Contents

Program ZVMXPDFARCHIVE

Transaction: ZMXARCH

Program Layout

- Initial Screen: These are the screen fields parameters:

- Execution Mode: We have two modes.
    1. Archive Documents: Archiving only documents that are not archived yet;
        - It is also mandatory fill at least Billing document or Billing Date field for performance reasons.
    2. Rewrite Existing Archived Docs: Delete old archive PDF versions and create a new one.
        - It is also mandatory fill at Least Billing document for Performance reasons.
        - When the user press F8 or click on run will appear a message informing the user that the program is running in Rewrite mode.

- Refresh Button on ALV screen: For performance reasons the Archiving is madden in background. So, The final report cannot reflect the real archiving result at the first time. For this reason I created a new button I create a new functionality called "Refresh". Once the user execute the
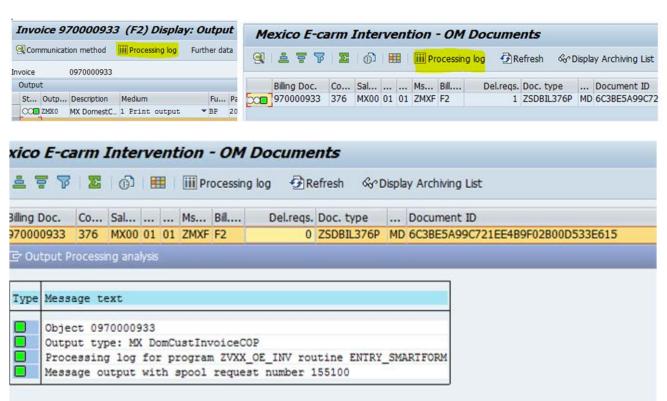
new transaction the program will show a message that the Archiving process starts and will request to the user wait a few minutes (or seconds) and click on refresh button.
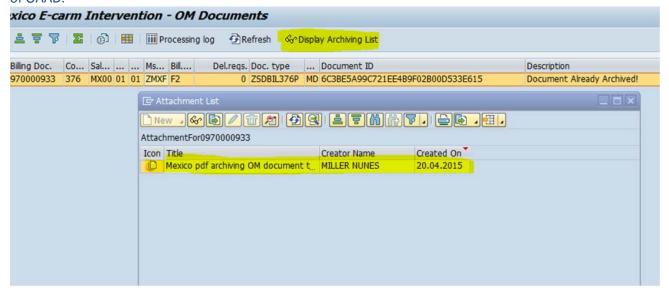
Mexico E-carm Intervention - OM Documents

Billing Doc.	Co...	Sal...	...	...	Ms...	Bil....	Del.reqs.	Doc. type	...	Document ID	Description
970000933	376	MX00	01	01	ZMXF	F2	1				Archiving Process Started. Please wait a few minutes and click on Refresh button

Once the archiving process was done and the user was clicked on Refresh button he/she will see a window like that:

Mexico E-carm Intervention - OM Documents

Billing Doc.	Co...	Sal...	...	...	Ms...	Bil....	Del.reqs.	Doc. type	...	Document ID	Description
970000933	376	MX00	01	01	ZMXF	F2	1	ZSDBIL376P	MD	6C3BE5A99C721EE4B9F02B00D533E615	Document Archived

- Processing Log: This functionality us copied from VF03 (Document output administration screen). This button has the same functionality of the original one: Display output Processing Log.

Invoice 970000933 (F2) Display: Output

Communication method | Processing log | Further data

| Invoice | 0970000933 |

Output

St...	Outp...	Description	Medium	Fu...	Pa
ZMX0	MX DomestC_	1 Print output	BP	20

Mexico E-carm Intervention - OM Documents

Billing Doc.	Co...	Sal...	...	...	Ms...	Bil....	Del.reqs.	Doc. type	...	Document ID
970000933	376	MX00	01	01	ZMXF	F2	1	ZSDBIL376P	MD	6C3BE5A99C72

xico E-carm Intervention - OM Documents

Processing log | Refresh | Display Archiving List

Billing Doc.	Co...	Sal...	...	...	Ms...	Bil....	Del.reqs.	Doc. type	...	Document ID
970000933	376	MX00	01	01	ZMXF	F2	0	ZSDBIL376P	MD	6C3BE5A99C721EE4B9F02B00D533E615

Output Processing analysis

Type	Message text
	Object 0970000933
	Output type: MX DomCustInvoiceCOP
	Processing log for program ZVXX_OE_INV routine ENTRY_SMARTFORM
	Message output with spool request number 155100

Technical Information | Current display variant | Print | 0 | 0 | 0

- Display Archiving List: This option will show all files archived via ECC. It will show the same files of OAAD.

Program Logic

Selection Screen Validation

Form `F_SCREEN_PARAMETERS_VALIDATION`

Before select the documents, the program validates the screen parameters.

1. If the parameter *Rewrite Existing Archived Docs*(P_DELETE) is not initial and no Billing Document was entered (S_VBELN initial) show the message below and stop program execution:
   "For Rewrite option Document Number is Mandatory!"

2. If P_DELETE is not initial and any Billing Document was entered, call the FM `POPUP_TO_CONFIRM` in order to show the message: "Rewrite option was flagged. Do you really want to delete the existing archiving and create a new one?". If the user click in YES continue the program, otherwise stop program execution.

3. If Billing Document and Billing date was in blank show the message below and stop the program execution:
   "Please fill at least Billing Document or Billing Date!"

Select Data

Form `F_SELECT_DATA`

1. We have to select Archiving document type associated with the output that we want to archive in order to validate if the documents was already archived or not. The Archiving document type is stored on table T685B field ARCOBJART. See the logic below:

```
SELECT SINGLE
       KAPPL
       KSCHL
       ARCOBJART
  FROM T685B
  INTO E_T685B
 WHERE KAPPL EQ C_V3
   AND KSCHL EQ P_KSCHL.

*If no output was found show message error:
*" Output & is not defined
  IF SY-SUBRC IS NOT INITIAL.
    MESSAGE I024(VN) WITH P_KSCHL.
    STOP.
  ENDIF.

  IF E_T685B-ARCOBJART IS INITIAL.
*  If no Archive Document type was configured show message error:
* "Maintain archiving parameter(s) for output type &1 (appl. &2)
    MESSAGE I096(VN) WITH P_KSCHL C_V3.
    STOP.
  ENDIF.
```

2. Then, we should validate if the Archive Document Type exists by selecting it on ArchiveLynk
Table TOADV.

```
SELECT SINGLE
        AR_OBJECT
        DOC_TYPE
  FROM TOADV
  INTO E_TOADV
 WHERE AR_OBJECT EQ E_T685B-ARCOBJART.
```

3. Select Billing Document Header (VBRK Table) according to screen parameters

```
SELECT VBELN
        FKART
        VKORG
        VTWEG
        FKDAT
        BUKRS
        KUNRG
        SPART
  FROM VBRK
  INTO TABLE TS_VBRK
 WHERE VBELN IN S_VBELN
   AND FKART IN S_FKART
   AND FKDAT IN S_FKDAT
   AND BUKRS EQ P_BUKRS.

*If no billing document was found show message error:
  IF SY-SUBRC IS NOT INITIAL.
* No billing documents selected
     MESSAGE I805(VF).

     STOP.

  ENDIF.
```

4. Get Bill-To party from Billing document (VBPA table)

```
* Get Bill-to party
   SELECT VBELN
          KUNNR
     FROM VBPA
     INTO TABLE TS_VBPA
      FOR ALL ENTRIES IN TS_VBRK
    WHERE VBELN EQ TS_VBRK-VBELN
      AND POSNR EQ C_000000
      AND PARVW EQ C_RE.

   IF SY-SUBRC IS INITIAL.
     SORT TS_VBPA BY VBELN ASCENDING.
   ENDIF.
```

ArchiveLink Configuration Check

Form `F_VALIDATE_ARCHIVELINK_CONF`

Call FM `ARCHIV_APPLICATIONINFO_GET` to validate the configuration of Archive system:

```abap
* Get/Check Archiving information
  CALL FUNCTION 'ARCHIV_APPLICATIONINFO_GET'
    EXPORTING
      AR_OBJECT                 = E_T685B-ARCOBJART
      SAP_OBJECT                = C_VBRK
    IMPORTING
      ARCHIV_ID                 = W_ARCHIV_ID
    EXCEPTIONS
      ERROR_COMMUNICATIONTABLE  = 1
      ERROR_CONNECTIONTABLE     = 2
      OTHERS                    = 3.

* If no ArchiveLink configuration was found show message error
  IF SY-SUBRC NE 0.
* "SAP ArchiveLink: Obj. type not assigned to
* storage syst.(Customizing) & & "
    MESSAGE ID SY-MSGID
         TYPE C_S
       NUMBER SY-MSGNO
         WITH SY-MSGV1
              SY-MSGV2
              SY-MSGV3
              SY-MSGV4.
    STOP.
* Implement suitable error handling here
  ENDIF.
```

Process data

Form `F_PROCESS_DATA`

For each document selected:

1. Get Archive information: We should call the FM `ARCHIV_CONNECTINFO_GET_META` (that are inside of FORM `F_GET_ARCHIVE_DATA`) to retrieve Archiving information passing OBJECT_ID = VBRK-VBELN and SAP_OBJECT = 'VBRK'. Then delete Archive files that does not have the same Archive Document Type. Each Archive Document Type means a different type of archive file such as Invoice PDF, Fiscal XML and so on.

```abap
    CALL FUNCTION 'ARCHIV_CONNECTINFO_GET_META'
      EXPORTING
        OBJECT_ID             = US_OBJECT_ID
        SAP_OBJECT            = US_SAP_OBJECT
      IMPORTING
        COUNT                 = US_COUNT
      TABLES
        CONNECT_INFO          = TA_CONNECTIONS
      EXCEPTIONS
        ERROR_CONNECTIONTABLE = 1
        OTHERS                = 2.
```

```
   IF NOT SY-SUBRC EQ 0.
     FREE TA_CONNECTIONS.
   ELSE.
* Check only documents that have the Same Archive Document type of Out
put
     DELETE TA_CONNECTIONS WHERE AR_OBJECT NE US_ARCOBJART.
   ENDIF.
```

2. If at least one Archive File was found for the same Archive Document Type (TS_CONNECTION is not initial)
    a. If P_DELETE is not initial: run the archive deletion logic (form F_DELETE_ARCHIVE).
       The program uses Method CL_ALINK_CONNECTION=>DELETE_BY_KEY and FM
       ARCHIVOBJECT_DELETE to delete the archive files.

```
* Delete all PDF documents related to the output
  LOOP AT TA_CONNECTIONS
      ASSIGNING <FS_CONNECTIONS>.

    CALL METHOD CL_ALINK_CONNECTION=>DELETE_BY_KEY
      EXPORTING
        MANDT       = <FS_CONNECTIONS>-MANDT
        SAP_OBJECT  = <FS_CONNECTIONS>-SAP_OBJECT
        OBJECT_ID   = <FS_CONNECTIONS>-OBJECT_ID
        ARCHIV_ID   = <FS_CONNECTIONS>-ARCHIV_ID
        ARC_DOC_ID  = <FS_CONNECTIONS>-ARC_DOC_ID
      EXCEPTIONS
        NOT_FOUND   = 1
        OTHERS      = 2.

    IF SY-SUBRC NE 0.
* Implement suitable error handling here
      CLEAR SY-SUBRC.
    ENDIF.

    CALL FUNCTION 'ARCHIVOBJECT_DELETE'
      EXPORTING
        DOC_TYPE               = E_TOADV-DOC_TYPE
        ARCHIV_DOC_ID          = <FS_CONNECTIONS>-ARC_DOC_ID
        ARCHIV_ID              = <FS_CONNECTIONS>-ARCHIV_ID
        SAP_OBJECT             = <FS_CONNECTIONS>-SAP_OBJECT
        AR_OBJECT              = <FS_CONNECTIONS>-AR_OBJECT
        OBJECT_ID              = <FS_CONNECTIONS>-OBJECT_ID
      EXCEPTIONS
        ERROR_ARCHIV           = 1
        ERROR_COMMUNICATIONTABLE = 2
        ERROR_KERNEL           = 3
        OTHERS                 = 4.


    IF SY-SUBRC NE 0.
* Implement suitable error handling here
      CLEAR <FS_CONNECTIONS>-ARC_DOC_ID.

    ENDIF.
  ENDLOOP.
```

b. If P_DELETE is initial: Select the last message output related with the current Billing document on NAST and insert it on IS_NAST internal table (form `F_SELECT_NAST_MESSAGE`) and insert the document on output table (`TS_OUTPUT_RW`) with the message 'Document Already Archived!' and Red Light sign (form `F_FILL_OUTPUT_ARCHIVED_ERROR`).

3. Run Archive logic.

Run Archive out Routine

Form `F_RUN_ARCHIVE_OUTPUT`

Once the output has the Archive configuration done and well formatted, the best choice to archive the PDF is create a new output only with archiving option. Therefore, the standard will do the job by itself.

```abap
** Fill NAST
  MOVE: SY-MANDT         TO NAST-MANDT,
        C_V3             TO NAST-KAPPL,
        US_VBRK-VBELN    TO NAST-OBJKY,
        SY-DATUM         TO NAST-ERDAT,
        SY-UNAME         TO NAST-USNAM,
        SY-UZEIT         TO NAST-ERUHR,
        US_VBRK-KUNRG    TO NAST-PARNR,
        C_BP             TO NAST-PARVW,
        P_KSCHL          TO NAST-KSCHL,
        C_EN             TO NAST-SPRAS,
        1                TO NAST-NACHA,
        1                TO NAST-VSZTP,
        C_VBRK           TO NAST-OBJTYPE,
*         w_printer        TO nast-ldest,
        C_LOCL           TO NAST-LDEST,
**        nast-dimme = 'X' => print immidiately
*         c_x              TO nast-dimme,
        TEXT-T02         TO NAST-TDCOVTITLE,
        2                TO NAST-TDARMOD.

  READ TABLE TS_VBPA
   ASSIGNING <FS_VBPA>
     WITH KEY VBELN = US_VBRK-VBELN
       BINARY SEARCH.

  IF  <FS_VBPA> IS ASSIGNED
  AND SY-SUBRC  IS INITIAL.

    MOVE <FS_VBPA>-KUNNR TO NAST-PARNR.

    UNASSIGN <FS_VBPA>.

  ENDIF.

  APPEND NAST TO IS_NAST_TMP.

* Clear NAST Memory
  CALL FUNCTION 'RV_MESSAGES_REFRESH'
```

```
      EXPORTING
        MSG_KAPPL = C_V3.

* Insert NAST entry on buffer tables
  CALL FUNCTION 'RV_MESSAGES_INSERT'
    TABLES
      TAB_XNAST = IS_NAST_TMP.

* insert NAST on database
  CALL FUNCTION 'RV_MESSAGES_UPDATE'
    EXPORTING
      MSG_KAPPL           = C_V3
      MSG_NO_UPDATE_TASK = C_X
      MSG_OBJKY           = NAST-OBJKY.

  COMMIT WORK.

*** Call Print Program
  PERFORM EINZELNACHRICHT_DIALOG IN PROGRAM RSNAST00 USING W_SUBRC.
**
  COMMIT WORK.
* add nast to internal table
  APPEND NAST TO IS_NAST.
```

If print process was executed properly get archive data and show message of success. To do so, we need to check if the document was archived after output had being finished by call the Form `F_GET_ARCHIVE_DATA` again.

For performance issues the SAP can take a long finished the archive process for each document. So:

1) If IS_CONNECTIONS_NEW is not initial: insert the document on output table (`TS_OUTPUT_RW`) with the message 'Document Already Archived!' and Green Light sign.
2) Otherwise: insert the document on output table (`TS_OUTPUT_RW`) with the message 'Archive not completed yet. Review Output Log and/or Archive List before run the transaction again!' and Yellow Light sign.
3) If some error occurs during Output execution: insert the document on output table (`TS_OUTPUT_RW`) with the message 'An Error occurred during Output execution. Please Review Log!' and Red Light sign.

Show Results in ALV
`Form F_SHOW_OUTPUT_RW`

Build the ALV using the class CL_SALV_TABLE. Register Event `ON_USER_COMMAND (Form F_HANDLE_USER_COMMAND)` and show ALV

User Command

Form `F_HANDLE_USER_COMMAND`

Gui Status: `SALV_TABLE_STANDARD`

For this program, we have three custom buttons. Those buttons are included on Gui Status `SALV_TABLE_STANDARD` and should be handle by FORM `F_HANDLE_USER_COMMAND`.

Items 1 - 7	&ETA		&ALL	&SAL		&OUP	&ODN
Items 8 - 14	&ILT		&UMC	&SUM		&RNT_PREV	
Items 15 - 21	&OL0	&OAD	&AVE		LOG Proces	REFRESH Refres	VIEW Displa
Items 22 - 28							
Items 29 - 35							

- Processing Log: this option has the same logic of the button Processing Log out output Visualization in VF03->Go To->Header->Output.
  To show the Popup with Log Messages we should call the FMs `WFMC_PROTOCOL_REFRESH`, `WFMC_PROTOCOL_LOAD` and `WFMC_PROTOCOL_LOAD`. Please see the Form `F_SHOW_OUTPUT_PROTOCOL` for more details.

- Display Archiving List: This option has the same functionality of OAAD transaction. It will show the Archived Document Files. Please see the Form `F_VIEW_ARCHIVING` for more details.

- Refresh: as I told before, for performance issues, the Archiving process is triggered in background, so at the moment that the ALV is showed some documents are not completely archived. The refresh button will check again if the archiving process was finished and will retrieve the ALV information. Please see the Form `F_REFRESH` for more details.