**QUESTION 4**

A company runs its Infrastructure on AWS and has a registered base of 700.000 users for res document management application. The company intends to create a product that converts large pdf files to jpg Image files. The .pdf files average 5 MB in size. The company needs to store the original files and the converted files. A solutions architect must design a scalable solution to accommodate demand that will grow rapidly over lime.

Which solution meets these requirements MOST cost-effectively?

1. Save the pdf files to Amazon S3.

Configure an S3 PUT event to invoke an AWS Lambda function to convert the files to jpg format and store them back in Amazon S3.

1. Save the pdf files to Amazon DynamoDB.

Use the DynamoDB Streams feature to invoke an AWS Lambda function to convert the files to jpg format and store them hack in DynamoDB.

1. Upload the pdf files to an AWS Elastic Beanstalk application that includes Amazon EC2 instances.

Amazon Elastic Block Store (Amazon EBS) storage and an Auto Scaling group.

Use a program In the EC2 instances to convert the files to jpg format Save the .pdf files and the .jpg files In the EBS store.

1. Upload the .pdf files to an AWS Elastic Beanstalk application that includes Amazon EC2 instances, Amazon Elastic File System (Amazon EPS) storage, and an Auto Scaling group. Use a program in the EC2 instances to convert the file to jpg format. Save the pdf files and the jpg files in the EBS store.

**Answer:** D

**QUESTION 9**

A solutions architect is designing a new hybrid architecture to extend a companys on-premises infrastructure to AWS. The company requires a highly available connection with consistent low latency to an AWS Region. The company needs to minimize costs and is willing to accept slower traffic if the primary connection fails.

What should the solutions architect do to meet these requirements?

1. Provision an AWS Direct Connect connection to a Region.

Provision a VPN connection as a backup if the primary Direct Connect connection fails.

1. Provision a VPN tunnel connection to a Region for private connectivity.

Provision a second VPN tunnel for private connectivity and as a backup if the primary VPN connection fails.

1. Provision an AWS Direct Connect connection to a Region.

Provision a second Direct Connect connection to the same Region as a backup if the primary Direct Connect connection fails.

1. Provision an AWS Direct Connect connection to a Region.

Use the Direct Connect failover attribute from the AWS CLI to automatically create a backup connection if the primary Direct Connect connection fails.

**Answer:** A

**Explanation:**

"In some cases, this connection alone is not enough. It is always better to guarantee a fallback connection as the backup of DX. There are several options, but implementing it with an AWS Site-To-Site VPN is a real cost-effective solution that can be exploited to reduce costs or, in the meantime, wait for the setup of a second DX."

https://www.proud2becloud.com/hybrid-cloud-networking-backup-aws-direct-connect-networkconnection-with-aws-site-to-site-vpn/

**QUESTION 47**

A company is building a web-based application running on Amazon EC2 instances in multiple Availability Zones. The web application will provide access to a repository of text documents totaling about 900 TB in size. The company anticipates that the web application will experience periods of high demand. A solutions architect must ensure that the storage component for the text documents can scale to meet the demand of the application at all times.

The company is concerned about the overall cost of the solution.

Which storage solution meets these requirements MOST cost-effectively?

1. Amazon Elastic Block Store (Amazon EBS)
2. Amazon Elastic File System (Amazon EFS)
3. Amazon ElasticSearch Service (Amazon ES)
4. Amazon S3

**Answer:** D

**Explanation:**

Amazon S3 is cheapest and can be accessed from anywhere.

**QUESTION 53**

A company has a highly dynamic batch processing job that uses many Amazon EC2 instances to complete it. The job is stateless in nature, can be started and stopped at any given time with no negative impact, and typically takes upwards of 60 minutes total to complete.

The company has asked a solutions architect to design a scalable and cost-effective solution that meets the requirements of the job.

What should the solutions architect recommend?

1. Implement EC2 Spot Instances
2. Purchase EC2 Reserved Instances
3. Implement EC2 On-Demand Instances
4. Implement the processing on AWS Lambda

**Answer:** A

**QUESTION 58**

A solutions architect needs to help a company optimize the cost of running an application on AWS. The application will use Amazon EC2 instances, AWS Fargate, and AWS Lambda for compute within the architecture.

The EC2 instances will run the data ingestion layer of the application.

EC2 usage will be sporadic and unpredictable.

Workloads that run on EC2 instances can be interrupted at any time.

The application front end will run on Fargate, and Lambda will serve the API layer.

The front-end utilization and API layer utilization will be predictable over the course of the next year.

Which combination of purchasing options will provide the MOST cost-effective solution for hosting this application? (Choose TWO)

1. Use Spot Instances for the data ingestion layer
2. Use On-Demand Instances for the data ingestion layer
3. Purchase a 1-year Compute Savings Plan for the front end and API layer.
4. Purchase 1-year All Upfront Reserved instances for the data ingestion layer.
5. Purchase a 1-year EC2 instance Savings Plan for the front end and API layer.

**Answer:** AC

**QUESTION 62**

A company recently started using Amazon Aurora as the data store for its global ecommerce application.

When large reports are run developers report that the ecommerce application is performing poorly After reviewing metrics in Amazon CloudWatch, a solutions architect finds that the ReadlOPS and CPUUtilization metrics are spiking when monthly reports run.

What is the MOST cost-effective solution?

1. Migrate the monthly reporting to Amazon Redshift.
2. Migrate the monthly reporting to an Aurora Replica
3. Migrate the Aurora database to a larger instance class
4. Increase the Provisioned IOPS on the Aurora instance

**Answer:** B

**Explanation:** <https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Aurora.Replication.html>

#Aurora.Replication.Replicas Aurora Replicas have two main purposes. You can issue queries to them to scale the read operations for your application. You typically do so by connecting to the reader endpoint of the cluster. That way, Aurora can spread the load for read-only connections across as many Aurora Replicas as you have in the cluster. Aurora Replicas also help to increase availability. If the writer instance in a cluster becomes unavailable, Aurora automatically promotes one of the reader instances to take its place as the new writer.

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Aurora.Overview.html>

**QUESTION 63**

A company hosts a website analytics application on a single Amazon EC2 On-Demand Instance. The analytics software is written in PHP and uses a MySQL database.

The analytics software, the web server that provides PHP, and the database server are all hosted on the EC2 instance.

The application is showing signs of performance degradation during busy times and is presenting 5xx errors.

The company needs to make the application scale seamlessly.

Which solution will meet these requirements MOST cost-effectively?

1. Migrate the database to an Amazon RDS for MySQL DB instance.

Create an AMI of the web application.

Use the AMI to launch a second EC2 On-Demand Instance.

Use an Application Load Balancer to distribute the load to each EC2 instance.

1. Migrate the database to an Amazon RDS for MySQL DB instance.

Create an AMI of the web application.

Use the AMI to launch a second EC2 On-Demand Instance.

Use Amazon Route 53 weighted routing to distribute the load across the two EC2 instances.

1. Migrate the database to an Amazon Aurora MySQL DB instance.

Create an AWS Lambda function to stop the EC2 instance and change the instance type. Create an Amazon CloudWatch alarm to invoke the Lambda function when CPU utilization surpasses 75%.

1. Migrate the database to an Amazon Aurora MySQL DB instance.

Create an AMI of the web application.

Apply the AMI to a launch template.

Create an Auto Scaling group with the launch template.

Configure the launch template to use a Spot Fleet.

Attach an Application Load Balancer to the Auto Scaling group.

**Answer:** D

**QUESTION 70**

A company uses a three-tier web application to provide training to new employees.

The application is accessed for only 12 hours every day. The company is using an Amazon RDS for MySQL DB instance to store information and wants to minimize costs.

What should a solutions architect do to meet these requirements?

1. Configure an IAM policy for AWS Systems Manager Session Manager.

Create an IAM role for the policy.

Update the trust relationship of the role.

Set up automatic start and stop for the DB instance.

1. Create an Amazon ElastiCache for Redis cache cluster that gives users the ability to access the data from the cache when the DB instance is stopped.

Invalidate the cache after the DB instance is started.

1. Launch an Amazon EC2 instance.

Create an IAM role that grants access to Amazon RDS.

Attach the role to the EC2 instance.

Configure a cron job to start and stop the EC2 instance on the desired schedule.

1. Create AWS Lambda functions to start and stop the DB instance.

Create Amazon EventBridge (Amazon CloudWatch Events) scheduled rules to invoke the Lambda functions.

Configure the Lambda functions as event targets for the rules

**Answer:** D

**QUESTION 100**

A company wants to monitor its AWS costs for financial review. The cloud operations team is designing an architecture in the AWS Organizations management account to query AWS Cost and Usage Reports for all member accounts.

The team must run this query once a month and provide a detailed analysis of the bill.

Which solution is the MOST scalable and cost-effective way to meet these requirements?

1. Enable Cost and Usage Reports in the management account.

Deliver reports to Amazon Kinesis. Use Amazon EMR for analysis.

1. Enable Cost and Usage Reports in the management account.

Deliver the reports to Amazon S3. Use Amazon Athena for analysis.

1. Enable Cost and Usage Reports for member accounts.

Deliver the reports to Amazon S3.

Use Amazon Redshift for analysis.

1. Enable Cost and Usage Reports for member accounts.

Deliver the reports to Amazon Kinesis. Use Amazon QuickSight for analysis.

**Answer:** C

**Explanation:** https://docs.aws.amazon.com/cur/latest/userguide/what-is-cur.html

If you are an administrator of an AWS Organizations management account and do not want any of the member accounts in your Organization to set-up a CUR you can do one of the following: (Recommended) If you've opted into Organizations with all features enabled, you can apply a Service Control Policy (SCP). Note that SCPs only apply to member accounts and if you want to restrict any IAM users associated with the management account from setting up a CUR, you'll need to adjust their specific IAM permissions. SCPs also are not retroactive, so they will not deactivate any CURs a member account may have set-up prior to the SCP being applied. Submit a customer support case to block access to billing data in the Billing console for member accounts. This is a list of organizations where the payer account prevents member accounts in its organization from viewing billing data on the Bills and Invoices pages. This also prevents those accounts from setting up Cost and Usage Reports. This option is only available for organizations without all features enabled. Please note that if you have already opted into this to prevent member accounts from viewing bills and invoices in the Billing Console, you do not need to request this access again. Those same member accounts will also be prevented from setting up a Cost and Usage Report.

**QUESTION 135**

A company runs an application in the AWS Cloud and uses Amazon DynamoDB as the database.

The company deploys Amazon EC2 instances to a private network to process data from the database.

The company uses two NAT instances to provide connectivity to DynamoDB.

The company wants to retire the NAT instances.

A solutions architect must implement a solution that provides connectivity to DynamoDB and that does not require ongoing management.

What is the MOST cost-effective solution that meets these requirements?

1. Create a gateway VPC endpoint to provide connectivity to DynamoDB.

1. Configure a managed NAT gateway to provide connectivity to DynamoDB.
2. Establish an AWS Direct Connect connection between the private network and DynamoDB.
3. Deploy an AWS PrivateLink endpoint service between the private network and DynamoDB.

**Answer:** A

**Explanation:**

AWS recommends changing from NAT Gateway to VPC endpoints to access S3 or DynamoDB.

"Determine whether the majority of your NAT gateway charges are from traffic to Amazon Simple Storage Service or Amazon DynamoDB in the same Region. If they are, set up a gateway VPC endpoint. Route traffic to and from the AWS resource through the gateway VPC endpoint, rather than through the NAT gateway. There's no data processing or hourly charges for using gateway VPC endpoints."

<https://aws.amazon.com/premiumsupport/knowledge-center/vpc-reduce-nat-gateway-transfercosts/>

**QUESTION 151**

A solutions architect is designing the cloud architecture for a company that needs to host hundreds of machine learning models for its users.

During startup, the models need to load up to 10 GB of data from Amazon S3 into memory, but they do not need disk access.

Most of the models are used sporadically, but the users expect all of them to be highly available and accessible with low latency.

Which solution meets the requirements and is MOST cost-effective?

1. Deploy models as AWS Lambda functions behind an Amazon API Gateway for each model.

1. Deploy models as Amazon Elastic Container Service (Amazon ECS) services behind an Application Load Balancer for each model.
2. Deploy models as AWS Lambda functions behind a single Amazon API Gateway with pathbased routing where one path corresponds to each model.
3. Deploy models as Amazon Elastic Container Service (Amazon ECS) services behind a single Application Load Balancer with path-based routing where one path corresponds to each model.

**Answer:** C

**Explanation:**

AWS just update Lambda to support 10G memory and helping compute intensive applications like machine learning. No disk access, lowest cost. <https://aws.amazon.com/about-aws/whats-new/2020/12/aws-lambda-supports-10gb-memory-6vcpu-cores-lambda-functions/>

**QUESTION 166**

A company has an image processing workload running on Amazon Elastic Container Service (Amazon ECS) in two private subnets. Each private subnet uses a NAT instance for internet access. All images are stored in Amazon S3 buckets.

The company is concerned about the data transfer costs between Amazon ECS and Amazon S3.

What should a solutions architect do to reduce costs?

1. Configure a NAT gateway to replace the NAT instances.
2. Configure a gateway endpoint for traffic destined to Amazon S3.
3. Configure an interface endpoint for traffic destined to Amazon S3.
4. Configure Amazon CloudFront for the S3 bucket storing the images.

**Answer:** B

**Explanation:**

S3 and Dynamo DB does not support interface endpoints. Both S3 and DynamoDB are routed via Gateway endpoint. https://docs.aws.amazon.com/vpc/latest/userguide/vpc-endpoints.html Interface Endpoint only supports services which are integrated with PrivateLink.

https://docs.aws.amazon.com/vpc/latest/userguide/integrated-services-vpce-list.html

**QUESTION 172**

A company observes an increase in Amazon EC2 costs in its most recent bill. The billing team notices unwanted vertical scaling of instance types for a couple of EC2 instances. A solutions architect needs to create a graph comparing the last 2 months of EC2 costs and perform an indepth analysis to identify the root cause of the vertical scaling.

How should the solutions architect generate the information with the LEAST operational overhead?

A. Use AWS Budgets to create a budget report and compare EC2 costs based on instance types

B. Use Cost Explorer's granular filtering feature to perform an in-depth analysis of EC2 costs based on instance types

1. Use graphs from the AWS Billing and Cost Management dashboard to compare EC2 costs based on instance types for the last 2 months
2. Use AWS Cost and Usage Reports to create a report and send it to an Amazon S3 bucket. Use Amazon QuickSight with Amazon S3 as a source to generate an interactive graph based on instance types..

**Answer:** B

**Explanation:**

AWS Cost Explorer is a tool that enables you to view and analyze your costs and usage. You can explore your usage and costs using the main graph, the Cost Explorer cost and usage reports, or the Cost Explorer RI reports. You can view data for up to the last 12 months, forecast how much you're likely to spend for the next 12 months, and get recommendations for what Reserved Instances to purchase. You can use Cost Explorer to identify areas that need further inquiry and see trends that you can use to understand your costs.

https://docs.aws.amazon.com/cost-management/latest/userguide/ce-what-is.html

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<https://docs.aws.amazon.com/cost-management/latest/userguide/ce-what-is.html>

**QUESTION 178**

A development team runs monthly resource-intensive tests on its general purpose Amazon RDS for MySQL DB instance with Performance Insights enabled. The testing lasts for 48 hours once a month and is the only process that uses the database. The team wants to reduce the cost of running the tests without reducing the compute and memory attributes of the DB instance.

Which solution meets these requirements MOST cost-effectively?

1. Stop the DB instance when tests are completed. Restart the DB instance when required.
2. Use an Auto Scaling policy with the DB instance to automatically scale when tests are completed.
3. Create a snapshot when tests are completed.

Terminate the DB instance and restore the snapshot when required.

1. Modify the DB instance to a low-capacity instance when tests are completed.

Modify the DB instance again when required.

**Answer:** C

**QUESTION 192**

A company wants to run applications in containers in the AWS Cloud. These applications are stateless and can tolerate disruptions within the underlying infrastructure. The company needs a solution that minimizes cost and operational overhead.

What should a solutions architect do to meet these requirements?

1. Use Spot Instances in an Amazon EC2 Auto Scaling group to run the application containers.
2. Use Spot Instances in an Amazon Elastic Kubernetes Service (Amazon EKS) managed node group.
3. Use On-Demand Instances in an Amazon EC2 Auto Scaling group to run the application containers.
4. Use On-Demand Instances in an Amazon Elastic Kubernetes Service (Amazon EKS) managed node group.

**Answer:** B

**QUESTION 180**

A development team needs to host a website that will be accessed by other teams.

The website contents consist of HTML, CSS, client-side JavaScript, and images.

Which method is the MOST cost-effective for hosting the website?

1. Containerize the website and host it in AWS Fargate.

1. Create an Amazon S3 bucket and host the website there.
2. Deploy a web server on an Amazon EC2 instance to host the website.
3. Configure an Application Loa d Balancer with an AWS Lambda target that uses the Express js framework.

**Answer:** B

**Explanation:**

In Static Websites, Web pages are returned by the server which are prebuilt.

They use simple languages such as HTML, CSS, or JavaScript.

There is no processing of content on the server (according to the user) in Static Websites.

Web pages are returned by the server with no change therefore, static Websites are fast.

There is no interaction with databases.

Also, they are less costly as the host does not need to support server-side processing with different languages.

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In Dynamic Websites, Web pages are returned by the server which are processed during runtime means they are not prebuilt web pages but they are built during runtime according to the user's demand.

These use server-side scripting languages such as PHP, Node.js, ASP.NET and many more supported by the server.

So, they are slower than static websites but updates and interaction with databases are possible.

**QUESTION 203**

A company is hosting a static website on Amazon S3 and is using Amazon Route 53 for DNS.

The website is experiencing increased demand from around the world.

The company must decrease latency for users who access the website.

Which solution meets these requirements MOST cost-effectively?

1. Replicate the S3 bucket that contains the website to all AWS Regions.

Add Route 53 geolocation routing entries.

1. Provision accelerators in AWS Global Accelerator.

Associate the supplied IP addresses with the S3 bucket.

Edit the Route 53 entries to point to the IP addresses of the accelerators.

1. Add an Amazon CloudFront distribution in front of the S3 bucket.

Edit the Route 53 entries to point to the CloudFront distribution.

1. Enable S3 Transfer Acceleration on the bucket.

Edit the Route 53 entries to point to the new endpoint.

**Answer:** C

**QUESTION 225**

A gaming company hosts a browser-based application on AWS.

The users of the application consume a large number of videos and images that are stored in Amazon S3.

This content is the same for all users.

The application has increased in popularity, and millions of users worldwide are accessing these media files.

The company wants to provide the files to the users while reducing the load on the origin.

Which solution meets these requirements MOST cost-effectively?

1. Deploy an AWS Global Accelerator accelerator in front of the web servers.

1. Deploy an Amazon CloudFront web distribution in front of the S3 bucket.
2. Deploy an Amazon ElastiCache for Redis instance in front of the web servers.
3. Deploy an Amazon ElastiCache for Memcached instance in front of the web servers.

**Answer:** B

**QUESTION 232**

An ecommerce company hosts its analytics application in the AWS Cloud.

The application generates about 300 MB of data each month.

The data is stored in JSON format.

The company is evaluating a disaster recovery solution to back up the data.

The data must be accessible in milliseconds if it is needed, and the data must be kept for 30 days.

Which solution meets these requirements MOST cost-effectively?

1. Amazon OpenSearch Service (Amazon Elasticsearch Service).

1. Amazon S3 Glacier.
2. Amazon S3 Standard.
3. Amazon RDS for PostgreSQL.

**Answer:** C