MM/DD/CCYY). This has been changed to replace this group MOVE with an elemental MOVE of each corresponding month, day, and year.

PPP876
This program extracts Student Earnings and Work-Study information from the PAR. Code in this program is moving an eight byte numeric field, EARNS-YMD, to a six byte alphanumeric field, XDC3-STD-DATE, causing the truncation of the right most 2 bytes of the numeric data. With this release, the receiving field of this move is XDC3-STD-DATE-LONG, an 8-byte field.

PPP880
This program uses an incorrectly defined date format for RPT-BIRTH-DATE-ISO. The first separator is incorrectly defined as PIC X(04). This error has no impact on program function because the only component of RPT-BIRTH-DATE-ISO to which specific reference is made is the field RPT-BIRTH-YEAR, which precedes the erroneous definition. Otherwise, RPT-BIRTH-DATE-ISO is a receiving field. The separator, RPT-BIRTH-SEP1, has been redefined as PIC X(01).

PPP884
This program uses SPEC-DATE to set the QUARTER-END-DATE, which is displayed in the header of the PPP8841 report. The program compares the SPEC-YY variable, defined as PIC 9(02), to the two-digit year of the SCR-PROCESS-DATE. This comparison presents no problem. However, in the same IF statement, SPEC-YY is compared to the expression (XDC3-FMT-YY - 1). This comparison will fail to give the desired results during the year 2000. The comparison has been changed to instead use WS-LAST-YY, a field already correctly formatted with the previous year.

PPP981
As of this Release, this program is obsolete.
PPRCGRSS
This program performs a date calculation without including the century portion of the year. The routine subtracts a '1' from the WORKING-STORAGE field, HIST-DATE-YY, a 2-digit year. This will fail to give the desired results during the year 2000. The routine has been changed to incorporate the century in the calculation.

PPWELEM
This program uses a WORKING-STORAGE field containing a hard-coded century value of '19'. In paragraph 6675-MOVE-FROM-RETURN-ARRAY, the component parts of the field WS-NUM-DATE (USA format) are loaded from a 6-character date without regard to the hard-coded '19' in the century portion of WS-NUM-DATE. This date field is later used in comparisons and formatted to the screen.

The date routine in 6675-MOVE-FROM-RETURN-ARRAY has been changed to call the XDC3 date routine to convert the 6-character date to a USA date. The hard-coded '19' has been removed.

Test Plan
Since many of the areas of concern identified by the code review process are either potential problems or situations which are seldom encountered, it is difficult, and in some cases impossible, to come up with adequate, but non-voluminous test data. The code changes released herein are generally minor. One or more programmers other than the one actually doing the coding have inspected the change. In many cases, the modified code has been exercised with batch or CICS Xpediter to insure proper function. No formal test plan or test data is provided with this release.

Installation Instructions
Install, compile, link and bind the modified programs listed in the following table

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Obsolete Program

PPP981
This program is obsolete. Follow local procedures to remove this obsolete COBOL program.

Timing of Installation

The installation of this release is date-mandated.

This release includes code modifications which should be placed in production prior to the execution of the modified programs after January 1, 2000.

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Roy Staples

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         Jerry Wilcox