Netflix is a global streaming giant that delivers high-quality video content to millions of users worldwide. To achieve this, they rely on a robust and scalable architecture. Here's a simplified breakdown:

**1. Client:**

* This is where you interact with Netflix – your **TV**, **smartphone**, **laptop**, or **game console**.
* The client sends requests to the Netflix servers for things like browsing titles, playing videos, and managing your account.

**2. Backend:**

* This is the "brain" of Netflix, running on **Amazon Web Services (AWS)**.
* It handles tasks like:
  + **Personalization:** Recommending shows and movies based on your viewing history.
  + **Content Management:** Adding new titles, managing metadata (descriptions, actors, etc.), and preparing videos for streaming.
  + **User Management:** Handling subscriptions, payments, and account information.
  + **Traffic Management:** Directing traffic to the nearest server for faster delivery.

**3. Content Delivery Network (CDN):**

* This is a vast network of servers strategically placed around the globe.
* Netflix uses its own CDN called **Open Connect**.
* It stores copies of videos closer to users, allowing for faster streaming speeds and reduced buffering.

**How it Works:**

1. You use your device (client) to request a movie on Netflix.
2. The request travels to the nearest Netflix server (backend).
3. The server processes the request, checks your subscription, and determines the best video quality for your internet speed.
4. The server directs your device to the nearest Open Connect server that has the requested video.
5. The video starts streaming directly from the Open Connect server to your device.

**Key Concepts:**

* **Microservices:** Netflix's backend is divided into many small, independent services. This makes the system more flexible and easier to scale.
* **Scalability:** Netflix's architecture can handle massive traffic spikes, such as during popular show releases.
* **Fault Tolerance:** If one part of the system fails, other parts can continue to function, minimizing disruptions for users.

**In essence, Netflix's architecture is a complex but efficient system designed to deliver a seamless streaming experience to millions of users worldwide.**

sequenceDiagram

participant Client as Your Device (Client)

participant NetflixServer as Netflix Server (Backend)

participant OpenConnect as Open Connect Server

Client->>NetflixServer: Request a movie

NetflixServer->>NetflixServer: Process request<br>Check subscription<br>Determine video quality

NetflixServer->>Client: Direct to nearest Open Connect server

Client->>OpenConnect: Request video stream

OpenConnect-->>Client: Stream video