



DataFlex to New Heights

# DataFlex Reports Update

## Vincent Oorsprong

# Agenda

- > Product status
- > Feature highlights version 6.2

# Status

- > Version 6.2 in beta
- > Latest released / production version is 6.1.5
- > Developer and Standard editions available
  - > Standard cannot be used for report integration, cannot be used to create RDS based reports

# Feature highlights v6.2

- > Crosstab / Pivot table support
- > Copy DataFlex Reports Studio options from an older version during installation
- > SQLite driver to create reports on this database
- > DSN connection string builder in ODBC wizard
- > Formatting functions for Number, Integer, Time, Date & Currency
- > Bigint support

# Feature highlights v6.2

- > Excel export using native datatype
- > Side-by-side support for DataFlex Reports Studio
- > DataFlex Reports Studio is now DPI aware
  - > New icons to support different DPI settings
- > Import & Export of RDS table structure and test data
- > Hide/Show row number in RDS table structure and test data grids
- > Hide barcode text and default barcode type



# Feature highlights v6.2

- > Positioning and sizing of objects via functions

# Crosstabs / Pivot tables

A photograph of a rugged, rocky mountain peak with sparse green vegetation, serving as a background for the title text. The mountain is dark and textured, with some green patches. The sky is a clear, pale blue. The text "Crosstabs / Pivot tables" is overlaid in a bold, yellow font.

# Crosstabs / Pivot tables

|               | AS     | BR    | BS    | CM     | CS    | CW    | DJ     | DM     | FF    | FMB   | HS     | JC     | JS     | JW     | KS     | LM     | MH    | MK    |
|---------------|--------|-------|-------|--------|-------|-------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|
| Alaska        |        |       |       | 6811   |       |       |        |        |       |       |        |        |        | 38374  |        |        |       |       |
| Arkansas      |        |       |       |        |       |       |        |        |       |       |        |        |        | 27463  |        |        |       |       |
| Arizona       |        |       | 96304 |        |       |       | 27897  |        |       |       |        |        |        |        |        |        |       |       |
| California    | 6670   |       |       |        |       |       |        |        |       |       | 60873  | 84192  |        |        |        | 238388 |       | 1130  |
| Colorado      |        |       |       |        |       | 17919 |        |        |       |       |        |        |        | 263575 |        |        |       |       |
| Delaware      |        |       |       | 6060   |       |       |        |        |       |       |        |        | 161440 | 8862   |        |        |       | 17615 |
| Florida       |        |       | 58861 |        |       |       |        |        |       |       | 14135  |        | 8546   |        |        |        |       |       |
| Georgia       |        |       |       |        |       |       |        |        |       |       |        | 9671   |        |        |        |        |       |       |
| Hawaii        |        |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |
| Iowa          | 215865 | 18616 |       |        |       |       |        | 29290  |       |       |        |        |        |        |        |        |       |       |
| Idaho         |        |       |       |        |       |       |        |        |       |       |        |        |        |        | 187586 |        |       | 30908 |
| Illinois      |        |       | 23418 |        |       |       |        |        |       |       |        |        |        |        | 87759  |        | 8011  |       |
| Indiana       |        |       |       |        |       |       |        |        |       |       |        | 28799  |        |        |        | 88874  | 52575 |       |
| Massachusetts |        |       | 33957 |        |       |       |        |        |       |       |        |        |        |        |        |        | 42480 |       |
| Maryland      |        |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |
| Missouri      |        | 44996 |       |        |       |       |        |        |       |       |        | 12177  |        |        |        |        |       |       |
| Mississippi   |        |       |       |        |       | 3215  |        |        |       |       |        |        |        |        |        |        |       |       |
| North Dakota  |        |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |
| Nebraska      | 182784 |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |
| New Hampshire | 4413   |       |       |        |       |       |        |        |       |       |        | 17255  |        |        |        | 90636  |       |       |
| New Mexico    |        |       |       |        |       |       |        |        |       |       |        |        |        | 42775  |        |        |       |       |
| New York      |        |       |       |        |       | 26804 |        |        |       |       |        |        |        |        |        |        |       |       |
| Ohio          |        |       |       |        |       |       |        | 26461  |       |       |        |        |        |        |        |        |       | 15531 |
| Oklahoma      |        | 14172 |       |        |       |       |        | 8532   | 9139  |       |        |        |        |        |        | 54890  |       |       |
| Oregon        |        | 940   |       |        |       |       | 246609 |        | 29086 |       |        | 287675 |        | 22413  | 31975  |        |       |       |
| Pensylvania   |        |       | 5600  |        |       |       |        | 38350  |       |       |        |        |        |        |        |        |       |       |
| Rhode Island  |        |       |       | 35476  | 96616 | 3105  |        | 141591 |       |       |        |        | 31717  |        | 143610 |        |       |       |
| Tennessee     |        |       |       |        |       |       |        |        |       |       | 143720 |        |        | 4275   |        |        |       |       |
| Texas         | 121289 |       |       |        |       |       |        |        |       |       |        | 1092   |        |        |        |        |       |       |
| Utah          |        |       |       |        |       |       |        |        |       |       | 27016  |        |        |        |        |        |       |       |
| Virginia      |        |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       | 15600 |
| Vermont       |        |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |
| Washington    | 270672 |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |
| Wisconsin     |        |       |       | 104262 |       |       |        |        |       |       |        |        |        |        | 100491 | 21309  |       | 34880 |
| West Virginia |        |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        | 4500  |       |
| Wyoming       |        |       |       |        | 25935 |       |        |        |       | 22185 | 12658  |        |        |        |        |        |       |       |



# Crosstabs / Pivot tables

- > Works on all data-sources (DataFlex, ODBC, RDS)
- > Not limited to one page only
  - > Number of rows and columns may not fit on one page
  - > You need scissors and glue to make a large print out

# Crosstab / Pivot tables

- > Via insert crosstab wizard
  - > Select database column or function returning
    - > Row value / label
    - > Column value / label
    - > Summary value

|   |   |                 |   |
|---|---|-----------------|---|
| Column:   | <input type="text" value="SalesP.ID"/>      | Display column: | <input type="text" value="SalesP.ID"/>  |
| Row:  | <input type="text" value="Customer.State"/> | Display row:    | <input type="text" value="@StateName"/> |
| Summary field:  | <input type="text" value="@SalesValue"/>    |                 |   |
| <input checked="" type="checkbox"/> Custom total function |   |                 |   |

# Crosstab / Pivot tables

- > Column/Row width & height can be changed
- > Different display value for Column and Row can be chosen
- > Custom totaling function possible
- > Row and column totals can be added
- > Grand total value can be displayed
- > Row and column labels can be repeated per page
- > Two or more crosstabs per page possible
- > Crosstabs per group possible

# Crosstab / Pivot tables

- > Lines around and inside the crosstab can be configured
- > Label text can be rotated
- > Cell margins can be configured

# Demo

- > Inventory sales per salesperson per US state



# SQLite driver

A photograph of a rugged, rocky mountain peak with sparse green vegetation, under a clear blue sky. The text 'SQLite driver' is overlaid in yellow.

# SQLite driver

- > We needed it for dr.db and language.db
- > Can only be used with DataFlex Reports
  - > Not a connectivity kit as in MSSQLDRV, ODBC\_DRV etc
- > Can be used for any report that needs to run on a SQLite database

# SQL Connections

A large, rugged mountain peak, likely Ben Bulbin in Ireland, dominates the background. The mountain is covered in green vegetation, with rocky outcrops and cliffs visible. The sky is a clear, pale blue. The title 'SQL Connections' is overlaid in a bold, yellow, sans-serif font.

# SQL Connections

## Creating connections

### Select from (v6.1 and older)

- > User DSN
- > System DSN
- > File DSN
- > Enter DSN less connection string

### Select from (v6.2)

- > Choose existing DSN
- > Create DSN less connection
- > Choose DataFlex Managed Connection



# SQL Connections

- > The change helps developers unfamiliar with DSNs
  - > The end-result is the same as in v6.1.5 and before
- > Managed connections
  - > New in DataFlex since v19.0
  - > Connection information is read and converted into a connection string
    - > Change in connection information in your workspace does not change the connection string in the report. You need to do that at integration level



# Formatting functions

A photograph of a rugged, rocky mountain peak with green vegetation on its slopes, under a clear blue sky. The text "Formatting functions" is overlaid in yellow.

# Formatting functions

- > FormatNumber
- > FormatInteger
- > FormatCurrency
- > FormatDate
- > FormatTime

# Formatting functions

## Combine text strings and variables

### Prior to v6.2

Total for order 101 is 1668

Total for order 102 is 396

---

```
return 'Total for order'  
*CStr({OrderHea.Order_Number})  
*'is'  
|*CStr({OrderHea.Order_Total})
```

### With v6.2

Total for order 101 is \$1,668.00

Total for order 102 is \$396.00

```
return 'Total for order'  
*FormatInteger({OrderHea.Order_Number},  
    drWindowsInteger)  
*'is'  
*FormatCurrency({OrderHea.Order_Total},  
    drCustomCurrencyMask, "0.00;$1.1;$1.1-;.;,$")
```



**Excel Export**



# Excel Export

## With native data-type support

### Prior to v6.2

- > Green corners indicating Excel does not know the data-type

|   | A                 | B                                  | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q      | R | S | T | U | V         | W | X | Y | Z | AA | AB | AC | AD |
|---|-------------------|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------|---|---|---|---|-----------|---|---|---|---|----|----|----|----|
| 1 | Inventory listing |                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |        |   |   |   |   |           |   |   |   |   |    |    |    |    |
| 2 |                   |                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |        |   |   |   |   |           |   |   |   |   |    |    |    |    |
| 3 |                   |                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |        |   |   |   |   |           |   |   |   |   |    |    |    |    |
| 4 | Item_ID           | Description                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   | Price  |   |   |   |   | Available |   |   |   |   |    |    |    |    |
| 5 | ACE1              | Ace marks the spot                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 25,00  |   |   |   |   | 89        |   |   |   |   |    |    |    |    |
| 6 | ACE-2             | More Ace Stuff                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 15,00  |   |   |   |   | 89        |   |   |   |   |    |    |    |    |
| 7 | BEARS             | The Bears of North America         |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 32,00  |   |   |   |   | 636       |   |   |   |   |    |    |    |    |
| 8 | BRIDGE            | Famous Bridges I've Known - Photos |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 195,00 |   |   |   |   | 614       |   |   |   |   |    |    |    |    |

### With v6.2

- > No green corners

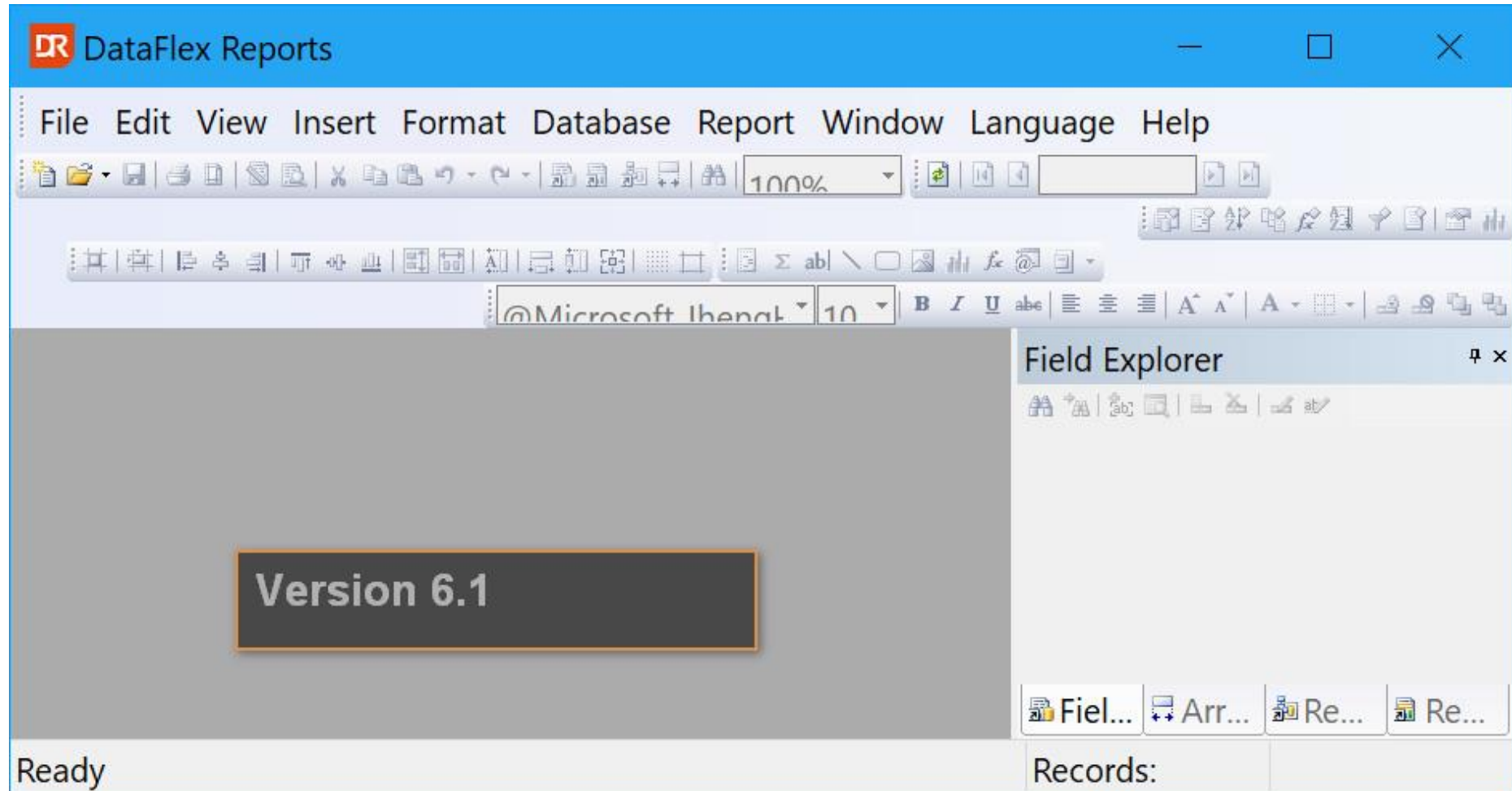
|   | A                 | B                                  | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q     | R | S | T | U | V         | W | X | Y | Z | AA | AB | AC | AD |
|---|-------------------|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-------|---|---|---|---|-----------|---|---|---|---|----|----|----|----|
| 1 | Inventory listing |                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |           |   |   |   |   |    |    |    |    |
| 2 |                   |                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |           |   |   |   |   |    |    |    |    |
| 3 |                   |                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |           |   |   |   |   |    |    |    |    |
| 4 | Item_ID           | Description                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   | Price |   |   |   |   | Available |   |   |   |   |    |    |    |    |
| 5 | ACE1              | Ace marks the spot                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 25    |   |   |   |   | 89        |   |   |   |   |    |    |    |    |
| 6 | ACE-2             | More Ace Stuff                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 15    |   |   |   |   | 89        |   |   |   |   |    |    |    |    |
| 7 | BEARS             | The Bears of North America         |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 32    |   |   |   |   | 636       |   |   |   |   |    |    |    |    |
| 8 | BRIDGE            | Famous Bridges I've Known - Photos |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 195   |   |   |   |   | 614       |   |   |   |   |    |    |    |    |



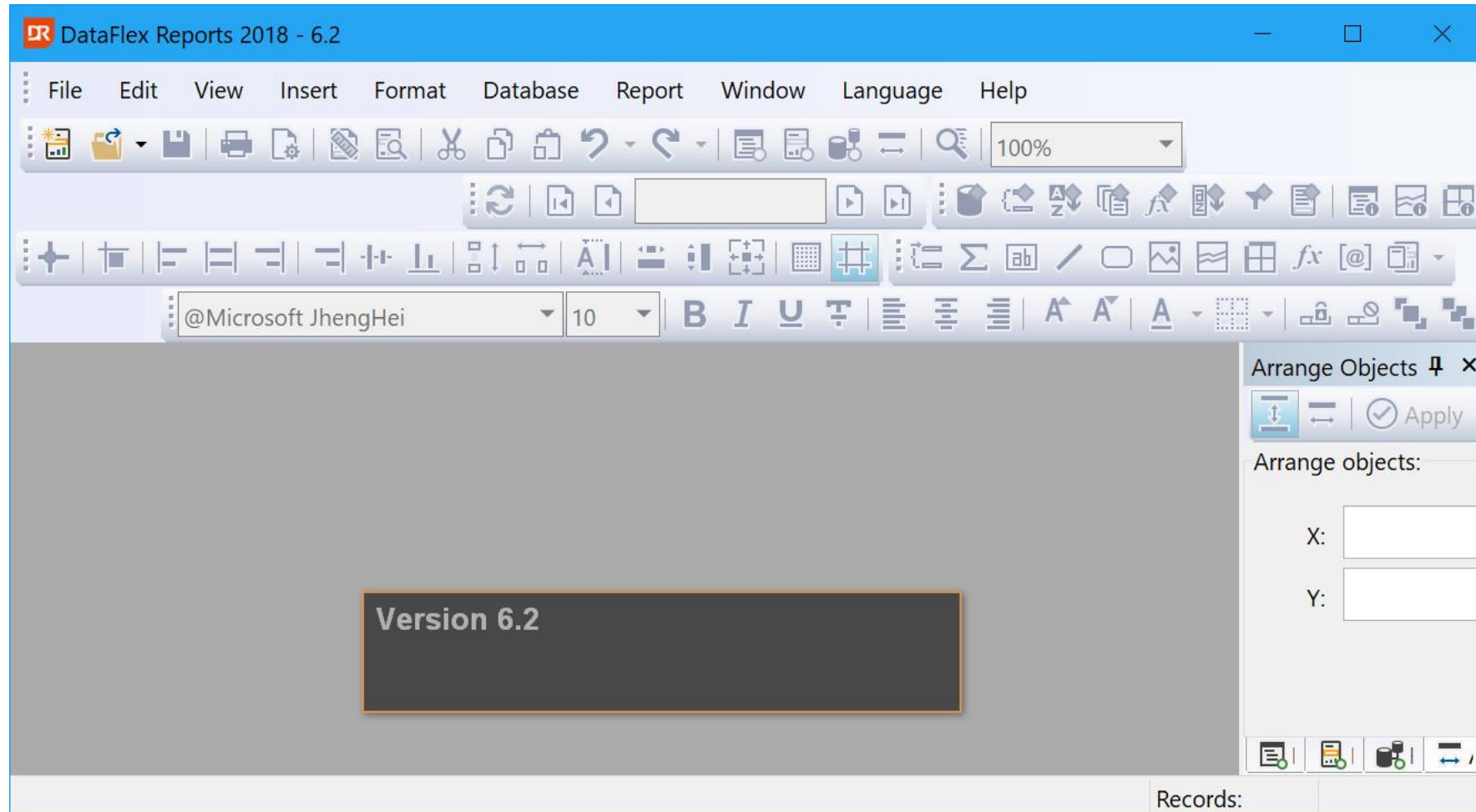


**DPI aware / new icons**

# DPI aware (not!)



# DPI aware - YES



# DPI aware – how?

- > DataFlex 19.0
- > CodeJock v17 components
- > New icons with 5 icons for each DPI size
  - > 16x16, 20x20, 24x24, 28x28, 32x32
- > Code changes for calculating available space





# **Import / Export RDS table structure and test data**



# Im- / Export RDS table struct and test data

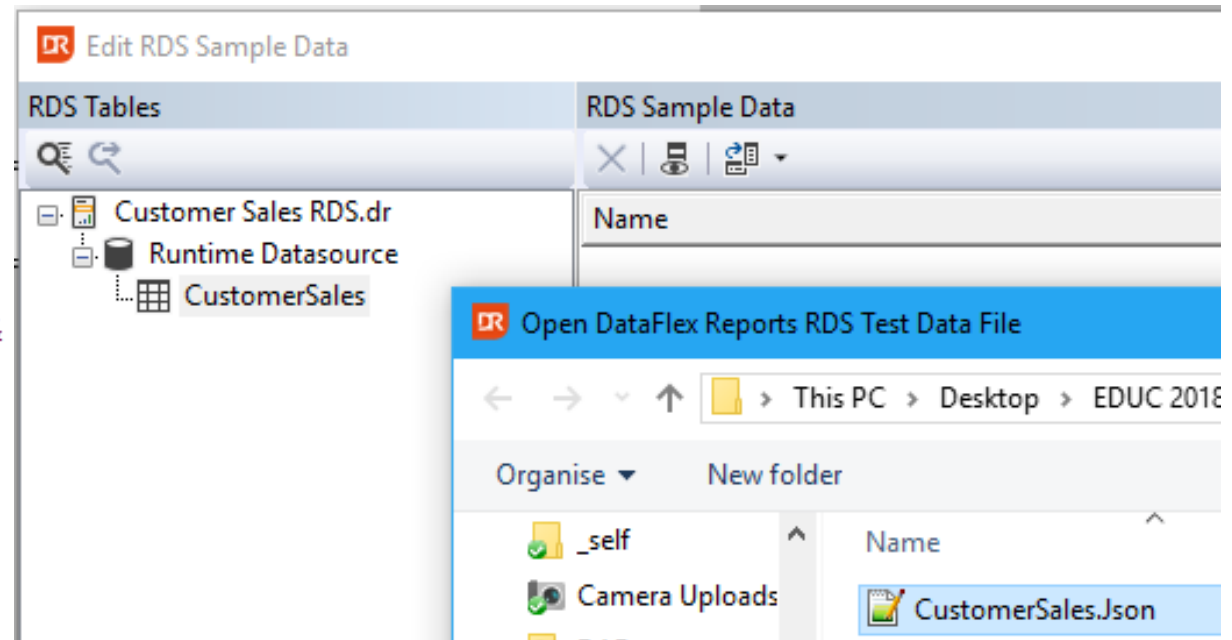
- > Table structure import & export
  - > Useful if you want to create another report with a similar or identical RDS table structure
- > Test data import & export
  - > Useful for testing from DataFlex Reports Studio
- > File format is a JSON

# Im- / Export RDS table struct and test data

- > Structure is the tDataSourceRow used for CodeJock Grids
  - > Easiest way for handling and structure is known and documented
- > Library comes with a function that helps writing the JSON test data file
  - > Converts the Variant[][] array via a tDRDataSource[] array to a uChar[] array using the cJSONObject class

# Im- / Export RDS table struct and test data

```
CustomerSales.Json
1 [{
2     "riID": "",
3     "bNewRow": false,
4     "vTag": "",
5     "sValue": ["",
6     "210 On Clark",
7     "8011"]
8 },
9 {
10    "riID": "",
11    "bNewRow": false,
12    "vTag": "",
13    "sValue": ["",
14    "228 Fuel Express Pizzas &
15    "263771"]
16 },
```



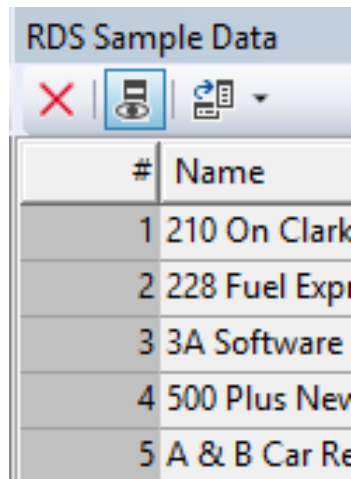


**Hide / Show row numbers column**

# Hide / Show row numbers column

- > RDS Table structure and test data dialog extended with a button to enable row numbers in the grid

RDS Sample Data



| # | Name         |
|---|--------------|
| 1 | 210 On Clark |
| 2 | 228 Fuel Exp |
| 3 | 3A Software  |
| 4 | 500 Plus Nev |
| 5 | A & B Car Re |

Runtime Datasource Table

Table

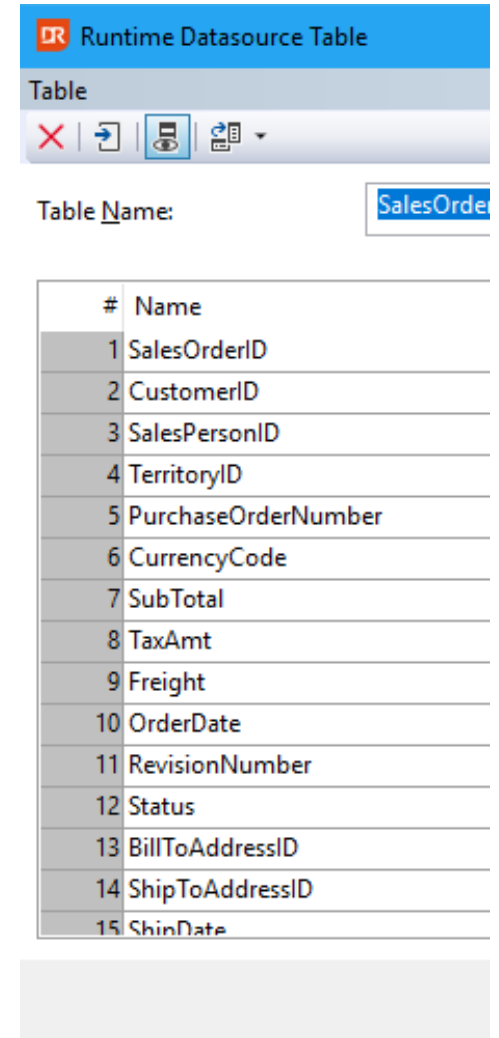


Table Name: SalesOrder

| #  | Name                |
|----|---------------------|
| 1  | SalesOrderID        |
| 2  | CustomerID          |
| 3  | SalesPersonID       |
| 4  | TerritoryID         |
| 5  | PurchaseOrderNumber |
| 6  | CurrencyCode        |
| 7  | SubTotal            |
| 8  | TaxAmt              |
| 9  | Freight             |
| 10 | OrderDate           |
| 11 | RevisionNumber      |
| 12 | Status              |
| 13 | BillToAddressID     |
| 14 | ShipToAddressID     |
| 15 | ShinDate            |





**Dynamic layout**

# Dynamic layout

- > Change of size and position of an object via one of the UnitXX functions
  - > UnitCM or UnitInch or UnitPt

Field Properties

Common Position HTML Border Font Text

Horizontal position: 10,8818 cm

Vertical position: 0,0529 cm

Width: 5,5203 cm

Height: 0,4938 cm

☐ Lock Position and Size

Function editor

Available fields

- Report Fields
- Summary Fields
- Database fields
- Function Fields
- Parameter Fields

Function

```
if {?HidePhone} then
    return UnitCm(7.8483)
else
    return UnitCm(10.8818)
end
```

# Dynamic layout

> To go from

| Customer List |                         |              |                    |
|---------------|-------------------------|--------------|--------------------|
| Number        | Name                    | Phone        | E-Mail             |
| 4             | Ace Manufacturers, Inc. | 309-555-3215 | ami@acemanfinc.com |

> to

| Customer List |                         |                    |
|---------------|-------------------------|--------------------|
| Number        | Name                    | E-Mail             |
| 4             | Ace Manufacturers, Inc. | ami@acemanfinc.com |

# Dynamic layout

- > Using a parameter field name HidePhone
  - > Suppress the phone number value and header label when true
  - > Move the location of the e-mail value and header label when true
  - > Enlarge the width of the e-mail value and header label when true



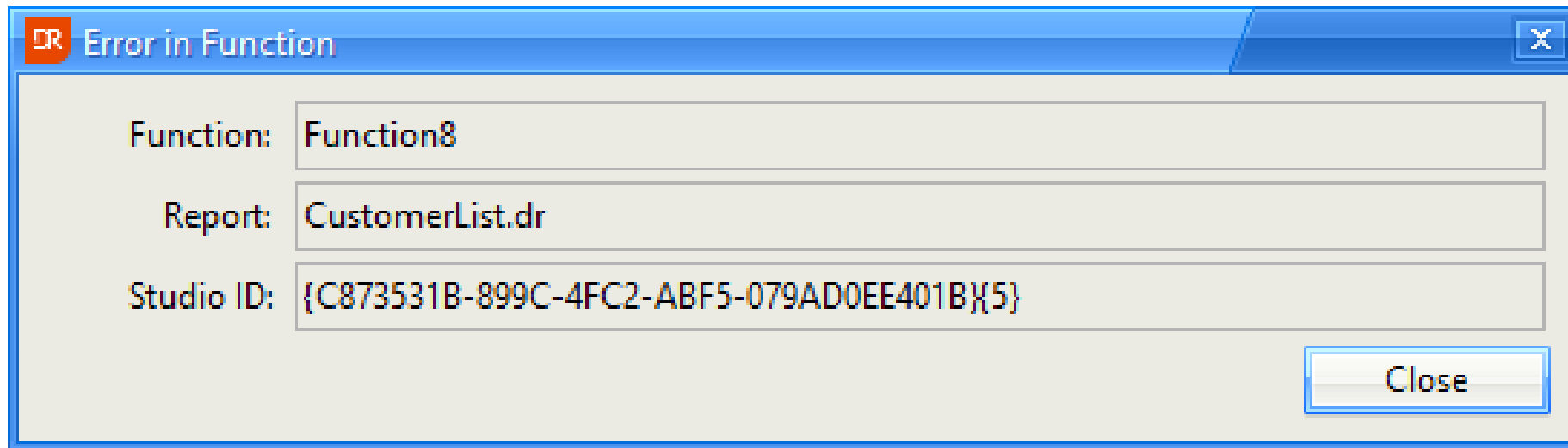


**Studio ID**

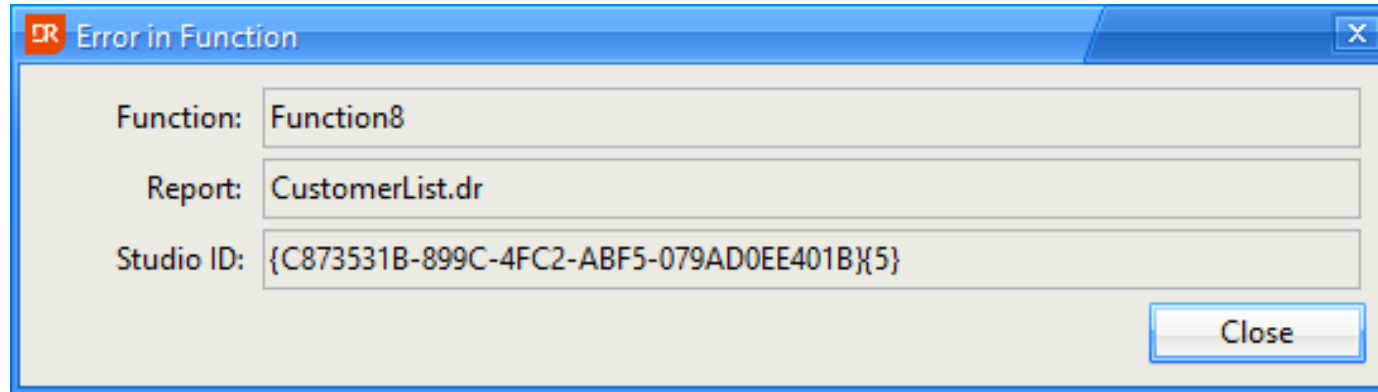


# Studio ID

- > A v6.1 change worth mentioning
- > Is shown in a dialog when a function in the report contains an error



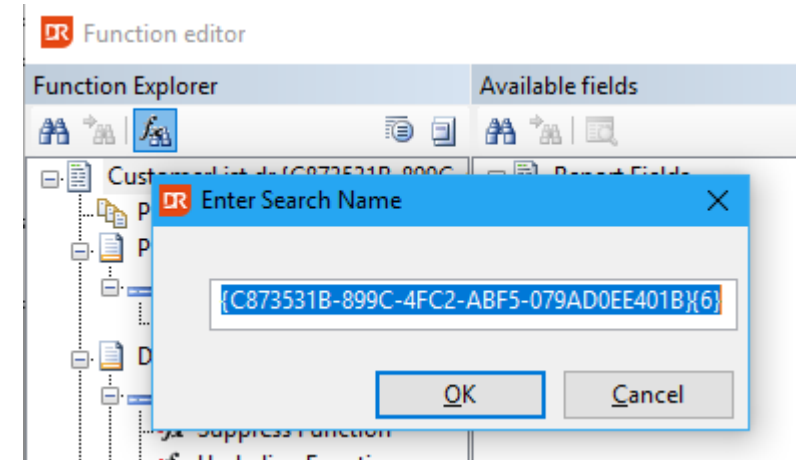
# Error in function



- > The dialog shows that the report CustomerList.dr contains a function named Function8 which has an error
- > The function name can be “Built-in Function”. This will be the case when it is not user function (such as a suppress function)

# Error in function – What to do?

- > Start the DataFlex Reports Studio
- > Open the named report
- > Open the function explorer dialog
- > Click the “find by function ID” button
- > Paste the Studio ID and press OK
  - > The OK button at integration level copies the Studio ID to the clipboard
- > Fix the problem, save the report and run again



# v6.2 Status

A photograph of a rugged, rocky mountain peak with green vegetation on its slopes. The sky is a clear, pale blue. The text "v6.2 Status" is overlaid in yellow on the left side of the image.

# Version 6.2 Status

- > Beta II available after EDUC
- > Things to do after Beta II
  - > Translations
  - > Improving documentation
  - > More testing and bug fixing





DataFlex to New Heights

**Thank you!**  
**Are there any questions?**