1. INTRO
   1. Amazon CloudWatch monitors your Amazon Web Services (AWS) resources and the applications you run on AWS in real time.
   2. CloudWatch provides you with data and actionable insights to monitor your applications, understand and respond to system-wide performance changes, optimize resource utilization, and get a unified view of operational health.
   3. You can create alarms that watch metrics and send notifications or automatically make changes to the resources you are monitoring when a threshold is breached
   4. CloudWatch sends events to Amazon EventBridge whenever a CloudWatch alarm changes alarm state. You can use EventBridge and these events to write rules that take actions, such as notifying you, when an alarm changes state.
2. METRICS
   1. Amazon CloudWatch is basically a metrics repository.
   2. An AWS service—such as Amazon EC2—puts metrics into the repository, and you retrieve statistics based on those metrics.
   3. If you put your own custom metrics into the repository, you can retrieve statistics on these metrics as well.
   4. CloudWatch agent
      1. You can collect metrics from servers by installing the CloudWatch agent on the server.
      2. You can install the agent on both Amazon EC2 instances and on-premises servers, and on computers running either Linux, Windows Server, or macOS.
      3. To Collect Metrics like Memory and Disk usage Cloud Watch Agent installation is compulsory
   5. Detailed Monitoring for your instances — By default, your instance is enabled for basic monitoring. You can optionally enable detailed monitoring. After you enable detailed monitoring, the Amazon EC2 console displays monitoring graphs with a 1-minute period for the instance.
3. ALARM
   1. You can create a CloudWatch alarm that watches a single CloudWatch metric or the result of a math expression based on CloudWatch metrics.
   2. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods.
   3. The action can be an Amazon EC2 action, an Amazon EC2 Auto Scaling action, or a notification sent to an Amazon SNS topic.
4. EventBridge

   1. INTRO
      1. Amazon CloudWatch Events delivers a near real-time stream of system events that describe changes in Amazon Web Services (AWS) resources.
      2. Using simple rules that you can quickly set up, you can match events and route them to one or more target functions or streams.
      3. CloudWatch Events becomes aware of operational changes as they occur. CloudWatch Events responds to these operational changes and takes corrective action as necessary, by sending messages to respond to the environment, activating functions, making changes, and capturing state information.
   2. EVENTS
      1. An event indicates a change in your AWS environment.
      2. AWS resources can generate events when their state changes.
      3. AWS CloudTrail publishes events when you make API calls.
      4. You can generate custom application-level events and publish them to CloudWatch Events.
      5. You can also set up scheduled events that are generated on a periodic basis
   3. Rules
      1. A rule matches incoming events and routes them to targets for processing.
      2. A single rule can route to multiple targets, all of which are processed in parallel. Rules are not processed in a particular order.
   4. Targets
      1. A target processes events. Targets can include Amazon EC2 instances, AWS Lambda functions, Kinesis streams, Amazon ECS tasks, Step Functions state machines, Amazon SNS topics, Amazon SQS queues, and built-in targets. A target receives events in JSON format.
      2. AWS services as targets for EventBridge
         1. Amazon EC2 instances
         2. AWS Lambda functions
         3. Streams in Amazon Kinesis Data Streams
         4. Delivery streams in Amazon Kinesis Data Firehose
         5. Log groups in Amazon CloudWatch Logs
         6. Amazon ECS tasks
         7. Systems Manager Run Command
         8. Systems Manager Automation
         9. AWS Batch jobs
         10. Step Functions state machines
         11. Pipelines in CodePipeline
         12. CodeBuild projects
         13. Amazon Inspector assessment templates
         14. Amazon SNS topics
         15. Amazon SQS queues