AWS Step Functions

If you are studying for AWS Developer Associate Exam, this guide will help you with quick revision before the exam. it can use as study notes for your preparation.

Dashboard Other Certification Notes

AWS Step Functions

- Step Functions allow to build visual workflows which are used to orchestrate Lambda Functions
- Workflow is represented as a JSON state machine
- Features:
  - Sequence
  - Parallel execution
  - Conditions
  - Timeouts
  - Error handling
- Can also integrate with EC2, ECS, on premise servers, API Gateway
- Maximum execution time is 1 year
- Possibility to implement human approval feature
- Use cases:
  - Order fulfillment
  - Data processing
  - Web applications
  - Any workflow
- When designing a Step Function we get an aspect of visualization (flow diagram)
- The execution can be visually represented on this diagram
- Any state can encounter errors:
  - State machine definition issues (example. no matching rules in choice state)
  - Task failures (example: an exception in a Lambda function)
  - Transient failures (example: network partition events)
- By default: when a state reports an error, the execution of the Step Functions fails entirely
- Failures can be retried:
  - Exponential backoff: *IntervalSeconds*, *MaxAttempts*, *BackoffRate*
  - Move on - Catch: *ErrorEquals*, *Next*
- Best practice: include data in the error message

Standard vs Express Step Functions

- Standard Function
  - Maximum duration: 1 year
  - Exactly-one workflow execution
  - Execution start rate: 2000 per second
  - Price per state transition: more expensive in general
- Express Function
  - Maximum duration: 5 minutes
  - At-least-once workflow execution
  - Execution start rate: 100_000 per second
  - Price per number of execution: much cheaper in general