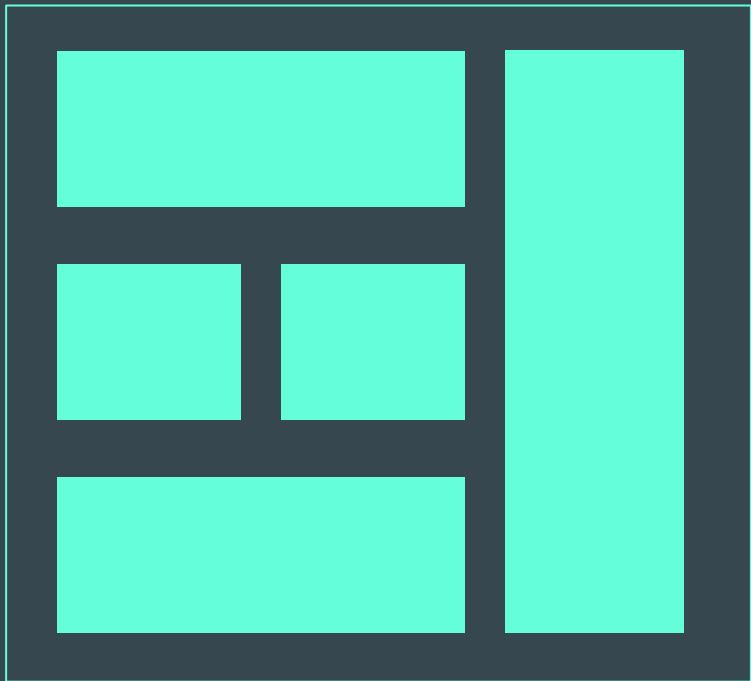
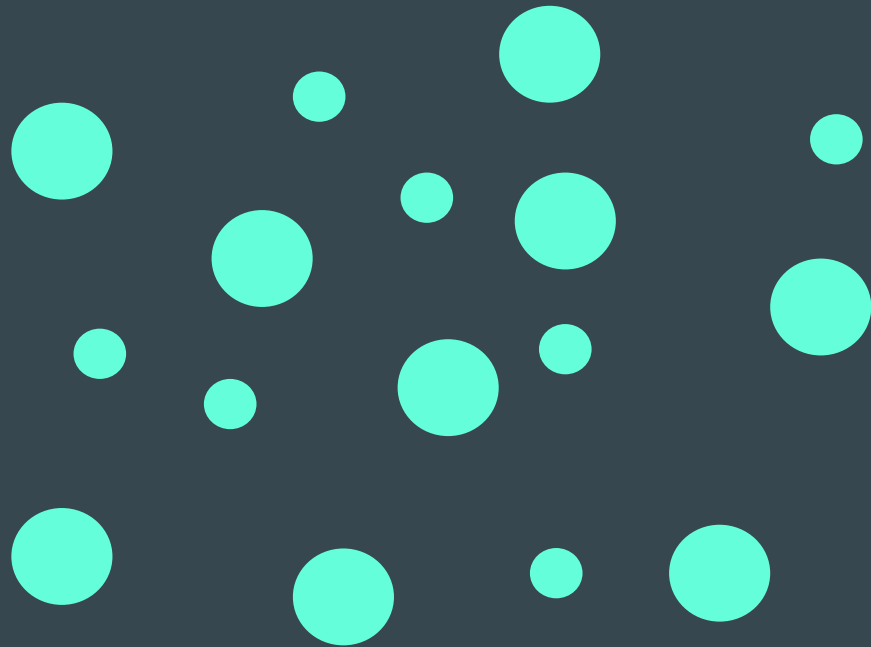
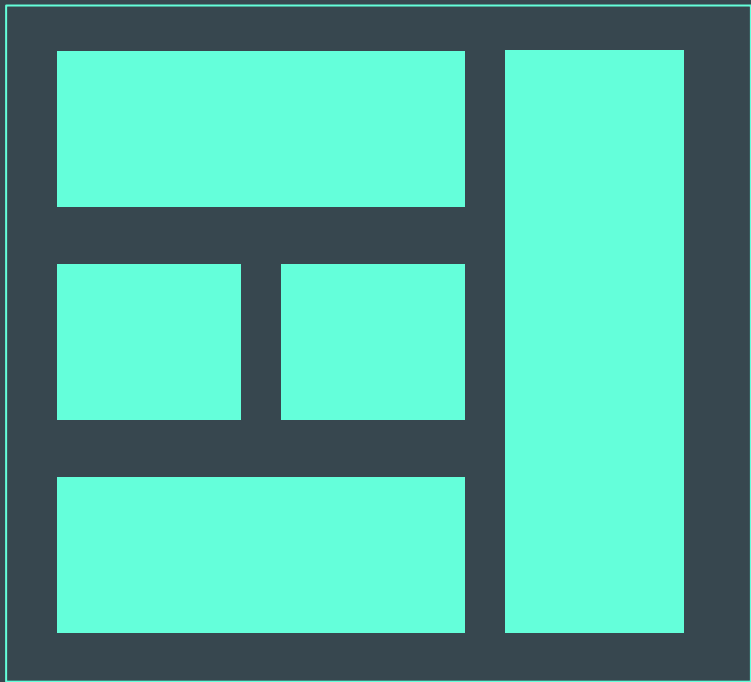
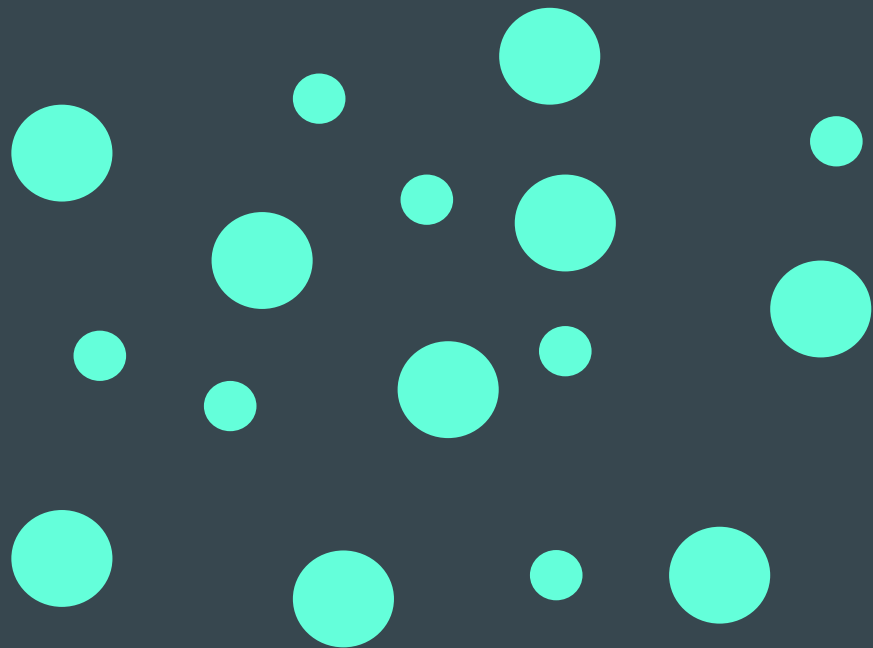
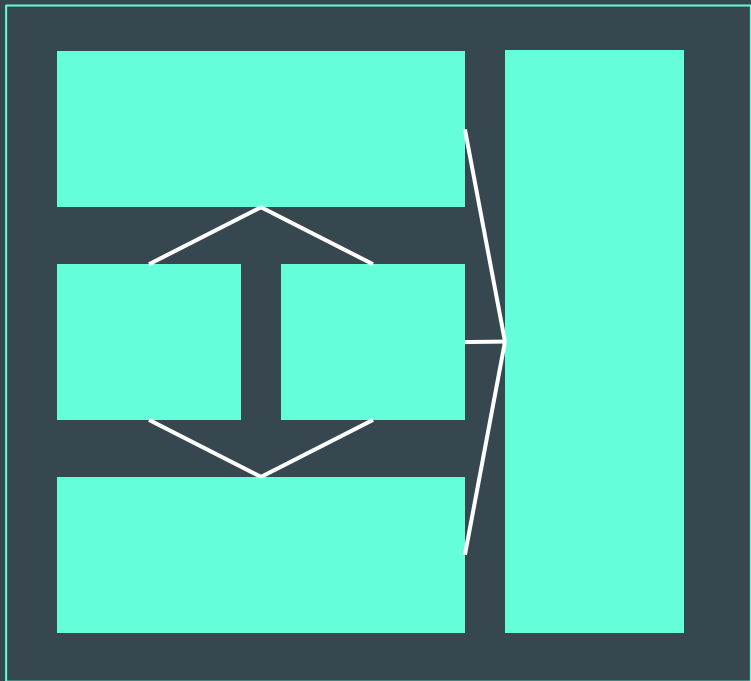


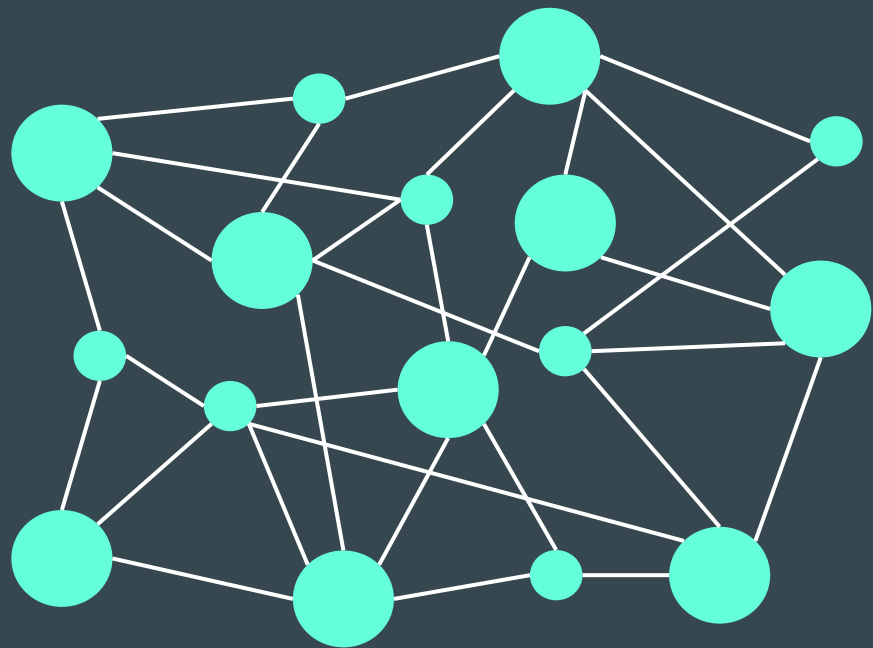
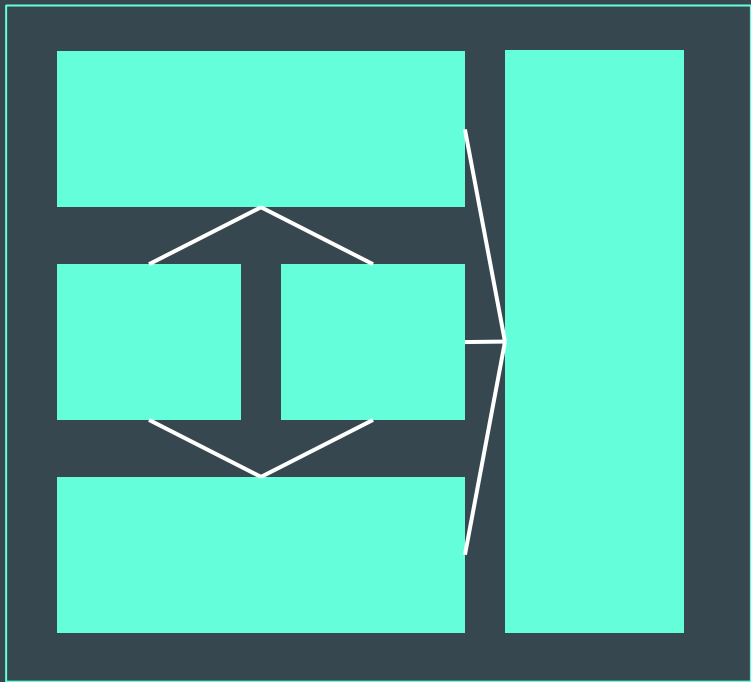


**2020/10/30 LOUIS LIN**









**COMMUNICATION MOSTLY**

**COMMUNICATION MOSTLY  
IN HTTP “REST”**

# HTTP PROTOCOL IS



# HTTP PROTOCOL IS SIMPLE

# HTTP PROTOCOL IS

**SIMPLE**

**FLEXIBLE**

# HTTP PROTOCOL IS

**SIMPLE**

~~**CHEAP**~~

**FLEXIBLE**

# HTTP PROTOCOL IS

**SIMPLE**

**FLEXIBLE**

~~**CHEAP**~~

~~**RELIABLE**~~

# HTTP PROTOCOL IS

**SIMPLE**

**FLEXIBLE**

~~**CHEAP**~~

~~**RELIABLE**~~

~~**FAST**~~

# FALLACIES OF DISTRIBUTED COMPUTING

[https://en.wikipedia.org/wiki/Fallacies\\_of\\_distributed\\_computing](https://en.wikipedia.org/wiki/Fallacies_of_distributed_computing)

# FALLACIES OF DISTRIBUTED COMPUTING NETWORK IS RELIABLE

# FALLACIES OF DISTRIBUTED COMPUTING LATENCY IS ZERO



# FALLACIES OF DISTRIBUTED COMPUTING BANDWIDTH IS INFINITE

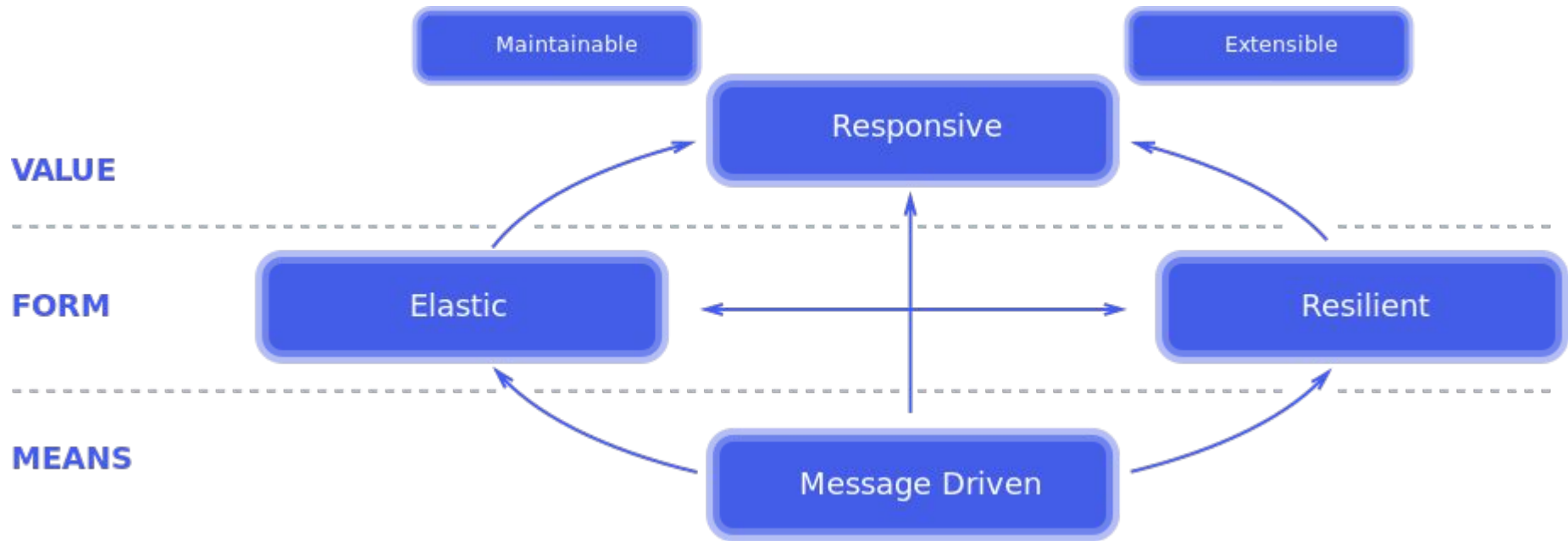
# FALLACIES OF DISTRIBUTED COMPUTING TRANSPORT COST IS ZERO

# COMMUNICATION IS A CHALLENGE



# THE REACTIVE MANIFESTO

<https://www.reactivemanifesto.org/>



**ASYNCHRONOUS**  
**NON BLOCKING**

# **PUBLISHER PUSHES**

**PUBLISHER PUSHES**  
**SUBSCRIBER LISTENS**



**NOTHING HAPPENS UNTIL  
SUBSCRIPTION**

# SUBSCRIBER

A large, fluffy brown cat is the central focus, sitting in a dark, cluttered room. The cat's eyes are glowing with a bright orange light, giving it a menacing or supernatural appearance. The cat's fur is thick and brown, and its whiskers are prominent. The background is dark and out of focus, showing some indistinct shapes that suggest a room with shelves or furniture. The overall mood is mysterious and slightly ominous.

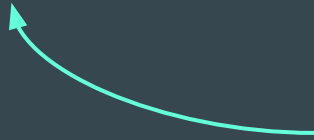
ASSUMING CONTROL

# FLOW CONTROL

**PULL**

# FLOW CONTROL

**PULL**



**BACKPRESSURE**

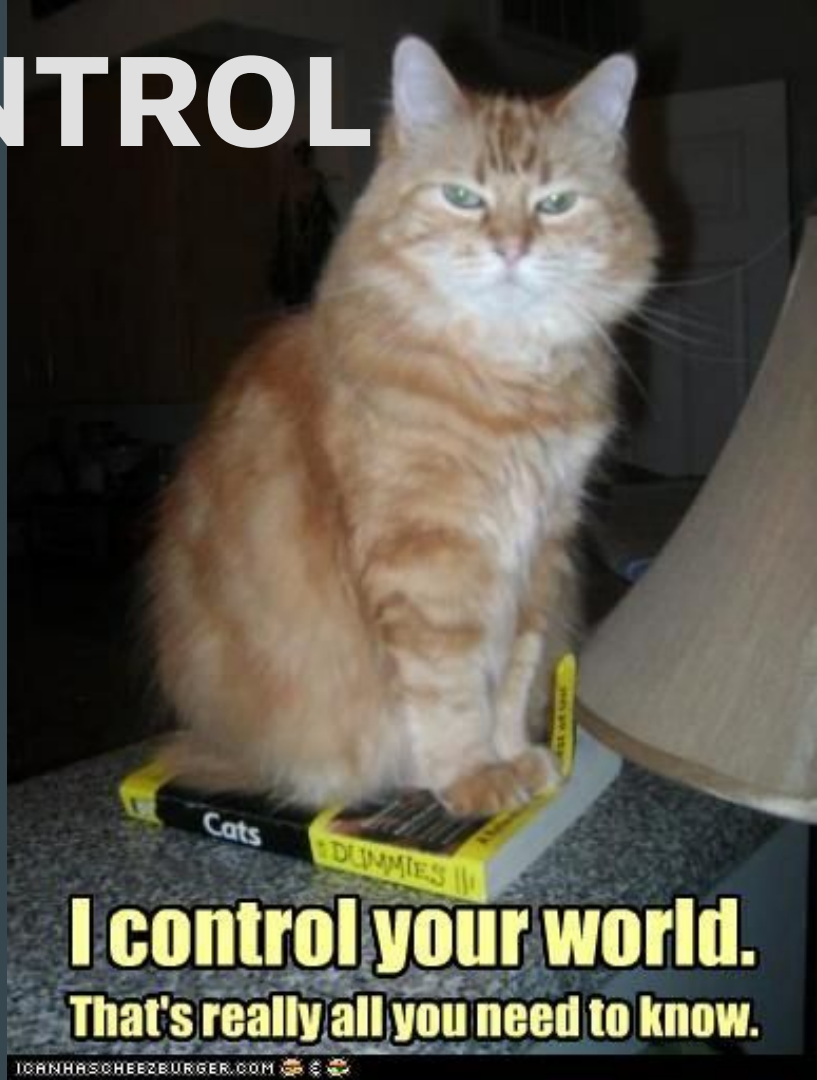
# FLOW CONTROL

**PULL**

**CANCEL**

# FLOW CONTROL

## PULL CANCEL



**I control your world.  
That's really all you need to know.**



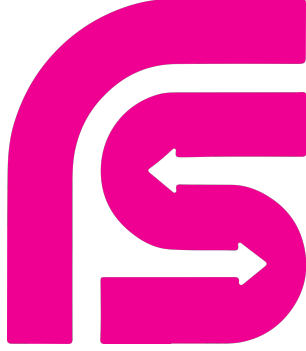
**I THOUGHT THE  
PRESENTATION  
WAS ABOUT  
Rsocket...**



**I THOUGHT THE  
PRESENTATION**

**RSOCKET IS  
REACTIVE**





**BINARY, APPLICATION LEVEL  
PROTOCOL...**



**BINARY, APPLICATION LEVEL  
PROTOCOL...  
PROVIDING REACTIVE  
STREAM SEMANTICS**

# REACTIVE STREAM CONCEPTS

**REACTIVE STREAM  
CONCEPTS**

**IN THE COMMUNICATION  
PROTOCOL**

# EVERYTHING IS A FRAME

**onNext**

**cancel**

**onComplete**

**request(n)**

**onError**

# **FOUR** INTERACTION MODES

# **FOUR** INTERACTION MODES

**REQUEST - RESPONSE**

**FIRE & FORGET**


**REQUEST - STREAM**

**REQUEST - CHANNEL**

# **FOUR** INTERACTION MODES VS **ONE** IN HTTP



# BINARY



**0101101  
100010  
1111000**

# MULTIPLExED



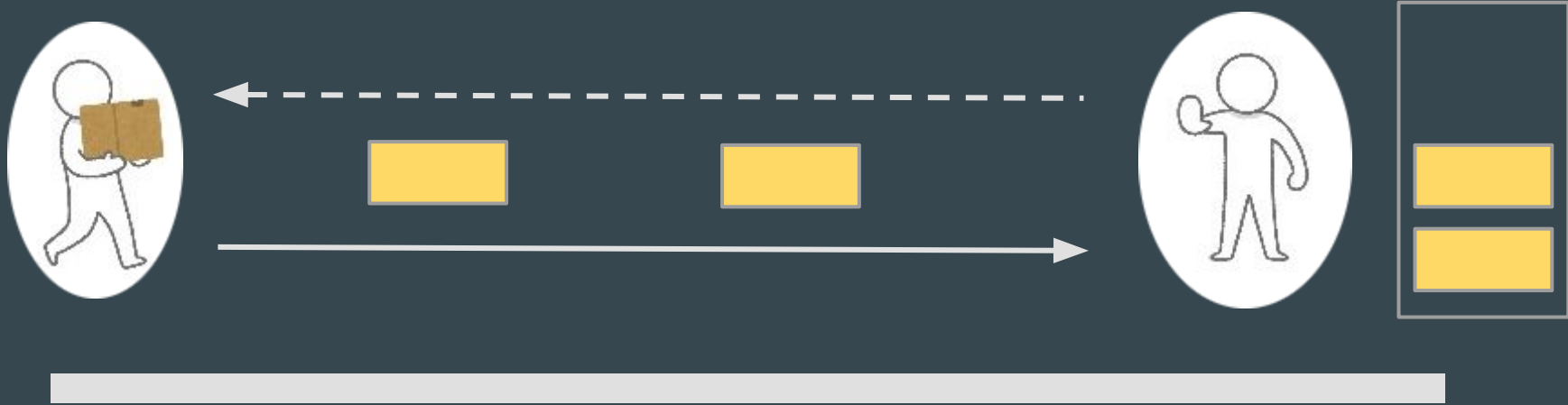
# BI-DIRECTIONAL



**STREAM BLUE**

**STREAM YELLOW**

# BACKPRESSURE



# LEASING



**JAVA**

**JAVASCRIPT**

**C++**

**GO**

**KOTLIN**

**.NET**

**LANGUAGE AGNOSTIC**

**JAVA**

**JAVASCRIPT**

**C++**

**GO**

**KOTLIN**

**.NET**

**RPC-STYLE**

**MESSAGING**

**ARCHITECTURE AGNOSTIC**

**JAVA**

**JAVASCRIPT**

**C++**

**GO**

**KOTLIN**

**.NET**

**RPC-STYLE**

**MESSAGING**

**PROTOBUF**

**JSON**

**CUSTOM BINARY**

**FORMAT AGNOSTIC**



**JAVA**

**JAVASCRIPT**

**C++**

**GO**

**KOTLIN**

**.NET**

# **PROTOCOL AGNOSTIC**

**PROTOBUF**

**JSON**

**CUSTOM BINARY**

**RSOCKET PROTOCOL**

**TCP**

**WEBSOCKET**

**AERON UDP**

# LIVE DEMO!



Pivotal®

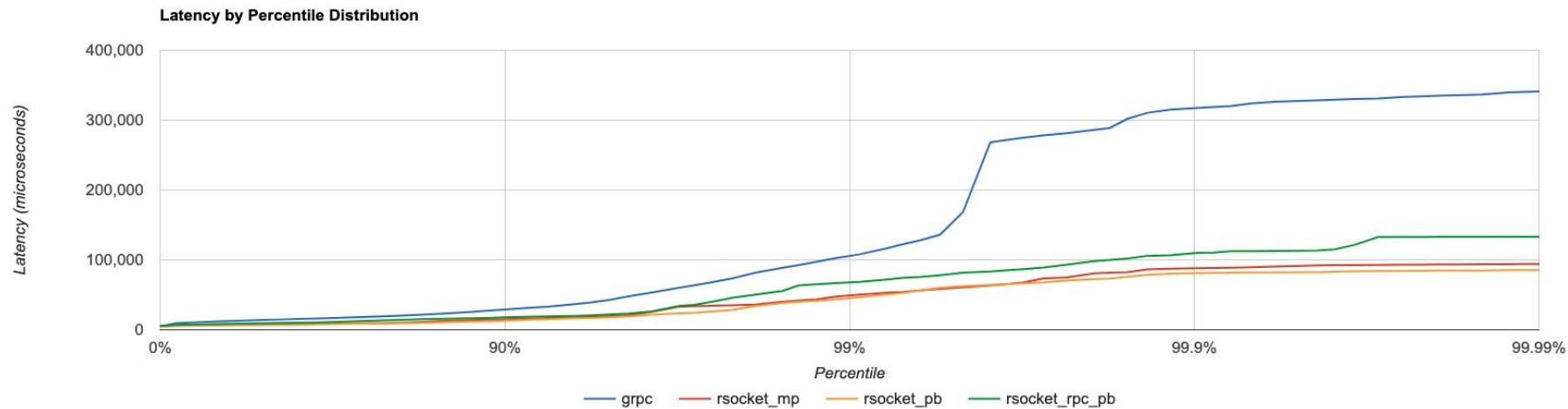
NETFLIX

facebook

**DUDE...**

**↑GRPG↓**





GRPC

---

HTTP/2

↑ G R P C

NOT “TRUELY”

REACTIVE

HTTP/2

# **POINTS TO CONSIDER BEFORE USING IT**

**NOT MATURE  
FEW TOOLS**

**HTTP CAN BE  
GOOD ENOUGH**



# CREDITS

- Pictures from [Pexel](#) & [Unsplash](#)
- Some memes were shamelessly taken from the internet
- Project link
  - <https://git.bioserenity.com/louis.lin/poc-rsocket>
- RSocket
  - <https://rsocket.io>