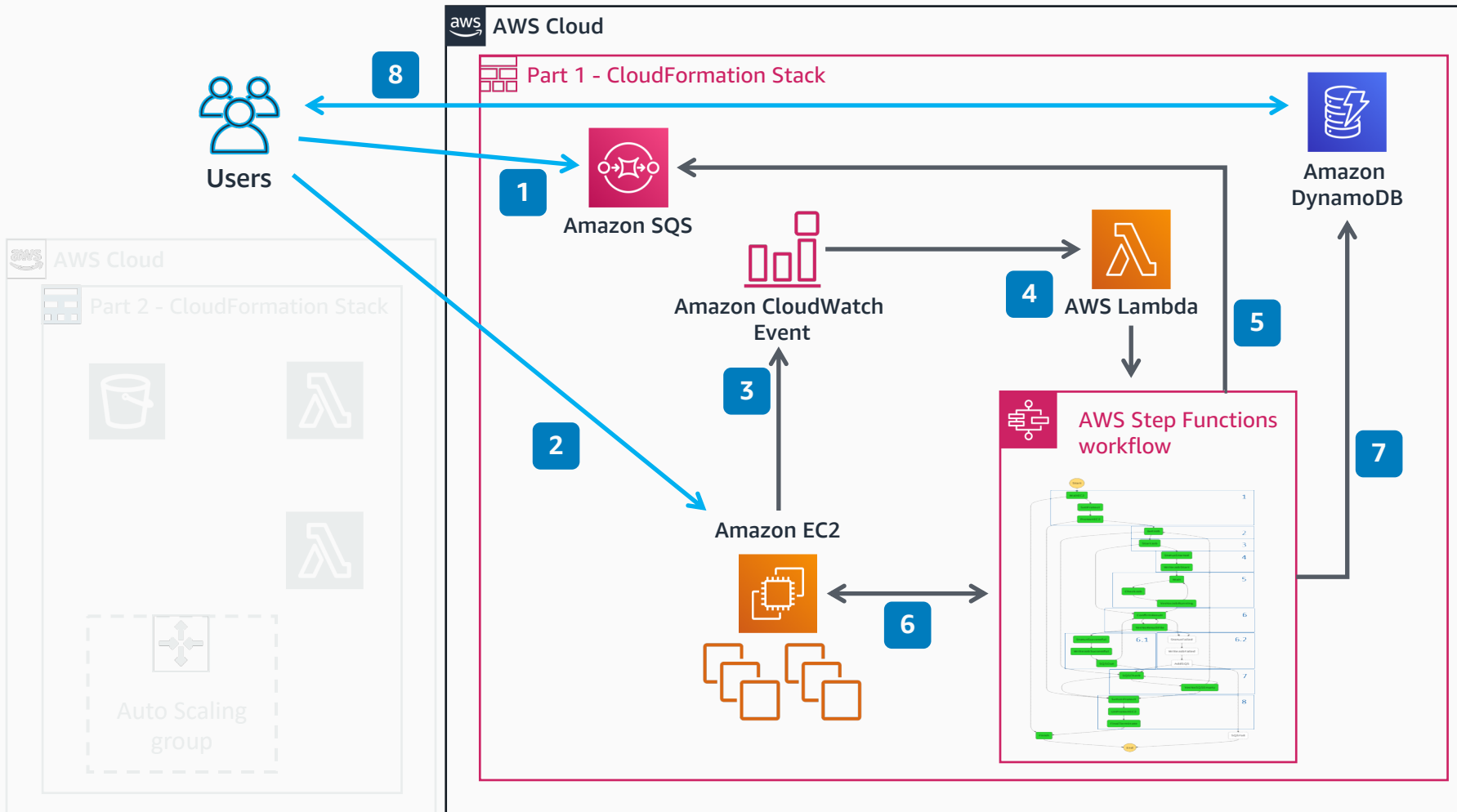


Decoupled Serverless Scheduler, Part 1 of 2

Deploy a Decoupled Serverless Scheduler To Run Any HPC Application At Scale

Workshop location is on AWS Samples: <https://github.com/aws-samples/aws-decoupled-serverless-scheduler>



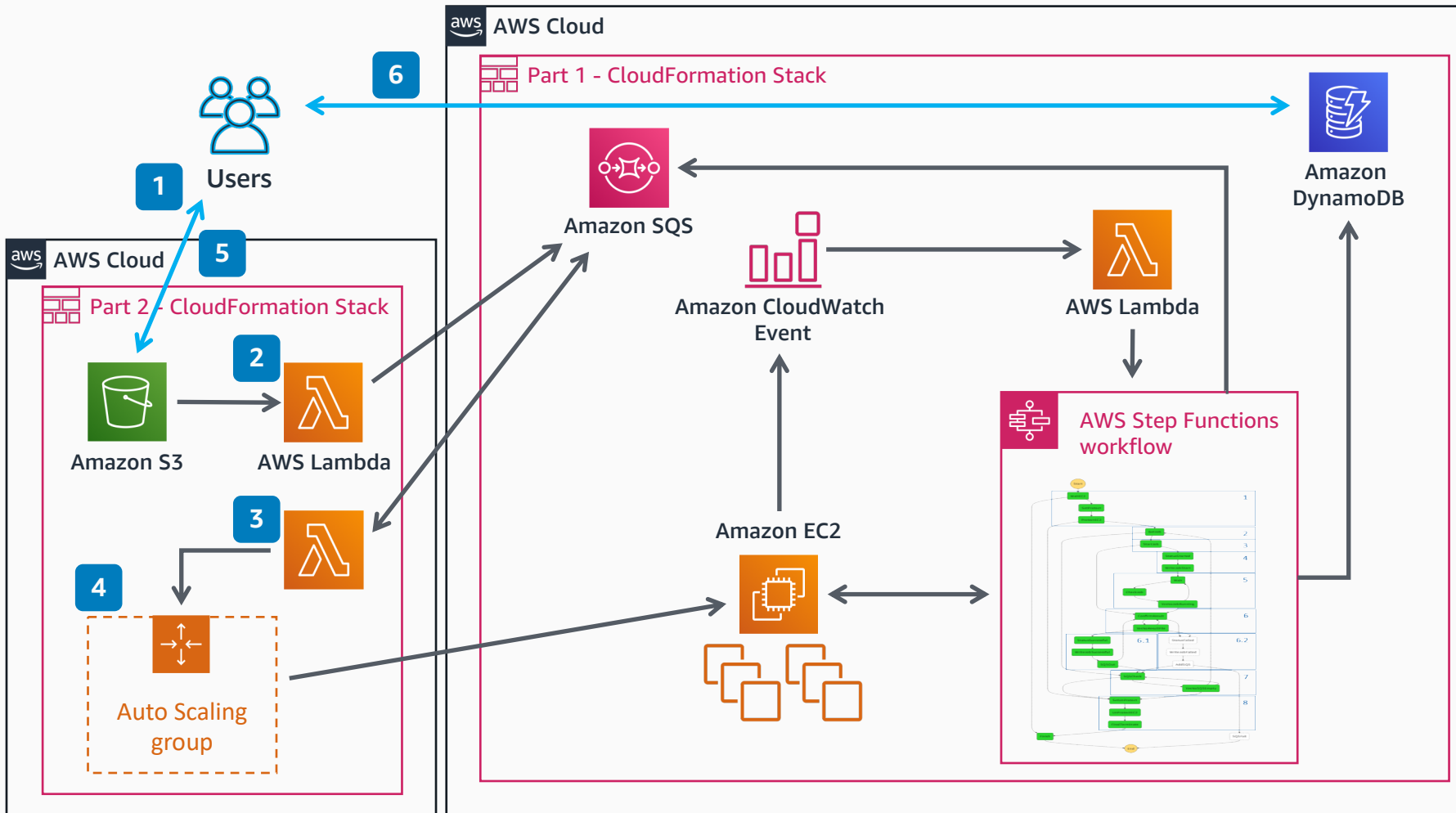
- Jobs submitted to **Amazon Simple Queue Service (Amazon SQS)** use **AWS Systems Manager Run Command** such as bash or Windows PowerShell.
- The user launches an **Amazon EC2** instance or cluster of EC2 instances with tag key `scheduler-queue`.
- On EC2 launch, an **Amazon CloudWatch Event** triggers an **AWS Lambda** function.
- The **Lambda function** looks for tag key `scheduler-queue` and triggers a new **AWS Step Function** state machine, passing the `instance_id` and tag value (`SQS job queue name`).
- Workflow polls **Amazon SQS** for a new job, and continues to poll until there are no more jobs.
- Workflow runs job on previously launched EC2 instances or cluster of EC2 instances.
- Workflow continuously writes job status to **Amazon DynamoDB** table.
- User monitors job status through **AWS Management Console** or **AWS Command Line Interface (AWS CLI)**.



Decoupled Serverless Scheduler, Part 2 of 2

Deploy a Decoupled Serverless Scheduler To Run Any HPC Application At Scale

Workshop location is on AWS Samples: <https://github.com/aws-samples/aws-decoupled-serverless-scheduler>



- 1 Users upload input files and executables for job(s) to **Amazon Simple Storage Service (Amazon S3)**.
- 2 **Amazon S3** event triggers an **AWS Lambda** function to create and submit the new job(s).
- 3 **AWS Lambda** monitors job queue and updates **Amazon EC2 Auto Scaling Group** with desired instance count (customizable).
- 4 **Amazon EC2 Auto Scaling Group** scales the number of workers from 0 to a defined maximum.
- 5 Users download results from **Amazon S3**.
- 6 User monitors job status through **AWS Management Console** or **AWS Command Line Interface (AWS CLI)**.

The user uploads the job input file(s) and executable to the S3 bucket instead of Amazon SQS. This upload triggers the job start; the Auto Scaling Group handles EC2 instance management. There is no longer a need to create a JSON job definition.

