Tech Stack Document

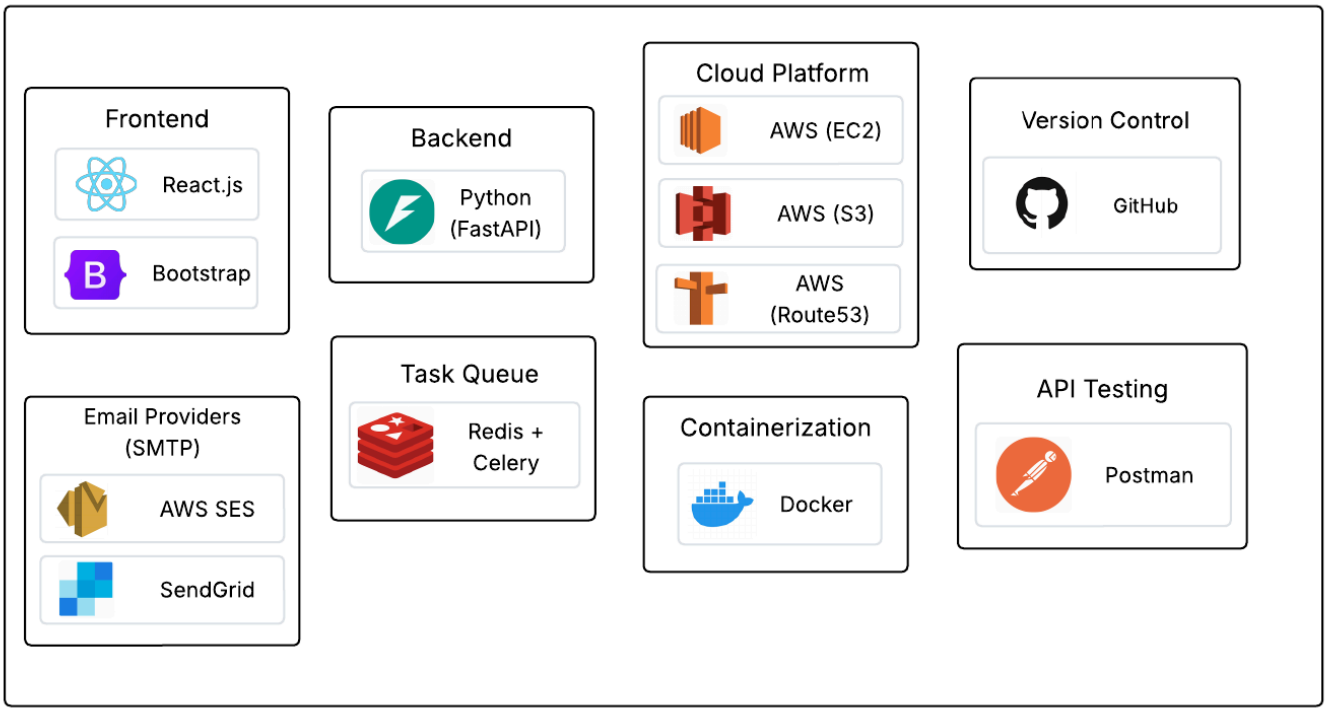
Project: *Mass Mailing Lead Generation Solution for SMEs*

Overview

The Mass Mailing Lead Generation Solution is designed to help SMEs run large-scale email campaigns efficiently while maintaining high deliverability and reputation.

To achieve scalability, performance, and maintainability, the system uses a modern, cloud-based technology stack combining FastAPI, React, MongoDB, and AWS Cloud Services.

Core Tech Stack



Layer / Module	Technology Used	Why It's Used
Frontend (UI)	**React.js**	It is a fast and dynamic and component-based framework helpful for building interactive and campaign builders, it is ideal for a responsive, modern web UI.
	Bootstrap	Faster setup, built-in responsive grid, easier for team collaboration.
Backend Framework	**FastAPI (Python)**	It has high performance, asynchronous processing and automatic documentation(Swagger). It is capable of handling concurrent email sends and API requests efficiently.
Database	**MongoDB Atlas**	NoSQL database suitable for unstructured campaign data. It is cloud hosted and can be scaled easily.
Task Queue	**Celery + Redis**	Manages asynchronous tasks like mass email dispatch, IP warming, and reputation checks to prevent blocking the main server.
Cloud Platform	**AWS (EC2, S3, Route53)**	It provides a reliable cloud infrastructure which can scale automatically. S3 stores assets and templates, EC2 runs the backend(hosting the app), and Route53 manages DNS and authentication records.
Email Providers (SMTP)	**AWS SES, SendGrid**	Multiple SMTP integrations ensure redundancy, deliverability, and better IP/domain reputation management.
Containerization	**Docker**	Simplifies development and deployment with isolated, reproducible environments.
Version Control	**GitHub**	Streamlines collaboration and enables automated builds, testing, and deployment to AWS.
API Testing	**Postman**	Used for endpoint testing, ensuring API stability and correctness.
Documentation Tools	**Swagger + PlantUML**	Swagger auto-generates API docs; PlantUML is used for architecture and sequence diagrams.