CR-10162 (see IMAPS Help Request 20180108122548) - Automate the process of updating the DDOU PLC rates data in Costpoint

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The periodic or on-demand process of updating the DDOU rates data in Costpoint table Deltek.PROJ\_LAB\_CAT\_RT\_SC can be automated such that it can be carried out

on demand by the Operations personnel, without necessitating help from Development.

**Analysis**

Develop a Microsoft Transact-SQL-SQL Server application that takes the customer-supplied source Excel spreadsheet(s) as input, imports the Excel data via the SQL Server bulk copy utility (bcp) into a SQL Server staging table, updates Deltek table PROJ\_LAB\_CAT\_RT\_SC, reports the success rate of the update, and archives the source input data files.

Unlike past practice, the solution does not produce a set of cumbersome UPDATE statements to be executed wholesale against table Deltek.PROJ\_LAB\_CAT\_RT\_SC, requiring manual execution by the DBA; instead, it updates table Deltek.PROJ\_LAB\_CAT\_RT\_SC directly in a highly efficient manner.

The application’s processing tasks are devised into three control points: (1) check for existence of input files, (2) load Excel data into SQL Server database, (3) update target Costpoint table and archive input files. The application will be installed permanently in both the SIT and PROD databases. A SQL Server job is used to launch the execution of the application. Book keeping of the application’s execution status is managed by the existing IMAPSStg interface status system.

Before running the application in SIT, the user (1) saves the customer-supplied Excel file as a tab-delimited text (MS-DOS) file and places copies of both the Excel and text files in the In Box folder of the existing IMAPS interface file storage system, (2) retain copies of both the Excel and text files for later submission in PROD, and (3) may copy Deltek.PROJ\_LAB\_CAT\_RT\_SC data in PROD to SIT to facilitate a better measuring of the success rate of the update.

For execution of the application, the user (1) runs the application in SIT first, (2) inspects the results, (3) if necessary, takes steps to manage the results from the source data (Excel data) aspect (e.g., Excel data require change), (4) if necessary, performs steps 1 through 4 again, or (5) obtains approval from the requestor/customer and runs the application in PROD to complete the update procedure.

**Requirements**

The customer submits the Excel file(s) containing the DDOU rates for a specific year via an IMAPS Help Request ticket. The user saves the Excel file as a tab-delimited text (MS-DOS) file and places both the Excel and text files in the In Box folder of the existing IMAPS interface file storage system. The text file is used as the input file to the system to load the data into the SQL Server database.

The user or system operator is responsible for preparing the input data in a format acceptable and make the data accessible to the system.

If the customer-supplied data come in more than one Excel file (typically, one for Costpoint project DDOU\_ICAB and one for DDOU\_NPUB), then the data must be put in a single file using a single sheet and only one column header. If the customer supplies the data in one Excel file and in more than one sheet, then the data must be put in a single sheet. This requirement is due to restriction in DOS file renaming that does not allow multiple files to be renamed to one particular file name.

Data preparation procedures, especially for the tab-delimited input data text file, are provided separately as part of the interface’s documentation.

The interface system shall verify that the input data text file exists in the designated folder, and terminate execution if it does not exist.

The input data text file shall have six columns, as they exist now, from left to right: PROJ\_ID, GLC, BLC, Billing Rate, Start Date, End Date. The existence of the data elements Start Date and End Date allows the retention of historical project labor rates.

The order of columns from left to right, as it exists now, must be kept consistent and unchanged.

The column names and the order of the columns from left to right as they exist now, must be kept consistent, predictable and unchanged by the user to ensure that the crucial automated data loading process works as designed. Any change to the format of the input files without the necessary system modification invalidates the data loading function of the system and causes its execution to fail.

The system shall rely on the tab-delimited format of the text input file to populate a SQL Server staging table using the SQL Server bulk copy utility (bcp).

The user shall place the input data files in a predetermined file storage location, usually the INBOX folder on the server that provides for the interface’s SQL Server execution environment, which is made accessible to the system via a IMAPSStg.dbo.XX\_PROCESSING\_PARAMETERS processing parameter.

The input data text file shall be used to insert records into a SQL Server staging table which is (1) defined correspondingly to the customer-supplied Excel spreadsheet’s design, (2) used to facilitate the update of the target Costpoint tables Deltek.BILL\_LAB\_CAT (parent) and Deltek.PROJ\_LAB\_CAT\_RT\_SC (child).

A more robust error handling recently implemented for GHHS CCS/GLIM and Sabrix interfaces shall be used for PLC\_RATES interface.

A SQL Server job shall be used to execute the PLC rates update process.

Upon completion of processing, the input files shall be archived in a predetermined file storage location, usually the ARCHIVE folder on the server that provides for the interface’s SQL Server execution environment, made available to the system via a IMAPSStg.dbo.XX\_PROCESSING\_PARAMETERS processing parameter.