Interacting with the Cluster

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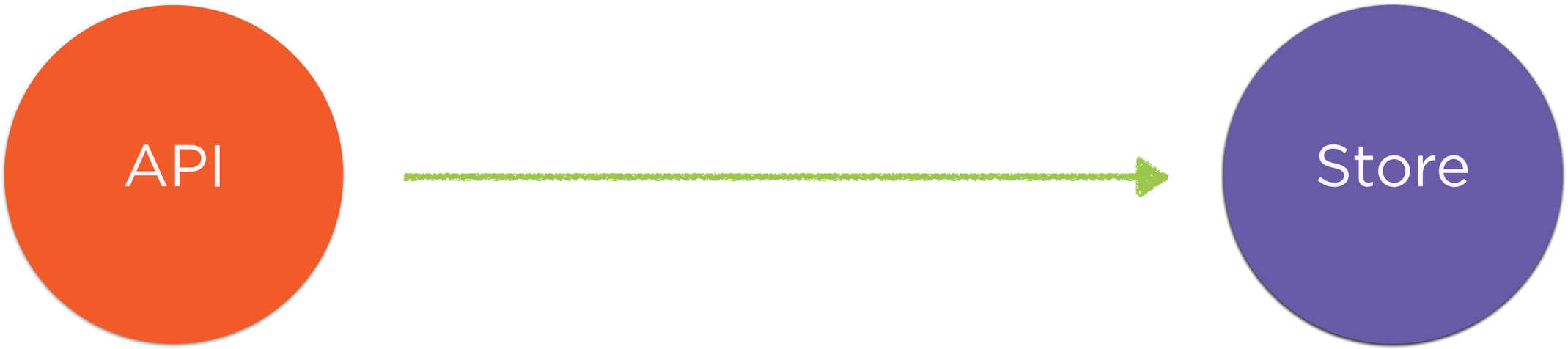
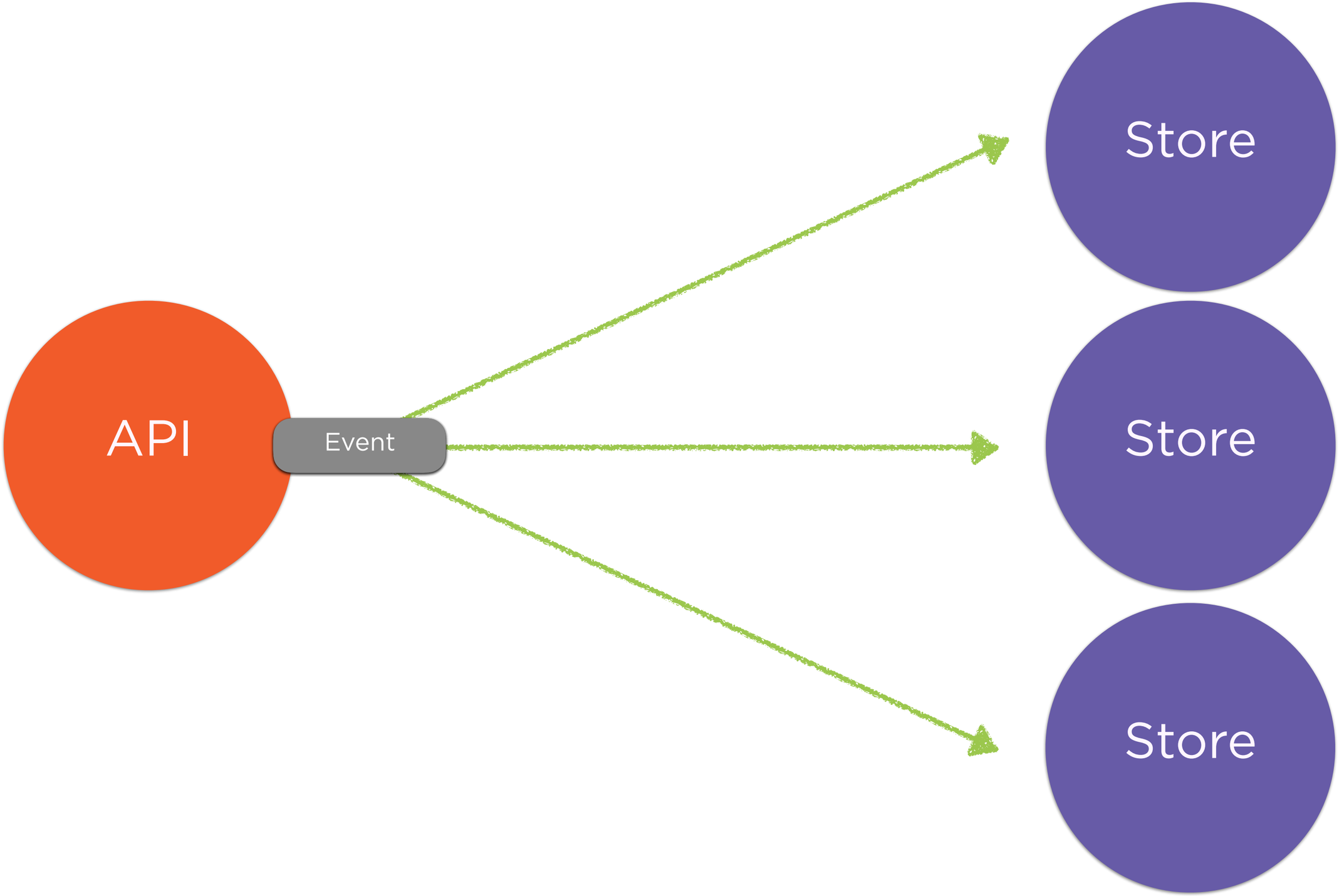
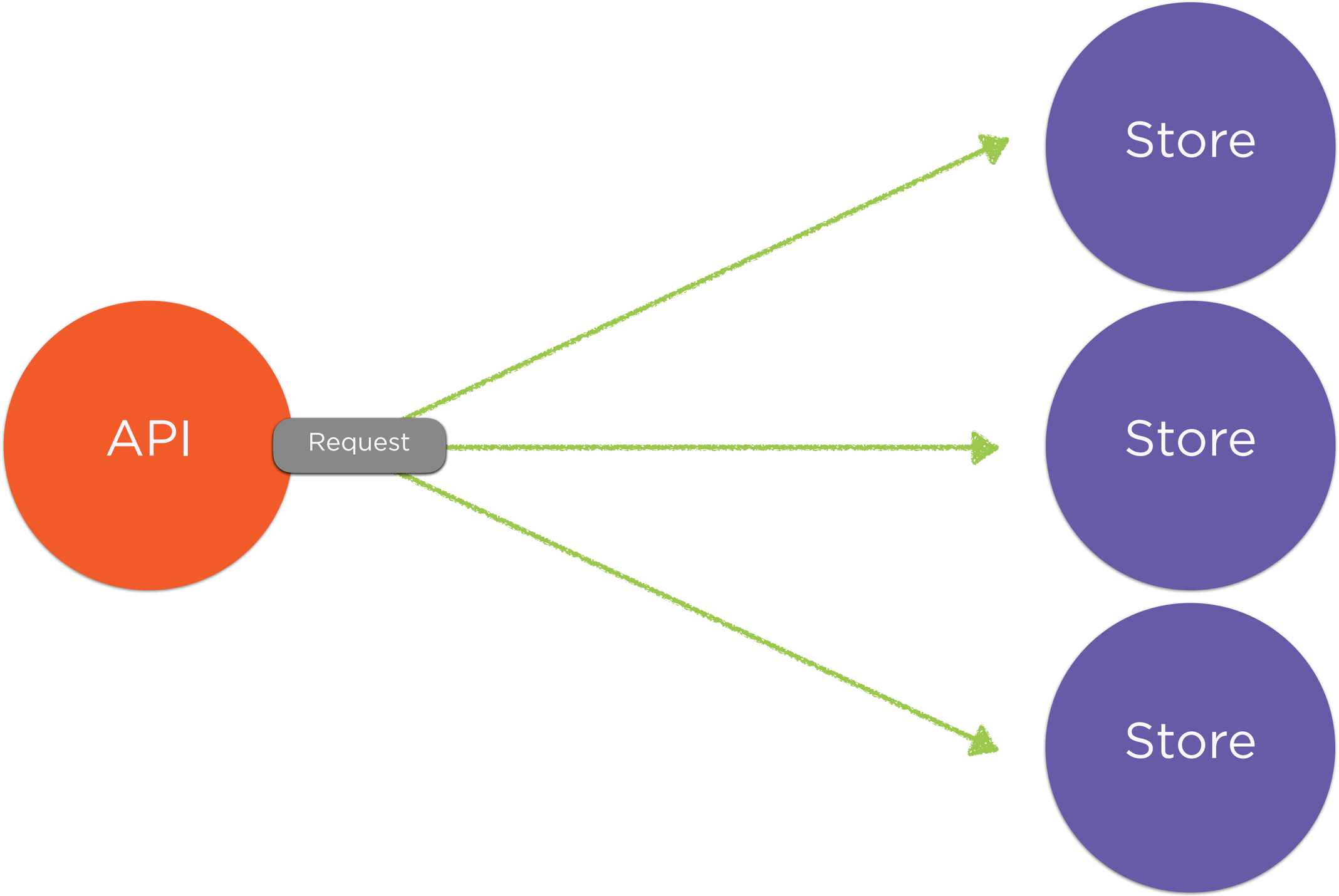
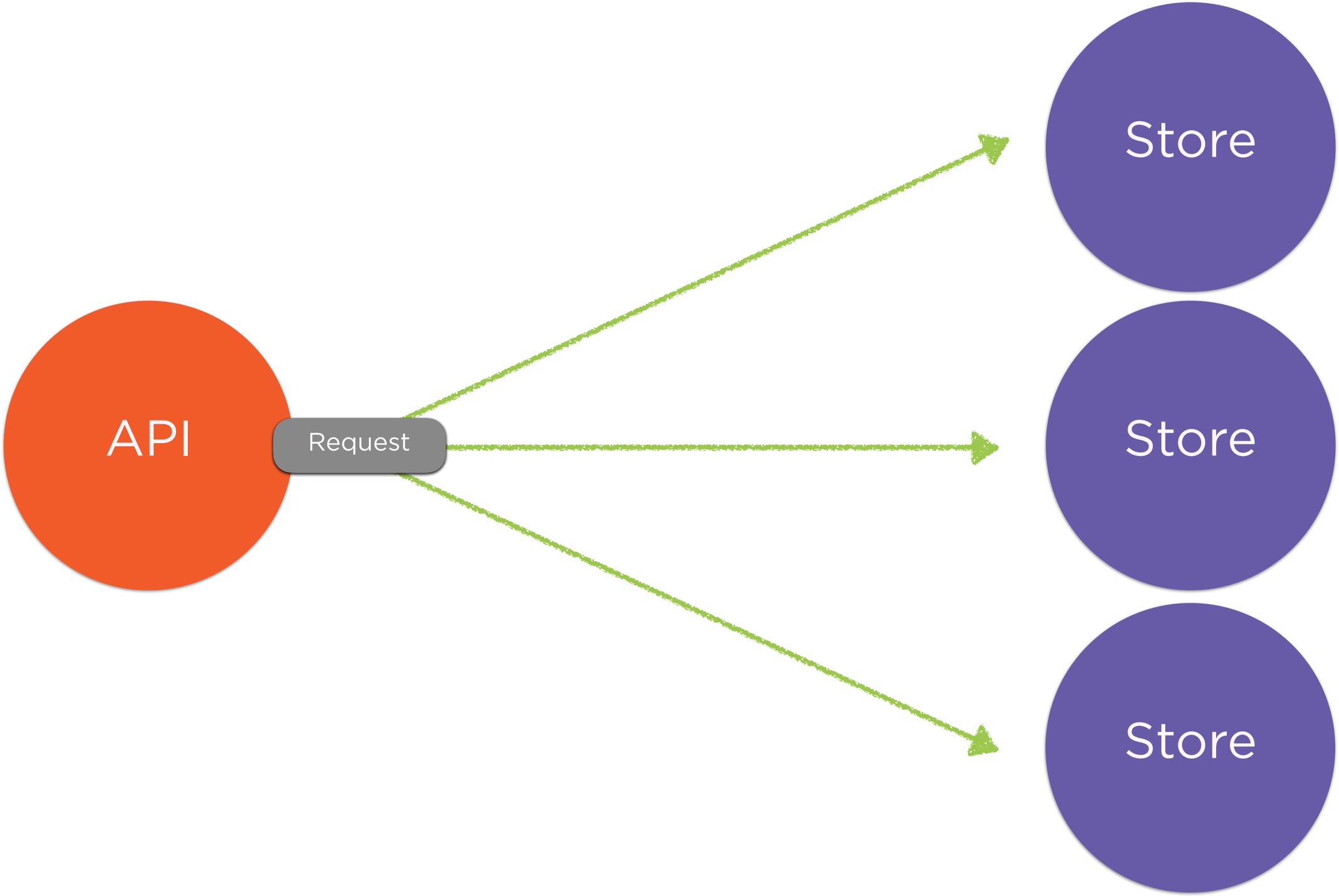
Summary

- Current solution
- Minimum viable solution
- Microservices
- Fallacies of distributed computing


API
Store


API
Event
Store
Store
Store


API
Request
Store
Store
Store


API
Request
Store
Store
Store

1. Fetch watched video ids

1. Fetch watched video ids

2. Fetch details for unwatched videos

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2. Fetch details for unwatched videos

3. Recommend top-rated *n* videos

1. Fetch watched video ids

`VideosWatchedEventStore`

2. Fetch details for unwatched videos

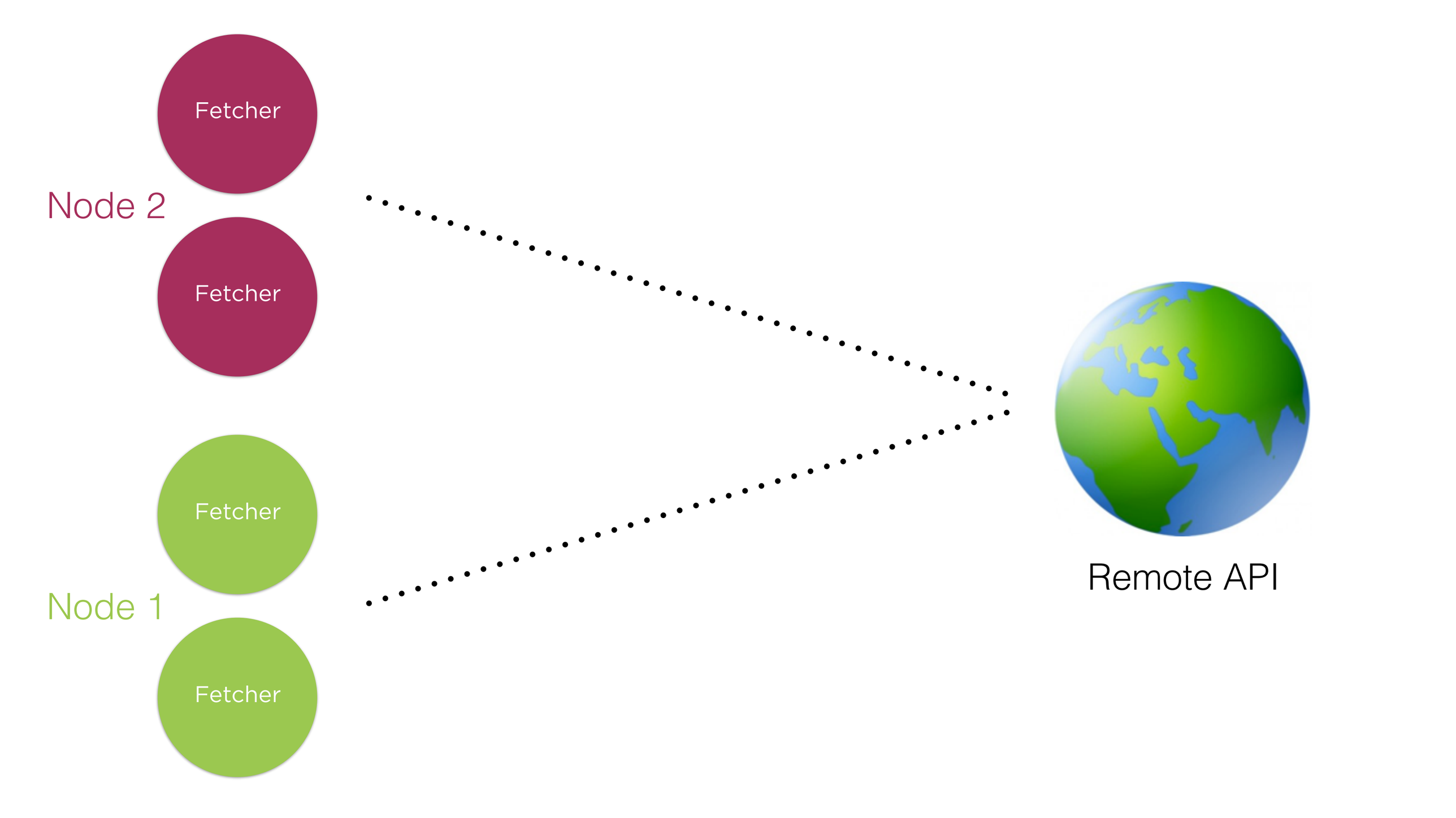
`VideoDetailsFetcher`

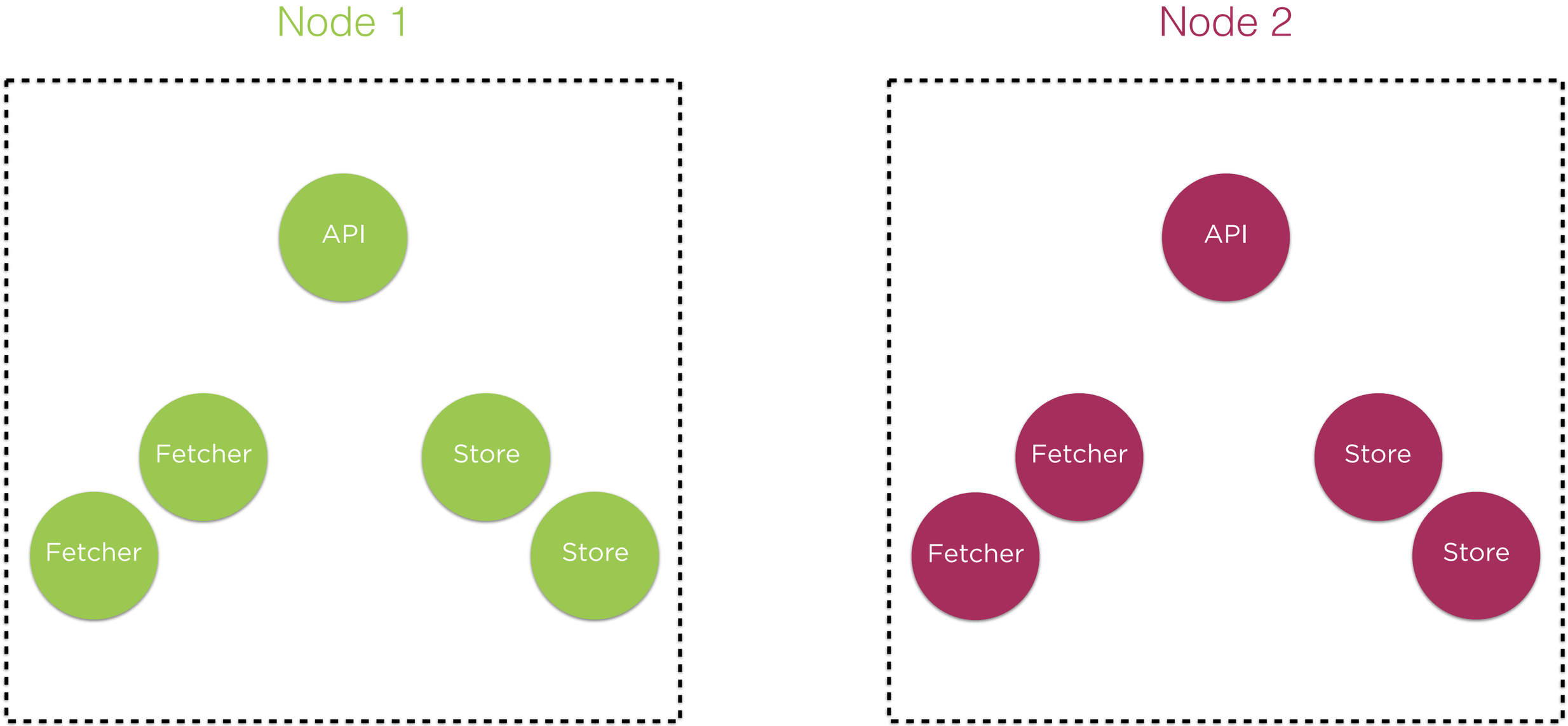
3. Recommend top-rated *n* videos

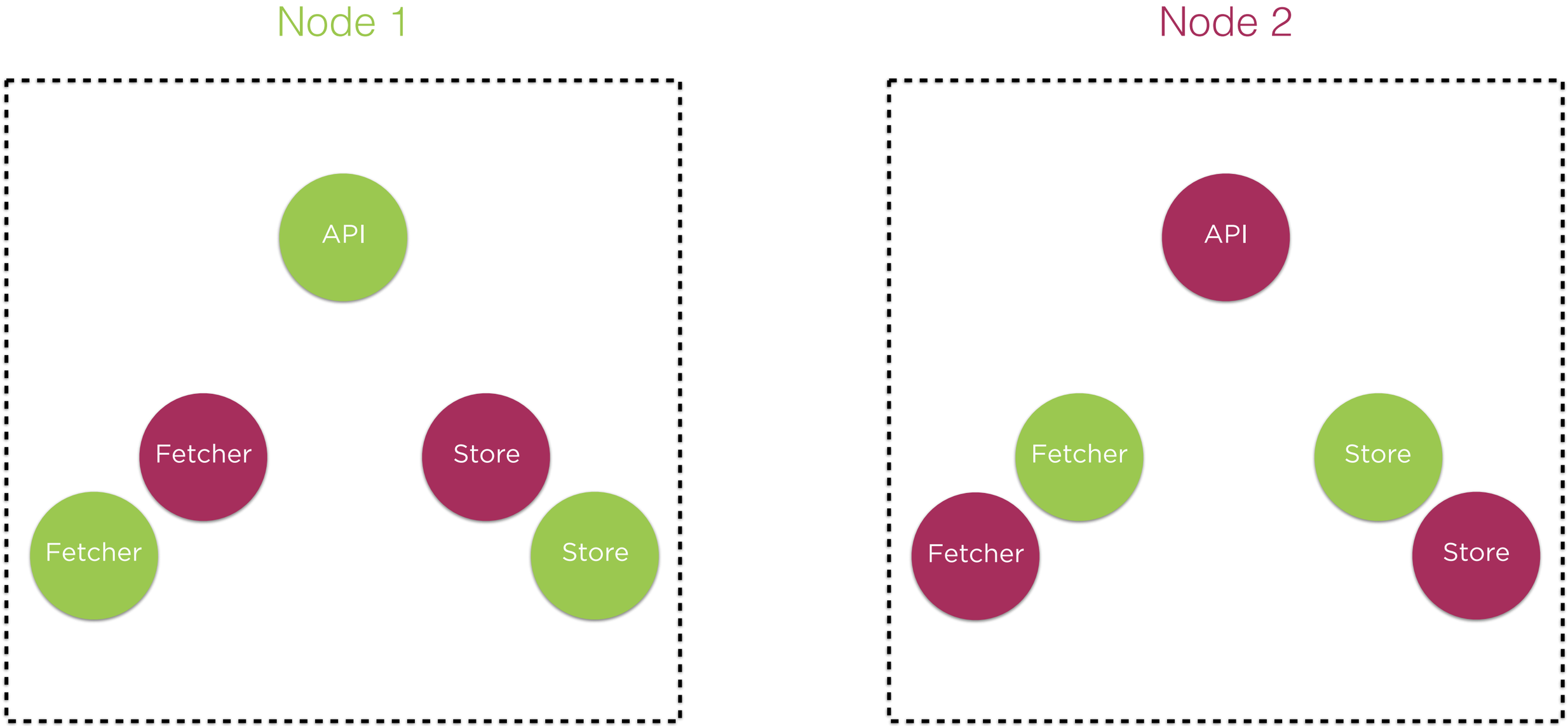
Fetcher

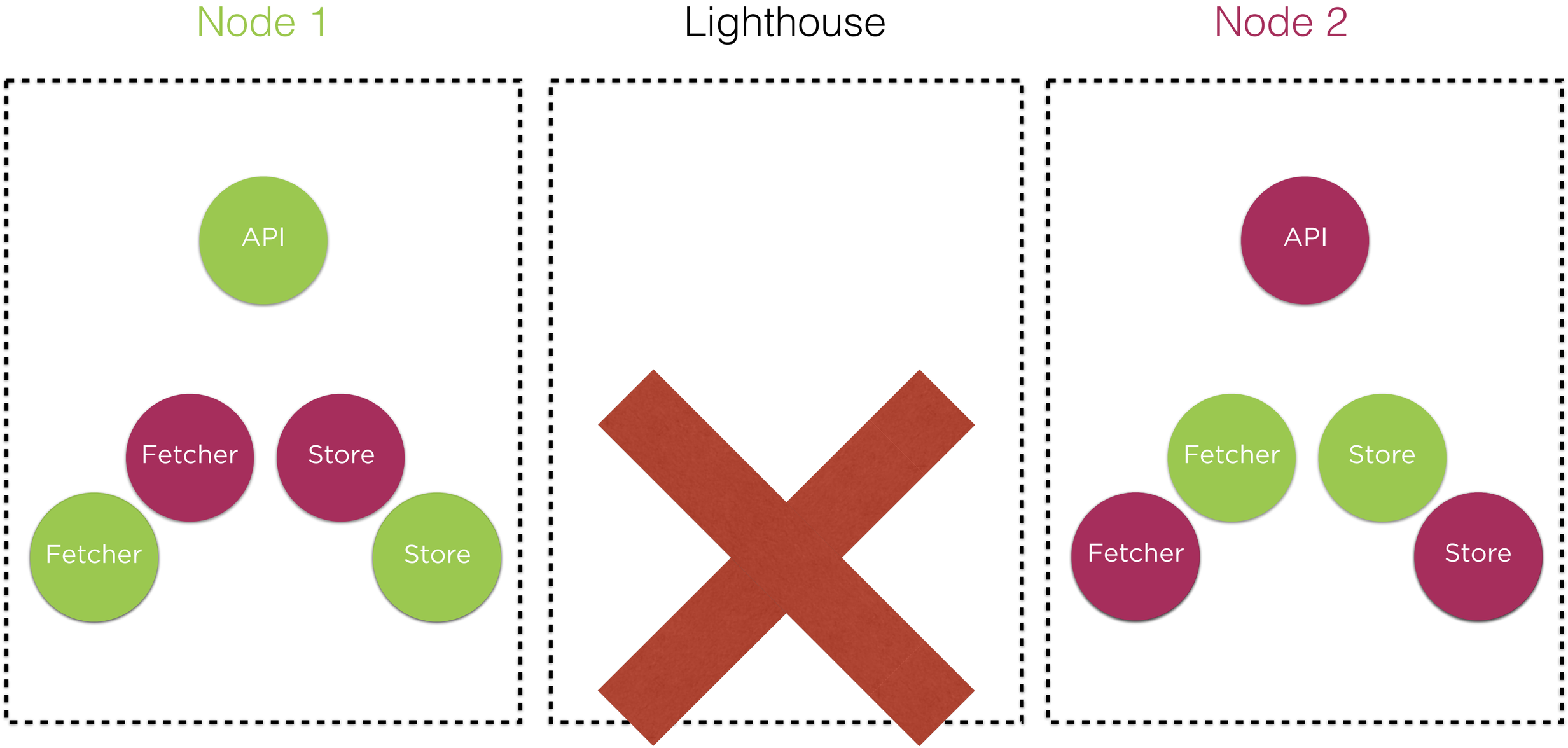
Fetcher

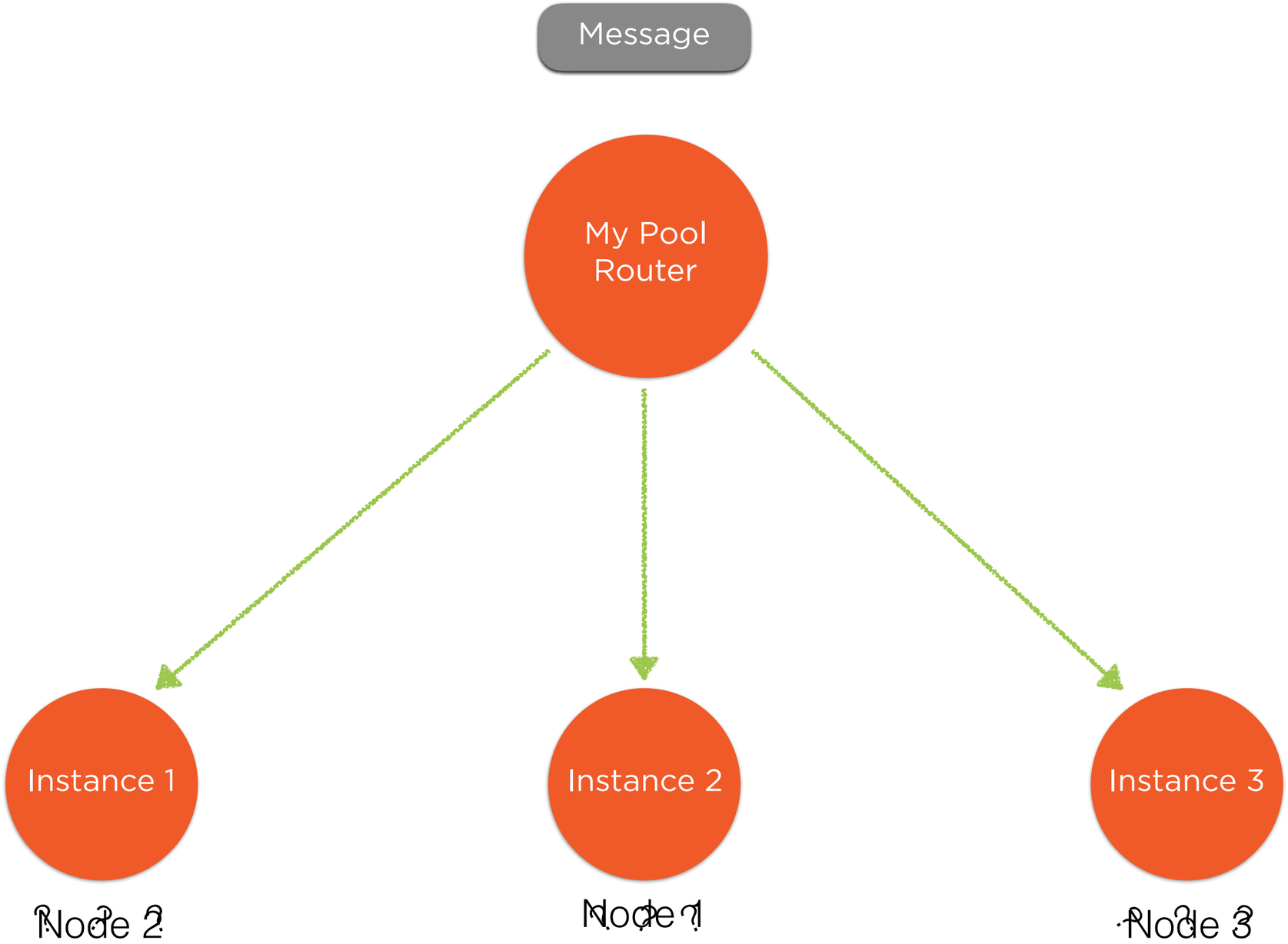
Remote API

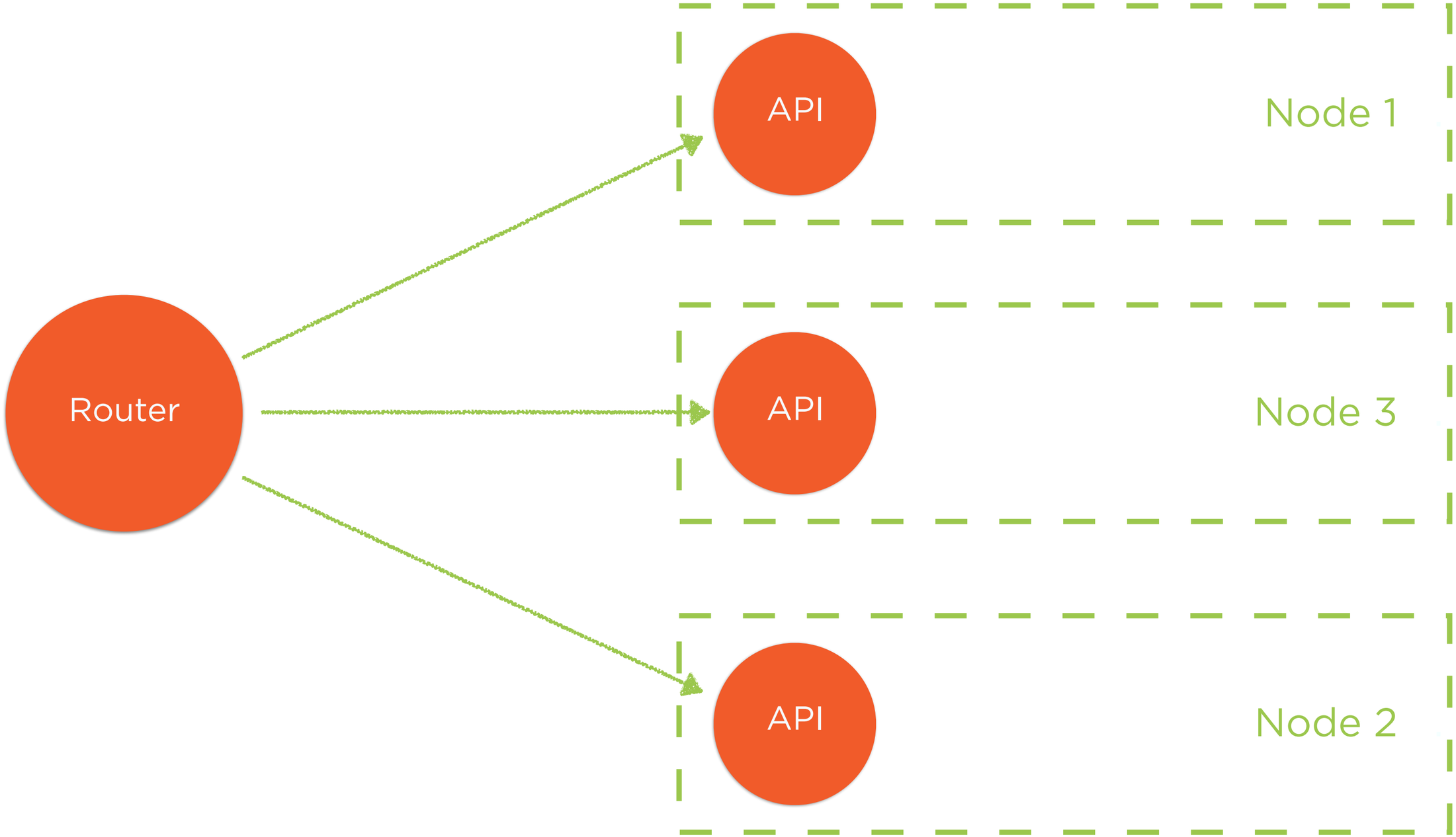

Fetcher
Node 2
Fetcher
Fetcher
Node 1
Fetcher
Remote API

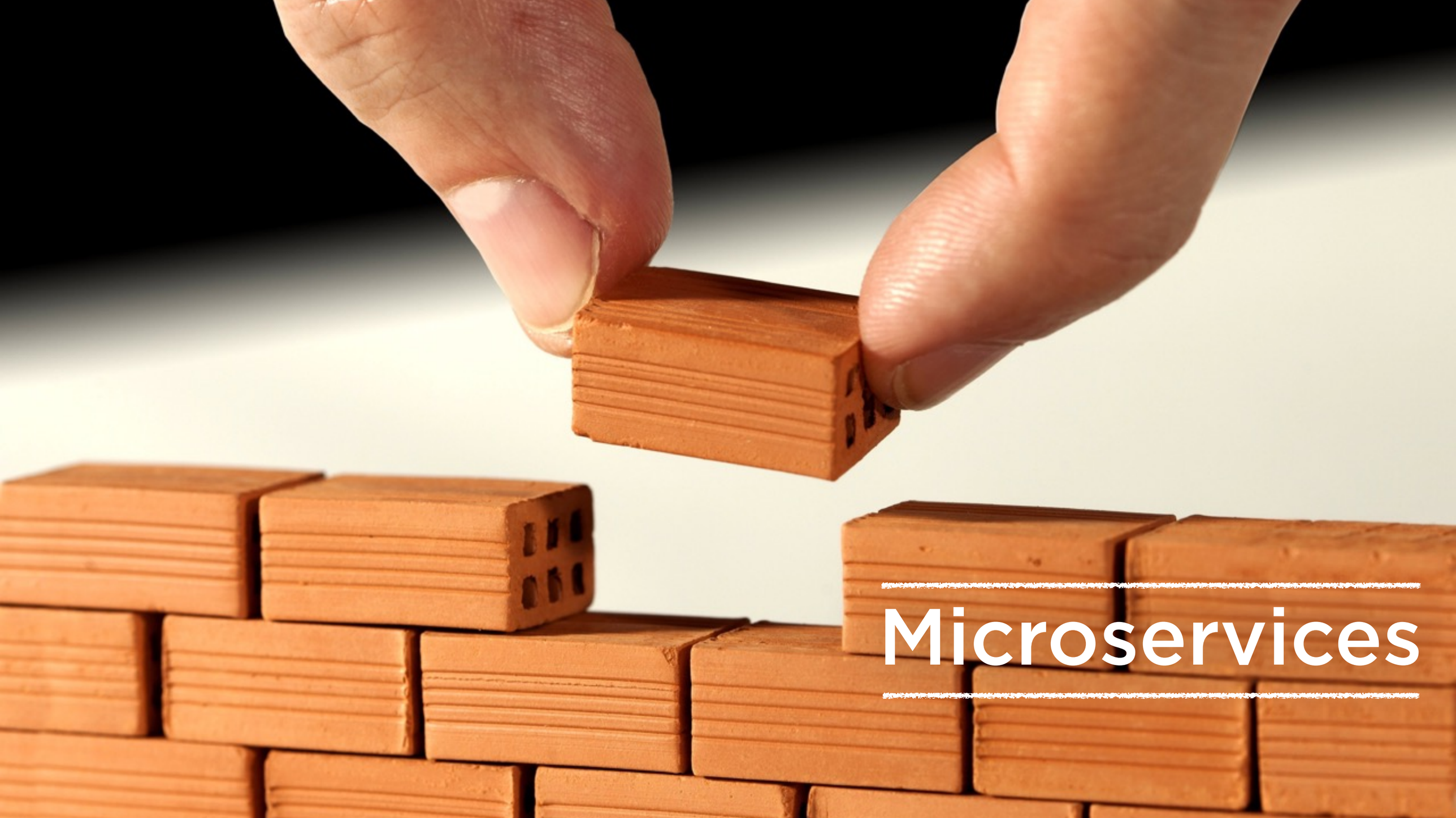

Node 1
API
Fetcher
Fetcher
Store
Store
Node 2
API
Fetcher
Fetcher
Store
Store


Node 1
API
Fetcher
Fetcher
Store
Store
Node 2
API
Fetcher
Fetcher
Store
Store


Node 1
Lighthouse
Node 2
API
Fetcher
Store
Fetcher
Store
API
Fetcher
Store
Fetcher
Store


Message
My Pool Router
Instance 1
Instance 2
Instance 3
Node 2
Node 1
Node 3


Router
API
API
API
Node 1
Node 3
Node 2



Microservices

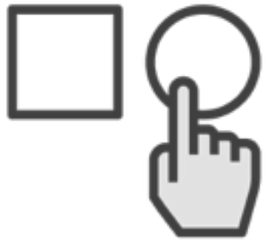

Scalable
Resilient
Simple


Monolithic application

collaboration of **many tiny,**
decoupled applications,
each **specialised** to do a
specific task.

Ease of Reasoning

Separate Deployments



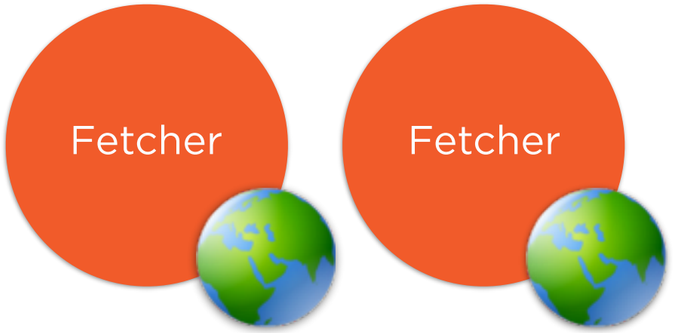
Resource Allocation

Flexible Scaling

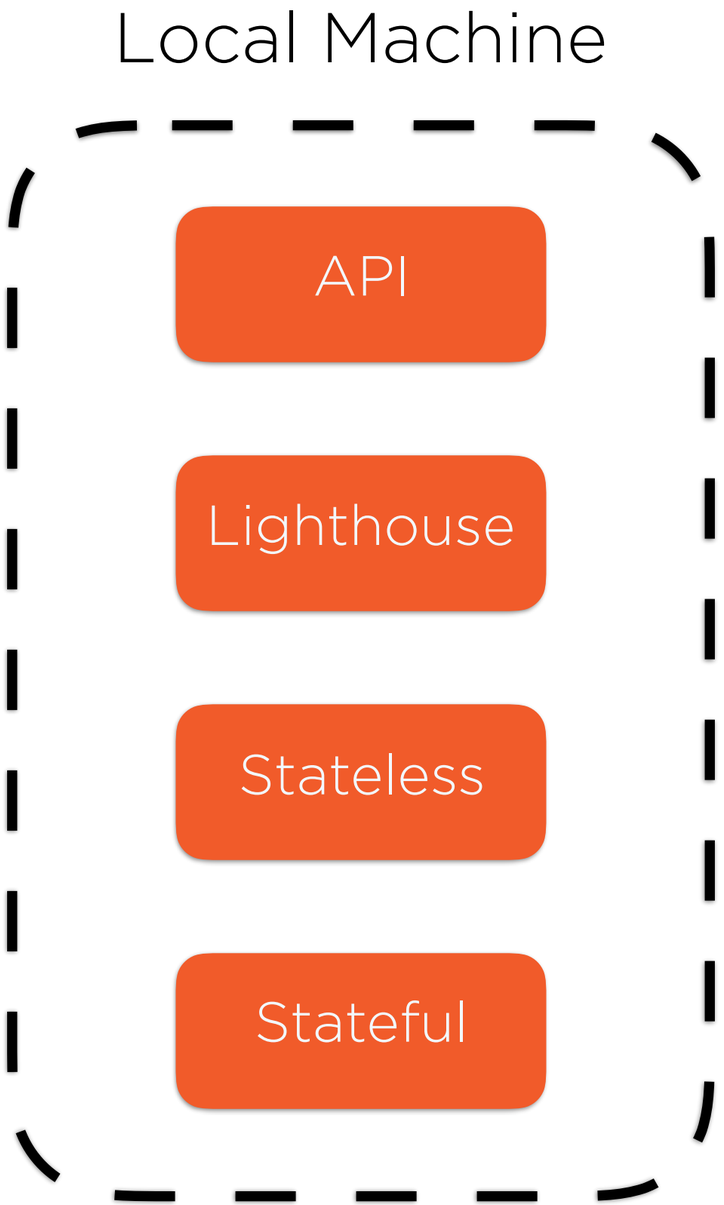
API Roles

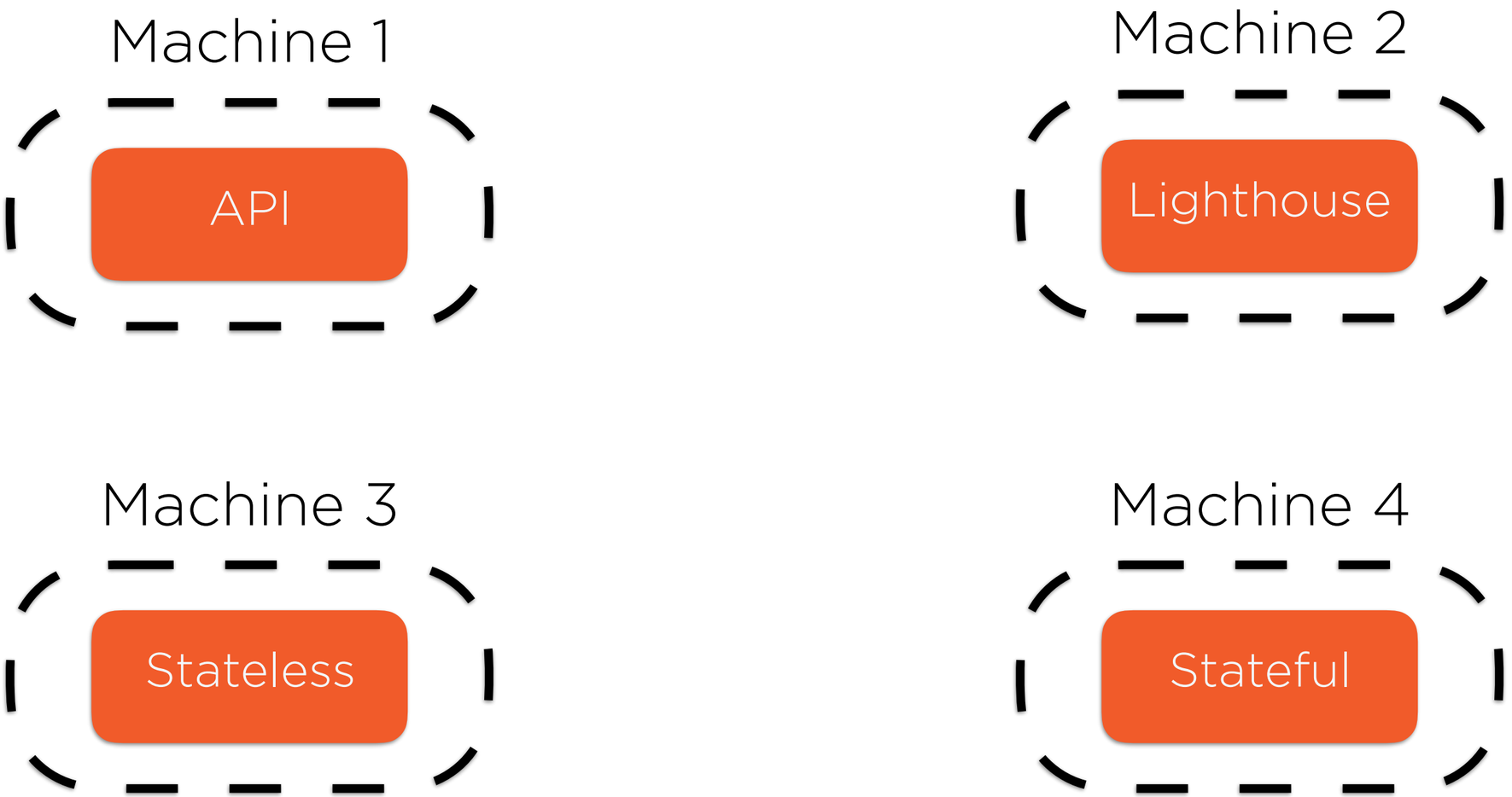
Lighthouse Roles

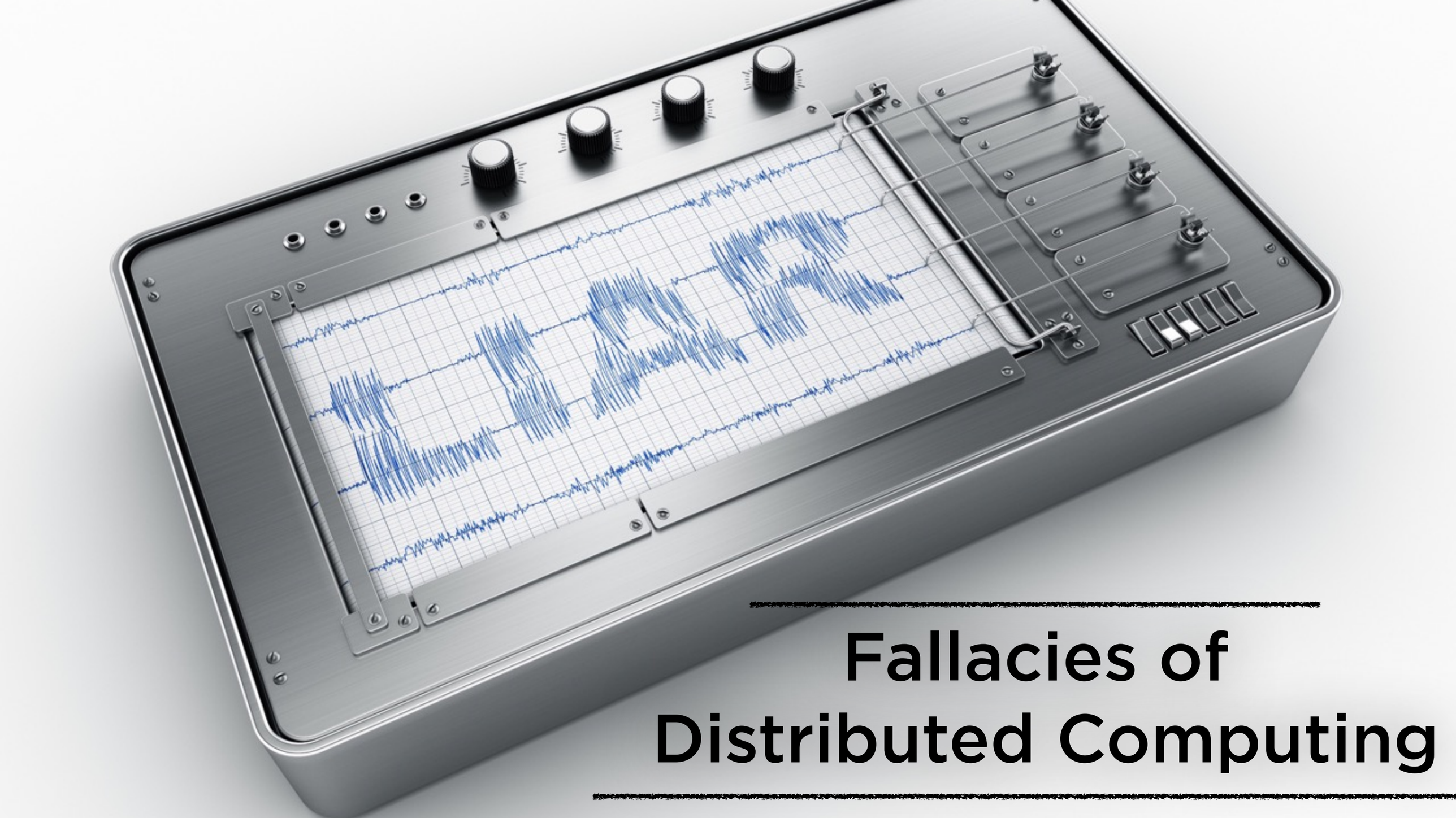
Stateless Roles



Stateful Roles


Local Machine
API
Lighthouse
Stateless
Stateful


Machine 1
API
Machine 2
Lighthouse
Machine 3
Stateless
Machine 4
Stateful



Fallacies of Distributed Computing

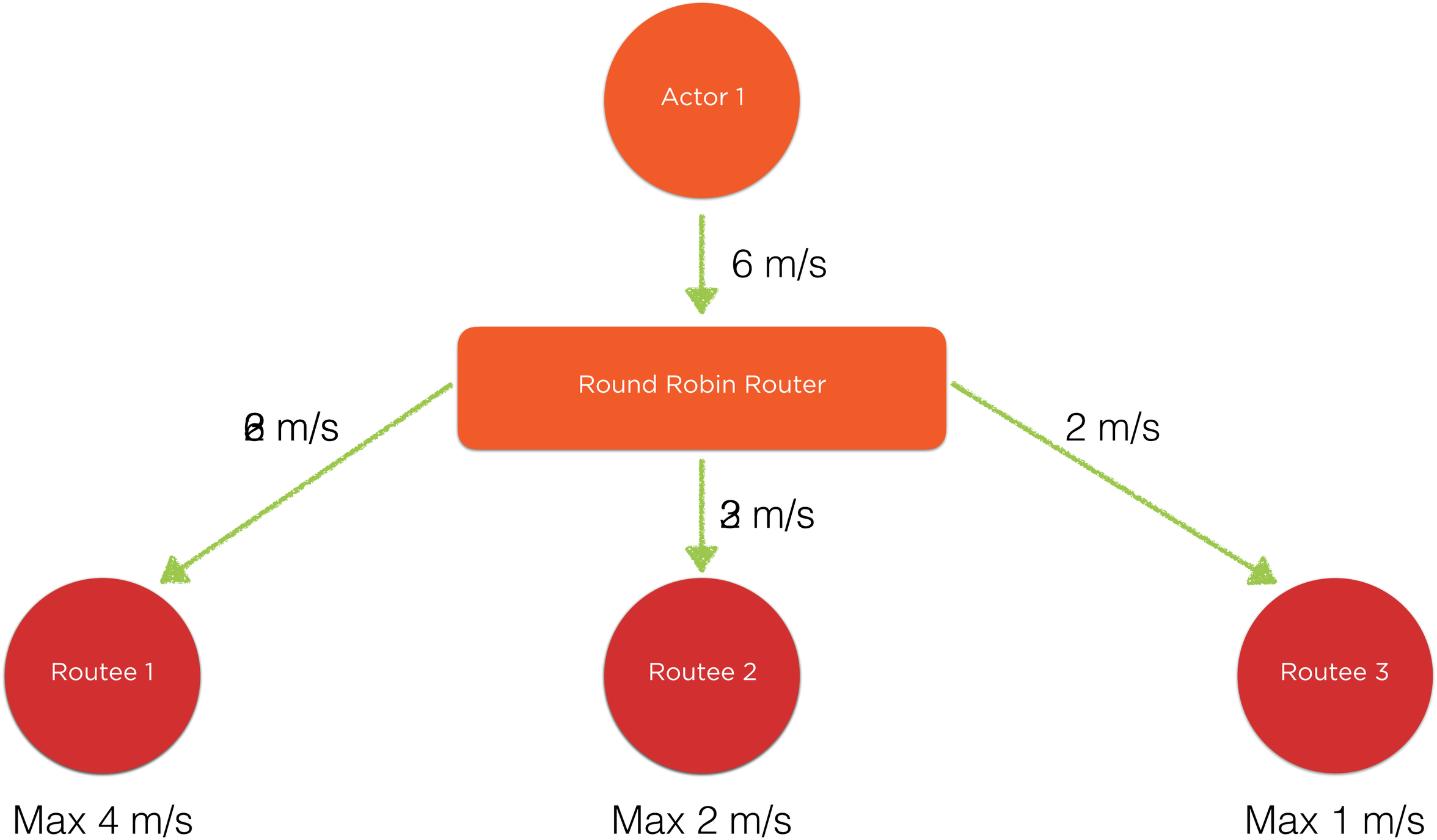
1. The network is reliable

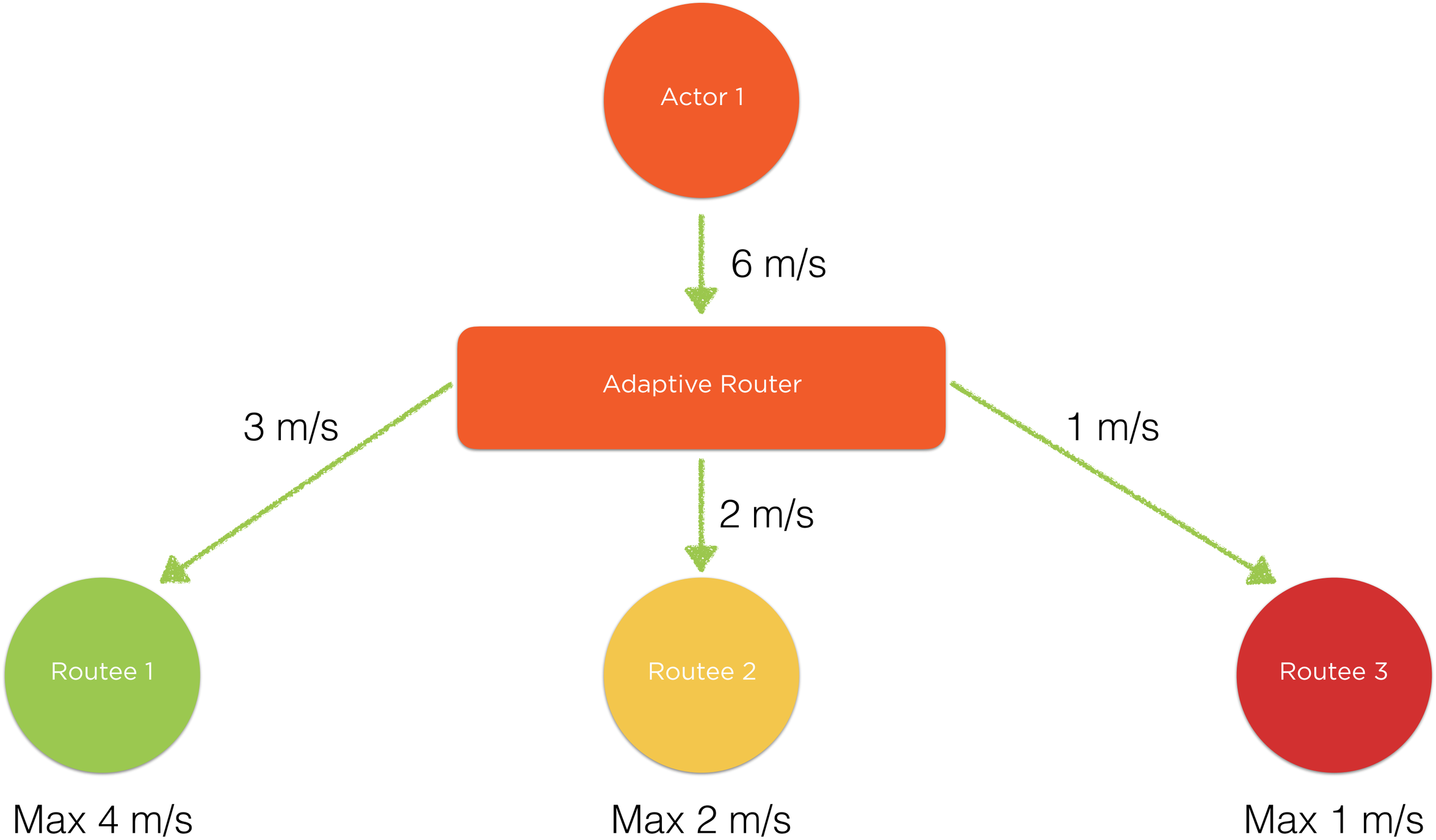
2. Latency is zero

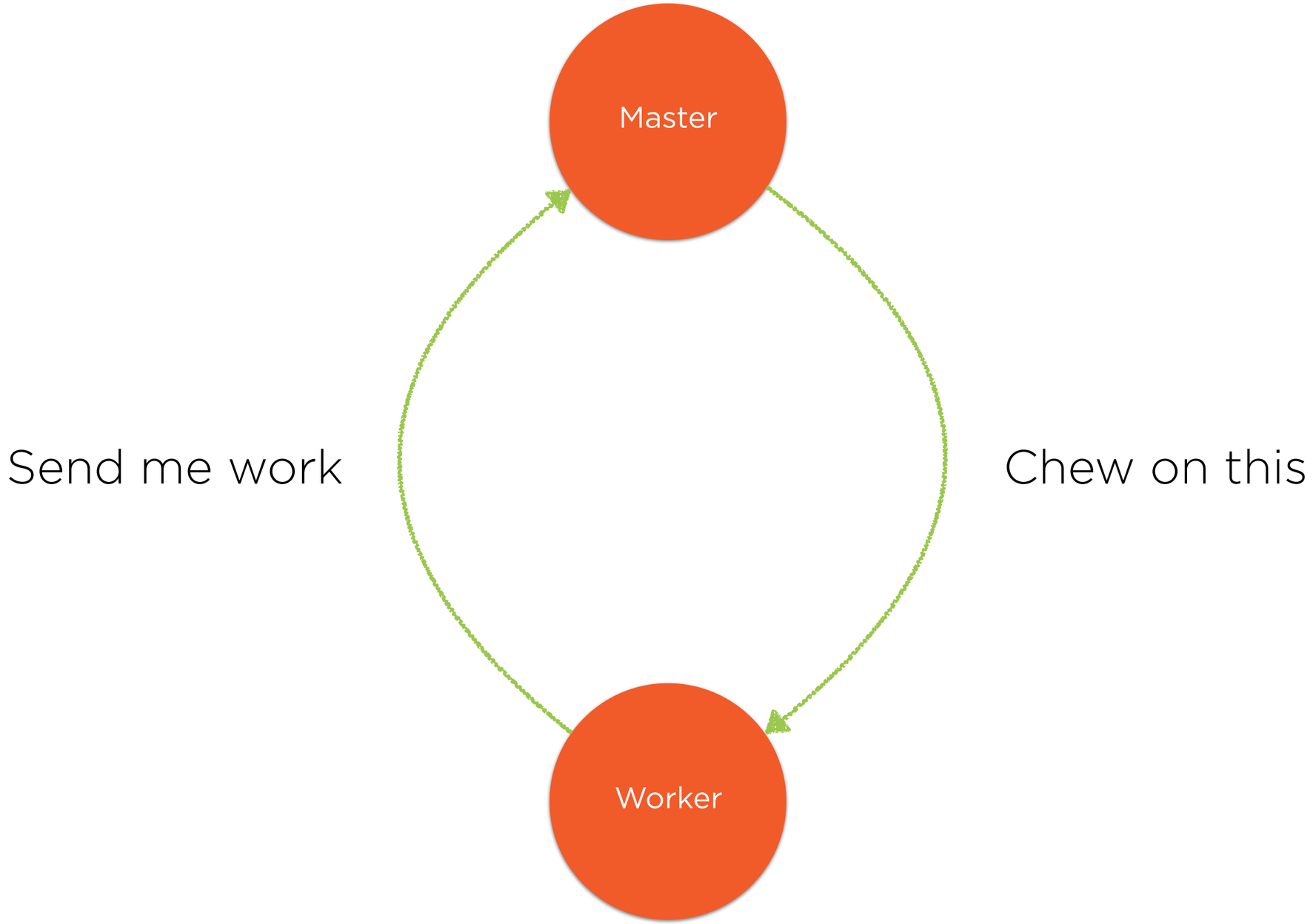
3. Topology is static

4. Transport cost is zero

5. The network is homogeneous


Actor 1
6 m/s
Round Robin Router
2 m/s
2 m/s
2 m/s
Routee 1
Routee 2
Routee 3
Max 4 m/s
Max 2 m/s
Max 1 m/s


Actor 1
6 m/s
Adaptive Router
3 m/s
2 m/s
1 m/s
Routee 1
Routee 2
Routee 3
Max 4 m/s
Max 2 m/s
Max 1 m/s


Master
Send me work
Chew on this
Worker

Recap

- Old solution
- Minimum viable solution
- Microservices using roles
- Fallacies of distributed computing

Fin

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