

Ensuring Quality of Robust and Highly Integrated Multi-Tenant Enterprise Solution

ORGANIZATION

Our client is a multinational home appliances corporation that seeks to provide an expanded suite of advanced solutions to help deliver healthier, safer, more efficient, and more productive indoor environments through their Healthy Buildings Program. The company has partnered with several other large organizations to gather data and address different factors such as occupancy, indoor air quality, and energy to provide good insight into aspects of building health.

They offer various commercial air handlers, fan coils, chillers, air purifiers, condensers, refrigerating units, and more. The company has over 100 years of experience creating optimal indoor air environments, and their innovations can be found across the globe and in virtually every facet of daily life.

CHALLENGE

Our client wanted to provide a Healthy Building environment through a well-integrated application with intuitive data visualizations of real-time and historical data. One of the main challenges was that the application is a multi-tenant enterprise solution and has to integrate multiple third-party applications/APIs within one application to provide real-time analytics. There were a lot of messages from multiple third-party systems that needed to be encompassed by the client application. The data needed to be transformed and stored to be made available for graphical representation. Monitoring, tracking real-time and historical data, calculating the building health score, and notifications of fluctuation in the indoor air quality were other necessary features. Testing of the application required thorough testing of various components across different tenants.

The key challenges were:

- The customer did not employ testing engineers to develop the multi-tenant web application. Instead, it was developers who ran all testing activities.
- As it is a multi-tenant application, we needed to test different customers with various devices specific to each customer.
- Ensuring the correctness of data flowing in from different third-party systems to increase client confidence in building interior health and provide science-based recommendations to improve building wellness.
- There was a considerable need for testing to be performed with test data gathered from various devices (physical sensors).

TECHNICAL SOLUTION

The project followed the Agile methodology. By collaborating with the customer and development vendor, XTIVIA successfully addressed the above challenges. Though QA was deployed towards the end of the pilot phase, the team quickly understood the requirements and provided an effective testing solution. As part of this engagement, XTIVIA focused on the following areas:

- Identify the dependencies on different internal and third-party systems
- Understand the data flow and the lightweight transformation that happens after the data is consumed
- Develop comprehensive testing artifacts to ensure no functionality is left untested
- Identify the regression test suite that had to be executed whenever new features were introduced
- Test the application for compatibility with various browsers and devices
- Test the application for its performance optimization to render the application pages quickly within SLAs
- Provided functional guidance to other teams
- Production validation

BUSINESS RESULT

Through our client's project, our team implemented test suites for functional and non-functional testing. In addition, XTIVIA's testing team ensured the application's reliable data, functionality, performance, and compatibility with popular browsers, all of which helped various end-users of our client to accept the application widely.

KEYWORDS

Application Integration, GraphQL, Application Programming Interfaces (API), REST, OAuth2, JSON

SOFTWARE

Rest API, GraphQL, AWS Neptune, DynamoDB, CircleCI, Selenium, Karate, Postman/Insomnia

ABOUT XTIVIA

XTIVIA is a proven technology integration and innovation company known for delivering leading-edge technology solutions to our clients' specific requirements, regardless of project complexity. We bring next-level business operations to reality through Application Development, Business Intelligence, Data Warehousing, Database Support & Management, Enterprise Information Management, Digital Experience Solutions and Enterprise Resource Planning. Our success stems from a demonstrated ability to deliver deep expertise via professional services, empowering clients to leverage their chosen technology successfully, competitively and profitably. XTIVIA has offices in Colorado, New York, New Jersey, Missouri, Texas, Virginia and India. www.xtivia.com