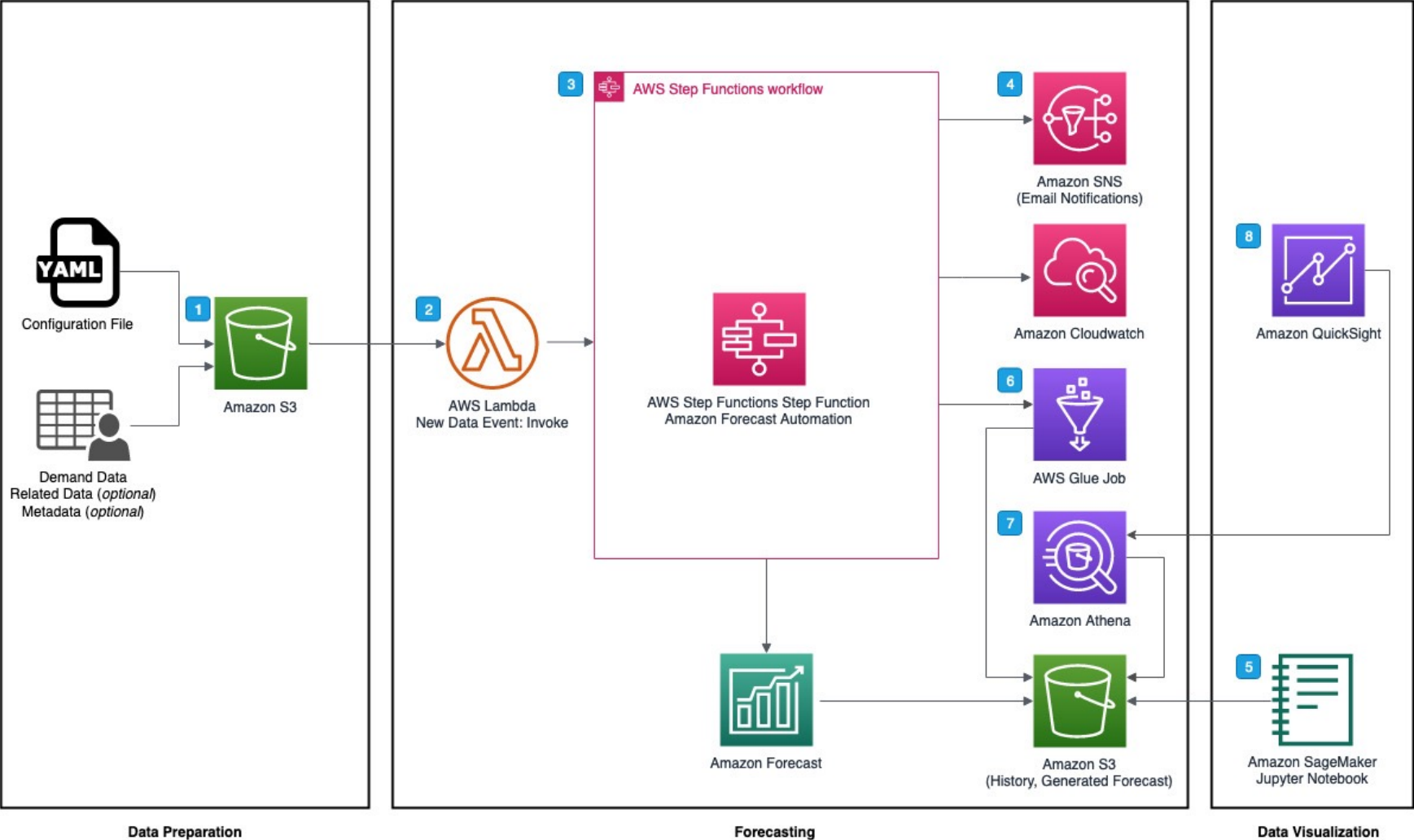


Improving Forecast Accuracy with Machine Learning

This solution is designed to help organizations generate accurate forecasts from diverse datasets. To deploy this solution using the available AWS CloudFormation template, select **Deploy with AWS**.



Based on the capabilities of the solution, the architecture is divided into three parts: **data preparation**, **forecasting**, and **data visualization**. The CloudFormation template includes the following components:

- 1 An **Amazon Simple Storage Service (Amazon S3)** bucket for **Amazon Forecast** configuration where you specify configuration settings for your dataset groups, dataset predictors, and forecasts, as well as the datasets themselves.
- 2 An **Amazon S3** event notification that triggers when new datasets are uploaded to the related **Amazon S3** bucket.
- 3 An Improving Forecast Accuracy with Machine Learning **AWS Step Functions** state machine. This combines a series of **AWS Lambda** functions that build, train, and deploy your Machine Learning (ML) models in **Amazon Forecast**. All **AWS Step Functions** log to **Amazon CloudWatch**.
- 4 An **Amazon Simple Notification Service (Amazon SNS)** email subscription that notifies administrative users with the results of the **AWS Step Functions**.
- 5 An **Amazon SageMaker** notebook instance that data scientists and developers can use to prepare and process data, and evaluate **Forecast** output.
- 6 An **AWS Glue** job combines raw forecast input data, metadata, predictor backtest exports, and forecast exports into an aggregated view of your forecasts.
- 7 **Amazon Athena** can be used to query your forecast output using standard SQL queries.
- 8 **Amazon QuickSight** analyses can be created on a per-forecast basis to provide users with forecast output visualization across hierarchies and categories of forecasted items, as well as item level accuracy metrics. Dashboards can be created from these analyses and shared within your organization.

