



# LOD Platform technological stack

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# Share-VDE's engines: the API Layers



A powerful and highly standardized **API** exposing Share-VDE' search capabilities over the **HTTP** protocol.

It comes in two flavours:

- **GraphQL**, with a rich data dictionary and the flexibility to query and extract only the fields of interest.
- **RESTful**, returning data represented according to the **HATEOAS** standard.

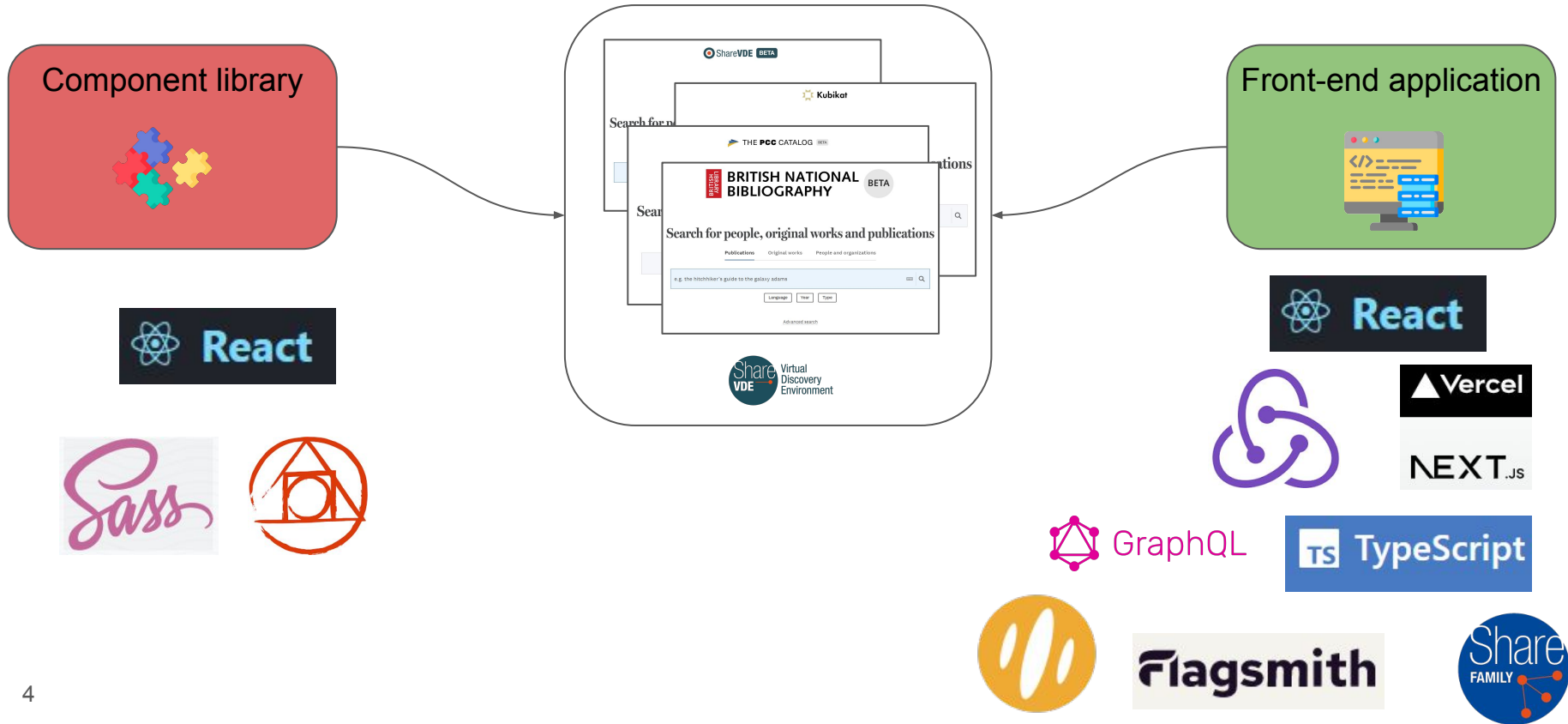
An advanced API offering **Prism curation** capabilities.

It takes advantage of the most modern features of **GraphQL** to establish a continuous informational dialogue between the server and the connected clients, so to offer them the most reactive experience possible.

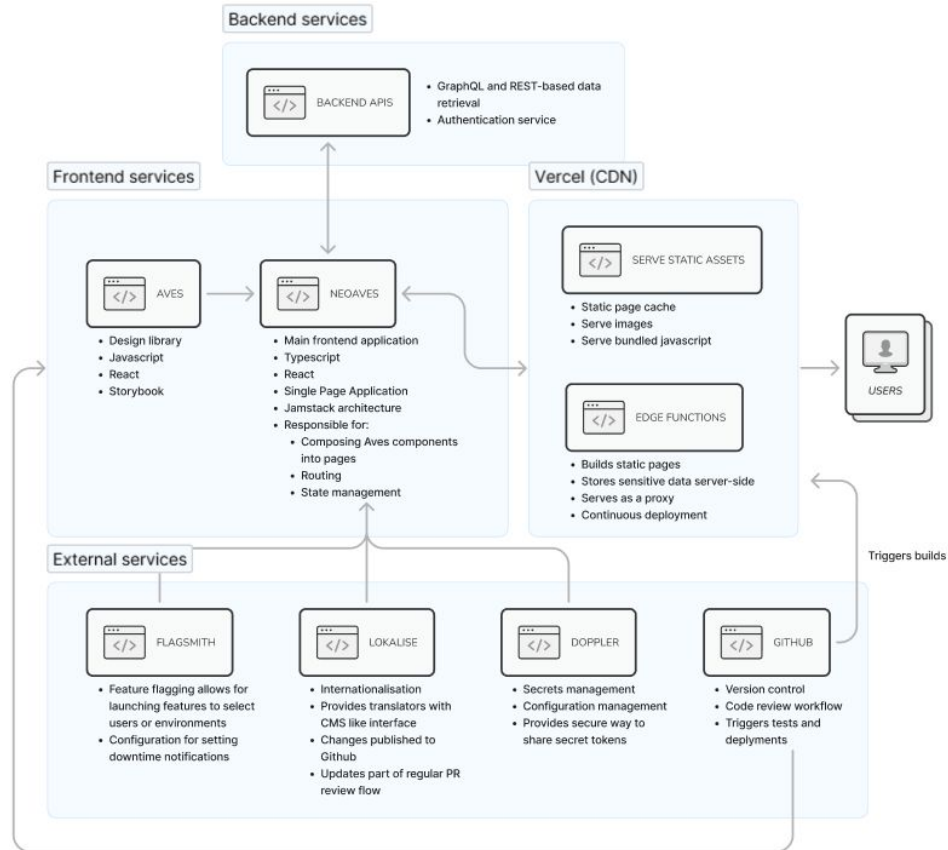
# The Technology Stack (back-end)



# The Technology Stack (front-end)



# The Technology Stack (front-end architecture)



# Share-VDE: Infrastructure

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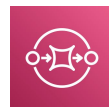
Amazon EC2



Amazon Relational Database Service (Amazon RDS)



AWS Lambda



Amazon Simple Queue Service (Amazon SQS)



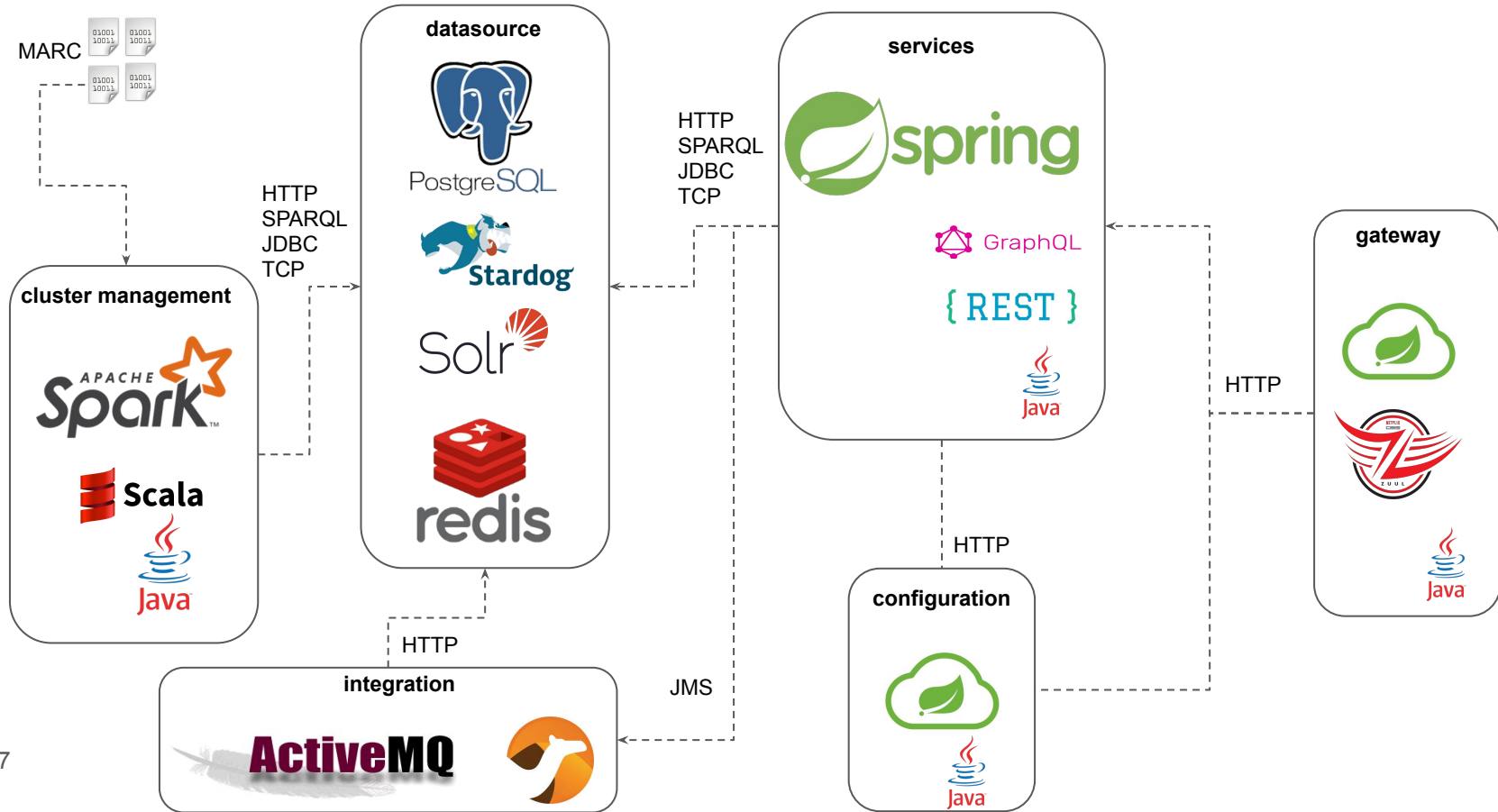
Amazon EMR



Amazon Keyspaces (for Apache Cassandra)



# Back end: High level component diagram



# Summary of the technologies used

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## Front-end side:

- React for setting up the layout
- Redux for state management
- NextJS for routing and SSR
- Typescript for better debugging
- GraphQL for flexible back-end queries
- Flagsmith for toggling features
- Brotli for optimizing load speed

# Summary of the technologies used

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Back-end side (1/x):

## Programming Languages & relevant framework

- Java (90%)
- Scala (10%)
- Hadoop MapReduce
- Apache Spark

## Web API

- REST (read-only)
- GraphQL (read/write)

# Summary of the technologies used

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Back-end side (2/x):

## Storage/Middleware

- PostgreSQL (Data Management)
- StarDog (RDF Management)
- Apache Solr (Search Services)

## Test & Production Infrastructure

- AWS (EC2, EMR, Aurora, S3, EKS)
- Jenkins
- Docker
- TestContainers
- 10.000 automatic integration tests



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