TEST

System Architecture for DEMO

Date	Version	Change History	By
21 Jul 2021	0.1	Initialize	

Baseline Date	Reference Document	Source
21 Jul 2021	https://www.algolia.com/doc/	
21 Jul 2021	https://kafka.apache.org/documentation/	

	Terms	Description
1		
2		
3		

I. GENERAL

1.1 Objectives

A small start-up named "iCommerce" wants to build a very simple online shopping application to sell their products. In order to get to the market quickly, they just want to build an MVP version with a very limited set of functionalities:

1. *The application is simply a simple web page that shows all products on which customers can filter and search for products based on different criteria such as product category, name, price, brand, colour.*
2. *If the customer finds a product that they like, they can view its details and add it to their shopping cart and proceed to place an order.*
3. *No online payment is supported yet. The customer is required to pay by cash when the product got delivered.*

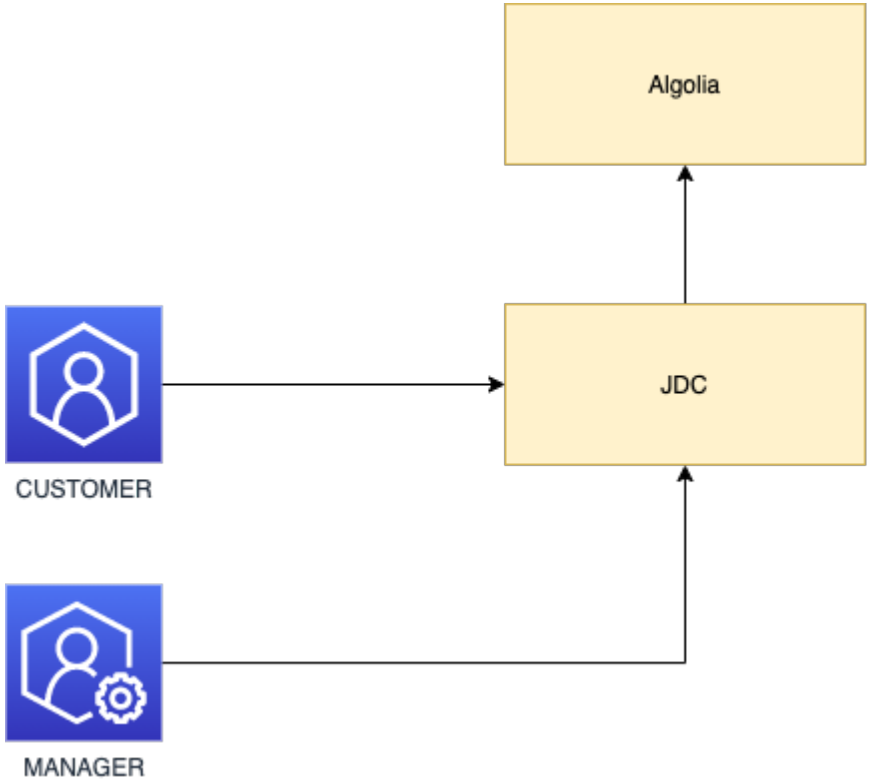
1.2 Scopes

II. KEY ARCHITECTURE DECISIONS

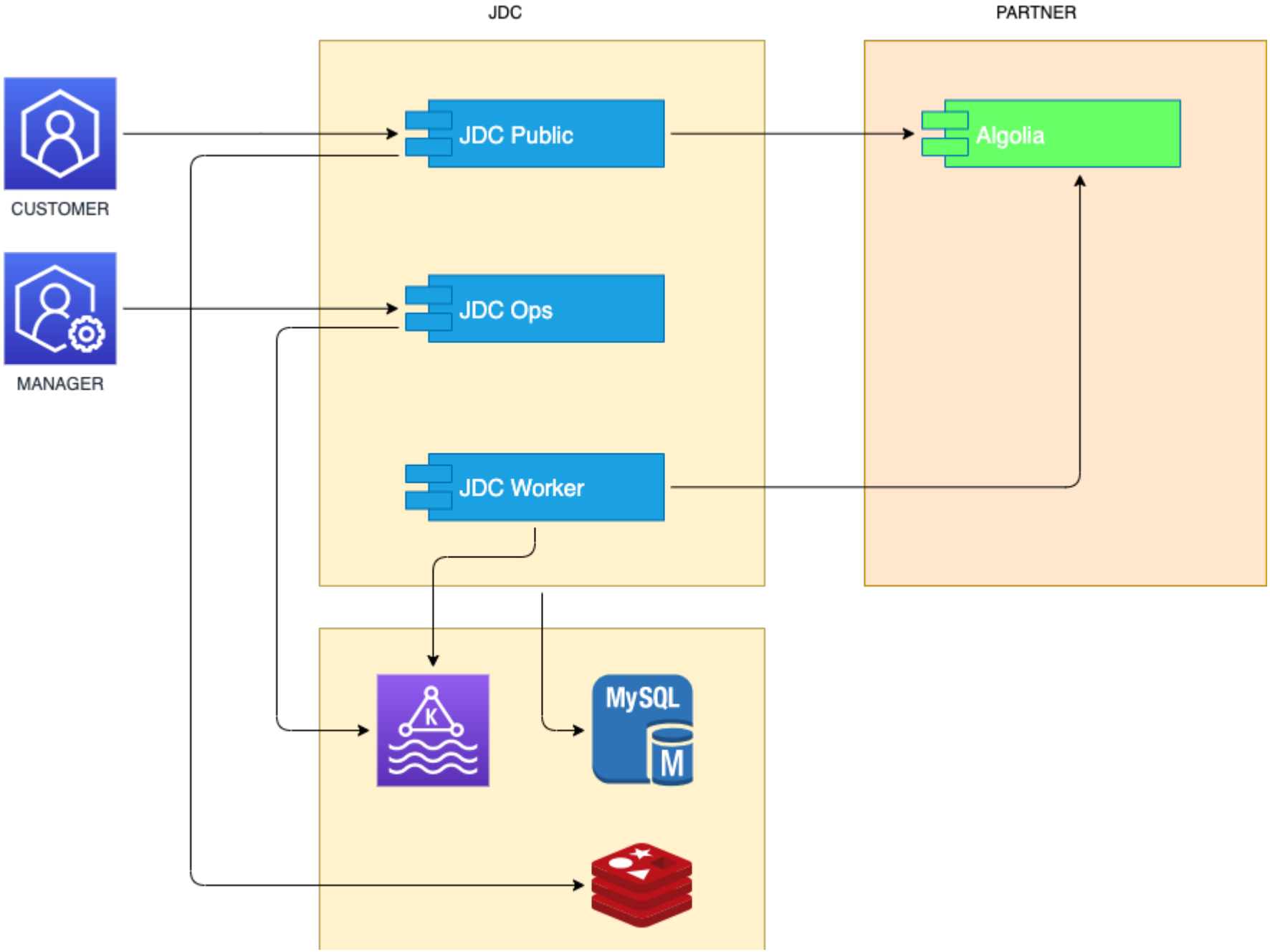
	Group	Key Architecture	Scope	Decisions & Reasons
1				
2				
3				

III. SYSTEM ARCHITECTURE

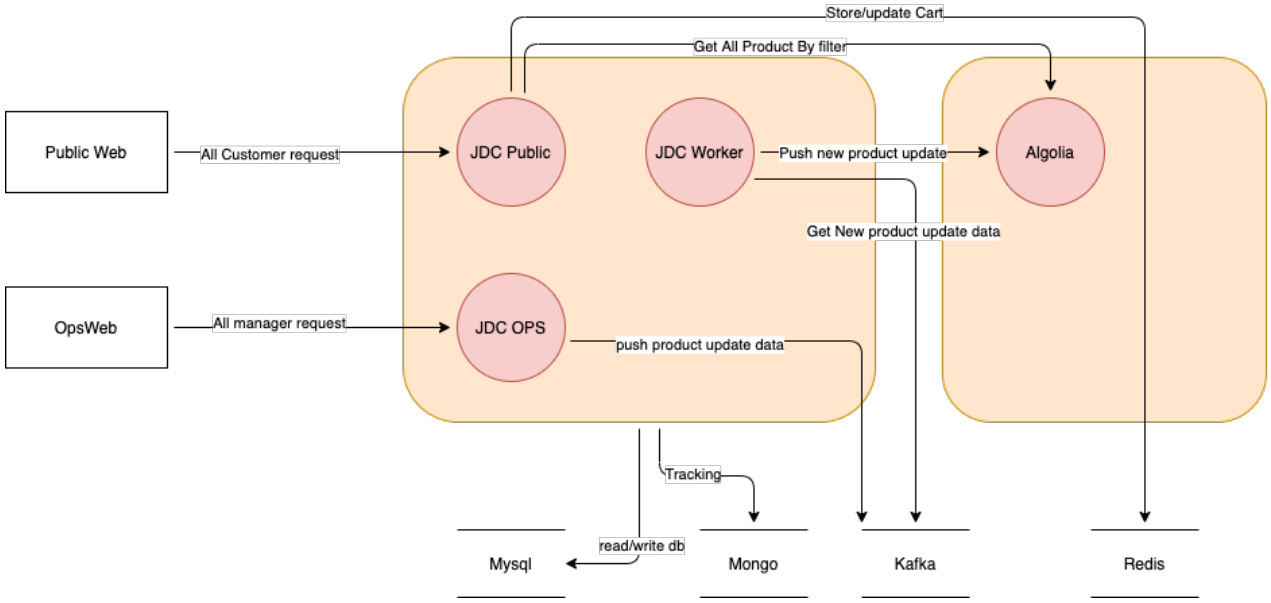
3.1 System Landscape

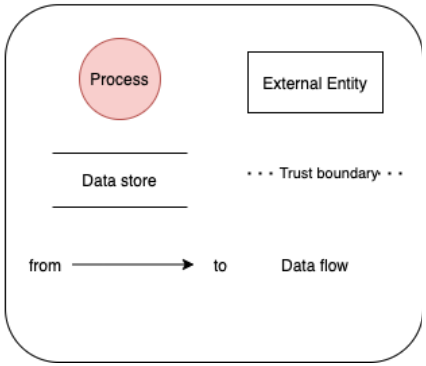


3.1.1 Logical Model


JDC
PARTNER
CUSTOMER
MANAGER
JDC Public
JDC Ops
JDC Worker
Algolia
MySQL
M
K

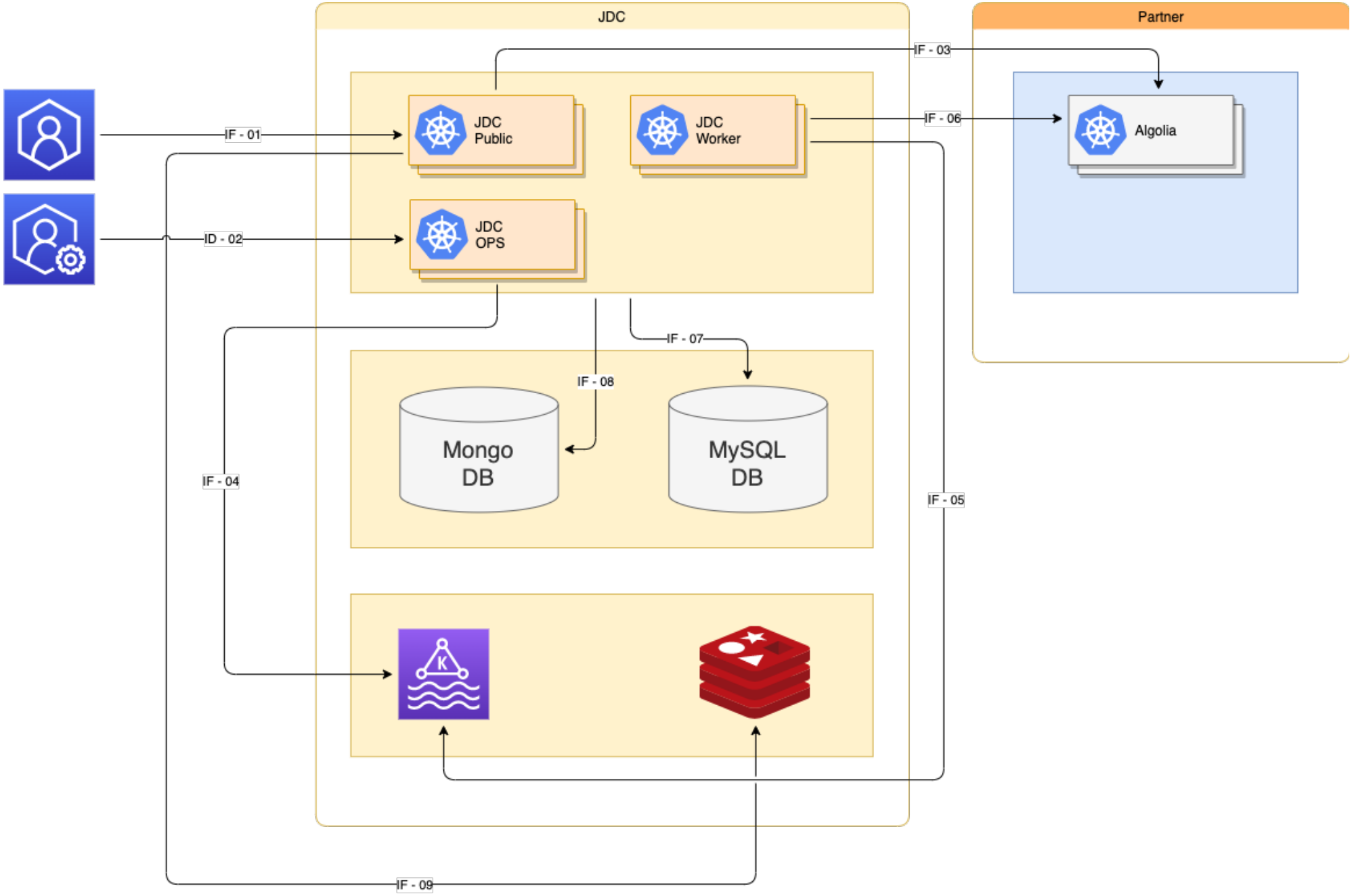
3.1.2 Data flow diagram





3.2 Physical Model

- <*Mô hình Hạ tầng = Mô hình LOGIC + các QUYẾT ĐỊNH về Kiến trúc ~ hình thành lên kiến trúc triển khai hạ tầng của hệ thống*>
- <*Cung cấp cái nhìn chi tiết về kiến trúc các module khi triển khai trong môi trường Production thật*>
- <*Trong một số trường hợp đặc biệt cần tách mô hình Hạ tầng nếu quá khác biệt giữa các môi trường Production & Non-prod*>


JDC
Partner
IF - 03
IF - 01
JDC
Public
JDC
Worker
IF - 06
Algolia
ID - 02
JDC
OPS
IF - 07
IF - 08
Mongo
DB
MySQL
DB
IF - 04
IF - 05
IF - 09

3.3 Services List

	Service / Module	Description	Git	Deployment	URL *(DEV, QC, UAT /Sandbox, PROD)*	Scalability	Volume / Traffic	Security
1	JDC Public				localhost:8080/api	Instance >= 2	• <10K / request • READ: 2000 TPS • WRITE: 100 TPS	Basic authen
2	JDC OPS					instance = 1	• <10K / request • READ: 2000 TPS • WRITE: 100 TPS	Basic authen
3	JDC Worker					instance = 1	• <10K / request • READ: 2000 TPS • WRITE: 100 TPS	No authentication

3.4 Infrastructure Resources - Nonprod

- <*Tham khảo* BM_Yêu cầu các dịch vụ hạ tầng *để định nghĩa các thành phần phù hợp cho hệ thống*>
- <*Cloud/Infra sẽ dựa vào bảng danh mục này để cung cấp các thành phần hạ tầng tương ứng*>
- <*DevOps sau đó sẽ dựa trên Kiến trúc để deploy các service vào các thành phần hạ tầng này*>

	Cluster	Service	Configurations	Min Cost	Max Cost	Descriptions
1		Micro Integrator		1 VM	1 VM	we are deploy on local. so no need more VM to balance.
2						

	Name	Specifications/Description	Result
1	SQL	Type: Mysql Spec: • CPU: 2 core • MEM: 4GB • DISK : HDD 100GB + 200GB mount data DB name: jdc_dev Timezone: *Default = GMT+7* Description: database	

2	NoSQL	Type: MongoDB Spec: • CPU: 2 core • MEM: 4GB • DISK : HDD 100GB + 200GB mount data HA: Enable/Disable → *Default= Disable* DB name: jdc_dev Timezone: *Default = GMT+7* Description: db for tracking	
3	Kafka	Topic: c1.jdc.product.dev Description: Replication Factor:2 Partitions: 2 Retention (day) : 2 Producer Service: JDC Producer SSL: none Consumer Service: JDC Consumer SSL: none Consumer Group: c1.jdc.product.dev Frequency: • 5 KB/message • Avg: 200 msg/min • Max: 6K msg/min Partition Key: transaction_id	

3.5 Infrastructure Resources - Production

	Cluster	Service	Configurations	Min Cost	Max Cost	Descriptions
1		Micro Integrator		1 VM	1 VM	
2						

	Name	Specifications/Description	Result
1	SQL	Type: Mysql Spec: • CPU: 2 core • MEM: 4GB • DISK : HDD 100GB + 200GB mount data DB name: jdc_prod Timezone: *Default = GMT+7* Description: database	
2	NoSQL	Type: MongoDB Spec: • CPU: 2 core • MEM: 4GB • DISK : HDD 100GB + 200GB mount data HA: Enable/Disable → *Default= Disable* DB name: jdc_prod Timezone: *Default = GMT+7* Description: db for tracking	

3	Kafka	Topic: c1.jdc.product.prod Description: Replication Factor:2 Partitions: 2 Retention (day) : 2 Producer Service: JDC Producer SSL: none Consumer Service: JDC Consumer SSL: none Consumer Group: c1.jdc.product.prod Frequency: • 5 KB/message • Avg: 200 msg/min • Max: 6K msg/min Partition Key: transaction_id	

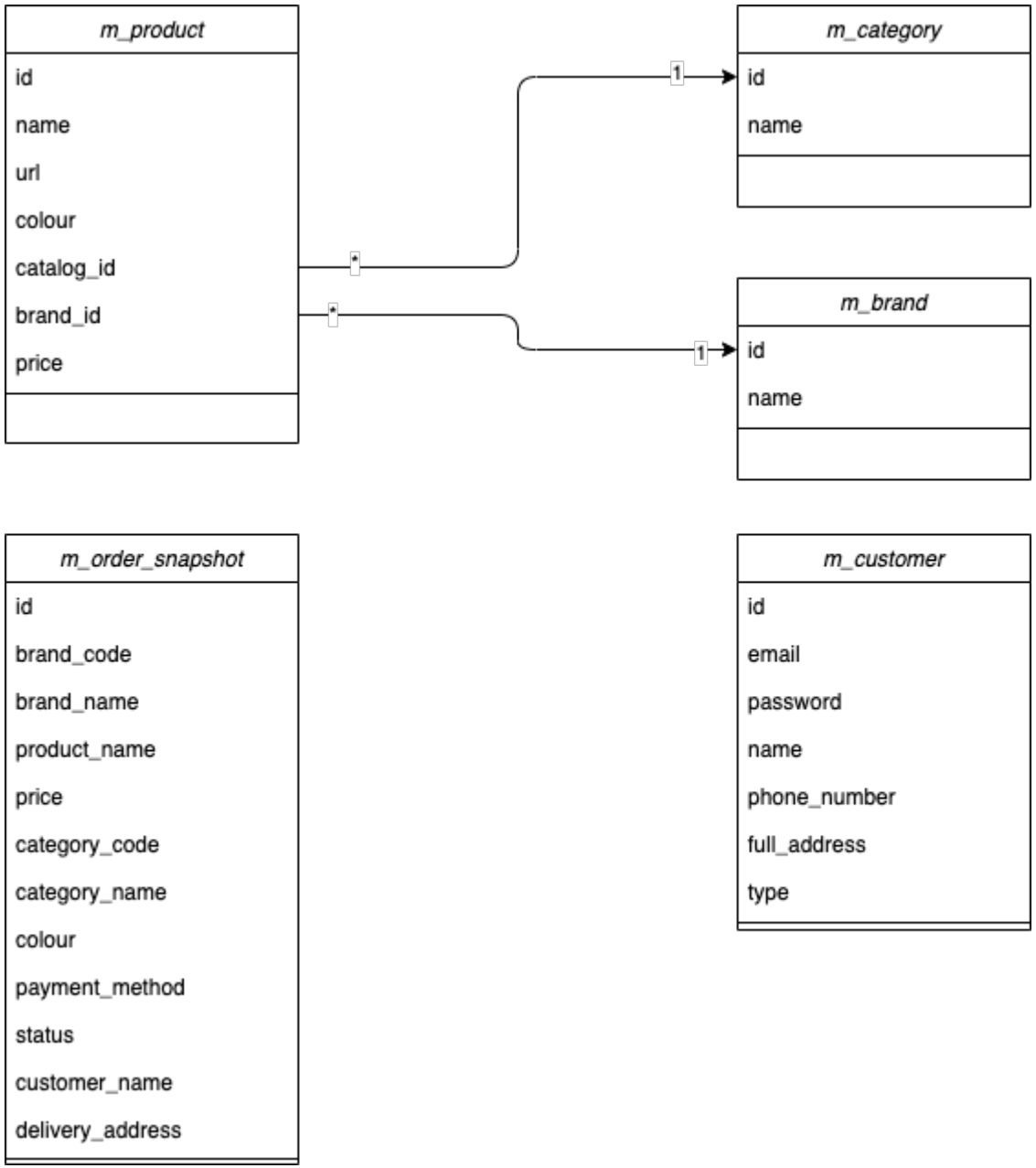
IV. INTEGRATIONS

	ID	Integration Interface	Provider	Consumer	Interface Method	Integration Documents	Sizing and Frequency	Security	Note
1	IF - 01	All request from website to JDC system	JDC Website	JDC Public	https			Basic Authen	
2	IF - 02	All request from ops website to JDC	JDC OPS Website	OD OPS	https			Basic Authen	
3	IF - 03	Get, Search and filter all product request	JDC Public	Algolia	https			Algolia Token	
4	IF - 04	All request for manage product, brand, category	JDC OPS	Kafka	socket			Producer SSL	
5	IF - 05	Worker collect all data from Kafka and handle	Kafka	JDC OPS	socket			Consumer SSL	
6	IF - 06	Worker push all update product /brand/category to Algolia	JDC Worker	Algolia	https			Algolia Token	
7	IF - 07	All handle data get/update to db	JDC	Mysql	socket			Mysql authentication	

8	IF - 08	All tracking data from JDC	JDC	MongoDB	socket			MongoDB SSL	

V. TECHNICAL SPECIFICATIONS

5.1 Database


m_product
id
name
url
colour
catalog_id
brand_id
price
m_category
id
name
m_brand
id
name
m_order_snapshot
id
brand_code
brand_name
product_name
price
category_code
category_name
colour
payment_method
status
customer_name
delivery_address
m_customer
id
email
password
name
phone_number
full_address
type
1
*
*
1

5.1 Database

5.2 Entity Diagram

5.3 State-flows

5.4 API Specs

5.5 Message Queues

5.6 Worker Process

5.7 Performances

VI. RISKS & ASSUMPTIONS

6.1 Risks

	Category	*Risk*	*System*	*Probability*	*Impact*	*Mitigation & Plan*
1						
2						

6.2 Assumptions

	Assumption	*System*	*Status/Confirmation*
1			
2			

VII. APPENDIX

n/a