**Step Functions**

* Step Functions makes it easy to coordinate the components of distributed applications as a series of steps in a visual workflow
* You can quickly build and run state machines to execute the steps of your application in a reliable and scalable fashion
* How it works:
  + Define the steps of your workflow in the JSON-based Amazon States Language. The visual console automatically graphs each step in the order of execution
  + Start an execution to visualize and verify the steps of your application are operating as intended. The console highlights the real-time status of each step and provides a detailed history of every execution
  + Step Functions operates and scales the steps of your application and underlying compute for you to help ensure your application executes reliably under I ncreasing demand
* Managed workflow orchestration platform
* Scalable and HA
* Define your app as a state machine
* Create tasks, sequential steps, parallel steps, branching paths or timers
* Amazon State Language declarative JSON
* Apps can interact and update the stream via Step Function API
* Visual interface describes flow and real-time status
* Detailed logs of each step execution
* **Benefits and Features:**
  + **Built-in error handling –** AWS Step Functions tracks the state of each step, so you can automatically retry failed or timed-out tasks, catch specific errors, and recover gracefully, whether the task takes seconds or months to complete
  + **Automatic Scaling –** AWS Step Functions automatically scales the operations and underlying compute to run the steps of your application for you in repsonse to changing workloads. Step Functions scales automatically to help ensure the performance of your application workflow remains consistently high as the frequency of requests increases
  + **Pay per use –** With Step Functions, you pay only for the transition from one step of your application workflow to the enxt, called a state transition. Billing is metered by state transition, regardless of how long each state persists(up to one year)
  + **Execution event history –** AWS Step Functions creates a detailed event log for every execution, so when things do go wrong, you can quickly identify not only where, but why. All of the execution history is available visually and programmatically to quickly troubleshoot and remediate failures
  + **High availability –** AWS Step Fucntions has built-in fault-tolerance. Step Functions maintains service capacity across multiple Availability Zones in each region to help protect application workflows against individual machine or data center facility features. There are no maintenance windows or scheduled downtimes
  + **Administrative security –** Step Functions is integrated with IAM. IAM policies can be used to control access to the Step Functions APIs
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