

DISD 2014

DataFlex 18.0

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Least I forget...

- Your Friendly (and sometimes thirsty) Neighborhood Development Team...
 - John Tuohy
 - John van Houten
 - Harm Wibier
 - Martin Moleman
 - Vincent Oorsprong (virtual)
 - Marcia Booth
 - Dennis Piccioni

DataFlex 18.0 RoadMap

- “17.1 was a really big project so we’ll catch our breath a bit, pay close attention to how the Web Framework is being used and 18.0 will be a much more modest release.”

We lied...

DataFlex 18.0 Overview

- Branding
- Studio
- Web Framework
- Windows Framework
- Data Dictionaries
- Connectivity
- Technology Updates
 - Client Web Services
 - Codejock
 - FleXML
 - Character Translation
- Utilities
 - WebApp Check
 - SignDataFlexExe
 - DataBase Explorer
 - DataBase Export
 - Flexerrs
 - Migration
- Examples
- Documentation
- Bug Fixes and Suggestions
- Installation

DataFlex Branding

- The newest release of our flagship development and deployment suite is DataFlex 2014 - 18.0.
- The “Visual DataFlex” identity you are accustomed to has been replaced with the new “DataFlex” branding nomenclature.
- How does this branding impact the installed product?

DataFlex Branding

- What we changed...
 - Default locations
 - Titles and nomenclature
 - Application goo
 - Registry branches
 - Service names
 - COM registration names
 - Documentation
- What we didn't change...
 - Physical component names
 - Class and method names

Studio

- A great mix of major changes (Table Viewer, native data types, Web Previewer) and lots of “little gems” that are “really handy” ~ JJT
- I don't have enough time for much of a demo but a couple of items are really best [seen...](#)

Table Viewer

- Select any table
- Columns can be resized, moved, added or removed (Field Chooser), sorted
 - Easily restore the default layout
- Edit (raw) or delete data
 - Mainly for ease of use when dealing with test data

Native Data Types

- Supported throughout the Studio (Table Editor, Code Explorer, Code Editor, etc.)
- Native types are still mapped to DataFlex types and the best type is chosen automatically
- Lengths are checked for validity
- Controlled via updated driver definitions

Previewer

- Select components directly in Previewer
 - Synchronizes with Code Explorer, Code Editor and Properties
- Toggle on and off with F7
- Refresh (context menu)
- Supports card containers, disabled and hidden tabs, disabled menus and items
 - Sometimes select in Code Explorer

Gems (little and otherwise)

- Class Palette Filtering
- Find in Files options
- “Create New...”
 - In context
 - Captions in templates
- New Toolbars
 - Find Results
 - Message Trace
- Web Applications
 - Disable Web Application
 - Copy application url in Workspace Explorer
- Tabs
 - Simplified, copy file path and close group
- SQL – close tables and logout when closing workspace
- Table explorer filters (per workspace / per user)
- Migration – simplified; not so many confirmations
- Expand tree in Code Explorer
- Debugger tooltips 600 characters (150 per line x 4)
- Move table
- Font scaling improvements

Web Framework

- New [Controls](#)
 - File Uploader (form and button)
 - Column Button
 - Column Link
 - Column Image
 - Progress Bar
 - Suggestion Form (in grids too)
 - Group
 - DatePicker

Web Framework

- tWebValueTree is the format for the transport mechanism for data between the client and server
- New JavaScript mixin system (df.mixin) allows classes to be generated based on a predefined class but inheriting from another class
- Custom key handlers (AddKeyHandler and RemoveKeyHandler)
- Errors as client-actions (correct order)
- Field error API is public (showControlError, hideControlError and hideAllControlErrors)
- Information balloons above (or below) controls (ShowInfoBalloon and HideInfoBalloon)

Web Framework

- Custom CSS for rows in grids and lists (OnDefineRowCSSClass)
- Custom Tooltips for columns in grids and lists (OnDefineTooltip)
- API for manipulating data in manually loaded grids and lists (DataSetUpdateRow, DataSetAppendRow, DataSetInsertRowBefore and DataSetDeleteRow)
- New properties for client metrics (piScreenWidth, piScreenHeight, piWindowWidth and piWindowHeight)

Web Framework

- Lots of fixes for browser differences
- Improved numeric entry filter, data entry filter and mask entry filter
- Datetime datatypes (includes masking and input filtering)
- Updated WebOrder example
- Increased Column default from 10 to 12 (better divisibility)
- Updated DFOs and Templates
- So much more that I'll let you bug Harm about it...

Windows Framework

- New Controls
 - Split button
 - Command link button
 - Suggestion form (in grids too)
 - Button
 - pbShield
 - psImage
 - piImageSize
 - piImageMarginLeft
 - piImageMarginRight
 - piImageMarginTop
 - piImageMarginBottom
 - peImageAlign

Windows Framework

- Alignment improvements
 - Label, textbox and form ([test program](#))
 - Combos are “special”
- CreateNamed - creates dynamic objects with names (which is helpful when debugging!)
- Popup_Modal - allow views and dbViews to be invoked modally
- Explorer style for TreeView
- Better icon handling with high DPI
- cTimer class – replacement for DFTimer
- ReadOnlyColor and NoEnterReadOnly in edit controls
- Sort combos in grid columns

Data Dictionaries

- Support SQL Filters
- New constraint messages
- Error messages include table name
- DD_Debug improvements

- DDOs, Constraints and Filters session with John Tuohy today at 1:00 pm

- Focus on how data dictionaries use constraints and provide you with the information you need to take full advantage of filtered record finding. This will touch on how to define constraints, how constraints are managed by the runtime and how to mix SQL filters with DD constraints.

Connectivity

- Includes latest connectivity kits (6.0.0.28 so far)
- Improved integration with the entire system (runtime, DDs, frameworks, Studio, etc.)
 - Really good things happen when Martin Molemen, John van Houten and John Tuohy team up...
- Revision 6.0 (debuted in DataFlex 17.1) started the ball rolling with really significant additions and enhancements
 - Support for MSSQL 2008/2012 types
 - Support for DB2 10.1 types
 - Improved type mapping
 - Improved restructure (didn't mess up all that improved type mapping)
 - Auto Reconnect

Connectivity

- Improved support for native datatypes
 - Continued refinement at the driver level
 - Fully modeled in the Studio
- SQL Filter integration
- ESQL Performance

SQL Filter Integration

- SQL Filters have been around for a long time
- Forum discussion in May of last year
 - Raveen, Chuck, JT, those darn Brits, etc.
 - Great example of taking a suggestion and refining it through discussion
- Pre and post finds
- Meta data about constraints
- Full DD support
- Fully supported in suggestion forms (Windows and Web)

ESQL Performance

- Another great example of taking developer input, experimenting and then refining the design for maximum impact
 - Eddy Kleinjan (input from Novax at ScanDUC), Martin Moleman and John Tuohy
- Optimization that focuses on getting data instead of getting information about the data
 - SQLColumnValue
 - SQLFetchRowValues
 - SQLFetchResultSetValues
- Results reported in the Forum (Matt)
 - 256 columns * 61,311 rows = 15,695,616 values fetched
 - 17.1 = 508.31 seconds (120 rows per second)
 - 18.0 = 85.119 Seconds (720 rows per second)
 - 18.0 using SQLFetchRowValues = 38.932 seconds (1,575 rows per second)

Client Web Services

- The client web service class and the Studio's WSDL parser have received a major overhaul. The two most significant changes are better support for nullable/nullable data types and better generation of struct names.
- Web services may expect that optional parameters (null values) will not be passed
 - When the data is passed (even when technically allowed by the service description) the service raises an error
 - You can now specify variables, both simple and complex, as null and decide not pass empty data which makes dealing with the service much easier
 - Previously you would have to perform low level customizations to alter the XML (complicated) or you would not use the service at all
- Complex web-services often generate complex struct definitions
 - Could require special name "mangling"
 - Resulted in names with suffixes consisting of mixes of underscores, numbers and letters
 - Now most names have no special characters resulting in classes that are much easier to read and use

FlexML

- **pvNodeValue**
 - Used to get/set XML node values directly from/to a variant string (BSTR)
 - Data of any size can be used and there is no translation between Unicode and OEM
- **pbAsync**
 - Determines if loading an XML document (LoadXMLDocument) should be asynchronous
- **pbReadyState**
 - A read only property that returns true when an XML document has been loaded and parsed
- **GetLastError**
 - Returns the last parsing error encountered by a document load and parse
- **pbResolveExternals**
 - Determines if an XML document should attempt to automatically resolve external schema or DTD references in the document

Codejock

- Updated from 15.3.1 to 16.3.0
- Mainly to get fix for better display of icons on high DPI displays
- Also keeps us current (getting too far behind makes updating more complex)
- There are new themes
 - Office2013.dll and VisualStudio2012.dll
 - Windows8.cjstyles
 - Note that these need to be copied from Lib to your workspace Programs folder when you use them
 - There is documentation on how to use resource themes (the dlls) starting with DataFlex 17.1

Character Encoding and Translation

- John Tuohy will discuss this topic in depth (not just the changes in 18.0) tomorrow at 1:00 pm
 - Basic introduction to character encoding and how it is used in DataFlex
 - Types of character encoding and their myriad of terms (Unicode, OEM, ANSI, UTF-8, UTF-16, ANSI)
 - Examine translation issues and how DataFlex currently handles them

WebApp Check

- Awesome utility created at Data Access Europe (Mark Idema and Lars ten Dam) to determine if the environment is properly configured to host DataFlex Web Applications
- Also provides information about most current DataFlex installation
- Can be run in two modes: full and revision-specific auto-run (command line parameter with revision)
- Two files ([DataFlexWebAppCheck.exe](#) and .chm)
 - Make sure they are in the same folder
- You can embedd this in your application installation (we did!) to make sure that the host is properly configured
 - We copy both files to the Windows temp folder and run from there
 - Note that we chose not to attempt to make any system changes

SignDataFlexProject

- Yet another awesome utility from Data Access Europe (Vincent Oorsprong) that helps automate digitally signing components
- Windows asks permission for elevated rights and unsigned executables look a bit ominous
- Need a tool (codesign or signtool) and certificate (VeriSign, Thawte, etc.)
- We use signtool because it's more automated
 - Use the machines certificate store and not prompt for a password
- Use from the Studio to sign current project
- You can also use signtool in batch files
 - "[path]\signtool" sign /a -t http://timestamp.verisign.com/scripts/timestamp.dll "[path]\[component name]"

DataFlex Utilities

- DataBase Explorer
 - Bug fixes and suggestions implemented – see lists in What's New
 - SQL Filter support
- DataBase Export
 - Bug Fixes
- Flexerrs
 - Major update includes use of CodeJock grids (sorting), a simplified interface and a form on the toolbar to type in a specific error number
- Workspace Migration
 - Reduced number of confirmations to streamline the process

Examples

- Web Order
 - Adds examples for all new controls
 - Pay special attention to the Demo menu
 - Column Types, File Upload, Suggestion Forms, etc.
- Order Entry (aka "Sacred Texts")
 - New Demo menu for Suggestion Forms and Buttons
 - We liked this technique so much in WebOrder we will use it more to consolidate examples
- Specialized Components
 - Order Generator
 - Restructured the Embedded SQL example to use the message interface instead of legacy command interface

Documentation

- Always check the What's New!
- During Alpha / Beta we've been putting in temporary pages that restructure the build notes to group by component
 - Full build notes are chronological
- Keep reporting any issues or suggestions in the Forums
 - Dennis Piccioni does a great job of keeping up with them

Installation

- Incorporates WebApp Check
- Server installation will include option for Network Accessible installation (like Client Engine)

DataFlex 18.0 – We don't need
no stinkin' modest releases...