

# Title

Discussing and implementing microservices with azure.

## Business context and problem

Company, Greentech billing solutions has a retail billing solution that can be sold to retail chains so all aspects of billing and pos can be managed for a retail business.

### Business Requirement

- Greentech has recently signed a sales agreement with Retail chain - **Urban Dior Retails**
- Team of Greentech's BA had gone through a series of business requirement discussions and finalised a FDS document.
- Urban Dior has two modes of operations
  - Offline sales
  - Online sales
- Company has its own stores in a few places and in a few places the company has given franchises to other dealers to sell.
- Store managers **can order for products** from their retail software installed in their store from Urban Dior warehouse.
- Also, in online mode **users can order products** from their online ecommerce service.
- Urban dior Retails Admin team at warehouse **can add products** from their UI.
- Other retailers and ecommerce services can read those products added by the warehouse admin team.
- Retailers during point of sale billing **can always add users for a particular membership** which will create a passive engagement between Urban Dior retails marketing team and the customers - which will help in increasing revenue for the company.
- Urban Dior retails **already has a monolithic solution in place deployed on prem** for these features which has **become too big to manage properly**, now company is looking to migrate this service to cloud with microservices architecture so easily Urban Dior retail engineering team which is not big enough can handle these day in out engineering operations.
- Important thing, to note in terms of product is as per Urban Dior's reporting for 100 requests calls coming to current monolithic applications, **it has a 70:30 ratio of read vs write calls**.
  - Which means 70% of the time they receive product read calls and 30% time product write calls.

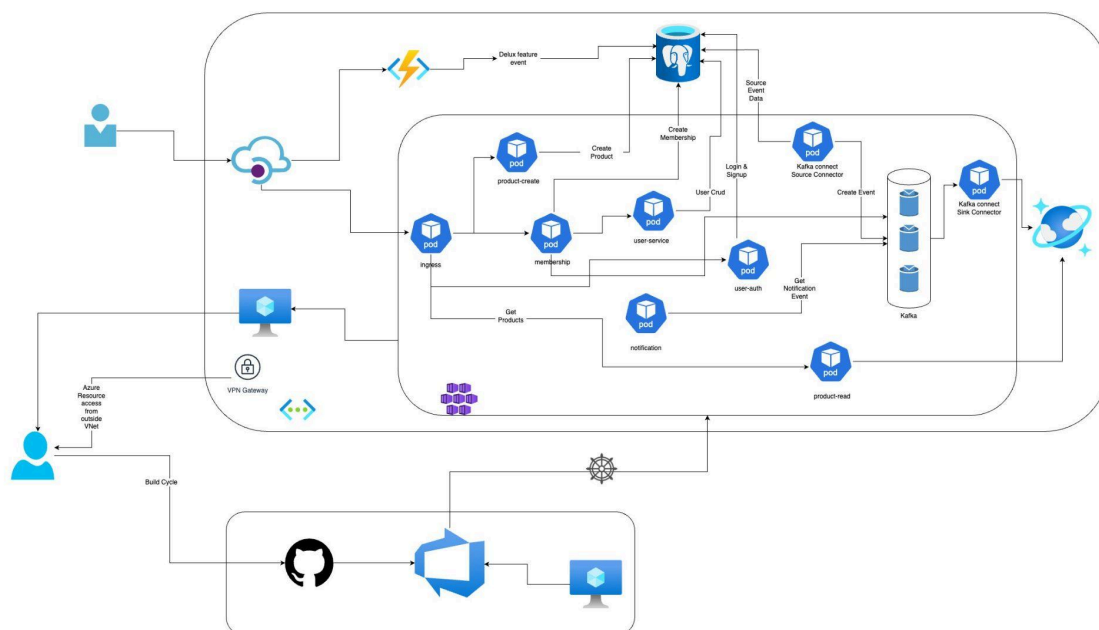
## Proposed solution

- Greentech has decided to provide a full solution on Azure Cloud using microservices architecture as they have this expertise in.
- Microservices will be deployed in azure kubernetes service.
- All APIs will be protected with JWT token.
- Solution will have two dedicated databases, one only dedicated for write operations and another one for high read operations and data will be replicated from one to another as part of change data capture.
- To deliver business values a faster solution will have a CICD pipeline in place using azure devops.
- Security should be maintained while accessing this deployed solution, no one can use this from any other network and if needed for remote access people can access using vpn.

## Cloud Components Involved

- Azure kubernetes
- Postgres Flexible service
- Azure function
- Azure VM
- Azure DevOps
- Virtual network
- VPN Gateway
- Cosmos DB for Mongo

## Architecture



## Cost Estimation