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USING CHGPF WITH TURNOVER® FOR ISERIES V100 TO CONVERT DATA WHILE CHANGING A PHYSICAL FILE

We've been asked occasionally if TURNOVER® for iSeries v100 can promote a physical file using the **CHGPF** command, instead of a more "normal" promotion method such as CSCO and then somehow mapping in the old data from the T#D library.

The answer is that, yes, it is possible to have TURNOVER® for iSeries v100 use the **CHGPF** command.

UNICOM Systems, Inc. CAUTION!

It is important that you understand that if you choose to use this method, you lose some of TURNOVER® for iSeries v100's fundamental strengths. Be aware that TURNOVER® for iSeries v100 cannot build and run a recovery form to restore files changed with the CHGPF type code!

Read about the advantages and disadvantages of implementing the CHGPF type code in TURNOVER® for iSeries v100 on page 6.

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WHAT IS THE CHGPF COMMAND?

Several releases ago, IBM added some functionality to the **Change Physical File** (**CHGPF**) command that permits a simple data conversion. **CHGPF** can be useful if you are just adding a new field to the end of a file because the OS does some low-level processing to preserve the existing logical file access paths, which makes it all happen faster.

The enhanced **CHGPF** command merges these previously separate steps into one:

1. Create the new physical file from the source code indicated in the **CHGPF** command.

2. Rebuild all logical files that are attached to the new physical file – *providing they share the same record format as the physical file*.

3. Copy the data from the old physical file into the new physical file, using the **CPYF** command with a ***MAP *DROP** option.

4. Delete the old physical file and its logicals.

5. Move the new physical file and its logicals back into place.

LIMITATIONS FOR USING CHGPF

There are several scenarios where **CHGPF** either doesn't work well, or doesn't work at all:

- **CHGPF** only does a ***MAP *DROP**, so if you need conversion logic to change the fields (such as computing the century of a MMDDYY date), you can't use **CHGPF**.

- **CHGPF** simply rebuilds the existing access paths as they are. If you wanted them to pick up the new field, you would have to handle that in a more "normal" fashion.

- If your logical files don't actually define the individual fields and instead simply pull in the record of the physical file, then it would appear rather confusing. Someone looking at the actual logical file would wonder why it is not really showing all the fields in the physical file.

- You must have the source code available on the machine during the conversion (this might be a problem on remote or production boxes).

- The physical file object has to be in place. This may be a problem if you have the **CHGPF** command on a form that is running up to a QA level, and the physical file does not exist there. (UNICOM Systems, Inc. recommends keeping a full complement of physical and logical files at the QA level, even if they contain a subset of records.)

HOW TO SET IT UP IN TURNOVER® FOR ISERIES V100

For the CHGPF technique to work, we need to tell TURNOVER® for iSeries v100 to do some special, out-of-the-ordinary processing as it promotes these types of objects. To accomplish this, we've created a new Change Management Scheme called **TCHGPF**. For more information about CM Schemes, the TURNOVER® for iSeries v100 Supplement entitled *Managing User-Defined Object Types* (**#59**).

Restore the TCHGPF change management scheme

This scheme is not initially configured in TURNOVER® for iSeries v100, so please follow these steps to configure it:

1. Locate the TCHGPF save file in library SOFTTURN (substitute in your product library name if different). If you cannot find this save file, you are probably running on an older release of TURNOVER® for iSeries v100 that did not have this scheme installed. The **TCHGPF** scheme and its method program are available for download from the SoftLanding Support Website - https://support.softlanding.com. Please contact Technical Support for further information.

2. From a TURNOVER® for iSeries v100 command, prompt the **TWRKCMSCH** command.

3. Press **F8**: Restore. Fill out the parms as follows, substituting library SOFTTURN with your TURNOVER® for iSeries v100 product library if necessary:

    a. If you found the save file already on your machine:

        ```
        SAVF(SOFTTURN/TCHGPF) TOSCHEME(*SAVSCHEME) REPLACE(*NO)
        RSTPGMS(*NO) RSTRSRCLIB(*NO)
        ```

    b. If you downloaded the save file from our support site:

        ```
        SAVF(SOFTTURN/TCHGPF) TOSCHEME(*SAVSCHEME) REPLACE(*NO)
        RSTPGMS(*YES) PGMLIB(*SCHEME) RSTRSRCLIB(*YES)
        RSRCLIB(*SAVLIB).
        ```

4. If your product library is not SOFTTURN, then you must change where the scheme should look for the programs that run any methods pointing to *DEFAULT. Select TCHGPF with option **2** and complete the parameters as follows:

    DFTPGM(*yourlib*/*TURNOVER)

    where *yourlib* represents the name of your product library.

Create a new type code

Now we need to create a new type code to tell TURNOVER® for iSeries v100 how to handle the unique requirements. Do the following:

1. Copy the physical file type code to create a new CHGPF type code.

2. Edit the lines as shown here:

```
  2/25/03                TurnOver Change a Type Code              YOUR COMPANY, INC.
 10:32:53                                                         YOURSYS


 Type code  . . . . .  CHGPF                    CM scheme  . . . . .  TCHGPF
 Description  . . . .  Promote file with CHGPF   Attribute  . . . . .  TCHGPF
 Object type  . . . .  *FILE                    Source file name . .  QDDSSRC
 Sequence . . . . . .  410                      Data object  . . . .  Y COPR
 Create command . . .  CHGPF FILE("&LI"/"&OB") SRCFILE("&SL"/"&SF") SRCMBR("&SM")
 SIZE(*NOMAX)


                                     "&RF" = Reference      "&X0"-"&X9" = Exit
 "&OB" = Object name                 "&TO" = Test object name
 "&LI" = Library name                "&TL" = Test object library name
 "&TY" = Type code                   "&TR" = Target release
 "&SM" = Source member name          "&FM" = From source member name
 "&SF" = Source file name            "&FF" = From source file name
 "&SL" = Source library name         "&FL" = From source library name
 "&U0" = Generation options          "&U1" = Product library (commands)
 "&U2" = ILE Debugging View          "&U3" = ILE Optimization Level
 "&U4" = PMTFILE Message File         "&U5" = Sort Sequence
 "&U6" = ILE Compiler Options        "&U7" = Activation Group
 "&U8" = LF Parent, Lib, Members     "&U9" = ILE Compiler Options
 F3=Exit  F4=Prompt/select   F7=Applications  F12=Cancel  F22=Long command
```

3. Move your cursor to the *CM Scheme* field, prompt with **F4**, and select "TCHGPF."

4. *Description*: "Promote file with CHGPF"

5. *Attribute*: "TCHGPF"

6. *Data object* and method: "Y COPR"

7. *Create command*: **CHGPF FILE("&LI"/"&OB") SRCFILE("&SL"/"&SF") SRCMBR("&SM")**

8. Press **F7** and push this type code into all levels of all desired applications.

9. Exit and save the new type code.

10. If you will distribute TURNOVER® for iSeries v100 forms containing this new type code to remote TURNOVER® for iSeries v100 machines, you must repeat this process on each of those remote machines.

Change and promote the physical file

Follow these steps to build a form that will promote your file:

1. Add the physical file to the worklist, specifying the CHGPF type code.

2. Check out the object.

3. Edit the source code.

   Note: Worklist option **36** defaults to the **CHGPF** command, which is <u>not</u> what you want here at development. You can use the standard **CRTPF** command on your command line, or create a two-position worklist short cut to create and unit test the new file.

4. Build the form at the next level.

5. Edit the form.

6. TURNOVER® for iSeries v100 is set up to automatically add to the form any recompile-only objects it finds in the cross-reference. This is fine for programs, but it's probably not what you want for logical files in this case, because the **CHGPF** command handles this step already. Delete the logical file(s) TURNOVER® for iSeries v100 added automatically from the form.

7. *Exit and save the form.* ***Remember to change the "Check cross-reference" line to "No"!!*** Otherwise, TURNOVER® for iSeries v100 will re-add all of the items that you just deleted.

8. Run the form.

Important Notes

- By definition, the IBM **CHGPF** command is not replacing the original object, so you lose the TURNOVER® for iSeries v100 advantage of archiving (and recovering) the original file and its data. To help protect you, however, the new **TCHGPF** CM Scheme does duplicate the existing file, with its data, into the T-Form #-D library.

- Normal source archiving also occurs, IF that option is configured for your application.

9. If you have additional levels above this one, you can simply copy the form. TURNOVER® for iSeries v100 will NOT re-add the logicals from the cross-reference UNLESS you open the form in edit mode and then forget to turn off the "check cross-reference" switch on the way out.

WHAT DO I LOSE BY DOING IT THIS WAY?

- TURNOVER® for iSeries v100 can't help you maintain company standards, such as object owner and access authorities (very important on a physical file!)

- You can't use worklist option **36=Compile** at the development level because this is a source-only object. You could use a two position user-defined option or the command line to compile it. However, TURNOVER® for iSeries v100 won't be helping you with default create command parameters, the way it was compiled last time, ownerships, and so on.

- You must remember to manually override TURNOVER® for iSeries v100's automatic impulse to add the logical files as recompile-only objects on each form.

- You can't use TURNOVER® for iSeries v100 recovery forms to restore objects that have been archived using the **CHGPF** process.

WHAT DO I GAIN BY DOING IT THIS WAY?

- Obviously, the biggest gain is that you don't have to suffer the extra downtime associated with a normal data conversion, especially when it comes to rebuilding the access paths. That's not to say you are not having some downtime, it just isn't as much, mostly because of the time saved in the access path rebuilds.

ARE THERE ANY OTHER OPTIONS?

There is another option.

If you prefer to have all of the benefits of a more normal promotion (such as archiving, recoverability, and so on), but you can't afford the downtime, then you might want to look into another product we offer, called TURNOVER® for PDQ v100.

TURNOVER® for PDQ v100 can perform data conversion, including the access path builds, while your users are still signed on. It does all the data conversion work in a side staging file. The only downtime that occurs happens at the very end of the process, when TURNOVER® for PDQ v100 gets an exclusive lock on the file, moves the old file out, and replaces it with the new file.

Best of all, TURNOVER® for PDQ v100 snaps right into TURNOVER® for iSeries v100 as one seamless interface! TURNOVER® for iSeries v100 invokes TURNOVER® for PDQ v100 during form processing.

If you want more information about TURNOVER® for PDQ v100, contact your UNICOM Systems, Inc. Sales Representative.