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The first Hub for Developers

Event Sourcing

1. What is Event Sourcing
2. persistence mechanism
3. Concurrency and distributed systems
4. Deployment

Agenda

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Event Sourcing

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Introduction

Event sourcing

is a pattern used in software development where changes to the application state are captured as a sequence of events.

These events are stored in an event store and can be replayed to reconstruct the application state at any point in time.

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Immutable Events

```
// Define events
public interface IEvent
{
    DateTime Timestamp { get; }
}
```

Implementation examples

- **AccountOpenedEvent**

- **MoneyDepositedEvent**

- **MoneyWithdrawnEvent**
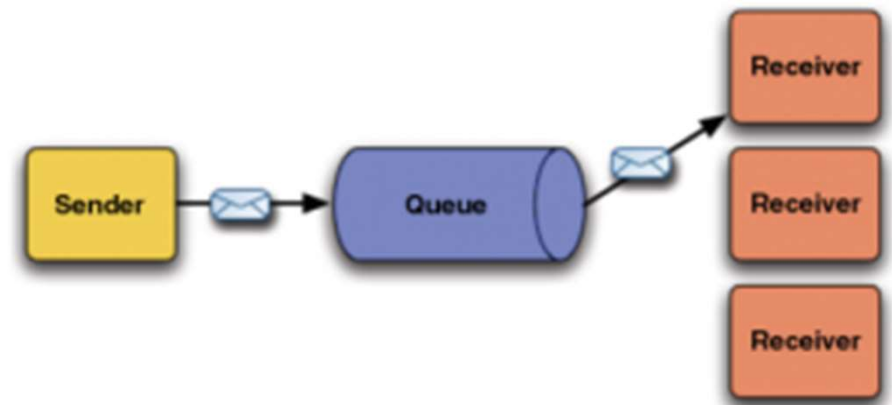
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persistence

Event store implementations include
- Event Store
- Apache Kafka
- Microsoft Azure Event Hubs
- Amazon DynamoDB Streams

Key characteristics and functionalities of an event store
- Append-only,   Schemaless
- Historical Record,   Idempotent Writes
- Event Metadata,   Event Versioning
- Querying and Projection, Scalability and Performance

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The Event store

Using docker

```
docker run -d -p 2113:2113 -p 1113:1113 --name eventstore-node
-e EVENTSTORE_ENABLE_ATOM_PUB_OVER_HTTP=true -e
EVENTSTORE_INSECURE=true eventstore/eventstore:latest
```

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Event store client

dotnet add package EventStore.Client.Grpc.Streams

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Event Store vs Kafka

Purpose

Data Model

Persistence

Scalability

Use Cases

APIs and Ecosystem

Case studies

Write events to Stream

Read events from Stream

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Thank you!

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