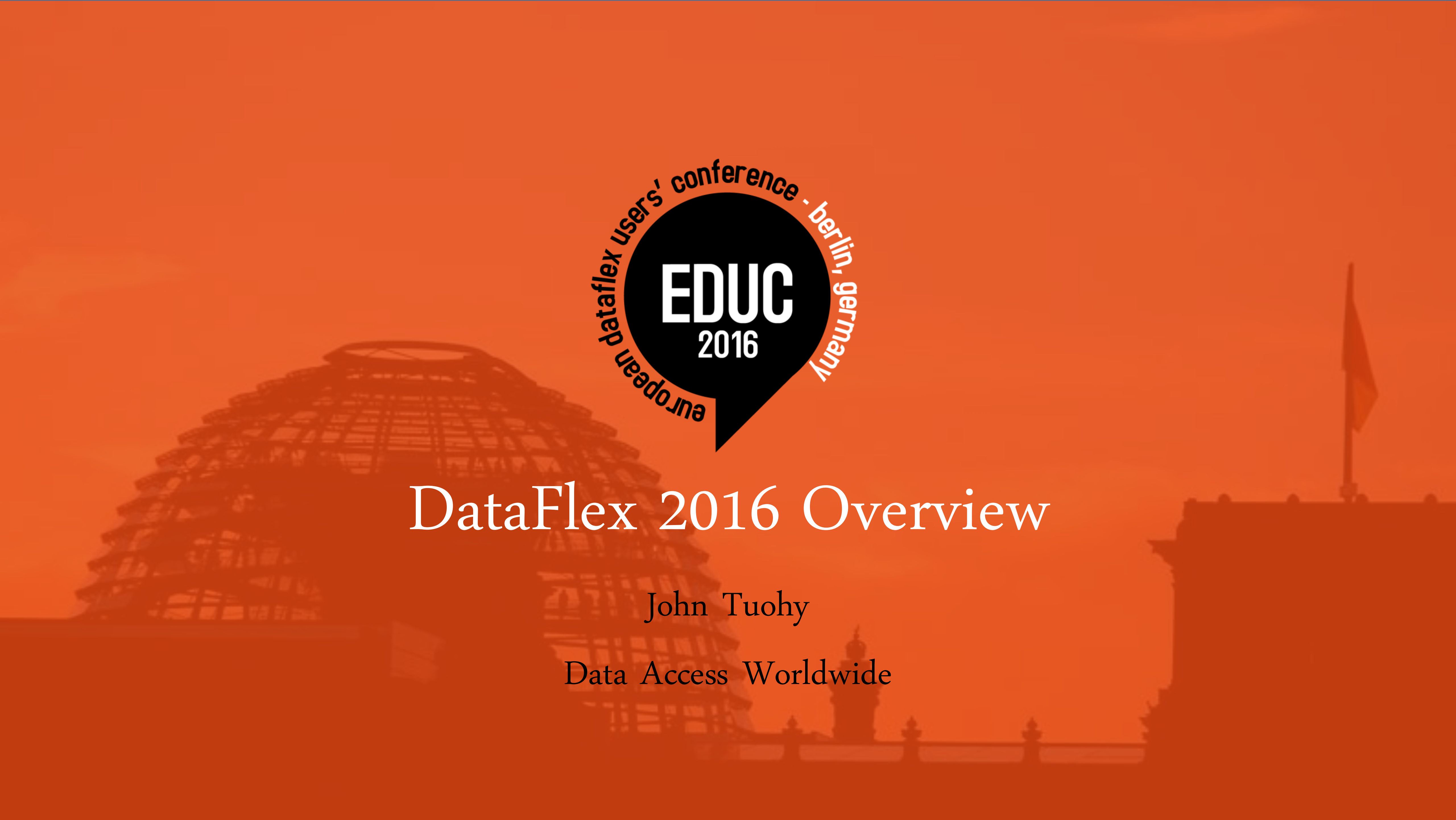

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DataFlex 2016 Overview

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Data Access Worldwide

Timeline

- It may seem like it’s been around for a long time, but DataFlex 18.x is only 18 months old…
  - August 2014 – 18.0
  - July 2015 – 18.1
  - February 2016 – 18.2

Major Areas of Development

- Rebranding
- Connectivity
- Data Dictionaries
- Studio / Debugger
- Wizards and Templates
- Windows Framework
- Web Framework
- Mobile / Touch Style

- Web Services
- Missing (Deleted) Record Handling
- Base System
- Character Encoding
- Documentation
- Suggestions and Bugs

DataFlex 18.0 – August 2014

- 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 – July 2015

- Web - Complex web properties (Structs and Arrays)
- Web - Introduced mobile framework
- 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, seq files, String to Uchar functions
- Many new struct/array functions
- Improved missing (deleted) record handling

DataFlex 18.2 – February 2016

- 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

What's in DataFlex 18.2 – Implemented Suggestions and Bugs

- Especially in DataFlex 18.2, we have focused on implementing YOUR suggestions and addressing bugs
  - 18.0 – 71
  - 18.1 – 23
  - 18.2 - 235

What's in DataFlex 18.2 – Windows Framework

- New parent combo control - dbParentCombo
- New Month Calendar control – Prompt dialog and for general use
- Applications now do a better job of sizing and locating the main panel when moving from a multi-screen to single screen environment.
- Windows 10 font spacing (kerning) issue is resolved
- The latest CodeJock controls (16.4.0) are used and supported

What’s in DataFlex 18.2 – Web Framework

- Complex views display much faster on clients
- New parent combo control - cWebParentCombo
- Web based DD Inspector dialog
- Improved cookie management
- Better error handling
- Many JavaScript engine improvements
  - Better cross platform compatibility and performance
  - Many layout and alignment improvements
- New Desktop Theme
  - Has modern look of mobile/touch but with smaller control sizing
- New Mobile/Touch style added to Web Framework

What's in DataFlex 18.2 - Studio

- Better Table Explorer Table Filter options
  - Table list (filelist) filtering is now applied more widely throughout the Studio, e.g. the DDO Table Selector.
- Generates .DEF files whenever .FD files are generated (configurable). You can also explicitly generate .DEF files
- Configurable pre & post compile processing
- Optimized web designer (much faster)
- Better support for JavaScript sub-classing in the Designer

What’s in DataFlex 18.2 – Data Dictionary

- Smart Relates
  - If parent DDO is not present, no relate
  - pbSmartRelate
  - Enabled by default
    - Most developers think this is how DDs already work
  - Can improve performance in large batch operations
  - Can improve performance when using SQL
- New RebuldAllConstraints method

What's in DataFlex 18.2 - Web Services

- OnPreSendSOAPRequest Event
    - New event for 18.2 for client web-services

What’s in DataFlex 18.2 - Other

- New Functions
  - String/Array
    - StrSplitToArray() / StrJoinFromArray()
  - Date, DateTime and TimeSpan functions
    - Makes it easy to set dates and perform datetime arithmetic (over 20 new functions)
    - Examples: DateSet(), DateAddMonth(), DateAddSecond ()

- Other minor Windows 10 compatibility changes

What’s in DataFlex 18.2 – Other

- Missing (Deleted) Record Handling
  - A major improvement in how DDOs and DEOs handle situations where records are deleted by another user or process.
  - Defers or completely suppresses errors and presents meaningful information (that can be augmented)

  - Switching Views (Refind_Records) – no errors
  - Save/Deletes – Handled error reported
  - Grids
    - Self-correcting
    - Handled Errors can be optionally reported
    - As of 18.2, Errors are not reported
    - pbSuppressCacheError – debug tip

DataFlex Applications

- DataFlex now supports three styles of applications
  - Windows Desktop
  - Web Desktop
  - Web Mobile/Touch
- All use the same framework – The DataFlex Framework
- You want to pick the right tool for the right job

How is the Mobile/Touch Environment Different?

- Display
  - They tend to be smaller screens
  - There are many devices with all kinds of different sizes screens
  - Screen sizes change on single device – portrait and landscape
  - High resolution - let's you show things very small - good for reading, bad for touching
  - Everything tends to be run full screen
- Pointing device
  - Your finger is not a mouse or a mouse substitute
  - The finger is a rather imprecise pointing device
  - Finger target space is completely different than a mouse target space
  - Scrolling is completely different
  - There is no right click
  - There is no double click
- Keyboard
  - The on-screen keyboard uses up valuable screen real estate
  - There are limited keys – no function keys, no ctrl/alt keys
  - In general, they are hard to use

How is a Mobile/Touch User Different?

- Is used to the forward/back browser stack paradigm
  - Understands a stack of operations (often seen as a breadcrumb)
- Is more adaptable
  - Willing to experiment
  - Doesn't want a lot of explanations
  - Accepts and expects hidden interfaces
  - Seems more accepting about not understanding something right away
- Expects an application to flow. The application will guide them
- Does not want a lot of confirmations - just do what's right
  - Does not want warnings about doing the right thing
  - Might want warnings when doing the wrong thing
- They expect applications to look great and “modern”
  - Expect a “a less is more approach”
  - In the battle of form over function – form wins
- They expect what we call a "webby" interface
  - They might even expect this same interface on a desktop browser, even if this is not optimal

Consequences of these differences

- Applications don’t use windowing
  - Just about everything is full “screen”
- Application flow is different
  - You navigate forward, back and go home
- Applications are less user driven and more developer driven
- Traditional menu systems and tool bar systems don't work well
  - When used, they are much smaller and much simpler
- Fewer Keyboard and mouse shortcuts
  - No context menus
  - No right click
  - No double click
- Vertical scrolling is common, horizontal much less so
- Keyboard usage is kept to a minimum
- Modal dialogs are kept to a minimum

The Desktop Framework and Mobile/Touch

- The desktop style framework style was originally created to accommodate evolving computers which had
  - Big screens
  - Flexible and precise mouse pointers
  - Full functioning keyboards
- The desktop style may not be a good fit for mobile/touch devices
  - Whole basis of the desktop framework is independent, selectable, overlapping views
  - The desktop framework makes extensive use of modal prompt lists
  - The desktop style is flat, not deep
  - The desktop style is completely user driven
  - You can't just create DDOs, create prompt lists, create views, add them to a menu and be ready to go

A New Application Style for Mobile/Touch

- We decided we needed a new style of application that
  - Uses a drilldown style
  - Is more application driven, less user driven
  - Requires the developer to connect the pieces
- We built Mobile/Touch style as an extension

- The DataFlex framework supports a new application style
  - The DataDictionary classes and your DDOs require no changes
  - The basis of the framework is unchanged - you still create views, which contain a DDO structures and connected DEOs
  - We extended the cWebView class
  - We extended the web DEO classes
  - We created new wizards and templates

What we did

- We built Mobile/Touch style as an extension

- The DataFlex framework supports with a new application style
  - The DataDictionary classes and your DDOs require no changes
  - The basis of the framework is unchanged - you still create views, which contain a DDO structures and connected DEOs
  - We extended the cWebView class
  - We extended the web DEO classes

- Now the web framework supports a drilldown style

- We consider this to be a huge validation of the DataFlex framework

Mobile / Touch Framework

- Drilldown interface that is navigationally contextual
- Mobile style menus and action menus
- Header bar and breadcrumbs
- Multi-line, single-touch lists
- On-screen keyboard support
- Responsive control of user interface
- New theme
- Dashboard

- Let’s take a look

Which Style Should You use?

- Windows Desktop, Web Desktop, Web Mobile/Touch - *The choice is yours*
- One is not better than the other
  - They excel in different environments
- Don't underestimate the desktop/user driven mode
  - It's unique, powerful and if you have the screen, the mouse and the keyboard it does things the mobile/touch style cannot
  - It is ideally suited from moving large Windows business applications to a desktop browser

The DataFlex 2016

- The DataFlex development system remains
  - One Language
  - A unified and unique framework
  - Shared Data Dictionaries
  - One Studio & One Debugger
  - All focused on building business applications

- Windows Applications
- Desktop Web Applications
- Mobile/Touch Web Applications

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Thank you for your attention.

Are there any questions?