



Come see the light

DataFlex 2020

Harm Wibier

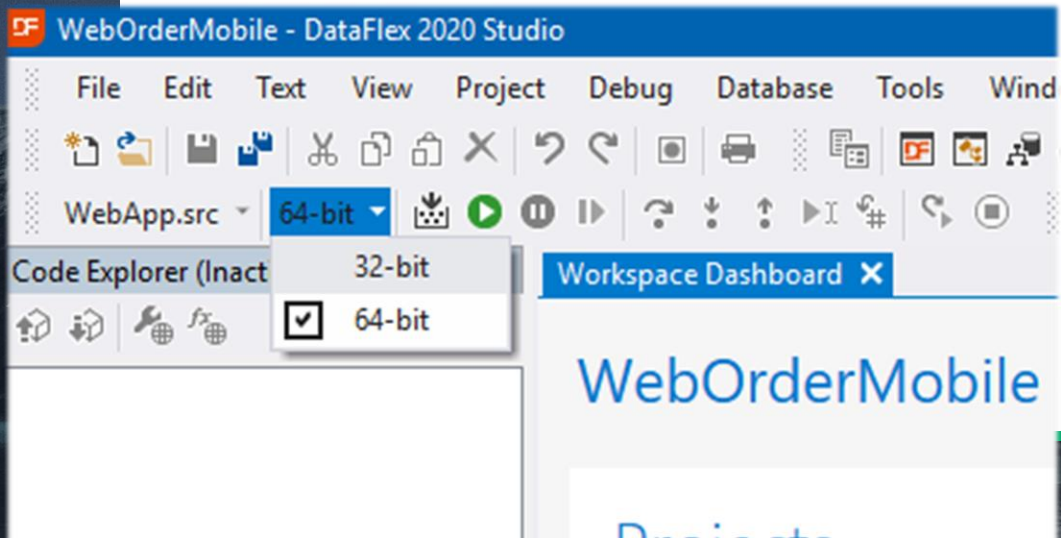
Unicode and 64-Bit

- › The major features of DataFlex 2020
 - › Dedicated resources were hired
 - › Years of development work
 - › Touched code that hasn't been touched this century



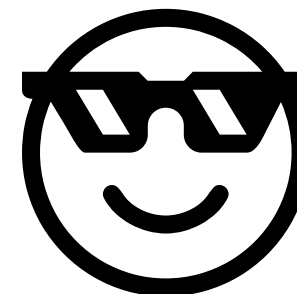
64-bit capable

- › Build 32-bit and 64-bit programs from one source
 - › Use 64-bit components
 - › Address more memory
 - › Increased performance
 - › Run on 64-bit only platforms



Unicode

- › Fully Unicode (not a bolt on solution)
 - › Support multiple languages in the same applications
 - › Support emoticons!
 - › No more code pages
- › UTF-8 as the main encoding
 - › Strings in memory
 - › Source files
- › WString type for communicating with external API's
- › Yet still pretty backwards compatible



Unicode databases

- › **MS SQL**
 - › Use NVarChar / NChar fields
 - › UTF-8 in SQL Server 2019 will be supported
- › **MySQL / DB2**
 - › Configure database for UTF-8
- › **Pervasive / Btrieve**
 - › 64-bit version is available
 - › Unicode support is being researched
 - › But likely not in the first rev
- › **Embedded database / legacy drivers**
 - › No Unicode support
 - › Compatibility layer converts data to OEM

Where we are now?

- › **Alpha 1 available for download now!**
 - › <http://www.dataaccess.eu/dataflexprerelease/>
- › Changes since Technical Preview 2:
 - › Unicode MS SQL Driver
 - › Numerous bugfixes
 - › Several non-unicode / x64 features are added
- › Please hold off on downloading until the break 😊



What else?



The other DataFlex 2020 Features

› **Several WebApp Server improvements**

- › Run processes as a different user
- › Improved error state handling
- › Smoother automatic reload
- › ...

› **Several WebApp Framework improvements**

- › Dynamic Web Objects
- › Web HTML List
- › GeoLocation API
- › ...

› **Command line compiler**

- › Numerous bugfixes

And we are not done yet..

- › Things that did not make it into Alpha 1
 - › Dark studio theme
 - › WebTagsForm
 - › SQL Samples

Vendors:

Book World x Olde Book Merchant x P

- Ace Publications
- Paperback Merchant
- Software Publishing
- Technical Book Supply
- The Book Emporium

Workspace Dashboard Order.src x SalesPerson [Table Editor] Customer.vw

```
001 Use OrderPrecompile.pkg
002
003 Use DfAllent.pkg
004 Use cCJStandardCommandBarSystem.pkg
005 Use cToolTipController.pkg
006 Use cCJCommandBarSystem.pkg
007
008 Object oHtmlHelp is a cHtmlHelp
009 End_Object
010
011 Object oApplication is a cApplication
012     Set psCompany to "Data Access Worldwide"
013     Set psProduct to "DataFlex Examples"
014     Set psVersion to "20.0"
015     Set psProgram to "Order"
016     Set psHelpFile to "DevelopmentGuide.chm"
017     Set peHelpType to htHtmlHelp
```


WebApp Framework improvements



cWebGeoLocation

- › Query the users current location
 - › GPS Coordinates
- › Wrapper for the HTML5 navigator.geolocation API
- › Supports
 - › Single query
 - › Tracking
- › *Some browsers require secure origins (HTTPS)*



cWebHtmlList

› HTML box on steroids

```
Object oWebList is a cWebHtmlList
  Set psHtmlBefore to '<table>'
  Set psHtmlTemplate to '<tr><td>{{oInventory_Item_ID}}</td><td>{{oInventory_Descrip..
  Set psHtmlAfter to '</table>'

Object oInventory_Item_ID is a cWebColumn
  Entry_Item Inventory.Item_ID
End_Object

Object oInventory_Description is a cWebColumn
  Entry_Item Inventory.Description
End_Object

Procedure OnLoad
  Send FindFromTop
End_Procedure
End_Object
```


Under the hood

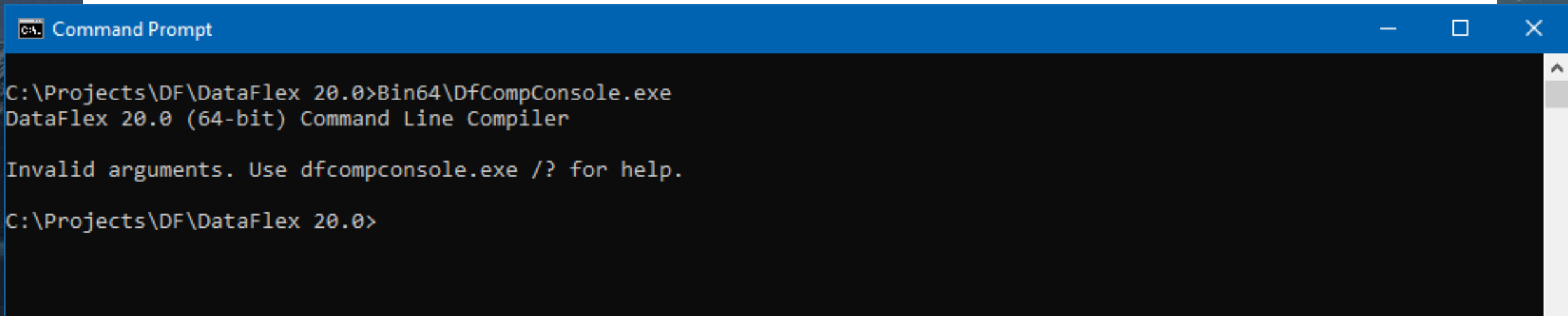
- › Switched from cWebService to cWebHttpHandler
 - › More flexibility in the JSON format
 - › No more valuetree
 - › http://localhost/WebOrderMobile_19_1/WebServiceDispatcher.wso
http://localhost/WebOrderMobile_20/WebServiceDispatcher.wso
- › Client web properties of type number & date
 - › Never fully implemented
 - › Suffered from regional settings issue

A wide-angle landscape photograph of a coastal scene at night. In the foreground, a calm body of water reflects the light from the sky. The middle ground features two prominent, rugged mountains covered in snow, their peaks sharp against the dark sky. The background is a vast, dark sky filled with numerous stars and a faint, ethereal green aurora borealis that stretches across the upper half of the frame. The overall mood is serene and majestic.

DfCompConsole

Command line compiler

- › Compiler that provides output on the console
- › It raises an error code when it exits
- › Created & optimized for automating build processes
 - › Separate thread for the UI
- › Note that it is not a new compiler, but a wrapper for the existing compiler



```
C:\> Command Prompt

C:\Projects\DF\DataFlex 20.0>Bin64\DfCompConsole.exe
DataFlex 20.0 (64-bit) Command Line Compiler

Invalid arguments. Use dfcompconsole.exe /? for help.

C:\Projects\DF\DataFlex 20.0>
```

Options

› Similar to DfComp.exe

Command Prompt

```
C:\Projects\DF\DataFlex 20.0>Bin64\DfCompConsole.exe /?
```

```
DataFlex 20.0 (64-bit) Command Line Compiler
```

Usage:

```
dfcompconsole {sourcefile} -x {workspace_path} -{opts_on} -{opts_off}-
```

```
{sourcefile}      - Path to DataFlex source file
{workspace_path}  - Path to DataFlex workspace(sws) file
{opts_on}         - Turns compiler options on
{opts_off}        - Turns compiler options off
```

Options:

```
I# - Console output level (0:no output, 1:compact output, 2:default)
C  - Force recompile
E# - Error notification level (0:quiet, 1:default, 2:each)
F  - Intermediate coding (.prn) file
V# - Verbosity of intermediate coding (.prn) file
P  - Precompile
W  - Write error file (.err)
```

```
C:\Projects\DF\DataFlex 20.0>
```


Build automation

- › We've automated the build of the DataFlex product since 19.1
- › Jenkins is used for a build server
 - › Sources are pulled from GIT
 - › C sources are build resulting in
 - › Results in compiler, runtime, CDS, drivers...
 - › DataFlex sources use this fresh compiler to build flex components
 - › Results in studio, db explorer, examples, ...



WebApp Server improvements



Configure windows user

- › Run webapp.exe under a different windows user
 - › Configure per webapp
 - › Password securely stored
- › Better isolation on shared servers

Windows User

☒ This Web Application runs as another user

Select User

DataFlex 20.0 Web Application Server Administrator (64-bit) - Service running

File Edit View Tools Help

SPASMEExample
WebOrder
WebOrderMobile
WebOrderMobileSQL

Type	Value
Current Sessions	0
Peak Sessions	0
Total Sessions	0
Current Processes	2
Peak Processes	2
Total Processes	2
Client Messages	0
Server Messages	0
Time	00:01:23
Last Accessed	00:01:22
Running as user	Harm

Other WebApp Server features

- › Concurrent session limit per webapp
- › Maximum number of processes per slave
- › Automatic reload without downtime
- › Better handling of processes in error state
- › Improved administrator responsiveness

Concurrent Sessions

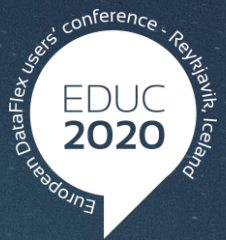
Maximum concurrent sessions (0 = infinite)

What's next?



What's next?

- › There is quite some work to do on DataFlex 2020
 - › Alpha 2 pretty soon
 - › First Alpha 1 bugs are already reported 😞
 - › DB2 & ODBC Unicode Drivers are progressing well
- › We hope to get into our 'regular' release cycle from this point on
- › The earlier you get involved, the sooner we will be able to get it out!



Come see the light

Thank you!
Are there any questions?