
Vdezi
SELL GLOBAL, IT'S EASY

Tech Stack

- **Os**
  - Ubuntu 18.04
- **Backend**
  - Python
  - Node.js
- **Rest API Frameworks**
  - Flask
  - Express.js
- **Frontend**
  - HTML/CSS, Bootstrap
  - Material Design
  - Angular 8
- **Database**
  - PostgresQL
  - MySQL
  - MongoDB
  - DynamoDB
- **Messaging Queues**
  - RabbitMQ
- **Cache**
  - Redis
- **ML/DL/AI**
  - Spark
  - Regression Algorithms
  - Clustering and Similarity Algorithms
  - NLP Algorithms
  - Open CV
- **API Management**
  - Postman
  - Stoplight
- **Cloud**
  - AWS
  - GCP
- **Version Control**
  - Git
  - Github
- **Project Management**
  - ClickUp
- **System Orchestration**
  - Airflow
- **Infrastructure Code**
  - Terraform
  - CloudFormation

Application Frameworks.

- Flask
- Express.js
- Spark
- NLTK Library
- SQLAlchemy
- Mongoose
- Bookshelf
- MongoEngine
- PyTorch
- Keras

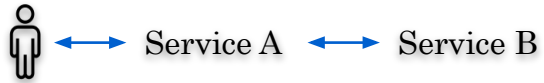
Architecture Patterns

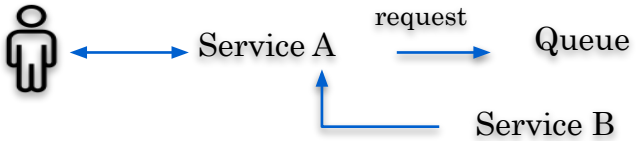
- Micro services
- Layered pattern
- Master-slave
- Client-server pattern
- Event-Sourcing pattern

Infrastructure Services

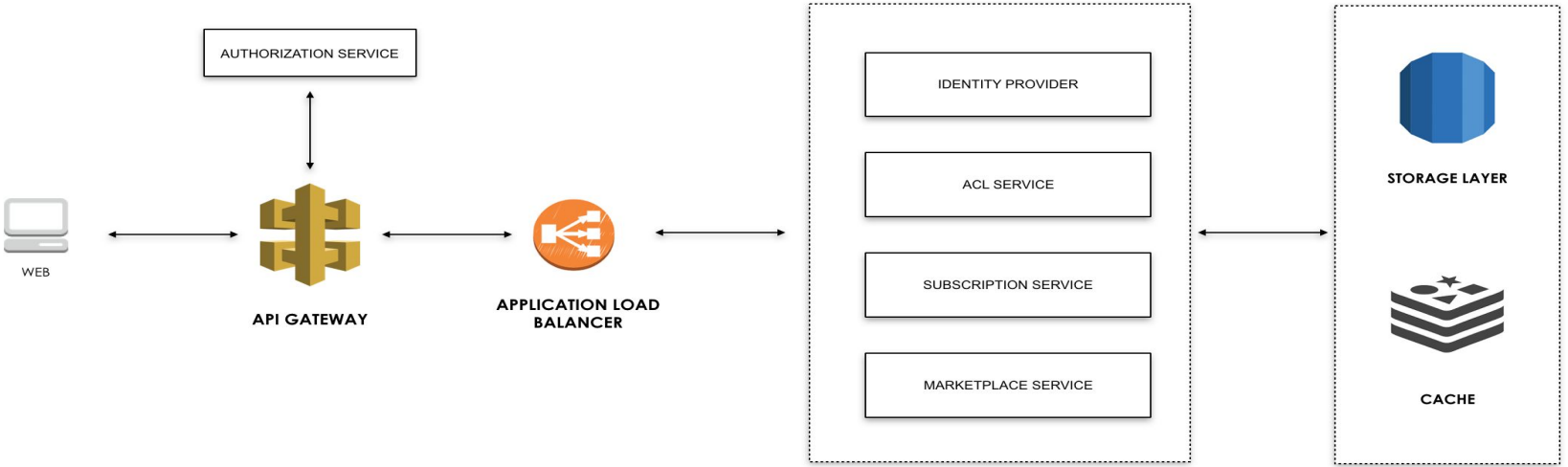
- **AWS**
  - Ec2
  - S3
  - VPC
  - CloudFront
  - Route53
  - SNS
  - SES
  - SQS
  - SageMaker
  - Load Balancers
  - RDS
  - DynamoDB
  - Lambda
  - CloudWatch
  - WAF
  - Cloudformation
  - Codepipeline
  - CodeBuild
  - ECS

Communication Patterns

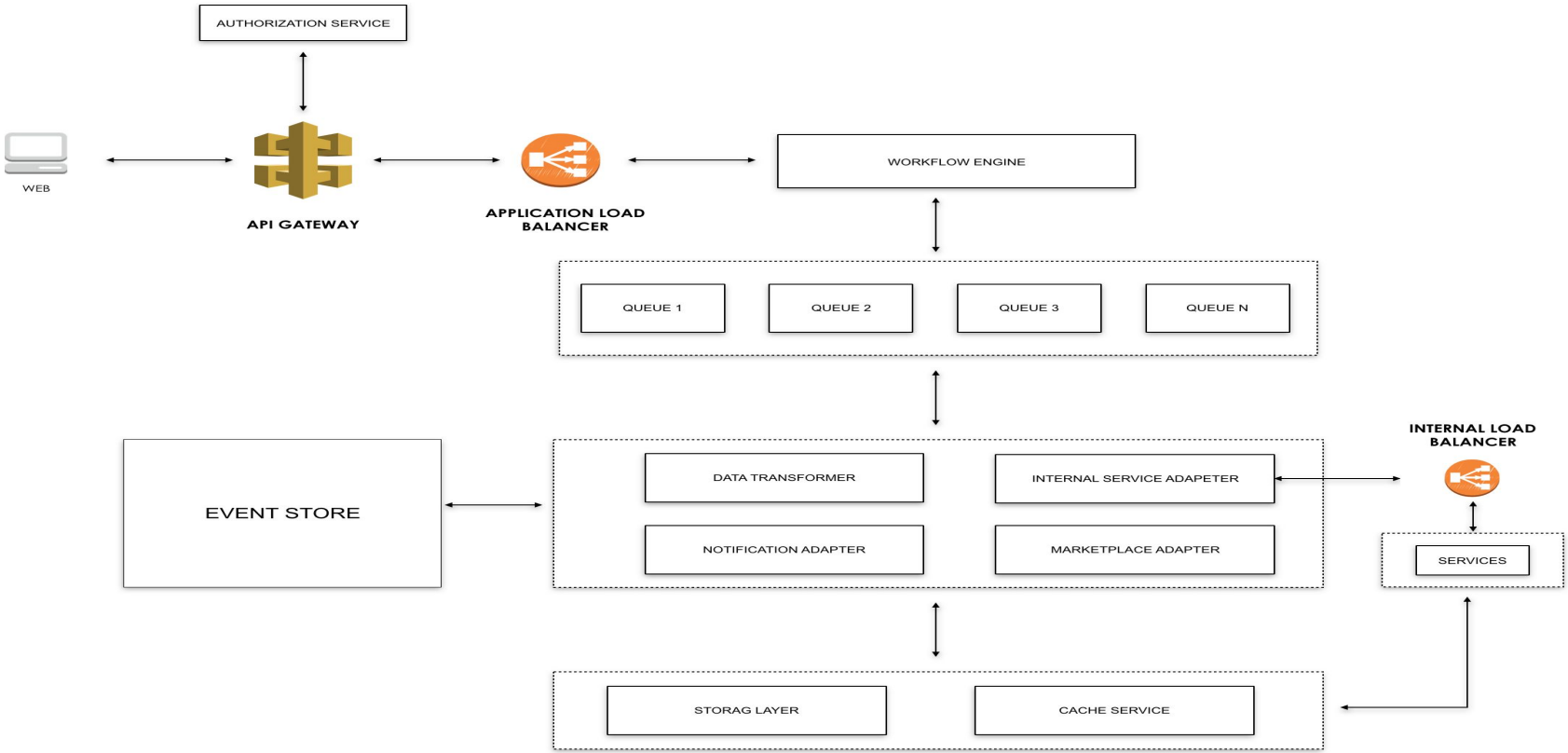
- Synchronous
  - Http(REST) protocol
  - 

- Asynchronous
  - Amqp protocol
  - 

APIS HIGH LEVEL ARCHITECTURE



ASYNC / JOBS PROCESSING

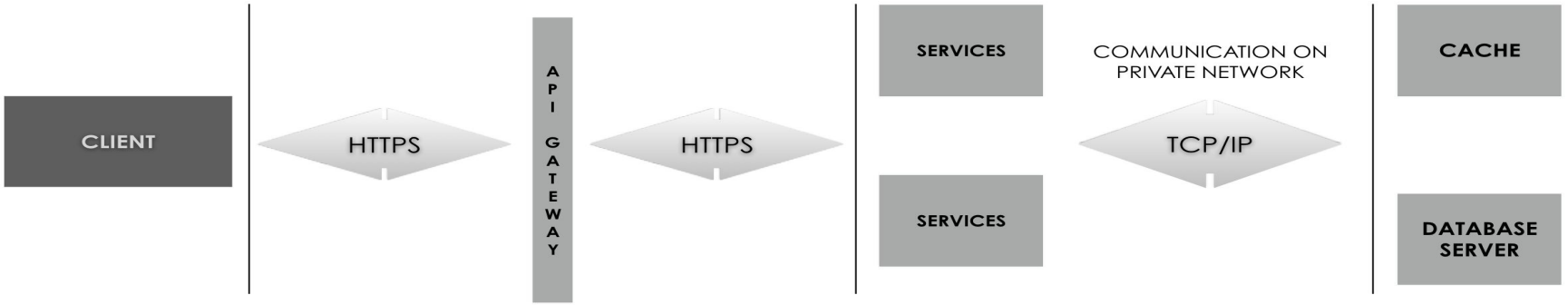


Security

- **Application Access**
  - Role-based and Attribute access control
  - Encrypting PII and credentials Data
  - JWT
- **Reverse Proxies**
- **De-Coupled Applications**
- **Cross-Origin configurations**
- **Data Security**
  - Databases are hosted in VPC and removed public access. Systems which are in VPC can only access it.

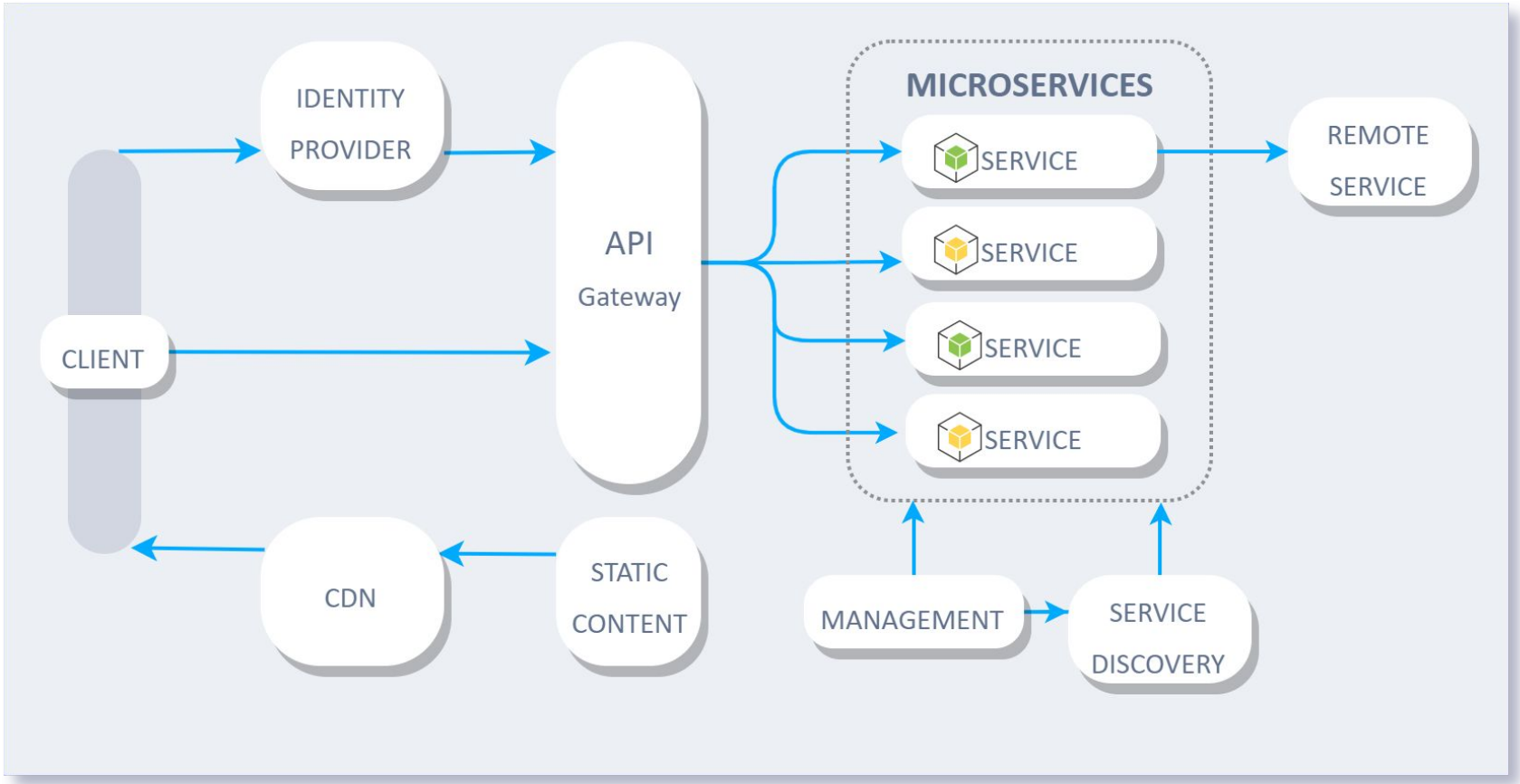
- **Application firewall(AWS- WAF)**
  - SQL Injection
  - Cross-site Scripting
  - Broken Authentication
  - XML External Entities
  - Insecure Deserialization

SECURITY COMMUNICATION

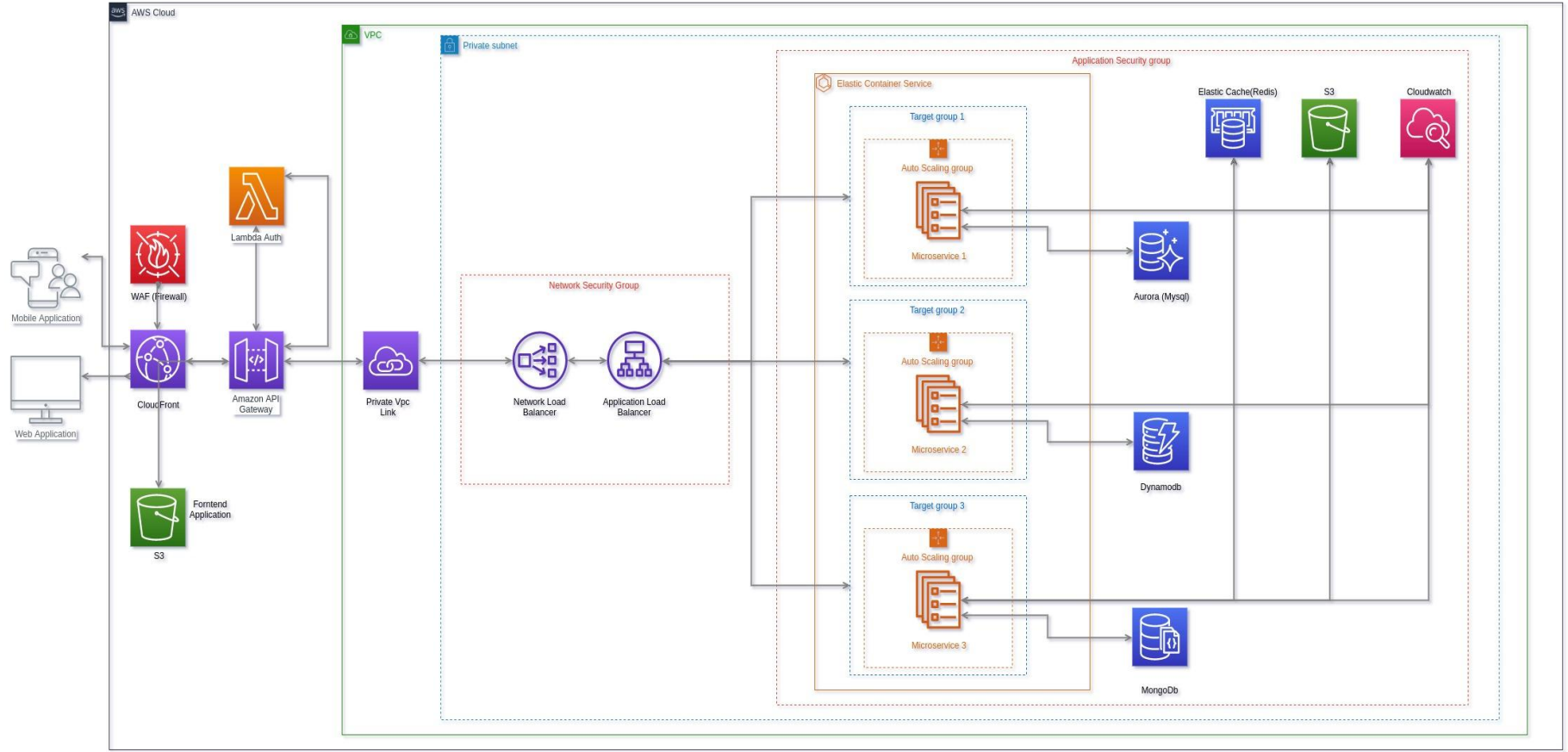


CLIENT LAYER	COMMUNICATION OVER INTERNET	PUBLIC FACING ENVIRONMENT	PRIVATE NETWORK(DMZ)
TLS/SSL ENABLED	256 BIT SSL ENCRYPTION	PUBLIC IP	INTERNET DISABLED PRIVATE ZONE / DMZ (DEMILITARISED ZONE)

Architecture



Detailed Architecture



Data Retention And Backup

- All Data related to users and their products, orders and payments are stored permanently and archived as anonymous data when deleted, these data is used as training Data
- Data Related to 3rd party or Crawled Data is stored for 60 days later it will be archived in s3
- Backup
  - Snapshots are taken, every **3** hours starting at **10:30** UTC. A maximum of **8** snapshots will be retained of a target volume. The oldest snapshot retained will be <= **24** hours old.
  - Snapshots are taken, every **24** hours starting at **21:00** UTC. A maximum of **30** snapshots will be retained of a target volume. The oldest snapshot retained will be <= **1** months old.

Application Development Process

1. **Research**
    a. Tools, Programming language, Frameworks, Best design Patterns to use.
    b. Which architecture, Algorithms to use.
    c. Risk Management Plan
    d. Research is a continuous process
2. **Design**
    a. Frontend
        i. Design Html Pages, user flow and user experience
    b. Backend
        i. Database Schema design
        ii. Design APIs
        iii. Infrastructure setup
3. **Implementation**
    a. Implementing APIs
    b. Daily scrum meetings
    c. Code Reviews
4. **Testing**
5. **Deployment**
    a. After UAT is passed it is deployed into production servers
    b. Right now deployments are automated but CI/CD Pipelines have to be implemented
6. **Backlogs and Bugs Tracking**
    c. All the Bugs are updated in Clickup and these are converted in to issues in Github and assigned to developers
    d. Backlogs are tracked in Jira

System Design