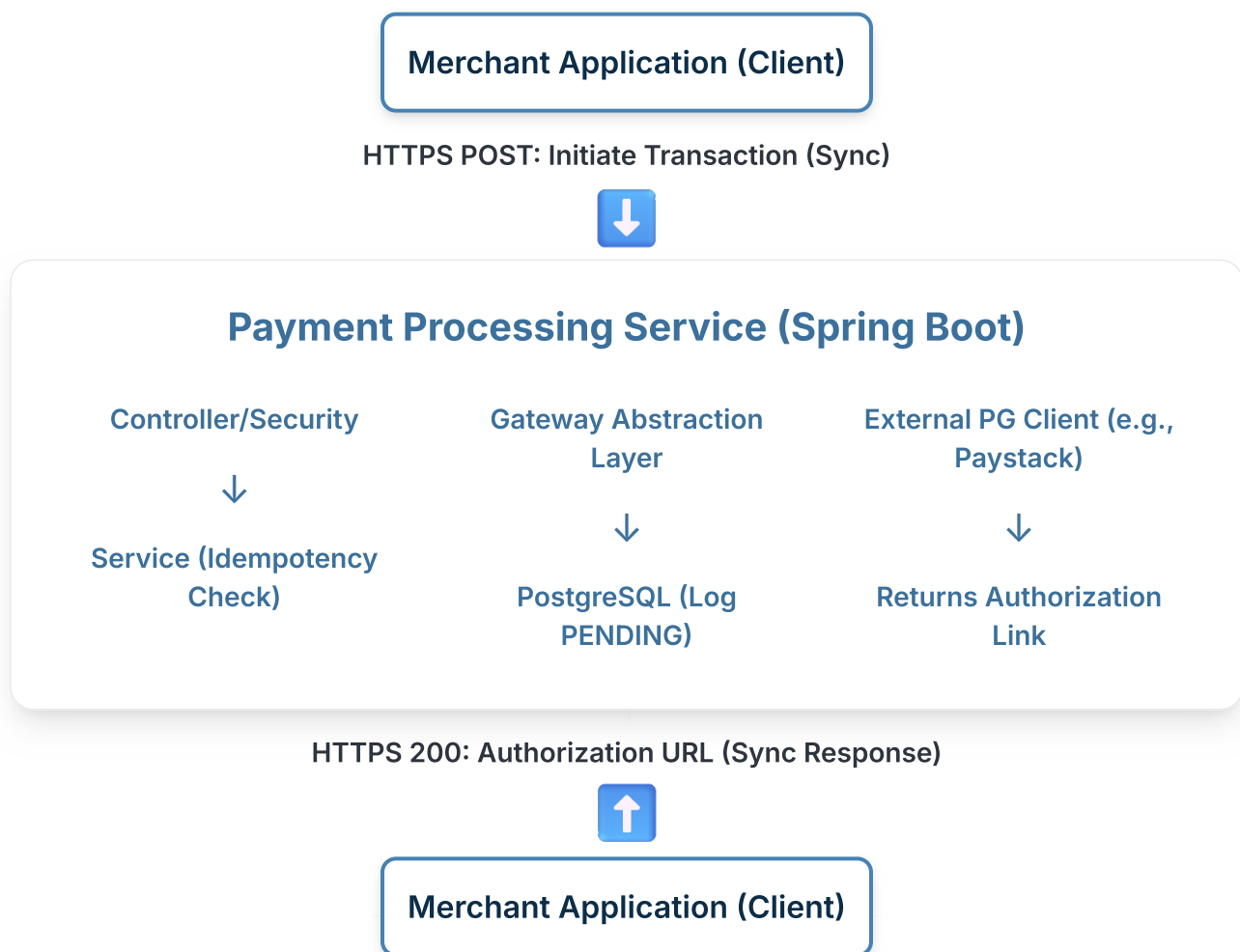# Simple Payment Processing Service (PPS) - Transaction Flow

Visualization of the synchronous transaction initiation and asynchronous webhook processing flows.

1. Transaction Initiation (Synchronous)

Merchant Application (Client)

HTTPS POST: Initiate Transaction (Sync)

⬇️

Payment Processing Service (Spring Boot)

Controller/Security	Gateway Abstraction Layer	External PG Client (e.g., Paystack)
↓	↓	↓
Service (Idempotency Check)	PostgreSQL (Log PENDING)	Returns Authorization Link

HTTPS 200: Authorization URL (Sync Response)

⬆️

Merchant Application (Client)

2. Asynchronous Webhook Flow

External PG Status Update	Merchant Notification

External PG ➡️ **PPS Webhook Controller**

↓ (Saves Raw Event)

Webhook Event Listener (Async)

↓ (Verifies & Processes)

Updates Transaction Status (SUCCESS/FAILED)

➡️

Internal Logic Trigger

PPS Webhook Outbound Service

↓ (Reliable Retry Logic)

HTTPS POST to Merchant's Callback URL

↓

Merchant App Acknowledges (200 OK)