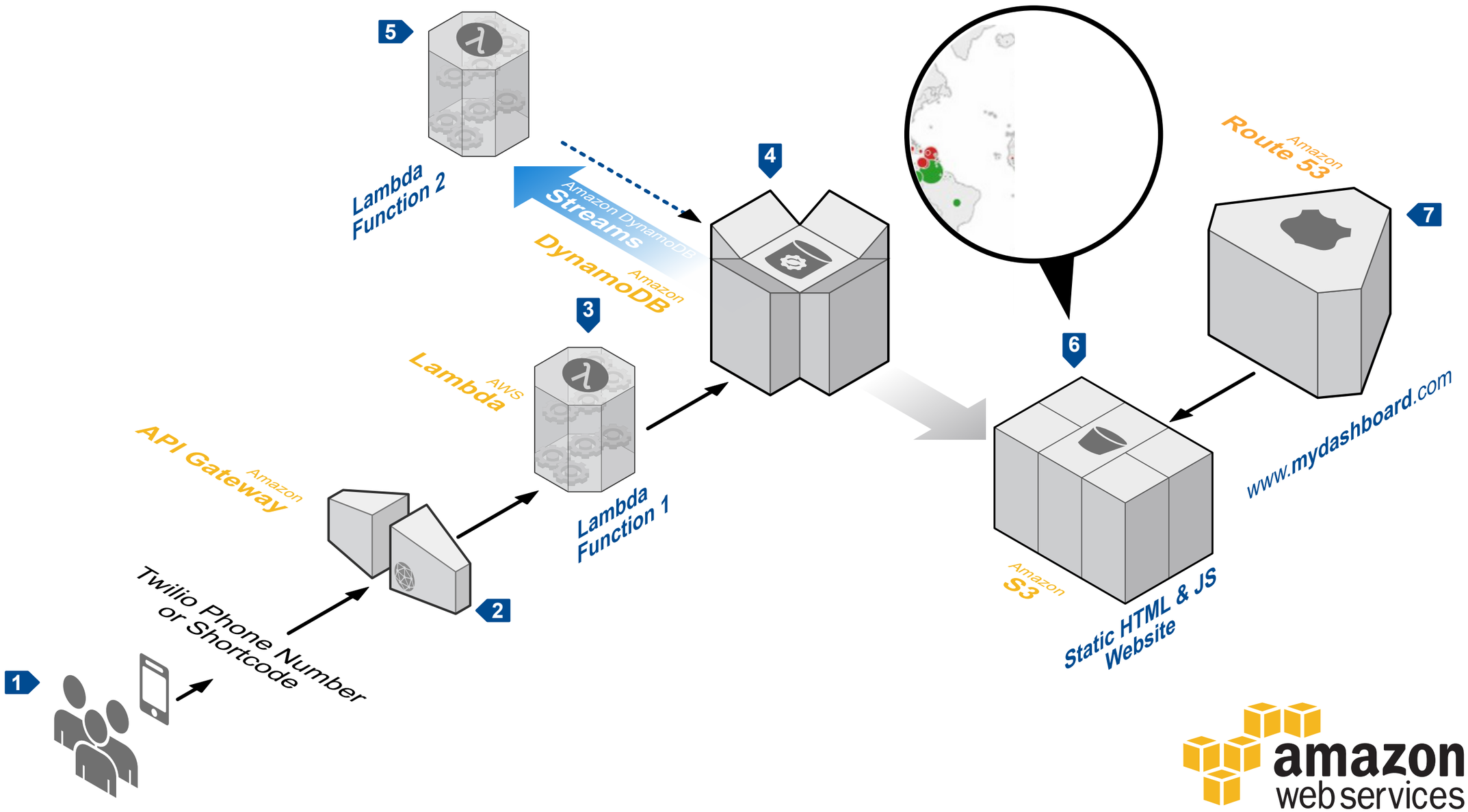
AWS Reference Architectures

- Amazon API Gateway
- AWS Lambda
- Amazon DynamoDB
- Amazon S3
- Amazon Route 53

AWS LAMBDA: REAL-TIME VOTING APPLICATION

Consider a dynamic web application that receives votes in real-time. Traditionally, architecting such applications meant building out your infrastructure to support both "spiky" and sustained usage over a finite amount of time. In most cases, this required your operations team to overprovision resources, leading to waste outside of high-volume voting periods.

By combining AWS Lambda with other serverless AWS services such as Amazon API Gateway, you can build a powerful, highly available web application that automatically scales up and down to handle large amounts of concurrent votes - all with zero administrative effort required. You can also store and analyze your data in fault-tolerant services like Amazon DynamoDB and Amazon Simple Storage Service.



System Overview

1 Users text a vote to a phone number or shortcode provided by a third party like Twilio.

2 The third party is configured to send the content of the message to and endpoint created by **Amazon API Gateway**, which then forwards

3 the response to a function built in **AWS Lambda**. This function extracts the vote from the message content and writes the result and any

4 metadata into a table in **Amazon DynamoDB**. This table has DynamoDB Streams enabled, which allows you to track changes to your tables on a rolling basis.

5 Upon update, DynamoDB Streams notifies a second AWS Lambda function, which tallies the votes and writes them back to a second aggregate DynamoDB table that only stores the sum of the votes for each category.

6 A dashboard to display a summary of votes is created using HTML and JavaScript, and hosted as a static website in **Amazon Simple Storage Service (Amazon S3)**. This page uses the AWS Javascript SDK to query the aggregate DynamoDB table and display the voting results in real-time.

7 Finally, **Amazon Route 53** is used as a DNS provider to create a hosted zone pointing a custom domain name to the Amazon S3 bucket.