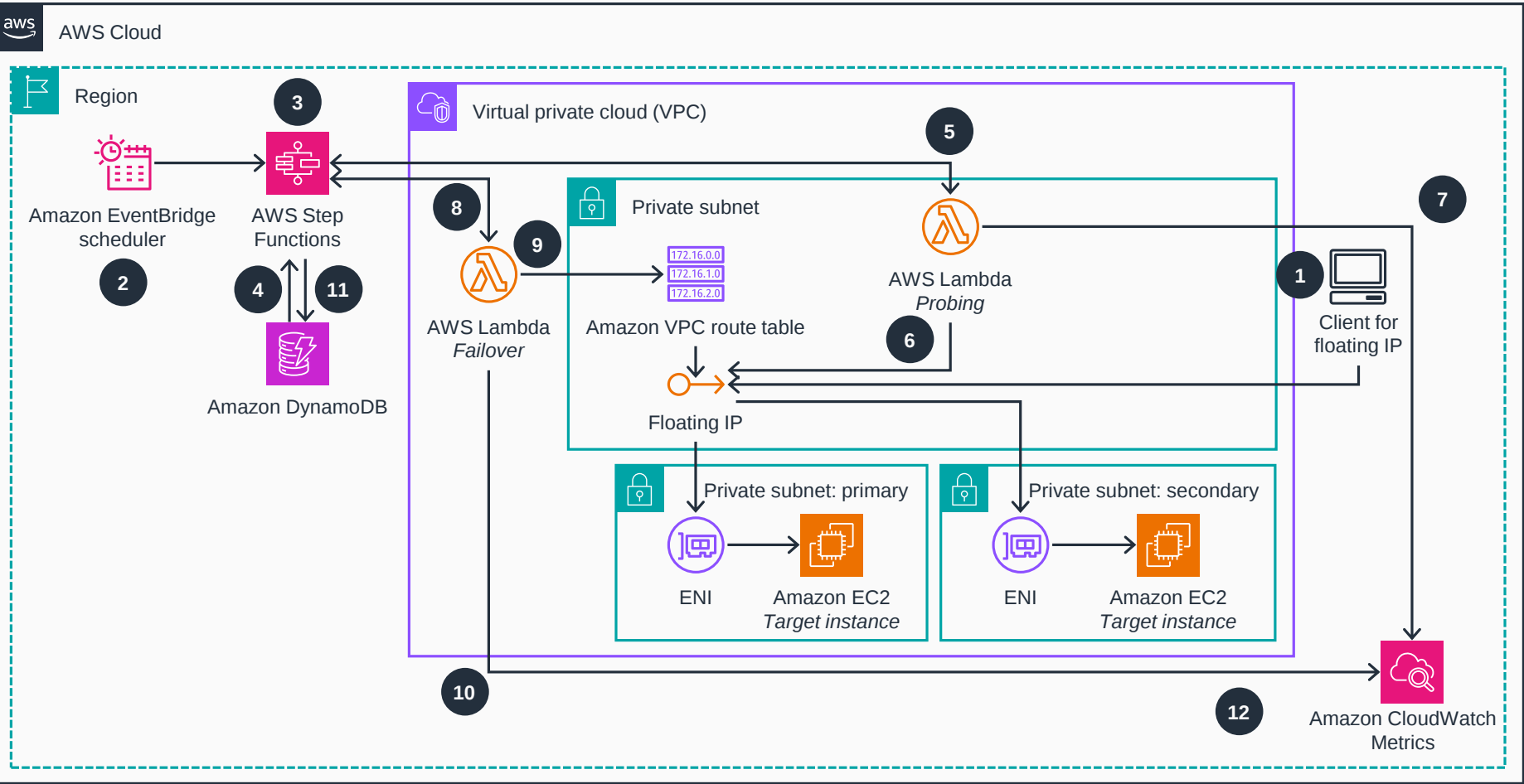


Guidance for Implementing Floating IP Addresses with Failover Capabilities on AWS

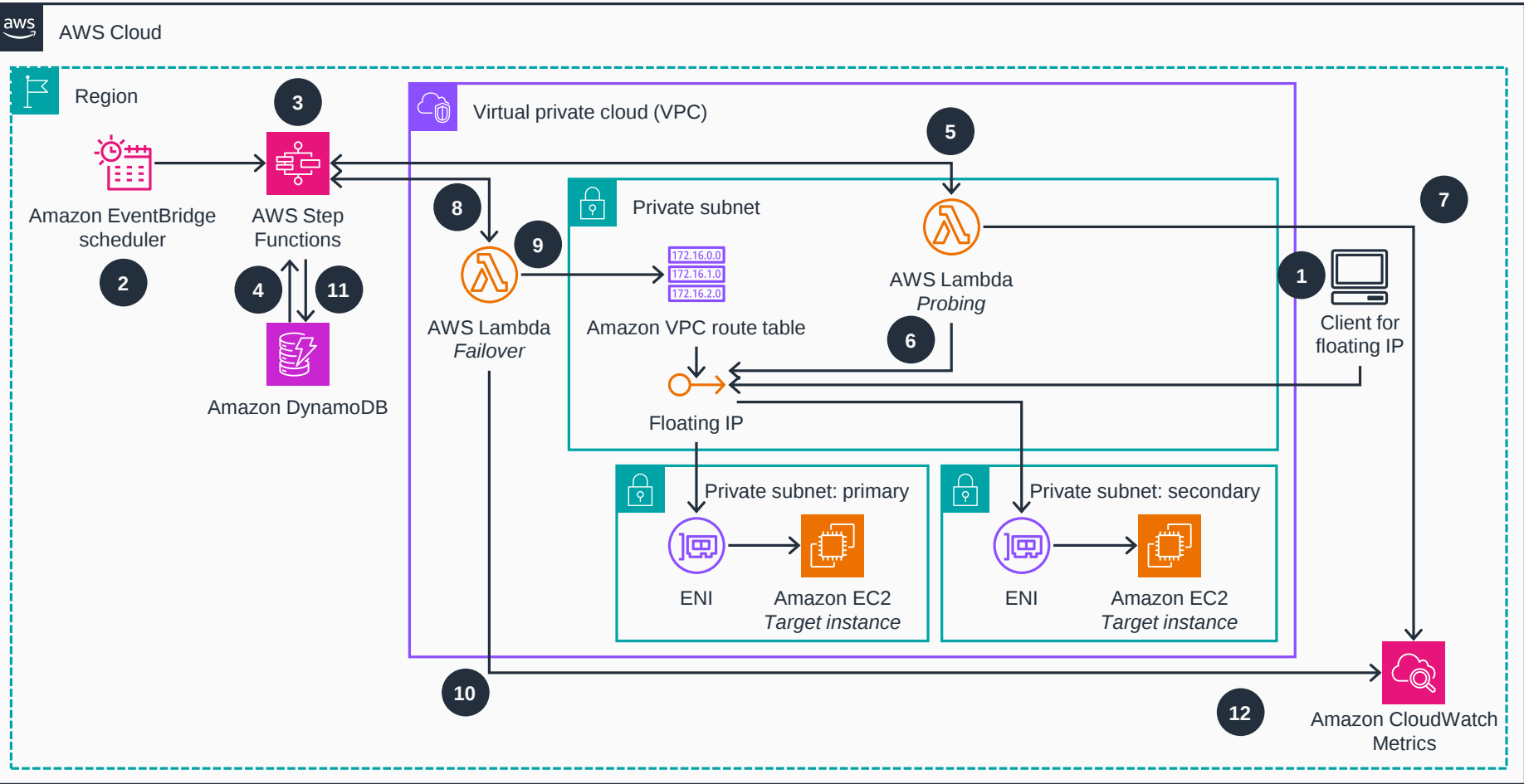
This architecture diagram shows how to configure and automatically manage private floating IP addresses in a virtual private cloud (VPC) to achieve high availability. This slide details Steps 1-9.



- 1 A client application connects to the target system through the floating IP address.
- 2 An **Amazon EventBridge** scheduler invokes the **AWS Step Functions** flow every minute to orchestrate health checks and the failover process for the floating IP address (when applicable).
- 3 The **Step Functions** workflow implementation iterates its tasks every N seconds, where N is configurable.
- 4 As an initial step, the stored context (probing counter and last probing result) from the previous **Step Functions** workflow implementation is retrieved from **Amazon DynamoDB**.
- 5 The **AWS Lambda** probing function is invoked, and context from its previous implementation is passed as an input.
- 6 The **Lambda** probing function checks the health of the target of the floating IP address, which was initially set in the primary subnet and corresponding elastic network interface (ENI) attached to **Amazon Elastic Compute Cloud (Amazon EC2)**. It then returns the probing result to the **Step Functions** implementation.
- 7 The **Lambda** probing function logs metrics (such as response time and number of failed probes) to **Amazon CloudWatch**.
- 8 If the set threshold of failed health checks (a deployment parameter) is reached, **Step Functions** initializes the failover procedure. The **Lambda** failover function is invoked to handle the failover process.
- 9 The **Lambda** failover function updates one or more **Amazon Virtual Private Cloud (Amazon VPC)** route tables. It changes the target ENI attached to **Amazon EC2** of the route associated with the floating IP address to the one set in a secondary subnet.

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This architecture diagram shows how to configure and automatically manage private floating IP addresses in a virtual private cloud (VPC) to achieve high availability. This slide details Steps 10-12.



- 10 The **Lambda** failover function logs failover count metrics to **CloudWatch**.
- 11 By the end of the **Step Functions** workflow implementation, the implementation context is stored in the **DynamoDB** database.
- 12 All relevant metrics stored in **CloudWatch** can be used to build comprehensive dashboards and create alarms for observability purposes.