

In this thesis we implement configurable set-top box TV application in context of an embedded web browser. Work is executed in accord with strict customer requirements and fully integrated into large IPTV platform. It takes form of a complex start-up menu, whose first section is an interactive tile grid with tile-scaled video player. Other sections contain smaller applications or sub-sections. We build upon modules that transform data sources into tiles. They are then projected to horizontal carousels according to dynamic configuration. A well defined interface to integrate new modules is provided. Almost twenty different modules are ready for immediate use. They provide various parametrized tiles such as live programmes that can be directly started or recorded. Our user interface layer, using React and Redux libraries, leverages the single page application paradigm. For predictability, any modification of application state is made by emitting actions handled solely by pure functions. Set-top box performance issues forced us to implement an immutable state optimization that cut the average render time of our React components by more than a half.