





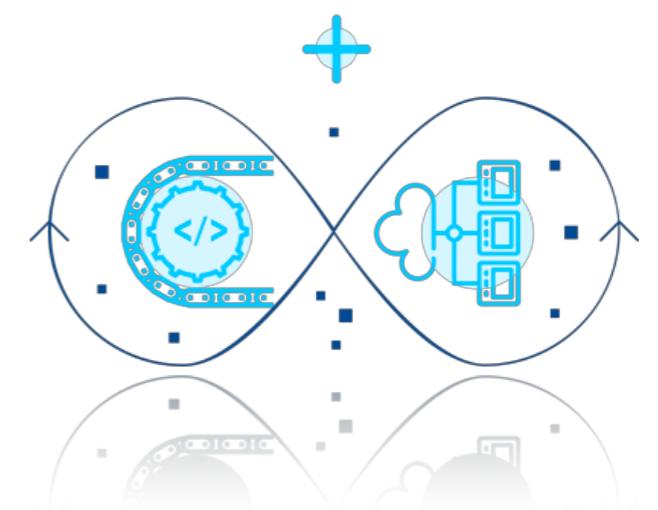
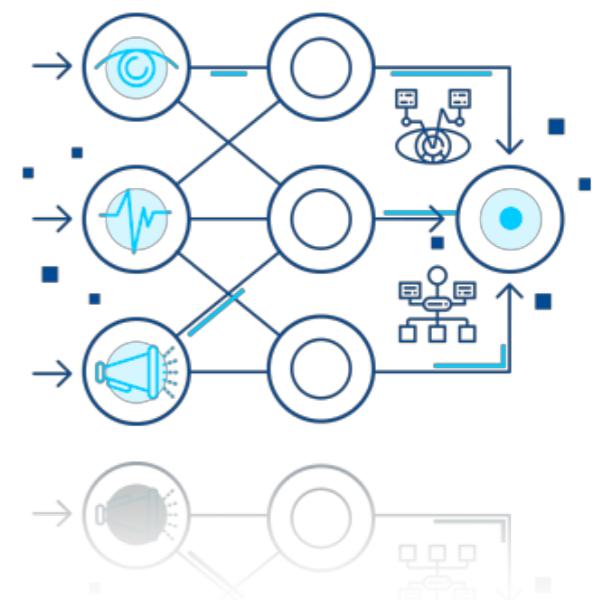
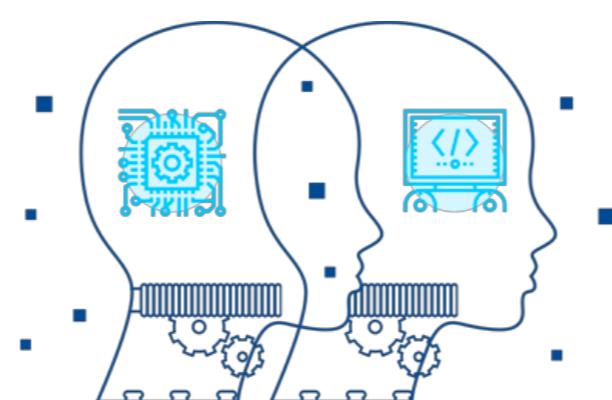
Integrating Chatbots with Google Managed Kubernetes

Dallas Kubernetes Meetup - December 20, 2018

About MavenCode

MavenCode is a Data Analytics software company offering training, product development, and consulting services in the following areas:

- * Provisioning Scalable Data Processing Pipelines and Cloud Infrastructure Deployment
- * Development & Deployment of Machine Learning and Artificial Intelligence Platforms
- * Streaming and Big Data Analytics -IoT and Sensors



About The Presenters

Timo Mechler (Architect & Product Manager)

Decade of experience in the energy commodity markets with particular focus building out scalable research platforms for commodities trading (data collection, data analysis, data modeling).



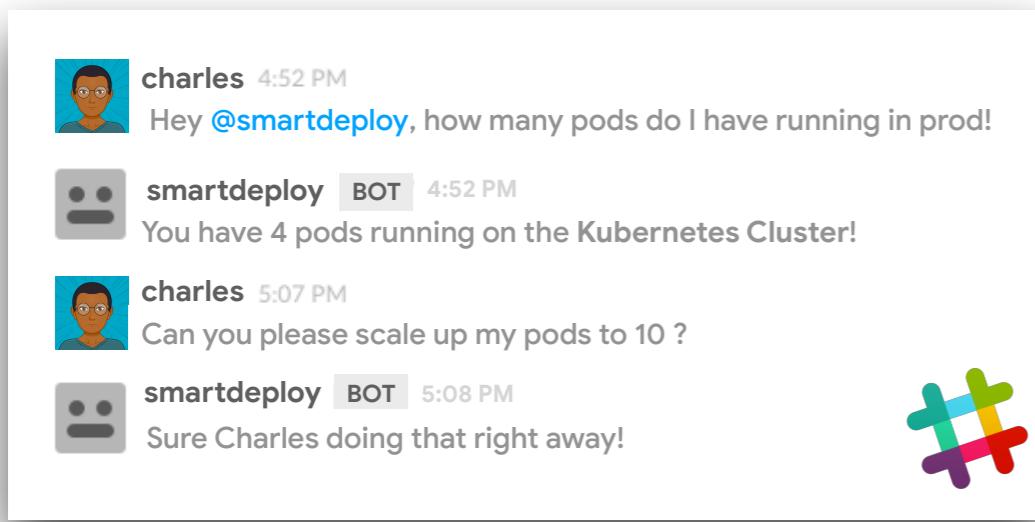
Charles Adetiloye (Lead Data Engineer)

Over a decade worth of experience consulting and implementing large scale distributed data processing software platforms across different industry verticals. Previously worked/consulted with Lightbend, Twitter, Starbucks, and a few other startups and Fortune 500 companies.



Chatbots For Kubernetes DevOps

Slack



- Cluster Management + Metrics

- Hey @smartdeploy, how many pods are running?
- Hey Google, how many pods are running?
- Alexa, how many pods are running?

- Intelligent Scheduling

- Hey @smartdeploy, scale up UserProfile Pods by 5x between 8am and 10am
- Hey Google, From 8am to 10am every Monday in December scale up my pods by 4x
- Alexa, Please scale up Checkout Services by 5 on BlackFriday



Google Assistant



Amazon Alexa



Apple Siri



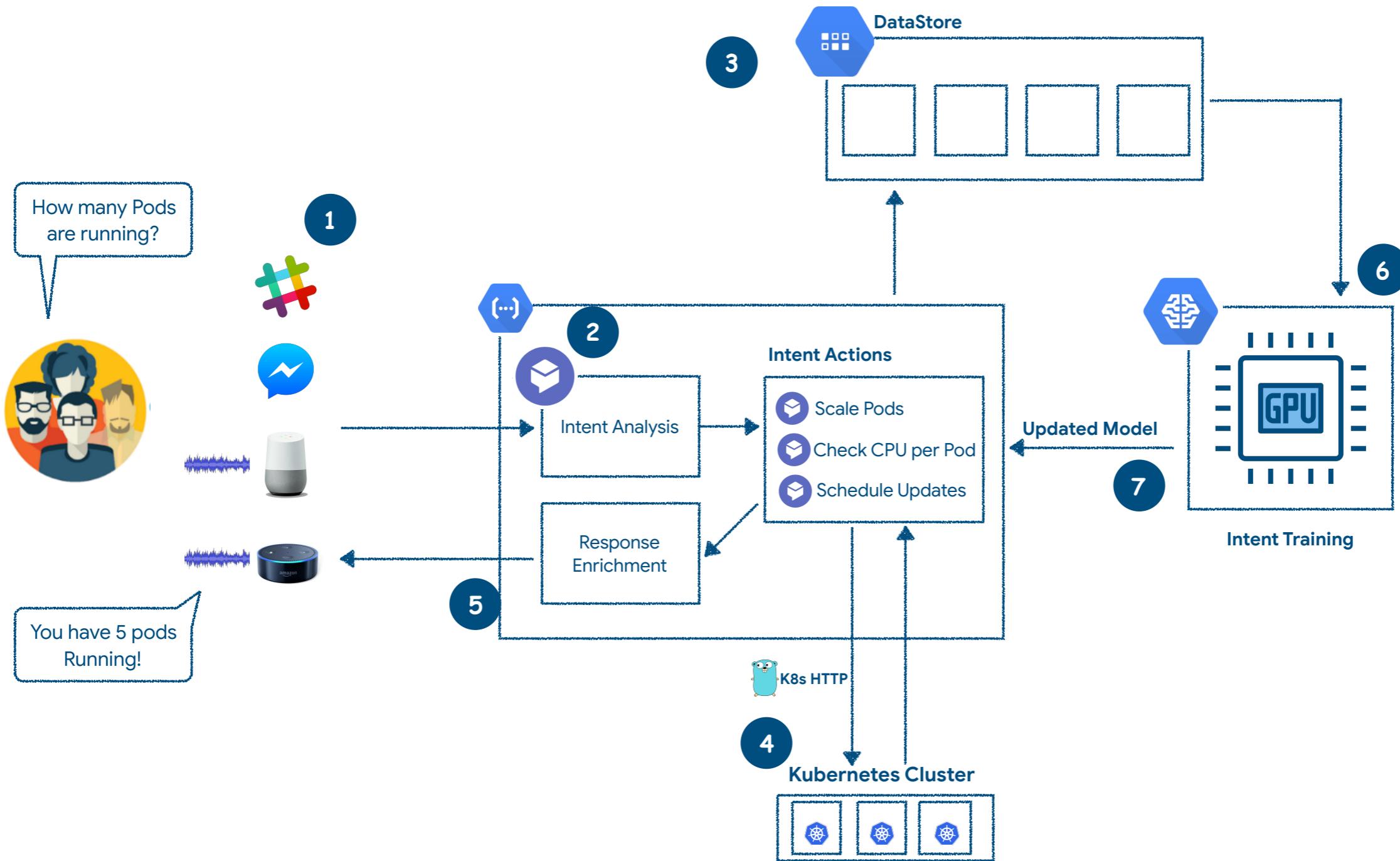
Facebook Messenger

- Gathering Metrics, Intelligently Reacting and Pro-Active Notifications

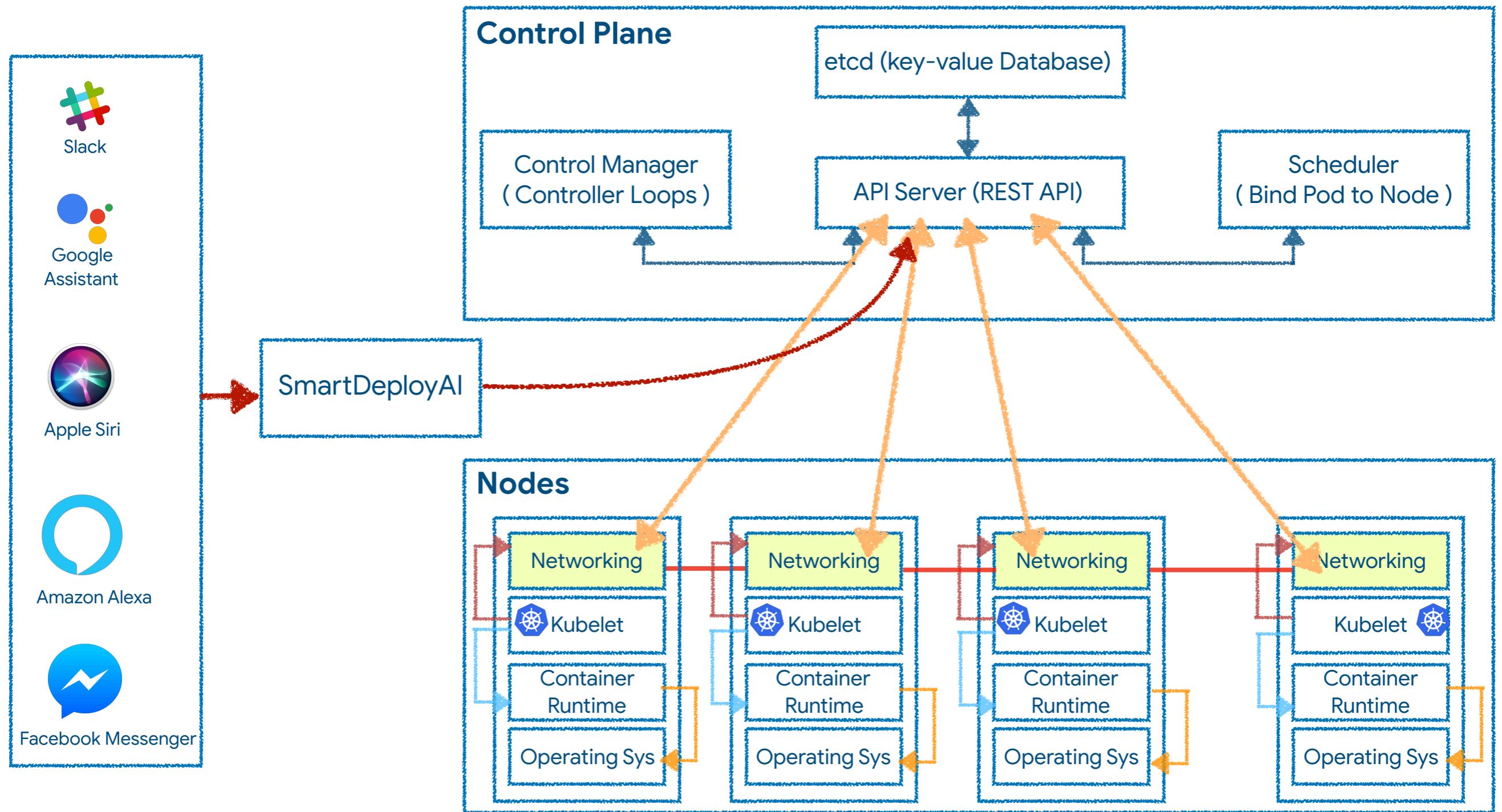
- SMARTDEPLOY-BOT: Hey Charles, You're about exceed 75% cpu utilization, I will have to add 2 more Shopping Cart Pods if that Happens
- SMARTDEPLOY-BOT: @DevopsTeam, I just scaled down the Registration Microservice
- SMARTDEPLOY-BOT: [FATAL] All Staging Pods failed after deploying build 1.0.22 from Jenkins



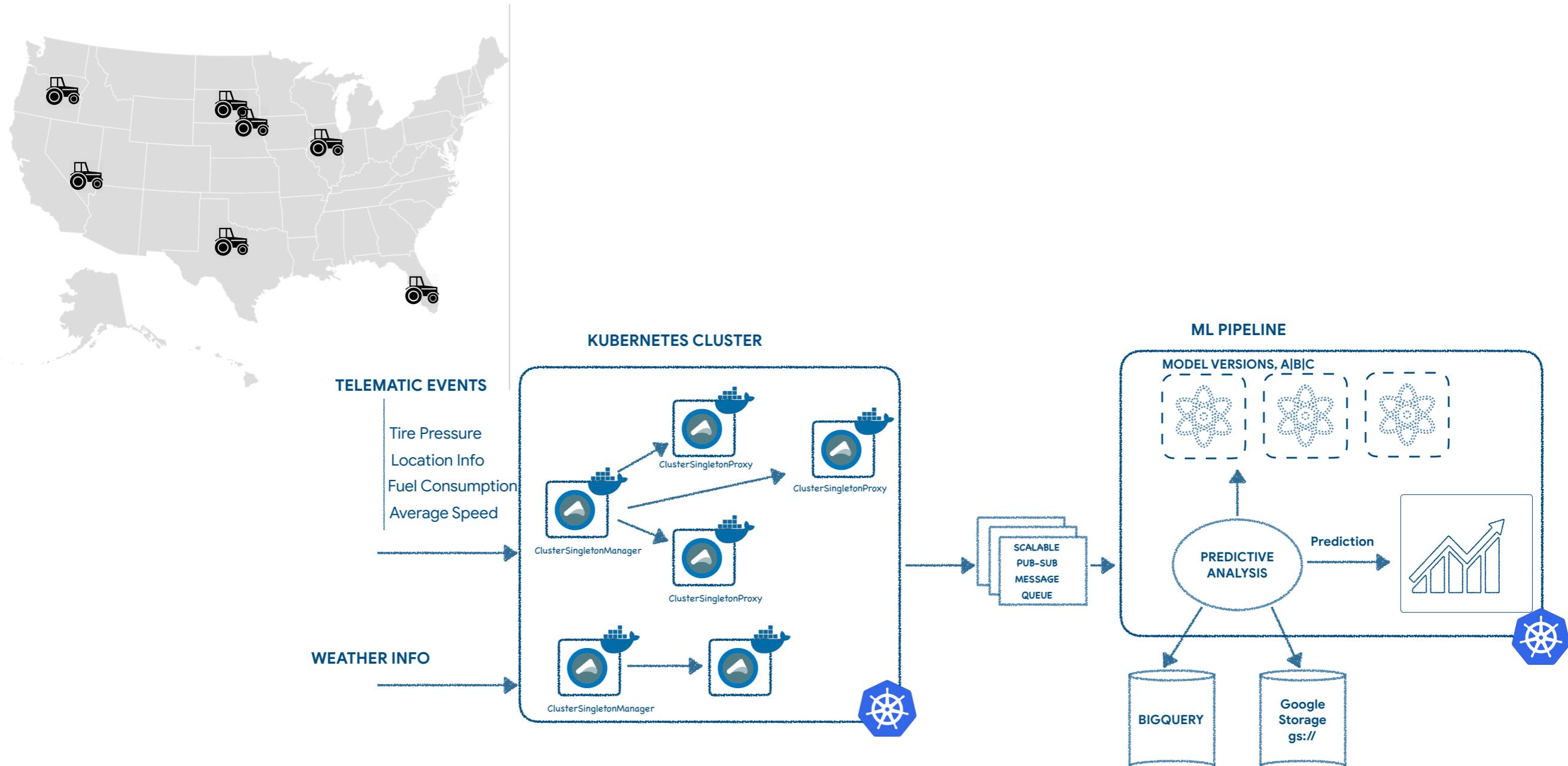
Chatbots Backend Pipeline Architecture



Kubernetes High-Level Component Architecture



Quick Demo - Telematics Event Processor on Google Cloud



GoogleCloud Kubernetes Setup

1. Create Multi-Zone Cluster

```
gcloud container clusters create telematics-rx18-cluster --zone us-central1-a \
--node-locations us-central1a, us-central1b, us-central1c
```

2. Create NameSpace for Your Kubernetes Clusters

```
kubectl create namespace ns-telematics
```

3. Create Service Account

```
kubectl create serviceaccount sa-telematics -n ns-telematics
```

```
kubectl get sa-telematics -o json --namespace ns-telematics | jq -r .secrets[].name
```

4. Grab Service Account Certificate & Token

```
kubectl get secret sa-telematics-token-4478c -o son --namespace ns-telematics | jq -r
'.data["ca.crt"]' | base64 --decode > ca.crt
```

```
kubectl get secret sa-telematics-token-4478c -o son --namespace ns-telematics | jq -r
'.data["token"]' | base64 --decode > token
```

5. Grant the Right Privilege for the `sa-telematics` Service Account to Query PODs in the namespace

```
kubectl --namespace=kube-system create clusterrolebinding rolebind-telematics \
--clusterrole=cluster-admin --serviceaccount=ns-telematics:sa-telematics
```



Q & A

Thank You!



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