**Microservices Architecture (React NodeJS Spring Boot)**

**React** – Javascript based framework for web UI development. It implements as client interface and will be deployed in Docker (compose) along with Node JS server. React based project is built using npm command. In application, it acts as client which sends request to the server (NodeJS) through Rest API.

**NodeJS** – It is middleware server which accept request from client (React) and redirect to the backend server (Java services). It acts as middle layer for security, data validation, request modification etc. It will be deployed in Docker (Compose) along with React app.

**Java Services** – They are different java-based services which will be developed using Spring Boot framework. Each service has its own independent functionality as per business requirement. There might be some services which will support business function like Report service. All services will be registered in service discovery tool like Zookeeper, Eureka etc. which will help for interservice communication. All java services will be deployed in docker.

**Service Discovery** – Service discovery is the tool which is used in microservice architecture. It helps all the services for interservice communication as well as API Gateway to get the detail about the service. There are some well known service discovery like Zookeeper, Consult , Eureka etc.

**API Gateway** – API Gateway is the interface for client (React & NodeJS) which will be in between NodeJS & All java services. API Gateway has the responsibility to identify which service needs to be called and forward the request to that service. In general, all services are deployed in different system with different IP and Port. All these IP and port are registered in Service Discovery and API Gateway gets all the information for service from service discovery. Zuul is example of API Gateway created by Netflix and it is open source.

**Docker/Image/Container** – Docker is the platform which is used to deploy the application in container. We can create application and all dependent component or environment in single image and port any where using Docker platform. We can create image for all component like React, Node JS, Java Services, API Gateway, Service Discovery etc. We can also create docker compose and add multiple images. The advantage of docker is to port application anywhere and also scale out as when required.

**AWS Cloud** – We can deploy the application in AWS as follow

* React – In S3 bucket
* Node JS – EC2 docker service
* Java Services – EC2 docker service
* Service Discovery/ API Gateway – EC2 docker service