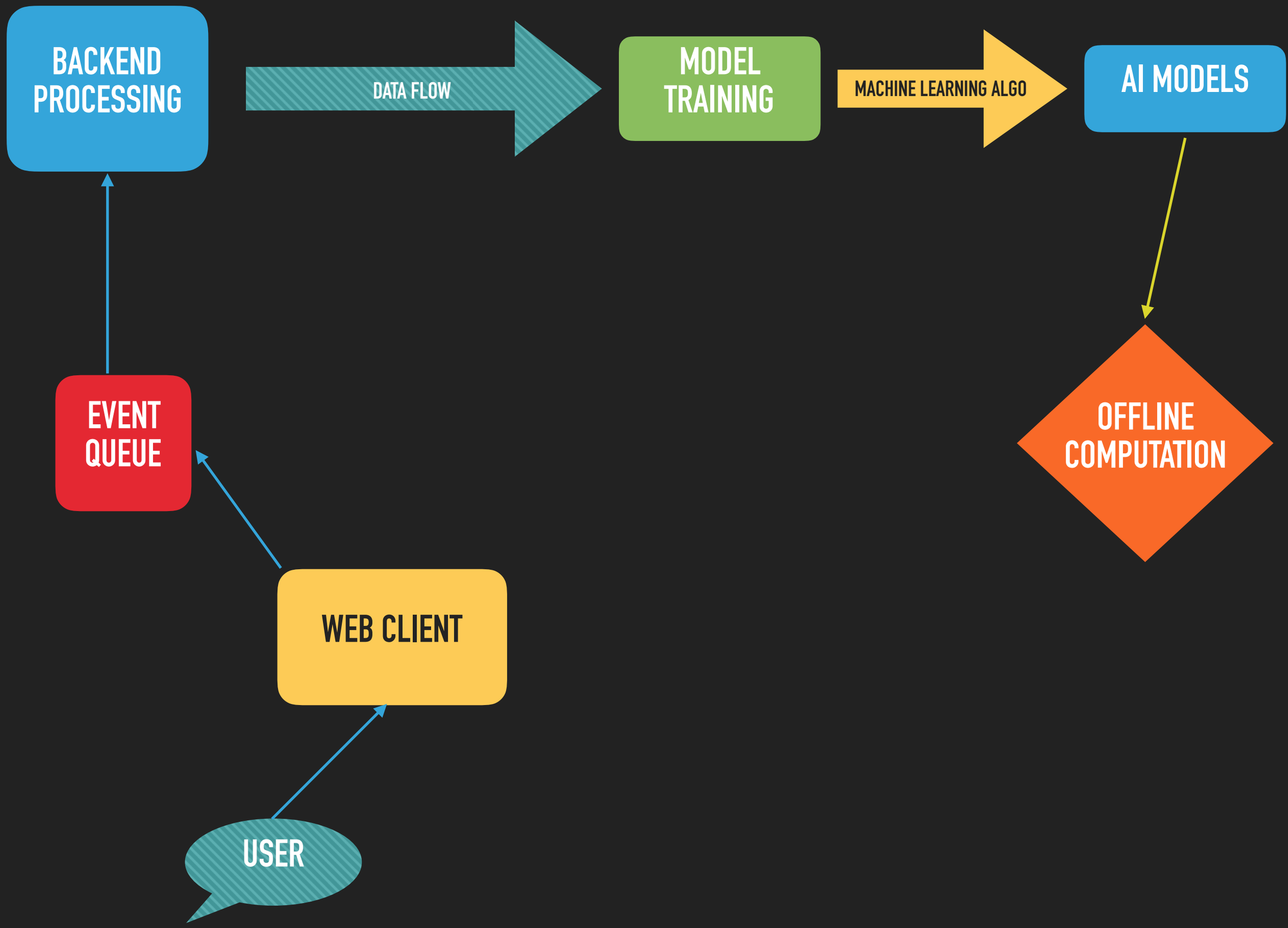
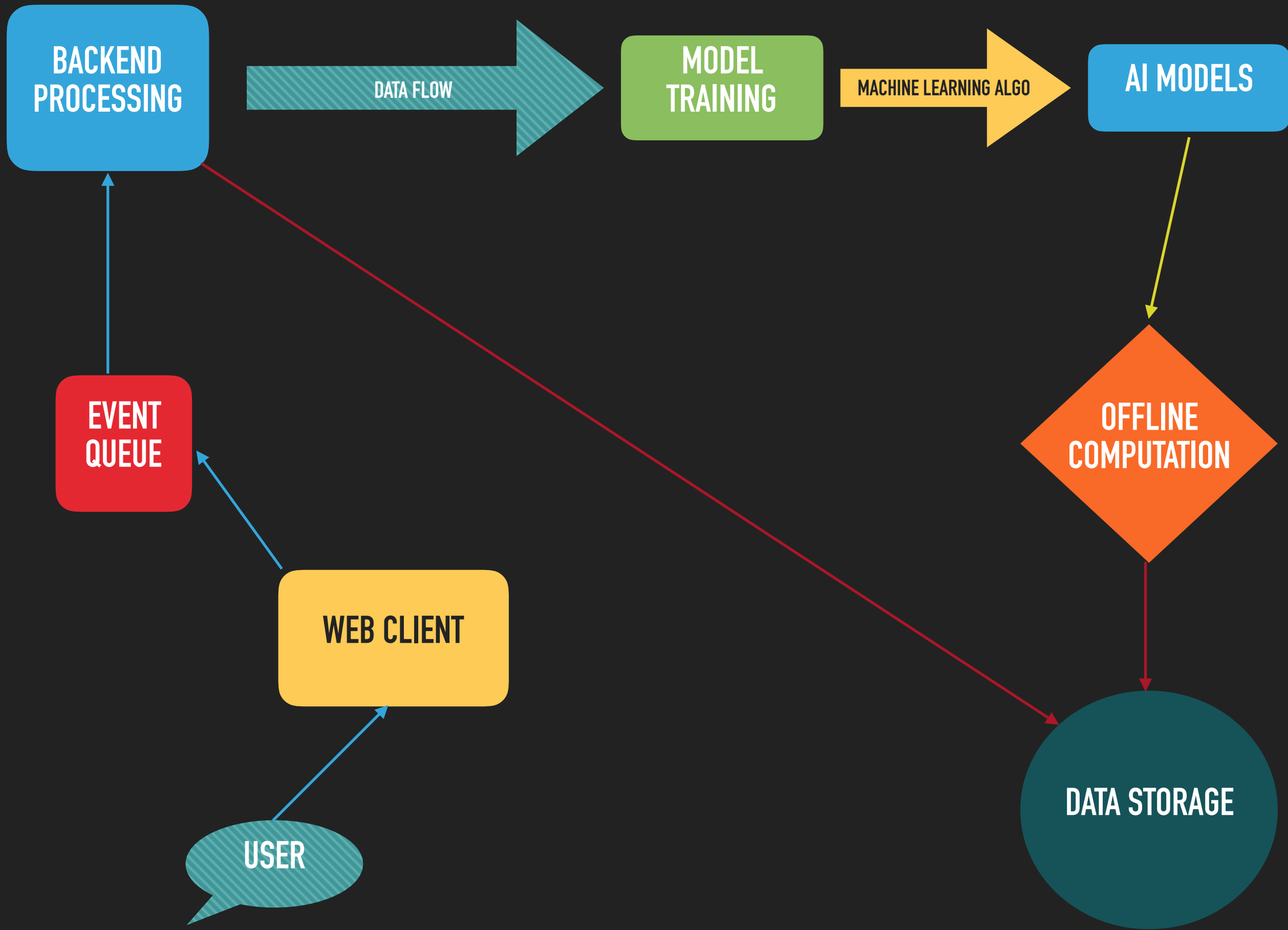
ARCHITECTING FOR CLOUD AND EDGE

DEVELOPING AN AI PRODUCT

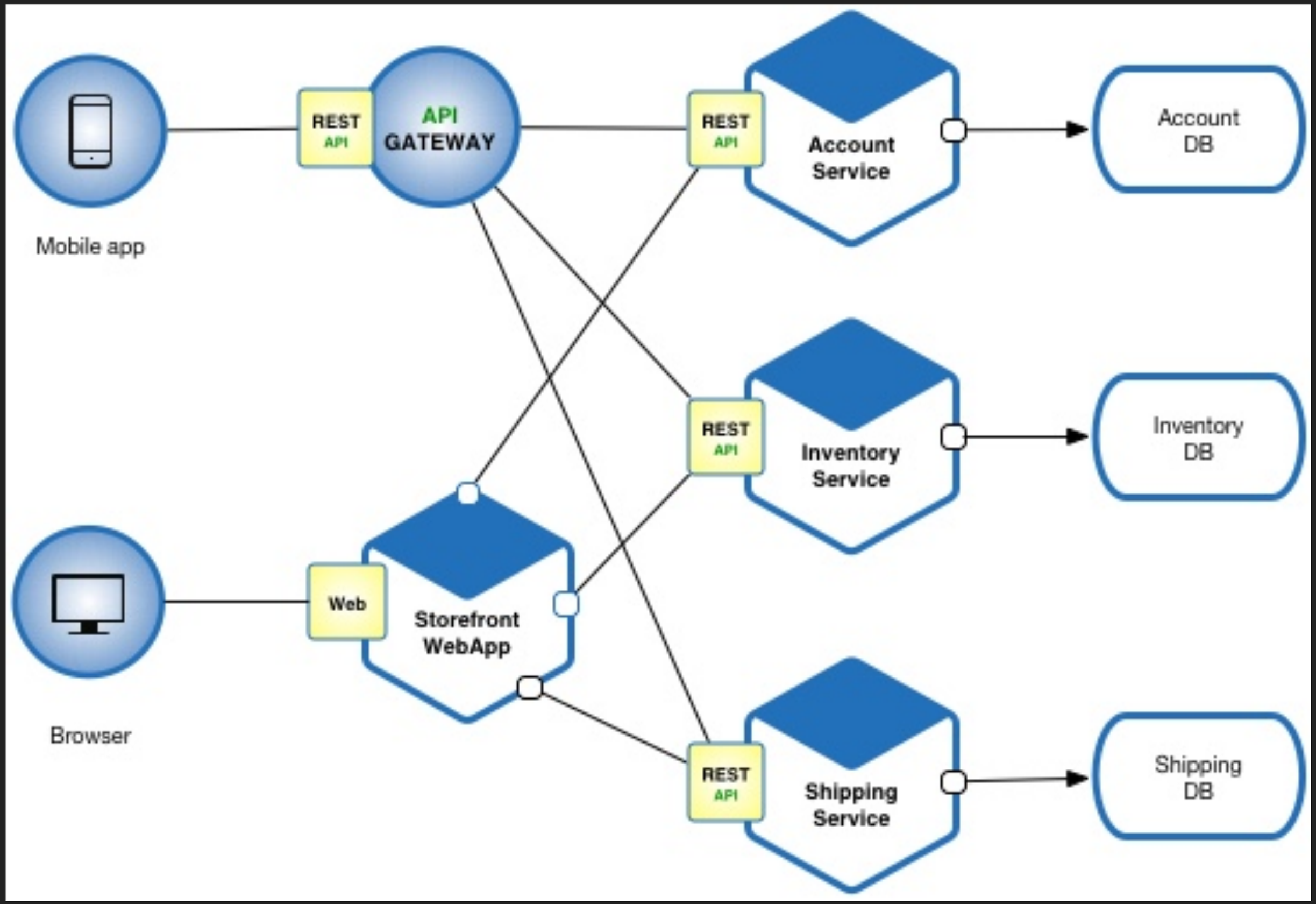

MODEL TRAINING
MACHINE LEARNING ALGO
AI MODELS

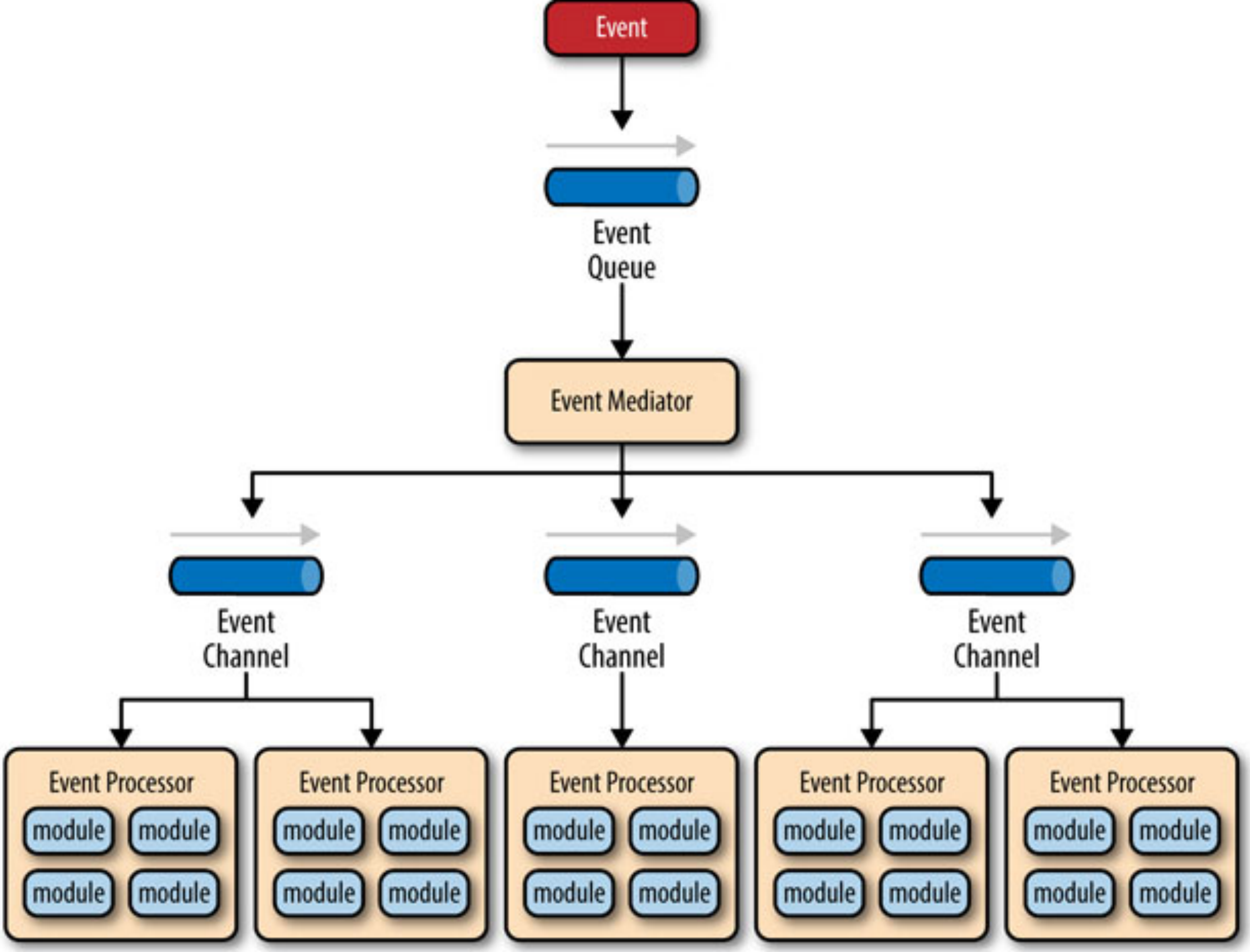

BACKEND PROCESSING
DATA FLOW
MODEL TRAINING
MACHINE LEARNING ALGO
AI MODELS
OFFLINE COMPUTATION
EVENT QUEUE
WEB CLIENT
USER


BACKEND PROCESSING
DATA FLOW
MODEL TRAINING
MACHINE LEARNING ALGO
AI MODELS
OFFLINE COMPUTATION
EVENT QUEUE
WEB CLIENT
USER
DATA STORAGE

IF YOU THINK GOOD ARCHITECTURE IS EXPENSIVE, TRY BAD ARCHITECTURE.

Brian Foote


Mobile app
REST
API
API
GATEWAY
REST
API
Account
Service
Account
DB
REST
API
Inventory
Service
Inventory
DB
Browser
Web
Storefront
WebApp
REST
API
Shipping
Service
Shipping
DB


Event
Event Queue
Event Mediator
Event Channel
Event Channel
Event Channel
Event Processor
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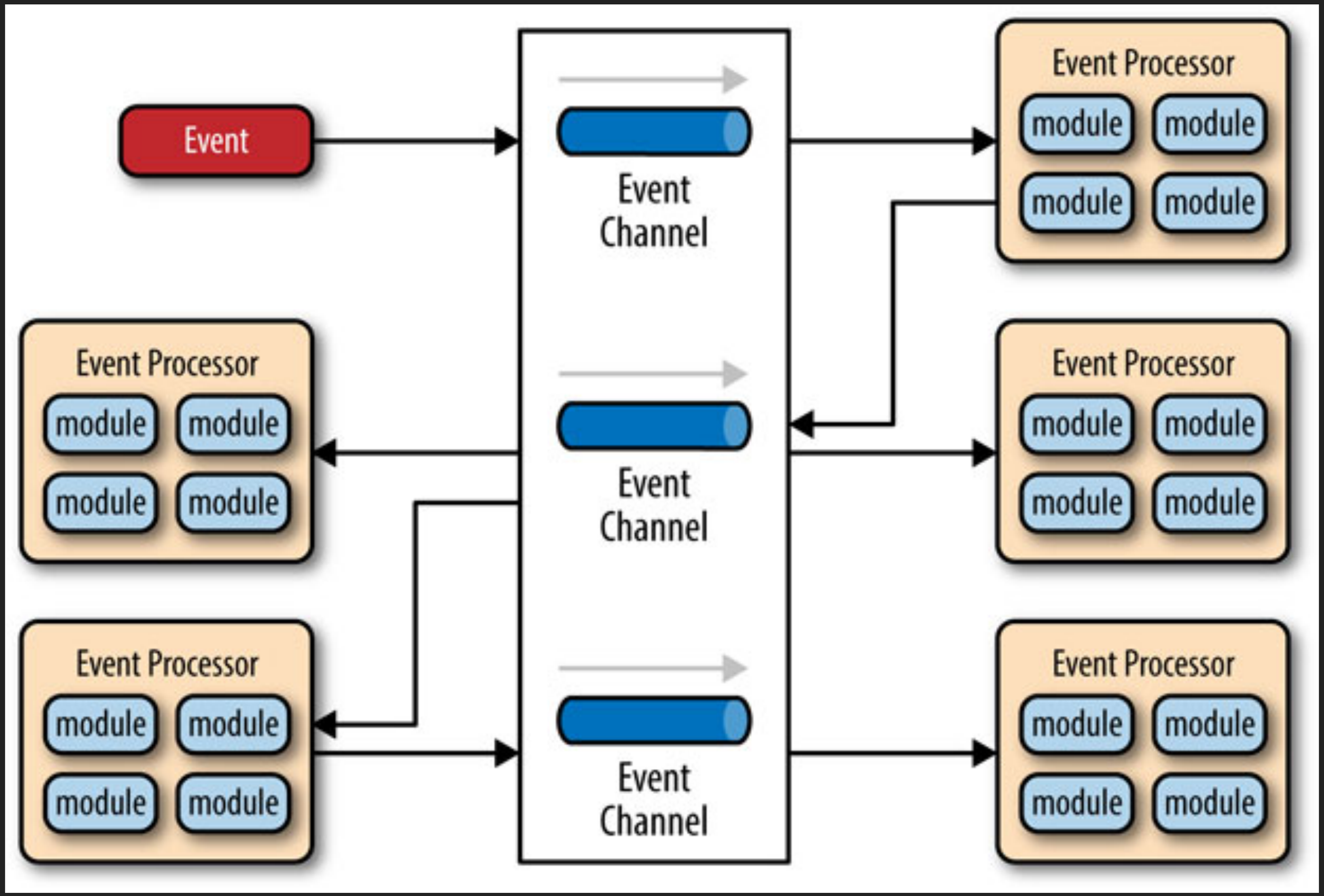
Event
Event Channel
Event Processor
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Event Channel
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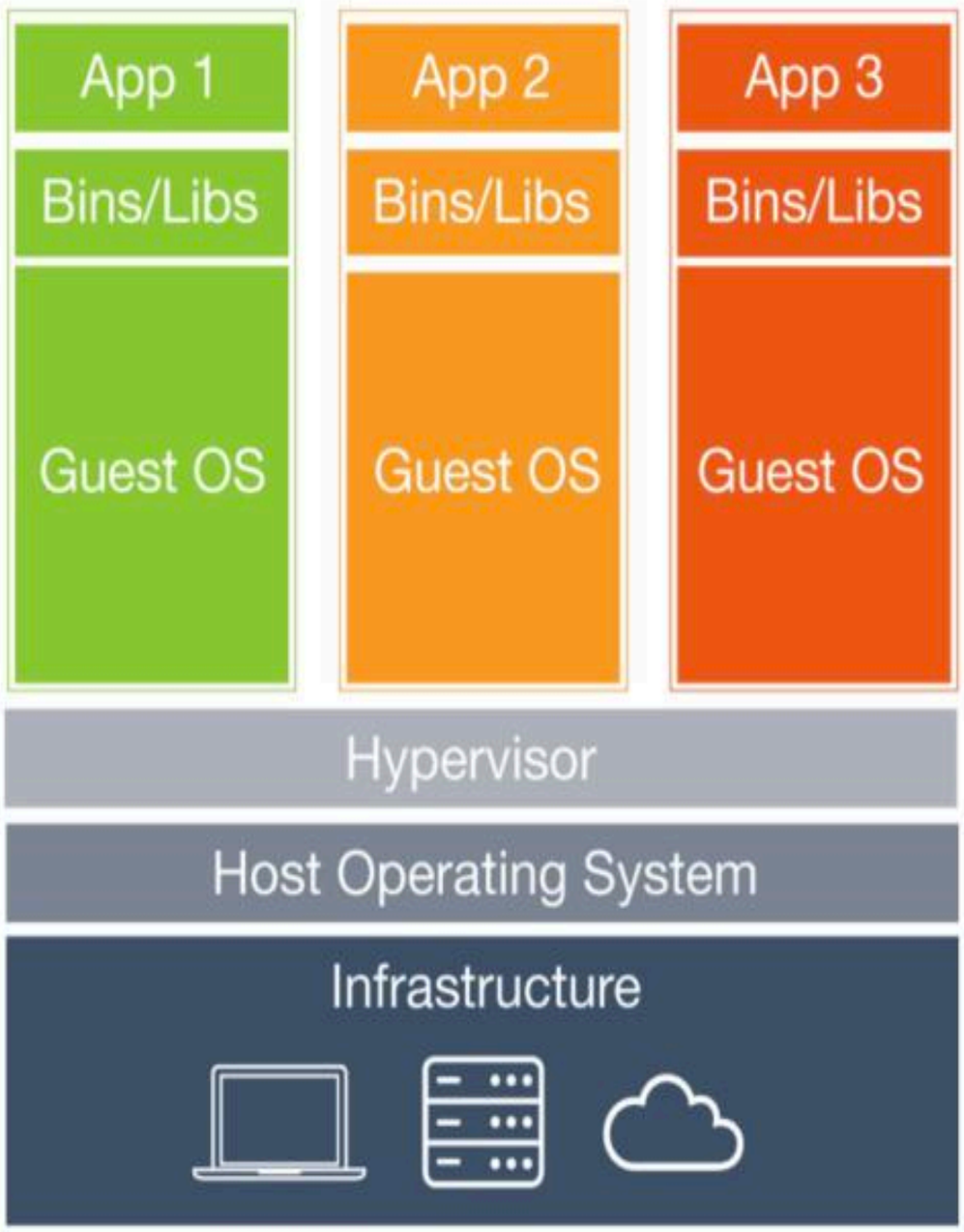
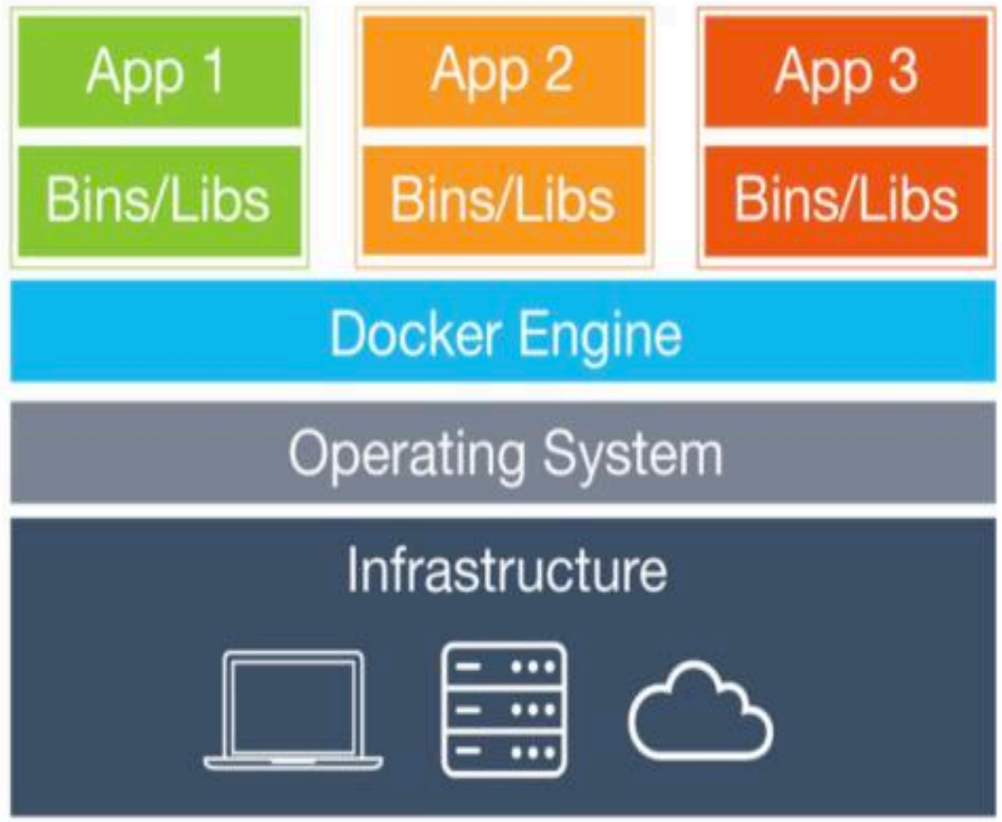
module

Docker vs Virtual Machine





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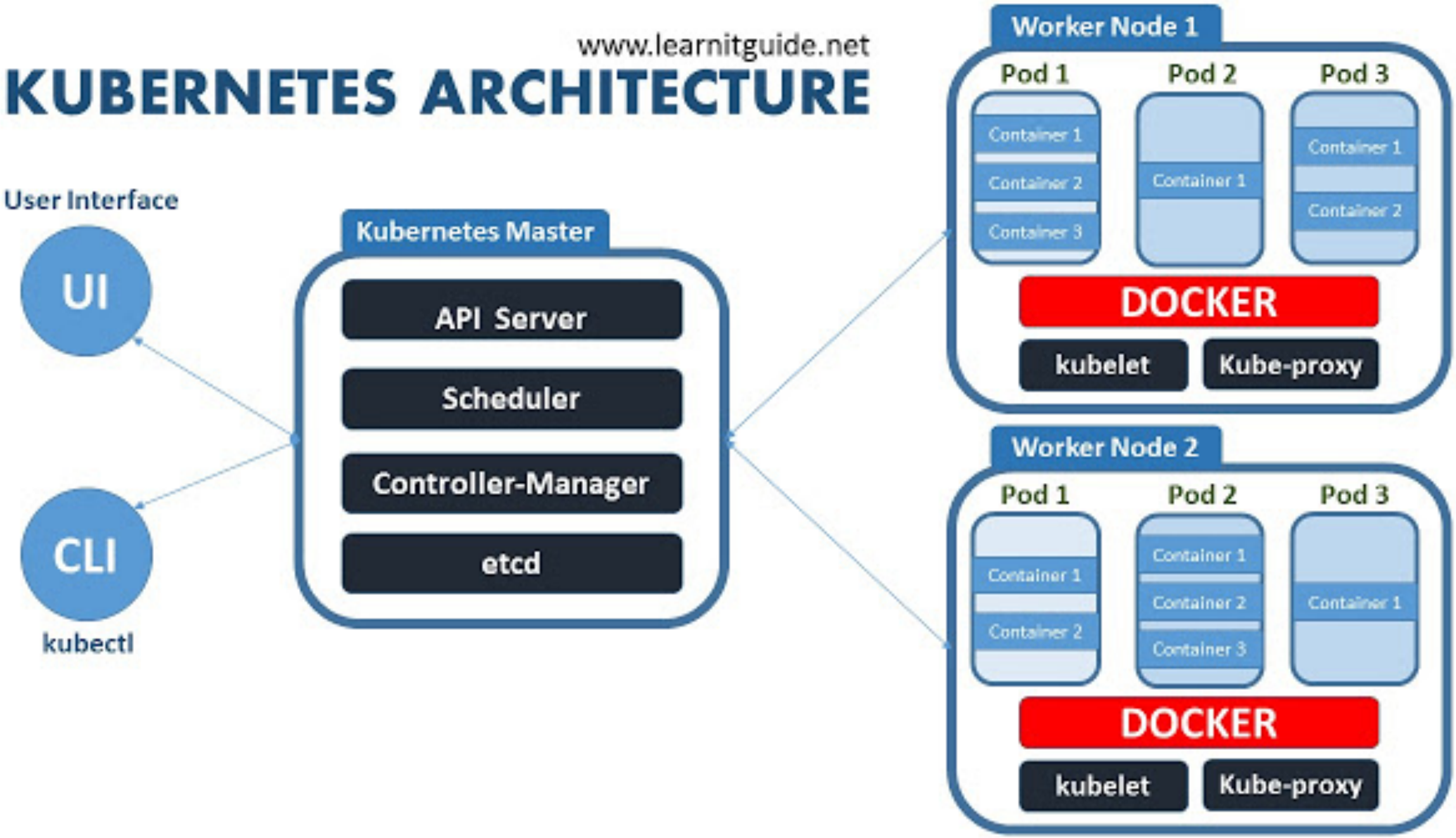
KUBERNETES ARCHITECTURE



REST API

CLIENT

application

REQUEST

REST API endpoint URL + API method + parameters

request example

https://api.flickr.com/services/rest/?method=flickr.photos.getinfo&photo_id=2079357948

REST API ENDPOINT URL | METHOD | PARAMETERS

RESPONSE

representation of resource

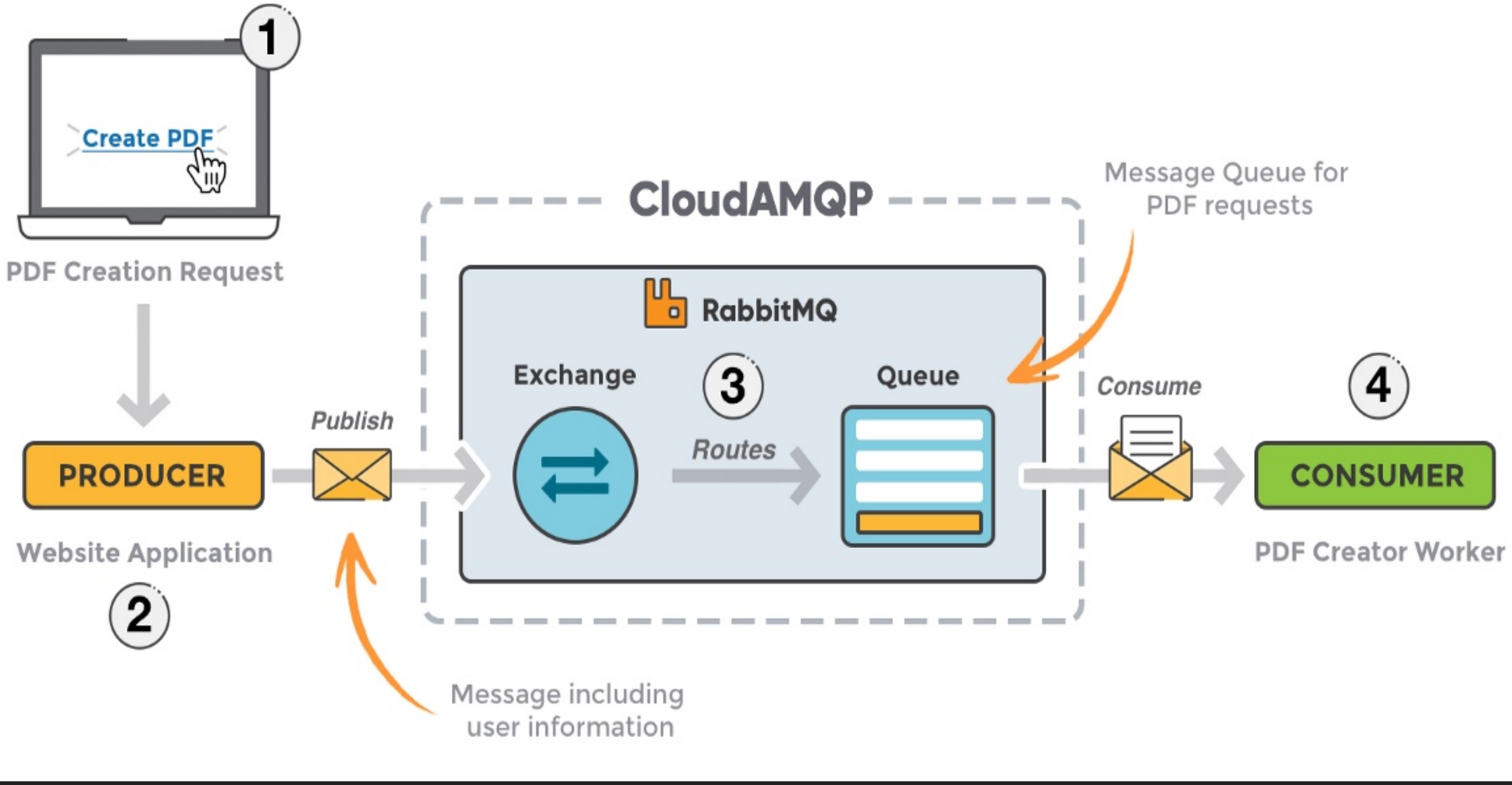
REST XML-RPC SOAP JSON Serialized PHP

WEB SERVER

API

(useful methods)

representational state transfer application programming interface


1
Create PDF
PDF Creation Request
CloudAMQP
Message Queue for
PDF requests
RabbitMQ
Exchange
3
Queue
Publish
Routes
Consume
4
PRODUCER
CONSUMER
Website Application
PDF Creator Worker
2
Message including
user information

Application Layer

Framework Layer

Transport Layer

Code-Generated Language Idiomatic API

Python	Ruby	PHP	Obj-C, C#, C++, ...
Python	Ruby	PHP	Obj-C, C#, C++,...

Generic Low Level API in C

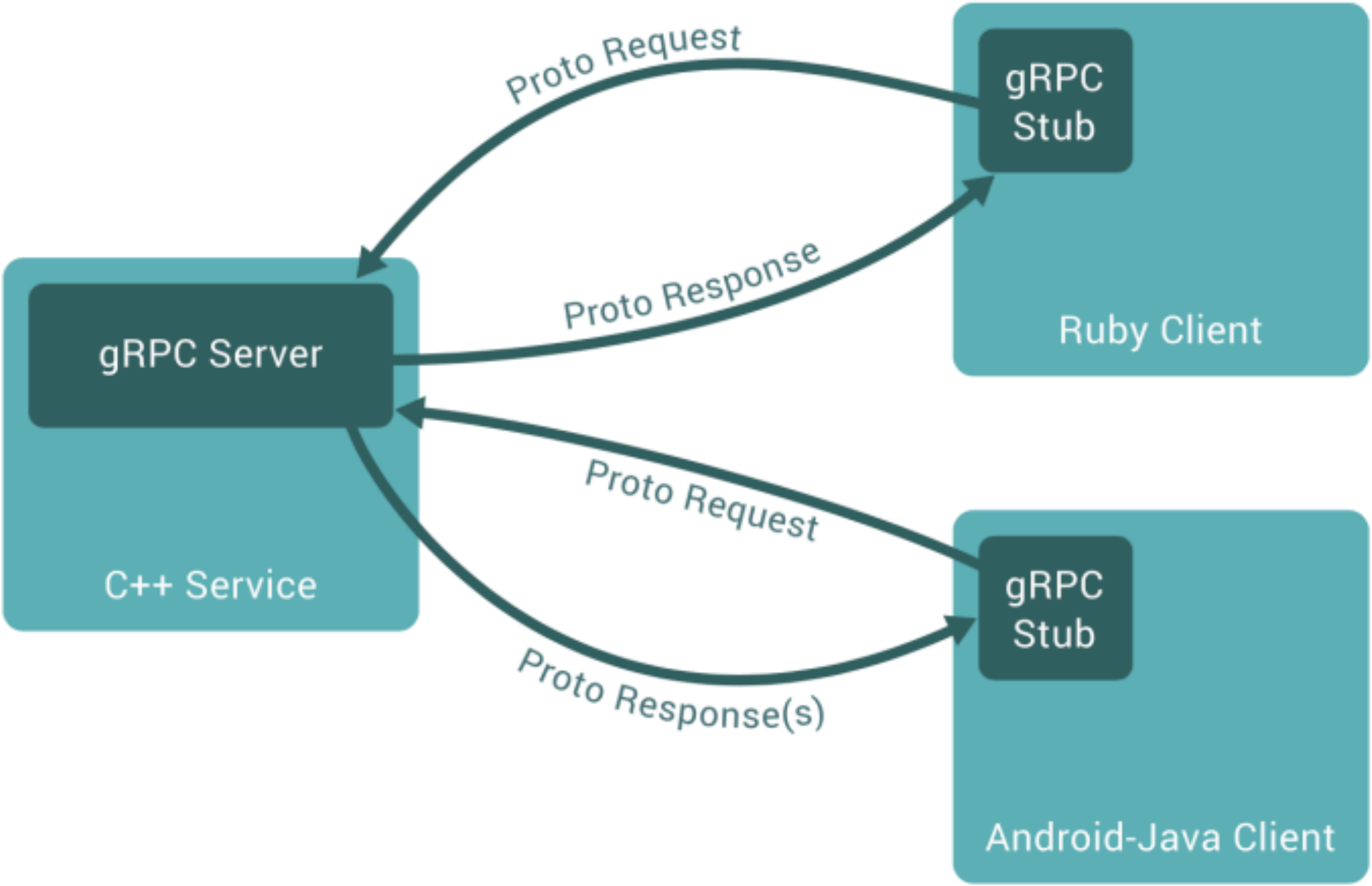
gRPC Core in C

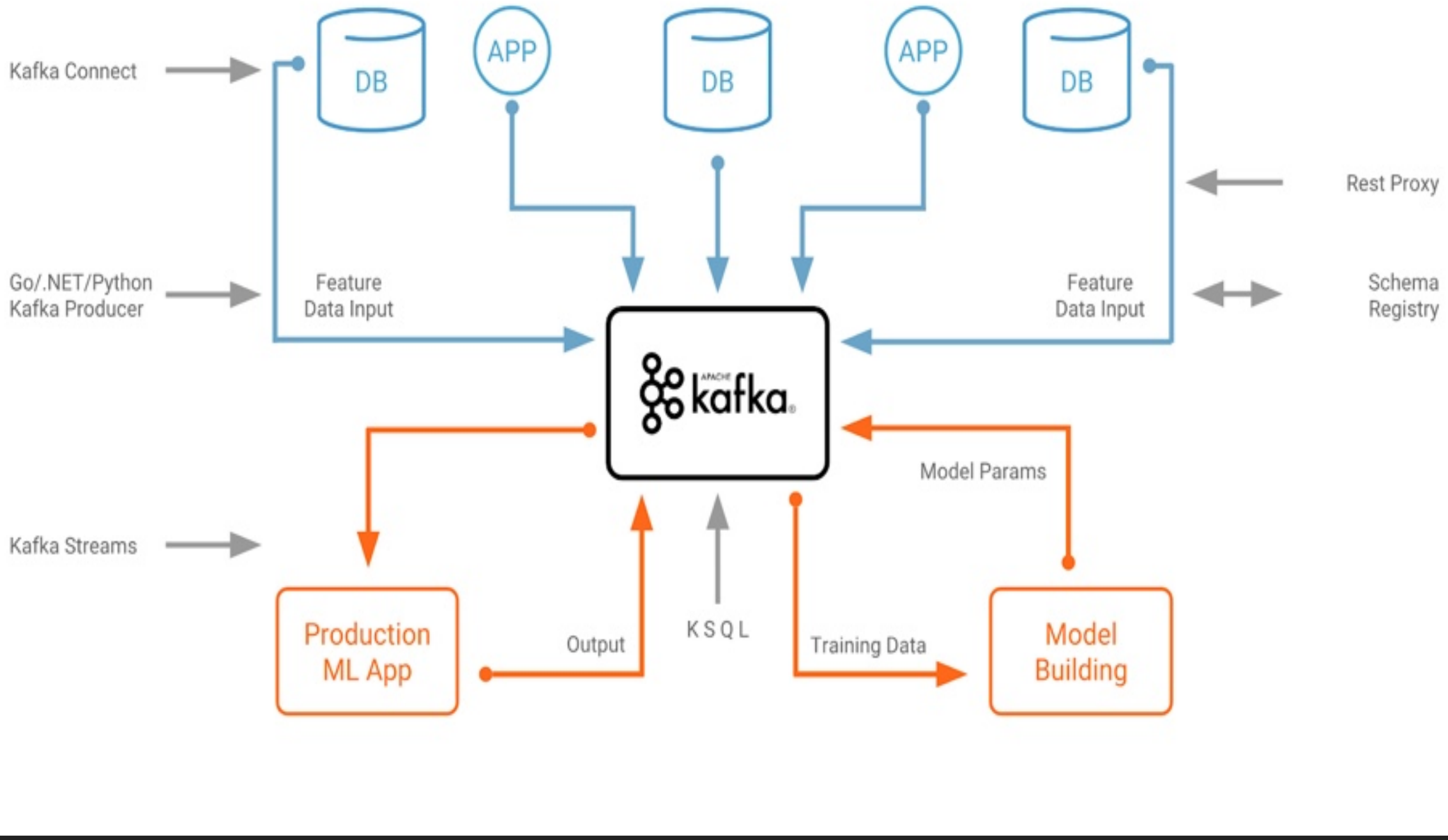
Http 2.0

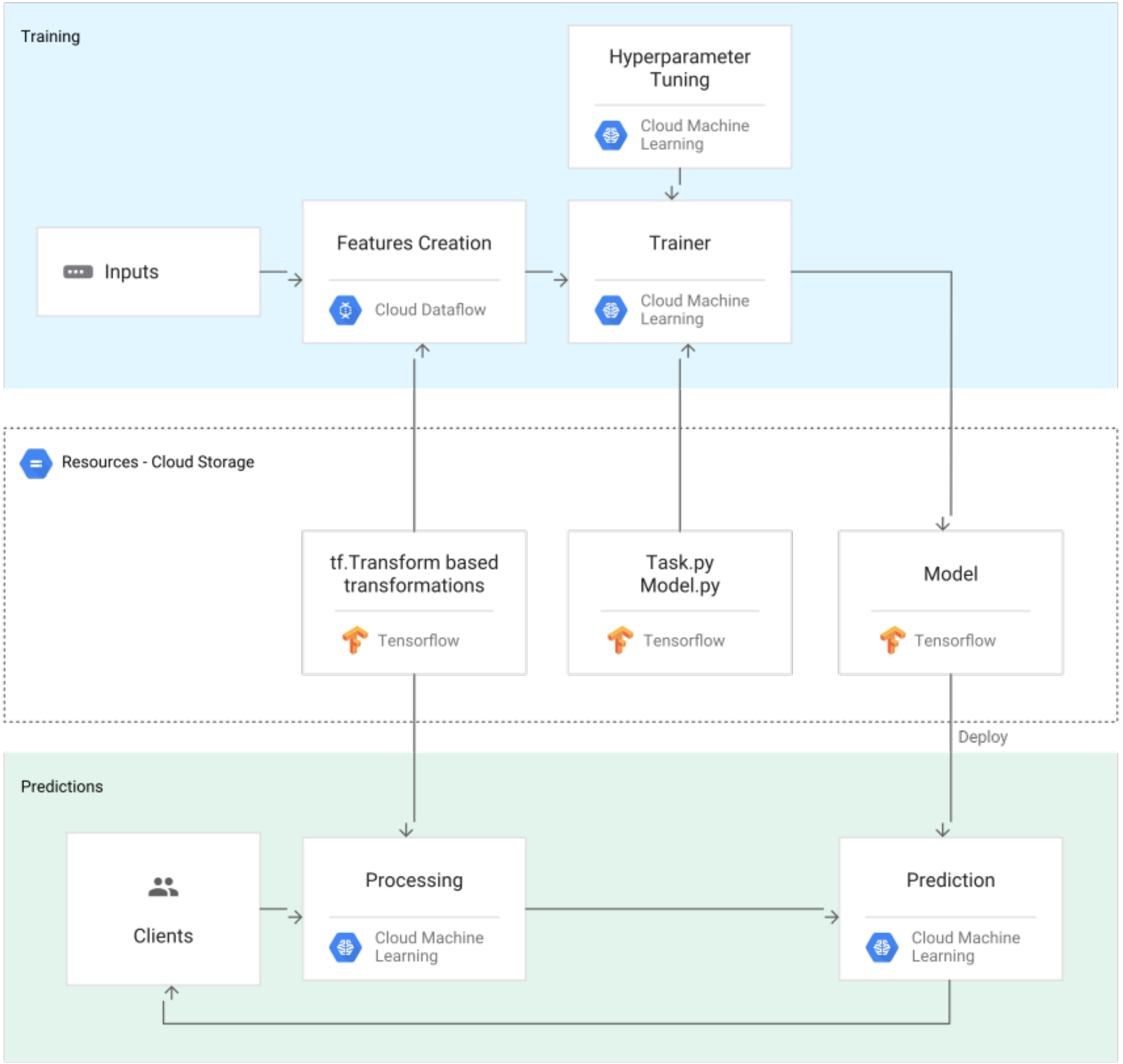
SSL

Code Generated

Language Bindings


Proto Request
gRPC
Stub
Proto Response
gRPC Server
Ruby Client
Proto Request
gRPC
Stub
C++ Service
Proto Response(s)
Android-Java Client


Kafka Connect
DB
APP
DB
APP
DB
Rest Proxy
Go/.NET/Python
Kafka Producer
Feature
Data Input
Feature
Data Input
Schema
Registry
kafka
Model Params
Kafka Streams
Production
ML App
Output
KSQL
Training Data
Model
Building


Training
Hyperparameter Tuning
Cloud Machine Learning
Inputs
Features Creation
Cloud Dataflow
Trainer
Cloud Machine Learning
Resources - Cloud Storage
tf.Transform based transformations
Tensorflow
Task.py
Model.py
Tensorflow
Model
Tensorflow
Deploy
Predictions
Clients
Processing
Cloud Machine Learning
Prediction
Cloud Machine Learning

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