



Apollo GraphQL Usage in UI5 Apps (Apollo Reloaded)

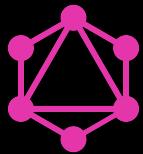
"Get inspired how you can use Apollo GraphQL in TypeScript-based UI5 applications"

Damian Maring, SAP SE

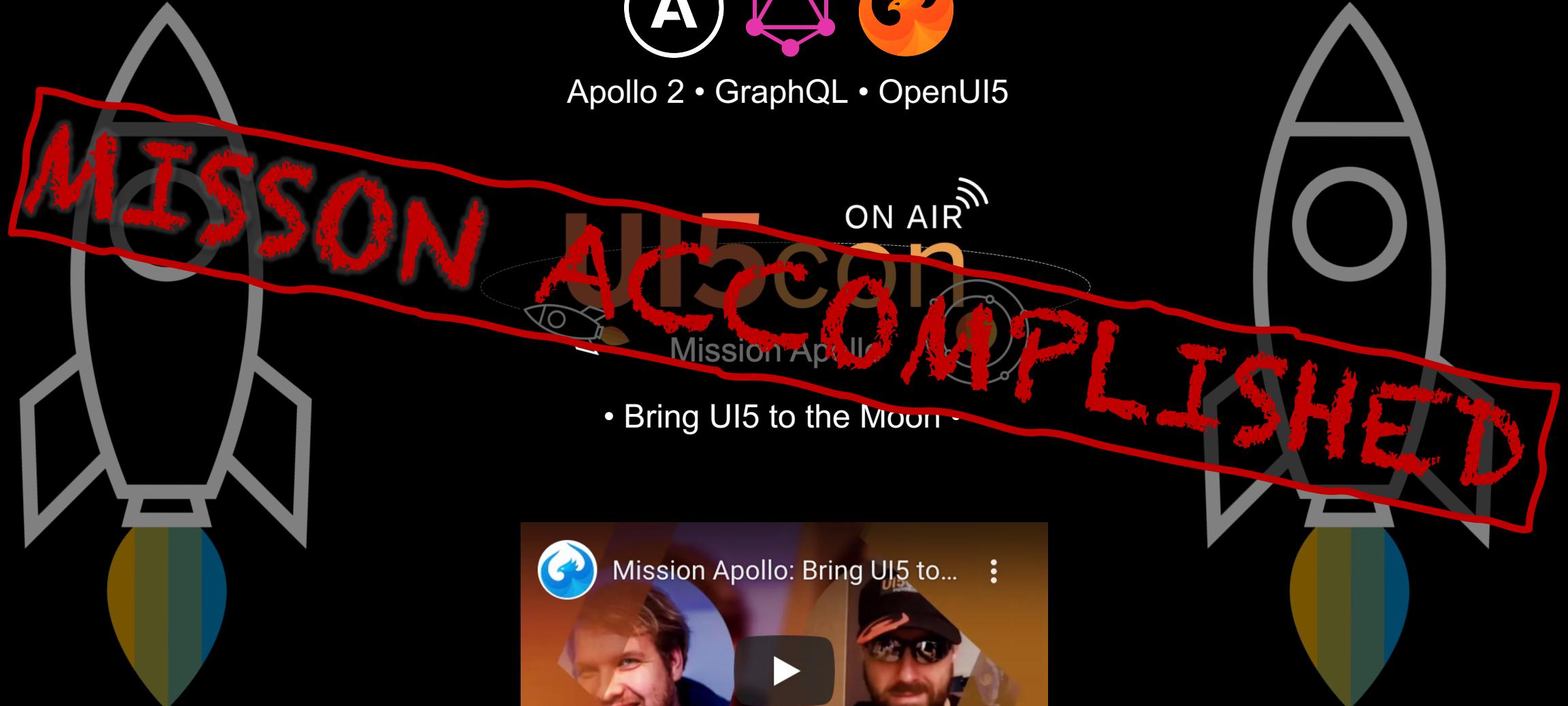
Peter Muessig, SAP SE

PUBLIC





Apollo 2 • GraphQL • OpenUI5



- Bring UI5 to the Moon





MISSION APOLLO RELOADED

(Key pillar of the [ARTEMIS PROGRAM](#))

Technology Challenges

- Apollo
- GraphQL
- TypeScript
- OpenUI5 + UI5 Web Components



Next Steps

- Briefing
- Take-Off



Duration

- 30 mins!
- NOT MORE



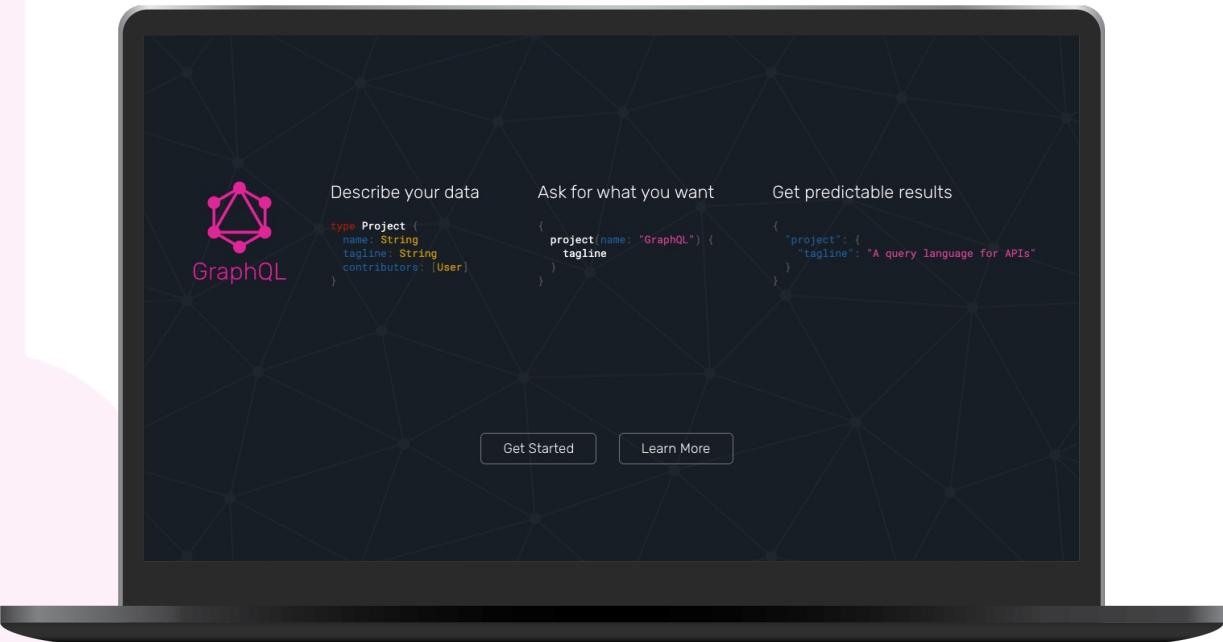
What is **GraphQL**?

“A query language for your API!”

- **GraphQL** is meant to be used for client applications, where network bandwidth and latency are critical
- Has the ability to query an object graph
- Makes it a whole lot simpler and easier to use and manage data fetching on the client's end

“Frontend First Approach!”

- **GraphQL** fosters a frontend first development approach since it allows to request the required data.



What is APOLO ?

“A GraphQL Platform!”

- Supports to build, query and manage a unified graph
- Provides many OSS components (Client, Server and Tooling) and additional enterprise qualities (Schema Registry, CI Features, ...)

Apollo Client

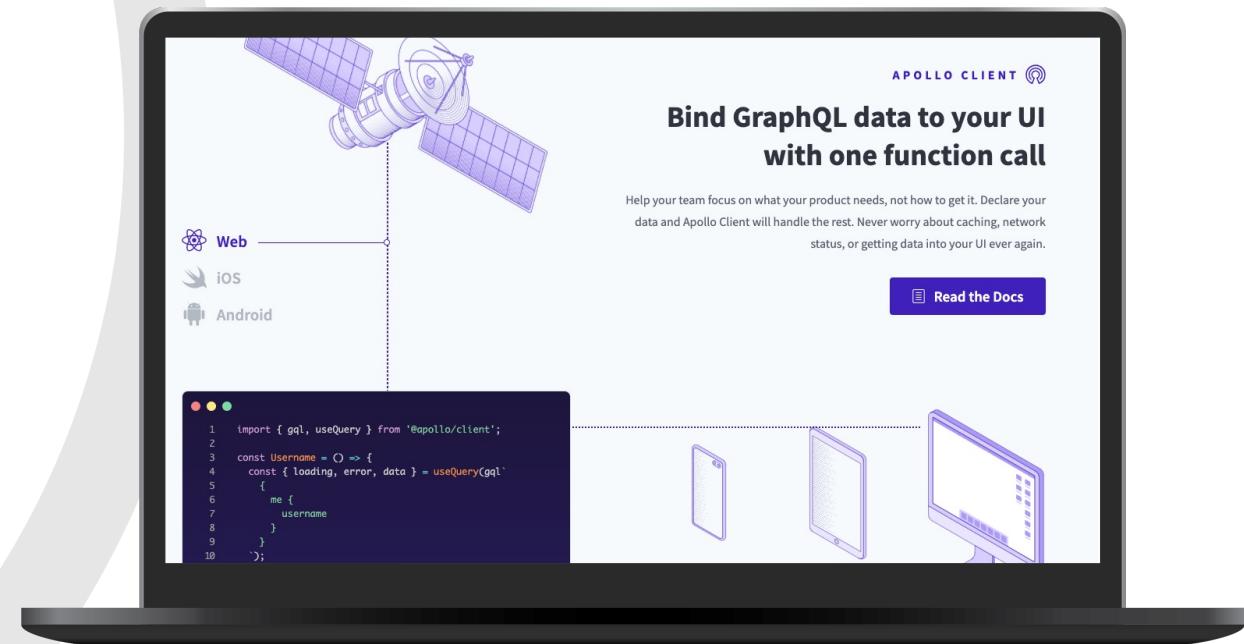
- GraphQL client (available for Web and Mobile)
- Manages app state and caching

Apollo Server

- GraphQL server
- Provides gateway and federation support

Apollo Tooling

- Apollo Studio (advanced GraphQL explorer)



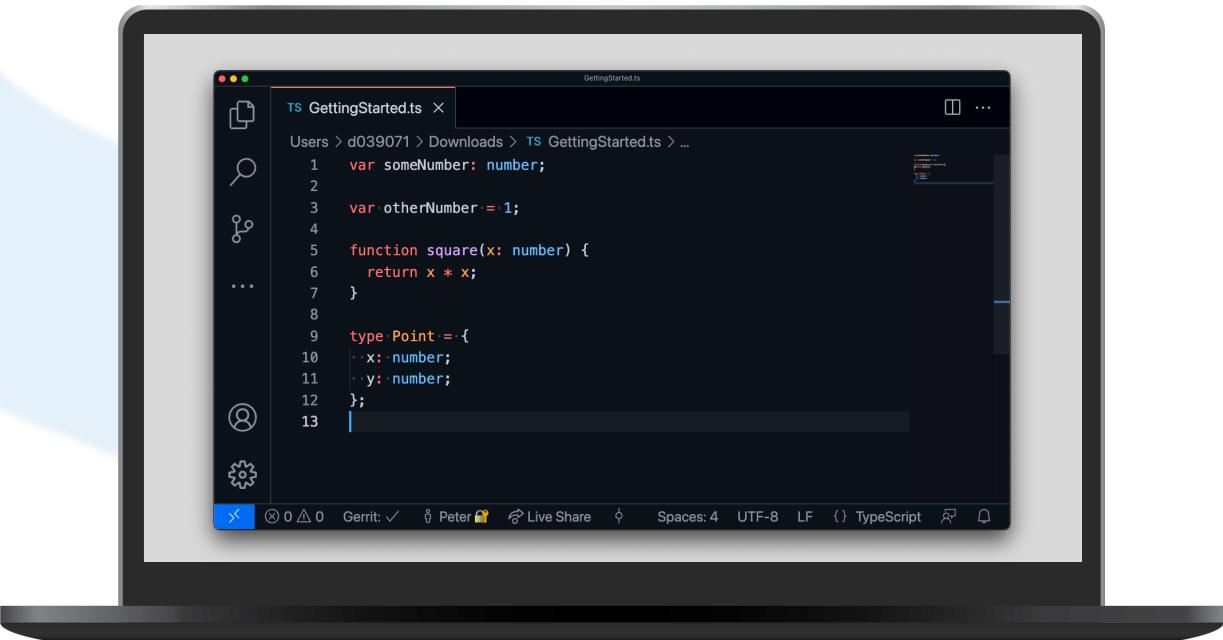
What is TypeScript ?

“JavaScript with Syntax for Types!”

- TypeScript is a superset of JavaScript
- Compiles into simple JavaScript
- Purely object-oriented with classes and interfaces
- Many JavaScript lib provide type information

“What are my benefits?”

- Code Completion
- Error messages while you code
- In-place API reference and navigation
- Easier refactoring and maintenance



Why TypeScript, OpenUI5 and UI5 Web Components?

“A great combination of technologies!”

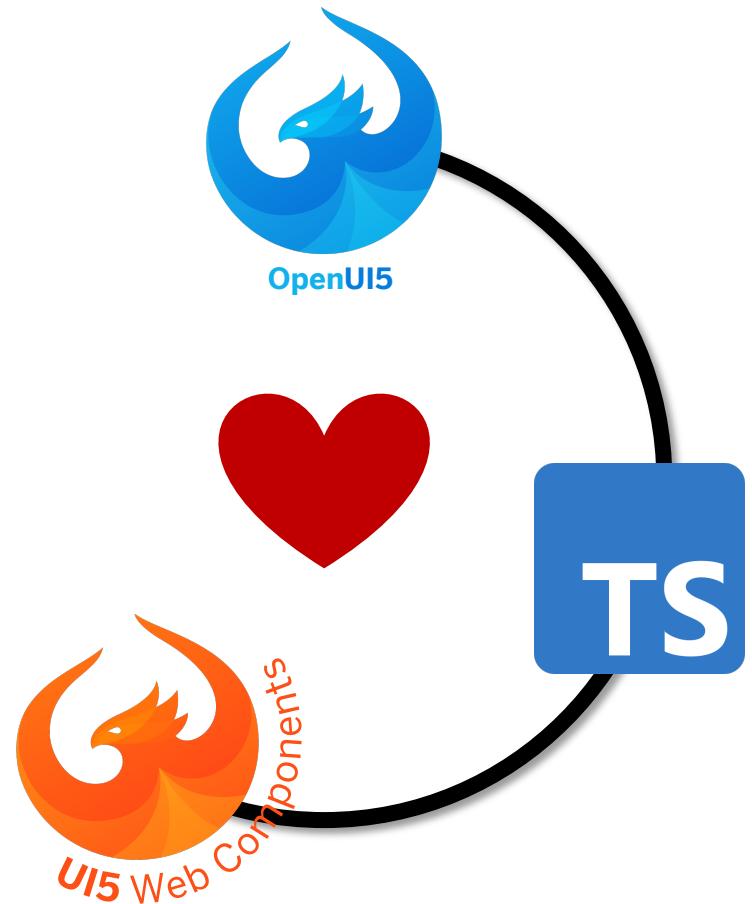
- **OpenUI5*** provides type definitions (since 1.90.1)
- **UI5 Web Components**** are available in OpenUI5 (since 1.92.0)
- UI5 Tooling is the glue between node-based tools and deps and UI5
- Object-orientation of TypeScript harmonizes well with UI5
- Moves the UI5 development experience to the next level!

Interested? Read more about it here:

- **UI5 Framework and UI5 Web Components**
(<https://blogs.sap.com/2020/03/10/ui5-framework-and-ui5-web-components/>)
- **Getting Started with TypeScript for UI5 Application Dev**
(<https://blogs.sap.com/2021/07/01/getting-started-with-typescript-for-ui5-application-development/>)

* SAPUI5 also provides the type definitions as NPM package (@sapui5/ts-types-esm)
OpenUI5 type definitions available on Definitely Typed and NPM (@openui5/ts-types-esm)

** UI5 Web Components retrofit/enabled is only available for OpenUI5 so far



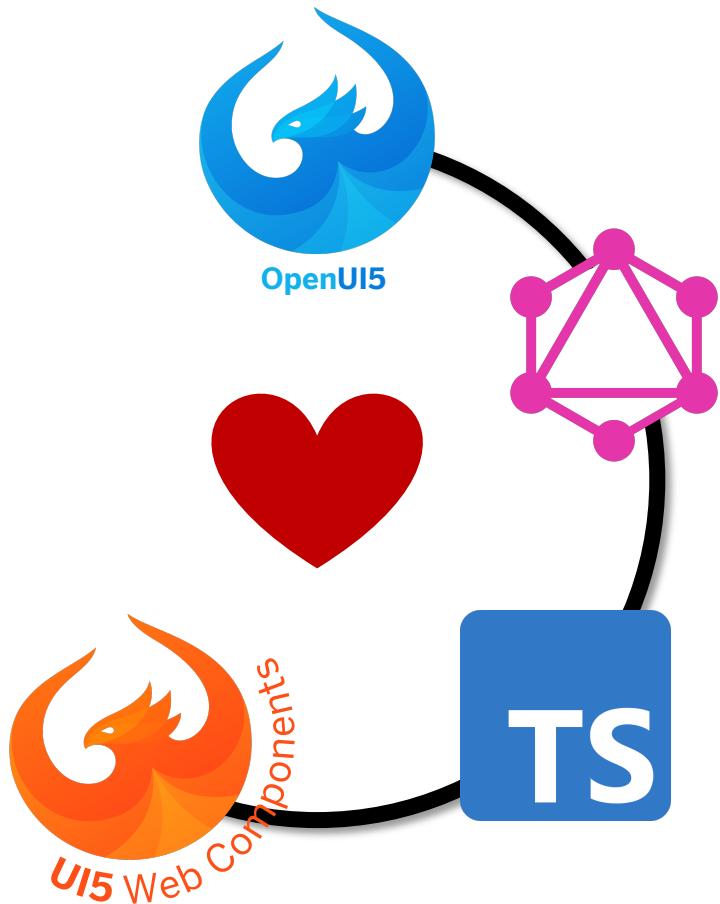
Why GraphQL for UI5 Applications?

Pros

- Adoption of GraphQL for **UI5**, Vue, React, Angular, Node and Co.
- Makes it a whole lot simpler and easier to use and manage data fetching on the client's end
- Makes it easy to consume events on the client side and react on them
- Query across systems
- Single source of truth

Cons

- Cache has to be implemented in the client logic
- GraphQL Rate Limiting
- GraphQL Query Complexity



3..2..1.. DEMO TIME

A screenshot of a laptop screen showing a Node.js application running in VS Code. The application is a "Todo Application" with a UI showing a list of todos and a terminal window showing logs of the application's execution.

<https://github.com/petermuessig/ui5-sample-apollo-reloaded>





MISSION COMPLETED!

Achievement

- OpenUI5 TypeScript Todo App using UI5 Web Components running on Apollo GraphQL

Learnings

- OpenUI5, UI5 Web Components with TypeScript
- Pros and cons of GraphQL
- Usage of GraphQL with UI5
- Working with GraphQL Subscriptions

Limitations

- Reactive caching is not yet connected to view model

Thank you.

Damian Maring
Area Architect, Procurement
damian.lion.maring@sap.com
@DamianMaring



Peter Muessig
Chief Architect, UI5
peter.muessig@sap.com
@pmuessig

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