



Ramco Nuthouse

The fun is about to start..



Ramco Nuthouse Anniversary – Part 2

Product Architecture

Oct 25th, 2018

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WHY



WHAT



HOW



VISION & MINDSET



IMPACT OF ARCHITECTURE ON BUSINESSES



WHICH IS THE “RIGHT” ARCHITECTURE?



THE PROBLEM STATEMENT



SOME INSPIRATIONS & USE CASES

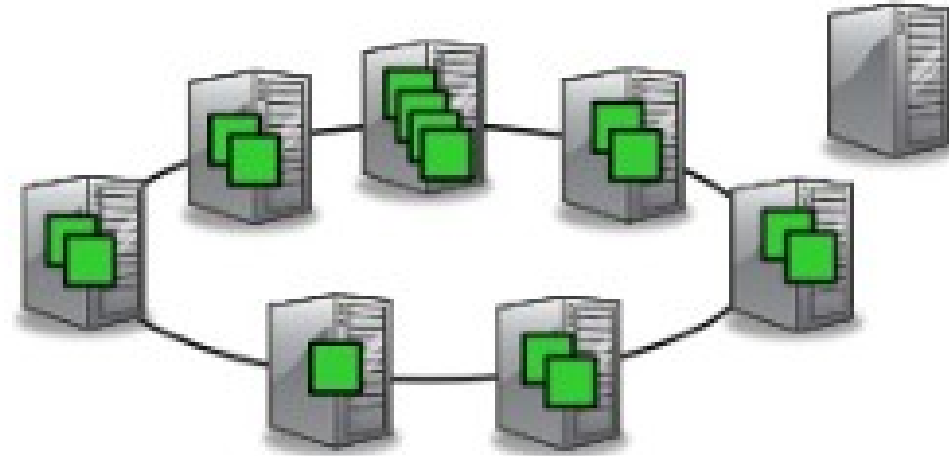


ORIGIN OF AWS

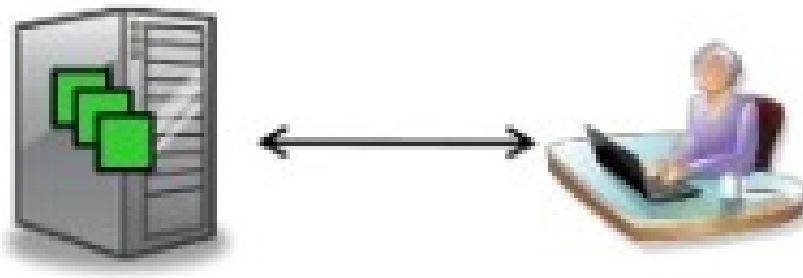


ARCHITECTURE @ GOOGLE

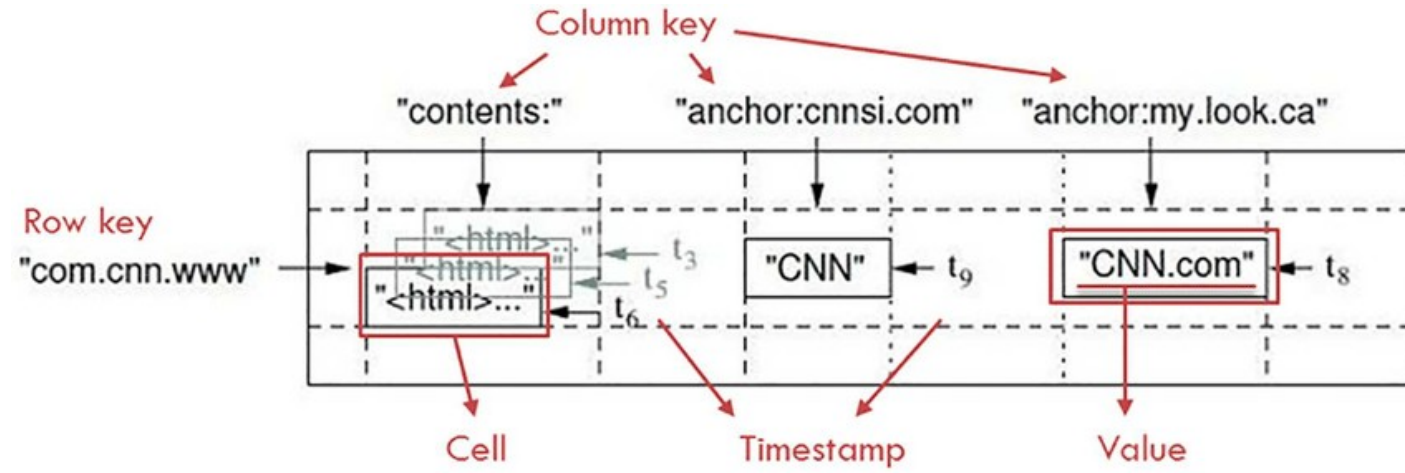
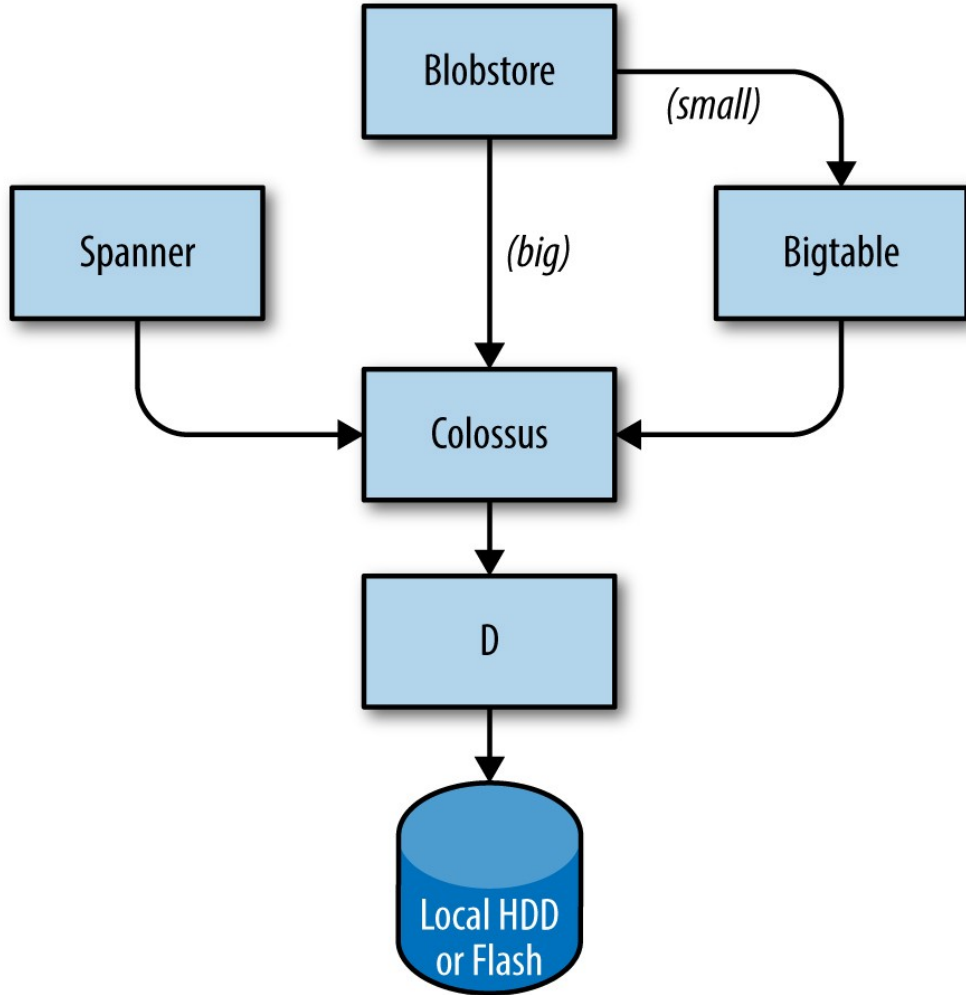
GFS -> Colossus



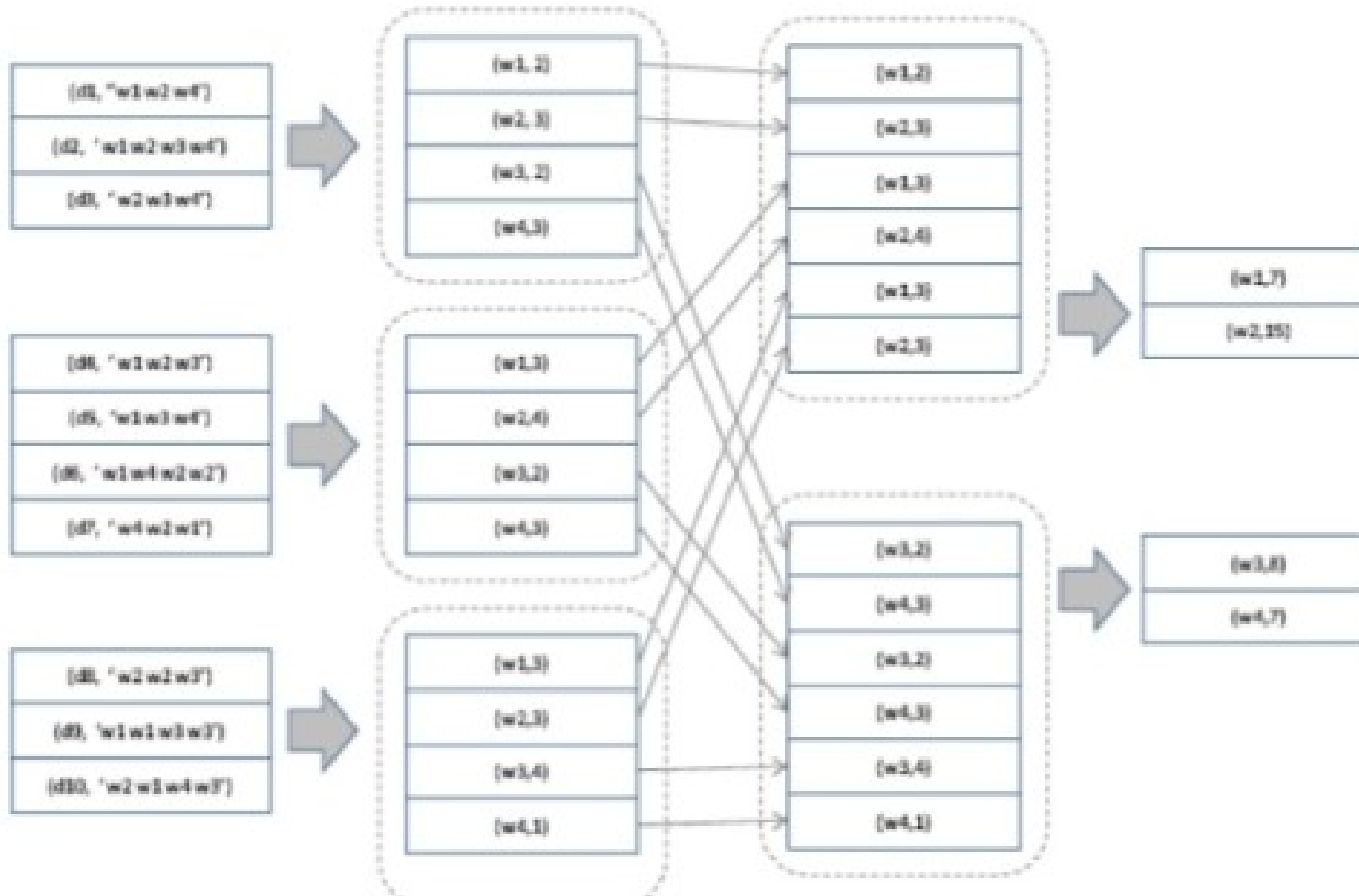
TRADITIONAL NFS



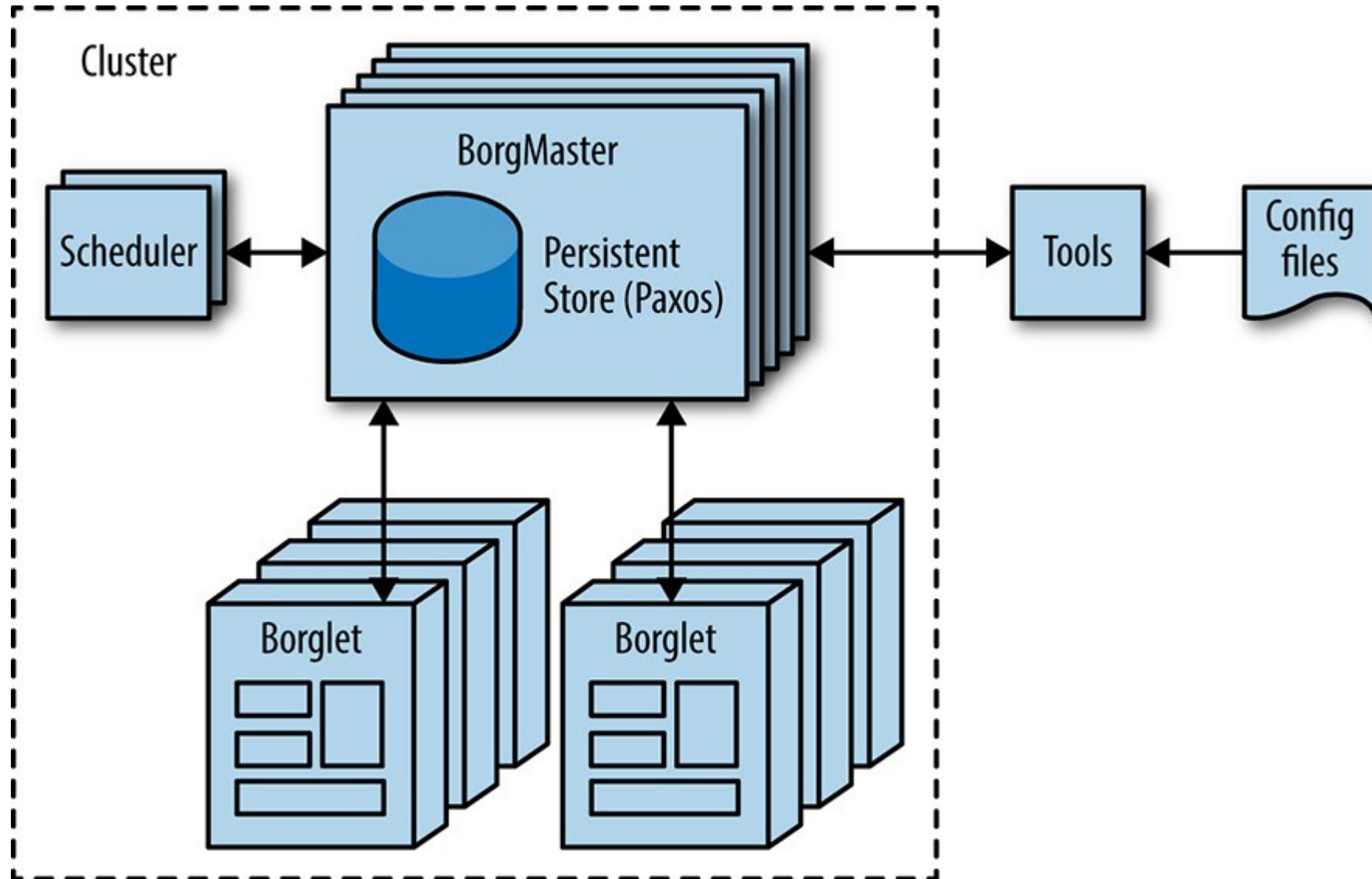
Big Table & Storage



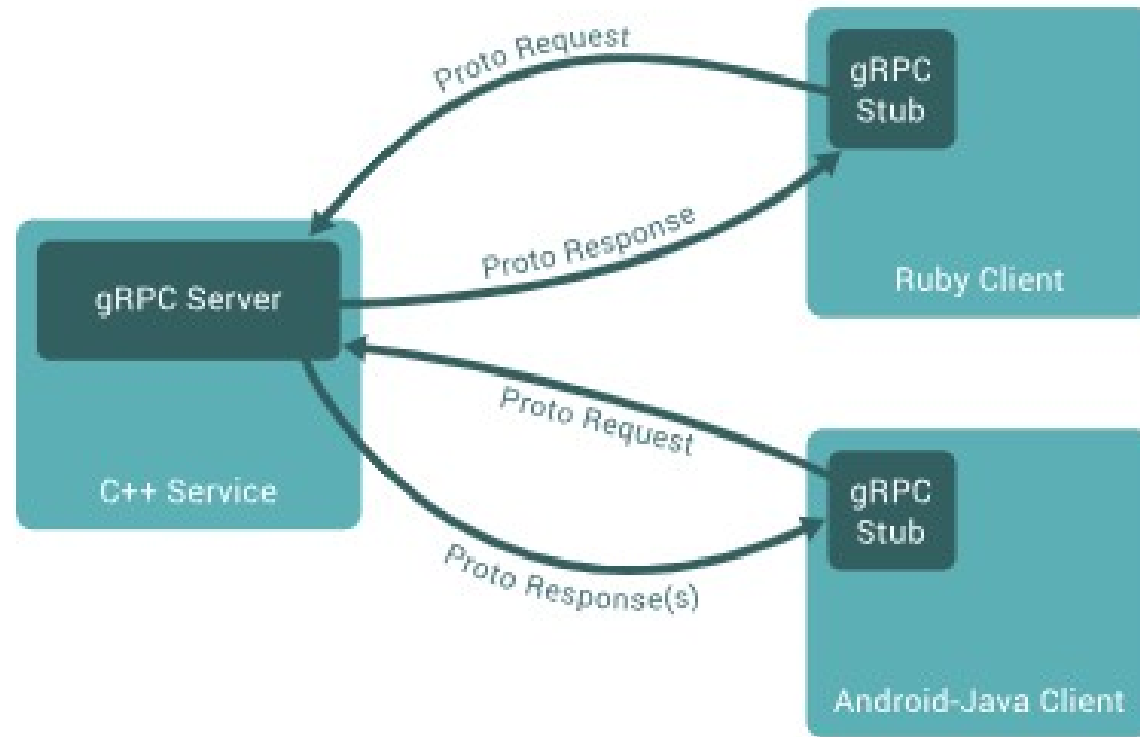
Map Reduce



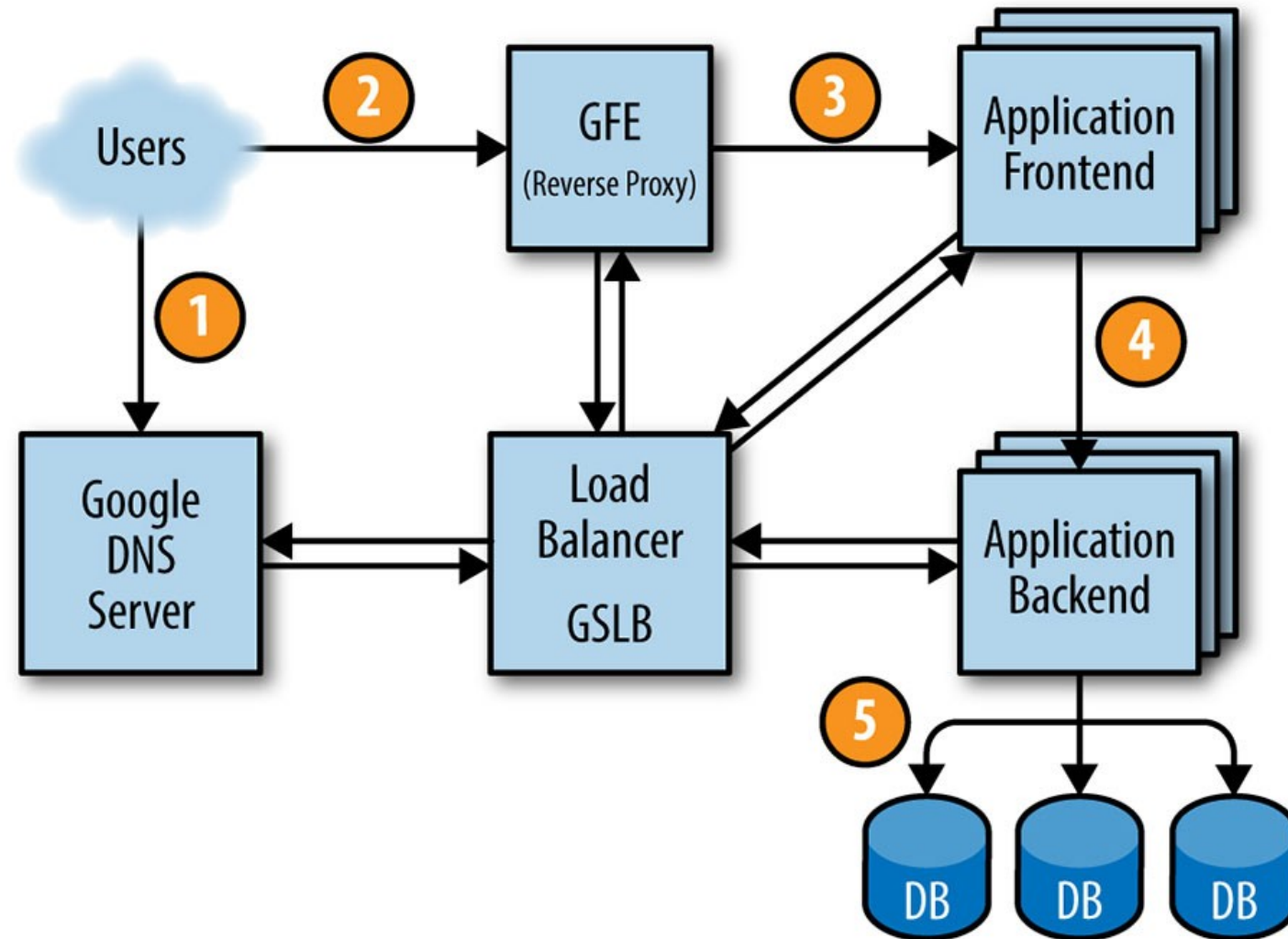
Borg



GRPC



Life of a Request



WEB COMPONENTS





GOOGLE CLOUD ENGINE



ARCHITECTURE @ UBER



THE OLD
PHP/MySQL

Then

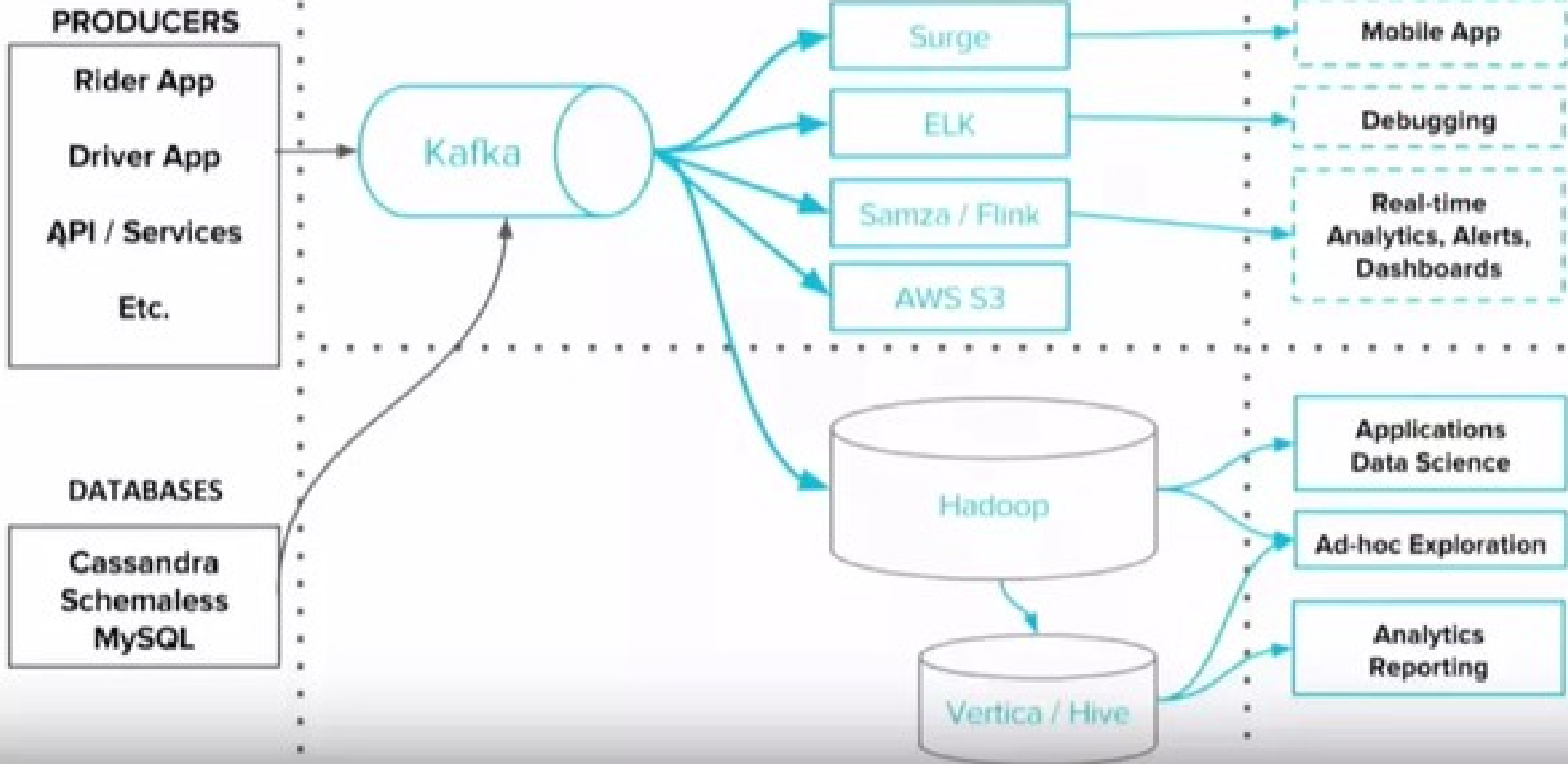
Node.js/Mongo and Python/MySQL

And now..

Ecosystem @ Uber

UBER

CONSUMERS





ARCHITECTURE @ FACEBOOK

OLD:
Perl/MySQL

NEW...



PHP/MySQL

Memcached – In Memory

HayStack – Photo Storage & Serving

Scribe – Logging

Cassandra – Distributed Store (Inbox)

HipHop – PHP to C compilation

“PHP is used for the front-end, Erlang is used for Chat, Java and C++ are also used in several places”



ARCHITECTURE @ WHATSAPP

Ejabberd/Erlang/Websockets/SQLite/Mnesia DB

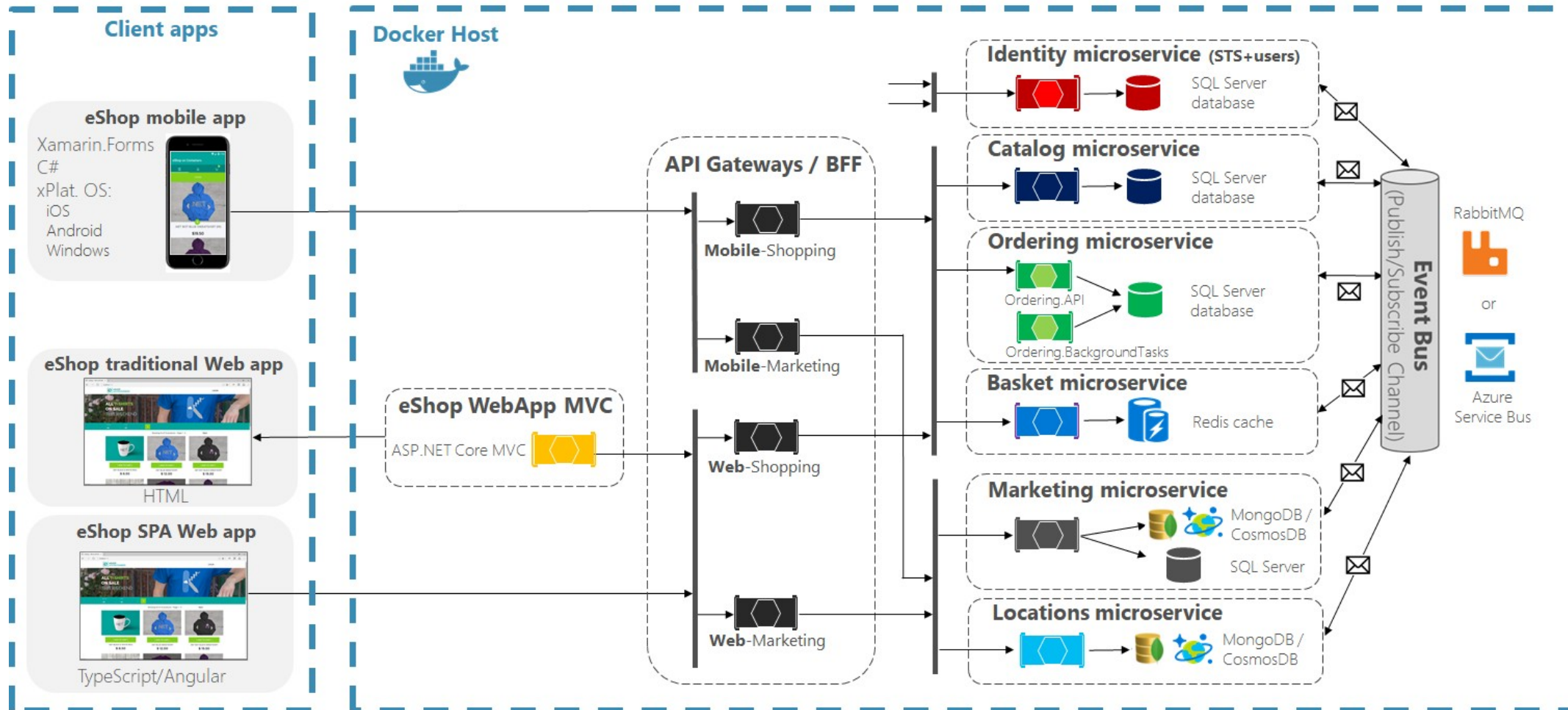


ARCHITECTURE @ YOUTUBE

Python/Apache/MySQL/Vitess/Zookeeper

eShopOnContainers reference application

(Development environment architecture)





Major Architectural Decisions

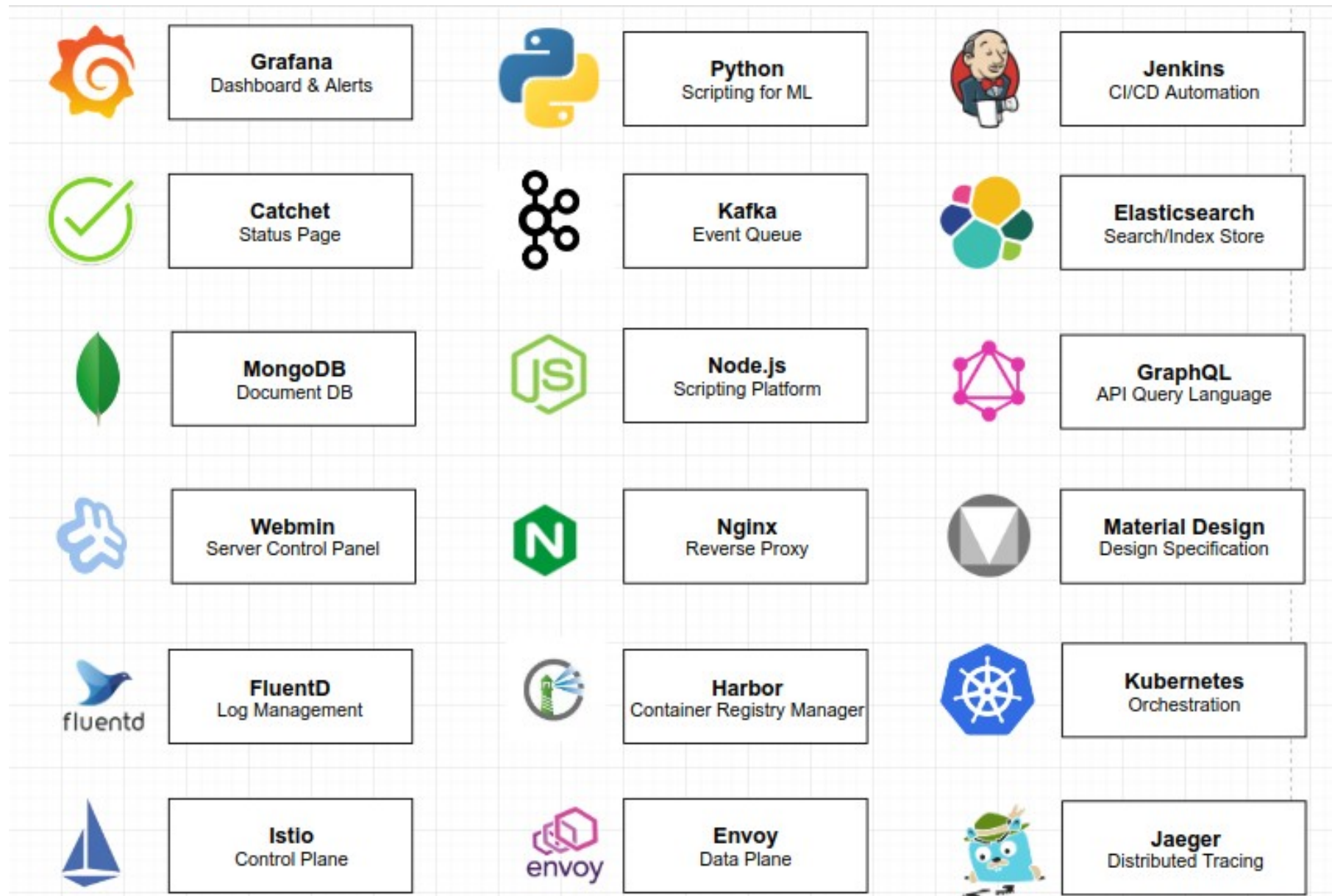
- Decentralize
- Horizontally scalable
- DevOps – Infrastructure as code, CI/CD
- Hide Implementation Details
- Fault tolerant & Failovers
- Monitoring
- Clustering
- Stateful vs Stateless
- Security
- Performance
- Testability
- Availability



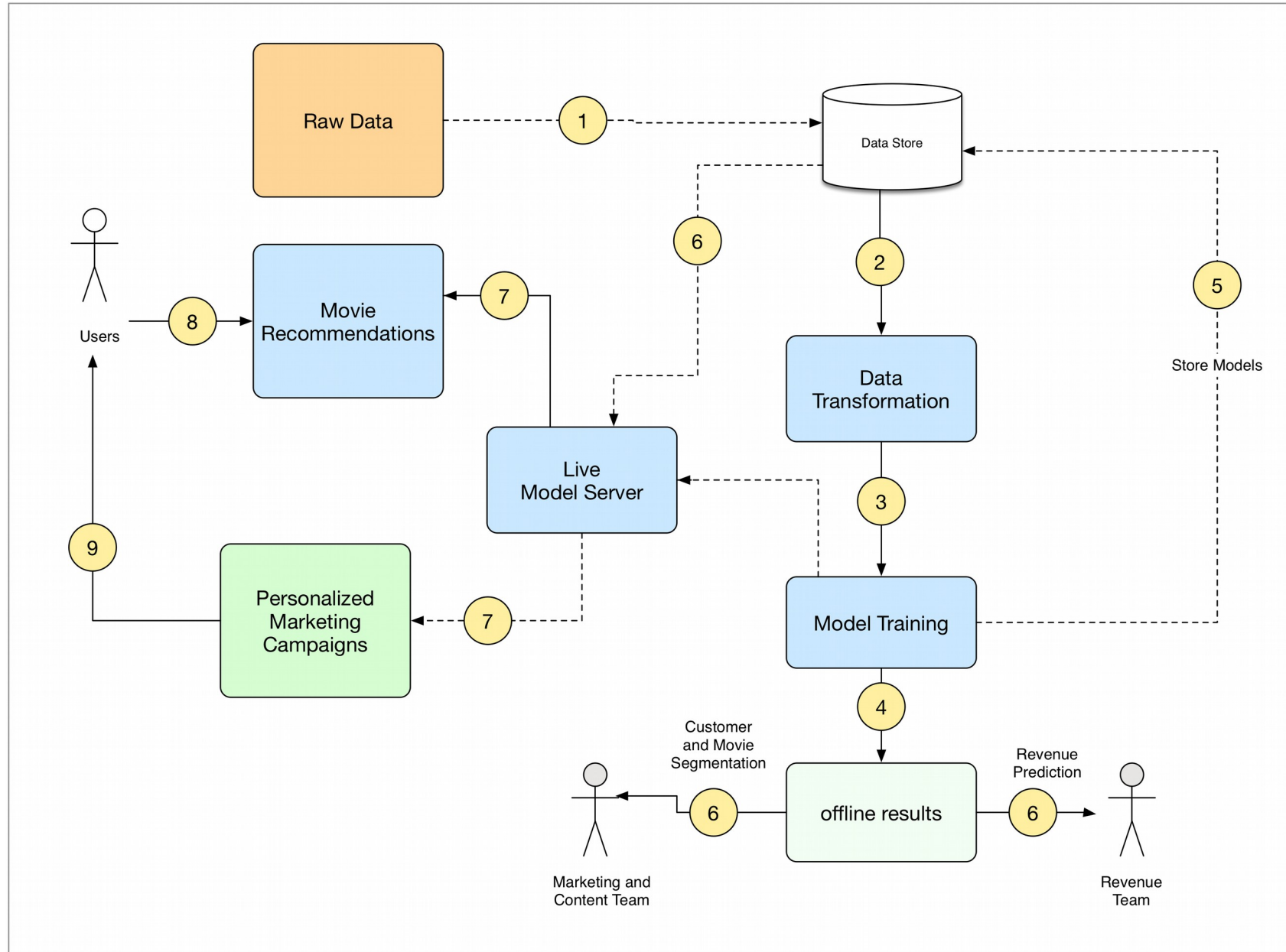
MY CHOICE FOR A TECH STACK

(Purely a personal preference)

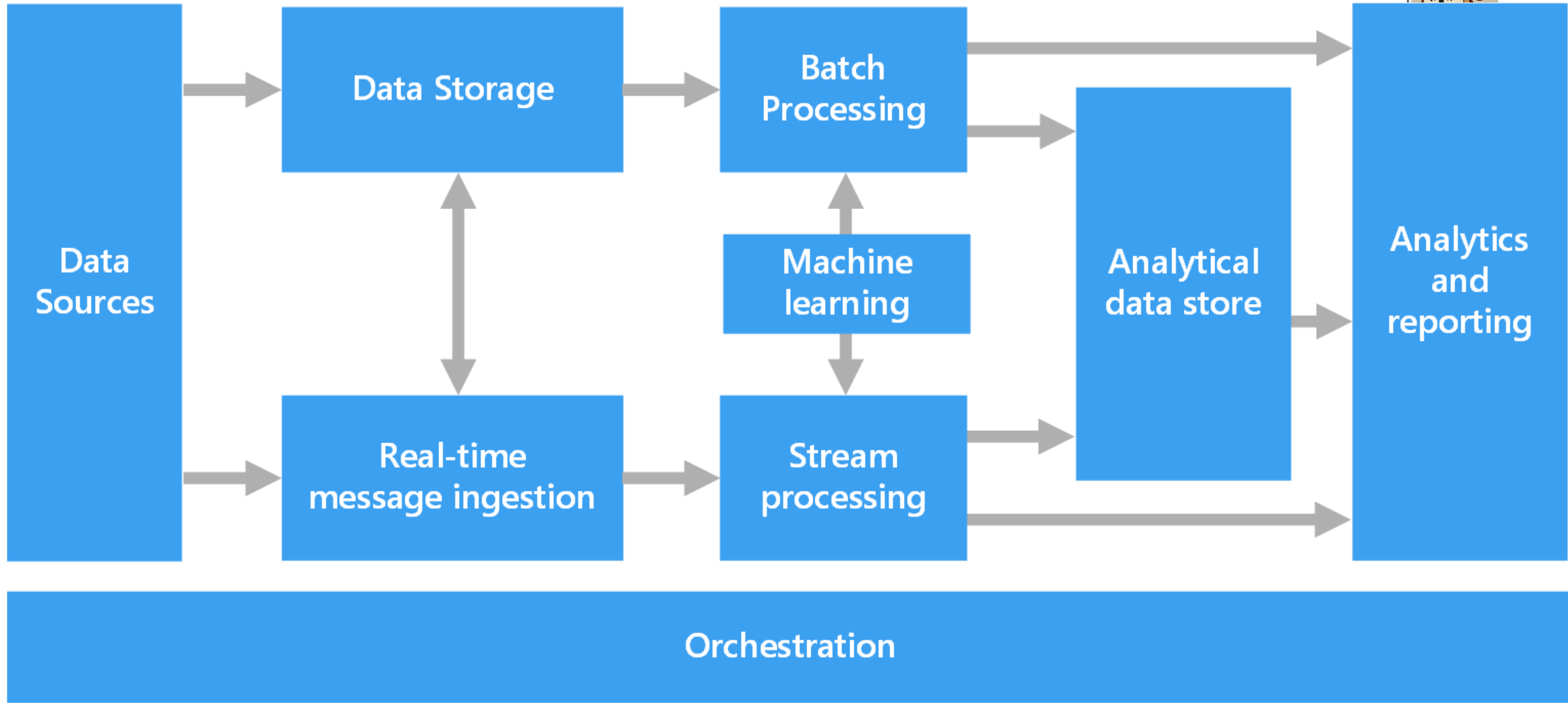
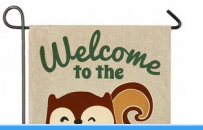
THE TECH STACK



MACHINE LEARNING ARCHITECTURE



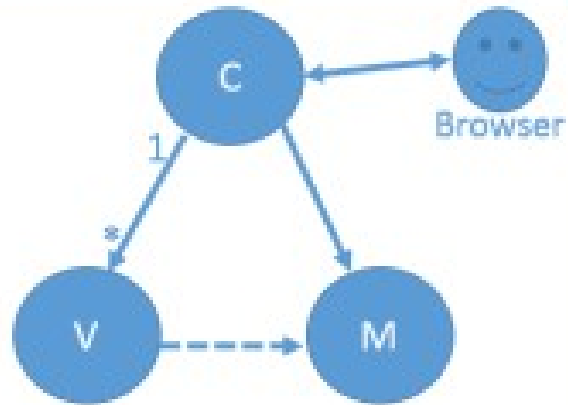
BIG DATA



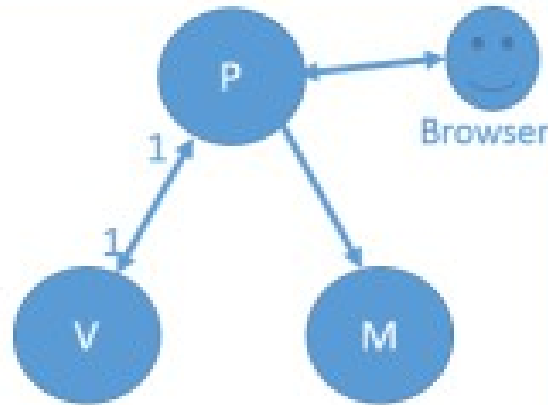
FRONT END ARCHITECTURE (Phew..)



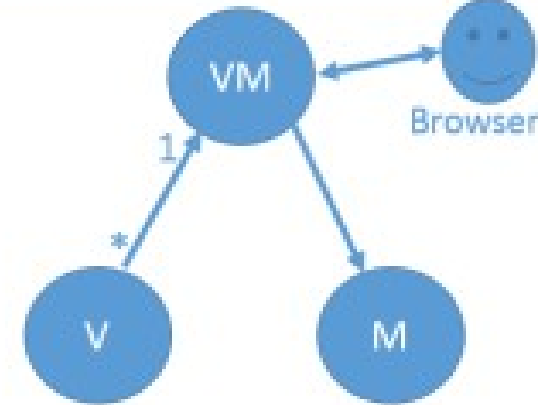
MVC – MVP - MVVM



- Controller is the entry point to the application
- One to Many relationship between Controller and View
- View does not have reference to the Controller
- View is very well aware of the Model
- Smalltalk, ASP.Net MVC

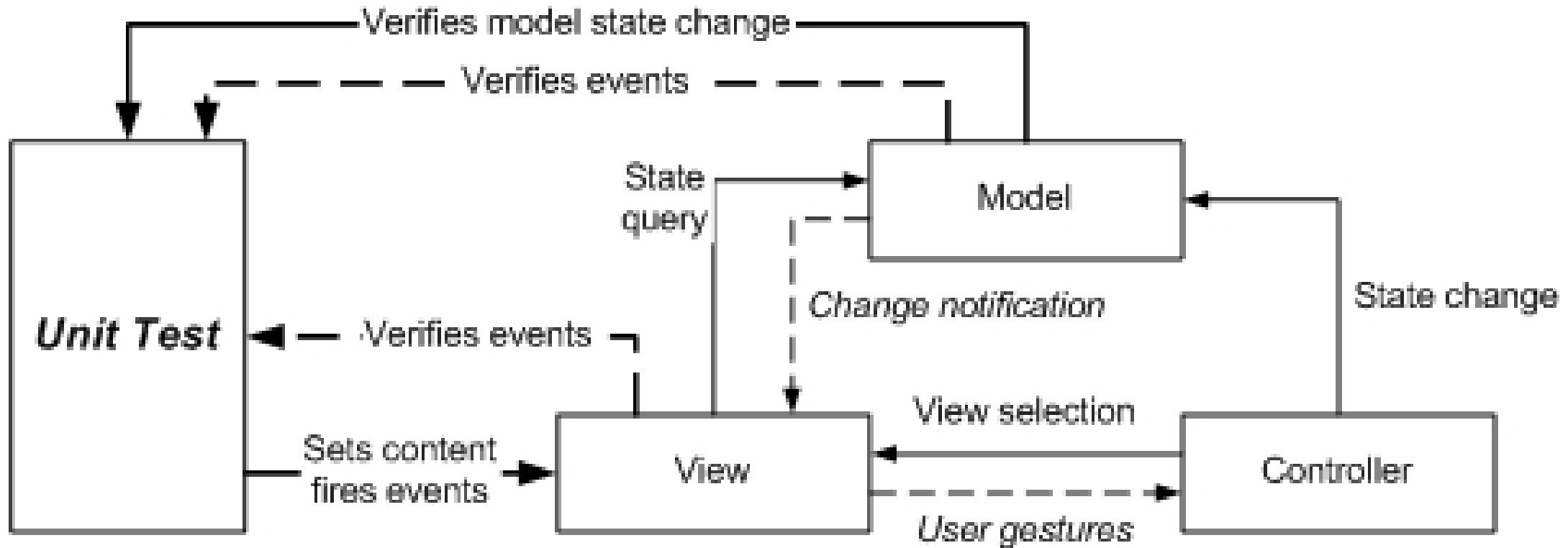


- View is the entry point to the application
- One to One mapping between View and Presenter
- View have the reference to the Presenter
- View is not aware of the Model
- Windows forms



- View is the entry point to the application
- One to Many relationship between View and ViewModel
- View have the reference to the View Model
- View is not aware of the Model
- Silverlight, WPF, HTML5 with Knockout/AngularJS

TEST ARCHITECTURE



—————> Method invocation

- - - - -> Events



Thank You! Questions?

Slides available at Github

<https://github.com/thenuthouse>

Next Session – 29th Oct, Monday, 6:30 PM



<https://thenuthouse.github.io>

Inviting Speakers for our next and future sessions...