

Project Design Phase-I
Solution Architecture

Date	19 September 2022
Team ID	PNT2022TMID03188
Project Name	Inventory Management System for Retailers
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Retailors login into the application and can manage stocks based on purchase rate of each product
- Products can be purchased by Customers by creating their account. Whenever a new customer is traced the details are fetched, processed and recorded into the IBM DB2 Database by Backend servers dockerized.
- Customers can login to their account and can purchase products and previously carted items as the sessions are restored from IBM DB2
- The reason we have used IBM DB2 at backend for storage is it is highly available and can be scaled up by adding additional nodes to the cluster with minimal operational downtime
- The fast selling and products which are to be soon out of stock is predicted using a machine learning model
- Retailors gets a regular notification of products that are soon to be out-of-stock and that are of no stock available. Hence enabling better restocking of unavailable products

Solution Architecture Diagram:

Fig1:

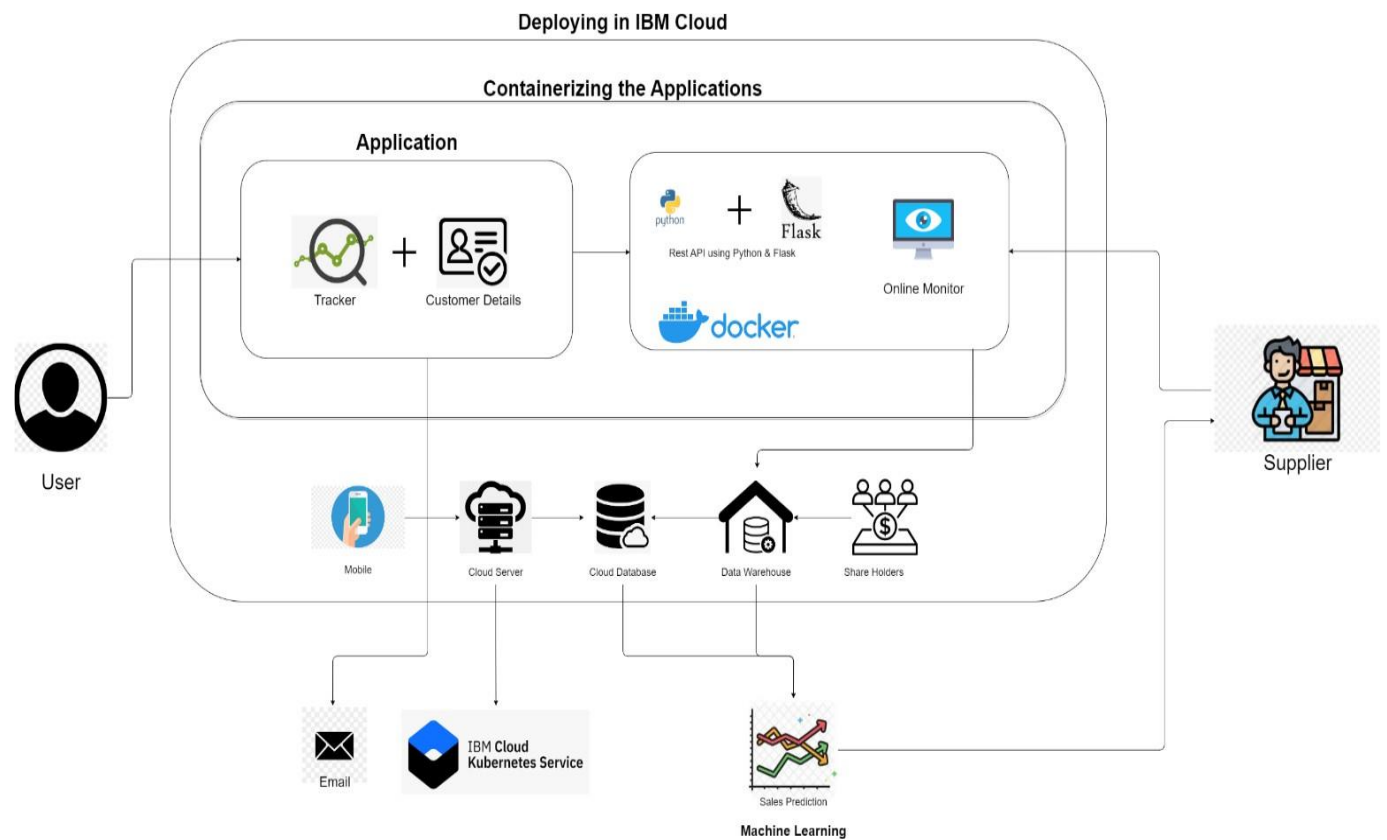


Fig1 represents the solution architecture of inventory management application for retailers deployed in IBM Cloud

- User account maintenance
- Stock monitored by Retailer(supplier)
- API request processed by docker containers
- Data stored in IBM DB2
- Notification of stocks using SendGrid Email
- Stock behavior analyzing using Machine learning