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ATLANTA, GA, USA

SYNERGY 2017

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DataFlex Overview – The Big Picture

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Why we use DataFlex...

- In one of our single day training classes you might:
 - Create a workspace
 - Connect to a complex SQL database
 - Create a set of business rules (DDs)
 - Create a Mobile Web Application
 - Implement a modern, good-looking, responsive web application with a complete set of navigationally contextual views for adding, editing and deleting data according to the business rules
 - Tie everything together with a user-friendly dashboard
 - Employ nice navigational interfaces for breadcrumbs, menus (multiple styles) and user access that are essentially automatic

Why we use DataFlex...

- And then after lunch...
 - Use the power of SQL to create and utilize an SQL view that combines elements of the complex data structure into a tight set of targeted data
- And you would do it all in a matter of hours and in under a couple of hundred lines of code (actually typed)
- And that's just for the Web
- If you had a couple of more hours you could do this in Windows as well

DataFlex 18.x

It's the cumulative effect that counts...

DataFlex 18.0

- Rebranding
- Web - Version 2 of the Web Framework
- Web - Grid/List, Upload class, SuggestionForm
- Windows - new classes, buttons w/ images, LinkButton, dbSuggestionForm
- Windows - optional modal views
- Studio Table Viewer
- Studio Native SQL Type Modeling
- DD - DD SQL Filtering
- DD - DD Inspector has constraint usage, optimization and SQL filter info
- Client Web Services - nullable data type support
- Character encoding translation class

DataFlex 18.1

- Web - Introduced mobile framework!
- Web - Complex web properties (structs and arrays)
- Web Designer – Previewer evolved into interactive designer
- Studio - Debugger much faster
- DD - Big performance and memory improvements
- Connectivity – PK support, identity column, GUID, Azure, better restructure
- UChar Array improvements - tables, sequential files, String to UChar functions
- Many new struct/array functions
- Improved missing (deleted) record handling

DataFlex 18.2

- Primarily created to fix bugs and implement suggestions
- Web - Version 2 of the Mobile Web Framework
- Web – cWebParentCombo, new desktop theme
- Web - Web DD Inspector
- Windows - Windows 10 Support
- Windows - ParentCombo, month calendar
- Studio - pre/post compile processing
- DDs - Smart Relates
- Refined deleted/missing record handling
- Extensive new set of DateTime functions

And now...
Introducing DataFlex 19.0

DataFlex 19.0 – The Headlines

- Connectivity
 - Managed Connections
 - Improve indexing support
- Windows Framework
 - Enhanced high DPI Support
 - Updated look
 - An MDI alternative style
- Studio, Database Explorer and Database Builder
 - More natural developing using SQL
 - Updated capabilities and look
- Web Framework
 - Server Web Properties
 - New Controls
- Web Application Server
 - Simplified deployment
 - 64-bit support
- Runtime – JSON Parser

Connectivity

Connectivity Goals

- Fully integrate Connection IDs into the application framework and the Studio (all our tools)
- Improve indexing support for SQL databases
- Improve the flow of SQL-based application development
 - Make support for typical SQL features in the Studio (PKs, FKs, identity, clustered indexes, etc.) more automatic and natural
- Improve the database login process (support encrypted credentials)
- Make the Convert, Connect, Reconnect process easier to use and more robust
- Maintain backwards compatibility!

The Stars of the Connectivity Show

- Managed Connections and Index Improvements will get plenty of attention over the next two days...
- Today's Sessions
 - 9:50 AM - Introducing Managed SQL Connections
 - 2:50 PM - How to Update Your Applications With Managed SQL Connections
- Tomorrow's Sessions
 - 9:00 AM - DataFlex and SQL Tables - Converting, Connection, Refreshing and Repairing
 - 11:05 PM - Let Me Help You Find That; Taking Advantage of SQL Index Support in DataFlex 2017
- John Tuohy and I are having a ton of fun showing this stuff off but so much of this starts with the great work Martin Moleman does at the driver level

Best Connectivity Features in a Supporting Role...

- Working with SQL at every level (from the drivers, up through the language and into all the tools is integrated and efficient)
- Environment management with `Minimum_Client_Version` and `Match_Client_Server_Version`
- Updated default data type mapping
- Restructure control
 - All table changes allowed
 - Only .int file changes allowed
 - No changes allowed
- `RedirectIdConnectionString` and `DF_DATABASE_DEFAULT_DATABASE` for fast switching between servers and databases at runtime
- Support for SQL Server 2016
- Support for the latest Microsoft clients (these pair up with the various server versions)

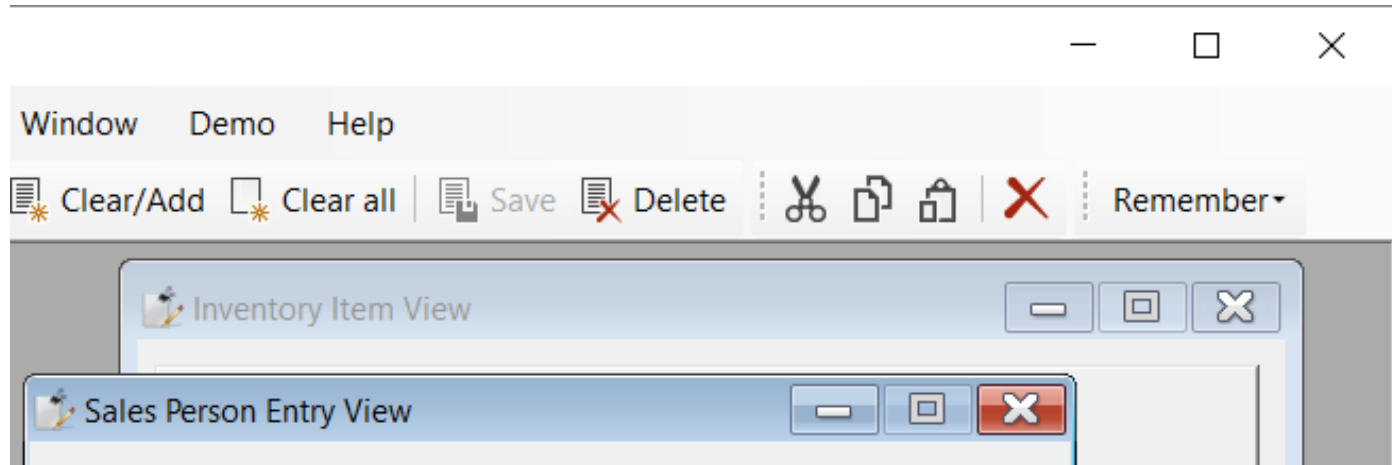
Windows Framework

Windows Framework

- Improved DPI Awareness
 - The key to making the UI look consistently good across a variety of high-DPI display settings
- Flat Style Icons
 - All of the menu and toolbar icons in our tools and all of the standard icons used in the Framework menu and toolbar are updated to the new style (and high DPI format)
- An alternative approach to MDI in Windows

Traditional MDI Interface

- Microsoft doesn't like MDI Interface so much...
 - In Windows 10 – Caption and System buttons are not painted correctly...



An Alternative MDI Style for Windows

- Microsoft has not done a good job of keeping the appearance of MDI dialogs up to date
 - Although this is a great and practical application style, Microsoft is moving away from this
 - It doesn't look like this will change
 - This makes an application appear old fashioned
- Rather than fight this, we are supporting an alternative look for MDI style applications
- Tabbed Workspaces
 - Instead of using overlapping windows your views are placed in tabbed workspaces
 - Views can be split vertically or horizontally, allowing you to see multiple views at one time
 - Views are selected by selecting their tab
 - To work properly special sizing, centering and scrolling of views must be supported – it's all automatic

An Alternative MDI Style for Windows

- The alternative MDI style is created using Codejock Tab Workspaces and our scrolling panel class support
- Using the alternative MDI style requires code changes
 - Your main application must enable tab-workspaces
 - Each view must add a scrolling panel and scrolling container object
 - In addition, you may want to further customize your views to take full advantage of this new style
- This is an optional style but developers and users really seem to like it
- 11:10 AM - Enhancing Windows Applications with Tabbed Interfaces and DPI Awareness
 - John van Houten

A New Look for the Tools

- These changes also led to improvements in the Studio, Database Explorer and Database Builder
 - They all have a new look
 - Applied all of the DPI changes
 - Replaced images with multi-sized, flat icons
 - We have a lot of images!
 - Updated our theme

Database Explorer

- Log changes made to data
 - tablename, tablename, rowid, timestamp, network user, operation (create/edit/delete)
- Supports Managed Connections
- Provides more information about the backend structure
- Updated grids and lists throughout
- Improved filtering
- Modern layout, capabilities and feel

- Vincent's has been very, very busy...

Web Framework

Server Web Properties

- Web properties were designed to configure everything that the client needs to know about (mainly the state of the user interface)
- Applications use web properties for all kinds of state data. This is data that is not needed on the client but needed for the page or session
- In 19.0, Server Web Properties provide a secure method to store application state data
- Harm will tell you all about this later this morning (Spoiler alert: It's really easy to do)
- 10:20 AM - Using the New Server Web Properties
 - Harm Wibier

Web Framework Controls

- DataFlex 19.0 includes exciting additions to the control set for the Mobile / Touch style
 - Color Picker
 - List Menu
 - Floating Panel
 - Highlight Column
 - Accordion Control
 - Collapsible Group
 - Styled Checkbox and Radio
 - Swipe Buttons (in Lists) and Cards
- 5:10 PM - Upgrade Your Web Application With the New 19.0 Web Controls
 - Harm Wibier

WebApp Server

WebApp Server

- 64-bit Support
 - Simplifies installation and configuration
 - Allows both 32-bit and 64-bit on the same server
- Administrator allows applications to be configured to run on other than the default web site
- New Command Line Interface for Managing Web Applications
 - Allows more control over which website is used

64-bit Support

- Applies to the Server process only, DataFlex processes are still 32-bit
- Additional server binaries located in Bin64 folder
- ISAPI handler registered so that IIS will automatically pick the right version (requires IIS 7)
- Any COM controls or components being called through IIS/ASP must be 64-bit to use the 64-bit server
 - This does not apply to controls or components being called by the 32-bit DataFlex processes
- These changes remove the need to install the IIS 6 Metabase Compatibility or enable 32-bit support in the Application Pool (assuming that you are able to solely use 64-bit)

Command Line Interface

- While many developers use the Web Application Administrator to manage their web applications, it is often desirable to automate the process via the command line interface
- We'll cover this in detail in the deployment session...
- Friday, 1:50 PM - Streamline Your Web Deployment with DataFlex 2017
 - Stephen W. Meeley

Runtime JSON Parser

A funny thing happened on the way to Server Properties...

Why a JSON Parser?

- Designing the server side web properties we needed the ability to...
 - Take DataFlex data of any type (and complexity) and convert it to JSON
 - Take JSON data of any type (and complexity) and convert it to a DataFlex type
- We added this capability to the runtime
- As long as we did that, we made this public so you can do the same thing
- As long as we were doing that we added an interface for a full JSON parser
 - It never ends...
- Friday, 9:30 AM - Putting the DataFlex 19.0 JSON Parser to Work
 - Harm Wibier

JSON in DataFlex

- More than just a new parser...
- Web Services
 - Built in JSON support
 - Every DataFlex Web-Service can be called using JSON
 - JSON parsing & generation happens in ISAPI handler
- cJSONObject
 - Manually parse & generate JSON
 - Serialize / deserialize structs and arrays
- cJSONHttpTransfer
 - Communicate with JSON Services

Timeline

DataFlex 19.0 Milestones

- First Look – mid-September 2016
- Alpha – January 2017
- Beta – March 2017
- Release Target – Summer 2017

A silver laptop is open on a wooden desk. To the left of the laptop is a glass of water. To the right is a smartphone on a white surface. The background is blurred, showing a warm, indoor setting.

Thank You for Your Time