

SWF (Software Workflow Service)

SWF allows you to build your application as a Workflow, where each task need to pass through several stages of the workflow.

This concept is very similar to orchestration pattern. The main benefit of building an application as a workflow is that it provides for asynchronous and distributed processing. As one stage is independent of the failure of another stage.

Swf Concepts/terminology:

Workflow: A workflow is build of several stages from which a task needs to pass. A stage can be a Activity Stage or a Decider Stage.

Domain: Each Workflow runs inside a domain. You can have multiple domains and each domain can have multiple workflows in it. But a workflow in one domain cannot interact with a workflow/activity/decider in another domain.

Activity: An activity represents a **processing stage**. i.e a stage in workflow where some computation needs to be done or an input is to be taken from a Human/ other resource.

Decider: Decider represents a **decision making stage**. The role of a decider is to decide the next stage/activity based on certain criteria.

An important point to note is that a Decider stage gets processing results history from all previous executed stages, Thus it can take pretty complex decisions.

Activity Worker: A activity worker is a program that polls for Activity tasks and does processing on them.

A Activity worker can be sitting on EC2 or an On-premise server or can be a GUI provided to Human users to perform some action.

Workers can be written in different programming languages and can run on different OS's situated at different geographic locations.

Activity task and Decider task:

An activity stage can run multiple tasks at the same time. So, each task is allocated an Activity instance, which is responsible for performing execution of that particular task.

This instance is what is called as Activity Task.

Same is for Decider task.

NOTE: The role of SWF is to act as a central hub through which data is exchanged between different Activities, Deciders and workers.

SWF also stores the state of execution, so you dont need to maintain it at your end.