

Publisher

Orders Service A

subscription

Orders Service B

subscription

**NATS Streaming**

**List of Channels**

**ticket:created**

**Queue Groups**

**'orders-service'**

## Tickets Service

**tickets**

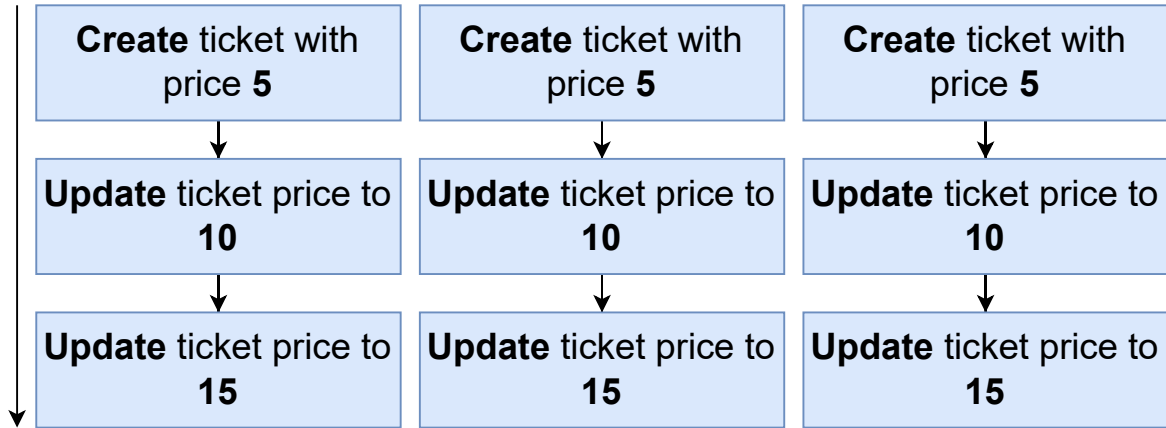
```
{ id: 'ABC', title: 'concert', price: 20 }
```

## Orders Service

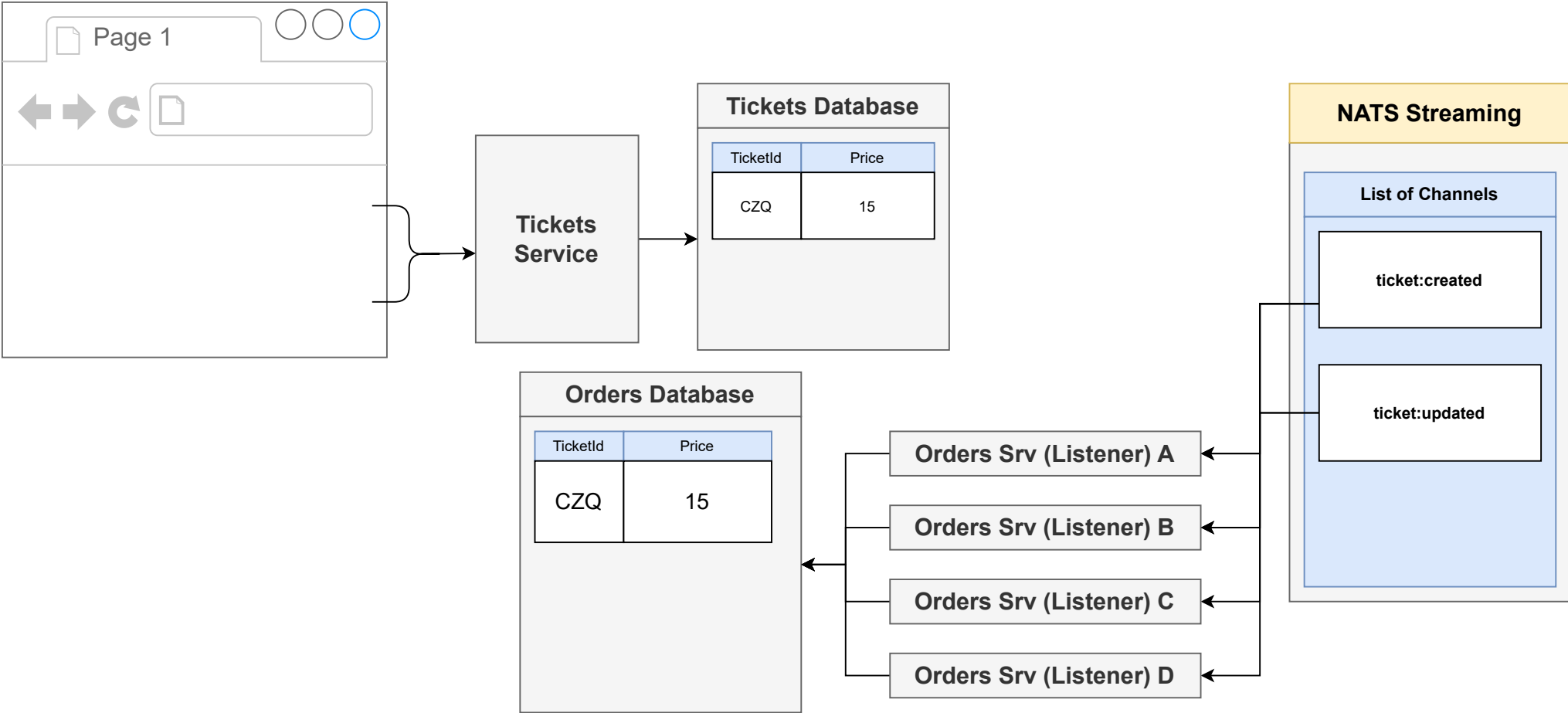
**tickets**

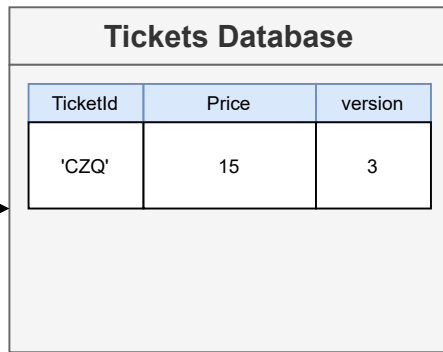
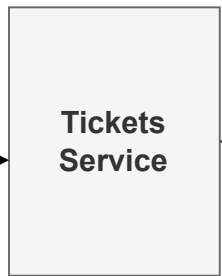
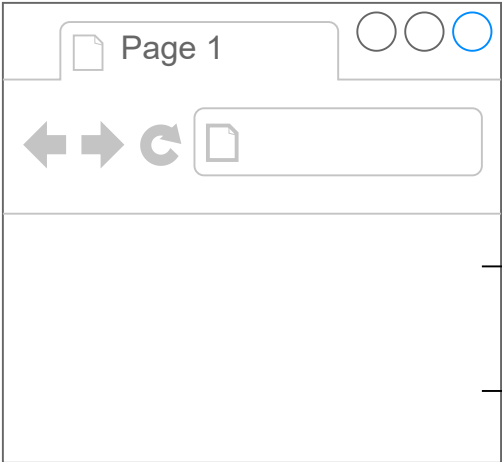
```
{ title: 'concert', price: 20, id: 'ABC' }
```

Time

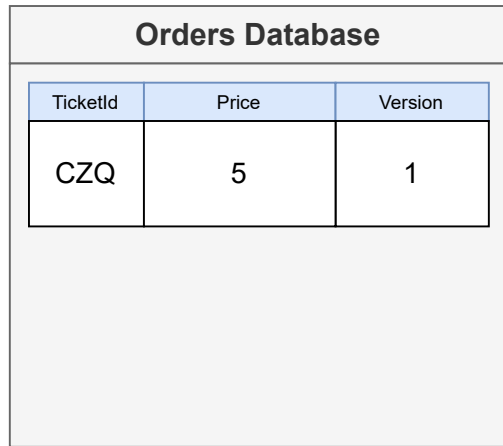


*Repeat 200x*





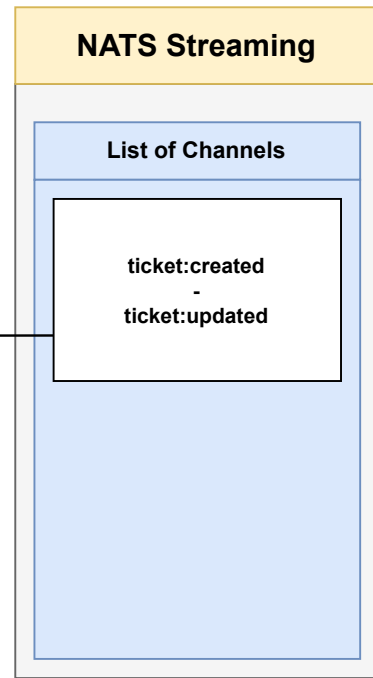
**ticket:updated**  
id: 'CZQ', price: 10, version: 2



**ticket:updated**  
id: 'czq', price: 15, version: 3

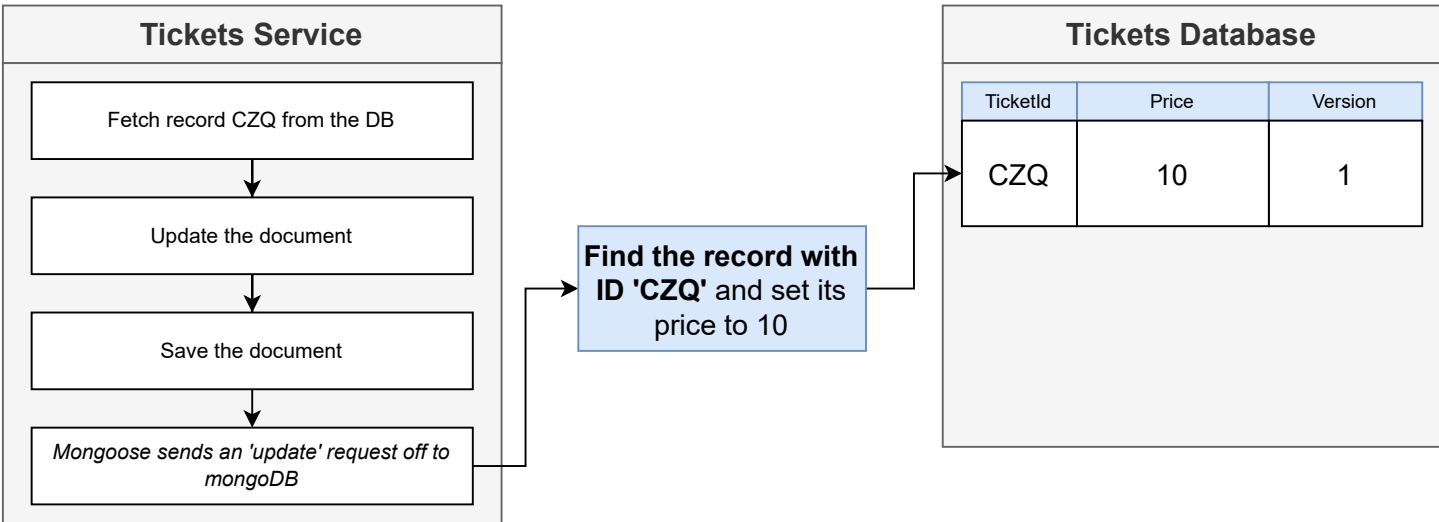
**Orders Srv (Listener) A**

**Orders Srv (Listener) B**



Text

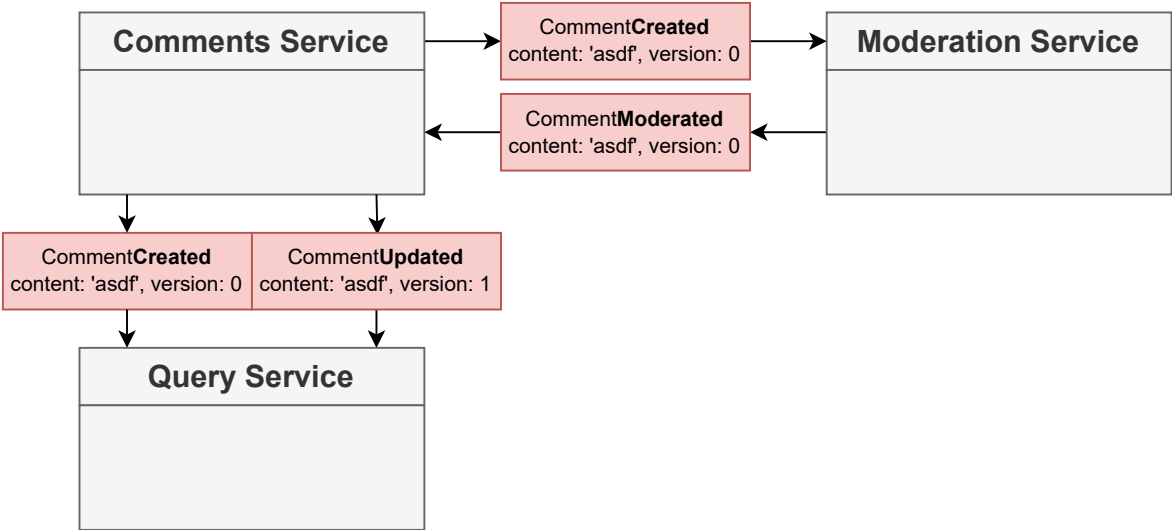
# Normal Record Updates



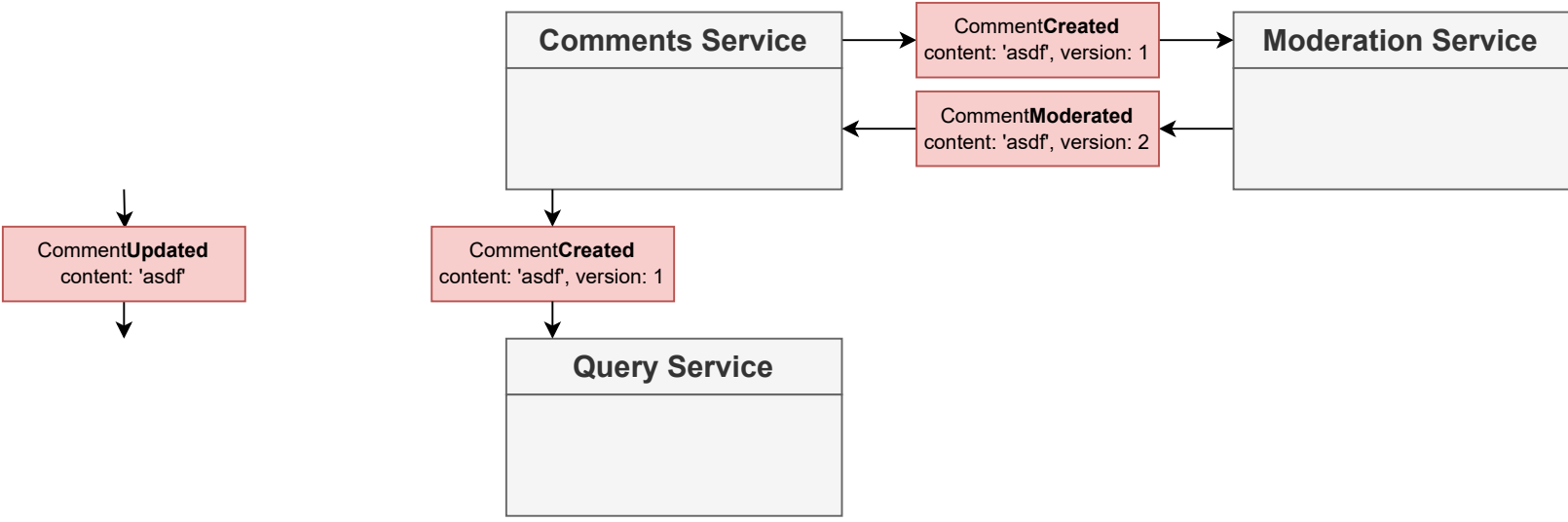
When should we increment or include the 'version' number of a record with an event?

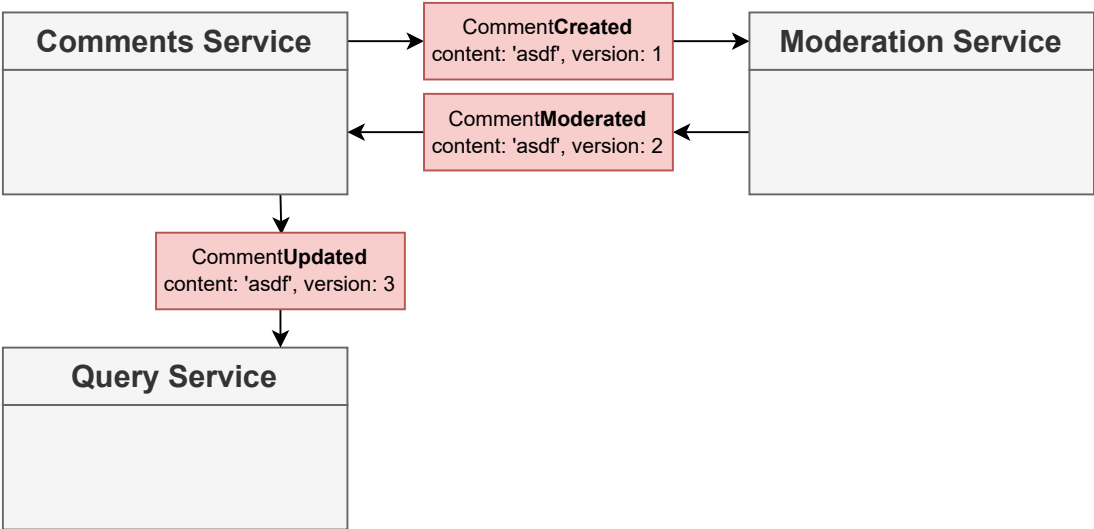


Increment the 'version' number whenever the ***primary service responsible for a record*** emits an event to describe a ***create/update/destroy*** to a record

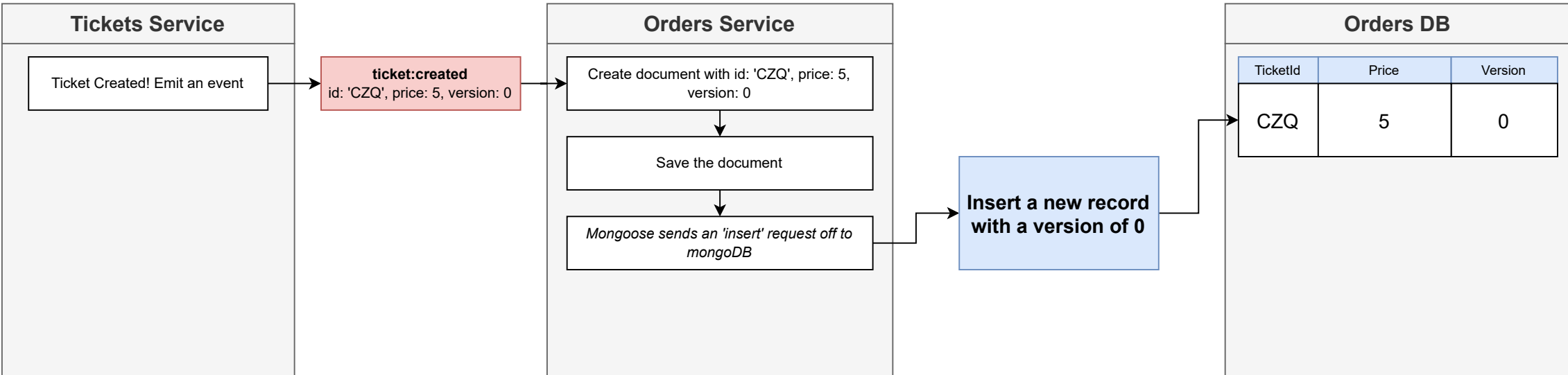




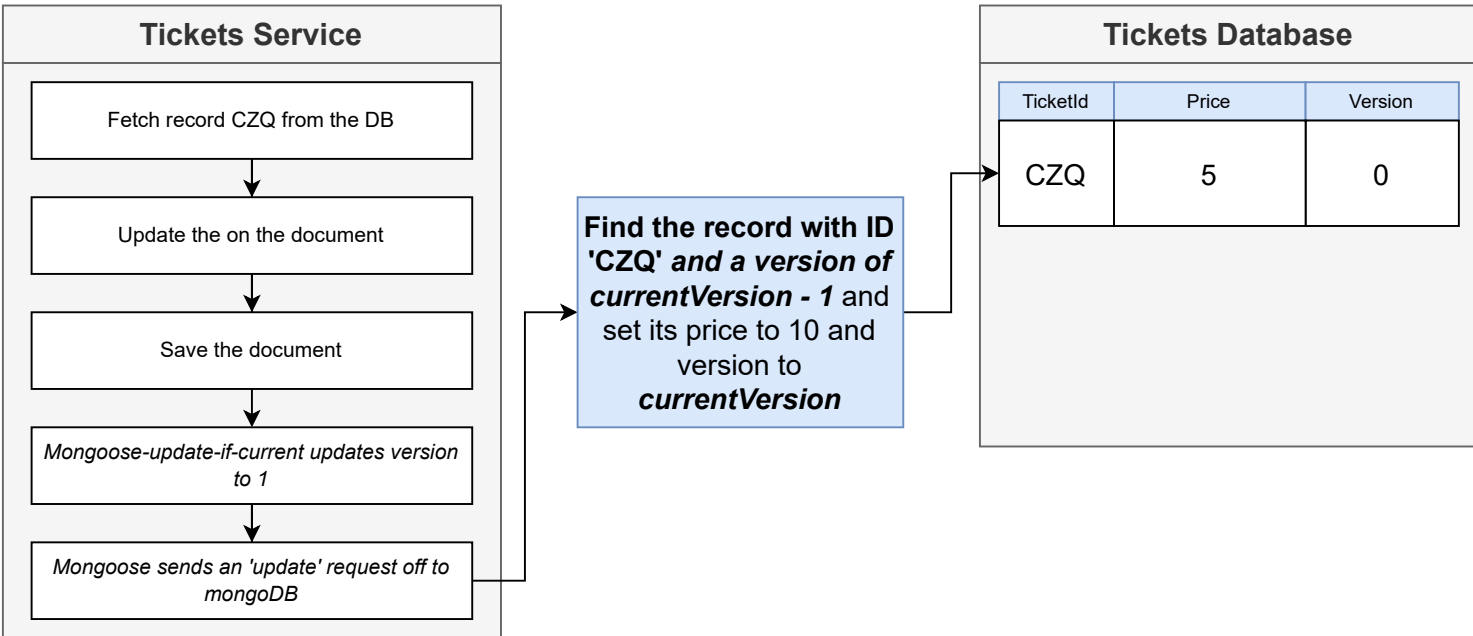




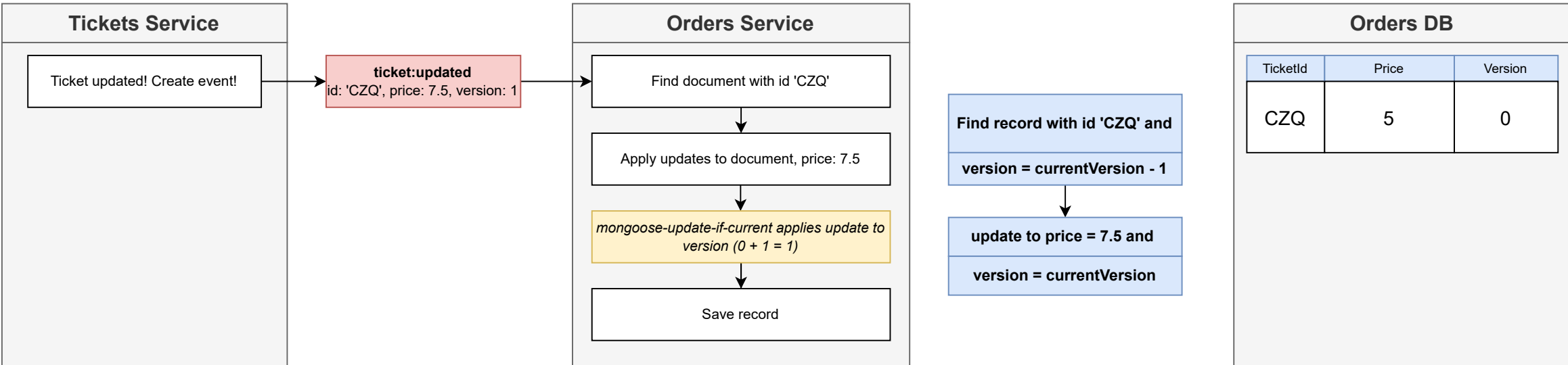
# Record Insertions



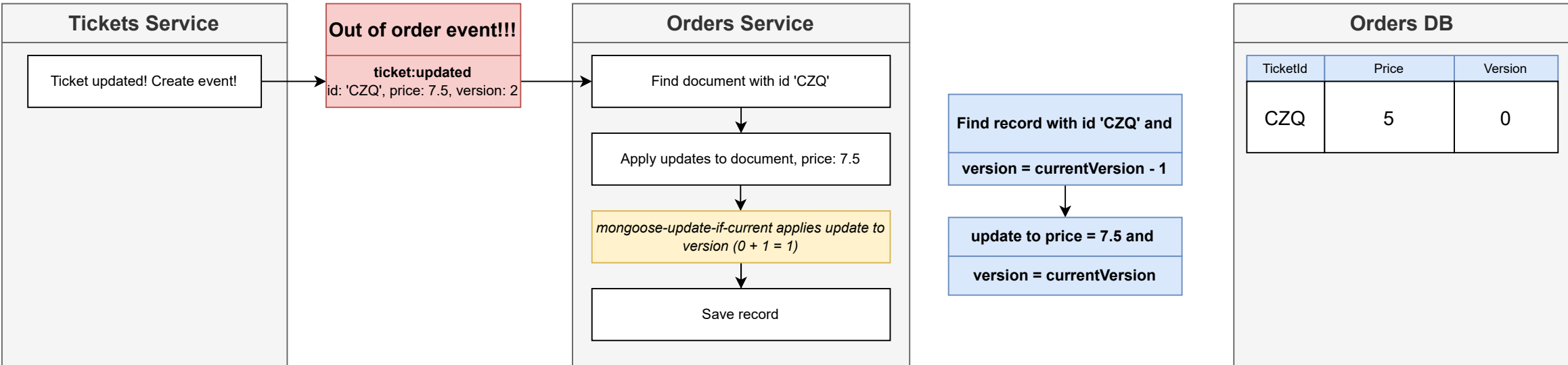
# Record Updates with Optimistic Concurrency Control



## Record Updates with *mongoose-update-if-current*



## Record Updates with *mongoose-update-if-current*



## mongoose-update-if-current

1

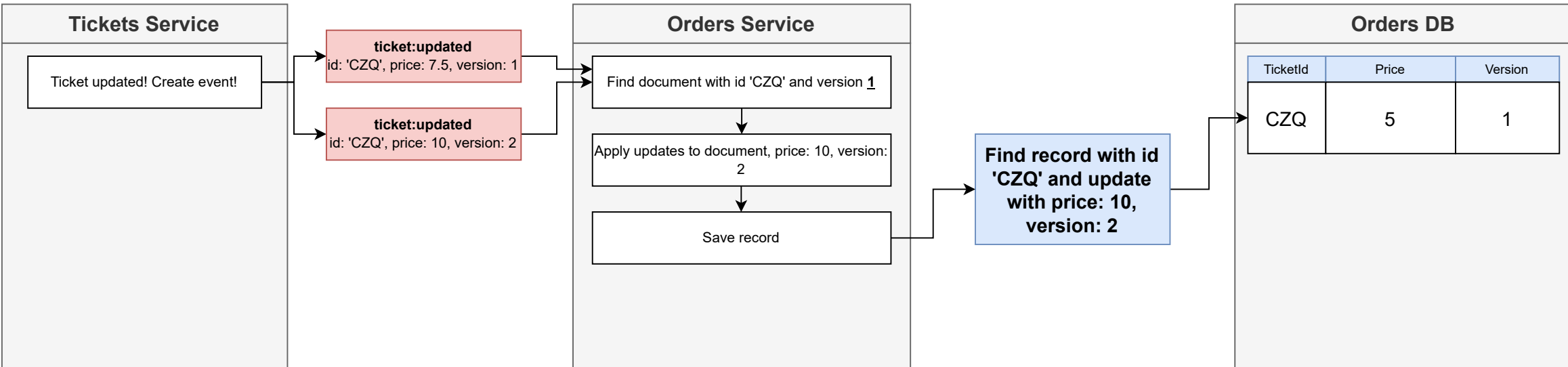
Updates the version number on records before they are saved

2

Customizes the find-and-update operation (save) to look for the correct version

This is behavior we only want for the service that owns a record. For dependent services, we are going to have to do this stuff ourselves

## Record Updates Option #1





## Orders Database

TicketId	Price	Version
CZQ	5	1

Orders Srv (Listener) A

Orders Srv (Listener) B

## Mystery Event Source!

### ticket:created

id: 'CZQ', price: 10, version: 100

### ticket:updated

id: 'CZQ', price: 10, version: 200

### ticket:updated

id: 'czq', price: 15, version: 300

## Orders Database

TicketId	Price	Version
CZQ	5	1

**Orders Srv (Listener) A**

**Orders Srv (Listener) B**

## Mystery Event Source!

### **ticket:created**

id: 'CZQ', price: 10, version: '05-01-12:00'

### **ticket:updated**

id: 'CZQ', price: 10, version: '05-02-12:00'

### **ticket:updated**

id: 'czq', price: 15, version: '05-03-12:00'

# mongoose-update-if-current

1

Updates the version number on records before they are saved

2

Customizes the find-and-update operation (save) to look for the correct version