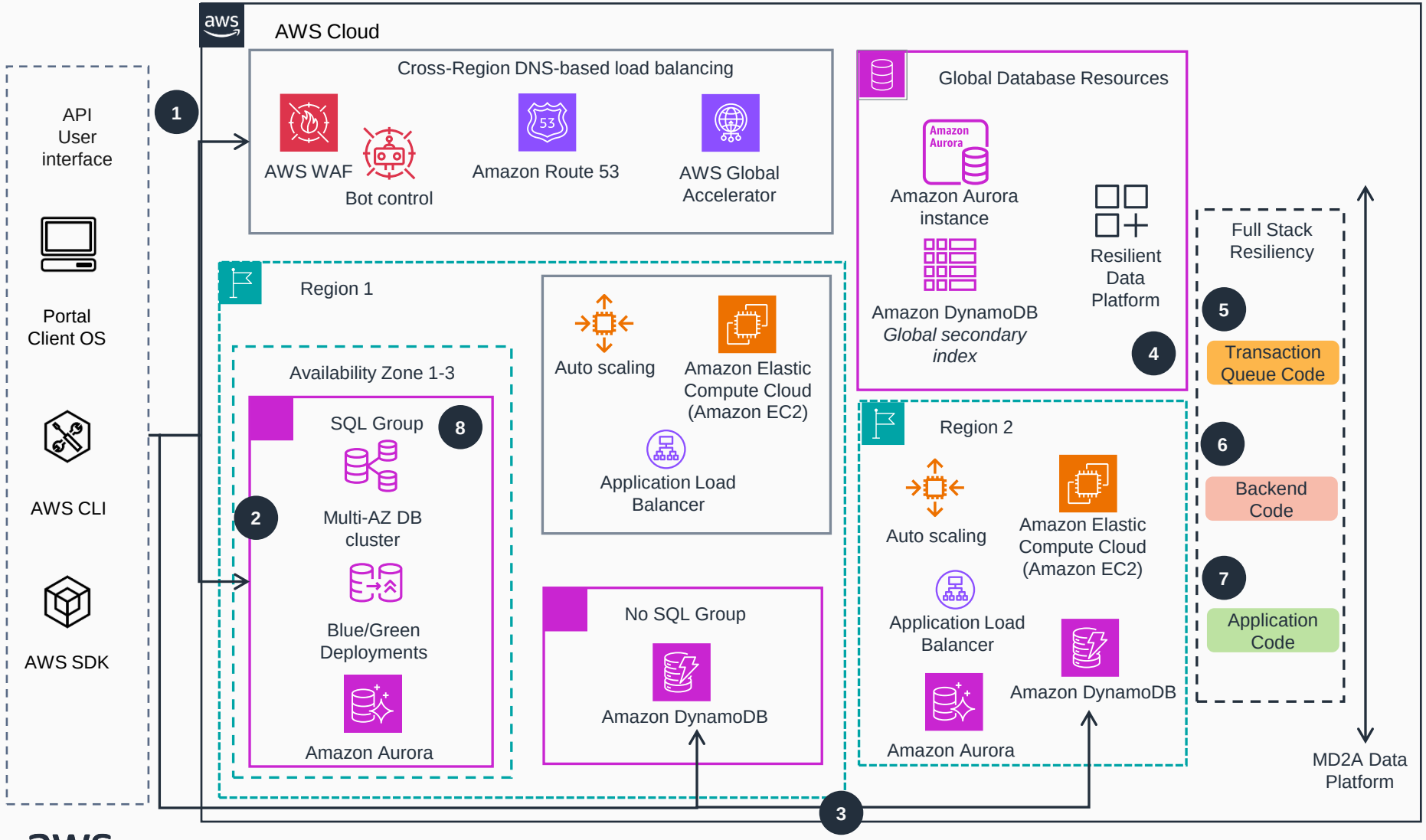
Guidance for Maximum Data Availability Architecture on AWS

This architecture diagram shows a recommended approach to improve resilience by introducing a Maximum Data Availability Architecture (MD2A). It uses Amazon Aurora and Amazon Relational Database Service (Amazon RDS), but can be extended to include other AWS data services.



1. A consumer or API accesses the application, protected by **AWS WAF** and **AWS WAF** Bot Control rules.
2. **Amazon Aurora** is deployed in multiple Availability Zones (Multi-AZ) or configured with an Amazon Aurora Global Database.
3. **Amazon DynamoDB** provides a global table, replicated between two AWS Regions.
4. The resilient data platform extends up the application stack. To use this resilient data platform, the application code must implement a capable and resilient connection pool.
5. The "*Transaction Queue Code*" will automatically detect **Aurora** availability changes and process all cached transactions accordingly.
6. The Maximum Data Availability Architecture (MD2A) Data Platform's "*Backend code*" intelligently redirects any failing transactions and stores them in the **DynamoDB** global table.
7. The application code includes a segregated data access layer in the "*Application Code*" that isolates the application logic from the specifics of the various data sources.
8. **Aurora** can be patched, upgraded, or completely rebuilt without causing application downtime or transactions loss.

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AWS Reference Architecture