
AWS
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PRT037

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How to build an Apache Kafka mesh

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Enterprises today are . . .

More distributed than ever

Core, cloud, edge, and more!

Trying to connect countless devices

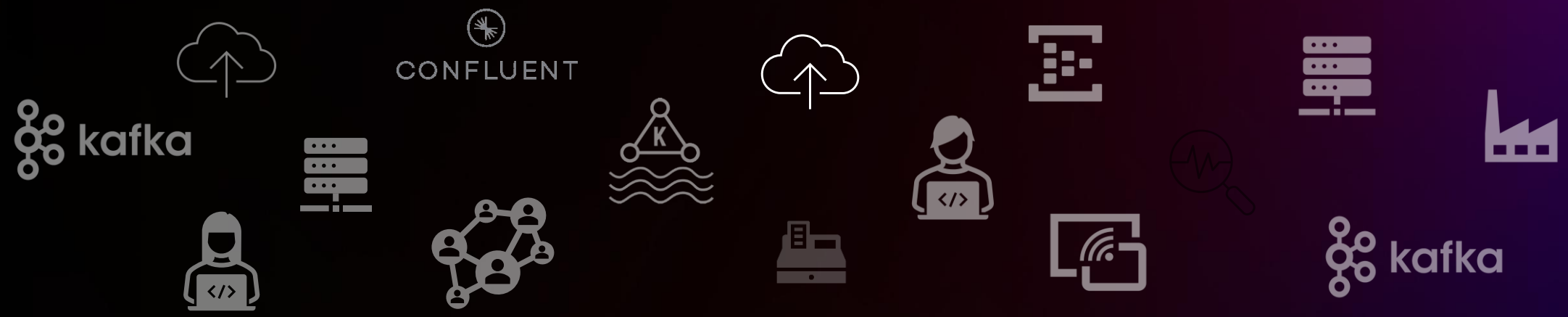
Not just thousands, but **millions** . . . even tens of millions!

Streaming everything

. . . because the network is now faster than disk

Using Apache Kafka

A lot of it, in many ways, in many environments

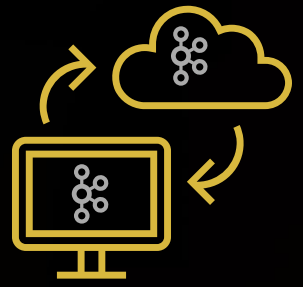


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New patterns bring new challenges

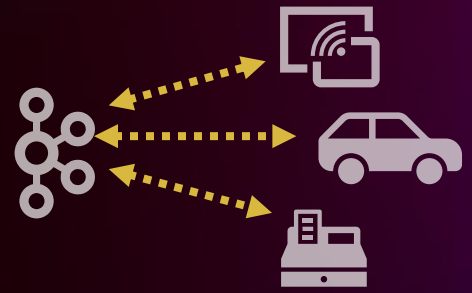
1. Hybrid cloud deployment



2. Interoperating with APIMs



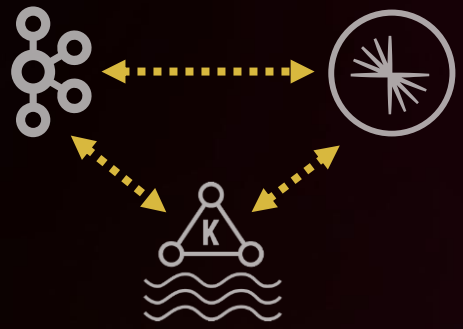
3. Streaming to and from edge and millions of devices



4. Filtering while preserving order



5. Replicating data between flavors



6. Managing Kafka and non-Kafka event streams



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How do you solve these challenges today?

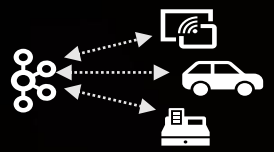
1. **Hybrid cloud deployment**



2. **Interoperating with APIMs**



3. **Streaming to and from edge and millions of devices**



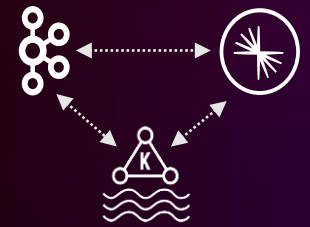
- Replicator
- MirrorMaker
- Cluster Linking
- Mosquitto
- Source connectors
- Sink connectors
- REST proxy
- Custom code
- Stream processors
- Governance
- Custom connectors

. . . and so on

4. **Filtering while preserving order**



5. **Replicating data between flavors**



6. **Managing Kafka and non-Kafka event streams**



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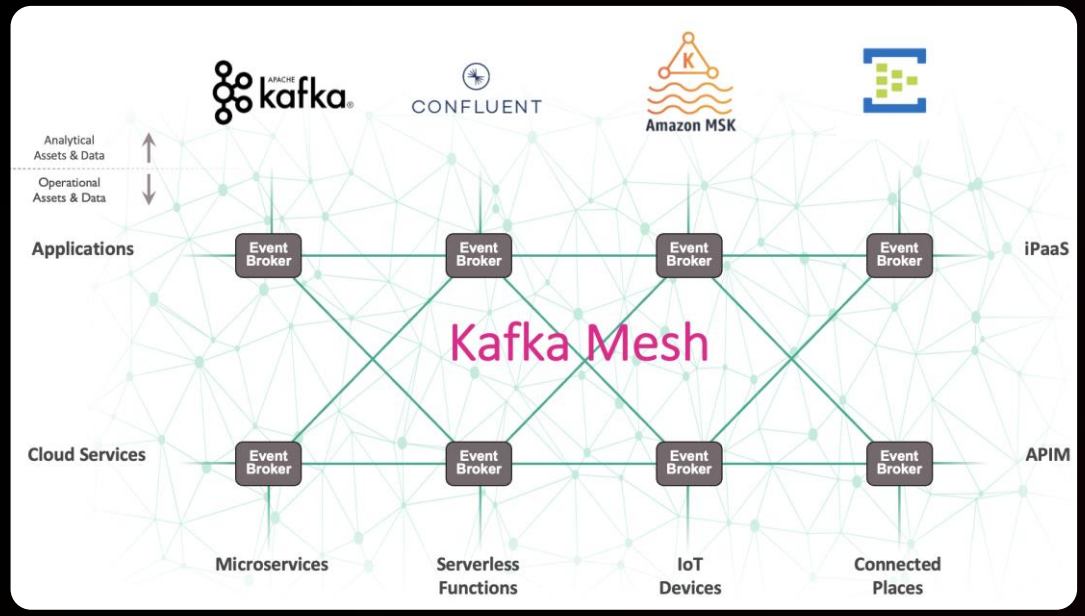
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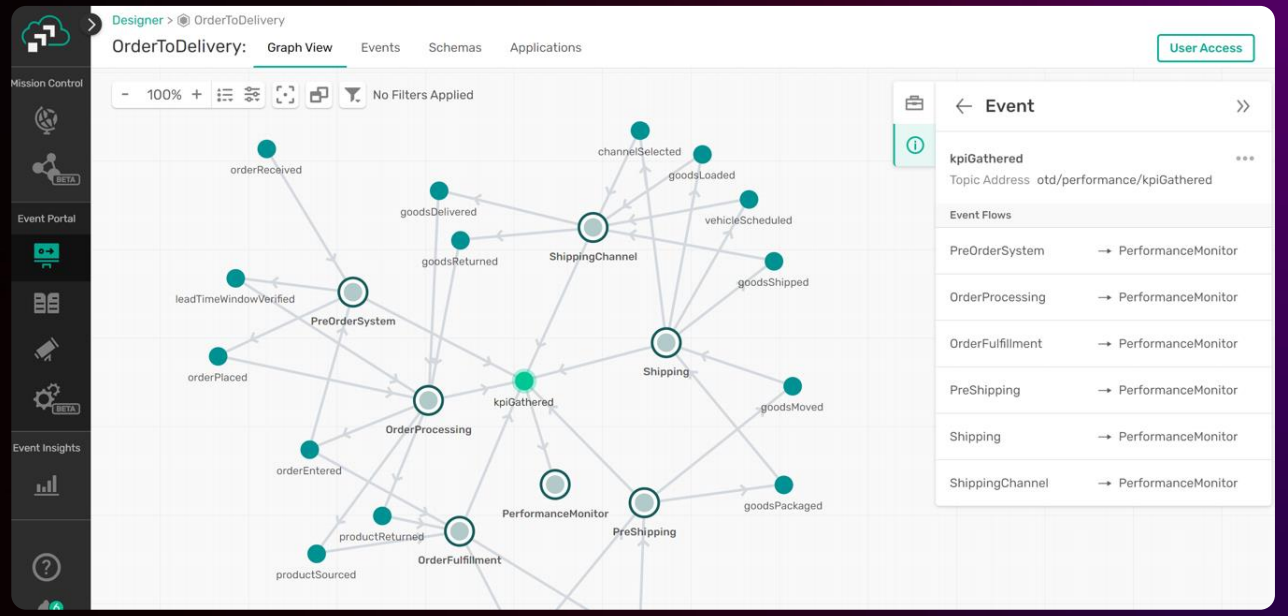
Kafka mesh addresses all those challenges



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I already have Kafka – Why do I need a Kafka mesh?





Streaming

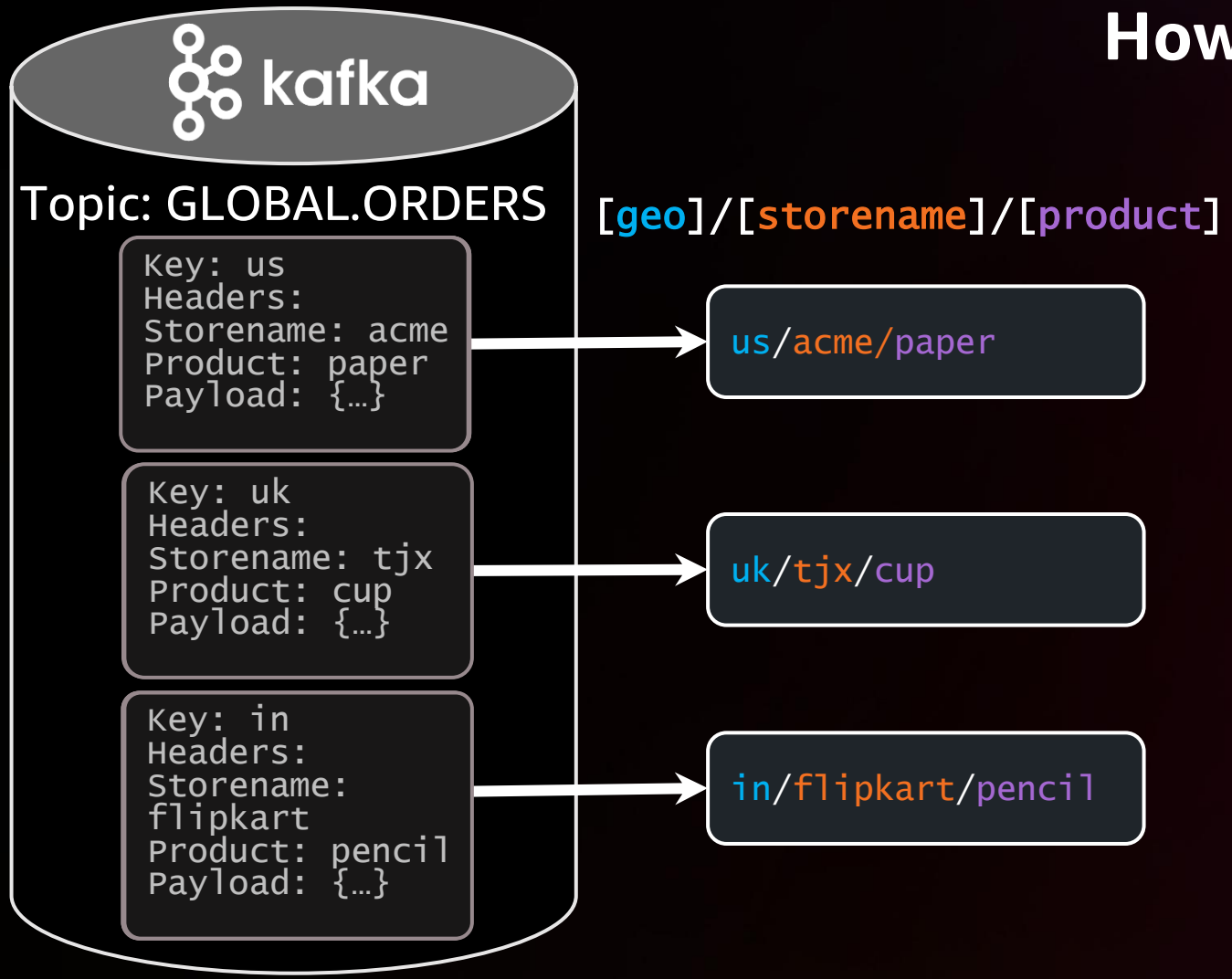
Connect islands of Kafka and non-Kafka for real-time event streaming across environments

Event management

Discover, audit, catalog, and govern your Kafka estate with an event portal

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Transforming a Kafka record into routable events



How do I get all orders that . . .



Originate in the US?

```
us/>
```

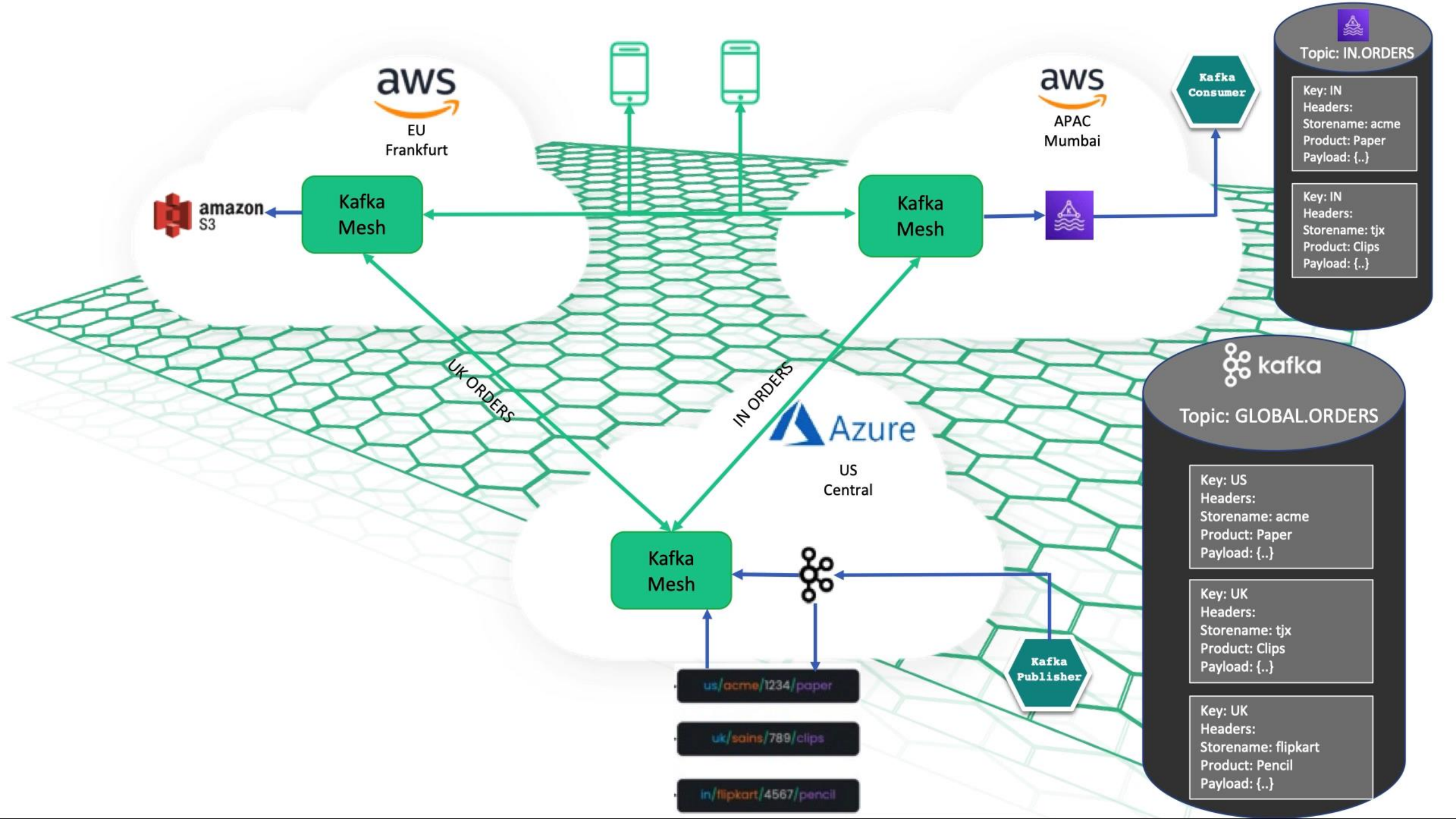
Are from Acme stores?

```
*/acme/*
```

Include pencils?

```
*/*/pencil
```

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aws
EU
Frankfurt
aws
APAC
Mumbai
Kafka Consumer
Topic: IN.ORDERS
Key: IN
Headers:
Storename: acme
Product: Paper
Payload: {..}
Key: IN
Headers:
Storename: tjx
Product: Clips
Payload: {..}
amazon
S3
Kafka Mesh
Kafka Mesh
UK ORDERS
IN ORDERS
Azure
US
Central
kafka
Topic: GLOBAL.ORDERS
Key: US
Headers:
Storename: acme
Product: Paper
Payload: {..}
Key: UK
Headers:
Storename: tjx
Product: Clips
Payload: {..}
Key: UK
Headers:
Storename: flipkart
Product: Pencil
Payload: {..}
Kafka Mesh
Kafka Publisher
us/acme/1234/paper
uk/sains/789/clips
in/flipkart/4567/pencil

Additional benefits of the Kafka mesh

1. Dynamic and on-demand routing of your Kafka Streams
2. Event streaming to/from the edge with APIM support
3. Store and forward
4. Native integration with cloud services
5. Distributed tracing
6. Managing Kafka event streams with event portal

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