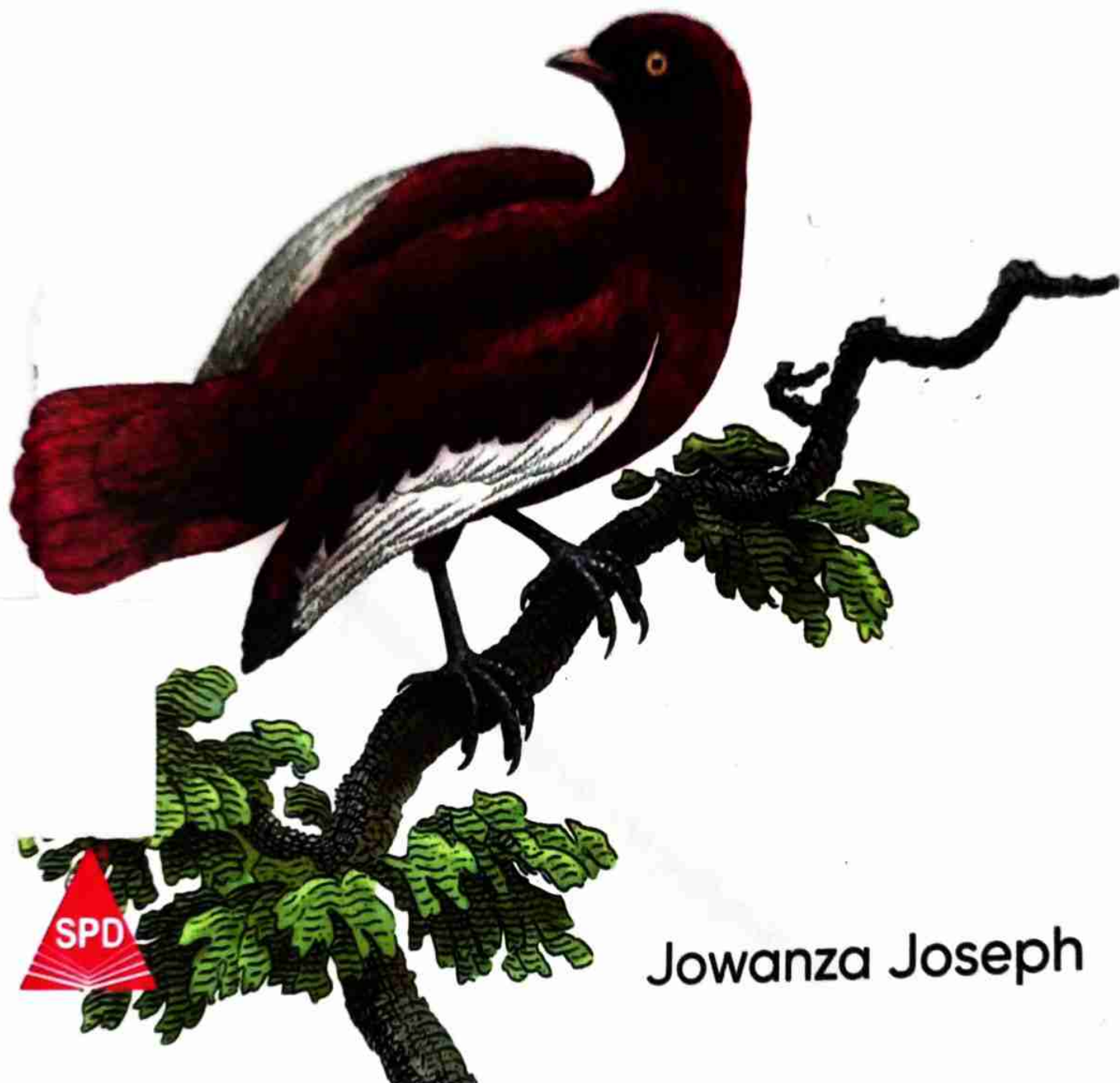


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Mastering Apache Pulsar

Cloud Native Event Streaming at Scale



Jowanza Joseph

Mastering Apache Pulsar

by Jowanza Joseph

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Preface

Why I Wrote This Book

Throughout my career, I've been tasked with learning complex systems as part of my job. Early on I had to learn how to write MapReduce jobs and understand the intricacies of the Hadoop Distributed File System (HDFS) and the Hadoop ecosystem; years later I learned early versions of Apache Spark. Today I'm still tasked with learning about complex systems for my job. Over the years, well-written technical blog posts, articles, and books have been instrumental in my ability to learn and to apply what I learn at work. With this book, I sought to create a resource that would provide a thorough explanation of the value of Apache Pulsar which could be long-lasting and fun.

Along with Apache Pulsar as a technology with its trade-offs and consideration is a broader ecosystem and ideas of event streaming. This book provides a nurturing environment to work through the event streams paradigm and provide the reader with context and a road map for adopting event streaming architectures.

Who This Book Is For

This book is targeted at two audiences: those who want to learn about Apache Pulsar and those who are curious about event streaming architectures. For the first audience, this book provides a thorough overview of Apache Pulsar, all of its components, and code samples for getting started with Pulsar and its ecosystem. For the second audience, it serves as a primer for adding Apache Pulsar, Apache Kafka, or another event streaming technology to your architecture.

How I Organized This Book

I spend Chapters 1 through 3 explaining the motivation for Apache Pulsar and the rise of event streams, as well as provide the reader with

Chapter 1. The Value of Real-Time Messaging

Real-time messaging systems power many of the systems we rely on today for banking, food, transportation, internet service, and communication, among others. They provide the infrastructure to make many of the daily interactions we have with these systems seem like magic. Apache Pulsar is one of these real-time messaging systems, and throughout this book, we'll dig into what makes it unique. But first we'll discuss the motivation for building systems like Pulsar so that you have some context for why we would take on the complexity of a real-time system with all of its moving parts.

Data in Motion

When I was 11 years old, I started a small business selling trading cards in my school cafeteria. The business model was simple: I bought packs of Pokémon cards, figured out which ones were the most valuable through cross-checking on internet forums, and then attempted to sell them to other kids during lunch break. What started as an exciting and profitable venture soon turned into a crowded space with many other children entering the market and trying to make some spending money of their own. My daily take-home profit dropped from about \$1 to 25 cents, and I thought about quitting the business. I talked to my stepfather about it one evening over dinner, looking for advice from someone who ran a small business too (although one that was much more profitable than mine). After listening to me intently, he absorbed what I said and took a deep breath. He explained that I needed a competitive advantage, something that would make me stick out in a space that was crowded with many other kids. I asked him what kinds of things would give me a competitive advantage, and he chuckled. He told me I needed to figure it out myself, and that when I did, I should come back and talk to him.