

# Supporting Concurrency

---



**Kevin Dockx**

Architect

@KevinDockx <https://www.kevindockx.com>



# Coming Up



**Supporting concurrency in a RESTful world**

**Using ETags to support concurrency**



# Supporting Concurrency in a RESTful World

Client 1 (Kevin)

Client 2 (Sven)

API

GET api/authors/{id}



GET api/authors/{id}



PUT api/authors/{id}



PUT api/authors/{id}



# Concurrency Strategies

## **Pessimistic concurrency**

**Resource is locked**

**While it's locked, it cannot be modified  
by another client**

**This is not possible in REST**

## **Optimistic concurrency**

**Token is returned together with the  
resource**

**The update can happen as long as the  
token is still valid**

**ETags are used as validation tokens**



# Supporting Concurrency in a RESTful World

Client 1 (Kevin)

Client 2 (Sven)

API

GET api/authors/{id}

200 Ok, ETag: "123456789"

GET api/authors/{id}

200 Ok, ETag: "123456789"

PUT api/authors/{id}  
If-Match: "123456789"

200/204, ETag: "987654321"

PUT api/authors/{id}  
If-Match: "123456789"

412 Precondition failed



# Demo



## Supporting concurrency



# Summary



**Use ETags as tokens/validators for an optimistic concurrency strategy**

- Send as **If-Match** header value
- On mismatch, **412 Precondition Failed** will be returned



# The End is Nigh...



**Questions?**

**@KevinDockx** or the discussions  
tab on the course page



**Consider rating this course :-)**







@KevinDockx

