

# 4D v14 R4 & v14 R5

## Presentation to Tech Support



Monday, 16th February, 2015

# 4D v14 R4 feature list

- **4D View: Get cell border definition by programming**
- **New property to define radius for rounding corner rectangles**
- **Show form values by object names in debugger**
- **Show record lock count in debugger**
- **BuildApp codesign changes in OS-X 10.9.5 and Yosemite**
- **Add Czech language to 4D**

# 4D v14 R4 feature list (2)

- 4D IC Mail content-type SMTP Attachment
- Import/export a database structure by programming
- Remove XSLT 4D commands from 64-bit OS X
- PROCESS 4D TAGS improvements
- SQL SELECT DISTINCT performance improvement
- [OEM] Find in sorted array

# 4D v14 R4 feature list (3)

## ISOFUNCTIONAL

- WebArea System Mac 64bit
- Remove Xalan/XSLT dependency in logs
- HTTP Client replacement with new network layer
- Form editor clean-up
- IC Plugin 64-bit on Mac OSX
- 4D Server MenuBars refactoring (carbon-free and altura-free)
- 4D Pop menu (altura free, carbon free)

# 4D View: Get cell border definition by programming



4D v14 R4

## Benefit:

Improving generic programming as well as procedural reading of 4D View to automatically create other documents, such as Excel XML files.

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

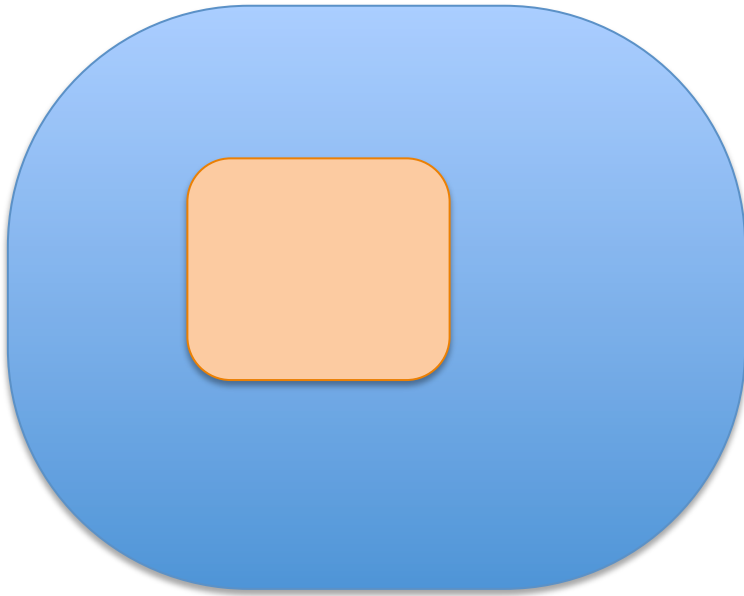
```
PV GET BORDER ROW RANGES (area; left; top; right; bottom;  
borderType; borderColor)
```

```
PV GET BORDER COLUMN RANGES (area; left; top; right; bottom;  
borderType; borderColor)
```

# New property to define radius for rounding corner rectangles



4D v14 R4



## Benefit:

To define rounded corners for a rectangle in the form editor properties and programmatically.

## Example:

```
OBJECT Get corner radius (*;"Round Rectangle")
```

```
OBJECT SET CORNER RADIUS (*;"Round Rectangle";Radius)
```

# Show form values by object names in debugger

4D v14 R4

For dynamic variable, object names are displayed in 4D Debugger and Runtime Explorer.

Current Form Values	
Button Obj1	1
Button Obj2	0
Combo Box Obj1	3 elements
Combo Box Obj1	1
Combo Box Obj1	""
Combo Box Obj1	"Item 1"
Combo Box Obj1	"Item 2"
Combo Box Obj1	"Item 3"

## Benefit:

- Easy debugging when using dynamic variables.

**4D v14 R4**



- 4D Debugger
- Runtime Explorer



# BuildApp codesign changes in OS-X 10.9.5 and Yosemite

4D v14 R4

## Benefit:

Generate 4D-certified solutions that are ready for the code signing rules in Mac OS X 10.9.5 and 10.10.



# Add Czech language to 4D

4D v14 R4



- 4D generates new zip package for Czech language.
- Czech language is not available in DMG Multilanguage and Installer Windows.

# 4D IC Mail content-type SMTP Attachment



4D v14 R4

## Benefit:

- To specify the content type of each attachment.
- To define the specific application to open attachment.



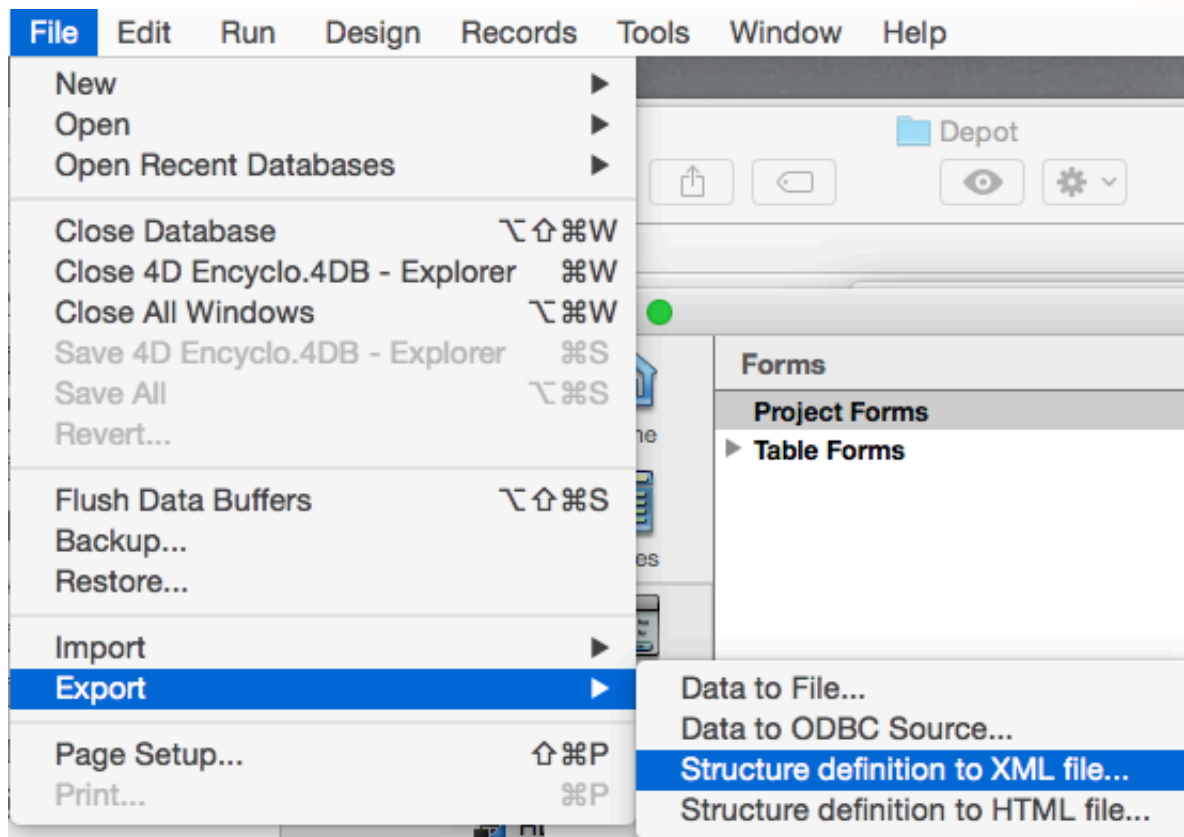
## Example:

```
SMTP_Attachment($smtp_id;"file";2;0)
```

```
SMTP_Attachment($smtp_id;"file";2;0;"";"contentType")
```

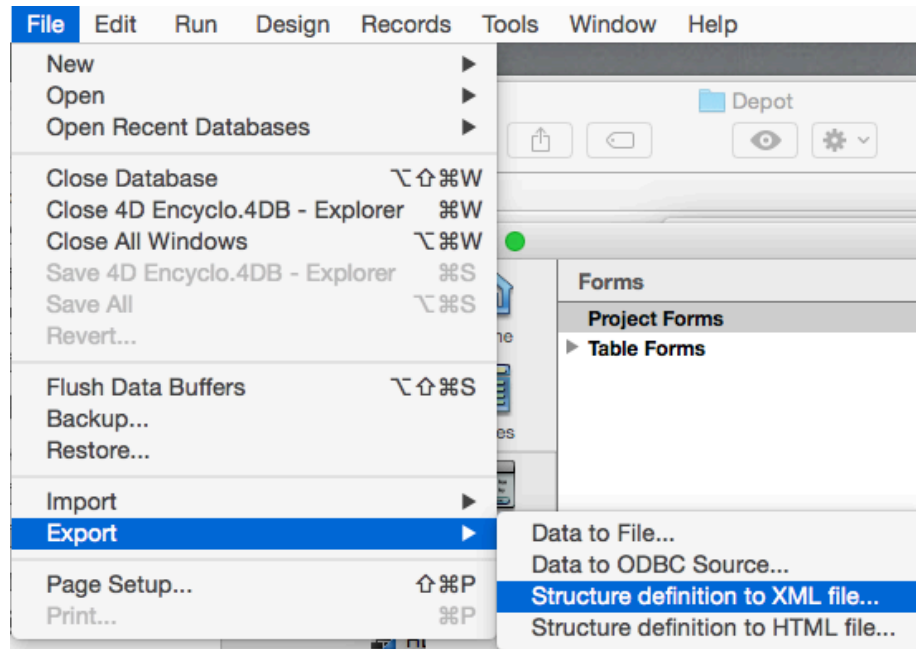
# Import/export a database structure by programming

4D v14 R4



# Import/export a database structure by programming

4D v14 R4



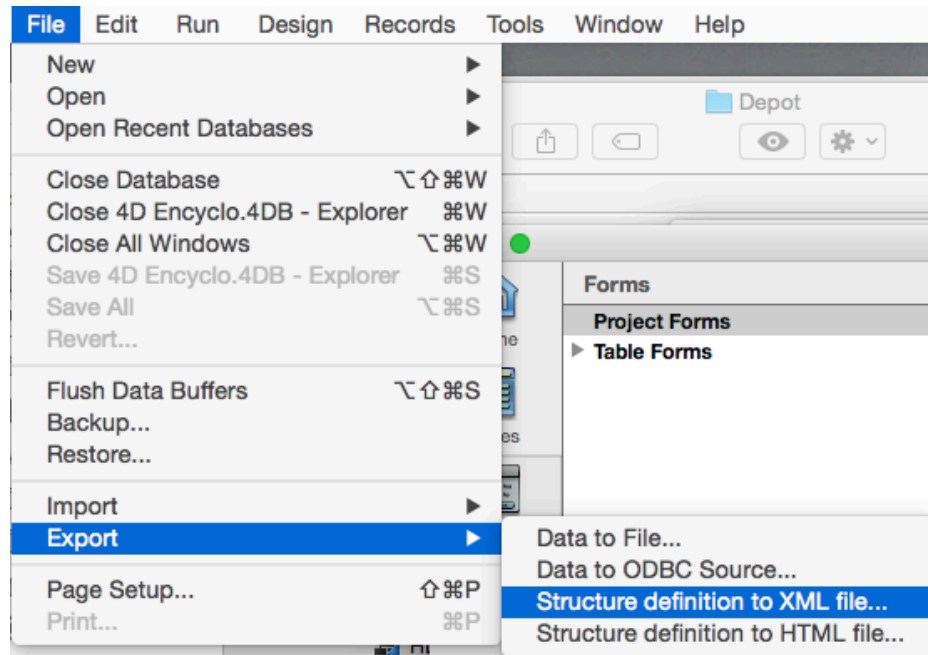
```
C_TEXT(xmlStructure)
```

```
EXPORT STRUCTURE(xmlStructure)
```

```
TEXT TO DOCUMENT ("struct.xml";xmlStructure;"UTF-8" ;  
Document with CRLF)
```

# Import/export a database structure by programming

4D v14 R4



```
$text:=Document to text("struct.xml")  
IMPORT STRUCTURE($text)
```

# 4D Remove XSLT 4D commands from 64-bit OS X

4D v14 R4

- `_o_XSLT APPLY TRANSFORMATION`
- `_o_XSLT GET ERROR`
- `_o_XSLT SET PARAMETER`

# PROCESS 4D TAGS improvements

4D v14 R4

- Parameters

```
PROCESS 4D TAGS ($input;  
$output;"2015";->$array1)
```

- #4DEVAL

```
<!--#4DEVAL $title := $1-->  
<!--#4DEVAL $yValuesArrPtr := $2-->  
<!--#4DEVAL DELETE FROM ARRAY:C228  
($yValuesArrPtr{1}->;9;100000)-->
```

- #4DLOOP

```
<!--#4DLOOP ($i<=8)-->
```



# [OEM] Find in sorted array



4D v14 R4

## Benefit:

- Fast search by dichotomy in a sorted array, mainly big arrays of strings.
- No additional work (and execution time) to find the position where the element should be inserted if it has not been found.

Number	String
1	alpha00
2	alpha01
3	alpha01
4	alpha20
5	alpha51
6	alpha55
7	alpha87
8	beta18
9	beta22
10	beta46
11	beta48
12	beta49
13	beta58
14	beta61

**Find in sorted array** (array; value ; > | < ;  
{posFirst {; posLast} }) -> Function result

# SQL SELECT DISTINCT performance improvement

4D v14 R4

## Benefit:

Optimized to run up **80% faster**.



Begin SQL

```
|      SELECT DISTINCT myField  
|      FROM myTable
```

End SQL

# Isofunctional

4D v14 R4

**Work has been done on refactoring without Carbon and 4D 64-bit Mac is moving forward.**

- WebArea System Mac 64bit
- Remove Xalan/XSLT dependency in logs
- HTTP Client replacement with new network layer
- Form editor clean-up
- IC Plugin 64-bit on Mac OSX
- 4D Server MenuBars refactoring (carbon-free and altura-free)
- 4D Pop menu (altura free, carbon free)



# 4D v14 R5 feature list

- SIGNATURE OSX 10.9.5
- [PLUGIN SDK] Use 4D dialogs from .4dbase stored in plugin resource
- SQL GROUP BY performance improvement - Phase 1
- SQL GROUP BY/ORDER BY performance improvement - Phase 2
- Activate HTTP Cache by default
- Network connection Security Improvement
- ServerNet: Replace legacy network stack
- Use long names for form objects

# 4D v14 R5 feature list (2)

- Support SVG filters on Windows when Direct2D is enabled
- Get the display coordinates of a listbox cell
- Get the display coordinates of a listbox object
- Get click count
- Get database measures improvements
- Remove Xalan/XSLT dependency for GRAPH command
- [OEM] New window type : "toolbar »
- 4D Write Pro v14 R5 Technical Preview
- Send .mht file with SMTP\_QuickSend [4DIC]

# 4D v14 R5 feature list (3)

## ISOFUNCTIONAL

- 4D Server OSX 64 bit
- Printing for 64-bits on Mac OSX
- Use Cocoa windows for 4D forms
- Export a database structure in HTML without using XALAN.
- ODBC drivers Windows installer refactoring
- Picture Pop-Up Menu refactoring
- 4D Pack Plugin 64-bit on Mac OSX
- Upgrade Xerces to 3.1.1
- Auto-update: Remove assumptions regarding application structure

# SIGNATURE OSX 10.9.5

4D v14 R5

## Benefit:

4D and 4D Server are certified for Mac OS X 10.9.5 and 10.10.

Type	Version	OS 10.10	OS 10.9.5	OS 10.9.4	OS 10.8.5	OS 10.7.5
v13.x	v13.0 to v13.5	Rejected	Rejected	Accepted	Accepted	Accepted
	v13.5 Nighty builds	Accepted (Build > 171262)	Accepted (Build > 171262)	Accepted	Accepted	Accepted
	v13.6 and above	Accepted	Accepted	Accepted	Accepted	Accepted
v14.x	v14.0 to v14.2	Rejected	Rejected	Accepted	Accepted	Accepted
	v14.2 Nighty builds	Accepted	Accepted	Accepted	Accepted	Accepted
	v14.3 and above	Accepted	Accepted	Accepted	Accepted	Accepted
v14Rx	v14R2	Rejected	Rejected	Accepted	Accepted	Accepted
	v14R3 and above	Accepted	Accepted	Accepted	Accepted	Accepted

# Use 4D dialogs from .4dbase stored in plugin resource

4D v14 R5

## Benefit:

- Easier resource management of 4D dialogs for 4D plug-in developers.



## Methodology:

- Create a 4D Database with your dials
- Save it in "<Plugin.Bundle>/Resources/Internal Components"
- Use PA\_OpenDialog command



# SQL GROUP BY/ORDER BY performance improvement

4D v14 R5

SELECT...FROM ... GROUP  
BY ... or ORDER BY ...

SELECT ... FROM ... INNER  
JOIN ... GROUP BY ... or  
ORDER BY ...



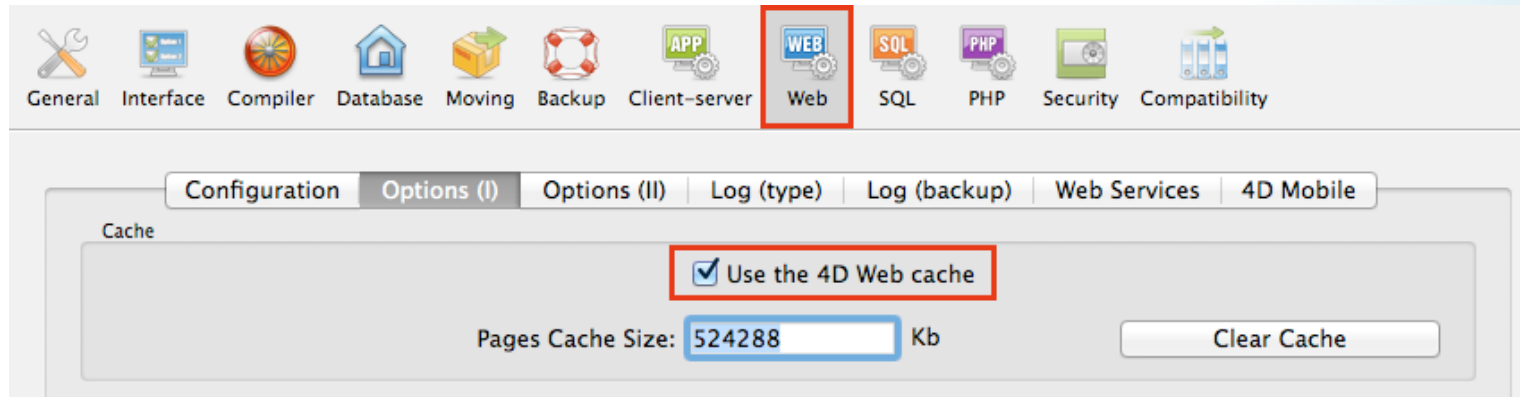
## Benefit:

Optimized to run up **10 times faster.**

- For single tables
- For more complex cases, particularly with joined tables

# Activate HTTP Cache by default

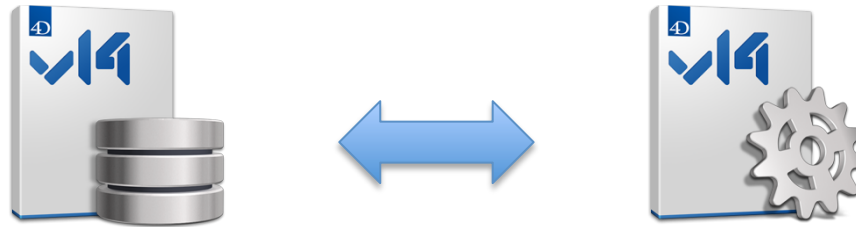
4D v14 R5



- For new database, the cache of the 4D Web server will be set by default.
- For converted database, the option will be unchanged.

# Network connection Security Improvement

4D v14 R5



## Benefit:

- Weak cipher list suites have been removed
- Certificate key length has been increased
- You can use your own encryption key for your secured client-server communications.

# ServerNet: Replace legacy network stack

4D v14 R5

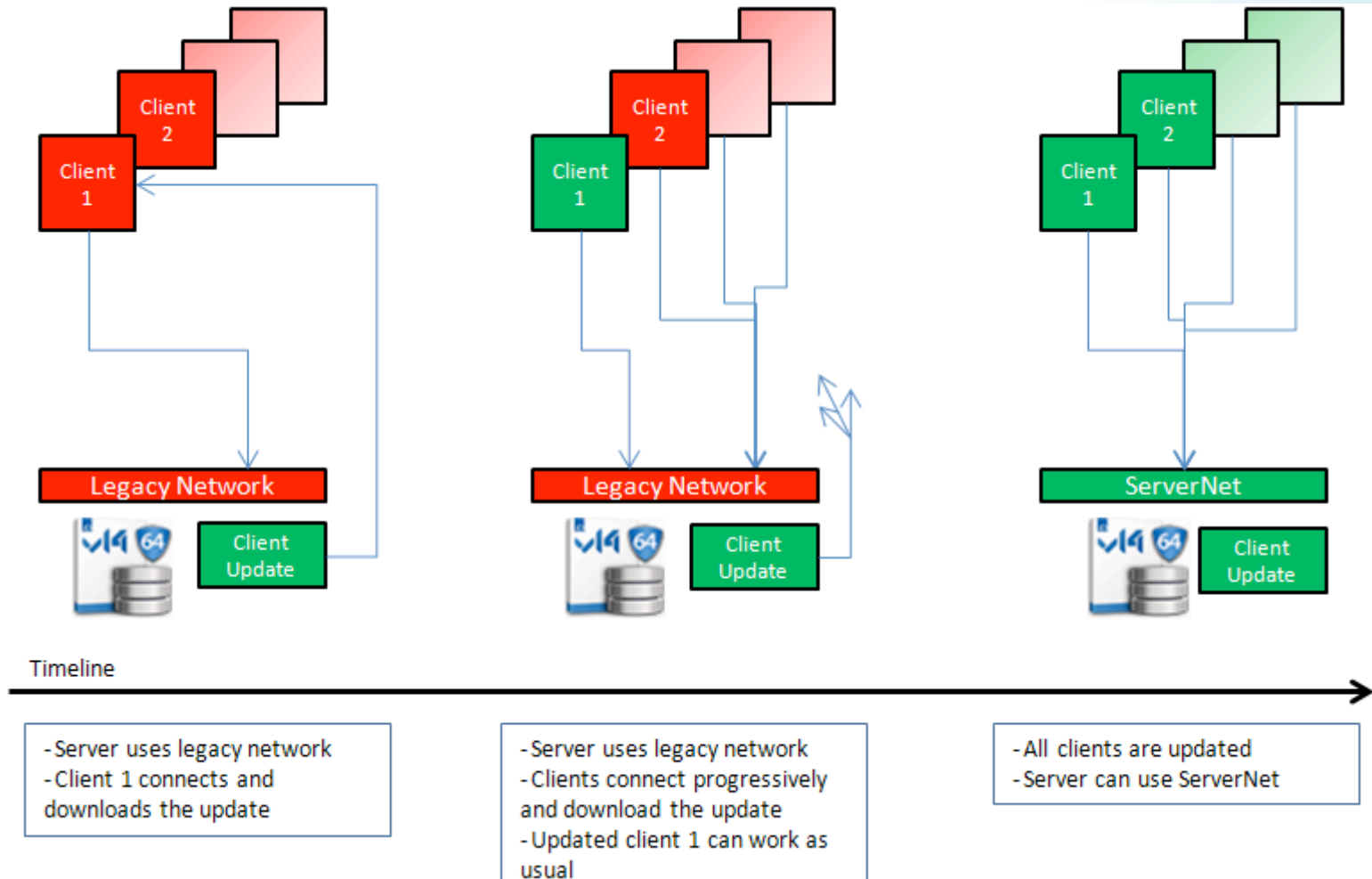
- Compatibility with both network stack (Except version Mac 64 bits)
- 4D uses by default:
  - For the converted databases: old version.
  - For the new databases: new version.

## Benefit:

- Use a new networking API.
- Integrate new feature in the future, by example POSTPONE, SLEEP.

# ServerNet: Replace legacy network stack

4D v14 R5



# ServerNet: Replace legacy network stack

4D v14 R5

- Logging client requests :
  - "Update client" event
  - "Fail to connect" event



- To activate:

```
SET DATABASE PARAMETER(Diagnostic log recording;1)
```

# Use long names for form objects

4D v14 R5

▼ Objects	
Type	Button
Object Name	Button_Admin_Cancel_Macintosh
Variable Name	
Title	Cancel

## Benefit:

Ex: Use object names as tags for interface settings.

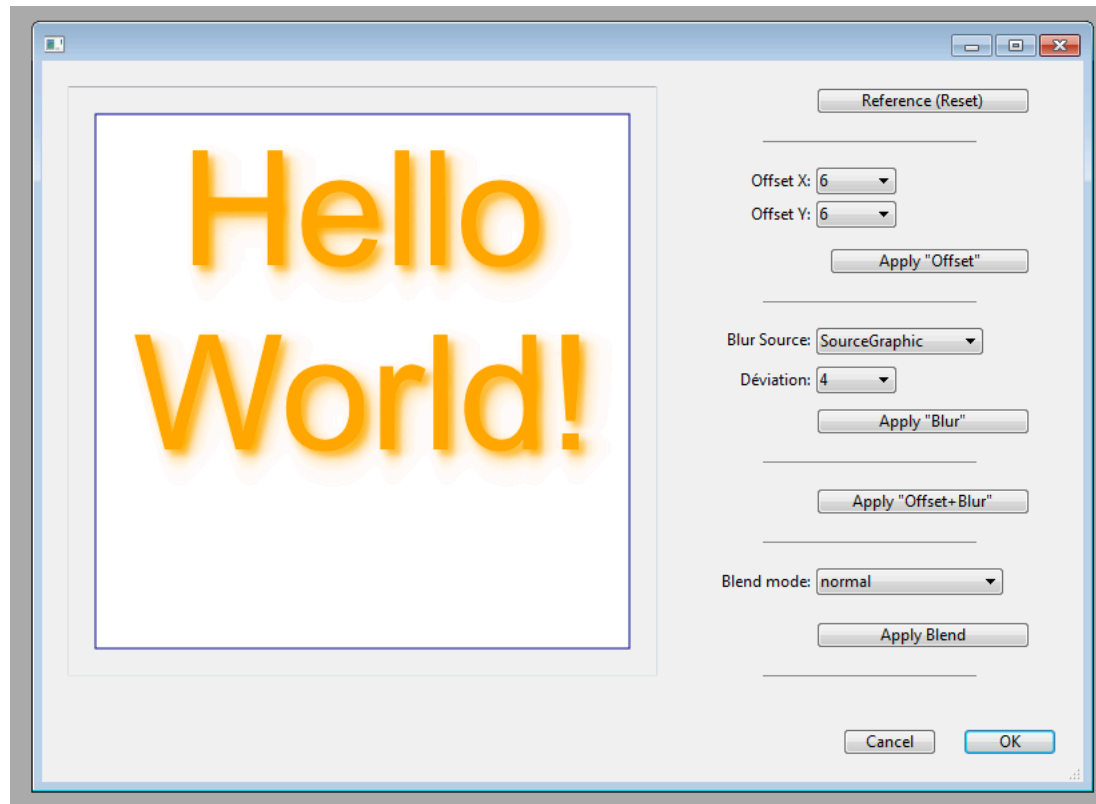
```
OBJECT SET VISIBLE ( *; "@Macintosh@" ; false )
```

# Support SVG filters on Windows when Direct2D is enabled



4D v14 R5

See the H.D.I. "HDI\_UseSvgFilters"



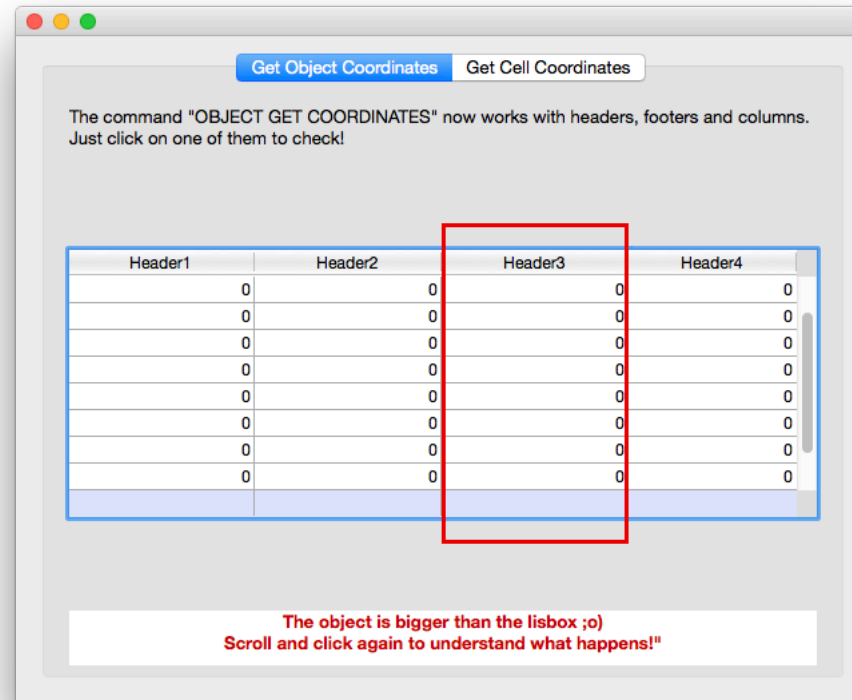


# Get the display coordinates of a listbox cell/column



4D v14 R5

See HDI



**OBJECT GET COORDINATES** (\*;"Col3";\$x1;\$y1;\$x2;\$y2)

**OBJECT GET COORDINATES** (\*;"Head2";\$x1;\$y1;\$x2;\$y2)

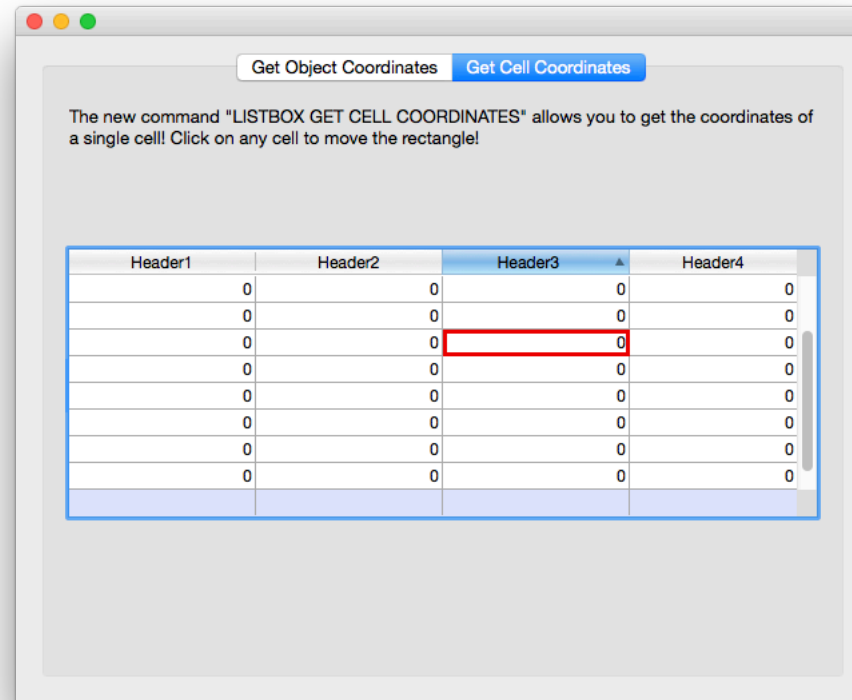
**OBJECT GET COORDINATES** (\*;"Footer1"; \$x1;\$y1;\$x2;\$y2)

# Get the display coordinates of a listbox cell/column



4D v14 R5

See HDI



**LISTBOX GET CELL COORDINATES** (\*;"LB1";\$col;\$row;\$x1;\$y1;\$x2;\$y2)

# Get click count



4D v14 R5

## See HDI

Inside the object methods, the new "Clickcount" command will return "1" when the first "on clicked" event is generated, and "2" when the "on double clicked" event is generated.

If the object does not support the double-click event (or if the event is not activated for this object) then the function will return "2" when the second "on clicked" event is generated.

If more than two clicks occur, then more "on clicked" events will be generated inside the object method again and the Clickcount function will return 3, 4, 5, etc.

---

Button	Header1	Header2	Clear	Events	Clicks
<input checked="" type="checkbox"/> Check Box				On Clicked	4
<input type="radio"/> Radio Button				On Clicked	3
<input type="radio"/> Radio Button				On Double Clicked	2
				On Clicked	1
				On Clicked	1

3D Button

0 1 2 3 4 5

$\$n := \text{Clickcount}$

# Get database measures improvements



4D v14 R5

See HDI

- simple example

See the technote (US et FR) about this command!

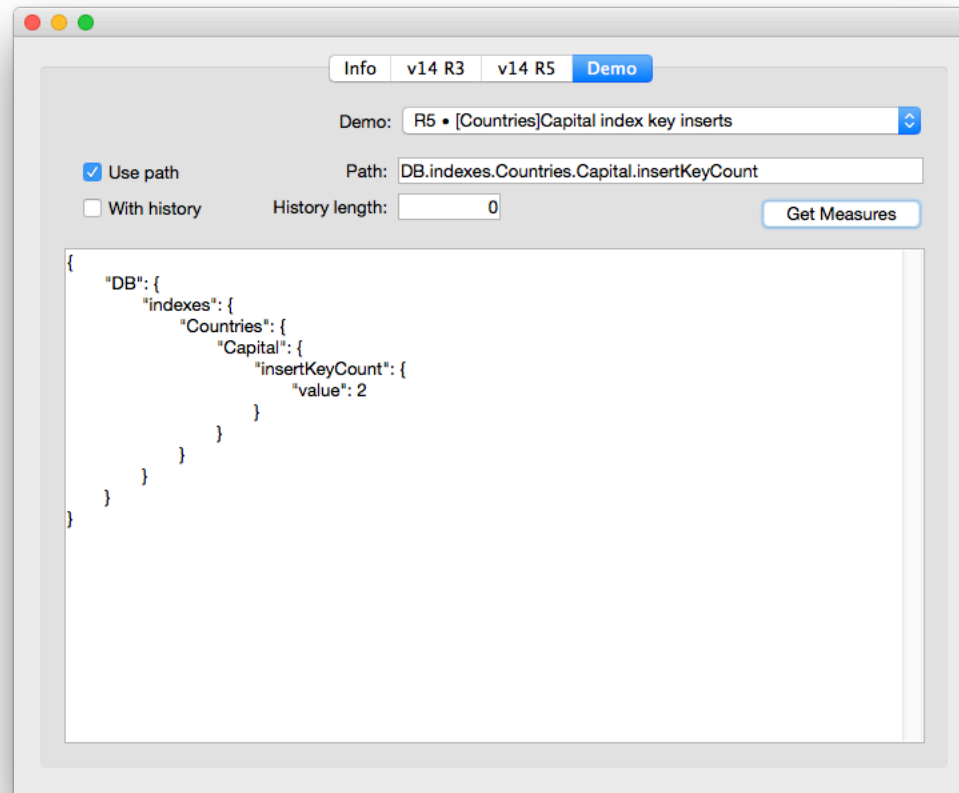
- Component "GetMeasures.4dbase"
- Tool "MeasuresReport.4dbase"

# Get database measures improvements



4D v14 R5

## HDI

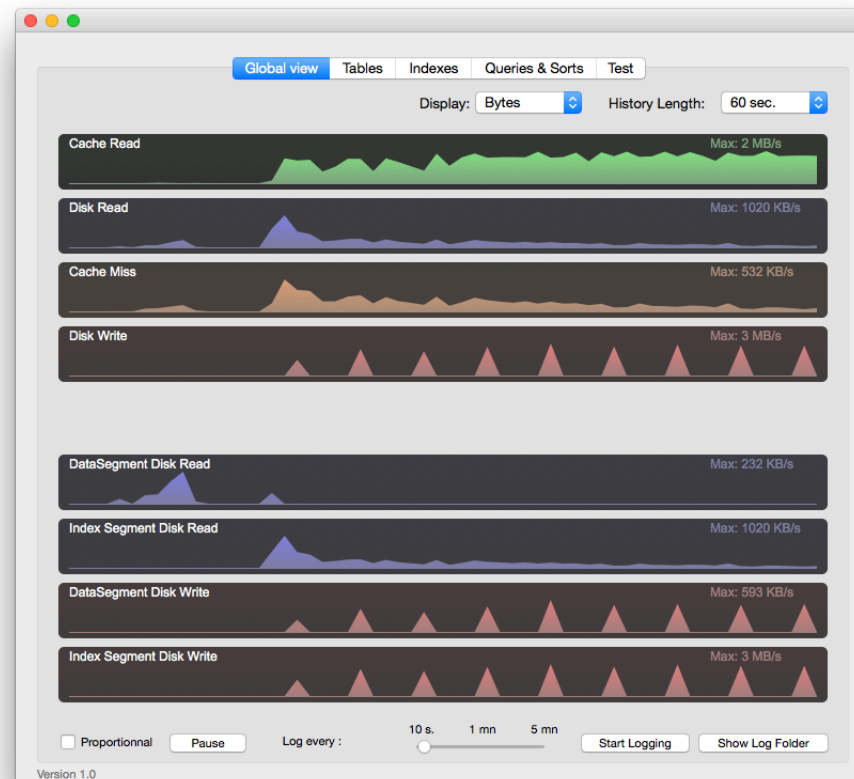


# Get database measures improvements



4D v14 R5

## Component

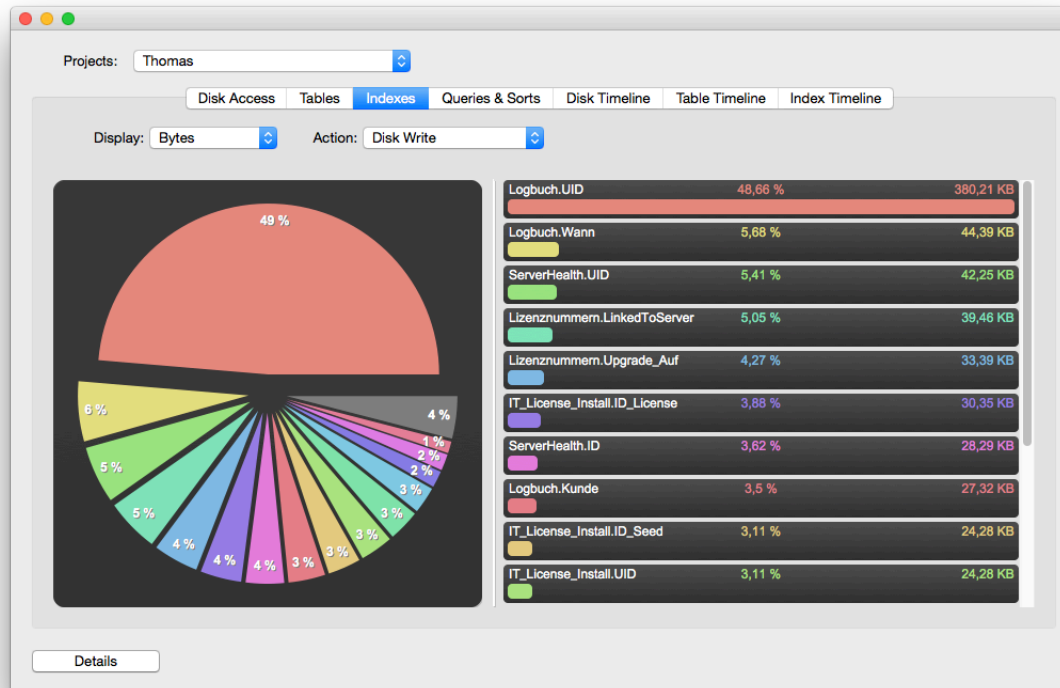


# Get database measures improvements



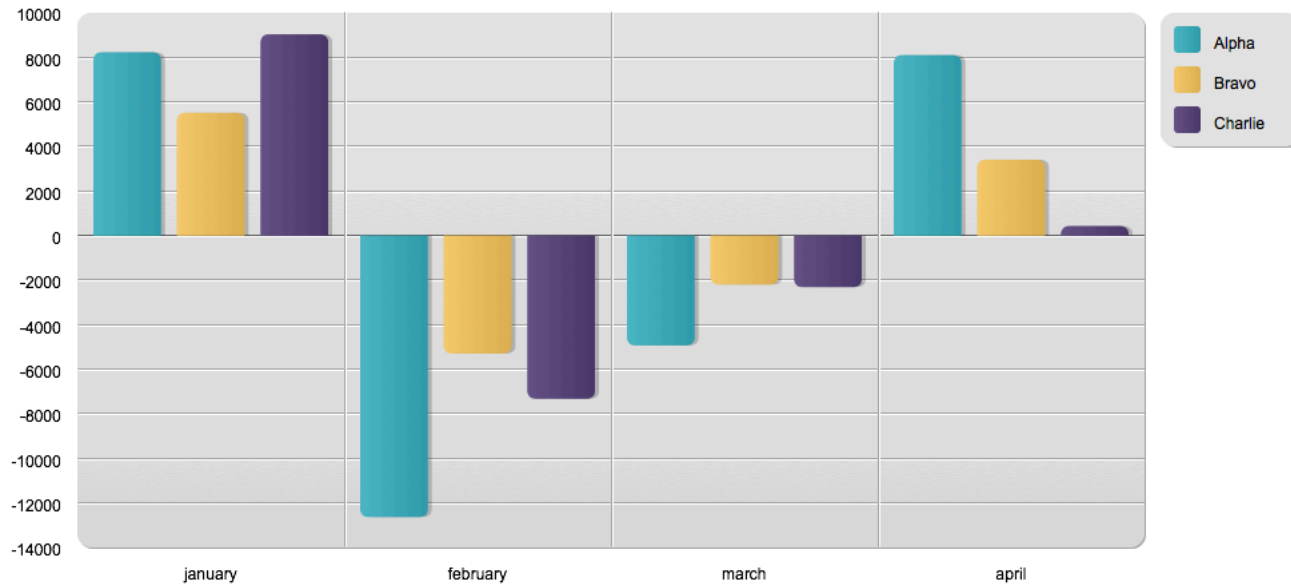
4D v14 R5

## Tool



# Remove Xalan/XSLT dependency for GRAPH command

4D v14 R5





# Remove Xalan/XSLT dependency for GRAPH command

4D v14 R5

## Before:

"xml" (internal) -> "XSLT" (.xsl resources) -> "SVG"

## After:

"xml" (.svg resources) -> "Process 4D tags"(internal) -> "SVG"

# [OEM] New window type : "toolbar"

4D v14 R5

- **New type of window**
- **Replaces the automatic user toolbar (based on menus)**
- **Based on a form height - Full screen width**
- **Single window (no tile)**
- **Always front most window**
- **Taken into account when zooming other windows**

# 4D Write Pro v14 R5 Technical Preview



4D v14 R5

- **Strategy :**
  - Very first step of 4D Write Pro delivered
    - Show progress of this major feature for 4D
    - Anticipate change for customer
    - Get feedback
- While 4D Write Pro doesn't cover all customers need, 4D Write plug-in will be maintained.

# 4D Write Pro v14 R5 Technical Preview



4D v14 R5

- 4D Write Pro is a new object in form editor.

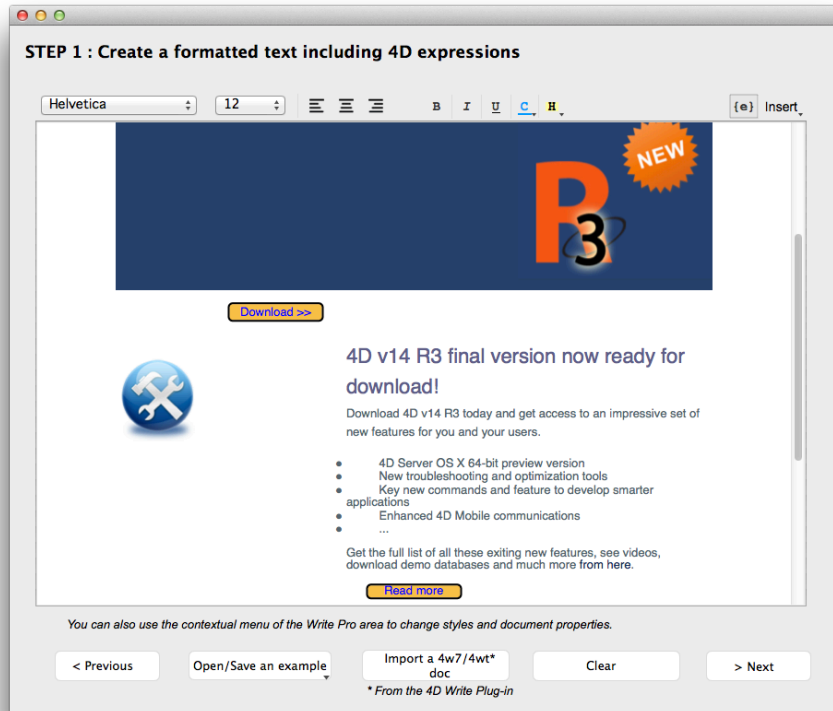


- 4D Write pro is using the same license as 4D Write
- 2 main user stories delivered with R5 :
  - Document compatibility with 4D Write plugin
  - Send an email with a 4D Write Pro document (with styled paragraphs, and images inline)

# 4D Write Pro v14 R5 Technical Preview



4D v14 R5



## Commands available:

- Work with a 4D Write Pro object :
  - **OBJECT** Commands
  - **ST** Commands
- New WP commands:
  - Import and create a document
  - Export document (*MIME html format, web page format, or lossless format*)

# 4D Write Pro – next steps

4D v14 R5



## Still a lot to do !!!

- Pagination
- Printing
- Document/Paragraph/Text/
- Images properties manipulation by programming
- Absolute image positioning
- Tables
- ...

# Send .mht file with SMTP\_QuickSend [4DIC]

4D v14 R5

- New option for sending a MIME format message.

```
$err_l := SMTP_QuickSend( hostName ; msgFrom ;  
msgTo ; subject ; bodyMessage {; sessionParam}{;  
port}{; userName ; password} )
```

- Possible to specify *sessionParam* for a MIME send with image embedded.



**4D v14 R5**

- ## Example:

```
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=A41C23183DCC41E886E0468A6AD059D2
--A41C23183DCC41E886E0468A6AD059D2
Content-Type: text/html; name="document.html"
Content-Transfer-Encoding: base64

77u/
PGh0bWwgeG1sbnM9Imh0dHA6Ly93d3cudzMub3JnLzE5OTkveGh0bWwiPjxoZWFKpJx0aXR5ZT40RCBX
0ZSBQcm8gTmV3IERvY3VtZW50PC90aXR5ZT48L2h1YWQ
+PGJvZHkgc3R5bGU9Im1hcmdpbjowcHQgODUuMDVwdDtiYWNrZ3JvdW5kLWNvbG9yOiNGRkZGRkY7Y
a2dyb3VuZC1pbWFnZTp1cmwvJ2NpZDoyMDE1MDIxMC4xNTU2MDQnKTtiYWNrZ3JvdW5kLXBvc2l0aW9
mxlZnQ7YmFja2dyb3VuZC1yZXBIYXQ6bm8tcmVwZWFOlj48cCBzdHlsZT0id2hpdGUtc3BhY2U6cHJILXdy
A7bWVyZ2luOjBwdDtwYWRkaW5nOjBwdDt0ZXh0LWFsaWduOmxiZnQ7Zm9udC1mYW1pbHk6J0hlbHZl
Y6-77u/
```



# Isofunctional

4D v14 R5

- Printing for 64-bits on Mac OSX
- Use Cocoa windows for 4D forms
- 4D Server OSX 64 bit
- Export a database structure in HTML without using XALAN.
- ODBC drivers Windows installer refactoring
- Picture Pop-Up Menu refactoring

# Upgrade Xerces to 3.1.1

4D v14 R5

- Upgrade Xerces from 3.0.1 to 3.1.1
- All DOM and SAX commands in 4D language are impacted.



# Auto-update: Remove assumptions regarding application structure

4D v14 R5

- SET UPDATE FOLDER and COPY DOCUMENT commands are impacted.
- The updater version is in “*UpdaterInternalRevision*” key inside Info.plist file.

# More info about R-releases

- Roadmap

[http://go.4d.com/rs/4d/images/4D Roadmap-January 2015-FR.pdf](http://go.4d.com/rs/4d/images/4D_Roadmap-January_2015-FR.pdf)

- 14R4

<http://www.4d.com/products/r-release/new-in-4d-v14-r4.html>

- 14R5

<http://forums.4d.fr/Post/FR/15804640>

