HOW TO CONVERT TO EXTERNAL DATABASES

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- Let's convert the Cats demo from using PxPlus native keyed files to using a MariaDB external database

- **Important:** Make sure you **back up** your PxPlus native keyed files before you start
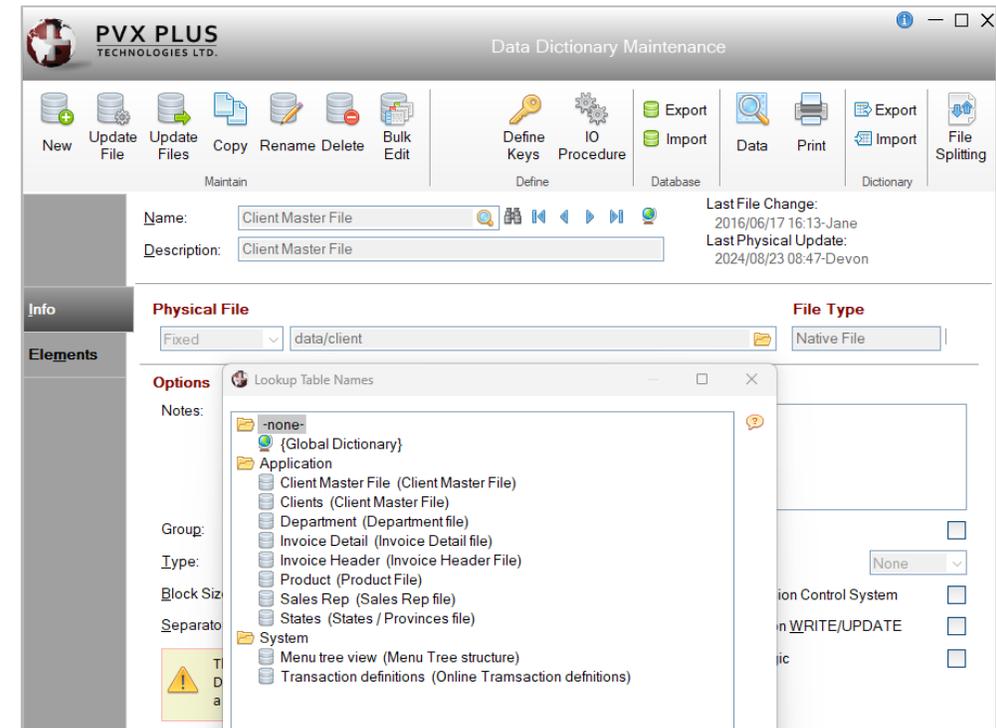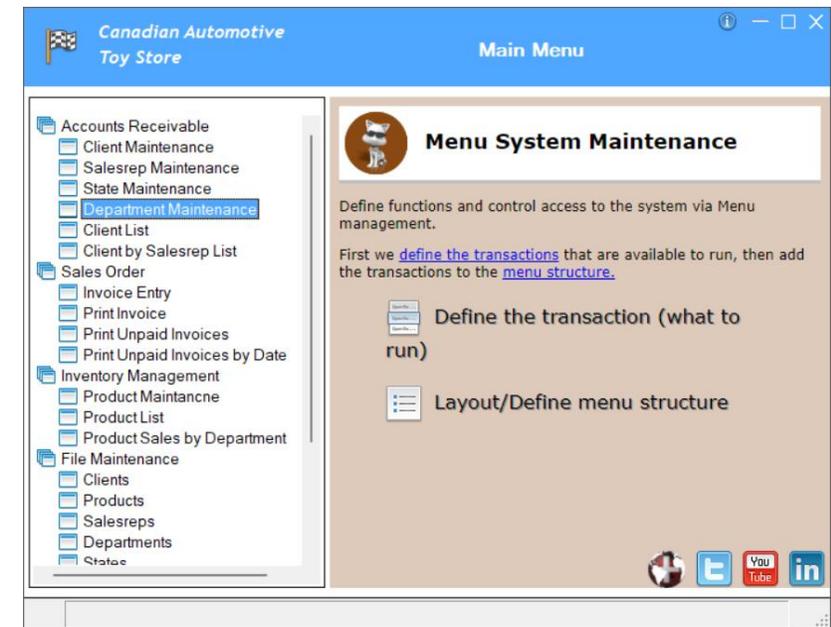
HOW TO CONVERT TO EXTERNAL DATABASES

- **Install and setup a database server if you don't already have one**

  - Use the software/tools provided by the database vendor to install and set up the database server

  - We used **MariaDB** (free MySQL)

- **Create a new database/schema on the server where the exported tables will go**

  - Use database management software or command line tools provided by database server to create the database/schema

  - We used **MySQL Workbench**
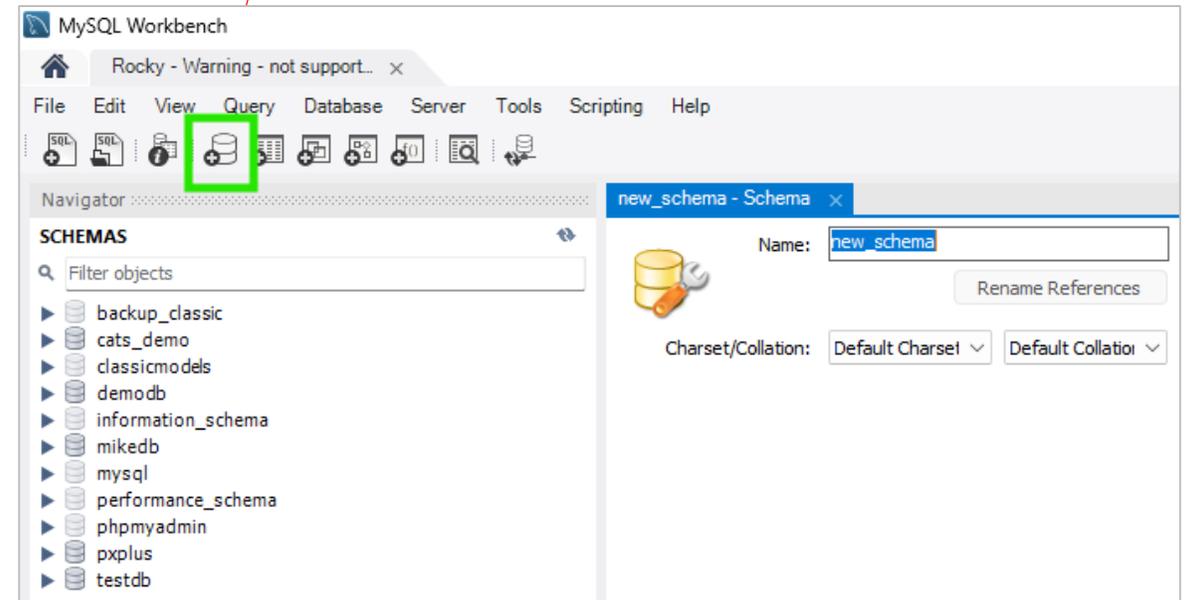
HOW TO CONVERT TO EXTERNAL DATABASES

- **May need to install database connector**

  - [MYSQL], [DB2], and [OCI] interfaces all require a database connector

  - [ODB] requires a ODBC driver for the database and a data source name

- **Working with MariaDB, we need [MYSQL] interface so must download MySQL C Connector**

- **Install/Extract library file (libmysql.dll/libmysqlclient.so) to PxPlus install directory**

  - Use **System Analysis Tool** to test if [MYSQL] interface is working
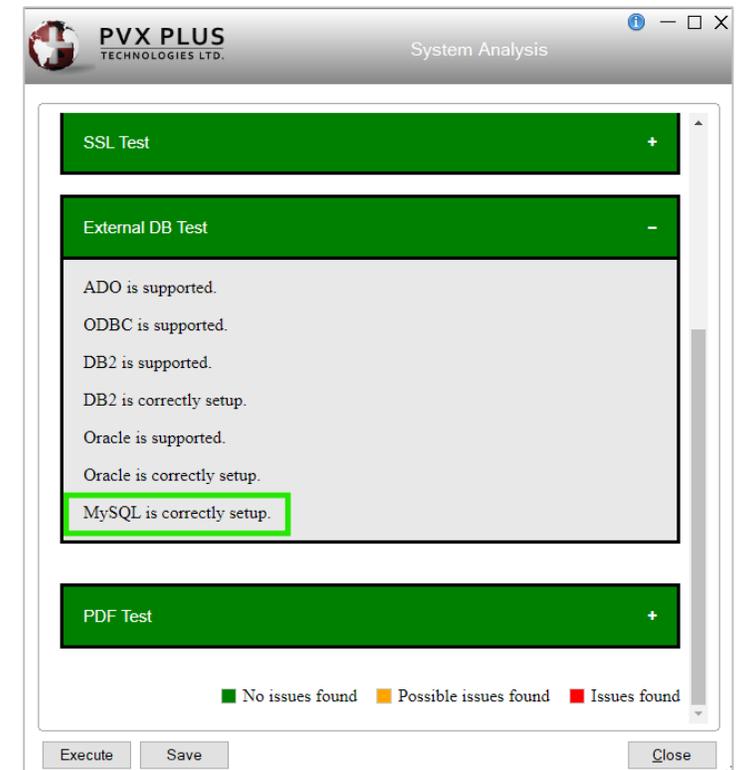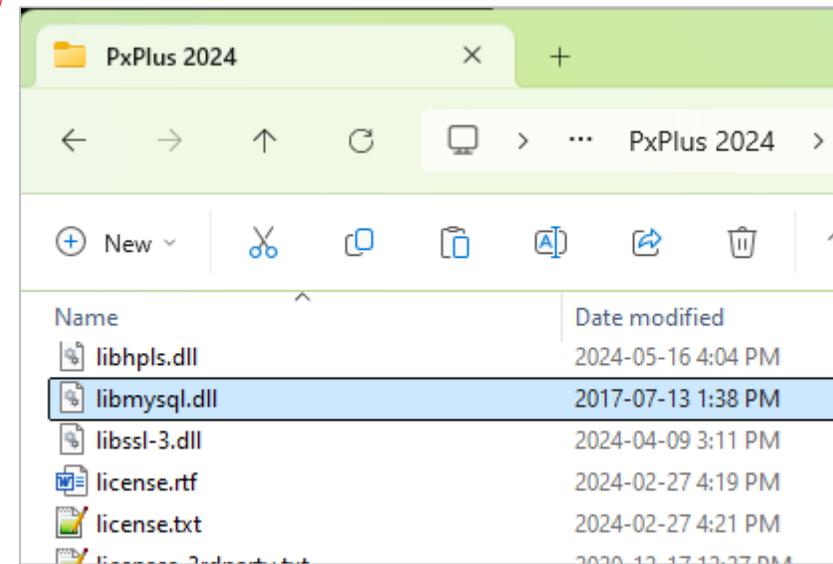
HOW TO CONVERT TO EXTERNAL DATABASES

- **Open the Data Dictionary**

  - On the IDE, expand the Data Management category and click on Data Dictionary Maintenance

- **Launch the Bulk Database Export Utility**

  - In Data Dictionary Maintenance, click the Export button in the Database section of the top toolbar

- **Input the connection information to connect to your database (in our case, MariaDB)**

- **Click the Load Tables button**

HOW TO CONVERT TO EXTERNAL DATABASES

Create Database Connection File

Database File Type: Link File

Link File Path:

Create   Cancel
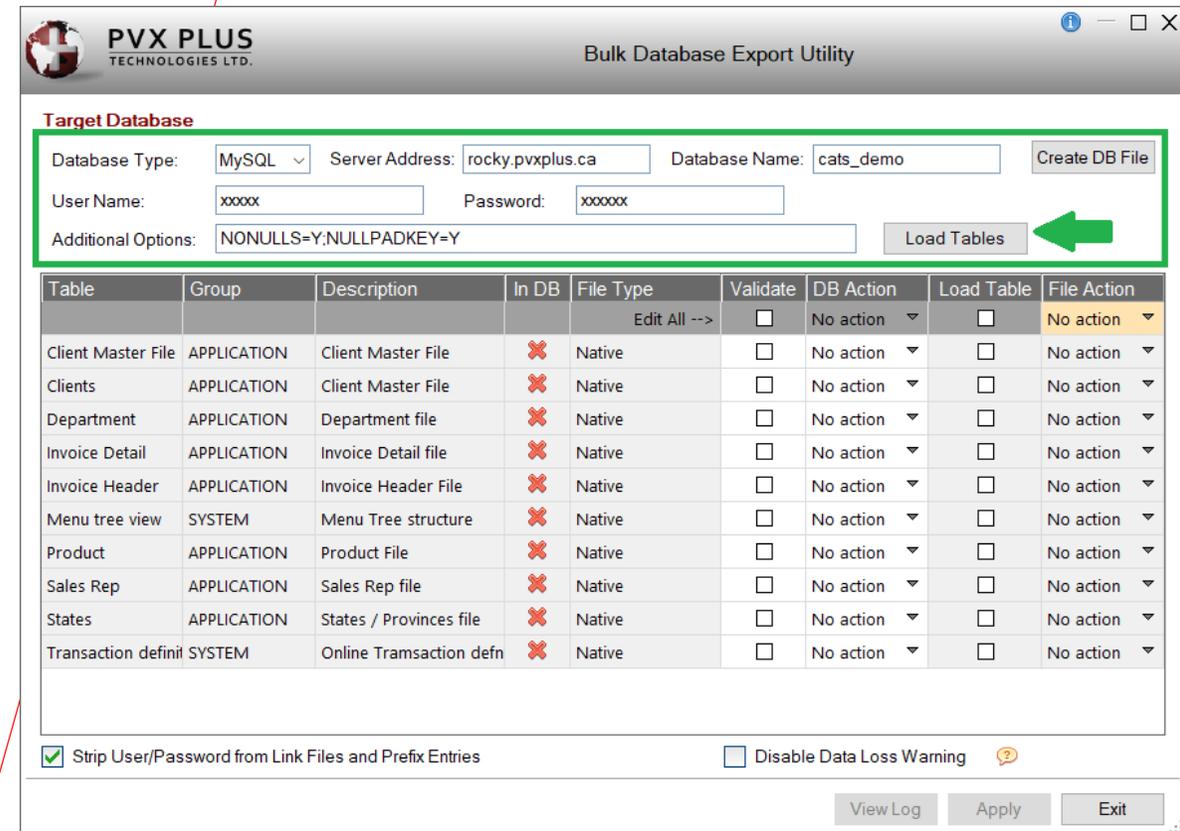
- **To prevent plain text login credentials and make it easier to change login credentials in the future:**

  - Click the **Create DB File** button to create a database Link File

  - Modify DB Link File to use a global variable for the User Name and Password

  - Add definition of User and Password and an OPEN of the DB Link File to the START_UP program

  - Password protect the START_UP program
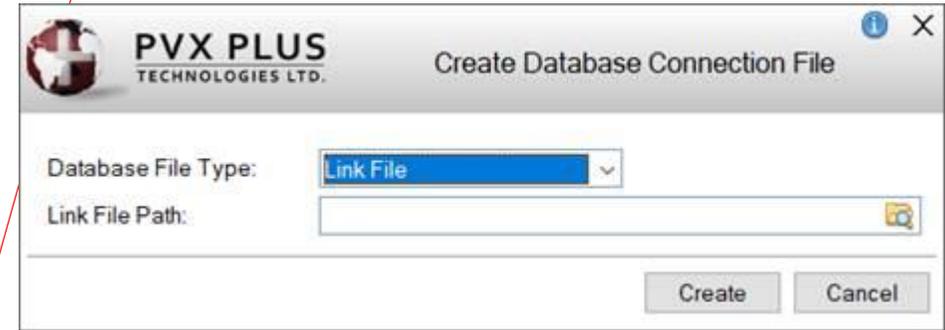
Link File

```
="USER="+%myDBUser$
="PSWD="+%myDBPswd$
```

START_UP

```
%myDBUser$="xxxxxx"
%myDBPswd$="xxxxxx"
open (gfn)myDBLinkFile
%myDB=lfo
%myDBUser$=""
%myDBPswd$=""
```

HOW TO CONVERT TO EXTERNAL DATABASES

- **Scroll through the list of tables from the data dictionary, and for all the tables you want to export:**

  - Click the **Validate** check box to ensure that the data in the file matches the data definition

    - If not a match, fix the definition or the data so that they do match; otherwise, the database will display an error when trying to load the data

  - Select the **Create Table** option from the **DB Action** drop-down list to create the table in the database

  - Click the **Load Table** check box to copy the data from the PxPlus native file to the database table

  - Select the **Create Link File** option from the **File Action** drop-down list to create a Link File to the table in the database, overwriting the PxPlus native file

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Bulk Database Export Utility

Target Database

Database Type:	MySQL	Server Address:	rocky.pvxplus.ca	Database Name:	cats_demo	Create DB File
User Name:	xxxxx		Password:	xxxxxx		
Additional Options:	NONULLS=Y;NULLPADKEY=Y					Load Tables

Table	Group	Description	In DB	File Type	Validate	DB Action	Load Table	File Action
				Edit All -->	☑	Create or Mr▽	☑	Create Link f▽
Client Master File	APPLICATION	Client Master File	✖	Native	☑	Create Table▽	☑	Create Link f▽
Clients	APPLICATION	Client Master File	✖	Native	☑	Create Table▽	☑	Create Link f▽
Department	APPLICATION	Department file	✖	Native	☑	Create Table▽	☑	Create Link f▽
Invoice Detail	APPLICATION	Invoice Detail file	✖	Native	☑	Create Table▽	☑	Create Link f▽
Invoice Header	APPLICATION	Invoice Header File	✖	Native	☑	Create Table▽	☑	Create Link f▽
Menu tree view	SYSTEM	Menu Tree structure	✖	Native	☑	Create Table▽	☑	Create Link f▽
Product	APPLICATION	Product File	✖	Native	☑	Create Table▽	☑	Create Link f▽
Sales Rep	APPLICATION	Sales Rep file	✖	Native	☑	Create Table▽	☑	Create Link f▽
States	APPLICATION	States / Provinces file	✖	Native	☑	Create Table▽	☑	Create Link f▽
Transaction defini	SYSTEM	Online Tramsaction defn	✖	Native	☑	Create Table▽	☑	Create Link f▽

☑ Strip User/Password from Link Files and Prefix Entries   ☐ Disable Data Loss Warning ❓

View Log | Apply | Exit

HOW TO CONVERT TO EXTERNAL DATABASES

- **Make sure that the Strip User/Password from Link Files and Prefix Entries check box is selected**

- **Select the Disable Data Loss Warning check box to avoid a warning for each table exported**

  - This is why we said earlier to backup your files so that you can always go back

- **Click the Apply button to perform the export**

  - When completed, a message box displays to list all the changes that were done

HOW TO CONVERT TO EXTERNAL DATABASES

- **Click the View Log button to view/save/print the log**

  - If any errors occurred, more details can be found in the log

- **Exit the Bulk Database Export Utility**

PVX PLUS TECHNOLOGIES LTD.   Bulk Database Export Utility

Target Database

Database Type: MySQL	Data Source: rocky.pvxplus.ca	Database Name: cats_demo	Create DB File
User Name: xxxxx		Password: xxxxxx	
Additional Options: NONULLS=Y;NULLPADKEY=Y			Load Tables

Table	Group	Description	In DB	File Type	Validate	DB Action	Load Table	File Action
					Edit All -->	☐	No action	☐	No action
Client Master File	APPLICATION	Client Master File	✔	MySQL Link	☐	No Action	☐	No action
Clients	APPLICATION	Client Master File	✔	MySQL Link	☐	No Action	☐	No action
Department	APPLICATION	Department file	✔	MySQL Link	☐	No Action	☐	No action
Invoice Detail	APPLICATION	Invoice Detail file	✔	MySQL Link	☐	No Action	☐	No action
Invoice Header	APPLICATION	Invoice Header File	✔	MySQL Link	☐	No Action	☐	No action
Menu tree view	SYSTEM	Menu Tree structure	✔	MySQL Link	☐	No Action	☐	No action
Product	APPLICATION	Product File	✔	MySQL Link	☐	No Action	☐	No action
Sales Rep	APPLICATION	Sales Rep file	✔	MySQL Link	☐	No Action	☐	No action
States	APPLICATION	States / Provinces file	✔	MySQL Link	☐	No Action	☐	No action
Transaction defini	SYSTEM	Online Tramsaction defn	✔	MySQL Link	☐	No Action	☐	No action

☑ Strip User/Password from Link Files and Prefix Entries   ☑ Disable Data Loss Warning

[View Log] [Apply] [Exit]

```
Export database Log - by Devon run 2024/08/23 12:21          Page: 1

1. Validate file (data/client) for: Client Master File

2. Replace database table record for: Client_Master_File in: [MySQL]cats_demo

3. Load data from file (data/client) for: Client_Master_File in: [MySQL]cats_
demo

4. Create link file (data/client) for: Client_Master_File in: [MySQL]cats_dem
o

5. Validate file (data/client) for: Clients

6. Create database table record for: Clients in: [MySQL]cats_demo

7. Load data from file (data/client) for: Clients in: [MySQL]cats_demo

8. Create link file (data/client) for: Clients in: [MySQL]cats_demo

9. Validate file (data/department) for: Department

10. Replace database table record for: Department in: [MySQL]cats_demo

11. Load data from file (data/department) for: Department in: [MySQL]cats_demo

12. Create link file (data/department) for: Department in: [MySQL]cats_demo
```

HOW TO CONVERT TO EXTERNAL DATABASES

- **Now if you look in the data dictionary, the files exported will display MySQL Link File as File Type**

- **Now if we open our Cats demo, it will work as before but the data is in the MariaDB database**