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TRACK
Living on the Edge

SESSION
GraphQL Caching on the Edge

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Max Stoiber discusses why and how to edge cache production GraphQL APIs at scale.

How to edge cache GraphQL APIs

Max Stoiber (@mxstbr)

We had an ideal use-case for caching because we had a Read-heavy GraphQL API, we can then try to cache GQL data at the edge

“Can’t I just run a GraphQL client at the edge?!”

How GraphQL clients cache

```
query getPost {  
  post(slug: "graphql-edge-caching") {  
    id  
    title  
    author {  
      id  
      name  
      avatar  
    }  
  }  
}
```



```
query getPost {  
  post(slug: "graphql-edge-caching") {  
    __typename  
    id  
    title  
    author {  
      __typename  
      id  
      name  
    }  
  }  
}
```



```

{
  "__typename": "Post",
  "id": 5,
  "title": "How to edge cache your GraphQL API",
  "author": {
    "__typename": "User",
    "id": 1,
    "name": "Max Stoiber"
  }
}

```

```

{
  "__typename": "Post",
  "id": 5,
  "title": "How to edge cache your GraphQL API",
  "author": {
    "__typename": "User",
    "id": 1,
    "name": "Max Stoiber"
  }
}

```

["Post:5", "User:1"]

```

mutation {
  editPost(input: {
    id: 5,
    title: "How to edge cache GraphQL APIs"
  }) {
    id
    title
  }
}

```

```

mutation {
  editPost(input: {
    id: 5,
    title: "How to edge cache GraphQL APIs"
  }) {
    __typename
    id
    title
  }
}

```

```

{
  "__typename": "Post",
  "id": 5,
  "title": "How to edge cache GraphQL APIs"
}

```

```
{
  "__typename": "Post",
  "id": 5,
  "title": "How to edge cache GraphQL APIs"
}
```

Invalidate cached query
results that contain "Post:5"

Where the magic ends: List invalidation

```
{
  posts {
    id
    title
  }
}
```

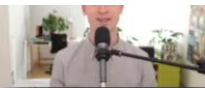
```
[{
  "__typename": "Post",
  "id": 5,
  "title": "How to edge cache GraphQL APIs"
}]
```

```
mutation createPost {
  createPost(input: { ... }) {
    id
    title
  }
}
```

```
{
  "__typename": "Post",
  "id": 6,
  "title": "..."
}
```

Our cached query result
doesn't contain "Post:6" 😞

```
{
  "__typename": "Post",
  "id": 6,
  "title": "..."
}
```



GQL clients can't automatically invalidate List cache items when new items are created, we can use manual APIs

👉 Manual invalidation

urql manual invalidation

```
cacheExchange({
  updates: {
    Mutation: {
      createPost(result, _, cache) {
        cache.invalidate('Query', 'posts');
      },
    },
  },
});
```

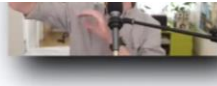


Normalized caching

```
query getPost {
  post(slug: "graphql-edge-caching") {
    id
    title
    author {
      id
      name
      avatar
    }
  }
}
```



```
{
  "__typename": "Post",
  "id": 5,
  "title": "How to edge cache your GraphQL API",
  "author": {
    "__typename": "User",
    "id": 1,
    "name": "Max Stoiber"
  }
}
```



Data

```
{
  'Post:5': {
    '__typename': 'Post',
    'id': 5,
    'title': 'How to edge cache your GraphQL API'
  },
  'User:1': {
    '__typename': 'User',
    'id': 1,
    'name': 'Max Stoiber'
  }
}
```



Relations

```
{
  'Query': {
    'post({slug:"graphql-edge-caching"})': 'Post:5'
  },
  'Post:5': {
    'author': 'User:1'
  },
  'User:1': { }
}
```



GraphQL is awesome for caching!

“Can’t I just run a GraphQL client at the edge?!”

Authorization

cache key = hash(query) + hash(token)

Global cache purging

Fastly Compute@Edge

