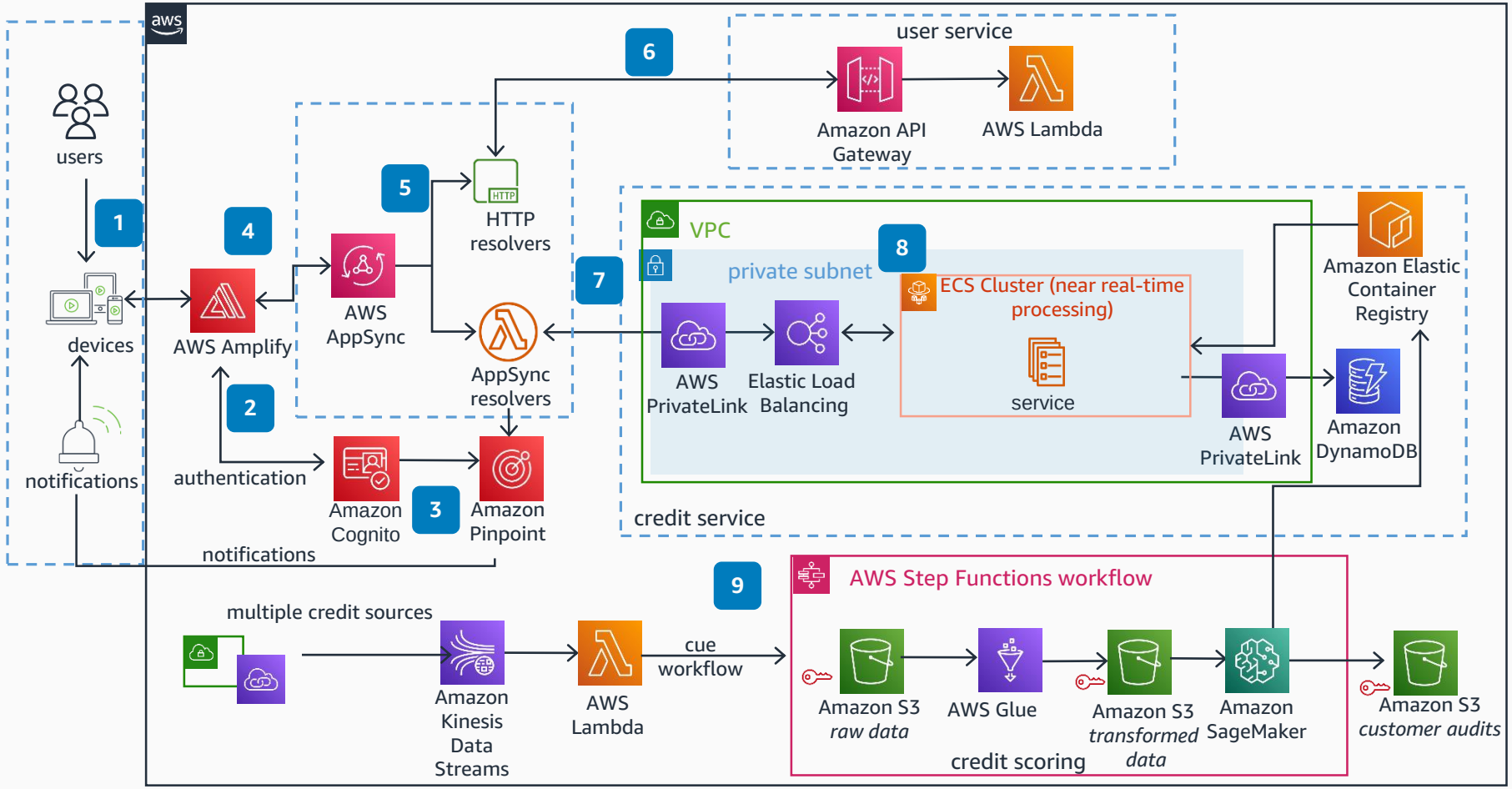
Guidance for Credit Decisioning Using Primary and Alternative Data on AWS

Use this high level reference architecture to build a Buy Now Pay Later (BNPL) platform on AWS with near real-time lending decisions.



1. Customer selects an item for purchase and prepares to check out.
2. The request is routed to a separate page which takes the user through the BNPL flow. This web page can be built using **AWS Amplify**, which is tightly integrated with **Amazon Cognito** for new customers to sign up, and existing customers to sign in.
3. New authenticated customers are verified by sending a notification to their devices using **Amazon Pinpoint**.
4. Authenticated clients make API calls to **AWS AppSync** using valid JWT tokens generated by **Amazon Cognito**.
5. **AWS AppSync** uses resolvers to make direct calls to different microservices. HTTP resolvers connect to REST endpoints of the user service. An **AWS Lambda** resolver directs calls to the credit service in a virtual private cloud (VPC).
6. The communication between the resolvers and the HTTP endpoints are protected with temporary **AWS Identity and Access Management** (IAM) credentials based on assumed IAM roles. The JSON Web Token (JWT) specific to the authenticated user is also forwarded to each microservice.
7. A **Lambda** function is invoked to access the private service hosted in a VPC through **AWS PrivateLink**. **PrivateLink** provides private connectivity between the credit service VPC and **Lambda** on the private AWS network. All services are secured in a way that only the main **AWS AppSync** API is granted access.
8. The credit service is hosted in **AWS Fargate** containers in a private VPC, and payment information is persisted in **Amazon DynamoDB**.
9. Customer requests are evaluated against their pseudo credit rating using a service from the **Amazon SageMaker** elastic inference and provided a near real-time decision.

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AWS Reference Architecture