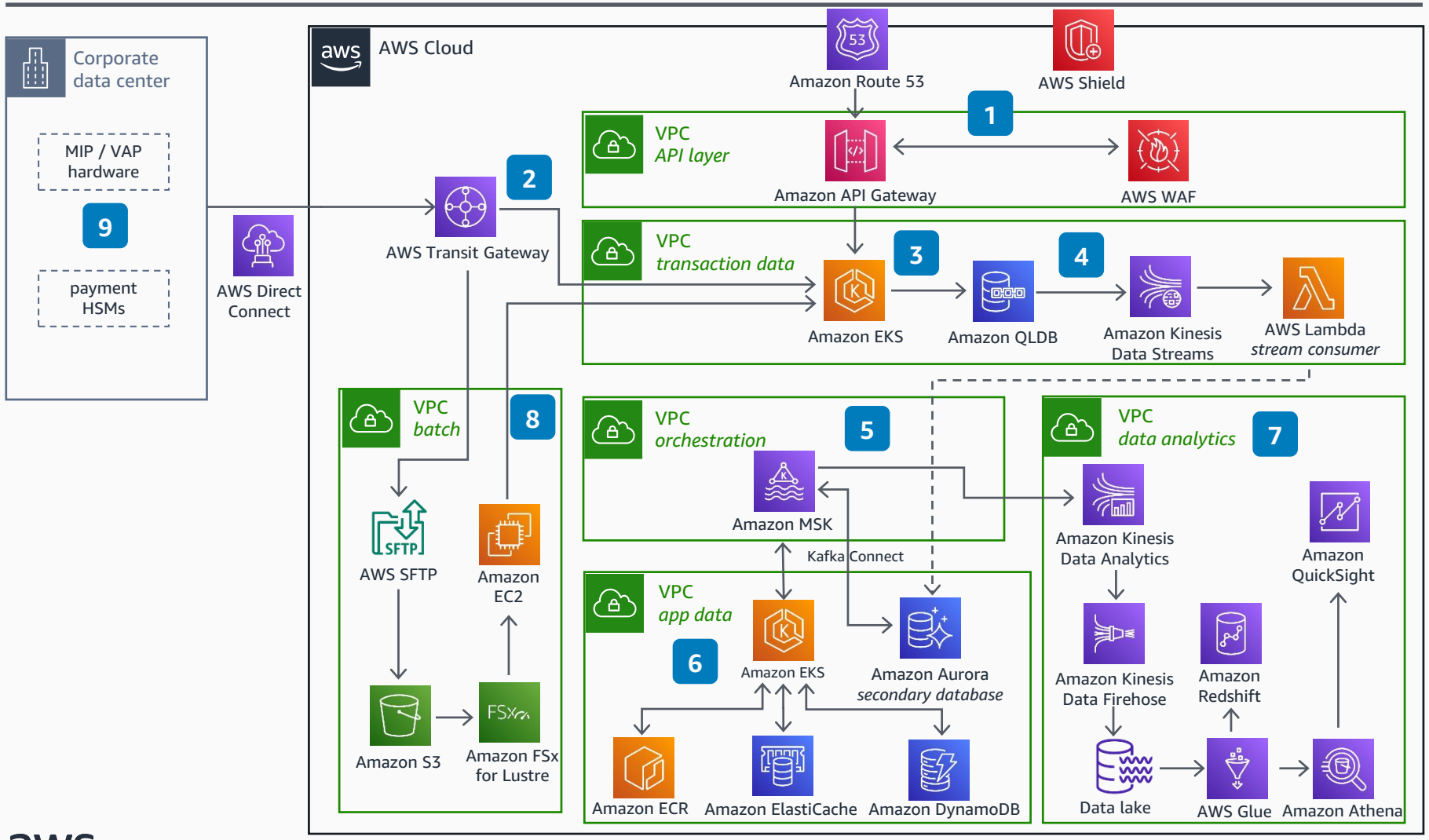
Guidance for Building a Core Banking Platform Using Amazon QLDB

This reference architecture helps you build a core banking platform on Amazon Web Services (AWS) by using native AWS services and Amazon Quantum Ledger Database (Amazon QLDB).



1. The API layer interfaces the core platform with the upstream applications by creating and managing accounts.
2. Real-time transactions come in from the payment networks.
3. The transaction data virtual private cloud (VPC) registers all transactions and hosts microservices to manage the ledger database.
4. Data is replicated in real time from **Amazon QLDB** to a secondary database that performs better with query patterns such as scanning or searching data.
5. Data from the secondary database is captured in **Amazon Managed Streaming for Apache Kafka** (Amazon MSK) using Kafka Connect to independently build and scale downstream applications.
6. Downstream applications and microservices consume from **Amazon MSK** and scale independently of each other.
7. Data from **Amazon MSK** is consumed to perform both real-time and batch data analytics.
8. Batch files come in from the acquiring banks and are processed by the issuing bank. Transaction values are updated in the ledger database.
9. The issuing bank's data center is connected to the AWS environment using **AWS Direct Connect**, which offers reliable connectivity to the network routers and payment hardware security module (HSM) devices.

Reviewed for technical accuracy September 13, 2022

AWS Reference Architecture