**Loan Accrual Process – Conversion from Monthly to Daily.**

We have 2 loan interest Accrual Process – Actual Process and Mirror Process. Difference between 2 processes is given below:

|  |  |  |
| --- | --- | --- |
| **SN** | **Actual Accrual Process** | **Mirror Accrual Process** |
| 1. | Run on **Quarterly** Basis. | Run on **Monthly** Basis. |
| 2. | Account Selection for Accrual happen using -  W\_SQL:= “SELECT …….  WHERE  PRODUCT\_CODE **IN** ( **productlist** )” | Account Selection for Accrual happen using -  W\_SQL:= “SELECT …….  WHERE  PRODUCT\_CODE **NOT IN** ( **productlist** )” |
|  | Note: **productlist** genetere using following procedure. All Loan A/C’s Interest application Frequency is “Q” or”H” or “Y”. Suppose, at January month end, CBD is ’31-JAN-2017’ and this date send to function that return wether this date is Monthend(M) or Quarterend(Q) or HalfyearEnd(H) or YearEnd(Y). Here, it will return **M**.  Since there is no Monthly appication frequency, **productlist** = ‘’ ”; And mirror process will accrual for all product.    Then, consider CBD “31-MAR-2016” where both process will run. How they will differentiate each other?  “31-MAR-2016” is a Quarterend and mention Function will return **“Q”**.  Generated **productlist** = “Q”;  So, at “31-MAR-2016”, Actual process accrues all quarterly interest applicable product and Mirror process handle rest of them.  Again, Consider CBD ‘30-JUN-2017’ where both process will run. For this CBD, Funtion will Return “H”. However, Halfyear end is also a Quarterend (Q).  Generated **productlist** = “Q”,”H”; | |
| 3. | Directly insert Data to LOANIA. | Insert Data to LOANIAMRR. Another process called Reversal transfer data from LOANIAMRR to LOANIA upon different business. |
| 4 | Post Accrual Voucher for **UC, SM, SS, and DF** and update Suspense Balance. | Post Accrual Voucher for only **UC and SM.** Morover suspense balance does not update. |

Now, if we want to change accrual process from monthly to Daily without posting accrual voucher then following scenario will happen.

**Scenario:**

1. Existing system using branch wise loop, create single run number for each branch and keep all the accounts details in **RTMPLNIA** after processing. Then another process post voucher by picking data from **RTMPLNIA** using run number and puts data into **LOANIA** or **LOANIAMRR** table. The above mentioned both task is being done in monthend and this is an integral task.
2. Though here run number is not a primary key, the system used this as primary key. If same run number exists in **RTMPLNIA** then the system delete previous run numbers data.
3. If we want to run this process daily then there should not be any dependency on run number and also we cannot delete data using run number. On Daily basis, rows will be inserted in this table but there will be no voucher posting. Voucher posting will do at month end. Since, there will 30 different run numbers available for 30 days in **RTMPLNIA** for each branch. So the posting processes pick data by using another mechanism.

**Mechanism:-TO\_CHAR (Accrual\_Date,”MON-YYYY”) = ’TO\_CHAR(AS\_ON\_DATE,”MON-YYYY”)’**

1. Data should not be deleted from **RTMPLNIA** in the middle of month.
2. Though daily accrual will be happen dailly, accrual date not change upon this. In this case for tracking next **Date** we can use column named **‘LNACNT\_RTMP\_LAST\_DATE’** of **LOANACNTS** table.
3. If a loan account status is change into **BL** at month end, then voucher posting will not be done using available data of this account for previous days (i.e 01-Jan to 30th Jan) at **RTMPLNIA**. Here, calculated accrual is available for 30 day’s for that month and column named **LNACNT\_RTMP\_LAST\_DATE** containss ‘30-JAN’ date.

If the account status upgrade from BL after 3 month, then accrual will not start from ‘30-JAN. It will start from Last Accrued Upto + 1 or Maximum Value Date of Mirror+1.

For this task the mechanism is:

If (‘MON-YYYY’’) of **LNACNT\_RTMP\_LAST\_DATE** and “MON-YYYY” of ASON DATE are not same then that date will not be considered.

1. The Accrual that is done in closure also inserts data in RTMPLNIA table. After Apply when **Applied\_Upto\_Date** update, available data at mention table become useless. So all data should be deleted from RTMPLNIA for this account.

**Manage only one Loan Accrual process:**

We know that there are some different characteristics in two processes.

First one is Account Selection where a Condition has added using IN / NOT IN operator.

Now we will remove the product list condition. Then if we run any process then all account will be selected. After that we have to see the Application Frequencyfor indivual account.

Lets todays date is “01-MAR-2017”. This is a **Quarter End Month (Q).** If application frequency of an account XXX is half yearly then the Flag Set will be ‘M’ since this is not the interest applicable month for this account. On the other hand if application frequency of an another account XXY is **Quarterly(Q)** then the Flag Set will be ‘A’ since this is the interest applicable month for this account . So the table looks like below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Run No | AC\_NO | Value\_Date | Accrual\_Date | Amt | Process\_Flag |
| 1 | XXX | 01-MAR | 01-MAR | 5 | ‘M’ |
| 1 | XXY | 01-MAR | 01-MAR | 6 | ‘A’ |
| ….. | ….. | ….. | …… | ….. | …. |

At month end (31-MAR-2017), both posting process will run.

Actual Posting process will select data from RTMPLNIA using flag **‘A’** and post voucher for UC, SM, SS, and DF as well as insert data into LOANIA and update accrual date.

Mirror posting process will select data from RTMPLNIA using flag **‘M’** and post voucher for UC, SM as well as insert data into LOANIAMRR and will not update accrual date.

Those will be the common behavior of posting process, they know where and which voucher they need to post. Only selection mechanism from RTMPLNIA will change.

**THE END**

**Summary of Customization:**

1. Remove

W\_SQL := W\_SQL || V\_APP\_FREQ\_STR; -- Note: Application Frequency

from PKG\_LOAN\_INT\_CALC\_PROCESS\_MRR package.

Feedback: OK

1. V\_INT\_APPL\_FREQ has taken from LNPRODPM for every account using a single query.

Feedback:

LNPRODPM table is already mapped at main W\_SQL query. So we can take from there.

1. Identify of Mirror / Actual done through following condition:

IF GET\_MQHY\_MON(V\_GLOB\_ENTITY\_NUM, LAST\_DAY(W\_PROCESS\_DATE), V\_INT\_APPL\_FREQ) = 1 THEN

T\_RTMPLNIA\_LNIA\_INSERT\_FROM (V\_RTMPLNIA\_INDX) := 'A';

ELSE

T\_RTMPLNIA\_LNIA\_INSERT\_FROM (V\_RTMPLNIA\_INDX) := 'M';

END IF ;

Feedback:

But here problem is function GET\_MQHY\_MON will call thousand times which of course a time consuming matter. We can follow the following procedure to generate V\_APP\_FREQ\_STR String.

declare

i integer;

V\_INT\_APPL\_FREQ CHAR(1);

TYPE T\_APP\_FREQ\_STR IS TABLE OF CHAR(1) INDEX BY VARCHAR2(3);

V\_APP\_FREQ\_STR T\_APP\_FREQ\_STR;

V\_PROCESS\_BY CHAR(1);

begin

V\_APP\_FREQ\_STR('Q') := 'Q';

V\_APP\_FREQ\_STR('H') := 'H';

-- V\_APP\_FREQ\_STR('Y') := 'Y';

V\_INT\_APPL\_FREQ := 'Y';

BEGIN

IF V\_APP\_FREQ\_STR(V\_INT\_APPL\_FREQ) = V\_INT\_APPL\_FREQ THEN

V\_PROCESS\_BY := 'A';

END IF;

EXCEPTION

WHEN NO\_DATA\_FOUND THEN

V\_PROCESS\_BY := 'M';

END GET\_IDCP\_AC;

DBMS\_OUTPUT.PUT\_LINE(V\_PROCESS\_BY);

end;

1. Update field LNACNT\_RTMP\_LAST\_DATE at LOANACNTS Table using W\_PROCESS\_DATE – 1.

Feedback:

Dependencies of W\_PROCESS\_DATE need to reduce because this date can vary on a particular EoD. W\_ASON\_DATE is important. However, its OK for this step.

1. For BL loan A/C handling part has not covered mention at feedback analysis point 6.

We will delete all data from RTMPLNIA table after every month end.

Suppose a loan A/C with DF status will accrue till 30-MAR and become BL at 31-DEC . Posting process will not consider BL account. So data will exist at table but not post at month end. Then after month end , deletion happen with keeping LNACNT\_RTMP\_LAST\_DATE date as 30-MAR-2016. Next time how it will manage?

Following segment of code need to change:-

IF T\_ACNTS(V\_CTR).LNACNT\_RTMP\_LAST\_DATE >= W\_PROCESS\_DATE THEN

W\_PROCESS\_DATE := T\_ACNTS(V\_CTR).LNACNT\_RTMP\_LAST\_DATE + 1 ;

END IF ;

Change to:

IF T\_ACNTS(V\_CTR).LNACNT\_RTMP\_LAST\_DATE IS NOT NULL AND

TO\_CHAR( T\_ACNTS(V\_CTR).LNACNT\_RTMP\_LAST\_DATE , ’MON-YYYY’)= TO\_CHAR(W\_PROCESS\_DATE,’MON-YYYY’)

AND T\_ACNTS(V\_CTR).LNACNT\_RTMP\_LAST\_DATE >= W\_PROCESS\_DATE THEN

W\_PROCESS\_DATE := T\_ACNTS(V\_CTR).LNACNT\_RTMP\_LAST\_DATE + 1 ;

END IF ;

1. PKG\_LNACCRUE\_REV\_PROC Package:

For reversal, the package inserts data into the RTMPLNIA table. To identify the data that are from reversal, we will insert “R” into the column RTMPLNIA\_INSERT\_FROM. We can’t insert “M” or “A” here because PKG\_LNACCRUE\_REV\_PROC package will run in quarter end and for the whole month data will be available for those accounts with “M” or “A”.

1. PKG\_LOANDAILYACCRPOST Package:

We will ignore data from RTMPLNIADTL table. All operations will take data from RTMPLNIA table. Previously data was inserted into the LOANIADTL/LOANIAMRRDTL table from RTMPLNIADTL table. As we have taken the RTMPLNIA table as base table, we will do all kind of operations from RTMPLNIA table. Previously data was picked from RTMPLNIA table only by run number. But now we will pick data by the flag “A” and ASSETCD\_NONPERF\_CAT <> 3 parameter.

1. PKG\_LOANDAILYACCRPOST\_MRR package :

As this package is called by PKG\_LNACCRUE\_REV\_PROC and PKG\_LOAN\_INT\_CALC\_PROCESS\_MRR, we have to track from which package it has been called and which flag(“R”/”M”) we have to pick. There is a flag called W\_CALL\_FROM. Here 1 means Reversal and 2 means mirror posting. If it 1 the flag will set as “R” and for “M” for 2.

1. There is a dependency in the package Sonali and Rupali in the accrual process. Sonali prefers to do the accrual based on the latest asset code. But Rupali had the business to accrual based on the real time asset code status. There is a flag (BANKCD\_ACCR\_DAILY\_ASSET\_CD) in MBANK(bankcd table) which identifies the bank (Sonali or Rupali). For Sonali we will pick the value with 0 and for Rupali we will pick 1 flag.

As we will pick the data from RTMPLNIA table at the end of month, all the data will be available in daily basis according to the asset code in the particular day. So, for Rupali we can take the RTMPLNIA\_NPA\_STATUS from the RTMPLNIA as it is. But for Sonali we need to pick this flag according to the current asset code. If the asset code is in UC or SM then we will pick 0 as RTMPLNIA\_NPA\_STATUS. Otherwise, if it is in SS or DF, it will pick 1 as RTMPLNIA\_NPA\_STATUS. Then based on the flag it will calculate whether it will go to income or suspense.

1. LOANIAPS :

There is a query on LOANIAPS table the runs for every account for every day of processing. It takes very much time for execution. Optimization has been done here by introducing some flags.

1. CHANGE IN MIRROR PACKAGE CALL FOR SONALI AND RUPALI :

We have changed the mirror package calling mechanism for both Sonali and Rupali. We changed W\_SQL where we join BANKCD AND INSTALL table to see whether Mirror package is applicable for Sonali or Rupali. If MIRROR\_APPLICABLE is ‘1’ then the Mirror package is being called for Sonali. If ‘0’ then it will not be called that means it’s for Rupali.

We have also changed in collection of UPDATE\_RTMPLNIA procedure. Here if MIRROR\_APPLICABLE=0 then we define T\_RTMPLNIA\_LNIA\_INSERT\_FROM collection value is ‘A’ else we define this collection value is ‘M’.