AWS SWF

What is a workflow?

A workflow is a sequence of multiple activities aimed at accomplishing a well-defined objective.

For instance, booking an airline ticket as a workflow may encompass multiple activities, such as selection of itinerary, submission of personal details, payment validation and booking confirmation.

Except for the start and completion of a workflow, each step has a well-defined predecessor and successor. With that

- on successful completion of an activity the workflow can progress with its execution,
- when one of workflow's activities fails it can be retried,
- and when it keeps failing repeatedly the workflow may regress to the previous step to gather alternative inputs or it may simply fail at that stage.

What is SWF ?

- Amazon SWF is a web service that makes it easy to co-ordinate work across distributed application components.
- SWF enables applications for a range of use cases, including media processing , web application etc to be designed as a co-ordination of tasks

- **TASKS**
- Tasks represent invocations of various processing steps in an application which can be performed by executable code, web service calls, human intractions and scripts.

SWF actors

- **Workflow Executors** - some entity starting workflow executions, typically through an action taken by a user(ecommerce) or from a cronjob.

- **Deciders** - a program codifying the business logic, i.e. a set of instructions and decisions. Deciders take decisions based on initial set of conditions and outcomes from activities. If something has finished or failed in the work flow, decider decides what to do next

- **Activity Workers** - their objective is very straightforward: to take inputs, execute the tasks and return a result to the Service.

SWF Vs SQS

- **SQS** has a retention period of up to 14 days; with SWF, work flow executions can last up to 1 year
- Amazon SWF presents a task-oriented API, where as Amazon SQS offers a message-oriented API.
- Amazon SWF ensures that a task is assigned only once and is never duplicated.
- With SQS, you need to handle duplicate messages and may also need to ensure that message is processed only once.
- Amazon SWF keeps tract of all the tasks and events in an application.
- With SQS, you need to implement your own application tracking, especially your application uses multiple queues.