



10 Writeln 'Hi Py';  
20 eg.execStr(STARTMAIN);  
30 dir(delphivcl);

# VCL4Python

EKON 26

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# Agenda EKON

- Hybrid Development Pascal and Python
- What's important in VCL4D Calls?
- Testing the Module
- Benefits of Integration

3-4 Use Cases or Questions (eg.: captcha)





# Get a pip first

- All you need to start using V4D is get the module:

DelphiVCL for Python is a native Python module. It is available via PyPi or download the source via GitHub. It's natively compiled for Win32 and Win64 and freely redistributable.

- The easiest way to install is via PIP: (dll: delphivcl.pyd)  
**pip install delphivcl**

You can also install manually by downloading or cloning the repository from GitHub:

<https://github.com/Embarcadero/DelphiVCL4Python>

- <https://github.com/maxkleiner/DelphiVCL4Python>



# Important for VCL/PCL

Entity	Refactor Function	Why or why not
Small Splitter or VCL Controls	Refactor Default VCL <b>Case Sensitive</b>	To small but make it larger for responsiveness Can't touch it right or "poScreenCenter"
BringToFront fsStayOnTop	Windows message <b>WM_SETTINGCHANGE</b>	Focus on background, sent by switching only fssurface, 'fsSurface', available
DelphiVCL.pyd	delphivcl.pyd	Older versions with PascalCase naming
FreeConsole()	<b>Performance Gain</b> GUI apps	GUI applications run in interaction with command window (console)- primary control
Properties	SetProps()	Set properties/attributes also directly
F1..F12 Keys	User Interface, menus	No keys on virtual Keyboards
MainForm	Instantiating	we instantiate a class instead of Form
Release Form	Memory Management	<code>def __on_form_close(self, sender, action)</code>

demo: 1072\_captcha21\_EKON26\_tutor97hp.txt

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# 4 Integrations

- 1. Call the script from terminal or shell:
  - > py examples\httpheader1.py --url "https://www.ipso.ch/ibz"
- 2. Reroute the script to another output:
  - > println(getDosOutput('py examples\httpheader1.py --url "https://www.ibz.ch"',exePath));
  -

[http://www.softwareschule.ch/examples/1150\\_pydemo42httpheader.txt](http://www.softwareschule.ch/examples/1150_pydemo42httpheader.txt)

Demo: 1150\_pydemo42httpheader1.txt



# 4 Integrations

- 3. Integrate the interpreter:  
eg.execstr(filetoString('C:\maXbox\works2021\maxbox4\examples\httpheader1.py'));
- >println(eg.evalstr('funcHTTPHeader("https://www.ipso.ch/ibz")));
- 
- 4. Integrate the script and the interpreter:  
eg.Execstring(HTTP\_HEADER\_DEF);  
>println(eg.evalstr('funcHTTPHeader("https://www.ipso.ch/ibz")));
-



# Testing

```
STARTMAIN =  
  
'def main():  
  
' Application.Initialize()           '+LF+  
  
' Application.Title = "Hello Python" '+LF+  
  
' Main = MainForm(Application)        '+LF+  
  
' Main.Show()                         '+LF+  
  
' FreeConsole()                      '+LF+  
  
' Application.Run()                  '+LF+  
  
' Main.Destroy()                     '+';
```

Demo: VCL4Python and Python4Delphi and SynEdit - TSynPythonSyn

[http://www.softwareschule.ch/examples/1096\\_MainFormSVG\\_2test4Python\\_VCL4Python2.pas](http://www.softwareschule.ch/examples/1096_MainFormSVG_2test4Python_VCL4Python2.pas)



# Use Show Case

The screenshot shows a Windows desktop environment with several open windows:

- A Python code editor window titled "11 \_\_init\_\_.py" showing code related to finding DelphiVCL modules.
- A terminal window titled "Windows.Svt" showing command-line output.
- A file explorer window showing the directory structure of a Python package named "hellodelphivcl".
- A command prompt window showing the path "C:\Users\breitsch\AppData\Local\Programs\Python\Python37-32\Lib\site-packages\delphivcl".
- A file manager window showing files in "Import\dist" folder.
- A small application window titled "A VCL Form..." displaying the text "Hello DelphiVCL\_mx41e for Python".
- A system tray icon for "maxbox" with a red "X" over it.

The taskbar at the bottom shows various pinned icons and the date/time: "07.02.2022 21:35 DEU".



# Problems with multicalls

- Check unload and reload a module
- names in the module namespace update cycle
- Editors lifecycle (shell, service or main mem)

```
You can unload the DelphiVCL.pyd each time: `` eg.execStr('vcl4d_filename = delphivcl.file');

println('import name path: '+eg.EvalStr('vcl4d_filename'));

eg.execStr('dll = ctypes.CDLL(vcl4d_filename');

//https://stackoverflow.com/questions/46450368/removing-loaded-pyd-files

eg.execStr('if vcl4d_filename.endswith("pyd"): '+LF+
    '_ctypes.FreeLibrary(dll._handle) '+LF+
    '_ctypes.FreeLibrary(dll._handle) '); println('unload `VCL4Python');`
```

<https://github.com/Embarcadero/DelphiVCL4Python/issues/7>

Demo fix try: 1096\_P4D\_VCL4Pythontest2\_EKON26.pas

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# Finally you can test with

- >>> len(dir(delphivcl))
- >>> print(delphivcl.\_\_spec\_\_)
- getDosOutput('py -3.6-32 -c "from delphivcl import \*; '+  
                      'print(dir()[0:45])"',exePath));
- Wine Reference or RealVNC on Android
- UISpy/dll to find Functions & Controls
- using PyScripter IDE VCL.ActivityIndicator

1072\_captcha21\_EKON26\_tutor97hp.txt

demo: pydemo37.htm

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# VCL4Py Developer Links

- Tutorial

[http://www.softwareschule.ch/download/maxbox\\_starter92\\_1.pdf](http://www.softwareschule.ch/download/maxbox_starter92_1.pdf)

- Demos

[http://www.softwareschule.ch/examples/1096\\_MainFormSVG\\_2test4Python\\_VCL4Python2.txt](http://www.softwareschule.ch/examples/1096_MainFormSVG_2test4Python_VCL4Python2.txt)

[http://www.softwareschule.ch/examples/1150\\_pydemo42httpheader1.txt](http://www.softwareschule.ch/examples/1150_pydemo42httpheader1.txt)

[https://github.com/maxkleiner/DelphiVCL4Python/blob/main/samples/1096\\_P4D\\_VCL4PythonTest2\\_EKON26.pas](https://github.com/maxkleiner/DelphiVCL4Python/blob/main/samples/1096_P4D_VCL4PythonTest2_EKON26.pas)

[https://github.com/maxkleiner/DelphiVCL4Python/blob/main/samples/1072\\_captcha21\\_EKON26\\_tutor97.txt](https://github.com/maxkleiner/DelphiVCL4Python/blob/main/samples/1072_captcha21_EKON26_tutor97.txt)

## Developer Site

<https://github.com/maxkleiner/DelphiVCL4Python>

<https://github.com/Embarcadero/DelphiFMX4Python>

## Guideline →

[https://github.com/maxkleiner/DelphiVCL4Python/blob/main/samples/DelphiVCL\\_for\\_Python\\_Quick\\_Start\\_Guide.pdf](https://github.com/maxkleiner/DelphiVCL4Python/blob/main/samples/DelphiVCL_for_Python_Quick_Start_Guide.pdf)

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# the source is with you!

max@kleiner.com

[www.softwareschule.ch](http://www.softwareschule.ch)

<https://learndelphi.org/python-native-windows-gui-with-delphi-vcl/>



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