

Introduction

Verkkokauppa.com -online store

Verkkokauppa is Finland's best-known and most-visited online retail store in Finland, launched in 1992, the aim of which is likely to be a cheaper place for customers to shop. It offers information technology, consumer electronics, toys , games, sports, household materials and childcare products as well as installation services through an online shop. It also has hundreds of thousands of uncensored product reviews, as well as reliable product-specific availability details and real-time service and return percentages, all aimed at making it easier for the consumer to make a buying decision.

The application has multiple use cases, we can take essential ones such as; it delivers more than 65.000 items online and that makes it easier for the consumer to search for a particular product, it increases the percentage of revenue that produces more income. On the other hand, it can be used as an advertising platform for different companies that want to promote their products.

The application provides all the information in the Finnish language. Therefore it's considered as a local application, and it's approximately dealing with a range of 10 thousand to 100 thousand requests simultaneously. The application intended to reach all users with different platforms, it needs to be highly scalable, accessible, easy to use, responsive, and secure. Moreover, the application serves to provide the consumer with uncensored product reviews, as well as accurate product-specific availability information and real-time service and return percentages.

Technology stack to be used

Front-end stack

To develop a responsive website focused on DOM and Cross-Browser Compatibility and states management such as Verkkokauppa.com, the stack I will choose will contain different frameworks and libraries:

1- Reactjs (functional components): The user will interact with different products and that interaction will continuously be increased and for that reason, I choose Reactjs as front-end library because it's working through the virtual DOM instead of using the DOM directly and that will decrease the used memory and better performance.

2- ES7: Instead of using the jQuery as js library in Verkkokaupaa.com to make the js code more lightweight and easier to use, I will prefer counting on the new features of ES6&ES7.

3- React Redux: To ensure that the state managements are updated whenever the user changes the state, I will prefer to use React redux rather than React Context API, because React Context API with all it benefits still has one drawback with the complex state which is re-render the state for each update. On the contrary, The Redux has a central store that holds the entire state of the website, it's possible to access the store from any components without having to pass any props from one component to another.

4- Webpack: Since the website has many non-code static assets such as images, fonts and different CSS files I will use Webpack to put all of the assets such as Js, CSS, and images in a dependency graph to get fast page reloading.

Back-end stack

If I need to choose a backend stack for an online marketing website, I should take into consideration specific arrangements such as, what database I will use to store images and information? what Server architecture I will choose? Estimate the scalability, performance, reliability, maintenance features, costs, and more and more. I will divide the backend into two parts starting from:

Databases: I will use AWS MongoDB which is an open-source and flexible data model enables to store data of any structure, in order to store customers personal data, customers history, and products information alongside with AWS S3 Intelligent - Tiering buckets to store all the products images, using this buckets because it's automatic cost savings for data with unknown or changing access patterns. On the other hand, to store all the purchase receipts I will choose S3 Glacier Deep Archive.

Node.js: I will choose Node Js which is an open-source javascript runtime environment to develop the backend services because its run in a single process, without creating a new thread for every request, also with complex projects Nodejs is useful to set of asynchronous I/O primitives.

ExpressJS: I will use ExpressJS which is Node.js web application framework that provides a robust set of features for web and mobile applications to scale the application quickly.

Web Server

Nginx: for web servers I will choose Nginx which is open-source software for web serving that allows users to process an unlimited number of requests simultaneously, making it a perfect server for high-volume websites.

Services

Various services used in Verkkokauppa website to monitor the website performance and improve the search engine. These services enable you to communicate with your customer better, it offers immediate access to actual information, it can be used for advertising messages, and it offers the simplest access to services. The services stacks which I will use in Verkkokauppa are:

- 1- CloudTask: Live-Chat used to provide live customer help.
- 2- Salesforce Service Cloud: Forms and Surveys, used to integrate the service functionality into the website environment.
- 3- Email Hosting services: Microsoft Office 365 Mail as email hosting provider.
- 4- Google Tag Manager: It's used to add and update the website tags without changing the underlying website code.

5- Google Sitelinks Search Box: Allow the users to search the contents more quickly from search results.

6- Cloud web hosting services(AWS, Google, Azura, etc).

7- CAPTCHA: I will use Honeypots technique instead of google reCAPTCHA to trick bots into revealing themselves automatically without human interfer.

8- Conversational System: I will choose Intercom to routing all service requests into a single help desk.