



Passing the AWS Cloud Practitioner exam

Study Group #5: Exam tips, CloudTrail, CloudWatch, and more

Presented By:
Christophe Limpalair,
Linux Academy

Homework Quiz

- 2) Which AWS service would simplify migration of a database to AWS?
- A) AWS Storage Gateway
 - B) AWS Database Migration Service (DMS)
 - C) Amazon Elastic Compute Cloud (EC2)
 - D) Amazon AppStream 2.0

Homework Quiz

2) Which AWS service would simplify migration of a database to AWS?

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AWS CloudTrail

CloudTrail allows you to **monitor all actions taken** by IAM users and API calls in your account. CloudTrail can log, continuously monitor, and **retain account activity across your AWS infrastructure**

Use cases:

- Compliance aid
- Security analysis
- Data exfiltration protection
- Troubleshooting

CloudTrail stores logs compressed in S3

Course Navigation

Monitoring and Logging
Section 10

Topic 1: CloudWatch
(Monitoring, Metrics,
and Logs)

Topic 2: CloudTrail

Notification Services
Section 11

Topic 1: Simple
Notification Service (SNS)

Topic 2: Just the FAQs and
Wrap It Up!

CloudTrail Basics

Logs are saved
into an S3 bucket
in a gzip archive.



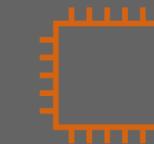
AWS
CloudTrail



LOG



GZIP



EC2

Matt shutdown the
EC2 Instance.



S3

James modified
bucket permissions
and granted public
access.

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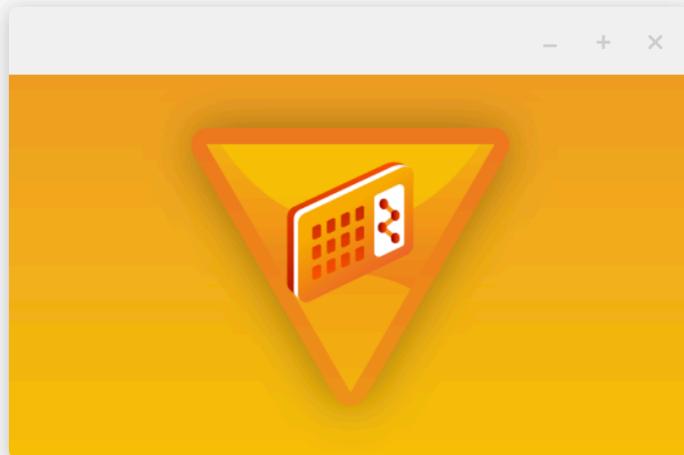
Amazon CloudTrail - Lab

[AWS Access Control Alerts with CloudWatch and CloudTrail](#)

AWS Access Control Alerts with CloudWatch and CloudTrail



HANDS-ON LAB



In this hands-on lab, we will create and configure a CloudTrail trail and a CloudWatch Logs log stream in order to set up monitoring and access alerts for an S3 bucket. Specifically, we'll create the trail for monitoring access to the S3 bucket, the CloudWatch Logs log stream to allow searching and filtering of the logs, and then a CloudWatch metric filter and alarm on that metric filter to generate an alert whenever there is any access to an S3 bucket. This will demonstrate how to build effective monitoring and alerting with specific AWS API calls.

[Take Hands-On Lab](#)

Amazon CloudWatch

CloudWatch is a monitoring service that keeps an eye on your AWS resources such as infrastructure resources, applications, and on-premises resources

With CloudWatch, you can:

- Monitor metrics for your AWS resources over time
- Create custom dashboards for easy viewing of metrics
- Monitor and store logs
- Set alarms and events (which can trigger actions, including billing alarms)

This means you can also automate decisions based on the state of your infrastructure or application

- ie: scale resources up or down

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Monitoring and Logging Section 10

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Topic 1: Simple Notification Service (SNS)

Topic 2: Just the FAQs and Wrap It Up!

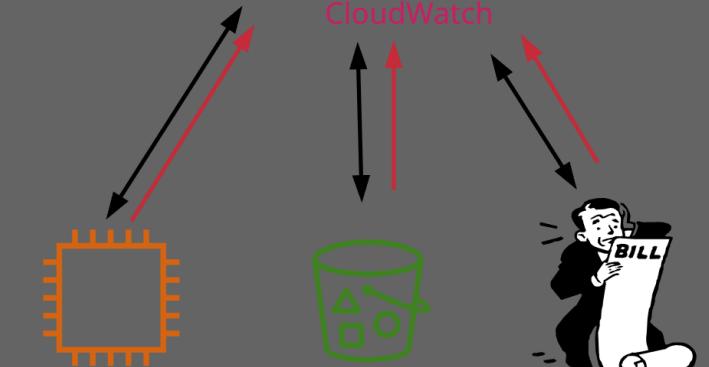
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CloudWatch Monitoring Basics

You can view the alarms in CloudWatch
or have the alarm trigger an action (like
an SNS message).



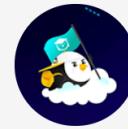
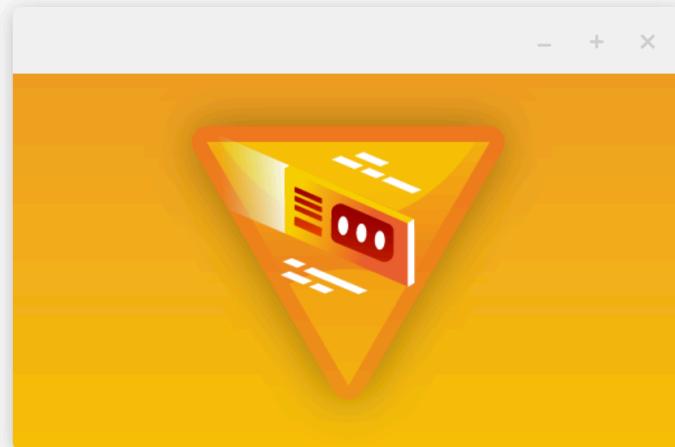
Amazon
CloudWatch

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Amazon CloudWatch - Lab

Custom Logging Using CloudWatch and CloudWatch Logs

Custom Logging Using CloudWatch and CloudWatch Logs



Adrian Cantrill

Training Architect

In this hands-on lab, we will configure custom CloudWatch logging using the CloudWatch agent and CloudWatch alarms. We will cover the configuration of the CloudWatch monitoring agent to monitor the occurrence of SSH attempts to our EC2 instance and create an alarm for frequent invalid authentication attempts. We will also configure monitoring for our *Memory Used* percentage in CloudWatch. This is only one small example of CloudWatch's potential. We could easily monitor our application logs and fire Lambda functions or SNS topics based upon certain metric activity.

[Take Hands-On Lab](#)

Amazon SNS

SNS can send notification across email, text, and HTTP endpoints based on events that happen within your AWS account.

This means you can:

- Send automated or manual notifications
- Send notifications to mobile (SMS), email, HTTP endpoints (Slack API)
- Closely integrates with other AWS services such as CloudWatch to trigger on certain events

It does this using:

- Publishers (aka producers)
- Subscribers (aka consumers)



SNS

Topics

How you label and group different **endpoints** that you send messages to

Subscriptions

The **endpoints** that a topic sends messages to (e.g., the email address or phone number of our system admin)

Publishers

The human/alarm/event that gives SNS the message that needs to be sent

Amazon SNS & CloudWatch example

Monitoring and Logging

Section 10

Topic 1: CloudWatch
(Monitoring, Metrics, and Logs)

Topic 2: CloudTrail

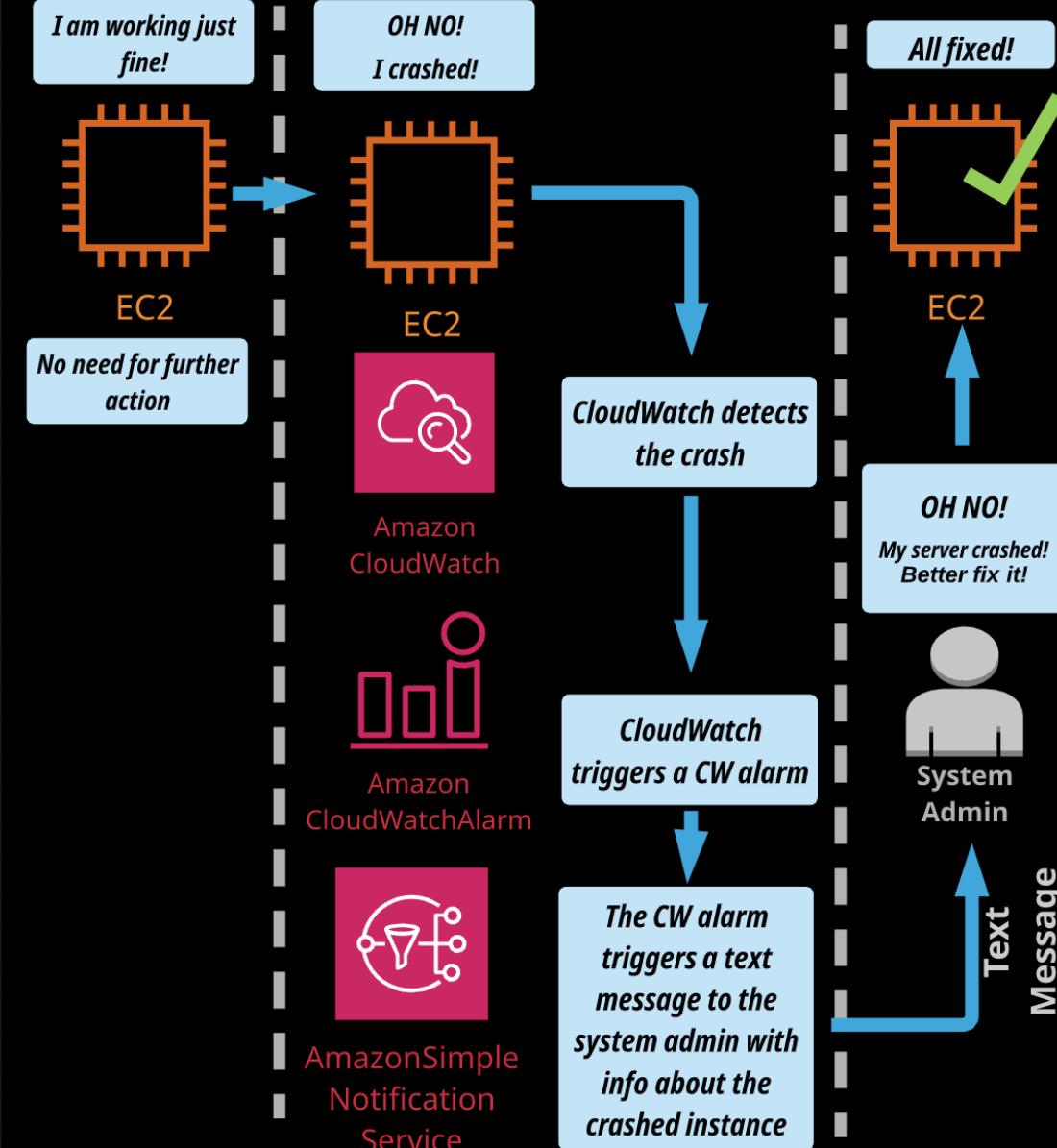
Notification Services

Section 11

Topic 1: Simple
Notification Service

Topic 2: Just the FAQs and
Wrap It Up!

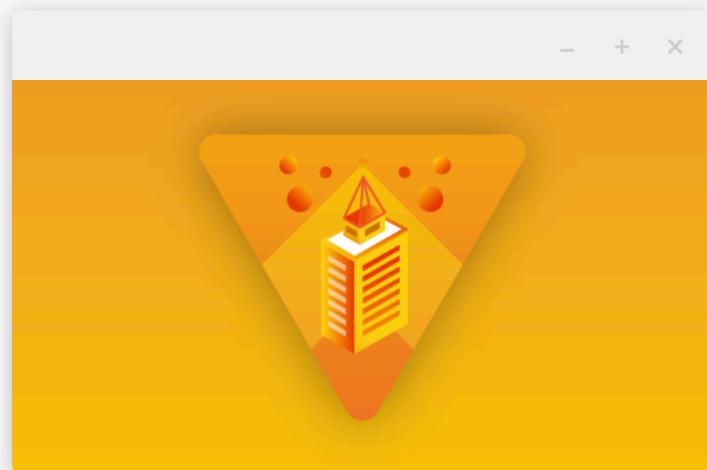
CloudWatch Notification Workflow



Amazon SNS & CloudWatch - Lab

[Monitoring and Notifications with CloudWatch Events and SNS](#)

Monitoring and Notifications with CloudWatch Events and SNS



Julie Elkins

AWS Training Architect I in Content

In this hands-on lab, we will create a CloudWatch Events alarm that triggers an SNS email notification. Then, we will trigger the alarm by simulating the shutdown of an EC2 instance.

[Take Hands-On Lab](#)

Pop Quiz

Which service would you use for this scenario?
An alarm was triggered and a notification was sent at 4:03pm on a Tuesday and your SysAdmins are trying to figure out what API call triggered a critical service to shut down.

- A) Amazon CloudWatch**
- B) AWS CloudTrail**
- C) Amazon SNS**

Pop Quiz

Which service would you use for this scenario?
An alarm was triggered and a notification was sent at 4:03pm on a Tuesday and your SysAdmins are trying to figure out what API call triggered a critical service to shut down.

- A) **Amazon CloudWatch**
- B) **AWS CloudTrail**
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Pop Quiz

What would you use for this scenario? Your team has configured and deployed a critical service to production, and they need to implement monitoring to keep an eye on resource utilization so they can make sure the service continues serving API requests

- A) **Amazon CloudWatch**
- B) **AWS CloudTrail**
- C) **Amazon SNS**

Pop Quiz

What would you use for this scenario? Your team has configured and deployed a critical service to production, and they need to implement monitoring to keep an eye on resource utilization so they can make sure the service continues serving API requests

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- B) **AWS CloudTrail**
- C) **Amazon SNS**

Pop Quiz

Your team believes that some important data was transferred from S3 to an unknown location without following procedures to get approval. Which service can they use to investigate whether this happened and if so, who transferred the data?

- A) Amazon CloudWatch
- B) AWS CloudTrail
- C) Amazon SNS

Pop Quiz

Your team believes that some important data was transferred from S3 to an unknown location without following procedures to get approval. Which service can they use to investigate whether this happened and if so, who transferred the data?

- A) Amazon CloudWatch
- B) AWS CloudTrail
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AWS Lambda

AWS Lambda is serverless computing that can replace the need for EC2 instances in some cases

Benefits:

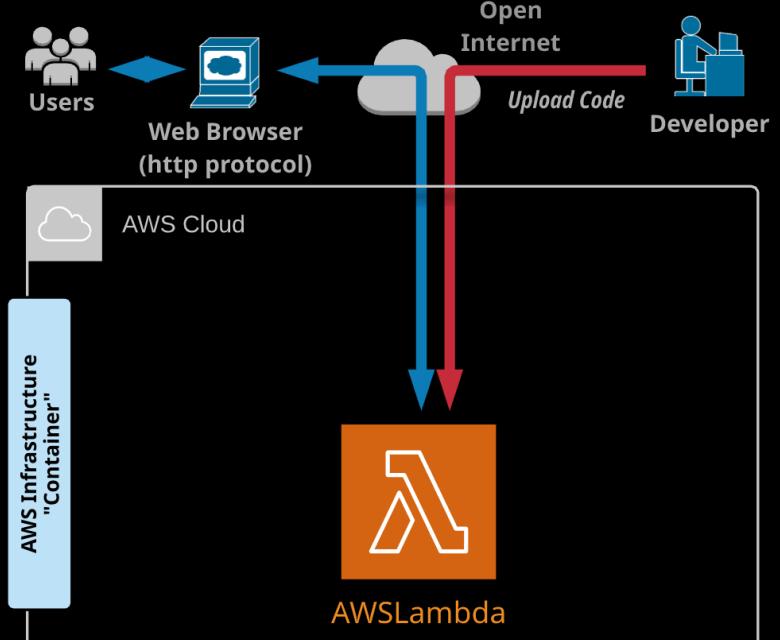
- Pay only for the compute time you need - there's no charge for when your code isn't running (Sub-second metering)
- Able to infinitely scale up to demand, even faster than EC2
- You configure it, and it handles everything else for you. You don't have to worry about the infrastructure
- Integrates with many other AWS services

Course Navigation

Serverless
Section 13

Topic 1: Lambda

EC2/Lambda Comparison



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AWS Lambda

AWS Lambda is serverless computing that can replace the need for EC2 instances in some cases

Use Cases:

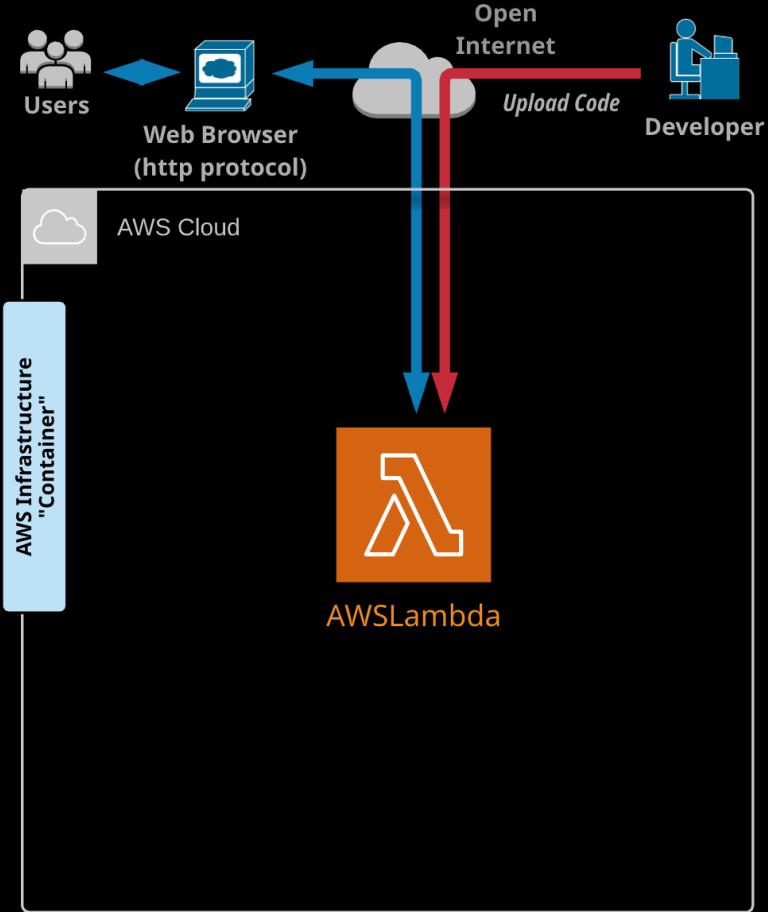
- Data Processing
 - Execute code in response to triggers
- Real-time file processing
 - Upload to S3 and trigger a Lambda function immediately
- Extract, Transform, Load (ETL)
 - Data validation, filtering, sorting, and other transformations
- IoT and mobile backends
- Web applications

Course Navigation

Serverless
Section 13

Topic 1: Lambda

EC2/Lambda Comparison



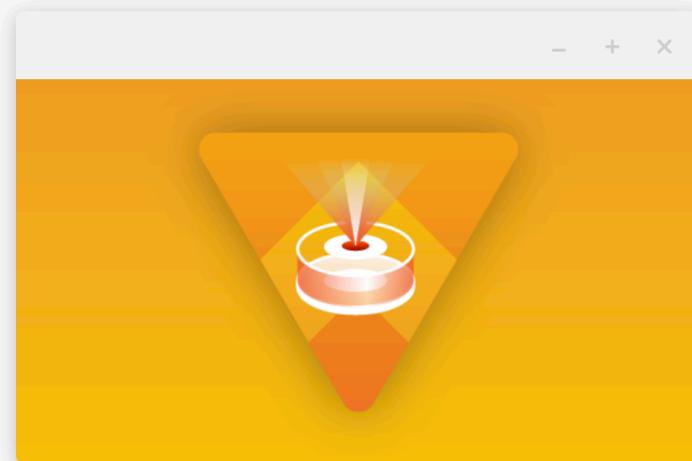
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AWS Lambda - Lab

[Trigger an AWS Lambda Function from an S3 Event](#)



Trigger an AWS Lambda Function from an S3 Event



HANDS-ON LAB

The event ecosystem of AWS (along with its API) makes it one of the most powerful cloud platforms available. Lambda is AWS's serverless Function as a Service (FaaS) compute platform, and it can execute in response to many different events within AWS. In this hands-on lab we will create a Lambda function that will get triggered when an object is placed into an S3 bucket. Specifically, we will trigger a job within Amazon Transcribe to transcribe speech from an audio file placed into S3. No development knowledge is required for this lab, as all the code is provided, but we will take a look at the code and how it works.

[Take Hands-On Lab](#)

Pop Quiz

Which of these are benefits that AWS Lambda has over EC2? (Select 3)

- A) You don't need to manage permissions
- B) Sub-second metering
- C) Requires no knowledge of how to manage servers
- D) Your code only runs when it's needed

Pop Quiz

Which of these are benefits that AWS Lambda has over EC2? (Select 3)

- A) You don't need to manage permissions
- B) Sub-second metering
- C) Requires no knowledge of how to manage servers
- D) Your code only runs when it's needed

Pop Quiz

Which of these setups would be most efficient to notify your SysAdmins that EC2 system resources aren't optimally performing?

- A) **CloudWatch Events -> SNS -> Lambda**
- B) **CloudWatch Events -> Lambda -> SMS**
- C) **CloudWatch Events -> SNS -> SMS**
- D) **CloudTrail -> CloudWatch Events -> SNS**

Pop Quiz

Which of these setups would be most efficient to notify your SysAdmins that EC2 system resources aren't optimally performing?

- A) **CloudWatch Events -> SNS -> Lambda**
- B) **CloudWatch Events -> Lambda -> SMS**
- C) **CloudWatch Events -> SNS -> SMS**
- D) **CloudTrail -> CloudWatch Events -> SNS**

Other services to review

Be familiar with what they do

- AWS Elastic Load Balancers and Auto Scaling
- Route 53
- Analytics – Athena, EMR
- Amazon Lightsail
- AWS Organizations
- CloudHSM vs KMS

Be familiar with details on this page:

- [AWS Acceptable Use Policy](#)

Pop Quiz (from PDF)

- 8) Which service can identify the user that made the API call when an Amazon Elastic Compute Cloud (Amazon EC2) instance is terminated?
- A) **Amazon CloudWatch**
 - B) **AWS CloudTrail**
 - C) **AWS X-Ray**
 - D) **AWS Identity and Access Management (IAM)**

Pop Quiz (from PDF)

8) Which service can identify the user that made the API call when an Amazon Elastic Compute Cloud (Amazon EC2) instance is terminated?

- A) **Amazon CloudWatch**
- B) **AWS CloudTrail**
- C) **AWS X-Ray**
- D) **AWS Identity and Access Management (IAM)**

Pop Quiz (from PDF)

9) Which service would you use to send alerts based on Amazon CloudWatch alarms?

- A) **Amazon Simple Notification Service (SNS)**
- B) **AWS CloudTrail**
- C) **AWS Trusted Advisor**
- D) **Amazon Route53**

Pop Quiz (from PDF)

9) Which service would you use to send alerts based on Amazon CloudWatch alarms?

- A) **Amazon Simple Notification Service (SNS)**
- B) AWS CloudTrail
- C) AWS Trusted Advisor
- D) Amazon Route53

Pop Quiz (from PDF)

10) Where can a customer find information about prohibited actions on AWS infrastructure?

- A) AWS Trusted Advisor
- B) AWS Identity and Access Management (IAM)
- C) AWS Billing Console
- D) AWS Acceptable Use Policy

Pop Quiz (from PDF)

10) Where can a customer find information about prohibited actions on AWS infrastructure?

- A) AWS Trusted Advisor
- B) AWS Identity and Access Management (IAM)
- C) AWS Billing Console
- D) AWS Acceptable Use Policy

Exam Tips

1. Identify areas you are weak in by reviewing objectives and teaching the topics to someone else.
If you can explain it, you understand it
2. Remember that it's OK if you don't pass, you can always try again
3. Give yourself plenty of time to arrive at the testing center (or take it online!); clear distractions and focus ahead of time
4. Use the sheets of paper or whiteboard they provide you with to write down facts or other thoughts in your head (clear your head so you can focus)

Exam Tips

5. Pay close attention to what the question is asking and look for tricky words in the questions *and* answers (read every word)
6. Don't spend too much time on questions you can't answer quickly. Mark them for review and come back later
7. Review the questions at the end if you have time and make mental notes of tricky questions so you know where to focus next time if you do fail this time

Homework

Review key terms & additional information

- ✓ **Download presentation slides and review these slides + prior ones**
- ✓ **Download sample AWS exam questions and answer all questions**
- ✓ **Take the Linux Academy practice exam a few times**
 - ✓ **Don't memorize answers, ensure that you understand them and review if you don't**
- ✓ **Reach out if you need any help**

Additional Info

Let us know if you pass or fail – we will send a surprise at random!

Showed up to all study groups? Contact us and we'll have a surprise at random!

Links / Resources / Info

https://github.com/Ellopunk/Cloud_Practitioner

Linux Academy Community

<https://linuxacademy.com/join/community>

Linux Academy Slack Channel

<https://linuxacademy-community-slack.herokuapp.com/>



Linux Academy

Thank you

If you found this helpful, please share with your colleagues!