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DataFlex and SQL Tables – Converting, Connecting, Refreshing and Repairing

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Working with SQL Tables in DataFlex

- In this presentation we will look at maintaining SQL tables from inside of the DataFlex Studio
- This consists of
 - Converting embedded tables to SQL databases
 - Connecting to existing SQL databases
 - Keeping the SQL table synchronized with the DataFlex table definition
- In DataFlex 19.0 there are a lot of new changes in this area
 - We have new capabilities and new ways to describe this
- You can now Convert, Connect, Refresh and Repair

Convert

- You perform this using the “SQL Conversion Wizard” from the Studio’s Database menu
- Used to convert from one database format to another.
 - For the most part, we are talking about Embedded to SQL
- The goal is to make this seamless. You convert, compile and run.
- What it does
 - Copies tables in Filelist to an SQL Database
 - Copies table definitions
 - Copies data
 - Creates INT file with information needed to define your table. This includes custom features not stored in the table itself
- Can be and should be used with managed connections

Convert

- A conversion retains
 - Table number in Filelist
 - Table names
 - Order of table columns
 - Order of index numbers
- Choices you must make
 - Define PKs - yes
 - Use Standard tables - if possible
 - ANSI or OEM - ANSI
 - Convert Definition only
- Considerations
 - Overlaps (Underlaps)
- When it goes wrong
 - you cannot "re-convert" - make sure SQL tables don't already exist
 - If problems, don't try to use Connect to solve this, maybe repair

Connect

- You perform this using the “SQL Connect/Repair Wizard” from the Studio’s Database menu. Within the wizard, select the “Connect” option
- Use this to connect to existing SQL tables in a database
- It creates a DataFlex definition of an SQL table, based on the SQL table’s metadata
- It assigns tables to empty Filelist slots (you don't control this)
- It assigns DataFlex data types based on SQL types
- It assigns indexes
 - If index is unique, it assigns this as a unique index
 - If index is non-unique, it creates a client side index that makes it unique
- It assigns relationship if it finds them (looks for PKs and FKs)

Connect

- It makes *no changes* to the actual database tables
- It skips tables that it thinks are connected (already defined in Filelist with an INT file)
- It ignores any existing INT file information.
 - If you've already connected you might want to use the Studio Refresh option or the wizard's Repair or Custom option

Refresh

- You perform this using the “Refresh Table” option from Studio’s Database menu or Table Explorer
- Is used to make sure your INT file is up to date with the table definition
- It’s safe - It makes no changes to the actual database tables
- It maintains table number
- It merges information with the INT and the table definition and doing the best it can
- It only changes the INT, FD and TAG definitions. Back them up and you can play all day.
- Very useful to catch typical back-end changes (new columns, new indexes, changed column length, etc.)
- It skips tables that are not yet connected.

Refresh

- Limitations
 - The table must be openable to do a refresh
 - INT files can get corrupted to the point where they can not be used to open the table
 - Some back end table changes might be too big to expect an INT merge to make sense
 - Examples might be column inserts, deletes, important index changes or deletions
 - The good news is those kinds of big changes rarely happens
 - When Refresh won't do, try Repair or Custom

Repair

- You perform this using the “SQL Connect/Repair Wizard” from the Studio’s Database menu. Select the “Repair” option in the wizard
- Is the next step when you cannot do a refresh
 - It can open tables that refresh cannot (because of how the table is selected)
- Other than that it is pretty much the same as Refresh
 - It’s safe - It makes no changes to the actual database table
 - It maintains table number
 - It merges information with the INT and the table definition
 - It only changes the INT, FD and TAG definitions
 - Very useful to catch typical back-end changes
 - It skips tables that are not yet connected.

Repair

- Limitations
 - Some back end table changes might be too big to expect an INT merge to make sense
 - Examples might be column inserts, deletes, important index changes or deletions
 - The good news is those kinds of big changes rarely happens
 - When Repair won't do, try Custom

Custom

- You perform this using the “SQL Connect/Repair Wizard” from the Studio’s Database menu. Select the “Custom” option in the wizard
- This can do a lot, but you have to set it up right
- You can apply this to all tables, connected or not
 - If not connected, it just does a standard connect
 - If connected you have choices:
 - Skip that table
 - Connect again using the existing table number and the existing INT
 - Ignore the INT but keep the table number

Custom

- Connect again using the existing table number and the existing INT
 - This can even be used to convert from one driver INT to another. It brings over as much custom INT meta-data as possible
- Ignore the INT but keep the table number
 - This lets you keep the table number but otherwise do a full connect
 - You do this a table has changed so much that you can't use the INT but you want to keep the table number

Custom

- With Custom you can experiment but do so carefully
 - It's still safe - It makes no changes to the actual database tables
 - It can maintain table numbers
 - It can change the INT, FD and TAG definitions so you might want to back them up first
 - You will usually just apply this to individual tables – be careful about what tables you select
 - Upon completion You may need to adjust things manually in the Studio's Table Editor

New Table Editor Feature

- When you edit a table in table editor you change:
 - The back-end table definition
 - The INT definition
 - Both
- You now have the ability to set what can be edited in Table Editor
 - **Read-only** - If read-only, back end table can not be changed
 - **INT only** – The back end tables is still read-only but you can specify that you can still change the INT definition
 - **Full Edit** - You can edit everything
- The edit INT only is very useful
 - How do you know when a table editor change is changing the INT or the back-end table?
 - Set this option and it tells you (you get an error)

Summary - Convert, Connect, Refresh, Repair and Custom

- Convert – Use to convert embedded tables to SQL
- Connect – Use to connect to an SQL database and define it to run in DataFlex
- Refresh – Use to synchronize small back end table definition changes with your DataFlex INT definition
- Repair – Use when Refresh won't work (usually the table cannot be opened)
- Custom – Your swiss army knife. Use for all kinds of advanced connection changes

