aws

Architecture Diagrams

Serverless Web App Real-Time Data Broadcasting

Serverless Web App Real-Time Data Broadcasting: Architecture Diagrams

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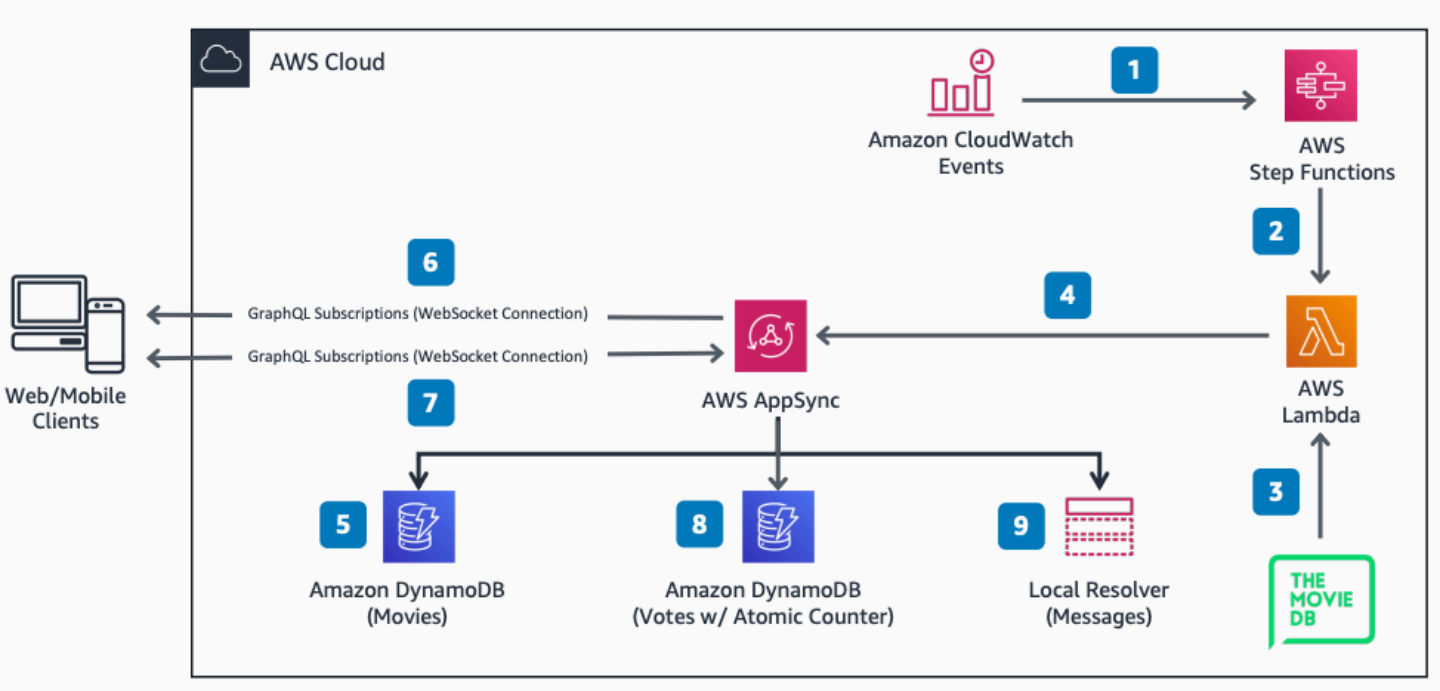
This architecture shows how to create a movie voting application using AWS AppSync, AWS Lambda, AWS Step Functions, and Amazon DynamoDB. You can use backend and client-facing real-time broadcasting with managed GraphQL subscriptions over WebSockets.

Serverless Web App Real-Time Data Broadcasting



The following steps describe the architecture:

1. Amazon CloudWatch Events initiates a workflow in Step Functions every 60 seconds.
2. Step Functions triggers Lambda every 10 seconds.
3. Lambda calls The Movie DB API to retrieve metadata for a single random movie from the most popular movies list.
4. Lambda updates the Movie table, zeroes current votes, and upvotes the leaderboard in the Votes table through GraphQL mutations to AppSync.
5. AppSync updates the Movie table in DynamoDB with the single current movie retrieved from Lambda.

6. All connected clients subscribed to the backend mutation see the same current movie poster and synopsis on screen through the broadcast.
7. Clients vote on the current movie during a 10-second window, and can send and receive chat messages in a public chatroom.
8. Lambda updates the leaderboard and client movie votes through AppSync mutations.
9. The public chatroom displays current messages on a pub/sub channel through Local Resolver. Messages are not persisted on backend storage, and only new messages are displayed.

Further reading

For additional information, refer to the following resources:

- AWS Architecture Icons
- AWS Architecture Center
- AWS Well-Architected
- AWS AppSync Real-Time Reference Architecture on GitHub

Diagram history

To be notified about updates to this reference architecture diagram, subscribe to the RSS feed.

Change	Description	Date
Initial publication	Reference architecture diagram first published.	March 24, 2021

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