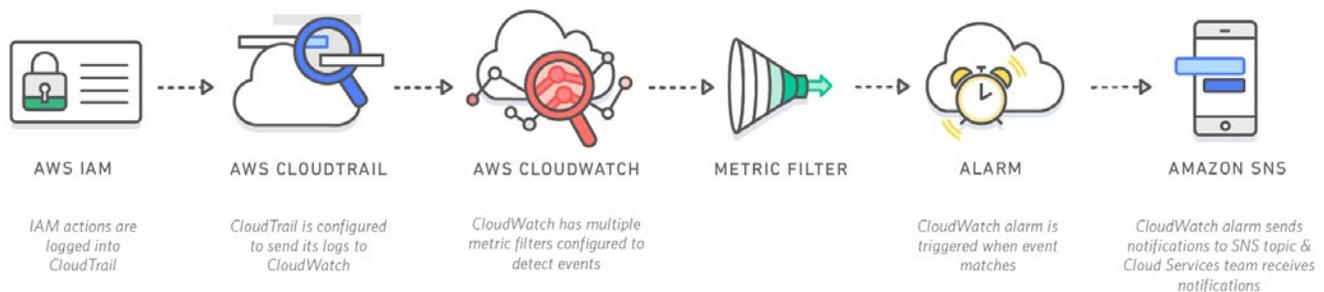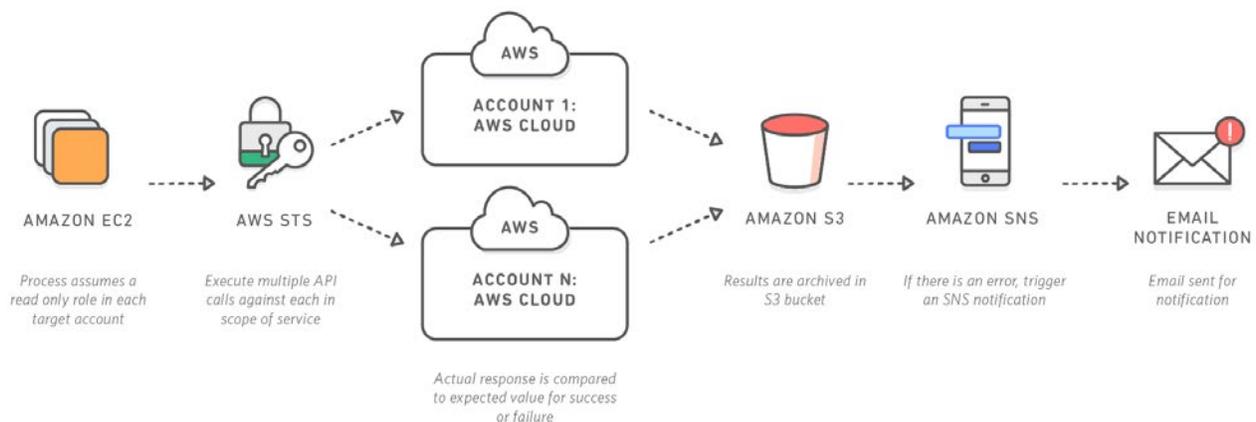# Architecting for GxP in the cloud

Industries that are developing or manufacturing drugs and medical devices are using AWS to build and run IT systems supporting their Good Laboratory, Clinical, and Manufacturing Practices (GxP). Building GxP systems using AWS allows you to improve the control you have over your IT environment, gives you enhanced testing and traceability, and helps you respond to audits. Learn more in the AWS whitepaper, developed with contributions from international compliance consulting firm Lachman Consultants, on building validated systems in the cloud.

Sample architecture patterns for using AWS for GxP regulated systems:

Near Real-time Alerting: Create near real-time alert to know when a specific event happened, or tried to happen, in the environment. This alerting system could be used for: root account usage, failed authentication attempts and changes to the environment that potentially require a change control.

AWS IAM	AWS CLOUDTRAIL	AWS CLOUDWATCH	METRIC FILTER	ALARM	AMAZON SNS
IAM actions are logged into CloudTrail	CloudTrail is configured to send its logs to CloudWatch	CloudWatch has multiple metric filters configured to detect events		CloudWatch alarm is triggered when event matches	CloudWatch alarm sends notifications to SNS topic & Cloud Services team receives notifications

Continuous Compliance: Create a continuous compliance checker, which can run daily to ensure that each account matches your standard configuration.

AMAZON EC2	AWS STS	ACCOUNT 1: AWS CLOUD / ACCOUNT N: AWS CLOUD	AMAZON S3	AMAZON SNS	EMAIL NOTIFICATION
Process assumes a read only role in each target account	Execute multiple API calls against each in scope of service	Actual response is compared to expected value for success or failure	Results are archived in S3 bucket	If there is an error, trigger an SNS notification	Email sent for notification

It is recommended that you do your due diligence, and consult AWS or your internal compliance department before implementing. Learn more at https://aws.amazon.com/health/life-sciences-compliance/