

Software System: Facebook

Facebook is one of the largest social media platforms, handling billions of users, messages, and interactions daily. Its architecture is designed to ensure scalability, real-time processing, and reliability.

Architecture Style: Microservices with Event-Driven and Client-Server Elements

1. Microservices Architecture

- Facebook is built on a Microservices architecture, where different features (e.g., News Feed, Messenger, Notifications, Ads, etc.) are separate services.
- These microservices communicate using APIs, allowing independent development and deployment.
- It enables scalability, as each microservice can be scaled individually based on traffic.

2. Event-Driven Architecture

- Facebook uses real-time updates for News Feed, Messenger, and Notifications.
- It relies on Apache Kafka and GraphQL subscriptions for processing live events.
- This ensures instant updates when a friend likes or comments on a post.

3. Client-Server Model

- Users interact with Facebook via a web browser or mobile app (client).
- The frontend sends requests to Facebook's backend servers via an API Gateway.
- The backend processes these requests and interacts with databases to fetch/store data.

