APPX LIBRARY

Move APPX/IO files to an RDBMS and roll back

APPX 6.2.1 · Migration rehearsal with PostgreSQL 18.7

> Rehearse a file conversion with APPX Change FMS. Compare record counts, keys, and encoded values before allowing writes, and preserve new records if you roll back.

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CHAPTER 1

Prepare the two systems

First set up the RDBMS and prove that APPX can create, save, and reopen the cookbook's scratch file. Use the cookbook that matches your APPX version, engine bitness, operating system, and driver. RDBMS cookbooks by platform

Rehearse on a copy of the APPX application and database with its matching design and runtime files. This walkthrough uses `TST / DMO / COUNTRY` on APPX 6.2.1, with native FMS type `9` and PostgreSQL FMS type `6`. Record the actual native FMS type and group for each file. A type `1` source returns to type `1` if you roll it back.

Record before conversion	What to verify
File specification	Database, application, version, file name, native FMS type, group, effective path, field overrides, and key definitions.
RDBMS destination	FMS group, identity, schema, resulting table name, database encoding, connection encoding, and any proxy locking settings.
Write access	APPX users, scheduled work, integrations, and direct database writers that must pause at conversion and rollback.

Use a dedicated target whose tables can be created or replaced. If a target table already has data, identify its owners and take a backup before proceeding.

CHAPTER 2

Back up and count the source

1. Stop writes to the source. Close the APPX sessions that can still hold the file open. Back up the matching APPX/IO data and key files, design structure, and administration configuration that resolves the original file. Test the backup by opening it in a separate APPX test database with the original file specification.
2. Open **Data File Management** and select only the file to convert. Use the native integrity check under **Verify Files Menu** or the analyzer on a working copy. Record active rows and verify every key.
3. Save the active key list, the values of representative records, and the totals you will compare after the move. Use **Export Files (CSV)** to keep a readable baseline if it covers all the fields needed for comparison. Check how the export represents non-ASCII characters before opening it in a spreadsheet or editor.

For the `COUNTRY` rehearsal, save `CANADA / PROVINCE / 2` and `ENCODING / Québec / 1`. Confirm both in a fresh APPX session. The working-copy analyzer reported two active records and two entries on the primary key.

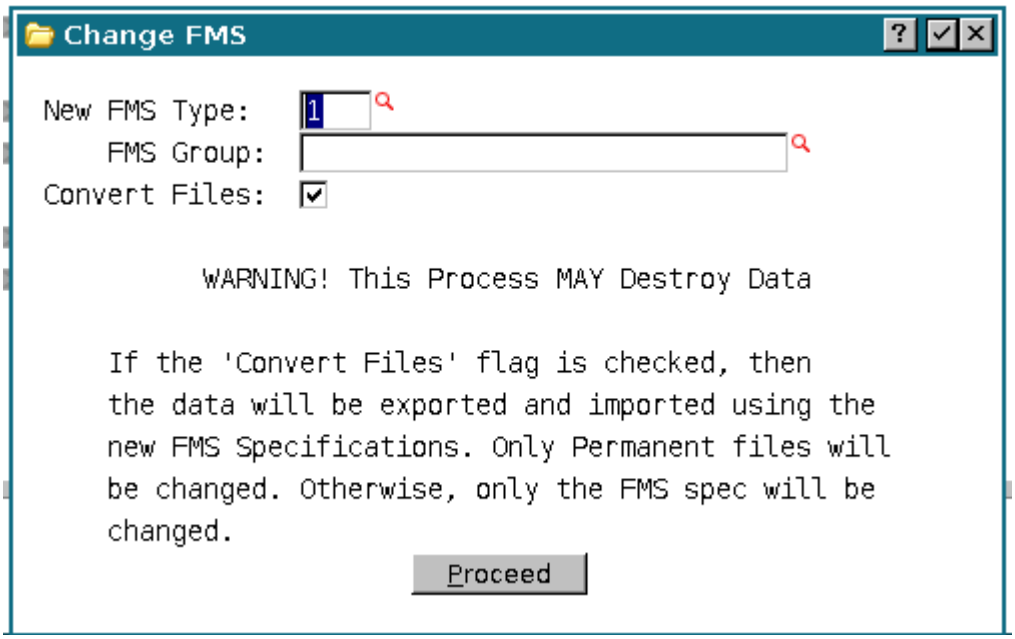
```
COUNT REC
VERIFY KEY #ALL
QUIT
```

Use the matching `.dat` and `.key` pair for the analyzer. APPX analyzer and recovery procedures

CHAPTER 3

Convert one file

1. Open **System Administration → Database/Applications → Databases / Applications.** Select the scratch database, then **Related Applications → Database Management** on the application row.
2. In **File Selection**, click **Unselect All.** Select `COUNTRY` and return to **Data File Management.** Confirm that only one file is selected.
3. Click **Change FMS.** Set **New FMS Type** to the target type and **FMS Group** to the tested group. The PostgreSQL example uses `6` and `APPX-POSTGRES`.
4. Leave **Convert Files** checked and click **Proceed.** Confirm the export and import count and save the log.



Change FMS exports and imports the selected files when Convert Files is checked.

WARNING! This Process MAY Destroy Data. Confirm the selected database, application, files, and verified backup before clicking **Proceed.** Clearing **Convert Files** changes the specification without moving records.

Change FMS

DB	Ap	Ver	File	Status/Message
TST	DMO	00	COUNTRY	2 Records Exported/Imported. FMS Changed.

Change FMS reports two records exported and imported in the rehearsal.

APPX Change FMS documentation

CHAPTER 4

Verify the destination

1. Open a fresh APPX session. Confirm the target type and group in **File Specifications**. Reopen known records using their keys and check the accented value in the original screen.
2. Connect to the RDBMS independently. Confirm the selected database and schema. Compare the row count and the complete primary key list with the source baseline. For a compound key, compare all its columns together.
3. Check the indexes against the application's keys, including uniqueness where required. Compare important numeric values, dates, blank and null handling, non-ASCII text, and business totals. Compare relationships to other files before moving a related set of records into service.

For PostgreSQL, the example returns two rows, two distinct keys, and `5175c3a9626563` for `Québec` in the UTF-8 database.

```
SELECT COUNT(*) AS rows, COUNT(DISTINCT country_name) AS keys
FROM public.appx_tst_dmo_country;
SELECT btrim(country_name), btrim(country_region_label), country_no_words,
       encode(convert_to(btrim(country_region_label), 'UTF8'), 'hex') AS utf8_hex
FROM public.appx_tst_dmo_country
ORDER BY country_name;
SELECT indexdef FROM pg_indexes
WHERE schemaname = 'public' AND tablename = 'appx_tst_dmo_country';
```

CHAPTER 5

Put the file in service

Rehearse the rollback while the data is disposable. For the scheduled move, repeat the backup and baseline with writers stopped. Use the same verified target configuration, convert the selected files, and repeat the destination checks before letting users and jobs write again.

Record the cutover time and the database, schema, and FMS group that now serve each file. Preserve the original APPX/IO backup and take a backup of the SQL destination. Keep the logs and key comparisons with the change record.

CHAPTER 6

Roll the file back

SQL target state	Rollback procedure
No writes since cutover	Keep writers stopped. Restore the verified APPX/IO snapshot and matching original file specification and group. Reopen the restored file in a new APPX session and compare its counts, keys, and records with the source baseline.
Writes occurred, or you cannot rule them out	Stop APPX and direct SQL writers. Back up the current SQL tables and capture their record counts, key sets, and important field values. Rehearse the reverse conversion with that current data in a copy. In **Change FMS**, set the original native type and group, check **Convert Files**, and compare the restored APPX/IO file with the current SQL baseline before resuming writes.

In the rehearsal, `AFTERMOVE / Québec / 1` was added while PostgreSQL served the file. After backing up the SQL table, the reverse **Change FMS** used type `9`, a blank group, and **Convert Files** checked. APPX reported three records exported and imported. On the resulting APPX/IO working copy, `COUNT REC` and `VERIFY KEY #ALL` found three active records and three key entries. A fresh APPX session reopened the three keys, including `AFTERMOVE` and its accent.

Change FMS

DB	Ap	Ver	File	Status/Message
TST	DMO	00	COUNTRY	3 Records Exported/Imported. FMS Changed.

The reverse conversion includes the record added after cutover.

Country Address Format Rules

Country Name	Region Label	City/Region On Sep Ln?	# Words In Postal Co...	Postal Code Location
AFTERMOVE	Québec		1	AFTER REGION
CANADA	PROVINCE		2	AFTER REGION
ENCODING	Québec		1	AFTER REGION

COUNTRY in a fresh APPX session after returning to APPX/IO.

CHAPTER 7

Troubleshooting

The counts differ. Save the conversion log. Confirm the selected files, target schema, rejected records, and unique keys. Keep writes stopped until you can account for each discrepancy.

The row count matches but a key is missing. Compare the full sorted key lists and check added and removed keys. An extra row can hide a missing row in the count.

An accent changed or the import reports an encoding error. Confirm the APPX field storage, ODBC driver and client encoding, and database encoding. Compare the source and destination as text and check the bytes or code points in the destination. Reproduce the problem on a scratch copy before attempting a second conversion.

The FMS changed but the data did not move. Check that **Convert Files** was selected. Preserve the source backup and inspect both file locations before retrying.