



CodeRage 2019



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FMX-JS Bridge – how to combine FMX host app and HTML/JS UI

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Overview

- Hybrid apps or Native apps – pros and cons
- Hybrid apps with Delphi – is that possible?
- How to develop hybrid app using Delphi
- Why do we need host application?
- What's the challenge?



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Hybrid app architecture

Business Logic + UI

HTML/CSS/JavaScript Content

or/and Web Storage

or/and Local Storage

or/and

Web Browser Container

Business Logic + UI

Native Host App

OS (Windows, iOS, Android, macOS)

Hybrid apps or Native apps?

Native apps pros and cons:

- The best performance – no any extra calculations or interpretation layers
- No way to update UI without updating the app (only if you don't have some built-in UI update engine 😊)
- You app can be used only for target platforms (e.g. you cannot start you app inside browser)

Hybrid apps or Native apps?

Hybrid apps pros and cons:

- Possibility update the app UI and logic without updating whole app
- Great opportunity if you like to use HTML/CSS/JavaScript for UI and even for business logic
- Not the best performance – your app UI or business logic (like JavaScript) executes inside browser component
- Risks during submission to app stores (but your app still will look like native app for the Apple App Store and Google Play Market)

Hybrid apps with Delphi – is that possible?

Yes! Sure!*

Business Logic + UI

HTML/CSS/JavaScript Content

or/and Web Storage

or/and Local Storage

or/and

TWebBrowser component or analogue

ScriptGate

Business Logic + UI

Delphi/Firemonkey Host App

OS (Windows, iOS, Android, macOS)

* - I just mention one of the possible solutions

Why do we need FMX host application?

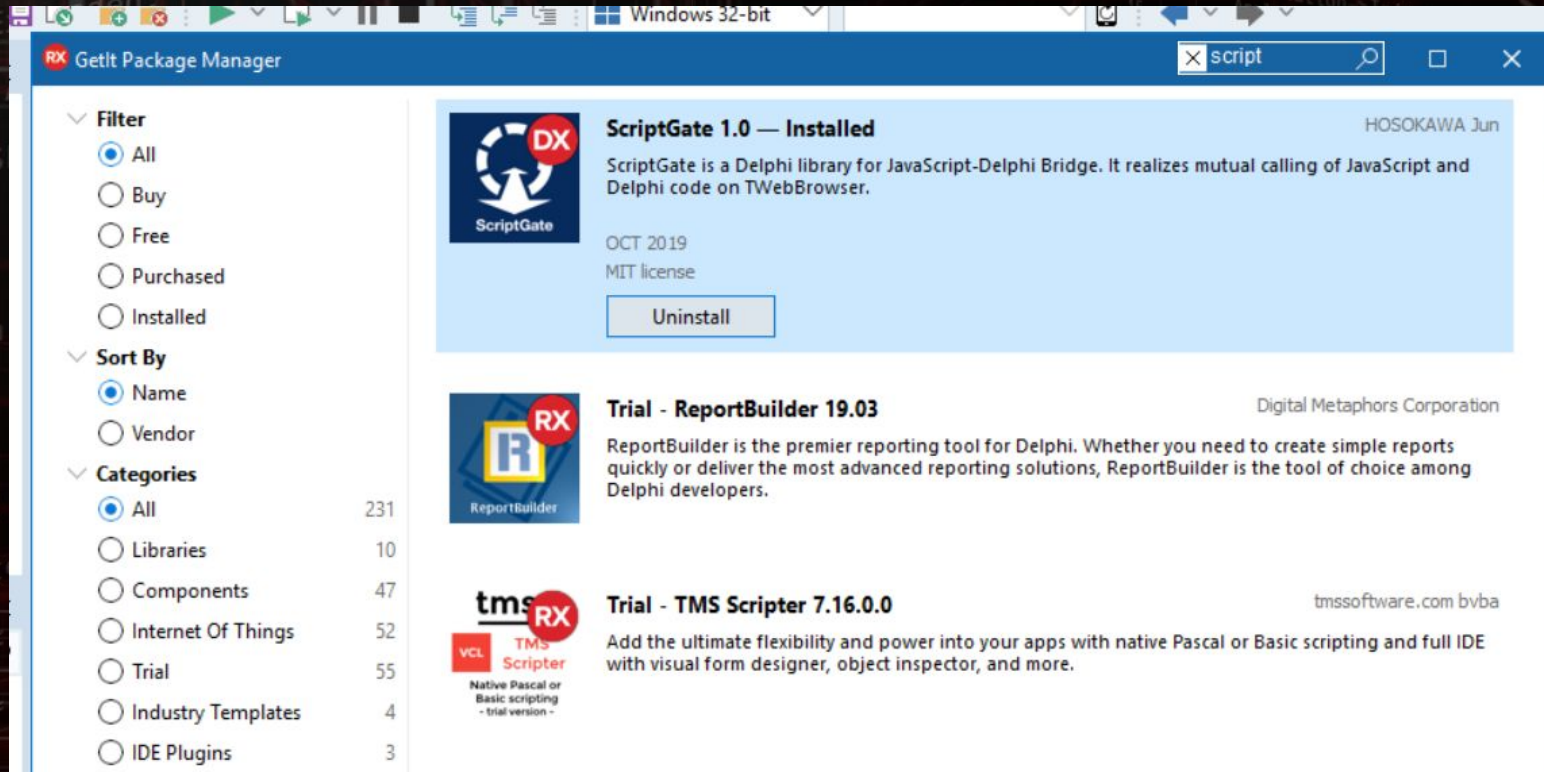
- Application will look like native application
- Access to platform-specific features, like get device token, working with push notifications (including background mode), access to BLE and other hardware on-board features, working with permissions and so on and so on
- Possibility to publish application to App Stores like native app

What's the challenge?

The main challenge – organize communication between your HTML/CSS/JavaScript web application, stored inside TWebBrowser component and you host application code, e.g.:

- Get push notifications token in host app and transfer it to web app
- Initiate permission request from web app before calling some restricted function, e.g. perform calls
- Register geofences for the platform, e.g. get list of geofences via REST API from web server using JavaScript code and put them to the OS using host app
- Etc.

ScriptGate communication layer



ScriptGate package is available via GetIt package manager

Let's check how it works!



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More Information

- Source code – <https://github.com/SoftacomCompany/FMX-JS-BridgeDemo>

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Special thanks to Yury Kudasov for topic's idea