1. **VPC and Self-Managed Kafka Setup**: Set up a Virtual Private Cloud (VPC) and a self-managed Kafka setup on one EC2 instance. The Kafka setup was a single node cluster. This setup provides a secure and scalable solution for real-time data streaming.
2. **Kinesis Setup**: Kinesis was set up in two modes: On-Demand and Provisioned. Kinesis On-Demand is a flexible option that automatically scales to match the throughput of your data and requires no capacity planning. Kinesis Provisioned provides a dedicated throughput capacity and allows for cost optimization.
3. **Java Microservice EC2 Deployments**: This task was performed for various use cases, with the same setup repeated four times. It involved setting up an EC2 instance for the deployment of Java microservices. This included configuring the EC2 instance to meet the requirements of the Java microservices, and then deploying the JAR files to the instance. This setup allows for the efficient running and management of the Java microservices.
4. **Confluent Kafka Setup**: This task involved setting up Confluent Kafka on an EC2 server. The setup was done following the official Confluent documentation. This setup was specifically for the BOPIS (Buy Online, Pick-up In Store) application. Confluent Kafka provides a robust and scalable platform for handling real-time data feeds in a fault-tolerant manner.
5. **RDS Setup for the BOPIS App**: This task involved setting up Amazon RDS for the BOPIS application. Amazon RDS provides cost-efficient and resizable capacity while automating time-consuming administration tasks such as hardware provisioning, database setup, patching, and backups.
6. **Redis Cache Setup using Amazon ElastiCache**: Set up a Redis cache using Amazon ElastiCache. Amazon ElastiCache improves the performance of web applications by allowing you to retrieve information from fast, managed, in-memory data stores.