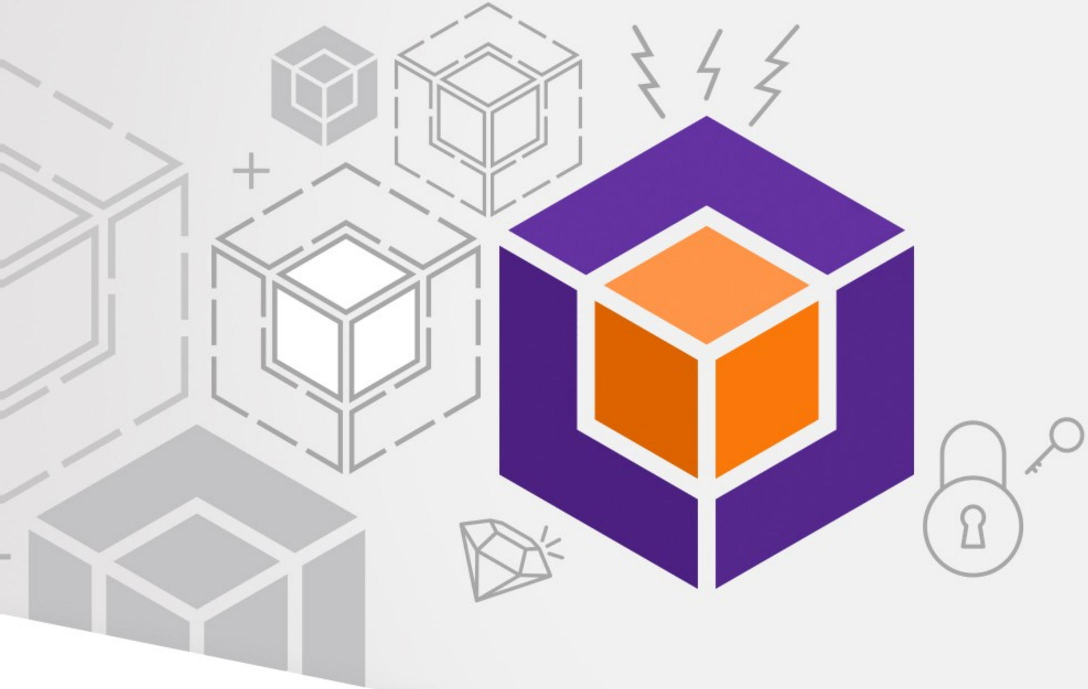
YottaDB

July 10, 2019



Adding Microservices to VistA using Octo and Go

Outline

- What is a micro-service
- What is VistA
- How do we make a VistA micro-service?
- Demo
- Conclusion

What is a micro-service

- A self-contained piece of functionality which can be easily written, tested, and deployed without major changes to the underlying system
  - Communicates with other components through some mechanism; usually a TCP connection
  - Small, small, small!

Why a micro-service

- Easy to create
- Easy to test
- Easy to deploy
- Easy to destroy
- What does ‘easy’ mean?

What is VistA

- I’m the wrong one to ask
- Open source EHR system
  - Monolithic
  - Stores data in M data model using FileMan
  - Allows some RPC calls

How?

YottaDB

- How do we offer a micro-service for a monolithic application?

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  - We provide an interface that allows us to write self-contained bits of business logic
  - We use infrastructure which allows us to easily deploy micro-services and hide them behind routers

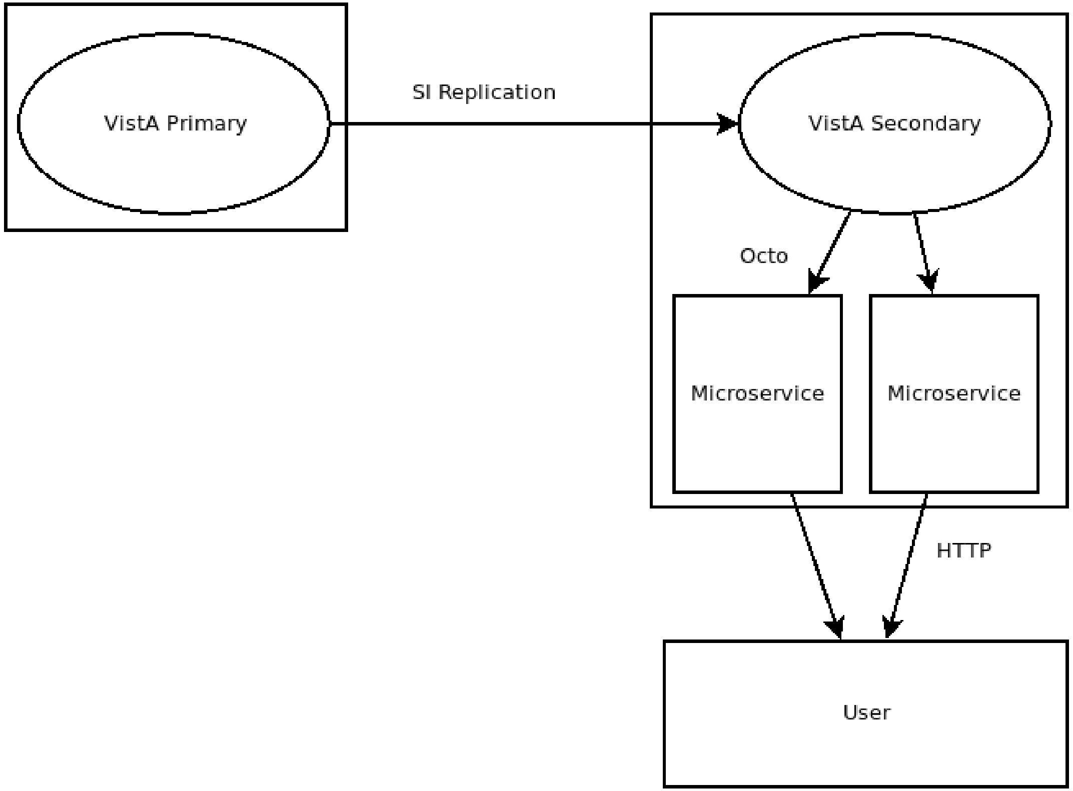
How - Specifically

- Run VistA as you normally would
- Have a replication stream going to a VistA instance deployed in Kubernetes, running Octo and the VistA mapper
- Write code in your language of choice to implement a specific new feature
  - Any logic to commit new data still needs to call into the VistA RPC’s

How - Specifically

- Kubernetes?
  - Tool to manage docker containers and coordinate scaling up/down, restarting containers, etc.
- Octo?
  - Postgres-compatible SQL engine which speaks directly to YottaDB

How - Specifically



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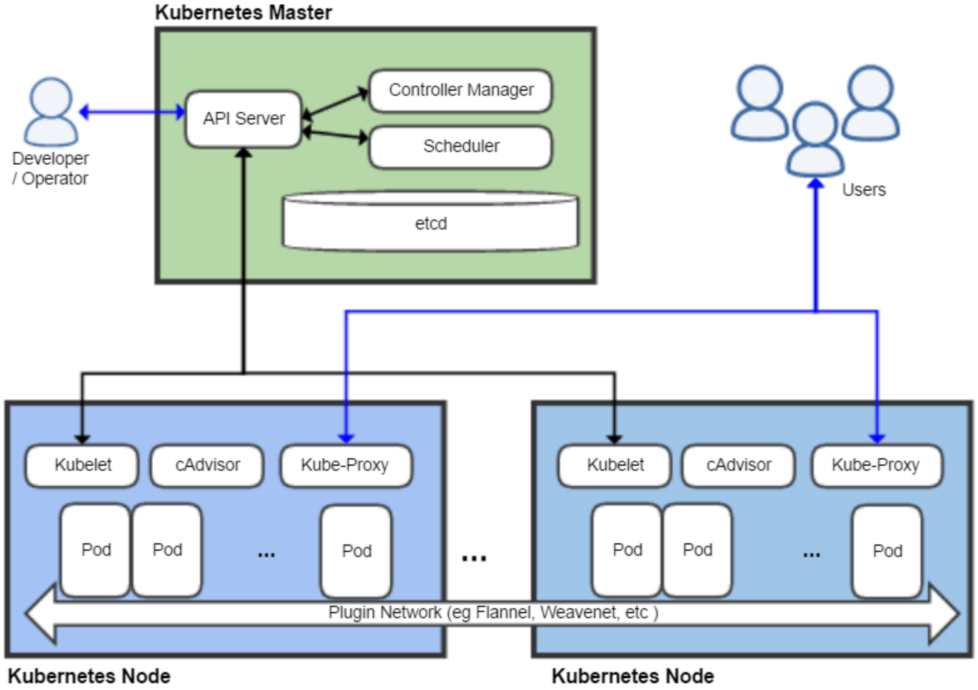

Demo

Demo

- Super simple; let's get a list of patients currently checked into a particular unit of the hospital
- A simple SQL query, back by almost-live data, retrieved by a Go application and converted to JSON
- Simple web-front end displays the list of patients

Query

```
SELECT h1.NAME, p1.NAME, p1.SEX, p1.AGE,
v1.CHECK_OUT_DATE_TIME, v1.VISIT_ADMIT_DATE_TIME

FROM HOSPITAL_LOCATION h1

INNER JOIN VISIT v1

  ON (v1.HOSPITAL_LOCATION = h1.HOSPITAL_LOCATION_ID)

INNER JOIN PATIENT p1

  ON (v1.PATIENT_NAME = p1.PATIENT_ID)

WHERE h1.NAME = 'ICU/CCU'
```

Conclusions

- We talked about micro-services
- We talked about VistA
- We talked about Octo
- We saw how it can be done