PRACTICE TEST III

Attempt	2
Marks Obtained	0 / 80
Your score is	0.0%

Completed on	Tuesday , 29 January 2019 , 02:37 PM
Time Taken	00 H 00 M 08 S
Result	Fail

Domains / Topics wise Quiz Performance Report

S.No.	Topic	Total Questions	Correct	Incorrect	Unattempted
1	Continuous Delivery and Process Automation	52	0	1	51
2	Security, Governance, and Validation	13	0	0	13
3	Monitoring, Metrics, and Logging	6	0	0	6
4	High Availability and Elasticity	6	0	0	6
5	Other	3	0	0	3

80	0	1	79
Questions	Correct	Incorrect	Unattempted

Show Answers

All	▼

You need to deploy a multi-container Docker environment on to Elastic beanstalk. Which of the following files can be used to deploy a set of Docker containers to Elastic beanstalk

○ **A.** Dockerfile ✖

○ **B.** DockerMultifile

○ **C.** Dockerrun.aws.json ✔

○ **D.** Dockerrun

Explanation :

Answer – C

The AWS Documentation specifies

A Dockerrun.aws.json file is an Elastic Beanstalk–specific JSON file that describes how to deploy a set of Docker containers as an Elastic Beanstalk application. You can use aDockerrun.aws.json file for a multicontainer Docker environment.

Dockerrun.aws.json describes the containers to deploy to each container instance in the environment as well as the data volumes to create on the host instance for the containers to mount.

For more information on this , please visit the below URL:

- http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/create_deploy_docker_v2config.html (http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/create_deploy_docker_v2config.html)

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Which of the following is not a rolling type update which is present for Configuration Updates when it comes to the Elastic Beanstalk service

○ **A.** Rolling based on Health

○   **B.** Rolling based on Instances ✔

○   **C.** Immutable

○   **D.** Rolling based on time

Explanation :

Answer – B

When you go to the configuration of your Elastic Beanstalk environment , below are the updates that are possible

The AWS Documentation mentions

1) With health-based rolling updates, Elastic Beanstalk waits until instances in a batch pass health checks before moving on to the next batch.

2) For time-based rolling updates, you can configure the amount of time that Elastic Beanstalk waits after completing the launch of a batch of instances before moving on to the next batch. This pause time allows your application to bootsrap and start serving requests.

3) Immutable environment updates are an alternative to rolling updates (http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.rollingupdates.html) that ensure that configuration changes that require replacing instances are applied efficiently and safely. If an immutable environment update fails, the rollback process requires only terminating an Auto Scaling group. A failed rolling update, on the other hand, requires performing an additional rolling update to roll back the changes.

For more information on Rolling updates for Elastic beanstalk configuration updates , please visit the below URL:

•   http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.rollingupdates.html (http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.rollingupdates.html)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Which of the following environment types are available in the Elastic Beanstalk environment. Choose 2 answers from the options given below

☐ **A.** Single Instance ✔

☐ **B.** Multi-Instance

☐ **C.** Load Balancing, Autoscaling ✔

☐ **D.** SQS, Autoscaling

Explanation :

Answer – A and C

The AWS Documentation mentions

In Elastic Beanstalk, you can create a load-balancing, autoscaling environment or a single-instance environment. The type of environment that you require depends on the application that you deploy.

When you go onto the Configuration for your environment, you will be able to see the Environment type from there

Environment Type

The following settings configure the availability settings of your environment to help reduce the costs for development activities.

Environment type: Load balancing, auto scaling ▼   Learn more

Load balancing, auto scaling
Single instance

Current status:

For more information on the environment types , please visit the below URL:

- http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features-managing-env-types.html (http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features-managing-env-types.html)

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You have the requirement to get a snapshot of the current configuration of the resources in your AWS Account. Which of the following services can be used for this purpose

○ **A.** AWS CodeDeploy

○ **B.** AWS Trusted Advisor

○ **C.** AWS Config ✔

○ **D.** AWS IAM

Explanation :

Answer - C

The AWS Documentation mentions the following

With AWS Config, you can do the following:

- Evaluate your AWS resource configurations for desired settings.

- Get a snapshot of the current configurations of the supported resources that are associated with your AWS account.

- Retrieve configurations of one or more resources that exist in your account.

- Retrieve historical configurations of one or more resources.

- Receive a notification whenever a resource is created, modified, or deleted.

- View relationships between resources. For example, you might want to find all resources that use a particular security group.

For more information on AWS Config , please visit the below URL:

- http://docs.aws.amazon.com/config/latest/developerguide/WhatIsConfig.html (http://docs.aws.amazon.com/config/latest/developerguide/WhatIsConfig.html)

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You have an a video processing application hosted in AWS. The video's are uploaded by users onto the site. You have a program that is custom built to process those videos. The program is able to recover incase there are any failures when processing the videos. Which of the following mechanisms can be used to deploy the instances for carrying out the video processing activities , ensuring that the cost is kept at a minimum.

○   **A.** Create a launch configuration with Reserved Instances. Ensure the User Data section details the installation of the custom software. Create an Autoscaling group with the launch configuration.

○   **B.** Create a launch configuration with Spot Instances. Ensure the User Data section details the installation of the custom software. Create an Autoscaling group with the launch configuration. ✔

○   **C.** Create a launch configuration with Dedicated Instances. Ensure the User Data section details the installation of the custom software. Create an Autoscaling group with the launch configuration.

○   **D.** Create a launch configuration with On-Demand Instances. Ensure the User Data section details the installation of the custom software. Create an Autoscaling group with the launch configuration.

Explanation :

Answer – B

Since the application can recover from failures and cost is the priority , then Spot instances are the best bet for this requirement. The launch configuration has the facility to request for Spot Instances.

The below snapshot from the Launch configuration section shows that Spot Instances can be used for AutoScaling Groups.

Create Launch Configuration

Name	(i)	Demo
Purchasing option	(i)	☑ Request Spot Instances
Current price	(i)	ap-southeast-1a 0.0173
		ap-southeast-1b 0.0198
Maximum price	(i)	$ (e.g. 0.045 = 4.5 cents/hour)
IAM role	(i)	None ▼
Monitoring	(i)	☐ Enable CloudWatch detailed monitoring
		Learn more
EBS-optimized instance	(i)	☐ Launch as EBS-optimized instance
		Additional charges apply.

▶ Advanced Details

For more information on Spot Instances and Autoscaling , please visit the below URL:

- http://docs.aws.amazon.com/autoscaling/latest/userguide/US-SpotInstances.html
(http://docs.aws.amazon.com/autoscaling/latest/userguide/US-SpotInstances.html)

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QUESTION 6   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You have a requirement to automate the creation of EBS Snapshots. Which of the following can be used to achieve this in the best way possible.

○ **A.** Create a powershell script which uses the AWS CLI to get the volumes and then run the script as a cron job.

○ **B.** Use the AWS Config service to create a snapshot of the AWS Volumes

○ **C.** Use the AWS CodeDeploy service to create a snapshot of the AWS Volumes

○ **D.** Use Cloudwatch Events to trigger the snapshots of EBS Volumes ✔

Explanation :

Answer – D

The best is to use the inbuilt service from Cloudwatch , as Cloudwatch Events to automate the creation of EBS Snapshots. With Option A , you would be restricted to running the powrshell script on Windows machines and maintaining the script itself. And then you have the overhead of having a separate instance just to run that script.

When you go to Cloudwatch events, you can use the Target as EC2 CreateSnapshot API call as shown below.

Create rules to invoke Targets based on Events happening in your AWS environment.

Event Source

Build or customize an Event Pattern or set a Schedule to invoke Targets.

- ○ Event Pattern ❶ ● Schedule ❶
- ● Fixed rate of   5   Minutes ▼
- ○ Cron expression   0/5 * * * ? *

Learn more about CloudWatch Events schedules.

▶ Show sample event(s)

Targets

Select Target to invoke when an event matches your Event Pattern or when schedule is triggered.

Lambda function ▼   ⊗

- CodePipeline
- **EC2 CreateSnapshot API call**
- EC2 RebootInstances API call
- EC2 StopInstances API call
- EC2 TerminateInstances API call
- ECS task
- Event bus in another AWS account
- Kinesis stream

* Required   Cancel   **Configure details**

The AWS Documentation mentions

Amazon CloudWatch Events delivers a near real-time stream of system events that describe changes in Amazon Web Services (AWS) resources. Using simple rules that you can quickly set up, you can match events and route them to one or more target functions or streams. 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.

For more information on Cloudwatch Events , please visit the below URL:

- http://docs.aws.amazon.com/AmazonCloudWatch/latest/events/WhatIsCloudWatchEvents.html (http://docs.aws.amazon.com/AmazonCloudWatch/latest/events/WhatIsCloudWatchEvents.html)

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You currently have an Autoscaling group that has the following settings

Min capacity - 2

Desired capacity – 2

Maximum capacity – 2

Your launch configuration has AMI's which are based on the t2.micro instance type. The application running on these instances are now experiencing issues and you have identified that the solution is to change the instance type of the instances running in the Autoscaling Group.

Which of the below solutions will meet this demand.

○   **A.** Change the Instance type in the current launch configuration. Change the Desired value of the Autoscaling Group to 4. Ensure the new instances are launched.

○   **B.** Delete the current Launch configuration. Create a new launch configuration with the new instance type and add it to the Autoscaling Group. This will then launch the new instances.

○   **C.** Make a copy the Launch configuration. Change the instance type in the new launch configuration. Attach that to the Autoscaling Group. Change the maximum and Desired size of the Autoscaling Group to 4. Once the new instances are launched, change the Desired and maximum size back to 2.   ✔

○   **D.** Change the desired and maximum size of the Autoscaling Group to 4. Make a copy the Launch configuration. Change the instance type in the new launch configuration. Attach that to the Autoscaling Group. Change the maximum and Desired size of the Autoscaling Group to 2

Explanation :

Answer – C
You should make a copy of the launch configuration, add the new instance type. The change the Autoscaling Group to include the new instance type. Then change the Desired number of the Autoscaling Group to 4 so that instances of new instance type can be launched. Once launched , change the desired size back to 2 , so that Autoscaling will delete the instances with the older

configuration. Note that the assumption here is that the current instances are equally distributed across multiple AZ's because Autoscaling will first use the AZRebalance process to terminate instances.

Option A is invalid because you cannot make changes to an existing Launch configuration.

Option B is invalid because if you delete the existing launch configuration, then your application will not be available. You need to ensure a smooth deployment process.

Option D is invalid because you should change the desired size to 4 after attaching the new launch configuration.

For more information on Changing the Launch Configuration for an Auto Scaling Group, please visit below AWS Docs:

- https://docs.aws.amazon.com/autoscaling/ec2/userguide/change-launch-config.html (https://docs.aws.amazon.com/autoscaling/ec2/userguide/change-launch-config.html)

For more information on Autoscaling Suspend and Resume , please visit the below URL:

- http://docs.aws.amazon.com/autoscaling/latest/userguide/as-suspend-resume-processes.html (http://docs.aws.amazon.com/autoscaling/latest/userguide/as-suspend-resume-processes.html)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You currently have an Autoscaling group that has the following settings

Min capacity - 2

Desired capacity – 2

Maximum capacity – 4

The current number of instances running in the Autoscaling Group is 2. You have been notified that for a duration of an hour, you need to ensure that no new instances are launched by the Autoscaling Group Which of the below 2 actions can be carried out to fulfil this requirement

☐   **A.** Change the Maximum capacity to 2 ✔

☐   **B.** Change the Desired capacity to 4

C. Suspend the Launch process of the Autoscaling Group ✔

D. Change the Minimum capacity to 2

Explanation :

Answer – A and C

You can temporarily suspend the creation of new instances by either reducing the Maximum capacity to 2 , so that the current instances running which is 2 , matches the maximum limit.

Secondly you can suspend the launch process of the Autoscaling Group

The AWS Documentation mentions

Scaling Processes

Amazon EC2 Auto Scaling supports the following scaling processes:

  Launch

Adds a new EC2 instance to the group, increasing its capacity.

 Warning

If you suspend Launch, this disrupts other processes. For example, you can't return an instance in a standby state to service if the Launch process is suspended, because the group can't scale.

For more information on Autoscaling Suspend and Resume, please visit the below URL:

- http://docs.aws.amazon.com/autoscaling/latest/userguide/as-suspend-resume-processes.html (http://docs.aws.amazon.com/autoscaling/latest/userguide/as-suspend-resume-processes.html)

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Your company has a set of resources hosted in AWS. They want to be notified when the costs of the AWS resources running in the account reaches a certain threshold. How can this be accomplished in an ideal way.

A. Create a script which monitors all the running resources and calculates the costs accordingly.

B. Download the cost reports and analyze the reports to see if the costs are going beyond the threshold

○ **C.** Create a billing alarm which can alert you when the costs are going beyond a certain threshold ✔

○ **D.** Create a consolidated billing report and see if the costs are going beyond the threshold.

Explanation :

Answer – C

The AWS Documentation mentions

You can monitor your AWS costs by using CloudWatch. With CloudWatch, you can create billing alerts that notify you when your usage of your services exceeds thresholds that you define. You specify these threshold amounts when you create the billing alerts. When your usage exceeds these amounts, AWS sends you an email notification. You can also sign up to receive notifications when AWS prices change.

For more information on billing alarms , please visit the below URL:

- http://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/monitor-charges.html (http://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/monitor-charges.html)

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Your company has a set of resources hosted in AWS. Your IT Supervisor is concerned with the costs being incurred by the resources running in AWS and wants to optimize on the costs as much as possible. Which of the following ways could help achieve this efficiently? Choose 2 answers from the options given below.

☐ **A.** Create Cloudwatch alarms to monitor underutilized resources and either shutdown or terminate resources which are not required. ✔

☐ **B.** Use the Trusted Advisor to see underutilized resources ✔

☐ **C.** Create a script which monitors all the running resources and calculates the costs accordingly. The analyze those resources accordingly and see which can be optimized.

D. Create Cloudwatch logs to monitor underutilized resources and either shutdown or terminate resources which are not required.

Explanation :

Answer – A and B

You can use Cloudwatch alarms to see if resources are below a threshold for long periods of time.

If so you can take the decision to either stop them or to terminate the resources.

For more information on Cloudwatch alarms , please visit the below URL:

- http://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/AlarmThatSendsEmail.html (http://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/AlarmThatSendsEmail.html)

In the Trusted Advisor , when you enable the Cost optimization section, you will get all sorts of checks which can be used to optimize the costs of your AWS resources.

Cost Optimization

0 ☑ 0 ⚠ 0 ❗

Cost Optimization Checks

🔓 **Upgrade your Support plan to unlock all Trusted Advisor recommendations!**
You will have access to technical support from a cloud support engineer, with phone and chat support, support API, Identity and Access Management, Architecture support - use case guidance, and more.

Upgrade Learn More

▶ **Low Utilization Amazon EC2 Instances**

Checks the Amazon Elastic Compute Cloud (Amazon EC2) instances that were running at any time during the last 14 days and alerts you if the daily CPU utilization was 10% or less and network I/O was 5 MB or less on 4 or more days.

For more information on the Trusted Advisor, please visit the below URL:

- https://aws.amazon.com/premiumsupport/trustedadvisor/ (https://aws.amazon.com/premiumsupport/trustedadvisor/)

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An audit is going to be conducted for your company's AWS account. Which of the following steps will ensure that the auditor has the right access to the logs of your AWS account?

○ **A.** Enable S3 and ELB logs. Send the logs as a zip file to the IT Auditor.

○ **B.** Ensure CloudTrail is enabled. Create a user account for the Auditor and attach the AWSCloudTrailReadOnlyAccess Policy to the user. ✔

○ **C.** Ensure that CloudTrail is enabled. Create a user for the IT Auditor and ensure that full control is given to the user for CloudTrail.

○ **D.** Enable CloudWatch logs. Create a user for the IT Auditor and ensure that full control is given to the user for the CloudWatch logs.

Explanation :

Answer – B

User details

User name	testdpuser	
AWS access type	AWS Management Console access - with a password	
Console password type	Autogenerated	
Require password reset	Yes	
Permissions boundary	Permissions boundary is not set	

Permissions summary

The following policies will be attached to the user shown above.

Type	Name
Managed policy	AWSCloudTrailReadOnlyAccess
Managed policy	IAMUserChangePassword

The AWS Documentation clearly mentions the below
AWS CloudTrail is an AWS service that helps you enable governance, compliance, and operational and risk auditing of your AWS account. Actions taken by a user, role, or an AWS service are recorded as events in CloudTrail. Events include actions taken in the AWS Management Console, AWS Command Line Interface, and AWS SDKs and APIs.
For more information on CloudTrail, please visit the below URL:

• http://docs.aws.amazon.com/awscloudtrail/latest/userguide/cloudtrail-user-guide.html (http://docs.aws.amazon.com/awscloudtrail/latest/userguide/cloudtrail-user-guide.html)

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QUESTION 12   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Your company has a set of EC2 resources hosted on AWS. Your new IT procedures state that AWS EC2 Instances must be of a particular Instance type. Which of the following can be used to get the list of EC2 Instances which currently don't match the instance type specified in the new IT procedures

- ⭘ **A.** Use AWS Cloudwatch alarms to check which EC2 Instances don't match the intended instance type.

- ⭘ **B.** Use AWS Config to create a rule to check the EC2 Instance type ✔

- ⭘ **C.** Use TrustedAdvisor to check which EC2 Instances don't match the intended instance type.

- ⭘ **D.** Use VPC Flow Logs to check which EC2 Instances don't match the intended instance type.

Explanation :

Answer – B
In AWS Config, you can create a rule which can be used to check if EC2 Instances follow a particular instance type. Below is a snapshot of the output of a rule to check if EC2 instances matches the type of t2.micro.

Description	Checks whether your EC2 instances are of the specified instance types.
Trigger type	Configuration changes
Scope of changes	Resources
Resource types	EC2 Instance
Config rule ARN	arn:aws:config:ap-southeast-1:213171387512:config-rule/config-rule-1exnif
Parameters	instanceType: t2.micro
Overall rule status	Last successful invocation on August 29, 2017 at 12:06:57 PM ✅
	Last successful evaluation on August 29, 2017 at 12:06:59 PM ✅

Resources evaluated

Click on the ←🕑 icon to view configuration details for the resource when it was last evaluated with this rule.

Resource type ▼	Config timeline ▼ ←🕑	Compliance ▼	Last successful invocation ▼	Last successful evaluation ▼	Manage resource
EC2 Instance	i-0798cb2c515b3aa50	Noncompliant	August 29, 2017 11:25:10 AM	August 29, 2017 11:25:12 AM	↗
EC2 Instance	i-0f2a1120bec8db3d0	Noncompliant	August 29, 2017 12:06:57 PM	August 29, 2017 12:06:59 PM	↗

For more information on AWS Config, please visit the below URL:

- https://aws.amazon.com/config/ (https://aws.amazon.com/config/)

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QUESTION 13   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Which of the following design strategies is ideal when designing loosely coupled systems. Choose 2 answers from the options given below

☐ **A.** Having the web and worker roles running on the same set of EC2 Instances

☐ **B.** Having the web and worker roles running on separate EC2 Instances ✔

☐ **C.** Using SNS to establish communication between the web and worker roles

☐ **D.** Using SQS to establish communication between the web and worker roles ✔

Explanation :

Answer – B and D

The below diagram shows the ideal design which uses SQS and separate environments for web and worker processes. The SQS queue manages the communication between the web and worker roles.
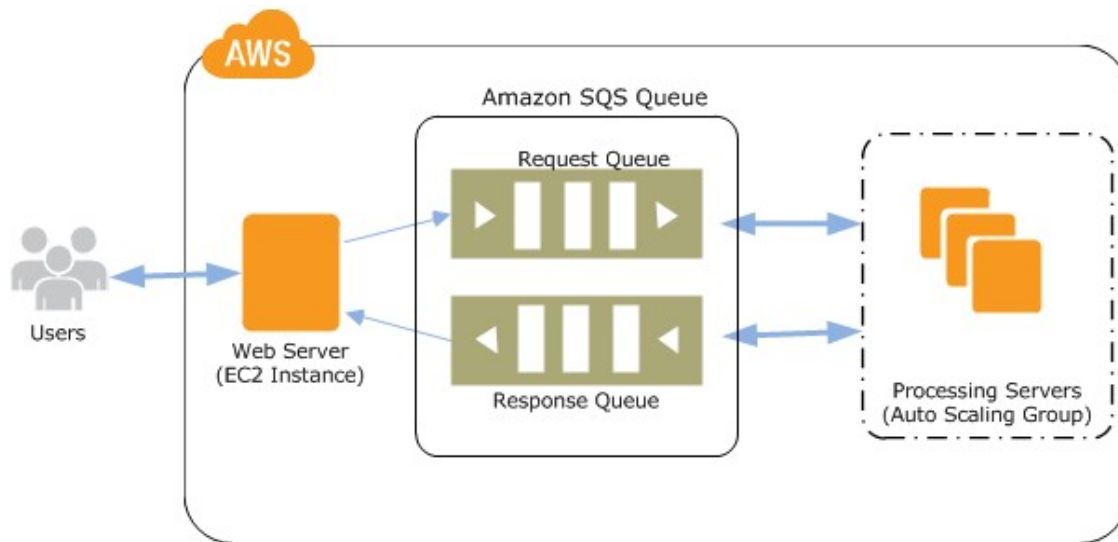
One example is the way Elastic beanstalk manages worker environments. For more information on this , please visit the below URL:

- http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features-managing-env-tiers.html (http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features-managing-env-tiers.html)

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QUESTION 14   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Your company has the requirement to set up instances running as part of an Autoscaling Group. Part of the requirement is to use Lifecycle hooks to setup custom based software's and do the necessary configuration on the instances. The time required for this setup might take an hour , or might finish before the hour is up. How should you setup lifecycle hooks for the Autoscaling Group. Choose 2 ideal actions you would include as part of the lifecycle hook.

A. Configure the lifecycle hook to record heartbeats. If the hour is up, restart the timeout period. ✔

B. Configure the lifecycle hook to record heartbeats. If the hour is up, choose to terminate the current instance and start a new one

C. If the software installation and configuration is complete , then restart the time period.

D. If the software installation and configuration is complete , then send a signal to complete the launch of the instance. ✔

Explanation :

Answer – A and D

The AWS Documentation provides the following information on lifecycle hooks

By default, the instance remains in a wait state for one hour, and then Auto Scaling continues the launch or terminate process (Pending:Proceed or Terminating:Proceed). If you need more time, you can restart the timeout period by recording a heartbeat. If you finish before the timeout period ends, you can complete the lifecycle action, which continues the launch or termination process

For more information on AWS Lifecycle hooks, please visit the below URL:

- http://docs.aws.amazon.com/autoscaling/latest/userguide/lifecycle-hooks.html (http://docs.aws.amazon.com/autoscaling/latest/userguide/lifecycle-hooks.html)

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Your company is planning to setup a wordpress application. The wordpress application will connect to a MySQL database. Part of the requirement is to ensure that the database environment is fault tolerant and highly available. Which of the following 2 options individually can help fulfil this requirement.

A. Create a MySQL RDS environment with Multi-AZ feature enabled ✔

B. Create a MySQL RDS environment and create a Read Replica

C. Create multiple EC2 instances in the same AZ. Host MySQL and enable replication via scripts between the instances.

D. Create multiple EC2 instances in separate AZ's. Host MySQL and enable replication via scripts between the instances. ✔

Explanation :

Answer – A and D

One way to ensure high availability and fault tolerant environments is to ensure Instances are located across multiple availability zones. Hence if you are hosting MySQL yourself , ensure you have instances spread across multiple AZ's

The AWS Documentation mentions the following about the multi-AZ feature

Amazon RDS provides high availability and failover support for DB instances using Multi-AZ deployments. Amazon RDS uses several different technologies to provide failover support. Multi-AZ deployments for Oracle, PostgreSQL, MySQL, and MariaDB DB instances use Amazon's failover technology

For more information on AWS Multi-AZ deployments, please visit the below URL:

- http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html (http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html)

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QUESTION 16   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You are currently using Elastic Beanstalk to host your production environment. You need to rollout updates to your application hosted on this environment. This is a critical application which is why there is a requirement that the rollback , if required , should be carried out with the least amount of downtime. Which of the following deployment strategies would ideally help achieve this purpose

○ **A.** Create a Cloudformation template with the same resources as those in the Elastic beanstalk environment. If the deployment fails, deploy the Cloudformation template.

B. Use Rolling updates in Elastic Beanstalk so that if the deployment fails , the rolling updates feature would roll back to the last deployment.

C. Create another parallel environment in elastic beanstalk. Use the Swap URL feature. ✔

D. Create another parallel environment in elastic beanstalk. Create a new Route53 Domain name for the new environment and release that url to the users.

Explanation :

Answer – C

Since the requirement is to have the least amount of downtime, the ideal way is to create a blue green deployment environment and then use the Swap URL feature to swap environments for the new deployment and then do the swap back , incase the deployment fails.

The AWS Documentation mentions the following on the SWAP url feature of Elastic Beanstalk

Because Elastic Beanstalk performs an in-place update when you update your application versions, your application may become unavailable to users for a short period of time. It is possible to avoid this downtime by performing a blue/green deployment, where you deploy the new version to a separate environment, and then swap CNAMEs of the two environments to redirect traffic to the new version instantly.

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Your application is having a very high traffic, so you have enabled autoscaling in multi availability zone to suffice the needs of your application but you observe that one of the availability zone is not receiving any traffic. What can be wrong here?

A. Autoscaling only works for single availability zone

B. Autoscaling can be enabled for multi AZ only in north Virginia region

C. Availability zone is not added to Elastic load balancer ✔

D. Instances need to manually added to availability zone

Explanation :

Answer – C

When you add an Availability Zone to your load balancer, Elastic Load Balancing creates a load balancer node in the Availability Zone. Load balancer nodes accept traffic from clients and forward requests to the healthy registered instances in one or more Availability Zones.

For more information on adding AZ's to ELB, please refer to the below URL:

- http://docs.aws.amazon.com/elasticloadbalancing/latest/classic/enable-disable-az.html (http://docs.aws.amazon.com/elasticloadbalancing/latest/classic/enable-disable-az.html)

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QUESTION 18   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Your company has an on-premise Active Directory setup in place. The company has extended their footprint on AWS , but still want to have the ability to use their on-premise Active Directory for authentication. Which of the following AWS services can be used to ensure that AWS resources such as AWS Workspaces can continue to use the existing credentials stored in the on-premise Active Directory.

- ○ **A.** Use the Active Directory service on AWS
- ○ **B.** Use the AWS Simple AD service
- ○ **C.** Use the Active Directory connector service on AWS ✔
- ○ **D.** Use the ClassicLink feature on AWS

Explanation :

Answer – C

The AWS Documentation mentions the following

AD Connector is a directory gateway with which you can redirect directory requests to your on-premises Microsoft Active Directory without caching any information in the cloud. AD Connector comes in two sizes, small and large. A small AD Connector is designed for smaller organizations of up to 500 users. A large AD Connector can support larger organizations of up to 5,000 users.

For more information on the AD connector, please refer to the below URL:

- http://docs.aws.amazon.com/directoryservice/latest/admin-
  guide/directory_ad_connector.html
  (http://docs.aws.amazon.com/directoryservice/latest/admin-
  guide/directory_ad_connector.html)

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You have a legacy application running that uses an m4.large instance size and cannot scale with Auto Scaling, but only has peak performance 5% of the time. This is a huge waste of resources and money so your Senior Technical Manager has set you the task of trying to reduce costs while still keeping the legacy application running as it should. Which of the following would best accomplish the task your manager has set you? Choose the correct answer from the options below

○ **A.** Use a T2 burstable performance instance. ✔

○ **B.** Use a C4.large instance with enhanced networking.

○ **C.** Use two t2.nano instances that have single Root I/O Virtualization.

○ **D.** Use t2.nano instance and add spot instances when they are required.

Explanation :

Answer – A
The aws documentation clearly indicates using T2 EC2 instance types for those instances which don't use CPU that often.
 T2
T2 instances are Burstable Performance Instances that provide a baseline level of CPU performance with the ability to burst above the baseline.

T2 Unlimited instances can sustain high CPU performance for as long as a workload needs it. For most general-purpose workloads, T2 Unlimited instances will provide ample performance without any additional charges. If the instance needs to run at higher CPU utilization for a prolonged period, it can also do so at a flat additional charge of 5 cents per vCPU-hour.

The baseline performance and ability to burst are governed by CPU Credits. T2 instances receive CPU Credits continuously at a set rate depending on the instance size, accumulating CPU Credits when they are idle, and consuming CPU credits when they are active. T2 instances are a good choice for a variety of general-purpose workloads including micro-services, low-latency interactive applications, small and medium databases, virtual desktops, development, build and stage environments, code repositories, and product prototypes. For more information see Burstable Performance Instances.

For more information on EC2 instance types please see the below link:

- https://aws.amazon.com/ec2/instance-types/ (https://aws.amazon.com/ec2/instance-types/)

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The company you work for has a huge amount of infrastructure built on AWS. However there has been some concerns recently about the security of this infrastructure, and an external auditor has been given the task of running a thorough check of all of your company's AWS assets. The auditor will be in the USA while your company's infrastructure resides in the Asia Pacific (Sydney) region on AWS. Initially, he needs to check all of your VPC assets, specifically, security groups and NACLs You have been assigned the task of providing the auditor with a login to be able to do this. Which of the following would be the best and most secure solution to provide the auditor with so he can begin his initial investigations? Choose the correct answer from the options below

- ○ **A. Create an IAM user tied to an administrator role. Also provide an additional level of security with MFA.**

- ○ **B. Give him root access to your AWS Infrastructure, because he is an auditor he will need access to every service.**

○　**C.** Create an IAM user who will have read-only access to your AWS VPC infrastructure and provide the auditor with those credentials. ✔

○　**D.** Create an IAM user with full VPC access but set a condition that will not allow him to modify anything if the request is from any IP other than his own.

Explanation :

Answer – C

Generally you should refrain from giving high level permissions and give only the required permissions. In this case option C fits well by just providing the relevant access which is required. For more information on IAM please see the below link:

• https://aws.amazon.com/iam/ (https://aws.amazon.com/iam/)

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You're building a mobile application game. The application needs permissions for each user to communicate and store data in DynamoDB tables. What is the best method for granting each mobile device that installs your application to access DynamoDB tables for storage when required? Choose the correct answer from the options below

○　**A.** During the install and game configuration process, have each user create an IAM credential and assign the IAM user to a group with proper permissions to communicate with DynamoDB.

○　**B.** Create an IAM group that only gives access to your application and to the DynamoDB tables. Then, when writing to DynamoDB, simply include the unique device ID to associate the data with that specific user.

○　**C.** Create an IAM role with the proper permission policy to communicate with the DynamoDB table. Use web identity federation, which assumes the IAM role using AssumeRoleWithWebIdentity, when the user signs in, granting temporary security credentials using STS. ✔

○ **D.** Create an Active Directory server and an AD user for each mobile application user. When the user signs in to the AD sign-on, allow the AD server to federate using SAML 2.0 to IAM and assign a role to the AD user which is the assumed with AssumeRoleWithSAML.

Explanation :

Answer – C

For access to any AWS service, the ideal approach for any application is to use Roles. This is the first preference.

For more information on IAM policies please refer to the below link:

- http://docs.aws.amazon.com/IAM/latest/UserGuide/access_policies.html (http://docs.aws.amazon.com/IAM/latest/UserGuide/access_policies.html)

Next for any web application, you need to use web identity federation. Hence option D is the right option. This along with the usage of roles is highly stressed in the aws documentation.

The AWS documentation mentions the following

When developing a web application it is recommend not to embed or distribute long-term AWS credentials with apps that a user downloads to a device, even in an encrypted store. Instead, build your app so that it requests temporary AWS security credentials dynamically when needed using *web identity federation*. The supplied temporary credentials map to an AWS role that has only the permissions needed to perform the tasks required by the mobile app.

For more information on web identity federation please refer to the below link:

- http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_providers_oidc.html (http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_providers_oidc.html)

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QUESTION 22 UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You are incharge of creating a Cloudformation template that will be used to spin our resources on demand for your Devops team. The requirement is that this cloudformation template should be able to spin up resources in different regions. Which of the following aspects of Cloudformation templates can help you design the template to spin up resources based on the region.

○　**A.** Use mappings section in the Cloudformation template , so that based on the relevant region , the relevant resource can be spinned up.　✔

○　**B.** Use the outputs section in the Cloudformation template , so that based on the relevant region , the relevant resource can be spinned up.

○　**C.** Use the parameters section in the Cloudformation template , so that based on the relevant region , the relevant resource can be spinned up.

○　**D.** Use the metadata section in the Cloudformation template , so that based on the relevant region , the relevant resource can be spinned up.

Explanation :

Answer – A

The AWS Documentation mentions

The optional Mappings section matches a key to a corresponding set of named values. For example, if you want to set values based on a region, you can create a mapping that uses the region name as a key and contains the values you want to specify for each specific region. You use the Fn::FindInMap intrinsic function to retrieve values in a map.

For more information on mappings please refer to the below link:

- http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/mappings-section-structure.html
  (http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/mappings-section-structure.html)

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QUESTION 23　　　UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You are the IT administrator for your company. You have the responsibility of creating development environments which would confirm to the LAMP development stack. The requirement is that the development team always gets the latest version of the LAMP stack each time a new instance is launched. Which of the following is an efficient and effective way to implement this requirement? Choose 2 answers from the options given below

☐ **A.** Create an AMI with all the artifacts of the LAMP stack and provide an instance to the development team based on the AMI.

☐ **B.** Create a cloudformation template and use the cloud-init directives to download and the install the LAMP stack packages. ✔

☐ **C.** Use the User data section and use a custom script which will be used to download the necessary LAMP stack packages. ✔

☐ **D.** Create an EBS Volume with the LAMP stack and attach it to an instance whenever it is required.

Explanation :

Answer – B and C

Using User data and cloud-init directives you can always ensure you download the latest version of the LAMP stack and give it to the development teams. With AMI's you will always have the same version and will need to create an AMI everytime the version of the LAMP stack changes.

The AWS Documentation mentions

When you launch an instance in Amazon EC2, you have the option of passing user data to the instance that can be used to perform common automated configuration tasks and even run scripts after the instance starts. You can pass two types of user data to Amazon EC2: shell scripts and cloud-init directives. You can also pass this data into the launch wizard as plain text, as a file (this is useful for launching instances using the command line tools), or as base64-encoded text (for API calls).

For more information on User data please refer to the below link:

- http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/user-data.html (http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/user-data.html)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

A company has developed a Ruby on Rails content management platform. Currently, OpsWorks with several stacks for dev, staging, and production is being used to deploy and manage the application. Now the company wants to start using Python instead of Ruby. How should the company manage the new deployment? Choose the correct answer from the options below

○ **A.** Update the existing stack with Python application code and deploy the application using the deploy life-cycle action to implement the application code.

○ **B.** Create a new stack that contains a new layer with the Python code. To cut over to the new stack the company should consider using Blue/Green deployment ✔

○ **C.** Create a new stack that contains the Python application code and manage separate deployments of the application via the secondary stack using the deploy lifecycle action to implement the application code.

○ **D.** Create a new stack that contains the Python application code and manages separate deployments of the application via the secondary stack.

Explanation :

Answer – B

Blue/green deployment is a technique for releasing applications by shifting traffic between two identical environments running different versions of the application. Blue/green deployments can mitigate common risks associated with deploying software, such as downtime and rollback capability
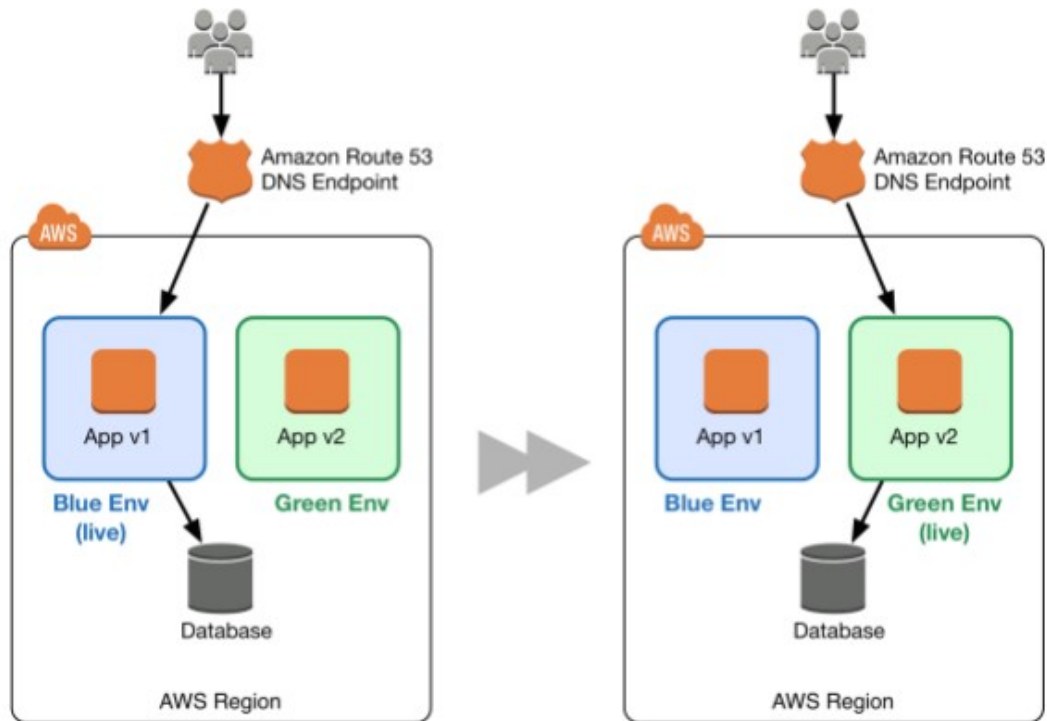
Please find the below link on a white paper for blue green deployments

- https://d0.awsstatic.com/whitepapers/AWS_Blue_Green_Deployments.pdf
  (https://d0.awsstatic.com/whitepapers/AWS_Blue_Green_Deployments.pdf)

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QUESTION 25   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You are working as an AWS Devops admins for your company. You are in-charge of building the infrastructure for the company's development teams using Cloudformation. The template will include building the VPC and networking components, installing a LAMP stack and securing the created resources. As per the AWS best practices what is the best way to design this template

○   **A. Create a single cloudformation template to create all the resources since it would be easier from the maintenance perspective.**

○　　**B.**　Create multiple cloudformation templates based on the number of VPC's in the environment.

○　　**C.**　Create multiple cloudformation templates based on the number of development groups in the environment.

○　　**D.**　Create multiple cloudformation templates for each set of logical resources , one for networking , the other for LAMP stack creation. ✔

Explanation :

Answer – D

Creating multiple cloudformation templates is an example of using nested stacks. The advantage of using nested stacks is given below as per the AWS documentation

As your infrastructure grows, common patterns can emerge in which you declare the same components in each of your templates. You can separate out these common components and create dedicated templates for them. That way, you can mix and match different templates but use nested stacks to create a single, unified stack. Nested stacks are stacks that create other stacks. To create nested stacks, use the AWS::CloudFormation::Stack (http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-stack.html)resource in your template to reference other templates.

For more information on Cloudformation best practises, please refer to the below link:

- http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/best-practices.html (http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/best-practices.html)

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Your security officer has told you that you need to tighten up the logging of all events that occur on your AWS account. He wants to be able to access all events that occur on the account across all regions quickly and in the simplest way possible. He also wants to make sure he is the only person that has access to these events in the most secure way possible. Which of the following would be the best solution to assure his requirements are met? Choose the correct answer from the options below

○ **A.** Use CloudTrail to log all events to one S3 bucket. Make this S3 bucket only accessible by your security officer with a bucket policy that restricts access to his user only and also add MFA to the policy for a further level of security. ✔

○ **B.** Use CloudTrail to log all events to an Amazon Glacier Vault. Make sure the vault access policy only grants access to the security officer's IP address.

○ **C.** Use CloudTrail to send all API calls to CloudWatch and send an email to the security officer every time an API call is made. Make sure the emails are encrypted.

○ **D.** Use CloudTrail to log all events to a separate S3 bucket in each region as CloudTrail cannot write to a bucket in a different region. Use MFA and bucket policies on all the different buckets.

Explanation :

Answer – A
AWS CloudTrail is a service that enables governance, compliance, operational auditing, and risk auditing of your AWS account. With CloudTrail, you can log, continuously monitor, and retain events related to API calls across your AWS infrastructure. CloudTrail provides a history of AWS API calls for your account, including API calls made through the AWS Management Console, AWS SDKs, command line tools, and other AWS services. This history simplifies security analysis, resource change tracking, and troubleshooting.
You can design cloudtrail to send all logs to a central S3 bucket.
For more information on cloudtrail , please visit the below URL:

* https://aws.amazon.com/cloudtrail/ (https://aws.amazon.com/cloudtrail/)

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QUESTION 27   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You are in charge of designing Cloudformation templates for your company. One of the key requirements is to ensure that if a Cloudformation stack is deleted, a snapshot of the relational database is created which is part of the stack. How can you achieve this in the best possible way?

- ○ **A.** Create a snapshot of the relational database beforehand so that when the cloudformation stack is deleted , the snapshot of the database will be present.

- ○ **B.** Use the Update policy of the cloudformation template to ensure a snapshot is created of the relational database.

- ○ **C.** Use the Deletion policy of the cloudformation template to ensure a snapshot is created of the relational database. ✔

- ○ **D.** Create a new cloudformation template to create a snapshot of the relational database.

Explanation :

Answer – C

The AWS documentation mentions the following

With the DeletionPolicy attribute you can preserve or (in some cases) backup a resource when its stack is deleted. You specify a DeletionPolicy attribute for each resource that you want to control. If a resource has no DeletionPolicy attribute, AWS CloudFormation deletes the resource by default. Note that this capability also applies to update operations that lead to resources being removed.

For more information on the Deletion policy , please visit the below URL:

- http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-attribute-deletionpolicy.html
  (http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-attribute-deletionpolicy.html)

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QUESTION 28   UNATTEMPTED   SECURITY, GOVERNANCE, AND VALIDATION

An enterprise wants to use a third-party SaaS application running on AWS.. The SaaS application needs to have access to issue several API commands to discover Amazon EC2 resources running within the enterprise's account. The enterprise has internal security policies that require any outside access to their environment must conform to the principles of least privilege and there must be

controls in place to ensure that the credentials used by the SaaS vendor cannot be used by any other third party. Which of the following would meet all of these conditions?

- ○ **A.** From the AWS Management Console, navigate to the Security Credentials page and retrieve the access and secret key for your account.

- ○ **B.** Create an IAM user within the enterprise account assign a user policy to the IAM user that allows only the actions required by the SaaS application. Create a new access and secret key for the user and provide these credentials to the SaaS provider.

- ○ **C.** Create an IAM role for cross-account access allows the SaaS provider's account to assume the role and assign it a policy that allows only the actions required by the SaaS application. ✔

- ○ **D.** Create an IAM role for EC2 instances, assign it a policy that allows only the actions required tor the Saas application to work, provide the role ARN to the SaaS provider to use when launching their application instances.

Explanation :

Answer – C
Many SaaS platforms can access aws resources via a Cross account access created in aws. If you go to Roles in your identity management, you will see the ability to add a cross account role.

Select Role Type

○ **AWS Service Roles**

◉ **Role for Cross-Account Access**

> **Provide access between AWS accounts you own**
Allows IAM users from one of your other AWS accounts to access this account.

> **Provide access between your AWS account and a 3rd party AWS account**
Allows IAM users from a 3rd party AWS account to access this account and enforces use of External ID.

○ **Role for Identity Provider Access**

For more information on cross account role , please visit the below URL:

- http://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html (http://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html)

QUESTION 29   UNATTEMPTED   HIGH AVAILABILITY AND ELASTICITY

Your company is getting ready to do a major public announcement of a social media site on AWS. The website is running on EC2 instances deployed across multiple Availability Zones with a Multi-AZ RDS MySQL Extra Large DB Instance. The site performs a high number of small reads and writes per second and relies on an eventual consistency model. After comprehensive tests you discover that there is read contention on RDS MySQL. Which are the best approaches to meet these requirements? Choose 2 answers from the options below

- [ ] **A.** Deploy ElasticCache in-memory cache running in each availability zone ✔

- [ ] **B.** Implement sharding to distribute load to multiple RDS MySQL instances

- [ ] **C.** Increase the RDS MySQL Instance size and Implement provisioned IOPS

- [ ] **D.** Add an RDS MySQL read replica in each availability zone ✔

Explanation :

Answer – A and D
Implement Read Replicas and Elastic Cache
Amazon RDS Read Replicas provide enhanced performance and durability for database (DB) instances. This replication feature makes it easy to elastically scale out beyond the capacity constraints of a single DB Instance for read-heavy database workloads. You can create one or more replicas of a given source DB Instance and serve high-volume application read traffic from multiple copies of your data, thereby increasing aggregate read throughput.
For more information on Read Replica's, please visit the below link:

- https://aws.amazon.com/rds/details/read-replicas/ (https://aws.amazon.com/rds/details/read-replicas/)

Amazon ElastiCache is a web service that makes it easy to deploy, operate, and scale an in-memory data store or cache in the cloud (https://aws.amazon.com/what-is-cloud-computing/). The service improves the performance of web applications by allowing you to retrieve information from fast, managed, in-memory data stores, instead of relying entirely on slower disk-based databases.

For more information on Amazon ElastiCache, please visit the below link:

- https://aws.amazon.com/elasticache/ (https://aws.amazon.com/elasticache/)

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QUESTION 30   UNATTEMPTED

Your company is planning to develop an application in which the front end is in .Net and the backend is in DynamoDB. There is an expectation of a high load on the application. How could you ensure the scalability of the application to reduce the load on the DynamoDB database? Choose an answer from the options below.

○   **A.** Add more DynamoDB databases to handle the load.

○   **B.** Increase write capacity of Dynamo DB to meet the peak loads

○   **C.** Use SQS to assist and let the application pull messages and then perform the relevant operation in DynamoDB. ✔

○   **D.** Launch DynamoDB in Multi-AZ configuration with a global index to balance writes

Explanation :

Answer – C

When the idea comes for scalability then SQS is the best option. Normally DynamoDB is scalable, but since one is looking for a cost effective solution, the messaging in SQS can assist in managing the situation mentioned in the question.

Amazon Simple Queue Service (SQS) is a fully-managed message queuing service for reliably communicating among distributed software components and microservices - at any scale. Building applications from individual components that each perform a discrete function improves scalability and reliability, and is best practice design for modern applications. SQS makes it simple and cost-effective to decouple and coordinate the components of a cloud application. Using SQS, you can send, store, and receive messages between software components at any volume, without losing messages or requiring other services to be always available

For more information on SQS, please refer to the below URL:

- https://aws.amazon.com/sqs/ (https://aws.amazon.com/sqs/)

QUESTION 31   UNATTEMPTED   MONITORING, METRICS, AND LOGGING
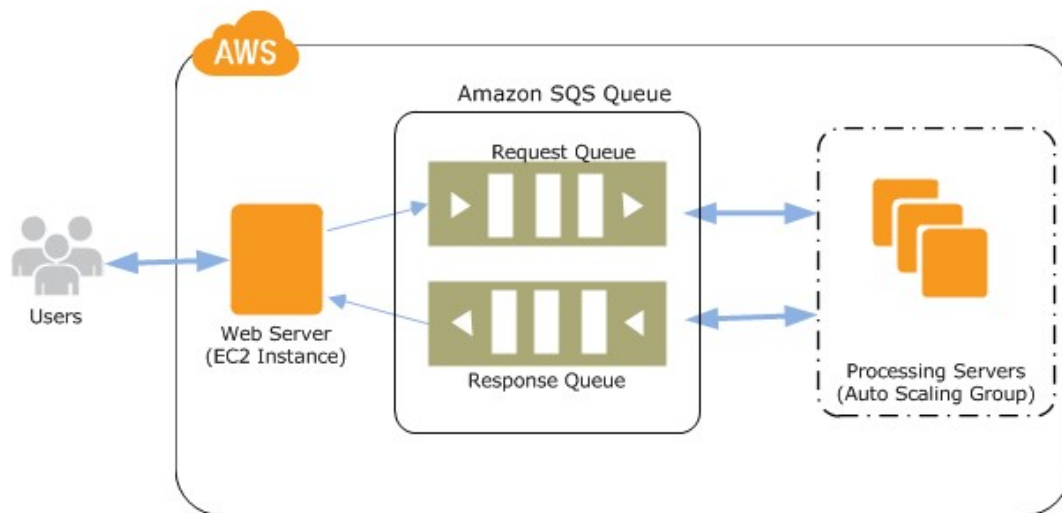
You are having a web and worker role infrastructure defined in AWS using Amazon EC2 resources. You are using SQS to manage the jobs being send by the web role. Which of the following is the right way to ensure the worker processes are adequately setup to handle the number of jobs send by the web role

○   **A.** Use Cloudwatch monitoring to check the size of the queue and then scale out SQS to ensure that it can handle the right number of jobs

○   **B.** Use ELB to ensure that the load is evenly distributed to the set of web and worker instances

○   **C.** Use Route53 to ensure that the load is evenly distributed to the set of web and worker instances

○   **D.** Use Cloudwatch monitoring to check the size of the queue and then scale out using Autoscaling to ensure that it can handle the right number of jobs ✔

Explanation :

Answer - D
The below diagram shows how SQS can be used to manage the communication between the Web and worker roles. The number of messages in the SQS queue can be used to determine the number of instances that should be there in the AutoScaling Group.

For more information on SQS and Autoscaling, please refer to the below URL:

- http://docs.aws.amazon.com/autoscaling/latest/userguide/as-using-sqs-queue.html (http://docs.aws.amazon.com/autoscaling/latest/userguide/as-using-sqs-queue.html)

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QUESTION 32   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Which of the following features of the Autoscaling Group ensures that additional instances are neither launched or terminated before the previous scaling activity takes effect

- ○ **A.** Termination policy
- ○ **B.** Cool down period ✔
- ○ **C.** Ramp up period
- ○ **D.** Creation policy

Explanation :

Answer - B

The AWS documentation mentions

The Auto Scaling cooldown period is a configurable setting for your Auto Scaling group that helps to ensure that Auto Scaling doesn't launch or terminate additional instances before the previous scaling activity takes effect. After the Auto Scaling group dynamically scales using a simple scaling policy, Auto Scaling waits for the cooldown period to complete before resuming scaling activities. When you manually scale your Auto Scaling group, the default is not to wait for the cooldown period, but you can override the default and honor the cooldown period. If an instance becomes unhealthy, Auto Scaling does not wait for the cooldown period to complete before replacing the unhealthy instance

For more information on the Cool down period, please refer to the below URL:

- http://docs.aws.amazon.com/autoscaling/latest/userguide/Cooldown.html (http://docs.aws.amazon.com/autoscaling/latest/userguide/Cooldown.html)

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Your finance supervisor has set a budget of 2000 USD for the resources in AWS. Which of the following is the simplest way to ensure that you know when this threshold is being reached.

○   **A. Use Cloudwatch events to notify you when you reach the threshold value**

○   **B. Use the Cloudwatch billing alarm to to notify you when you reach the threshold value ✔**

○   **C. Use Cloudwatch logs to notify you when you reach the threshold value**

○   **D. Use SQS queues to notify you when you reach the threshold value**

Explanation :

Answer – B
The AWS documentation mentions

You can monitor your AWS costs by using CloudWatch. With CloudWatch, you can create billing alerts that notify you when your usage of your services exceeds thresholds that you define. You specify these threshold amounts when you create the billing alerts. When your usage exceeds these amounts, AWS sends you an email notification. You can also sign up to receive notifications when AWS prices change.

For more information on billing alarms, please refer to the below URL:

- http://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/monitor-charges.html (http://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/monitor-charges.html)

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You are using lifecycle hooks in your AutoScaling Group. Because there is a lifecycle hook, the instance is put in the Pending:Wait state, which means that it is not available to handle traffic yet. When the instance enters the wait state, other scaling actions are suspended. After some time, the instance state is changed to Pending:Proceed, and finally InService where the instances that are part of the Autoscaling Group can start serving up traffic. But you notice that the bootstrapping process on the instances finish much earlier, long before the state is changed to Pending:Proceed.

What can you do to ensure the instances are placed in the right state after the bootstrapping process is complete?

○ **A.** Use the complete-lifecycle-action call to complete the lifecycle action. Run this command from another EC2 Instance.

○ **B.** Use the complete-lifecycle-action call to complete the lifecycle action. Run this command from the Command line interface. ✔

○ **C.** Use the complete-lifecycle-action call to complete the lifecycle action. Run this command from the Simple Notification service.

○ **D.** Use the complete-lifecycle-action call to complete the lifecycle action. Run this command from a SQS queue

Explanation :

Answer – B

The AWS Documentation mentions the following

3. If you finish the custom action before the timeout period ends, use the complete-lifecycle-action command so that the Auto Scaling group can continue launching or terminating the instance. You can specify the lifecycle action token, as shown in the following command:

> 3. If you finish the custom action before the timeout period ends, use the complete-lifecycle-action command so that Auto Scaling can continue launching or terminating the instance. You can specify the lifecycle action token, as shown in the following command:

```
aws autoscaling complete-lifecycle-action --lifecycle-action-result CONTINUE
```

For more information on lifecycle hooks, please refer to the below URL:

- http://docs.aws.amazon.com/autoscaling/latest/userguide/lifecycle-hooks.html
  (http://docs.aws.amazon.com/autoscaling/latest/userguide/lifecycle-hooks.html)

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There is a requirement for an application hosted on a VPC to access the On-premise LDAP server. The VPC and the On-premise location are connected via an IPSec VPN. Which of the below are the right options for the application to authenticate each user. Choose 2 answers from the options below

☐ **A.** Develop an identity broker that authenticates against IAM security Token service to assume a IAM role in order to get temporary AWS security credentials The application calls the identity broker to get AWS temporary security credentials.

B. The application authenticates against LDAP and retrieves the name of an IAM role associated with the user. The application then calls the IAM Security Token Service to assume that IAM role. The application can use the temporary credentials to access any AWS resources. ✔

C. Develop an identity broker that authenticates against LDAP and then calls IAM Security Token Service to get IAM federated user credentials. The application calls the identity broker to get IAM federated user credentials with access to the appropriate AWS service. ✔

D. The application authenticates against LDAP the application then calls the AWS identity and Access Management (IAM) Security service to log in to IAM using the LDAP credentials the application can use the IAM temporary credentials to access the appropriate AWS service.


Explanation :

Answer – B and C

When you have the need for an in-premise environment to work with a cloud environment, you would normally have 2 artefacts for authentication purposes

- An identity store – So this is the on-premise store such as Active Directory which stores all the information for the user's and the groups they below to.

- An identity broker – This is used as an intermediate agent between the on-premise location and the cloud environment. In Windows you have a system known as Active Directory Federation services to provide this facility.

Hence in the above case, you need to have an identity broker which can work with the identity store and the Security Token service in aws. An example diagram of how this works from the aws documentation is given below.
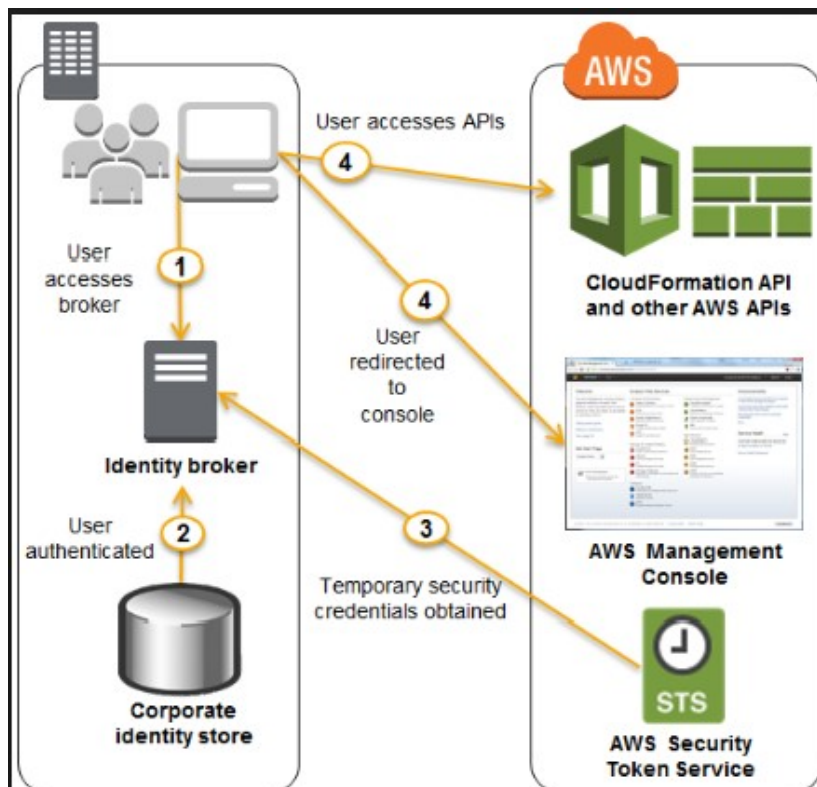
For more information on federated access, please visit the below link:

- http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_common-scenarios_federated-users.html
(http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_common-scenarios_federated-users.html)

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Which of the following is incorrect when it comes to using the instances in an Opswork stack?

- ○ **A.** In a stack you can use a mix of both Windows and Linux operating systems ✔
- ○ **B.** You can start and stop instances manually in a stack

○ **C.** You can use custom AMI's as long as they are based on one of the AWS OpsWorks Stacks-supported AMIs

○ **D.** You can use time-based automatic scaling with any stack

---

Explanation :

Answer - A

The AWS documentation mentions the following about Opswork stack

- A stack's instances can run either Linux or Windows.

A stack can have different Linux versions or distributions on different instances, but you cannot mix Linux and Windows instances.

- You can use custom AMIs (Amazon Machine Images), but they must be based on one of the AWS OpsWorks Stacks-supported AMIs

- You can start and stop instances manually or have AWS OpsWorks Stacks automatically scale the number of instances.

You can use time-based automatic scaling with any stack; Linux stacks also can use load-based scaling.

- In addition to using AWS OpsWorks Stacks to create Amazon EC2 instances, you can also register instances with a Linux stack that were created outside of AWS OpsWorks Stacks.

For more information on Opswork stacks, please visit the below link:

- http://docs.aws.amazon.com/opsworks/latest/userguide/workinginstances-os.html (http://docs.aws.amazon.com/opsworks/latest/userguide/workinginstances-os.html)

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A company has recently started using Docker cloud. This is a SaaS solution for managing docker containers on the AWS cloud and the solution provider is also on the same cloud platform. There is a requirement for the SaaS solution to

access AWS resources. Which of the following would meet the requirement for enabling the SaaS solution to work with AWS resources in the most secured manner?

○ **A.** From the AWS Management Console, navigate to the Security Credentials page and retrieve the access and secret key for your account.

○ **B.** Create an IAM user within the enterprise account assign a user policy to the IAM user that allows only the actions required by the SaaS application. Create a new access and secret key for the user and provide these credentials to the SaaS provider.

○ **C.** Create an IAM role for cross-account access allows the SaaS provider's account to assume the role and assign it a policy that allows only the actions required by the SaaS application. ✔

○ **D.** Create an IAM role for EC2 instances, assign it a policy mat allows only the actions required tor the Saas application to work, provide the role ARM to the SaaS provider to use when launching their application instances.

Explanation :

Answer – C

Many SaaS platforms can access aws resources via a Cross account access created in aws. If you go to Roles in your identity management, you will see the ability to add a cross account role.

Select Role Type

○ AWS Service Roles

◉ Role for Cross-Account Access

› Provide access between AWS accounts you own
Allows IAM users from one of your other AWS accounts to access this account.

› Provide access between your AWS account and a 3rd party AWS account
Allows IAM users from a 3rd party AWS account to access this account and enforces use of External ID.

○ Role for Identity Provider Access

For more information on cross account role , please visit the below URL:

- http://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html (http://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html)

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Which of the following will you need to consider so you can set up a solution that incorporates single sign-on from your corporate AD or LDAP directory and restricts access for each user to a designated user folder in a bucket? Choose 3 Answers from the options below

☐ **A.** Setting up a federation proxy or identity provider ✔

☐ **B.** Using AWS Security Token Service to generate temporary tokens ✔

☐ **C.** Tagging each folder in the bucket

☐ **D.** Configuring IAM role ✔

☐ **E.** Setting up a matching IAM user for every user in your corporate directory that needs access to a folder in the bucket

Explanation :

Answer – A,B and D
The below diagram showcases how authentication is carried out when having an identity broker. This is an example of a SAML connection , but the same concept holds true for getting access to an AWS resource.
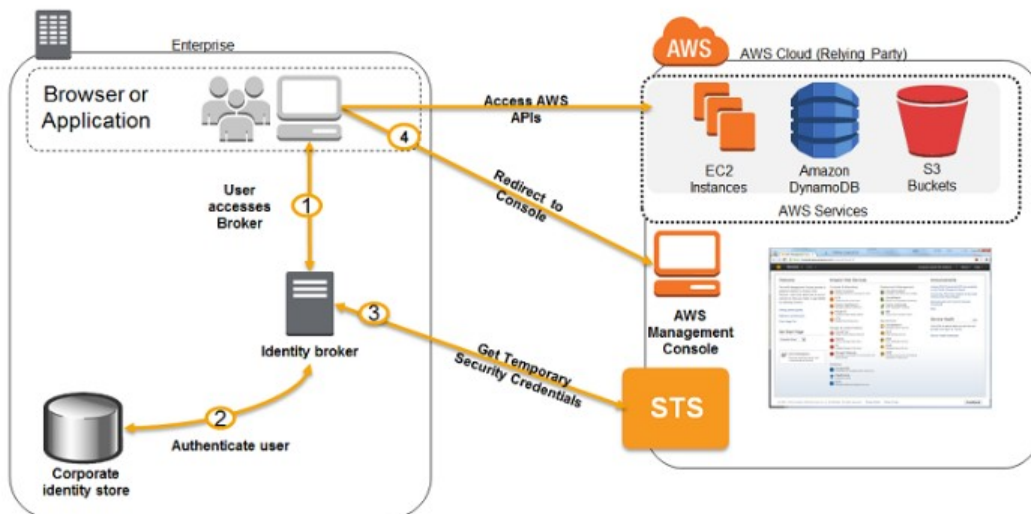
For more information on federated access , please visit the below link:

- http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_common-scenarios_federated-users.html
(http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_common-scenarios_federated-users.html)

- https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_create_for-idp_saml.html?icmpid=docs_iam_console
(https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_create_for-idp_saml.html?icmpid=docs_iam_console)

- https://aws.amazon.com/blogs/security/writing-iam-policies-grant-access-to-user-specific-folders-in-an-amazon-s3-bucket/ (https://aws.amazon.com/blogs/security/writing-iam-policies-grant-access-to-user-specific-folders-in-an-amazon-s3-bucket/)

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QUESTION 39   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You are using Autoscaling for managing the instances in your AWS environment. You need to deploy a new version of your application. You'd prefer to use all new instances if possible, but you cannot have any downtime. You also don't want to swap any environment urls. Which of the following deployment methods would you implement

○ **A.** Using "All at once" deployment method.

○ **B.** Using "Blue Green" deployment method.

○ **C.** Using "Rolling Updates" deployment method. ✔

○ **D.** Using "Blue Green" with "All at once" deployment method.

Explanation :

Answer - C

In Rolling deployment, you can mention a new set of servers which can replace the existing set of servers. This replacement will happen in a phased out manner. Since there is a requirement to not swap URL's , you must not use Blue Green deployments.

For more information on the differences between Rolling Updates and Blue Green deployments , please refer to the below URL:

· https://cloudnative.io/docs/blue-green-deployment/ (https://cloudnative.io/docs/blue-green-deployment/)

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QUESTION 40   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

A custom script needs to be passed to a new Amazon Linux instances created in your Auto Scaling group. Which feature allows you to accomplish this?

○ **A.** User data ✔

○ **B.** EC2Config service

○ **C.** IAM roles

○ **D.** AWS Config

Explanation :

Answer – A

When you configure an instance during creation, you can add custom scripts to the User data

section.

So in Step 3 of creating an instance, in the Advanced Details section, we can enter custom scripts in the User Data section. The below script installs Perl during the instance creation of the EC2 instance.

Step 3: Configure Instance Details

~~Additional charges apply.~~

Tenancy ⓘ	Shared - Run a shared hardware instance ▾
	Additional charges will apply for dedicated tenancy.

▼ Network interfaces ⓘ

Device	Network Interface	Subnet	Primary IP	Secondary IP addresses
eth0	New network interface ▾	subnet-95ed8dd ▾	Auto-assign	Add IP

Add Device

▼ Advanced Details

User data ⓘ	⦿ As text ○ As file ☐ Input is already base64 encoded
	yum install perl-Switch perl-DateTime perl-Sys-Syslog perl-LWP-Protocol-https -y

For more information on user data please refer to the URL:

- http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-metadata.html (http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-metadata.html)

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QUESTION 41   UNATTEMPTED

Your IT company is currently hosting a production environment in Elastic beanstalk. You understand that the Elastic beanstalk service provides a facility known as Managed updates which are minor and patch version updates which are periodically required for your system. Your IT supervisor is worried about the impact that these updates would have on the system. What can you tell about the Elastic beanstalk service with regards to managed updates

○ **A.** Package updates can be configurable weekly maintenance window

○ **B.** Elastic Beanstalk applies managed updates with no downtime

○ **C.** Elastic Beanstalk applies managed updates with no reduction in capacity

○ **D.** All of the above ✔

Explanation :

Answer - D

The AWS Documentation mentions the following on package updates for the Elastic beanstalk environment

You can configure your environment to apply minor and patch version updates automatically during a configurable weekly maintenance window with Managed Platform Updates. Elastic Beanstalk applies managed updates with no downtime or reduction in capacity, and cancels the update immediately if instances running your application on the new version fail health checks. For more information on Elastic beanstalk managed updates please refer to the URL:

- https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/environment-platform-update-managed.html (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/environment-platform-update-managed.html)

- http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.platform.upgrade.html (http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.platform.upgrade.html)

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QUESTION 42   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You are planning on using AWS Code Deploy in your AWS environment. Which of the below features of AWS Code Deploy can be used to Specify scripts to be run on each instance at various stages of the deployment process

○ **A.** AppSpec file ✔

○ **B.** CodeDeploy file

○   **C.** Config file

○   **D.** Deploy file

Explanation :

Answer – A

The AWS Documentation mentions the following on AWS Code Deploy

An application specification file (AppSpec file), which is unique to AWS CodeDeploy, is a YAML (http://www.yaml.org/)-formatted file used to:

- Map the source files in your application revision to their destinations on the instance.

- Specify custom permissions for deployed files.

- Specify scripts to be run on each instance at various stages of the deployment process.

For more information on AWS CodeDeploy, please refer to the URL:

- http://docs.aws.amazon.com/codedeploy/latest/userguide/application-specification-files.html (http://docs.aws.amazon.com/codedeploy/latest/userguide/application-specification-files.html)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Of the 6 available sections on a CloudFormation template (Template Description Declaration, Template Format Version Declaration, Parameters, Resources, Mappings, Outputs), which is the only one required for a CloudFormation template to be accepted? Choose an answer from the options below

○   **A.** Parameters

○   **B.** Template Declaration

○   **C.** Mappings

○   **D.** Resources ✔

Explanation :

Answer – D

If you refer to the documentation, you will see that Resources is the only mandatory field Specifies the stack resources and their properties, such as an Amazon Elastic Compute Cloud instance or an Amazon Simple Storage Service bucket.

For more information on cloudformation templates, please refer to the below link:

- http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/template-anatomy.html
  (http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/template-anatomy.html)

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A user is trying to save some cost on the AWS services. Which of the below mentioned options will not help him save cost?

- ○ **A.** Delete the unutilized EBS volumes once the instance is terminated

- ○ **B.** Delete the AutoScaling launch configuration after the instances are terminated ✔

- ○ **C.** Release the elastic IP if not required once the instance is terminated

- ○ **D.** Delete the AWS ELB after the instances are terminated

Explanation :

Answer – B

Option A is wrong because EBS volumes does have a costing aspect and hence deleting the volumes will save on cost.

Option C is wrong because Elastic IP will consume cost if not removed.

Option D is wrong because ELB also incur costs.

Only Autoscaling groups are free of cost. It's only the underlying resources which you are charged for.

For more information on AWS Pricing, please visit the link:

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An organization is planning to use AWS for their Production RollOut. The organizations wants to implement automation for deployment, such that it will automatically create a LAMP stack, deploy an RDS MySQLDB instance, download the latest PHP installable from S3 and set up the ELB. Which of the below mentioned AWS services meets the requirement for making an orderly deployment of the software?

○ **A.** AWS Elastic Beanstalk

○ **B.** AWS Cloudfront

○ **C.** AWS Cloudformation ✔

○ **D.** AWS DevOps

Explanation :

Answer – C

When you want to automate deployment, the automatic choice is Cloudformation. Below is the excerpt from AWS on cloudformation.

AWS CloudFormation gives developers and systems administrators an easy way to create and manage a collection of related AWS resources, provisioning and updating them in an orderly and predictable fashion.

You can use AWS CloudFormation's sample templates or create your own templates to describe the AWS resources, and any associated dependencies or runtime parameters, required to run your application. You don't need to figure out the order for provisioning AWS services or the subtleties of making those dependencies work. CloudFormation takes care of this for you. After the AWS resources are deployed, you can modify and update them in a controlled and predictable way, in effect applying version control to your AWS infrastructure the same way you do with your software

For more information on Cloud Formation, please visit the link:

- https://aws.amazon.com/cloudformation/ (https://aws.amazon.com/cloudformation/)

As per AWS,
"AWS Elastic Beanstalk provides support for running Amazon Relational Database Service (Amazon RDS) instances in your Elastic Beanstalk environment. This works great for development and testing environments. However, **it isn't ideal for a production environment** because it ties the lifecycle of the database instance to the lifecycle of your application's environment."

- https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/AWSHowTo.RDS.html (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/AWSHowTo.RDS.html)

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QUESTION 46   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Which of the following are components of the AWS Data Pipeline service. Choose 2 answers from the options given below

- ☐ **A.** Pipeline definition ✔
- ☐ **B.** Task Runner ✔
- ☐ **C.** Task History
- ☐ **D.** Workflow Runner

Explanation :

Answer – A and B
The AWS Documentation mentions the following on AWS Pipeline
The following components of AWS Data Pipeline work together to manage your data:

- A *pipeline definition* specifies the business logic of your data management.

- A *pipeline* schedules and runs tasks. You upload your pipeline definition to the pipeline, and then activate the pipeline. You can edit the pipeline definition for a running pipeline and activate the pipeline again for it to take effect. You can deactivate the pipeline, modify a data source, and then activate the pipeline again. When you are finished with your pipeline, you can delete it.

- *Task Runner* polls for tasks and then performs those tasks. For example, Task Runner could copy log files to Amazon S3 and launch Amazon EMR clusters. Task Runner is installed and runs

automatically on resources created by your pipeline definitions. You can write a custom task runner application, or you can use the Task Runner application that is provided by AWS Data Pipeline.

For more information on AWS Pipeline, please visit the link:

- http://docs.aws.amazon.com/datapipeline/latest/DeveloperGuide/what-is-datapipeline.html (http://docs.aws.amazon.com/datapipeline/latest/DeveloperGuide/what-is-datapipeline.html)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You were just hired as a DevOps Engineer for a startup. Your startup uses AWS for 100% of their infrastructure. They currently have no automation at all for deployment, and they have had many failures while trying to deploy to production.The company has told you deployment process risk mitigation is the most important thing now, and you have a lot of budget for tools and AWS resources.

Their stack includes a 2-tier API with data stored in DynamoDB or S3, depending on type. The Compute layer is EC2 in Auto Scaling Groups. They use Route53 for DNS pointing to an ELB. An ELB balances load across the EC2 instances. The scaling group properly varies between 4 and 12 EC2 servers. Which of the following approaches, given this company's stack and their priorities, best meets the company's needs?

- A. Model the stack in AWS Elastic Beanstalk as a single Application with multiple Environments. Use Elastic Beanstalk's Rolling Deploy option to progressively roll out application code changes when promoting across environments.

- B. Model the stack in three CloudFormation templates: Data layer, compute layer, and networking layer. Write stack deployment and integration testing automation following Blue-Green methodologies. ✔

○ **C.** Model the stack in AWS OpsWorks as a single Stack, with 1 compute layer and its associated ELB. Use Chef and App Deployments to automate Rolling Deployment.

○ **D.** Model the stack in 1 CloudFormation template, to ensure consistency and dependency graph resolution. Write deployment and integration testing automation following Rolling Deployment methodologies.

Explanation :

Answer – B

Here you are using 2 of the best practices for deployment , one is Blue Green Deployments and the other is using Nested Cloudformation stacks.

The AWS Documentation mentions the below on nested stacks

As your infrastructure grows, common patterns can emerge in which you declare the same components in each of your templates. You can separate out these common components and create dedicated templates for them. That way, you can mix and match different templates but use nested stacks to create a single, unified stack. Nested stacks are stacks that create other stacks. To create nested stacks, use the AWS::CloudFormation::Stack (http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-stack.html)resource in your template to reference other templates.

For more information on Cloudformation best practises, please visit the link:

- http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/best-practices.html (http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/best-practices.html)

For more information on Blue Green Deployment, please visit the link:

- https://d0.awsstatic.com/whitepapers/AWS_Blue_Green_Deployments.pdf (https://d0.awsstatic.com/whitepapers/AWS_Blue_Green_Deployments.pdf)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You work for a company that automatically tags photographs using artificial neural networks (ANNs), which run on GPUs using C++. You receive millions of images at a time, but only 3 times per day on average. These images are loaded

into an AWS S3 bucket you control for you in a batch, and then the customer publishes a JSON-formatted manifest into another S3 bucket you control as well. Each image takes 10 milliseconds to process using a full GPU. Your neural network software requires 5 minutes to bootstrap. Image tags are JSON objects, and you must publish them to an S3 bucket. Which of these is the best system architectures for this system?

○ **A.** Create an OpsWorks Stack with two Layers. The first contains lifecycle scripts for launching and bootstrapping an HTTP API on G2 instances for image processing, and the second has an always-on instance which monitors the S3 manifest bucket for new files. When a new file is detected, request instances to boot on the artificial neural network layer. When the instances are booted and the HTTP APIs are up, submit processing requests to individual instances.

○ **B.** Make an S3 notification configuration which publishes to AWS Lambda on the manifest bucket. Make the Lambda create a CloudFormation Stack which contains the logic to construct an autoscaling worker tier of EC2 G2 instances with the artificial neural network code on each instance. Handle the CloudFormation stacks creation success or failure using another Lambda Function. Create an SQS queue of the images in the manifest. Tear the stack down when the queue is empty. ✔

○ **C.** Deploy your artificial neural network code to AWS Lambda as a bundled binary for the C++ extension. Make an S3 notification configuration on the manifest, which publishes to another AWS Lambda running controller code. This controller code publishes all the images in the manifest to AWS Kinesis. Your ANN code Lambda Function uses the Kinesis as an Event Source. The system automatically scales when the stream contains image events.

○ **D.** Create an Auto Scaling, Load Balanced Elastic Beanstalk worker tier Application and Environment. Deploy the artificial neural network code to G2 instances in this tier. Set the desired capacity to 1. Make the code periodically check S3 for new manifests. When a new manifest is detected, push all of the images in the manifest into the SQS queue associated with the Elastic Beanstalk worker tier.

Explanation :

Answer – B

The best way to get notified when the images get sent to the bucket is the S3 Events. Here you don't need to provision infrastructure beforehand , and also since the source of S3 provides Event Handling , this should be used.

The AWS Documentation mentions the following on AWS S3 and Lambda

Amazon S3 can publish events (for example, when an object is created in a bucket) to AWS Lambda and invoke your Lambda function by passing the event data as a parameter. This integration enables you to write Lambda functions that process Amazon S3 events. In Amazon S3, you add bucket notification configuration that identifies the type of event that you want Amazon S3 to publish and the Lambda function that you want to invoke.

Additional Information as to why a second Lambda function is required:

AWS Lambda can be used to create a CloudFormation stack. Creation of CloudFormation stack is an asynchronous call i.e we don't have to wait till the entire stack moves to FAILED/SUCCEEDED state.

Reference:

- https://stackoverflow.com/questions/46075343/setup-lambda-function-to-run-a-cloudformation-stack (https://stackoverflow.com/questions/46075343/setup-lambda-function-to-run-a-cloudformation-stack)

You can get the "Status" of stacks creation by using SNS notification Topics option in CloudFormation advanced section, Options menu:

- https://stackoverflow.com/questions/33664226/how-to-send-sns-notification-after-cloud-formation-is-completed (https://stackoverflow.com/questions/33664226/how-to-send-sns-notification-after-cloud-formation-is-completed)

For more information on AWS Lambda and S3 Events, please visit the link:

- http://docs.aws.amazon.com/lambda/latest/dg/with-s3.html (http://docs.aws.amazon.com/lambda/latest/dg/with-s3.html)

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QUESTION 49   UNATTEMPTED
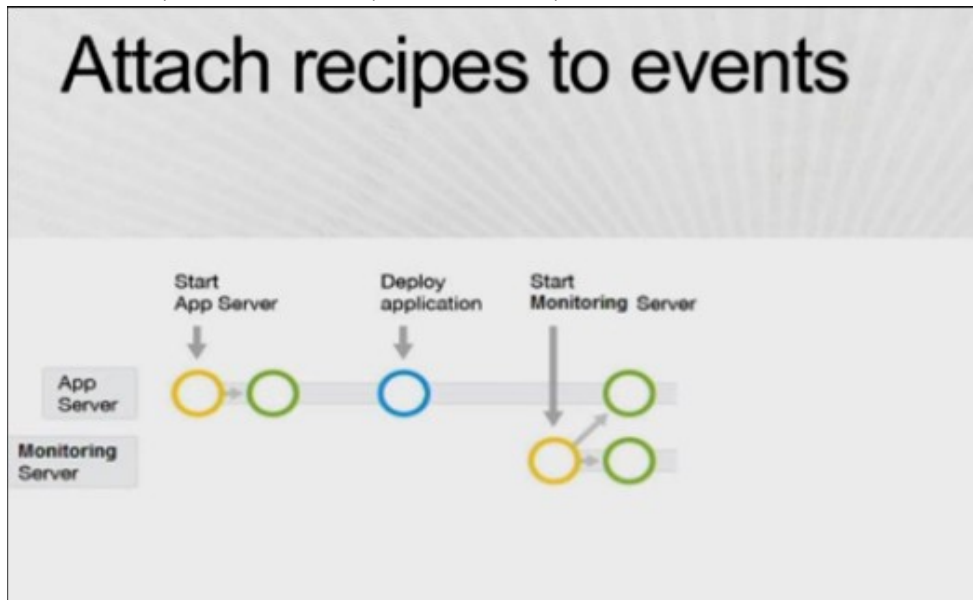
CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Which of the following are Lifecycle events available in Opswork? Choose 3 answers from the options below

A. Setup ✔

B. Decommision

C. Deploy ✔

D. Shutdown ✔

Explanation :

Answer – A,C and D

Below is a snapshot of the Lifecycle events in Opswork.

For more information on Lifecycle events, please refer to the below URL:

- http://docs.aws.amazon.com/opsworks/latest/userguide/workingcookbook-events.html (http://docs.aws.amazon.com/opsworks/latest/userguide/workingcookbook-events.html)

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A user is accessing RDS from an application. The user has enabled the Multi AZ feature with the MS SQL RDS DB. During a planned outage how will AWS ensure that a switch from DB to a standby replica will not affect access to the application?

- ○ **A.** RDS will have an internal IP which will redirect all requests to the new DB

- ○ **B.** RDS uses DNS to switch over to stand by replica for seamless transition ✔

- ○ **C.** The switch over changes Hardware so RDS does not need to worry about access

- ○ **D.** RDS will have both the DBs running independently and the user has to manually switch over

---

Explanation :

Answer – B

Amazon RDS Multi-AZ deployments provide enhanced availability and durability for Database (DB) Instances, making them a natural fit for production database workloads. When you provision a Multi-AZ DB Instance, Amazon RDS automatically creates a primary DB Instance and synchronously replicates the data to a standby instance in a different Availability Zone (AZ). Each AZ runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure (for example, instance hardware failure, storage failure, or network disruption), Amazon RDS performs an automatic failover to the standby, so that you can resume database operations as soon as the failover is complete.

And as per the AWS documentation, the cname is changed to the standby DB when the primary one fails.

Q: What happens during Multi-AZ failover and how long does it take?

"Failover is automatically handled by Amazon RDS so that you can resume database operations as quickly as possible without administrative intervention. When failing over, Amazon RDS simply flips the canonical name record (CNAME) for your DB instance to point at the standby, which is in turn promoted to become the new primary. We encourage you to follow best practices and implement database connection retry at the application layer".

- https://aws.amazon.com/rds/faqs/ (https://aws.amazon.com/rds/faqs/)

Based on this , RDS Multi-AZ will use DNS to create the CNAME and hence B is the right option. For more information on RDS Multi-AZ please visit the link:

- http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html
(http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html)

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QUESTION 51   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You are currently using SQS to pass messages to EC2 Instances. You need to pass messages which are greater than 5 MB in size. Which of the following can help you accomplish this.

○ **A.** Use Kinesis as a buffer stream for message bodies. Store the checkpoint id for the placement in the Kinesis Stream in SQS.

○ **B.** Use the Amazon SQS Extended Client Library for Java and Amazon S3 as a storage mechanism for message bodies. ✔

○ **C.** Use SQS's support for message partitioning and multi-part uploads on Amazon S3.

○ **D.** Use AWS EFS as a shared pool storage medium. Store filesystem pointers to the files on disk in the SQS message bodies.

Explanation :

Answer – B
The AWS documentation mentions the following
You can manage Amazon SQS messages with Amazon S3. This is especially useful for storing and consuming messages with a message size of up to 2 GB. To manage Amazon SQS messages with Amazon S3, use the Amazon SQS Extended Client Library for Java. Specifically, you use this library to:

- Specify whether messages are always stored in Amazon S3 or only when a message's size exceeds 256 KB.

- Send a message that references a single message object stored in an Amazon S3 bucket.

- Get the corresponding message object from an Amazon S3 bucket.

- Delete the corresponding message object from an Amazon S3 bucket.

For more information on SQS and sending larger messages please visit the link – http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-s3-messages.html (http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-s3-messages.html)

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When thinking of AWS Elastic Beanstalk, the 'Swap Environment URLs' feature most directly aids in what?

- ○ **A.** Immutable Rolling Deployments
- ○ **B.** Mutable Rolling Deployments
- ○ **C.** Canary Deployments
- ○ **D.** Blue-Green Deployments ✔

Explanation :

Answer – D
The AWS Documentation mentions the following
Because Elastic Beanstalk performs an in-place update when you update your application versions, your application may become unavailable to users for a short period of time. It is possible to avoid this downtime by performing a blue/green deployment, where you deploy the new version to a separate environment, and then swap CNAMEs of the two environments to redirect traffic to the new version instantly.

Blue/green deployments require that your environment runs independently of your production database, if your application uses one. If your environment has an Amazon RDS DB instance attached to it, the data will not transfer over to your second environment, and will be lost if you terminate the original environment.

For more information on Blue Green deployments with AWS please visit the link –
http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.CNAMESwap.html
(http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.CNAMESwap.html)

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A user is using Cloudformation to launch an EC2 instance and then configure an application after the instance is launched. The user wants the stack creation of ELB and AutoScaling to wait until the EC2 instance is launched and configured properly. How can the user configure this?

○   **A.** It is not possible that the stack creation will wait until one service is created and launched

○   **B.** The user can use the HoldCondition resource to wait for the creation of the other dependent resources

○   **C.** The user can use the DependentCondition resource to hold the creation of the other dependent resources

○   **D.** The user can use the WaitCondition resource to hold the creation of the other dependent resources ✔

Explanation :

Answer – D
You can use a wait condition for situations like the following:

- To coordinate stack resource creation with configuration actions that are external to the stack creation

- To track the status of a configuration process

For more information on Cloudformation Wait condition please visit the link http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-waitcondition.html (http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-waitcondition.html)

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A gaming company adopted AWS Cloud Formation to automate load-testing of their games. They have created an AWS Cloud Formation template for each gaming environment and one for the load-testing stack. The load-testing stack creates an Amazon Relational Database Service (RDS) Postgres database and two web servers running on Amazon Elastic Compute Cloud (EC2) that send HTTP requests, measure response times, and write the results into the database. A test run usually takes between 15 and 30 minutes. Once the tests are done, the AWS Cloud Formation stacks are torn down immediately. The test results written to the Amazon RDS database must remain accessible for visualization and analysis.

Select possible solutions that allow access to the test results after the AWS Cloud Formation load -testing stack is deleted.

Choose 2 answers.

A. Define an Amazon RDS Read-Replica in theload-testing AWS Cloud Formation stack and define a dependency relation between master and replica via the Depends On attribute.

B. Define an update policy to prevent deletion of the Amazon RDS database after the AWS Cloud Formation stack is deleted.

C. Define a deletion policy of type Retain forthe Amazon RDS resource to assure that the RDS database is not deleted with the AWS Cloud Formation stack. ✔

D. Define a deletion policy of type Snapshot for the Amazon RDS resource to assure that the RDS database can be restored after the AWS Cloud Formation stack is deleted. ✔

E. Define automated backups with a backup retention period of 30 days for the Amazon RDS database and perform point-in-time recovery of the database after the AWS CloudFormation stack is deleted.

Explanation :

Answer – C and D

With the DeletionPolicy attribute you can preserve or (in some cases) backup a resource when its stack is deleted. You specify a DeletionPolicy attribute for each resource that you want to control. If a resource has no DeletionPolicy attribute, AWS CloudFormation deletes the resource by default.

To keep a resource when its stack is deleted, specify Retain for that resource. You can use retain for any resource. For example, you can retain a nested stack, S3 bucket, or EC2 instance so that you can continue to use or modify those resources after you delete their stacks.

For more information on Deletion policy, please visit the below url

• http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-attribute-deletionpolicy.html
(http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-attribute-deletionpolicy.html)

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You are writing an AWS CloudFormation template and you want to assign values to properties that will not be available until runtime. You know that you can use intrinsic functions to do this but are unsure as to which part of the template they can be used in. Which of the following is correct in describing how you can currently use intrinsic functions in an AWS CloudFormation template?

○   **A.** You can use intrinsic functions in any part of a template.

○   **B.** Youcan only uses intrinsic functions in specific parts of a template. You can use intrinsic functions in resource properties, metadata attributes, and update policy attributes. ✔

○   **C.** You can use intrinsic functions only in the resource properties part of a template.

○   **D.** You can use intrinsic functions in any part of a template, except AWSTemplateFormatVersion and Description.

Explanation :

Answer – B
This is clearly given in the aws documentation.
Intrinsic Function Reference
AWS CloudFormation provides several built-in functions that help you manage your stacks. Use intrinsic functions in your templates to assign values to properties that are not available until runtime.
Note
You can use intrinsic functions only in specific parts of a template. Currently, you can use intrinsic functions in resource properties, outputs, metadata attributes, and update policy attributes. You can also use intrinsic functions to conditionally create stack resources.

For more information on intrinsic function please refer to the below link

- https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference.html
  (https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference.html)

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QUESTION 56   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Which of the following run command types are available for opswork stacks?

Choose 3 answers from the options given below.

☐ **A.** Update Custom Cookbooks ✔

☐ **B.** Execute Recipes ✔

☐ **C.** Configure ✔

☐ **D.** UnDeploy

Explanation :

Answer - A,B and C

The following run command types are available

1) Update Custom Cookbooks - Updates the instances' custom cookbooks with the current version from the repository. This command does not run any recipes.

2) Execute Recipes- Executes a specified set of recipes on the instances

3) Setup - Runs the instances' Setup recipes.

4) Configure - Runs the instances' Configure recipes.

For more information on the Opswork Run commands please refer to the below link

  • http://docs.aws.amazon.com/opsworks/latest/userguide/workingstacks-commands.html (http://docs.aws.amazon.com/opsworks/latest/userguide/workingstacks-commands.html)

👍 👎

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Which of the following CLI commands is used to spin up new EC2 Instances?

○ **A.** aws ec2 run-instances ✔

○ **B.** aws ec2 create-instances

○ **C.** aws ec2 new-instances

○ **D.** aws ec2 launch-instances

Explanation :

Answer - A

The AWS Documentation mentions the following

Launches the specified number of instances using an AMI for which you have permissions. You can specify the number of options, or leave the default options. The following rules apply:

•   [EC2-VPC] If you don't specify a subnet ID, we choose a default subnet from your default VPC for you. If you don't have a default VPC, you must specify a subnet ID in the request.

•   [EC2-Classic] If don't specify an Availability Zone, we choose one for you.

•   Some instance types must be launched into a VPC. If you do not have a default VPC, or if you do not specify a subnet ID, the request fails. For more information, see Instance Types Available Only in a VPC.

•   [EC2-VPC] All instances have a network interface with a primary private IPv4 address. If you don't specify this address, we choose one from the IPv4 range of your subnet.

•   Not all instance types support IPv6 addresses. For more information, see Instance Types.

•   If you don't specify a security group ID, we use the default security group. For more information, see Security Groups.

•   If any of the AMIs have a product code attached for which the user has not subscribed, the request fails.

For more information on the Ec2 run instance command please refer to the below link

- http://docs.aws.amazon.com/cli/latest/reference/ec2/run-instances.html
  (http://docs.aws.amazon.com/cli/latest/reference/ec2/run-instances.html)

Ask our Experts

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Your company has an e-commerce platform which is expanding all over the globe, you have EC2 instances deployed in multiple regions you want to monitor performance of all of these EC2 instances. How will you setup CloudWatch to monitor EC2 instances in multiple regions?

- ○   **A.** Create separate dashboards in every region

- ○   **B.** Register instances running on different regions to CloudWatch

- ○   **C.** Have one single dashboard to report metrics to CloudWatch from different region ✔

- ○   **D.** This is not possible

Explanation :

Answer – C
You can monitor AWS resources in multiple regions using a single CloudWatch dashboard. For example, you can create a dashboard that shows CPU utilization for an EC2 instance located in the us-west-2 region with your billing metrics, which are located in the us-east-1 region.
For more information on Cloudwatch dashboard, please refer to the below url

- http://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/cross_region_dashboard.html
  (http://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/cross_region_dashboard.html)

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Your company is getting ready to do a major public announcement of a social media site on AWS. The website is running on EC2 instances deployed across multiple Availability Zones with a Multi-AZ RDS MySQL Extra Large DB Instance. The site performs a high number of small reads and writes per second and relies on an eventual consistency model. After comprehensive tests you discover that there is read contention on RDS MySQL. Which are the best approaches to meet these requirements?

Choose 2 answers from the options below

- ☐ **A.** Deploy ElasticCache in-memory cache running in each availability zone ✔
- ☐ **B.** Implement sharding to distribute load to multiple RDS MySQL instances
- ☐ **C.** Increase the RDS MySQL Instance size and Implement provisioned IOPS
- ☐ **D.** Add an RDS MySQL read replica in each availability zone ✔

Explanation :

Answer – A and D
Implement Read Replicas and Elastic Cache
Amazon RDS Read Replicas provide enhanced performance and durability for database (DB) instances. This replication feature makes it easy to elastically scale out beyond the capacity constraints of a single DB Instance for read-heavy database workloads. You can create one or more replicas of a given source DB Instance and serve high-volume application read traffic from multiple copies of your data, thereby increasing aggregate read throughput.
For more information on Read Replica's, please visit the below link

- https://aws.amazon.com/rds/details/read-replicas/
  (https://aws.amazon.com/rds/details/read-replicas/)

Amazon ElastiCache is a web service that makes it easy to deploy, operate, and scale an in-memory data store or cache in the cloud. The service improves the performance of web applications by allowing you to retrieve information from fast, managed, in-memory data stores, instead of relying entirely on slower disk-based databases.
For more information on Amazon ElastiCache, please visit the below link

- https://aws.amazon.com/elasticache/ (https://aws.amazon.com/elasticache/)

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QUESTION 60   UNATTEMPTED

A web-startup runs its very successful social news application on Amazon EC2 with an Elastic Load Balancer, an Auto-Scaling group of Java/Tomcat application-servers, and DynamoDB as data store. The main web application best runs on m2 x large instances since it is highly memory- bound. Each new deployment requires semi-automated creation and testing of a new AMI for the application servers which takes quite a while and is therefore only done once per week. Recently, a new chat feature has been implemented in nodejs and waits to be integrated in the architecture. First tests show that the new component is CPU bound because the company has some experience with using Chef, they decided to streamline the deployment process and use AWS Ops Works as an application life cycle tool to simplify management of the application and reduce the deployment cycles. What configuration in AWS Ops Works is necessary to integrate the new chat module in the most cost-efficient and flexible way?

○ **A.** Create one AWS Ops Works stack, create one AWS Ops Works layer, create one custom recipe

○ **B.** Create one AWS Ops Works stack create two AWS Ops Works layers create one custom recipe ✔

○ **C.** Create two AWS Ops Works stacks create two AWS Ops Works layers create one custom recipe

○ **D.** Create two AWS Ops Works stacks create two AWS Ops Works layers create two custom recipe

---

Explanation :

Answer - B

You can just have one Opswork stack and multiple layers, one for Node.js and the other for the standard application.

An AWS OpsWorks Stack defines the configuration of your entire application: the load balancers, server software, database, etc. You control every part of the stack by building layers that define the software packages deployed to your instances and other configuration details such as Elastic IPs and security groups. You can also deploy your software onto layers by identifying the repository and optionally using Chef Recipes to automate everything Chef can do, such as creating directories and users, configuring databases, etc. You can use OpsWorks Stacks' built-in automation to scale your application and automatically recover from instance failures. You can control who can view and manage the resources that are used by your application, including ssh access to the instances that your application uses.

For more information on Ops work, please visit the below URL

- https://aws.amazon.com/opsworks/stacks/faqs/ (https://aws.amazon.com/opsworks/stacks/faqs/)

Ask our Experts

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Your company owns multiple AWS accounts. There is currently one development and one production account. You need to grant access to the development team to an S3 bucket in the production account. How can you achieve this?

○   **A.** Create an IAM user in the Production account that allows users from the Development account (the trusted account) to access the S3 bucket in the Production account.

○   **B.** When creating the role, define the Development account as a trusted entity and specify a permissions policy that allows trusted users to update the S3 bucket.

○   **C.** Use web identity federation with a third-party identity provider with AWS STS to grant temporary credentials and membership into the production IAM user.

○   **D.** Create an IAM cross account role in the Production account that allows users from the Development account to access the S3 bucket in the Production account. ✔

Explanation :

Answer – D
The AWS Documentation mentions the following on cross account roles
You can use AWS Identity and Access Management (https://aws.amazon.com/iam/) (IAM) roles and AWS Security Token Service (STS) to set up cross-account access between AWS accounts. When you assume an I (http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles.html)AM role in another AWS account to obtain cross-account access to services and resources in that account, AWS CloudTrail logs the cross-account activity.
 For more information on Cross account roles, please visit the below URL

 •   http://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html (http://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html)

Which of the below 3 things can you achieve with the Cloudwatch logs service?

Choose 3 options.

☐ **A.** Record API calls for your AWS account and delivers log files containing API calls to your Amazon S3 bucket

☐ **B.** Send the log data to AWS Lambda for custom processing or to load into other systems ✔

☐ **C.** Stream the log data to Amazon Kinesis ✔

☐ **D.** Stream the log data into Amazon Elasticsearch in near real-time with CloudWatch Logs subscriptions. ✔

Explanation :

Answer - B,C and D
You can use Amazon CloudWatch Logs to monitor, store, and access your log files from Amazon Elastic Compute Cloud (Amazon EC2) instances, AWS CloudTrail, and other sources. You can then retrieve the associated log data from CloudWatch Logs.
For more information on Cloudwatch logs, please visit the below URL

- http://docs.aws.amazon.com/AmazonCloudWatch/latest/logs/WhatIsCloudWatchLogs.html (http://docs.aws.amazon.com/AmazonCloudWatch/latest/logs/WhatIsCloudWatchLogs.html)

QUESTION 63   UNATTEMPTED

A vendor needs access to your AWS account. They need to be able to read protected messages in a private S3 bucket. They have a separate AWS account. Which of the solutions below is the best way to do this?

○   **A.** Allow the vendor to ssh into your EC2 instance and grant them an IAM role with full access to the bucket.

○   **B.** Create a cross-account IAM role with permission to access the bucket, and grant permission to use the role to the vendor AWS account.   ✔

○   **C.** Create an IAM User with API Access Keys. Give the vendor the AWS Access Key ID and AWS Secret Access Key for the user.

○   **D.** Create an S3 bucket policy that allows the vendor to read from the bucket from their AWS account.

Explanation :

Answer – B
The AWS Documentation mentions the following on cross account roles
You can use AWS Identity and Access Management (IAM) roles and AWS Security Token Service (STS) to set up cross-account access between AWS accounts. When you assume an IAM role in another AWS account to obtain cross-account access to services and resources in that account, AWS CloudTrail logs the cross-account activity.
For more information on Cross account roles, please visit the below URL

• http://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html (http://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html)

• https://docs.aws.amazon.com/AmazonS3/latest/dev/example-walkthroughs-managing-access-example2.html (https://docs.aws.amazon.com/AmazonS3/latest/dev/example-walkthroughs-managing-access-example2.html)

QUESTION 64   **UNATTEMPTED**

You need to store a large volume of data. The data needs to be readily accessible for a short period, but then needs to be archived indefinitely after that. What is a cost-effective solution?

○   **A.** Store all the data in S3 so that it can be more cost-effective

○   **B.** Store your data in Amazon S3, and use lifecycle policies to archive to Amazon Glacier ✔

○   **C.** Store your data in an EBS volume, and use lifecycle policies to archive to AmazonGlacier.

○   **D.** Store your data in Amazon S3, and use lifecycle policies to archive toS3-Infrequently Access

Explanation :

Answer – B
The AWS documentation mentions the following on Lifecycle policies
Lifecycle configuration enables you to specify the lifecycle management of objects in a bucket. The configuration is a set of one or more rules, where each rule defines an action for Amazon S3 to apply to a group of objects. These actions can be classified as follows:

•   Transition actions – In which you define when objects transition to another storage class. For example, you may choose to transition objects to the STANDARD_IA (IA, for infrequent access) storage class 30 days after creation, or archive objects to the GLACIER storage class one year after creation.

•   Expiration actions – In which you specify when the objects expire. Then Amazon S3 deletes the expired objects on your behalf.

For more information on S3 Lifecycle policies, please visit the below URL

- http://docs.aws.amazon.com/AmazonS3/latest/dev/object-lifecycle-mgmt.html (http://docs.aws.amazon.com/AmazonS3/latest/dev/object-lifecycle-mgmt.html)

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QUESTION 65

QUESTION 65   UNATTEMPTED   HIGH AVAILABILITY AND ELASTICITY

You work at a company that makes use of AWS resources. One of the key security policies is to ensure that all data is encrypted both at rest and in transit. Which of the following is not a right implementation which aligns to this policy?

○ **A.** Using S3 Server Side Encryption (SSE) to store the information

○ **B.** Enable SSL termination on the ELB ✔

○ **C.** Enabling Proxy Protocol

○ **D.** Enabling sticky sessions on your load balancer

Explanation :

Answer - B
Please note the keyword "**NOT**" in the question.
Option A is incorrect. Enabling S3 SSE encryption helps the encryption of data at rest in S3.So Option A is invalid.
Option B is correct. If you disable SSL termination on the ELB the traffic will be encrypted all the way to the backend. SSL termination allows encrypted traffic between the client and the ELB but cause traffic to be unencrypted between the ELB and the backend (presumably EC2 or ECS/Task, etc.)

If SSL is not terminated on the ELB you must use Layer 4 to have traffic encrypted all the way.

Sticky sessions are not supported with Layer 4 (TCP endpoint). Thus option D " Enabling sticky sessions on your load balancer " can't be used and is the right answer

For more information on sticky sessions, please visit the below
URL https://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-sticky-sessions.html (https://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-sticky-sessions.html)

Requirements

- An HTTP/HTTPS load balancer.

- At least one healthy instance in each Availability Zone.

If you don't want the load balancer to handle the SSL termination (known as *SSL offloading*), you can use TCP for both the front-end and back-end connections, and deploy certificates on the registered instances handling requests.

For more information on elb-listener-config, please visit the below

- https://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-listener-config.html (https://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-listener-config.html)

> If the front-end connection uses TCP or SSL, then your back-end connections can use either TCP or SSL.

Note: You can use an HTTPS listener and still use SSL on the backend but the ELB must terminate, decrypt and re-encrypt. This is slower and less secure then using the same encryption all the way to the backend.. It also breaks the question requirement of having all data encrypted in transit since it force the ELB to decrypt

Proxy protocol is used to provide a secure transport connection hence Option C is also incorrect.

For more information on SSL Listeners for your load balancer, please visit the below URL

- http://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-https-load-balancers.html (http://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-https-load-balancers.html)

- https://aws.amazon.com/blogs/aws/elastic-load-balancer-support-for-ssl-termination/ (https://aws.amazon.com/blogs/aws/elastic-load-balancer-support-for-ssl-termination/)

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Your company is using an Autoscaling Group to scale out and scale in instances. There is an expectation of a peak in traffic every Monday at 8am. The traffic is then expected to come down before the weekend on Friday 5pm. How should you configure Autoscaling in this?

- ○ **A.** Create dynamic scaling policies to scale up on Monday and scale down on Friday

- ○ **B.** Create a scheduled policy to scale up on Friday and scale down on Monday

- ○ **C.** Create a scheduled policy to scale up on Monday and scale down on Friday ✔

- ○ **D.** Manually add instances to the Autoscaling Group on Monday and remove them on Friday

Explanation :

Answer - C
The AWS Documentation mentions the following for Scheduled scaling
Scaling based on a schedule allows you to scale your application in response to predictable load changes. For example, every week the traffic to your web application starts to increase on Wednesday, remains high on Thursday, and starts to decrease on Friday. You can plan your scaling activities based on the predictable traffic patterns of your web application.
For more information on scheduled scaling for Autoscaling, please visit the below URL

Ask our Experts

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You are working for a company has an on-premise infrastructure. There is now a decision to move to AWS. The plan is to move the development environment first. There are a lot of custom based applications that need to be deployed for the development community. Which of the following can help to implement the application for the development team?

Choose 2 answers from the options below.

☐ **A.** Create docker containers for the custom application components. ✔

☐ **B.** Use OpsWorks to deploy the docker containers.

☐ **C.** Use Elastic beanstalk to deploy the docker containers. ✔

☐ **D.** Use Cloudformation to deploy the docker containers.

Explanation :

Answer - A and C
The AWS documentation states the following for docker containers on Elastic Beanstalk

Elastic Beanstalk supports the deployment of web applications from Docker containers. With Docker containers, you can define your own runtime environment. You can choose your own platform, programming language, and any application dependencies (such as package managers or tools), that aren't supported by other platforms. Docker containers are self-contained and include all the configuration information and software your web application requires to run.

For more information on docker containers and Elastic beanstalk, please visit the below URL

- http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/create_deploy_docker.html (http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/create_deploy_docker.html)

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QUESTION 68   UNATTEMPTED

CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Your firm has uploaded a large amount of aerial image data to S3. In the past, in your on-premises
environment, you used a dedicated group of servers to process this data and used Rabbit MQ – An open source messaging system to get job information to the servers. Once processed the data would go to tape and be shipped offsite. Your manager told you to stay with the current design, and leverage AWS archival storage and messaging services to minimize cost. Which is correct?

A. Use SQS for passing job messages. Use Cloud Watch alarms to terminate EC2 worker instances when they become idle. Once data is processed, change the storage class of the S3 objects to Reduced Redundancy Storage.

B. Setup Auto-Scaled workers triggered by queue depth that use spot instances to process messages in SQS. Once data is processed, change the storage class of the S3 objects to Glacier ✔

C. Change the storage class of the S3 objects to Reduced Redundancy Storage. Setup Auto-Scaled workers triggered by queue depth that use spot instances to process messages in SQS. Once data is processed, change the storage class of the S3 objects to Glacier.

D. Use SNS to pass job messages use Cloud Watch alarms to terminate spot worker instances when they become idle. Once data is processed, change the storage class of the S3 object to Glacier.
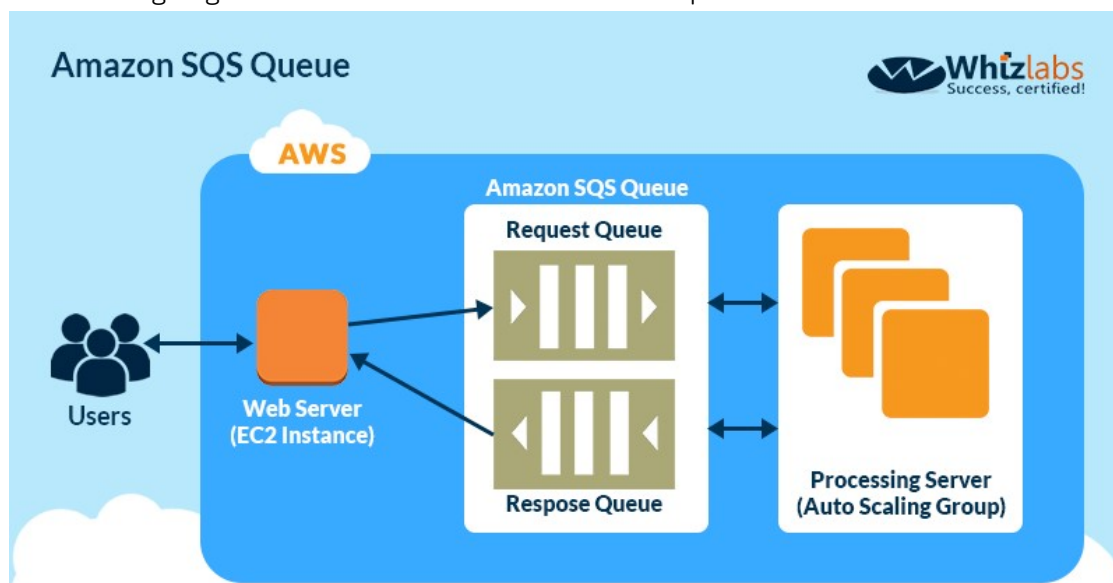

Explanation :

Answer - B

The best option for reduces costs is Glacier, since anyway in the on-premise location everything was stored on tape. Hence option A is out.

Next SQS should be used, since RabbitMQ was used internally. Hence option D is out.

The first step is to leave the objects in S3 and not tamper with that. Hence option B is more suited.

The following diagram shows how SQS is used in a worker span environment

For more information on SQS queues, please visit the below URL

• http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-how-it-works.html
(http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-how-it-works.html)

Ask our Experts

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Your company has recently extended its datacenter into a VPC on AWS. There is a requirement for on-premise users manage AWS resources from the AWS console. You don't want to create IAM users for them again. Which of the below options will fit your needs for authentication?

○ **A.** Use Auth 2.0 to retrieve temporary AWS security credentials to enable your members to sign in to the AWS Management Console.

○ **B.** Use web Identity Federation to retrieve AWS temporary security credentials to enable your members to sign in to the AWS Management Console.

○ **C.** Use your on-premises SAML 2 O-compliant identity provider (IDP) to grant the members federated access to the AWS Management Console via the AWS single-sign-on (SSO) endpoint. ✔

○ **D.** Use your on-premises SAML2.0-compliant identity provider (IDP) to retrieve temporary security credentials to enable members to sign in to the AWS management console.

Explanation :

Answer – C

You can use a role to configure your SAML 2.0-compliant IdP and AWS to permit your federated users to access the AWS Management Console. The role grants the user permissions to carry out tasks in the console.

For more information on aws SAML, please visit the below URL

- http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_providers_enable-console-saml.html (http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_providers_enable-console-saml.html)

Ask our Experts

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Explain what the following resource in a CloudFormation template does?

Choose the best possible answer.

```
"SNSTopic" : {

    "Type" : "AWS::SNS::Topic",

    "Properties" : {

        "Subscription" : [{

            "Protocol" : "sqs",

            "Endpoint" : { "Fn::GetAtt" : [ "SQSQueue", "Arn" ] }

        }]

    }
```

○ **A.** Creates an SNS topic which allows SQS subscription endpoints to be added as a parameter on the template

○ **B.** Creates an SNS topic that allows SQS subscription endpoints

○ **C.** Creates an SNS topic and then invokes the call to create an SQS queue with a logical resource name of SQSQueue

○ **D.** Creates an SNS topic and adds a subscription ARN endpoint for the SQS resource created under the logical name SQSQueue ✔

Explanation :

Answer – D
The intrinsic function Fn::GetAtt returns the value of an attribute from a resource in the template.
This has nothing to do with adding parameters (Option A is wrong) or allowing endpoints (Option B is wrong) or invoking relevant calls (Option C is wrong)
For more information on Fn:: GetAtt function please refer to the below link
http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-getatt.html
(http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-getatt.html)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

You are currently planning on using Autoscaling to launch instances which have an application installed. Which of the following methods will help ensure the instances are up and running in the shortest span of time to take in traffic from the users?

○ **A.** Log into each instance and install the software.

○ **B.** Use UserData to launch scripts to install the software.

○ **C.** Use Docker containers to launch the software.

○ **D.** Use AMI's which already have the software installed. ✔

Explanation :

Answer - D
The AMI will be the fatest because it will already have the software installed. You can customize the instance that you launch from a public AMI and then save that configuration as a custom AMI for your own use. Instances that you launch from your AMI use all the customizations that you've made.

For more information on AMI's please refer to the below link

- http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AMIs.html (http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AMIs.html)

Ask our Experts

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Which of the following are advantages of using AWS CodeCommit over hosting your own source code repository system?

○ **A.** Reduction in hardware maintenance costs

○ **B.** Reduction in fees paid over licensing

○ **C.** No specific restriction on files and branches

○ **D.** All of the above ✔

Explanation :

Answer - D

The AWS Documentation mentions the following on CodeCommit

Self-hosted version control systems have many potential drawbacks, including:

- Expensive per-developer licensing fees.

- High hardware maintenance costs.

- High support staffing costs.

- Limits on the amount and types of files that can be stored and managed.

- Limits on the number of branches, the amount of version history, and other related metadata that can be stored.

For more information on CodeCommit please refer to the below link

- http://docs.aws.amazon.com/codecommit/latest/userguide/welcome.html (http://docs.aws.amazon.com/codecommit/latest/userguide/welcome.html)

Ask our Experts

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Which of the following is not a component of Elastic Beanstalk?

○ **A.** Application

○ **B.** Environment

○ **C.** Docker ✔

○ **D.** ApplicationVersion

Explanation :

Answer - C

The following are the components of Elastic Beanstalk

1) Application - An Elastic Beanstalk application is a logical collection of Elastic Beanstalk components, including environments, versions, and environment configurations. In Elastic Beanstalk an application is conceptually similar to a folder

2) Application version - In Elastic Beanstalk, an application version refers to a specific, labeled iteration of deployable code for a web application

3) Environment - An environment is a version that is deployed onto AWS resources. Each environment runs only a single application version at a time, however you can run the same version or different versions in many environments at the same time.

4) Environment Configuration - An environment configuration identifies a collection of parameters and settings that define how an environment and its associated resources behave.

5) Configuration Template - A configuration template is a starting point for creating unique environment configurations.

For more information on the components of Elastic beanstalk please refer to the below link http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/concepts.components.html (http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/concepts.components.html)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

Which of the following is not a supported platform on Elastic Beanstalk?

○ **A.** Packer Builder

○ **B.** Go

○ **C.** Node.js

○ **D.** Java SE

○ **E.** Kubernetes ✔

Explanation :

Answer - E
Below is the list of supported platforms

- Packer Builder

- Single Container Docker

- Multicontainer Docker

- Preconfigured Docker

- Go

- Java SE

- Java with Tomcat

- .NET on Windows Server with IIS

- Node.js

- PHP

- Python

- Ruby

For more information on the supported platforms please refer to the below link
http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/concepts.platforms.html
(http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/concepts.platforms.html)

What would you set in your CloudFormation template to fire up different instance sizes based off of environment type?

i.e. (If this is for prod, use m1.large instead of t1.micro)

O   **A.** Outputs

O   **B.** Resources

O   **C.** Mappings

O   **D.** conditions ✔

Explanation :

Answer – D

The optional Conditions section includes statements that define when a resource is created or when a property is defined. For example, you can compare whether a value is equal to another value. Based on the result of that condition, you can conditionally create resources. If you have multiple conditions, separate them with commas.

For more information on Cloudformation conditions please visit the below link

http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/conditions-section-structure.html

(http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/conditions-section-structure.html)

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You have a number of Cloudformation stacks in your IT organization. Which of the following commands will help see all the cloudformation stacks which have a completed status?

- ○ **A.** describe-stacks
- ○ **B.** list-stacks ✔
- ○ **C.** stacks-complete
- ○ **D.** list-templates

Explanation :

Answer - B

The following is the description of the list-stacks command

Returns the summary information for stacks whose status matches the specified StackStatusFilter. Summary information for stacks that have been deleted is kept for 90 days after the stack is deleted. If no stack-status-filter is specified, summary information for all stacks is returned (including existing stacks and stacks that have been deleted).

For more information on the list-stacks command please visit the below link

http://docs.aws.amazon.com/cli/latest/reference/cloudformation/list-stacks.html (http://docs.aws.amazon.com/cli/latest/reference/cloudformation/list-stacks.html)

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If you're trying to configure an AWS Elastic Beanstalk worker tier for easy debugging if there are problems finishing queue jobs, what should you configure?

A. Configure Rolling Deployments.

B. Configure Enhanced Health Reporting.

C. Configure Blue-Green Deployments.

D. Configure a Dead Letter Queue. ✔

Explanation :

Answer – D

The AWS documentation mentions the following on dead-letter queues

Amazon SQS supports *dead-letter queues*. A dead-letter queue is a queue that other (source) queues can target for messages that can't be processed (consumed) successfully. You can set aside and isolate these messages in the dead-letter queue to determine why their processing doesn't succeed.

For more information on dead letter queues please visit the below link

http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-dead-letter-queues.html

(http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-dead-letter-queues.html)

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Your CTO is very worried about the security of your AWS account. How best can you prevent hackers from completely hijacking your account?

A. Use short but complex password on the root account and any administrators.

B. Use AWS IAM Geo-Lock and disallow anyone from logging in except for in your city.

C. Use MFA on all users and accounts, especially on the root account. ✔

○ **D.** Don't write down or remember the root account password after creating the AWS account.

Explanation :

Answer – C
The AWS documentation mentions the following on MFA
AWS Multi-Factor Authentication (MFA) is a simple best practice that adds an extra layer of protection on top of your user name and password. With MFA enabled, when a user signs in to an AWS website, they will be prompted for their user name and password (the first factor—what they know), as well as for an authentication code from their AWS MFA device (the second factor—what they have). Taken together, these multiple factors provide increased security for your AWS account settings and resources.
For more information on MFA please visit the below link
https://aws.amazon.com/iam/details/mfa/ (https://aws.amazon.com/iam/details/mfa/)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

When one creates an encrypted EBS volume and attach it to a supported instance type ,which of the following data types are encrypted?

Choose 3 answers from the options below

☐ **A.** Data at rest inside the volume ✔

☐ **B.** All data copied from the EBS volume to S3

☐ **C.** All data moving between the volume and the instance ✔

☐ **D.** All snapshots created from the volume ✔

Explanation :

Answer – A,C and D

This is clearly given in the aws documentation.

Amazon EBS Encryption

Amazon EBS encryption offers a simple encryption solution for your EBS volumes without the need to build, maintain, and secure your own key management infrastructure. When you create an encrypted EBS volume and attach it to a supported instance type, the following types of data are encrypted:

- Data at rest inside the volume

- All data moving between the volume and the instance

- All snapshots created from the volume

- All volumes created from those snapshots

For more information on EBS encryption, please refer to the below url
http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSEncryption.html
(http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSEncryption.html)

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CONTINUOUS DELIVERY AND PROCESS AUTOMATION

How can you resolve a dependency Error when using Cloudformation?

  ○   **A.** Use the mappings attribute

  ○   **B.** Use the parameter attribute

  ○   **C.** Use the DependsOn attribute   ✔

  ○   **D.** Use the Error attribute

Explanation :

Answer - C

The AWS troubleshooting guide for Cloudformation states the following

To resolve a dependency error, add a DependsOn attribute to resources that depend on other resources in your template. In some cases, you must explicitly declare dependencies so that AWS CloudFormation can create or delete resources in the correct order. For example, if you create an Elastic IP and a VPC with an Internet gateway in the same stack, the Elastic IP must depend on the Internet gateway attachment.

For more information on Cloudformation troubleshooting, please refer to the below url

http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/troubleshooting.html

(http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/troubleshooting.html)

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Certification

- Cloud Certification (https://www.whizlabs.com/cloud-certification-training-courses/)

- Java Certification (https://www.whizlabs.com/oracle-java-certifications/)

- PM Certification (https://www.whizlabs.com/project-management-certifications/)

- Big Data Certification (https://www.whizlabs.com/big-data-certifications/)

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