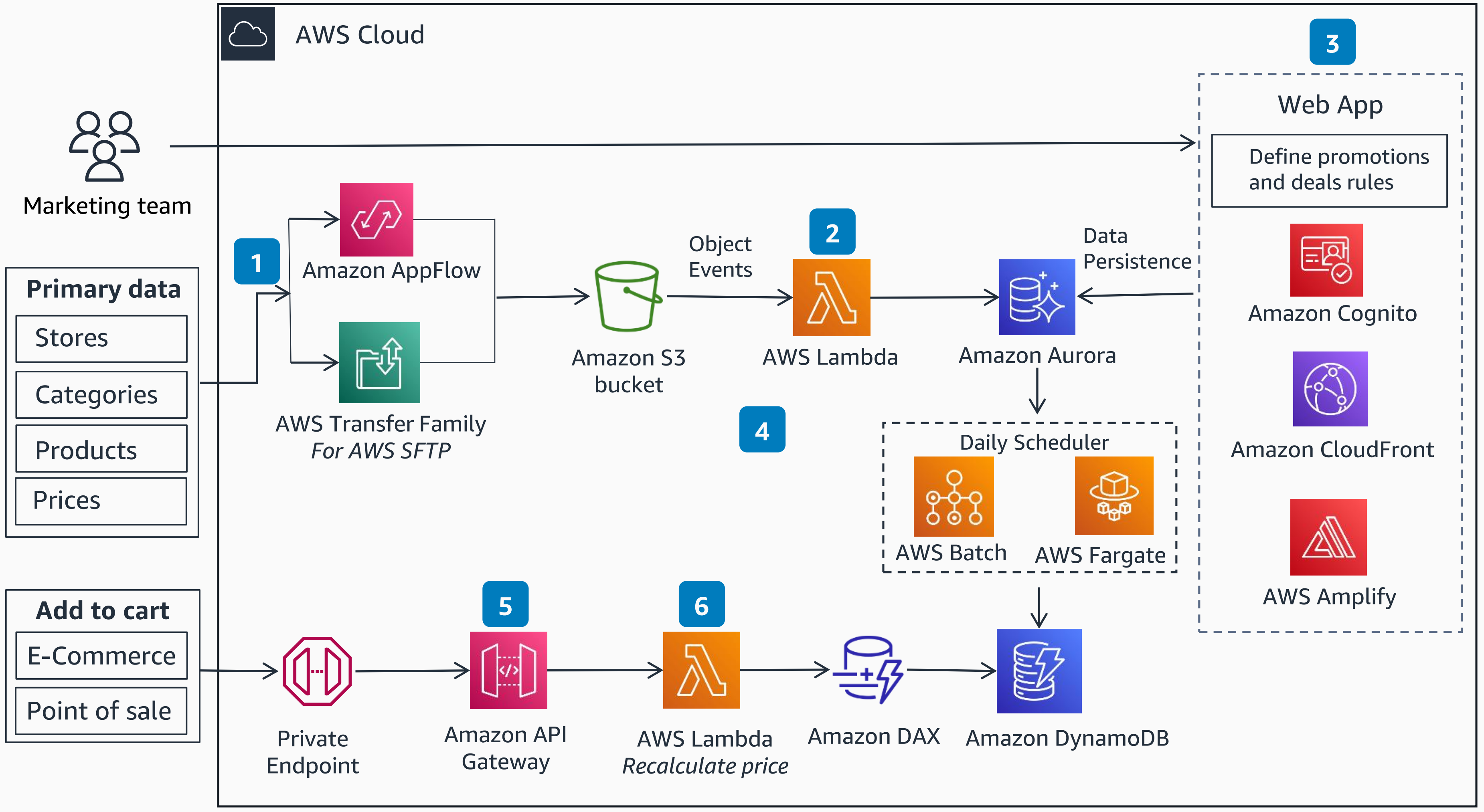
Guidance for Dynamic Price and Promotions on AWS

The pricing engine in this architecture prices the contents of an online or in-store shopping cart based on set rules, allowing for complex promotions, deals, and dynamic pricing.



1. The pricing engine relies on primary data from systems such as SAP, Product Information Management System (PIMS), or Master Data Management (MDM). **Amazon AppFlow** is used for turn-key integrations with systems such as SAP and systems that are limited to file-based integrations. **AWS Transfer Family** manages secure file transfers, such as secure file transfer protocol (SFTP) jobs.

2. Primary data from **Amazon Simple Storage Service (Amazon S3)** is batch-ingested into a relational database management system (RDBMS) and hosted in **Amazon Aurora** using **AWS Lambda**.

3. The Marketing team uses Web App to create promotions and deals that are stored in **Aurora**. Web App is a scalable, secure, and serverless front-end application, created with **AWS Amplify** for easy code development, **Amazon Cognito** for identity management, and **Amazon CloudFront** for content distribution.

4. **AWS Batch** and **AWS Fargate** serverless runtime processes complex promotions, deals, and dynamic pricing data at a given scheduled time, such as the end of the day. These services store eligible records in **Amazon DynamoDB**.

5. A customer facing commerce system, such as e-Commerce or point of sale, requests the Price Engine API through an **Amazon API Gateway** private endpoint on every "Add to cart" event to re-calculate the price based on configured promotions and deals.

6. **Lambda** calculates the price of respective products from the cart, based on rule records defined in **DynamoDB**. **Amazon DynamoDB Accelerator (DAX)** in-memory cache reduces read latency from **DynamoDB**, which also helps reduce overall API response time to less than a second.

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AWS Reference Architecture