

I have been working in the software industry for well over 10 years and during those years I have come across several fascinating and challenging software projects which I can be proudly mentioned. Out of those, I believe Virtuso stands out. Virtuso has given me great exposure not only for new technologies and trends but also a great experience where I can take forward in my career.

### **What is Virtuso,**

Virtuso is a legacy software solution developed some time ago with some old technologies, especially the frontend module with Backbone and Thorax. Cinglevue management has decided to upgrade the solution, and the responsibility was handed over to our team. As the lead front-end developer, I was given the responsibility to upgrade the frontend application.

### **Challenges faced during the upgrade.**

- Technologies and methodologies need to use
- How to upgrade existing functionality
- Security
- Shared functionality

The most important and difficult challenge I had was to decide what will be the technologies and methodologies I need to use when I'm developing the solution. After having discussions with my team and leadership I have decided to use Angular as our frontend framework, also we have decided to develop our solutions as micro frontends.

Another important decision we had to take was how to upgrade the existing functionality of the existing application. The key thing was to decide whether we are going to develop it with Backbone and Thorax or are we going to develop it with angular. so, I have decided to develop web components using angular elements and plugged it into the Backbone application.

Security was also a very important functionality we need to consider, Existing application used OAuth 2.0 and OpenID Connect implementation for the application's security together with Keylock (as an Identity Provider). so, we have adopted the same implementation for a new application with some changes.

Since we are using the same functionality within several micro front-ends (UI components, shared functionality etc..) we did not want to duplicate ourselves. So, I have implements angular libraries and published it with local NPM repository (verdaccio).