**Weight Generation & EST Value Calculation**

Stored Procedure: **WEIGHT\_GENERATION**  
we are implemented the following ways of weight generation like Raw to Stage and Update to Stage  
  
**Raw to Stage:**  
 Get all the records from the table PES\_STG\_CMD & PES\_STG\_BOL and to load the temp table (TEMP\_WT\_GENERATION) with condition of CMD Desc value = “Container Cargo”, weight value >0 and the record status should be “Automated”.

**Stage to update:**  
 Get all the records from the table PES\_STG\_CMD & PES\_STG\_BOL and to load the temporary tables with condition of CMD Desc value = “Container Cargo”, weight value >0 and the BOL ID should be available in the table of PES\_BILLS\_UPDATE\_STAGING

**Business Logic:**

1. Set the POUNDS

Update the pounds in the existing temp table, if the CMD Desc value is “CONTAINER CARGO”   
  
UPDATE #TEMP\_WT\_GENERATION SET POUNDS=C.WGT FROM

(SELECT T\_NUMBER,POUNDS AS WGT FROM #TEMP\_WT\_GENERATION

WHERE LTRIM(RTRIM(CMD\_DESC))='CONTAINER CARGO')C WHERE C.T\_NUMBER = #TEMP\_WT\_GENERATION.T\_NUMBER

1. Set the COAST

Update the US COAST to temp table from main table of PES\_US\_COAST

UPDATE #TEMP\_WT\_GENERATION SET US\_COAST = COAST FROM PES.DBO.PES\_US\_COAST P WITH (NOLOCK) ,

#TEMP\_WT\_GENERATION T WHERE LTRIM(RTRIM(P.USPORT\_CODE)) = LTRIM(RTRIM(T.USPORT\_CODE))

1. Set the LOOKUP POUNDS

Update the LOOKUP POUNDS to temp table in the below condition

SET Lookup\_pounds= L.LOOKUPPOUNDS

FROM (select T.T\_NUMBER,T.CMD\_ID,P.Pounds AS LOOKUPPOUNDS FROM PES.DBO.REF\_GEN\_WEIGHT P WITH (NOLOCK) ,#TEMP\_WT\_GENERATION T where P.DIR = T.DIRECTION AND P.HARMCODE = T.HSCODE AND P.COAST=T.US\_COAST AND P.COUNTRY = T.ORIGINCODE and P.UOFM = T.UM)L, #TEMP\_WT\_GENERATION A

WHERE A.T\_NUMBER=L.T\_NUMBER AND A.CMD\_ID = L.CMD\_ID

1. Set the ORIGINCODE

Update the ORGINCODE as “ALL” if the lookup pound is null

1. Set Lookup Pounds for altered the ORGINCODE and DESTINATIONCODE

set Lookup\_pounds=L.LOOKUPPOUNDS FROM

(select T.T\_NUMBER,T.CMD\_ID,P.Pounds AS LOOKUPPOUNDS FROM REF\_GEN\_WEIGHT P WITH (NOLOCK) ,#TEMP\_WT\_GENERATION T where

P.DIR = T.DIRECTION AND P.HARMCODE = T.HSCODE AND P.COAST=T.US\_COAST

AND P.COUNTRY = T.ORIGINCODE and P.UOFM = T.UM)L,#TEMP\_WT\_GENERATION A

WHERE A.T\_NUMBER=L.T\_NUMBER AND A.CMD\_ID = L.CMD\_ID AND A.LOOKUP\_POUNDS IS NULL

1. Set the LOOKUP Key field

Update the lookup key UM as “ALL” If the lookup pound is null and US Coast value is “A”

1. Update lookup pound values from REF\_GEN\_WEIGHT table for imports
2. Set the US COAST  
    Update the US COAST as “A”, if the lookup pound is null and US COAST value is not equal to “A”
3. Update lookup pound values from REF\_GEN\_WEIGHT table for imports
4. Set the LOOKUP Key field  
    Update the lookup key UM as “ALL” If the lookup pound is null
5. Update lookup pound values from REF\_GEN\_WEIGHT table for imports
6. Identify the Single Commodity from temp weight generation table

SELECT T\_NUMBER INTO #TEMP\_SINGLE\_COMMODITY FROM #TEMP\_WT\_GENERATION

WHERE LOOKUP\_POUNDS IS NULL

GROUP BY T\_NUMBER HAVING COUNT(\*)=1

1. Calculate temp value (QUANTITY\*LOOKUP\_POUNDS), if the quantity is not equal to 0  
     
    SET TEMPVALUE=(QUANTITY\*LOOKUP\_POUNDS)   
    FROM #TEMP\_WT\_GENERATION WHERE QUANTITY!=0
2. Calculate total temp value (SUM(TEMPVALUE)), if the quantity is not equal to 0  
     
   UPDATE #TEMP\_WT\_GENERATION SET TOTALVALUE= T.TOTAL FROM   
   (SELECT T\_NUMBER,SUM(TEMPVALUE) AS TOTAL FROM #TEMP\_WT\_GENERATION GROUP BY T\_NUMBER)T WHERE #TEMP\_WT\_GENERATION.T\_NUMBER=T.T\_NUMBER AND #TEMP\_WT\_GENERATION.QUANTITY!=0
3. Calculate generated weight value (TEMPVALUE\*POUNDS)/TOTALVALUE AS GENERATED\_WT), if the quantity is not equal to 0  
     
   UPDATE #TEMP\_WT\_GENERATION SET GENWT=CAST(T.GENERATED\_WT AS INT) FROM (SELECT T\_NUMBER,TEMPVALUE,(TEMPVALUE\*POUNDS)/TOTALVALUE AS GENERATED\_WT FROM #TEMP\_WT\_GENERATION WHERE T\_NUMBER= #TEMP\_WT\_GENERATION.T\_NUMBER AND TOTALVALUE!=0)T WHERE #TEMP\_WT\_GENERATION.T\_NUMBER=T.T\_NUMBER AND #TEMP\_WT\_GENERATION.TEMPVALUE =T.TEMPVALUE AND #TEMP\_WT\_GENERATION.QUANTITY!=0
4. Calculate generated weight value (GENWT = POUNDS-T.TOTALGENWT), if the lookup pound is null  
     
   UPDATE #TEMP\_WT\_GENERATION SET GENWT = POUNDS-T.TOTALGENWT,LOOKUP\_POUNDS = 0 FROM (SELECT T\_NUMBER,SUM(ISNULL(GENWT,0)) AS TOTALGENWT FROM #TEMP\_WT\_GENERATION GROUP BY T\_NUMBER)T WHERE #TEMP\_WT\_GENERATION.T\_NUMBER=T.T\_NUMBER AND #TEMP\_WT\_GENERATION.QUANTITY!=0 AND #TEMP\_WT\_GENERATION.T\_NUMBER IN(SELECT T\_NUMBER FROM #TEMP\_SINGLE\_COMMODITY) AND LOOKUP\_POUNDS IS NULL
5. Calculate total generated weight and adjustment (SET TOTALWEIGHT=T.TOTALGENWT, ADJUSTMENT= POUNDS-T.TOTALGENWT), if the lookup pound is null  
     
   UPDATE #TEMP\_WT\_GENERATION SET TOTALWEIGHT=T.TOTALGENWT, ADJUSTMENT= POUNDS-T.TOTALGENWT FROM (SELECT T\_NUMBER,SUM(ISNULL(GENWT,0)) AS TOTALGENWT FROM #TEMP\_WT\_GENERATION GROUP BY T\_NUMBER)T WHERE #TEMP\_WT\_GENERATION.T\_NUMBER=T.T\_NUMBER AND #TEMP\_WT\_GENERATION.QUANTITY!=0 AND #TEMP\_WT\_GENERATION.T\_NUMBER NOT IN(SELECT T\_NUMBER FROM #TEMP\_WT\_GENERATION WHERE LOOKUP\_POUNDS IS NULL)
6. Update calculated total generated weight with adjustment (SET GENWT=GENWT+ADJUSTMENT), if the lookup pound is null  
     
   UPDATE #TEMP\_WT\_GENERATION SET GENWT=GENWT+ADJUSTMENT WHERE CMD\_ID IN (SELECT MAX(isnull(CMD\_ID,0)) FROM #TEMP\_WT\_GENERATION GROUP BY T\_NUMBER) AND #TEMP\_WT\_GENERATION.T\_NUMBER NOT IN(SELECT T\_NUMBER FROM #TEMP\_WT\_GENERATION WHERE LOOKUP\_POUNDS IS NULL)

19. Identified weight distributed   
  
 SELECT T\_NUMBER, GENWT, CMD\_ID

FROM #TEMP\_WT\_GENERATION

WHERE T\_NUMBER NOT IN (SELECT DISTINCT T\_NUMBER FROM #TEMP\_WT\_GENERATION WHERE LOOKUP\_POUNDS IS NULL )

20. Update the generated weight for distributed  
  
 UPDATE PES\_STG\_CMD SET CMD\_WGT\_VALUE = GENWGT

FROM #TEMP\_WT\_DISTRIBUTED T JOIN PES\_STG\_CMD S  
 ON T.T\_NUMBER=S.BOL\_ID AND T.CMD\_ID=S.CMD\_ID

21. Update the generated value as “0” if the CMD Desc value is “CONTAINER CARGO”  
  
 UPDATE PES\_STG\_CMD SET CMD\_WGT\_VALUE=0

FROM #TEMP\_WT\_DISTRIBUTED T JOIN PES\_STG\_CMD S

ON T.T\_NUMBER=S.BOL\_ID

WHERE LTRIM(RTRIM(CMD\_DESC))='CONTAINER CARGO'

Stored Procedure: **USP\_PES\_EST\_VALUE\_CALCULATION**

We are implemented the following ways of EST Value Calculation like Raw to Stage and Update to Stage

**Raw to Stage:**  
 Get all the records from the table PES\_STG\_CMD & PES\_STG\_BOL and to load the temp table (#TEMP\_EST\_VALUE) with condition of @LOADNUMBER = LOADNUMBER FROM PES\_PROGRESS\_STATUS WHERE LOAD\_DT= MAX(isnull(Load\_DT,getdate())) and the record status should be “Automated”.

**Stage to update:**  
 Get all the records from the table PES\_STG\_CMD & PES\_STG\_BOL and to load the temporary tables with condition of all BOL\_ID should be available in the table of PES\_BILLS\_UPDATE\_STAGING   
 **Business Logic:**

Set and calculate the value for EST\_VALUE, EVCOAST, EVVPMT and OLD\_USPORT and update to the table of PES\_STG\_CMD & PES\_STG\_BOL

1. Set the value for WGT\_CONV\_FACTOR variable from the table REF\_WEIGHT\_UNIT   
     
   SELECT TOP 1 @WGT\_CONV\_FACTOR=(1/CONVERSION\_FACTOR)\*1000 FROM REF\_WEIGHT\_UNIT WITH (NOLOCK) WHERE WGT\_UNIT='LB'
2. Identify and set the OLD USPORT from Convert New USPORT to OLD USPORT

SELECT @OLD\_USPORT=SOURCE FROM PES\_PORT\_CONVERSION WITH (NOLOCK)

WHERE TARGET=@DISCHARGE\_PORT AND

IS\_US\_PORT='1'  
  
IF @OLD\_USPORT IS NOT NULL   
 SET @DISCHARGE\_PORT=@OLD\_USPORT

1. Set the EST\_VALUE, if the CMD\_WGT value is “0” OR IS NULL

IF @CMD\_WGT=0 OR @CMD\_WGT IS NULL  
 SET @EST\_VALUE=0

1. Set KILOTONS value  
      
    SET @KILOTONS=@CMD\_WGT/@WGT\_CONV\_FACTOR
2. Set country code value as 470, if the country code value is 649 or 469  
     
    IF @CTRYCODE='649' OR @CTRYCODE='469'

SET @CTRYCODE='470'

1. Check and set the EVCOAST value from PES\_US\_COAST table with USPORT\_Code   
     
    IF @CTRYCODE='649' OR @CTRYCODE='469'

SET @CTRYCODE='470'

SELECT @COUNT=COUNT(\*) FROM PES\_US\_COAST WITH (NOLOCK) WHERE SUBSTRING(USPORT\_CODE,1,2)=SUBSTRING(@DISCHARGE\_PORT,1,2)

IF @COUNT=1

SELECT @EVCOAST=COAST FROM PES\_US\_COAST WITH (NOLOCK) WHERE SUBSTRING(USPORT\_CODE,1,2)= SUBSTRING(@DISCHARGE\_PORT,1,2)

ELSE IF @COUNT>1

SELECT @EVCOAST=COAST FROM PES\_US\_COAST WITH (NOLOCK) WHERE USPORT\_CODE=@DISCHARGE\_PORT

IF @EVCOAST IS NULL

SELECT @EVCOAST=COAST FROM PES\_US\_COAST WITH (NOLOCK) WHERE SUBSTRING(USPORT\_CODE,1,2)= SUBSTRING(@DISCHARGE\_PORT,1,2)

1. Set EVVPMT and EST\_VALUE, if the EVCOAST value is NULL OR EMPTY

SET @HARM6=SUBSTRING(@CMD\_HSCODE,1,6)

SET @EVCTRY=SUBSTRING(@CTRYCODE,1,1)

IF @BOL\_DIRECTION='E'

SELECT @EVVPMT=VMPT FROM PES\_EXPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST=@HARM6+@EVCTRY+@EVCOAST

IF @BOL\_DIRECTION='I'

SELECT @EVVPMT=VMPT FROM PES\_IMPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST=@HARM6+@EVCTRY+@EVCOAST

IF @EVVPMT IS NOT NULL

SET @EST\_VALUE=ROUND(@KILOTONS\*@EVVPMT,2)

1. Set EVVPMT and EST\_VALUE, if the EVCOAST value is not NULL

SET @HARM6=SUBSTRING(@CMD\_HSCODE,1,6)

SET @EVCTRY=@CTRYCODE

IF @BOL\_DIRECTION='E'

SELECT @EVVPMT=VMPT FROM PES\_EXPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST=@HARM6+@EVCTRY+@EVCOAST

IF @BOL\_DIRECTION='I'

SELECT @EVVPMT=VMPT FROM PES\_IMPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST=@HARM6+@EVCTRY+@EVCOAST

IF @EVVPMT>199899 AND @EVVPMT<201000

SET @HARM6='ALL'

SET @EVCTRY=@CTRYCODE

SET @EVVPMT=NULL

IF @BOL\_DIRECTION='E'

SELECT @EVVPMT=VMPT FROM PES\_EXPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST =@HARM6+@EVCTRY+@EVCOAST

IF @BOL\_DIRECTION='I'

SELECT @EVVPMT=VMPT FROM PES\_IMPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST = @HARM6+@EVCTRY+@EVCOAST

IF @EVVPMT IS NOT NULL

SET @EST\_VALUE=ROUND(@KILOTONS\*@EVVPMT,2)

IF @EVVPMT>100000  
 SET @SAVE\_VPMT=@EVVPMT

SET @HARM6=SUBSTRING(@CMD\_HSCODE,1,6)

SET @EVCTRY=@CTRYCODE

SET @EVCOAST1='A'

SET @EVVPMT=NULL

IF @BOL\_DIRECTION='E'

SELECT @EVVPMT=VMPT FROM PES\_EXPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST = @HARM6+@EVCTRY+@EVCOAST1

IF @BOL\_DIRECTION='I'

SELECT @EVVPMT=VMPT FROM PES\_IMPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST = @HARM6+@EVCTRY+@EVCOAST1

IF @EVVPMT IS NOT NULL

SET @CALC\_PERCENT=ROUND(@EVVPMT/@SAVE\_VPMT,2)

IF @CALC\_PERCENT>=0.90

SET @EST\_VALUE=ROUND(@KILOTONS\*@SAVE\_VPMT,2)

ELSE

SET @EST\_VALUE=ROUND(@KILOTONS\*@EVVPMT,2)

IF @EVVPMT IS NULL

SET @HARM6='ALL'

SET @EVCTRY=@CTRYCODE

SET @EVVPMT=NULL

IF @BOL\_DIRECTION='E'

SELECT @EVVPMT=VMPT FROM PES\_EXPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST = @HARM6+@EVCTRY+@EVCOAST

IF @BOL\_DIRECTION='I'

SELECT @EVVPMT=VMPT FROM PES\_IMPVALUE\_UPDATE WITH (NOLOCK) WHERE HSCODE6\_CTRYCODE+COAST = @HARM6+@EVCTRY+@EVCOAST

IF @EVVPMT IS NOT NULL

SET @EST\_VALUE=ROUND(@KILOTONS\*@EVVPMT,2)

ELSE  
 SET @EST\_VALUE=ROUND(@KILOTONS\*@EVVPMT,2)

1. If the EST\_Value is null again need to set that value   
     
    IF @EVCOAST=' '

SET @EVHARM4=SUBSTRING(@CMD\_HSCODE,1,4)

SET @EVCTRY=SUBSTRING(@CTRYCODE,1,1)

IF @BOL\_DIRECTION='E'

SELECT @EVVPMT=EVVPMT FROM PES\_EXPVALUE WITH (NOLOCK) WHERE EVHARM4\_EVCTRY\_EVCOAST = @EVHARM4+@EVCTRY+@EVCOAST

IF @BOL\_DIRECTION='I'

SELECT @EVVPMT=EVVPMT FROM PES\_IMPVALUE WITH (NOLOCK) WHERE EVHARM4\_EVCTRY\_EVCOAST = @EVHARM4+@EVCTRY+@EVCOAST

IF @EVVPMT IS NOT NULL

SET @EST\_VALUE=ROUND(@KILOTONS\*@EVVPMT,2)

IF @EVVPMT>199899 AND @EVVPMT<201000

SET @EVHARM4='ALL'

SET @EVCTRY=@CTRYCODE

SET @EVVPMT=NULL

IF @BOL\_DIRECTION='E'

SELECT @EVVPMT=EVVPMT FROM PES\_EXPVALUE WITH (NOLOCK) WHERE EVHARM4\_EVCTRY\_EVCOAST = @EVHARM4+@EVCTRY+@EVCOAST

IF @BOL\_DIRECTION='I'

SELECT @EVVPMT=EVVPMT FROM PES\_IMPVALUE WITH (NOLOCK) WHERE VHARM4\_EVCTRY\_EVCOAST=@EVHARM4+@EVCTRY+@EVCOAST

IF @EVVPMT IS NOT NULL

SET @EST\_VALUE=ROUND(@KILOTONS\*@EVVPMT,2)

IF @EVVPMT>100000  
  
 IF @BOL\_DIRECTION='E'

SELECT @EVVPMT=EVVPMT FROM PES\_EXPVALUE WITH (NOLOCK) WHERE EVHARM4\_EVCTRY\_EVCOAST = @EVHARM4+@EVCTRY+@EVCOAST1

IF @BOL\_DIRECTION='I'

SELECT @EVVPMT=EVVPMT FROM PES\_IMPVALUE WITH (NOLOCK) WHERE EVHARM4\_EVCTRY\_EVCOAST = @EVHARM4+@EVCTRY+@EVCOAST1

IF @EVVPMT IS NOT NULL

SET @CALC\_PERCENT=ROUND(@EVVPMT/@SAVE\_VPMT,2)

IF @CALC\_PERCENT>=0.90

SET @EST\_VALUE=ROUND(@KILOTONS\*@SAVE\_VPMT,2)

ELSE

SET @EST\_VALUE=ROUND(@KILOTONS\*@EVVPMT,2)

ELSE   
  
 SET @EVHARM4='ALL'

SET @EVCTRY=@CTRYCODE

SET @EVVPMT=NULL

IF @BOL\_DIRECTION='E'

SELECT @EVVPMT=EVVPMT FROM PES\_EXPVALUE WITH (NOLOCK) WHERE EVHARM4\_EVCTRY\_EVCOAST = @EVHARM4+@EVCTRY+@EVCOAST

IF @BOL\_DIRECTION='I'

SELECT @EVVPMT=EVVPMT FROM PES\_IMPVALUE WITH (NOLOCK) WHERE EVHARM4\_EVCTRY\_EVCOAST = @EVHARM4+@EVCTRY+@EVCOAST

IF @EVVPMT IS NOT NULL

SET @EST\_VALUE=ROUND(@KILOTONS\*@EVVPMT,2)

1. Update the EST Value to CMD\_EST\_VALUE in the temp table  
     
   UPDATE #TEMP\_EST\_VALUE WITH (UPDLOCK) SET CMD\_EST\_VALUE=ISNULL(@EST\_VALUE,0) WHERE BOL\_ID=@BOL\_ID AND CMD\_ID=@CMD\_ID
2. If found any error in EST Value calculation then set the EST value as “0” and log into the error “PES\_TEMP\_CALCULATIONS\_ERROR\_LOG” table

UPDATE #TEMP\_EST\_VALUE WITH (UPDLOCK) SET CMD\_EST\_VALUE=0   
WHERE BOL\_ID=@BOL\_ID AND CMD\_ID=@CMD\_ID

1. Finally update the EST value in PES\_STG\_CMD and PES\_STG\_BOL table

UPDATE A WITH (UPDLOCK)

SET A.CMD\_VALUE\_VALUE=B.CMD\_EST\_VALUE

FROM PES\_STG\_CMD A JOIN #TEMP\_EST\_VALUE B

ON A.BOL\_ID=B.BOL\_ID

WHERE A.CMD\_ID=B.CMD\_ID

UPDATE PES\_STG\_BOL WITH (UPDLOCK)

SET PES\_STG\_BOL.EST\_VALUE=(SELECT SUM(C.CMD\_EST\_VALUE)

FROM #TEMP\_EST\_VALUE C WITH (NOLOCK)

WHERE C.BOL\_ID=PES\_STG\_BOL.BOL\_ID) FROM #TEMP\_EST\_VALUE D

WHERE PES\_STG\_BOL.BOL\_ID=D.BOL\_ID

13. Update the EST Value as “0” in the PES\_STG\_BOL table, if the source is RAW to Stage and the record status should be “Automated”   
  
 UPDATE PES\_STG\_BOL with (updlock)

SET EST\_VALUE=0

WHERE EST\_VALUE IS NULL AND RECORD\_STATUS='AUTOMATED'

AND REF\_LOAD\_NUM\_ID=@LOADNUMBER

14. Update the EST Value as “0” in the PES\_STG\_BOL table, if the source is Update to Stage and the EST Value is null and the BOL\_ID should be available in PES\_BILLS\_UPDATE\_STAGING table   
 UPDATE PES\_STG\_BOL with (updlock)

SET PES\_STG\_BOL.EST\_VALUE=0

WHERE PES\_STG\_BOL.EST\_VALUE IS NULL

AND PES\_STG\_BOL.BOL\_ID IN (SELECT BOL\_ID FROM PES\_BILLS\_UPDATE\_STAGING WITH (NOLOCK) )

**Improvement Area:** 1. To remove unwanted system function like LTRIM () & RTRIM ()

2. To create proper index for the temp tables

3. To remove unwanted code, which is commented

4. To avoid IN condition and use INNER JOIN  
5. To put SET NOCOUNT ON in top of SProc