

Reliability, Availability & Scalability

How To Have Your Cake, and Eat It Too

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Scalability is Popular



Availability is a Bit Less Popular

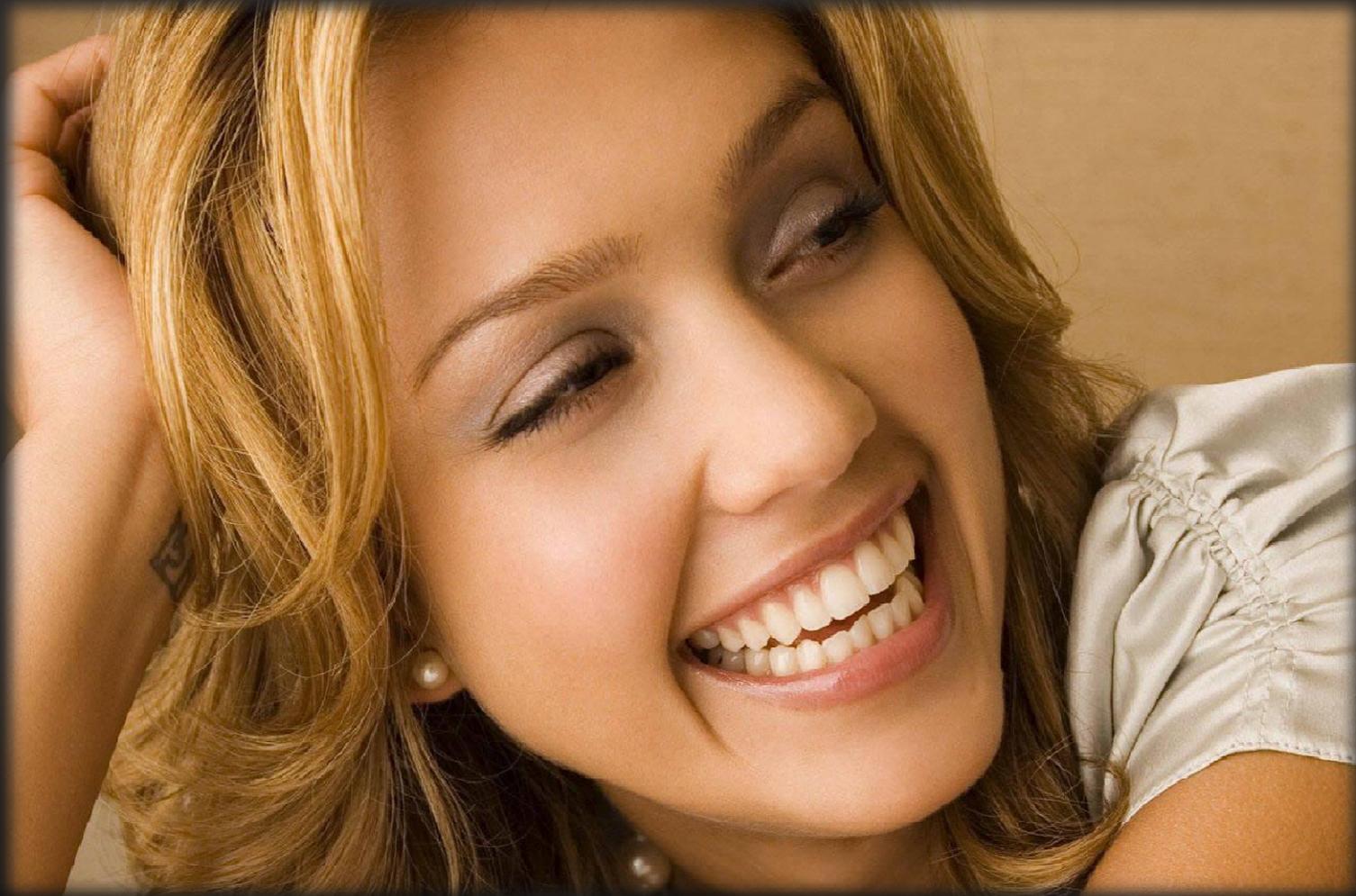


Reliability is as Popular as...



...but necessary if you want to...

Keep Smiling



Agenda





Reliability

What It Isn't



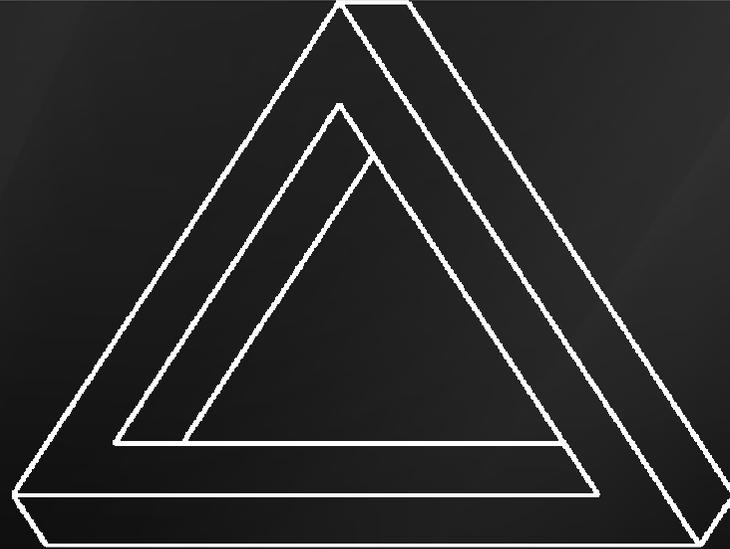
LEHMAN BROTHERS

Reliability Isn't...

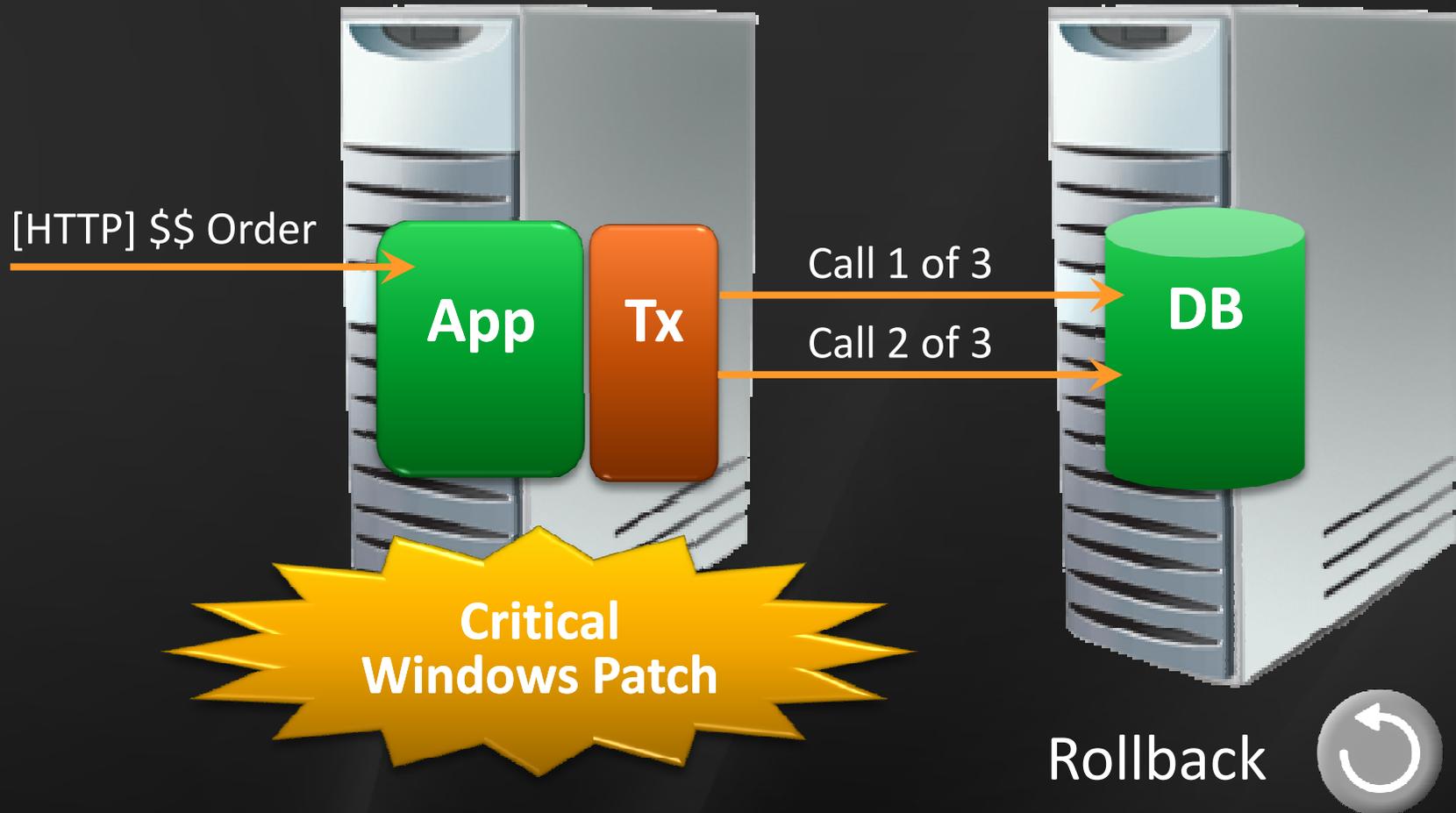


Losing data

Causing global
inconsistency



When Servers Crash



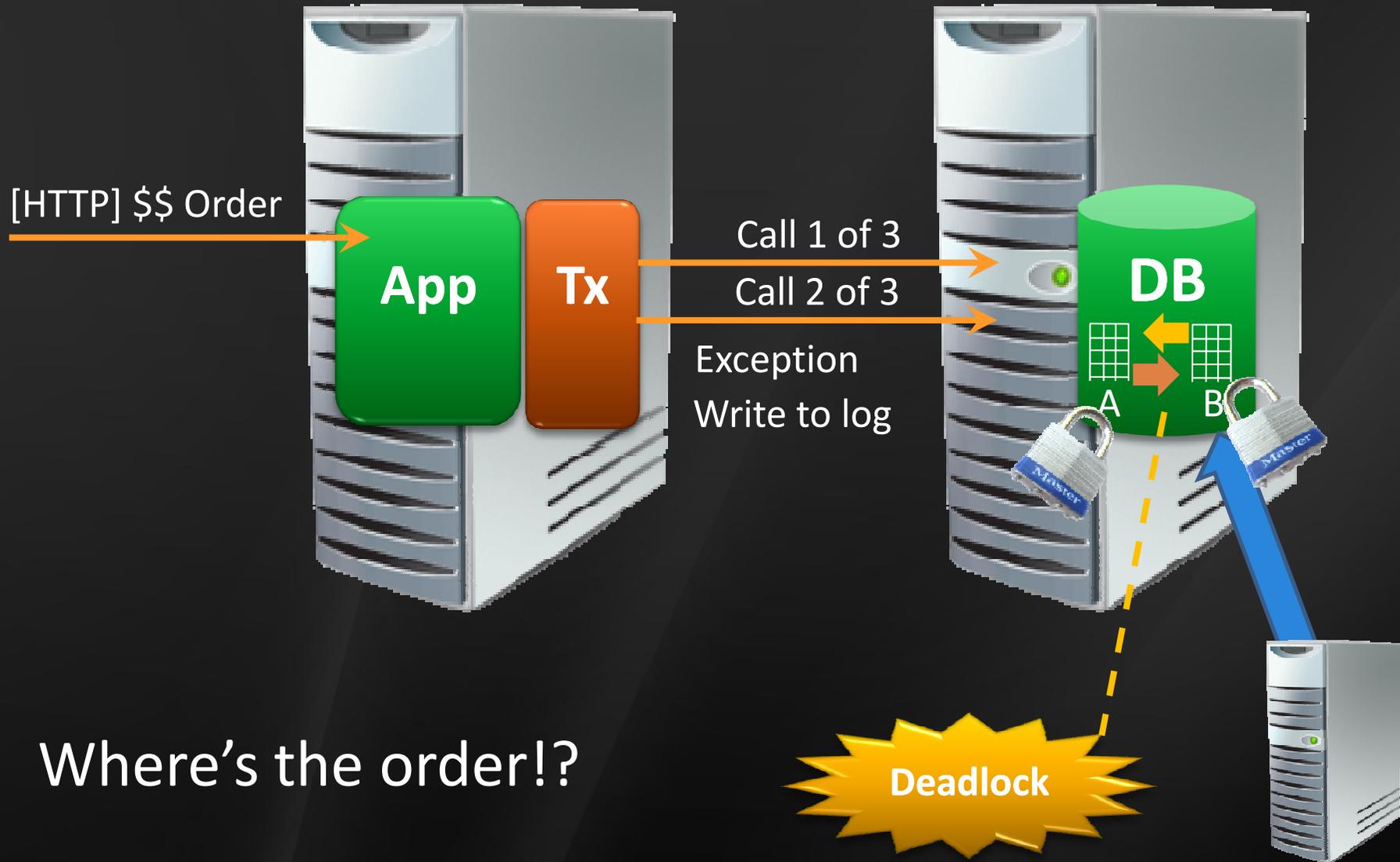
Where's the order!?

When Databases Are Down

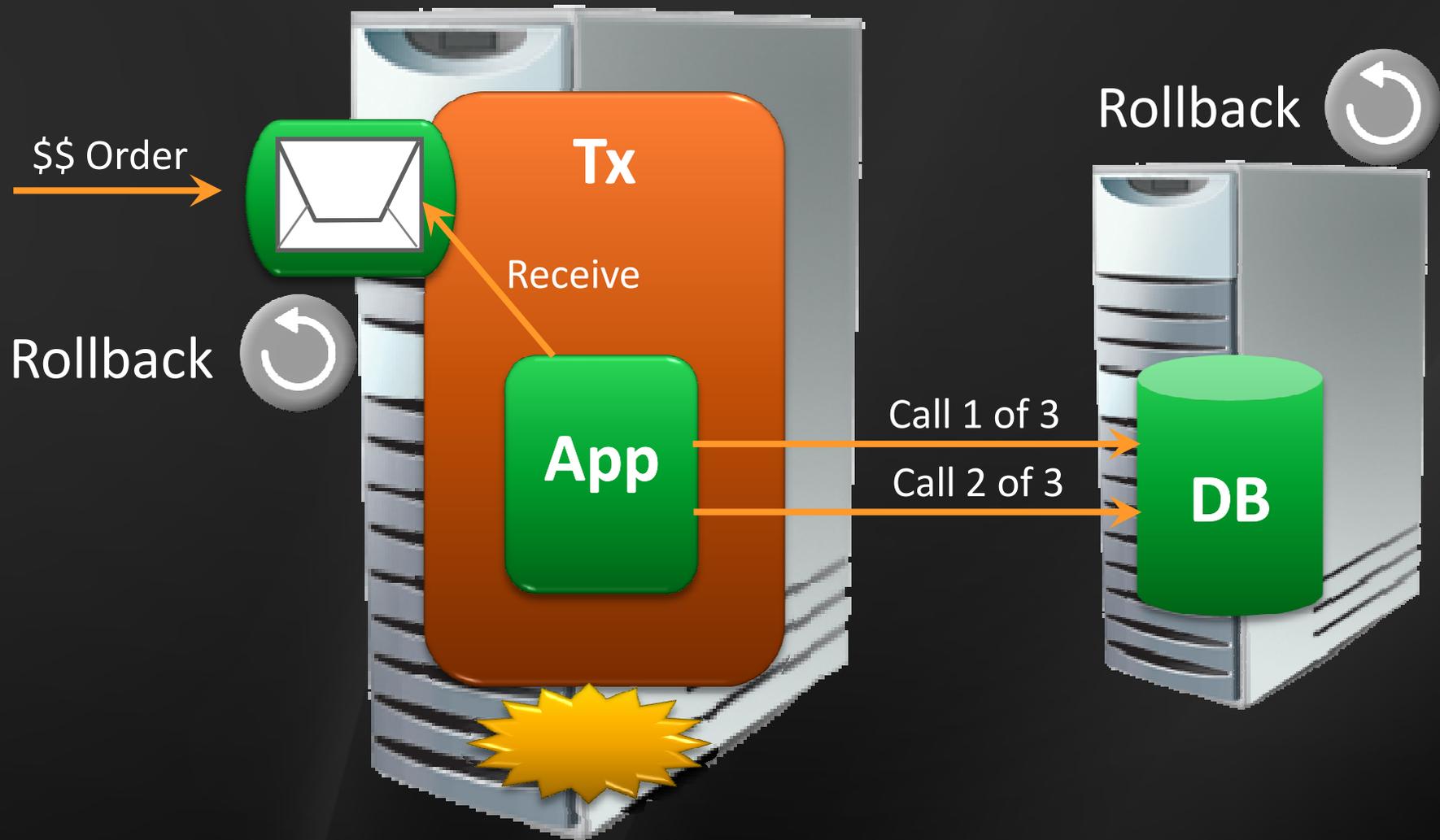


Where's the order!?

When Deadlocks Happen

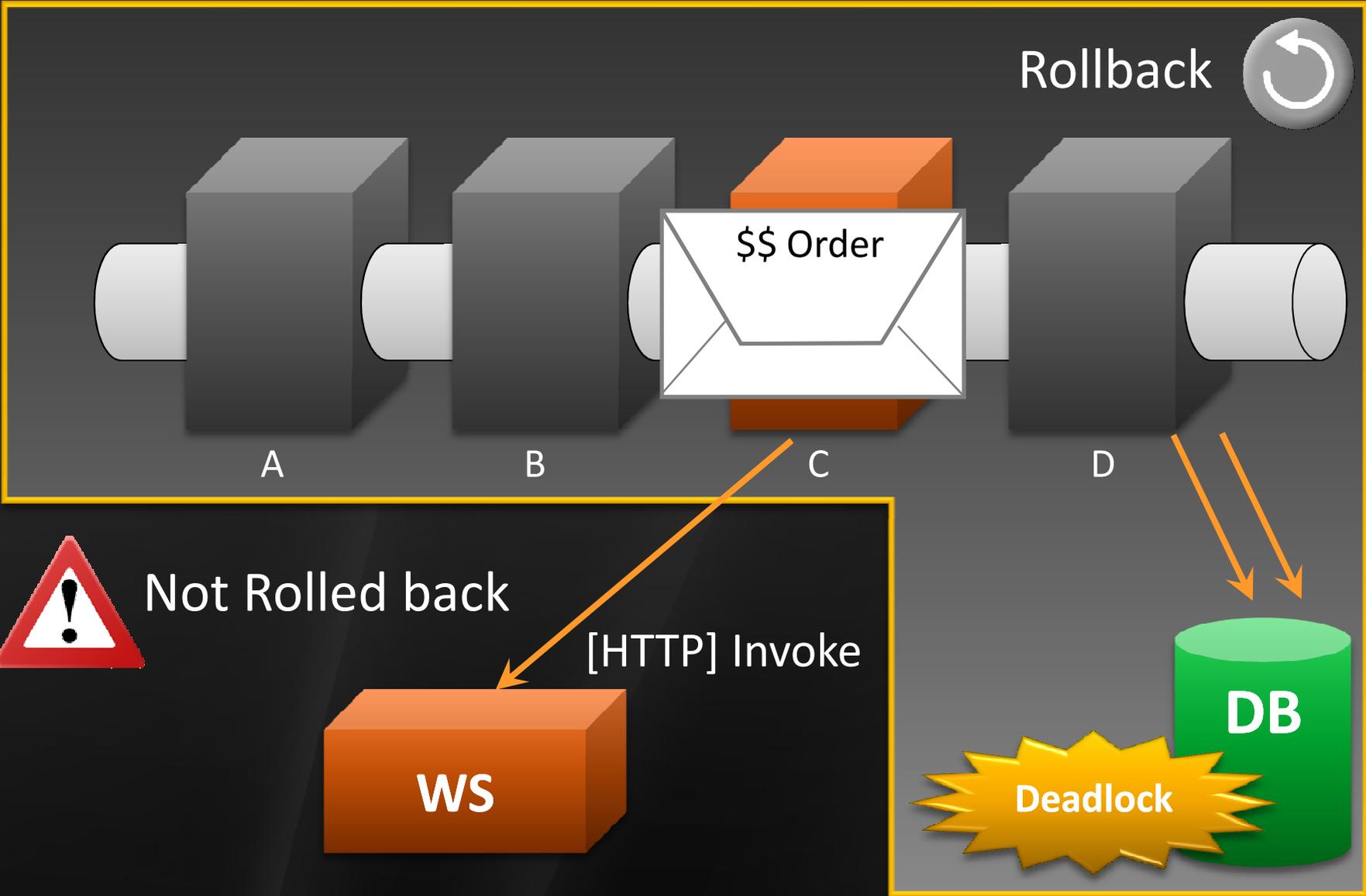


How Does Messaging Help?



The order is back in the queue

Calling External Web Services

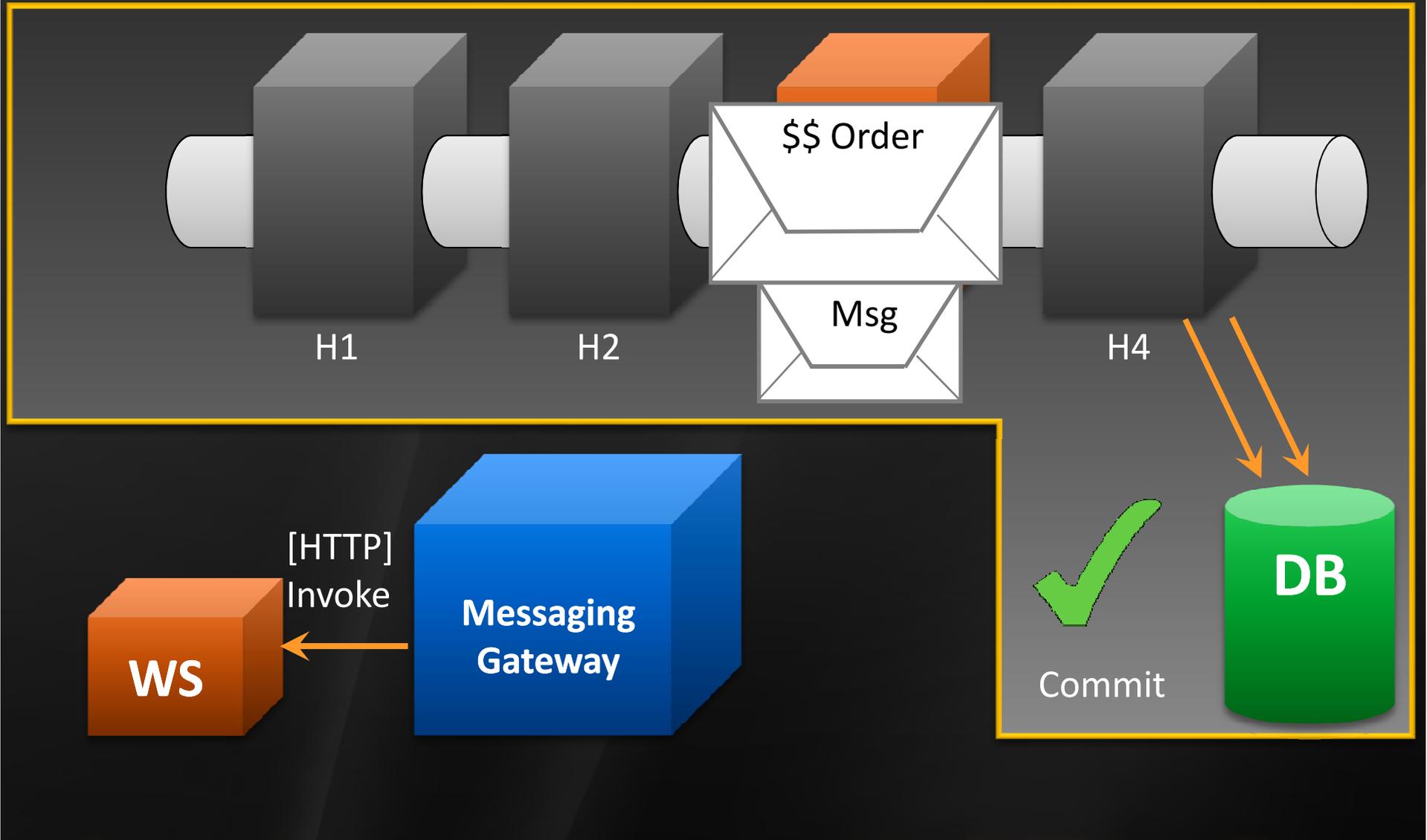


At That Level of Inconsistency
Bad Things Happen



How Does Messaging Help?

The message won't be sent if there's a failure





**Transactional
messaging keeps the
world in balance**

The diagram features a central orange triangle with a large blue circle in the middle containing the text 'One-Way Messaging'. At each of the three vertices of the triangle, there is a smaller blue circle. The top circle is labeled 'Availability', the bottom-left circle is labeled 'Reliability', and the bottom-right circle is labeled 'Scalability'. The top circle has a yellow border, while the other two have blue borders. The entire diagram is set against a dark gray background.

Availability

**One-Way
Messaging**

Reliability

Scalability

Availability

Is it just a question of nines?



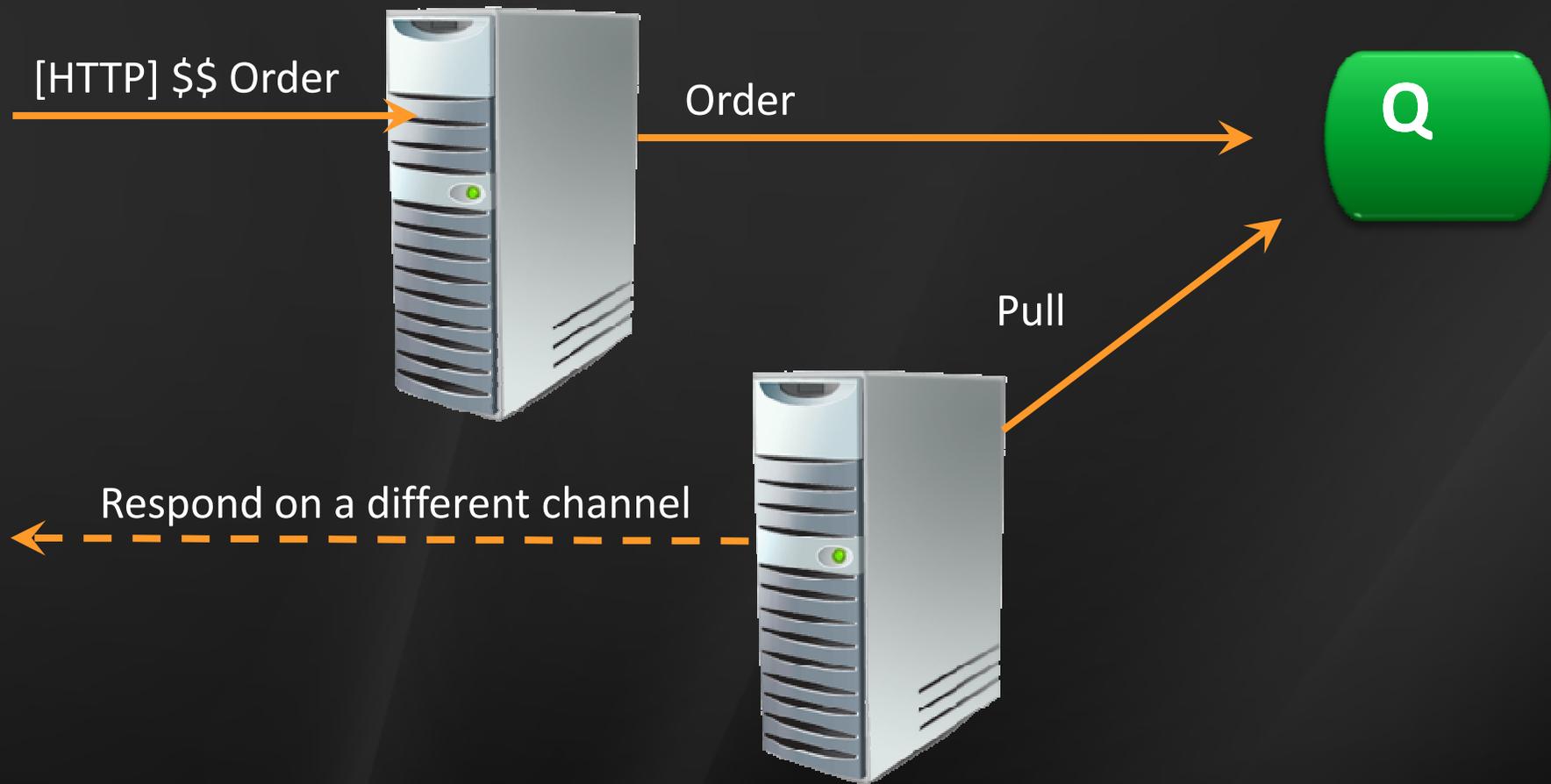
Response Times



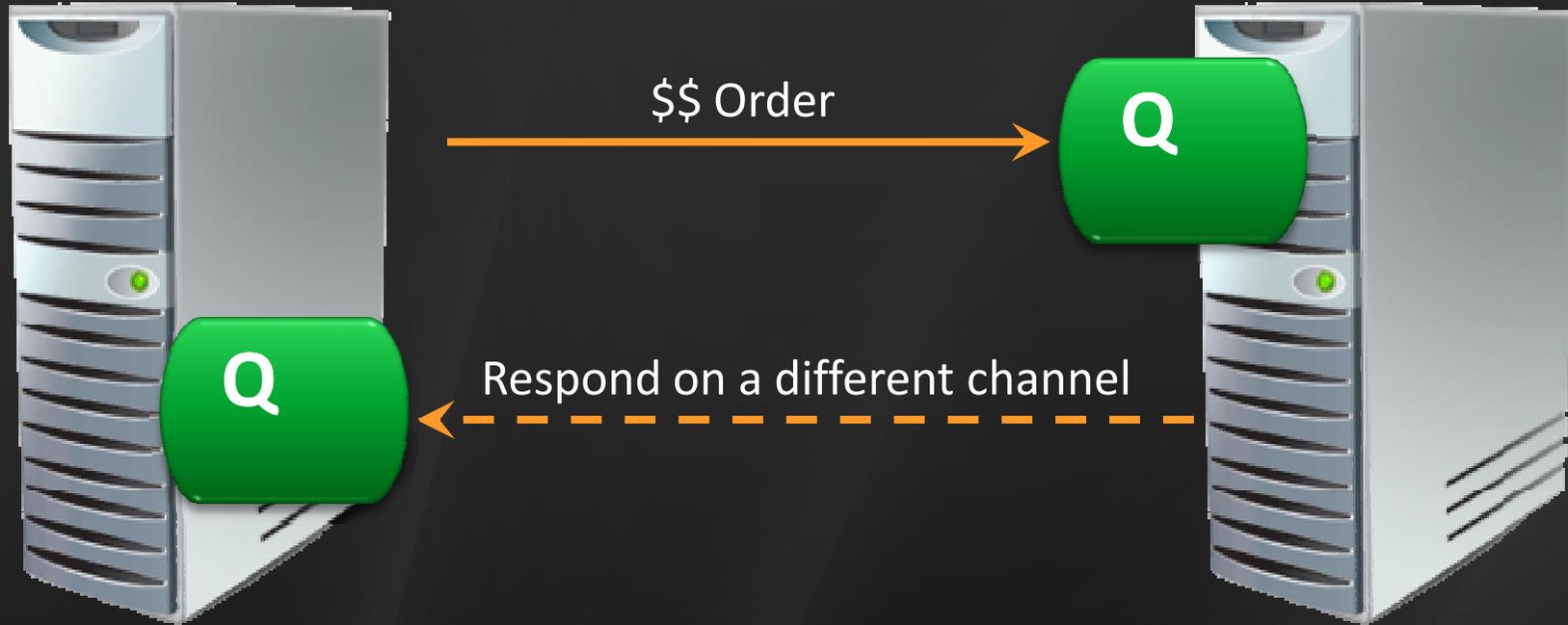
Command / Response



How Does Messaging Help?

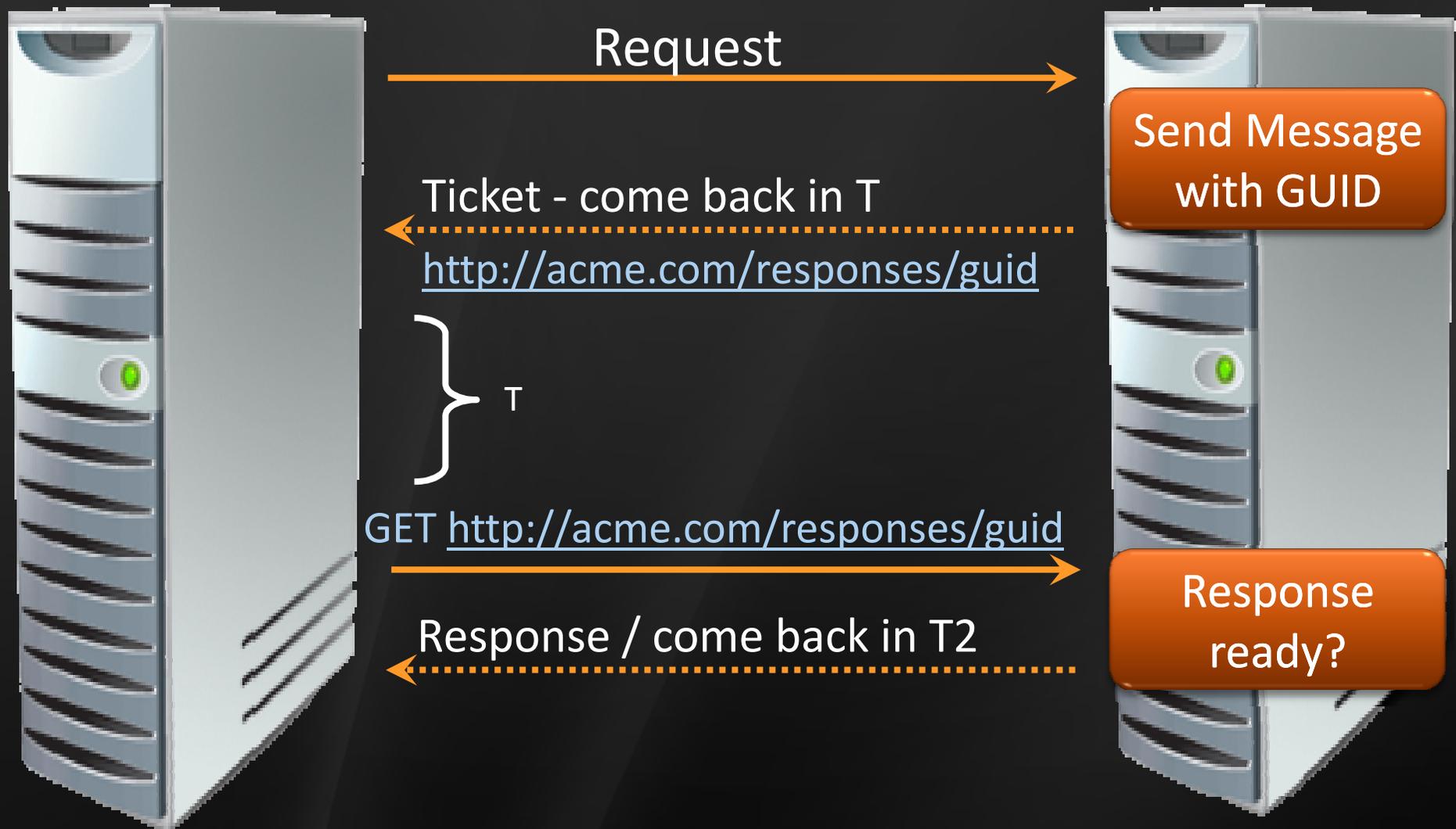


Messaging Only



No more single point of failure

Messaging over HTTP



What's the Difference?

A fundamentally different perspective

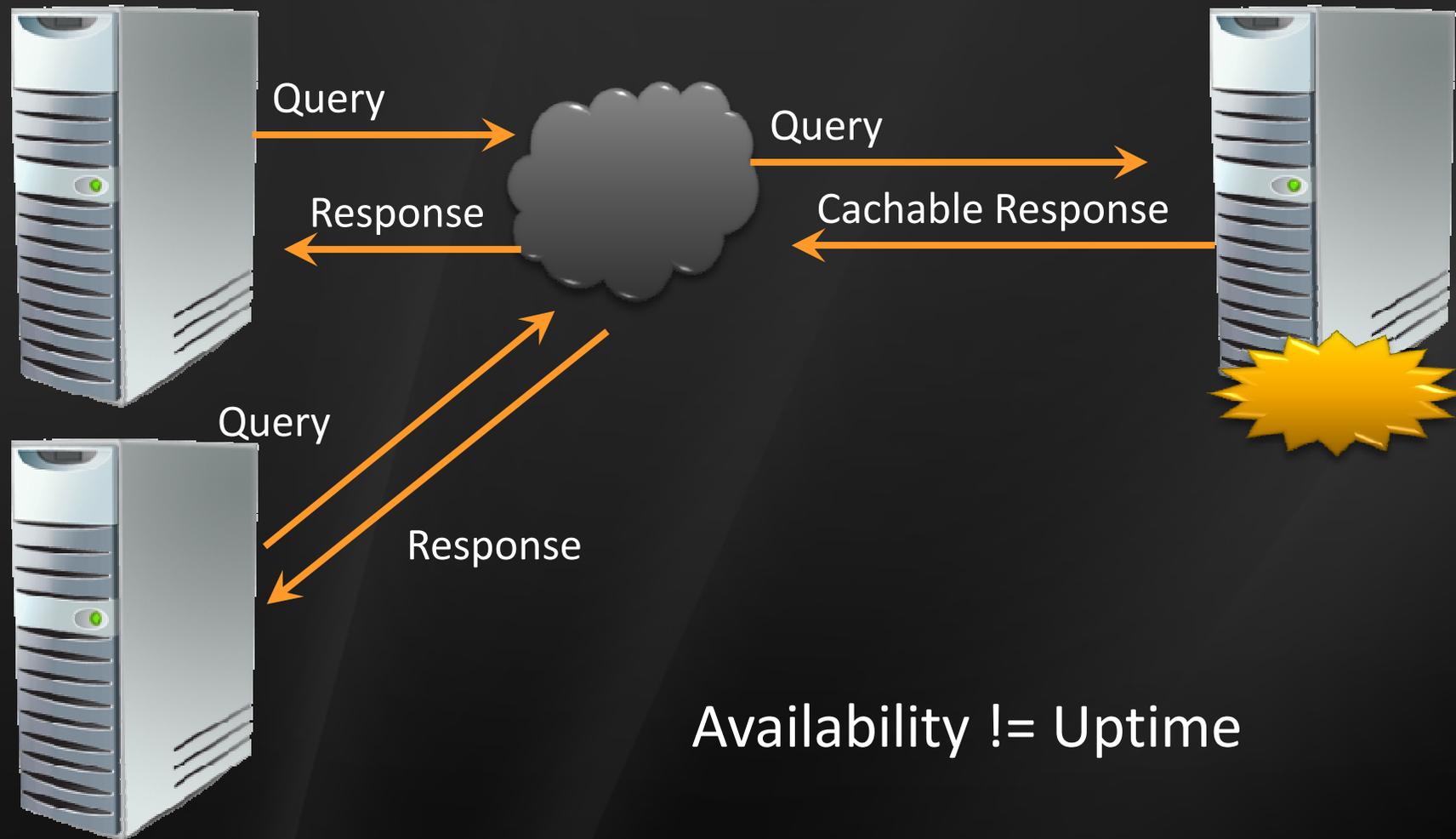


Query/Response



Query / Cached Response

Caching improves perceived uptime



Availability != Uptime

Don't Call Us, We'll Call You



Pub/Sub Messaging



Pub/Sub Taking Over the Web Too



The CAP Theorem

- ▶ Consistency
- ▶ Availability
- ▶ Partition-Tolerance

Pick two



Availability

**One-Way
Messaging**

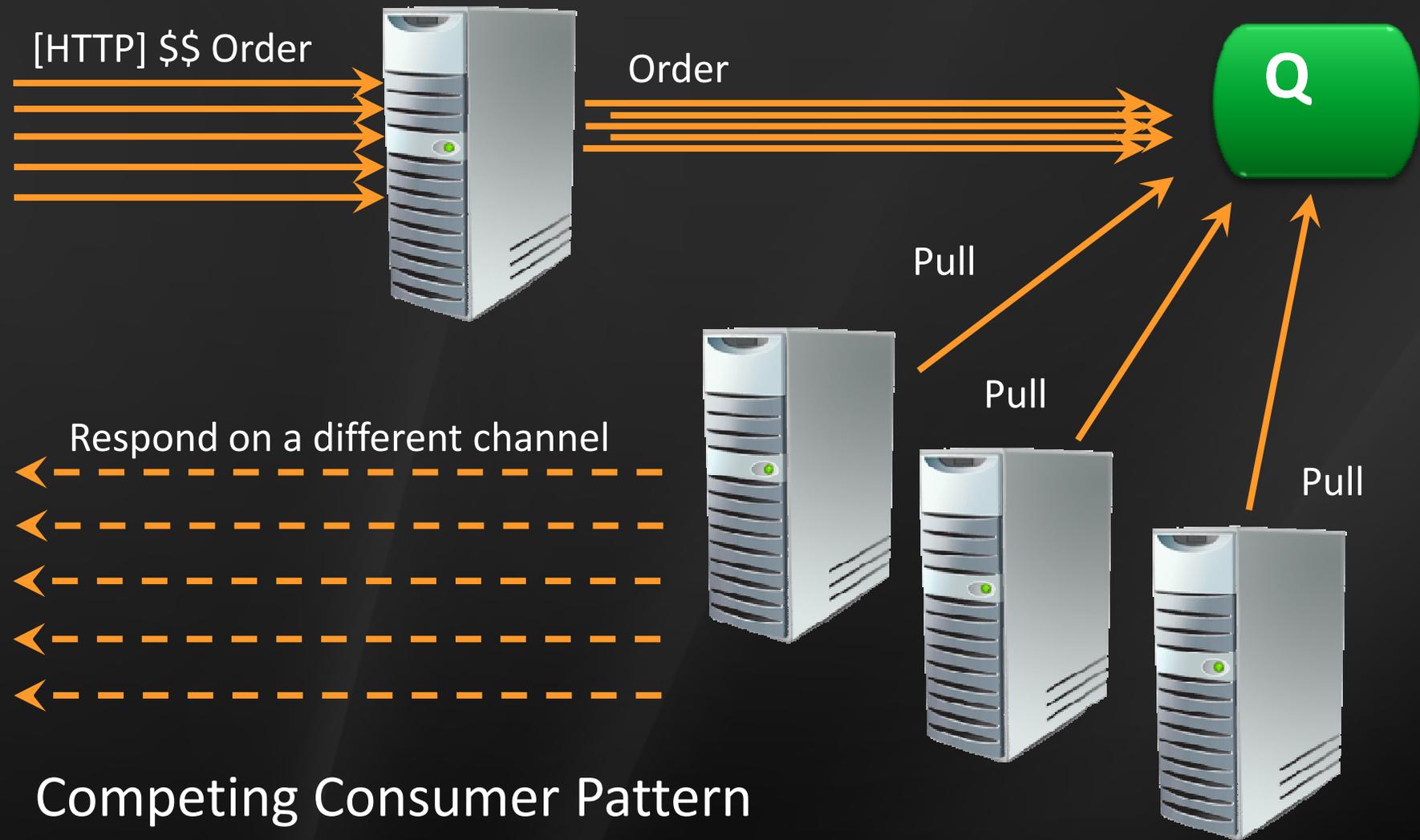
Reliability

Scalability

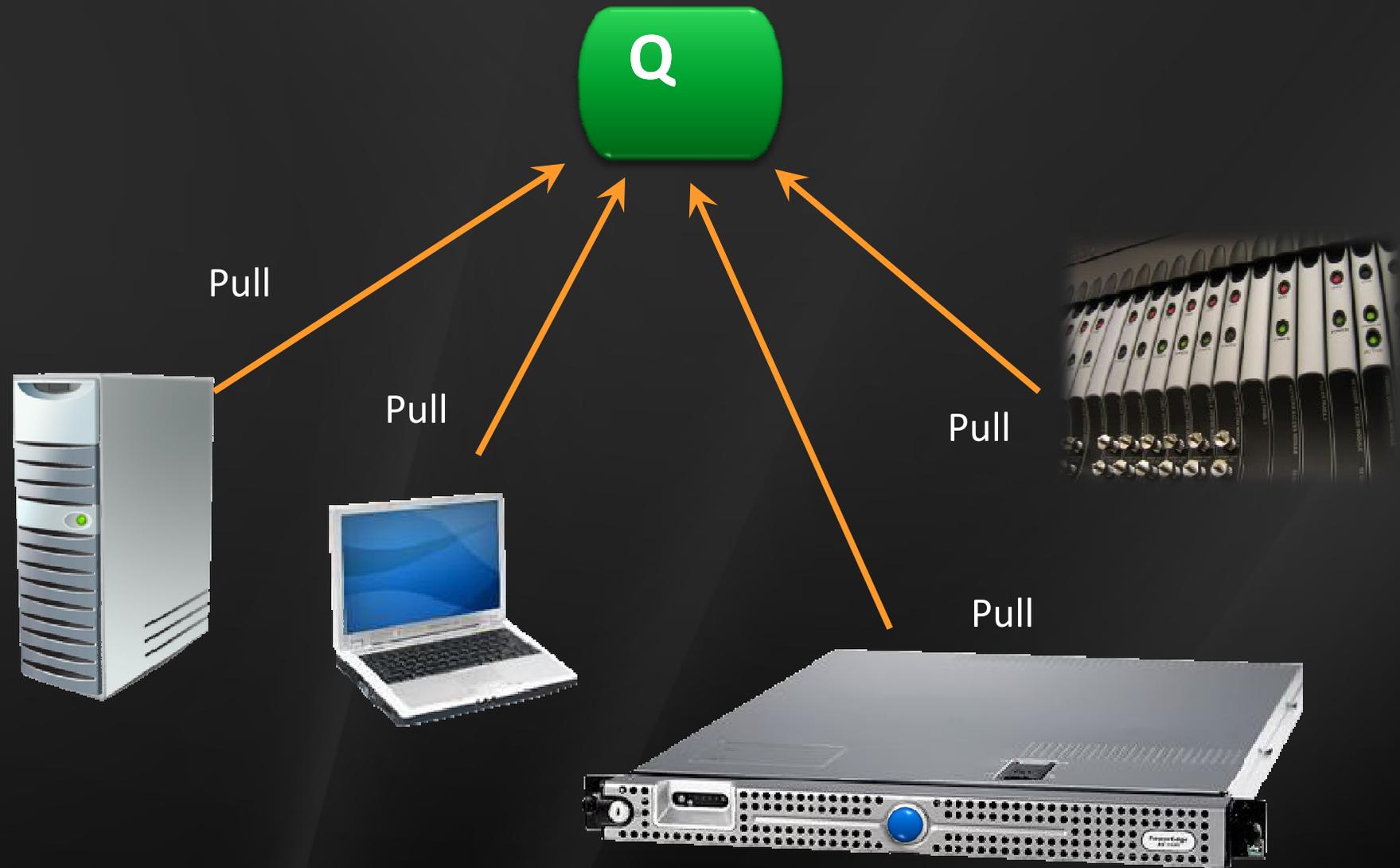


Scale

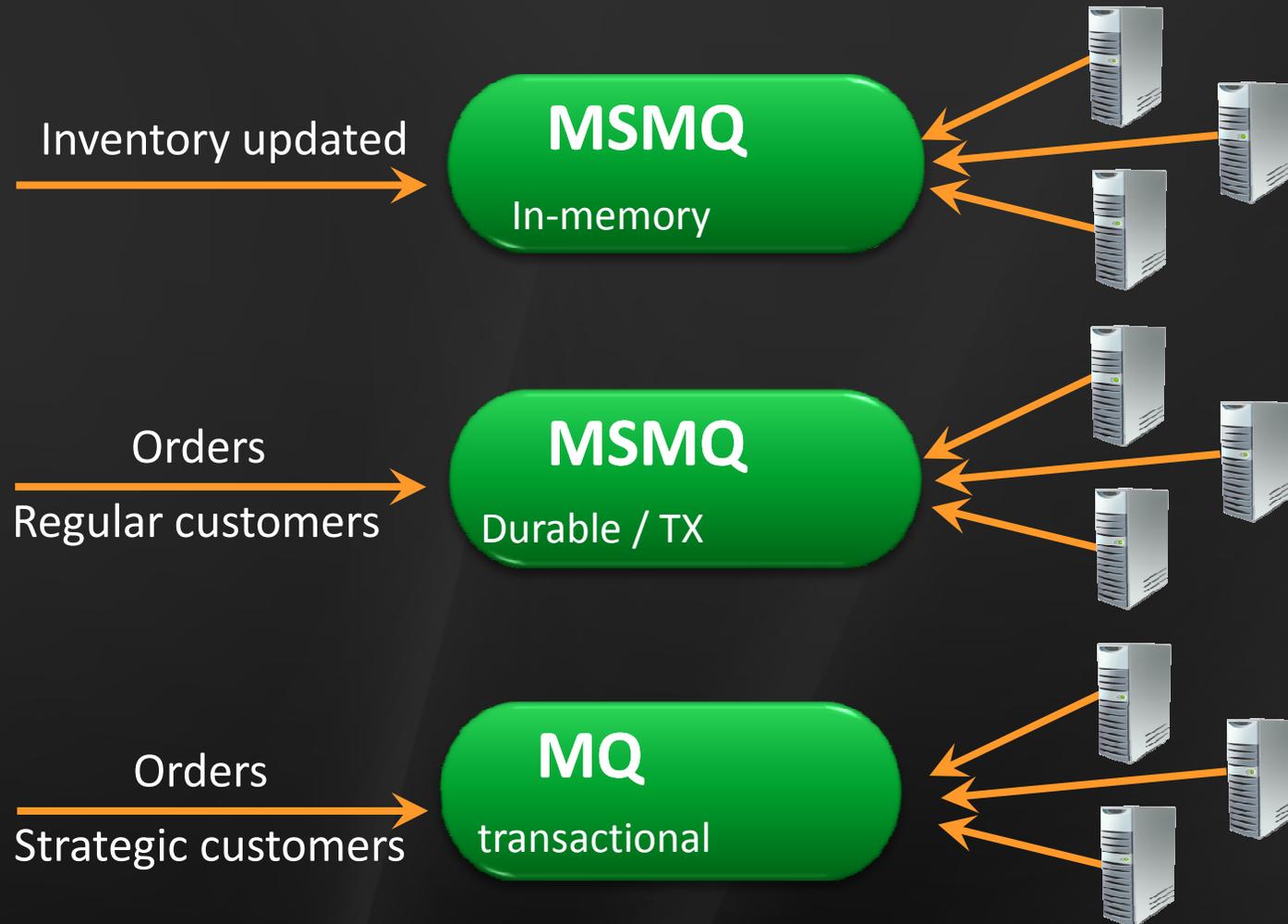
Scaling Out to Handle More Requests



Heterogeneous Server Farms

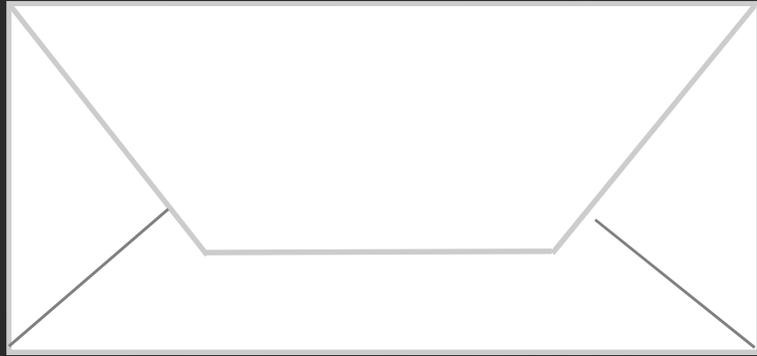


Different Strokes for Different Folks



Avoid priority within the same queue

Scaling to Large Messages



Availability

**One-Way
Messaging**

Reliability

Scalability

Want to try it out?



www.NServiceBus.com

Thank you

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