

# Amazon-Web-Services

## Exam Questions ANS-C01

AWS Certified Advanced Networking Specialty Exam



**NEW QUESTION 1**

An IoT company sells hardware sensor modules that periodically send out temperature, humidity, pressure, and location data through the MQTT messaging protocol. The hardware sensor modules send this data to the company's on-premises MQTT brokers that run on Linux servers behind a load balancer. The hardware sensor modules have been hardcoded with public IP addresses to reach the brokers. The company is growing and is acquiring customers across the world. The existing solution can no longer scale and is introducing additional latency because of the company's global presence. As a result, the company decides to migrate its entire infrastructure from on premises to the AWS Cloud. The company needs to migrate without reconfiguring the hardware sensor modules that are already deployed across the world. The solution also must minimize latency. The company migrates the MQTT brokers to run on Amazon EC2 instances. What should the company do next to meet these requirements?

- A. Place the EC2 instances behind a Network Load Balancer (NLB). Configure TCP listener
- B. Use Bring Your Own IP (BYOIP) from the on-premises network with the NLB.
- C. Place the EC2 instances behind a Network Load Balancer (NLB). Configure TCP listener
- D. Create an AWS Global Accelerator accelerator in front of the NLB. Use Bring Your Own IP (BYOIP) from the on-premises network with Global Accelerator.
- E. Place the EC2 instances behind an Application Load Balancer (ALB). Configure TCP listener
- F. Create an AWS Global Accelerator accelerator in front of the ALB
- G. Use Bring Your Own IP (BYOIP) from the on-premises network with Global Accelerator
- H. Place the EC2 instances behind an Amazon CloudFront distribution
- I. Use Bring Your Own IP (BYOIP) from the on-premises network with CloudFront.

**Answer:** B

**NEW QUESTION 2**

A company has developed an application on AWS that will track inventory levels of vending machines and initiate the restocking process automatically. The company plans to integrate this application with vending machines and deploy the vending machines in several markets around the world. The application resides in a VPC in the us-east-1 Region. The application consists of an Amazon Elastic Container Service (Amazon ECS) cluster behind an Application Load Balancer (ALB). The communication from the vending machines to the application happens over HTTPS.

The company is planning to use an AWS Global Accelerator accelerator and configure static IP addresses of the accelerator in the vending machines for application endpoint access. The application must be accessible only through the accelerator and not through a direct connection over the internet to the ALB endpoint.

Which solution will meet these requirements?

- A. Configure the ALB in a private subnet of the VPC
- B. Attach an internet gateway without adding routes in the subnet route tables to point to the internet gateway
- C. Configure the accelerator with endpoint groups that include the ALB endpoint
- D. Configure the ALB's security group to only allow inbound traffic from the internet on the ALB listener port.
- E. Configure the ALB in a private subnet of the VPC
- F. Configure the accelerator with endpoint groups that include the ALB endpoint
- G. Configure the ALB's security group to only allow inbound traffic from the internet on the ALB listener port.
- H. Configure the ALB in a public subnet of the VPC. Attach an internet gateway
- I. Add routes in the subnet route tables to point to the internet gateway
- J. Configure the accelerator with endpoint groups that include the ALB endpoint
- K. Configure the ALB's security group to only allow inbound traffic from the accelerator's IP addresses on the ALB listener port.
- L. Configure the ALB in a private subnet of the VPC
- M. Attach an internet gateway
- N. Add routes in the subnet route tables to point to the internet gateway
- O. Configure the accelerator with endpoint groups that include the ALB endpoint
- P. Configure the ALB's security group to only allow inbound traffic from the accelerator's IP addresses on the ALB listener port.

**Answer:** A

**Explanation:**

Please read the below link typically describing ELB integration with AWS Global accelerator (and the last line of the extract) - <https://docs.aws.amazon.com/global-accelerator/latest/dg/secure-vpc-connections.html> "When you add an internal Application Load Balancer or an Amazon EC2 instance endpoint in AWS Global Accelerator, you enable internet traffic to flow directly to and from the endpoint in Virtual Private Clouds (VPCs) by targeting it in a private subnet. The VPC that contains the load balancer or EC2 instance must have an internet gateway attached to it, to indicate that the VPC accepts internet traffic. However, you don't need public IP addresses on the load balancer or EC2 instance. You also don't need an associated internet gateway route for the subnet."

**NEW QUESTION 3**

A data analytics company has a 100-node high performance computing (HPC) cluster. The HPC cluster is for parallel data processing and is hosted in a VPC in the AWS Cloud. As part of the data processing workflow, the HPC cluster needs to perform several DNS queries to resolve and connect to Amazon RDS databases, Amazon S3 buckets, and on-premises data stores that are accessible through AWS Direct Connect. The HPC cluster can increase in size by five to seven times during the company's peak event at the end of the year.

The company is using two Amazon EC2 instances as primary DNS servers for the VPC. The EC2 instances are configured to forward queries to the default VPC resolver for Amazon Route 53 hosted domains and to the on-premises DNS servers for other on-premises hosted domain names. The company notices job failures and finds that DNS queries from the HPC cluster nodes failed when the nodes tried to resolve RDS and S3 bucket endpoints.

Which architectural change should a network engineer implement to provide the DNS service in the MOST scalable way?

- A. Scale out the DNS service by adding two additional EC2 instances in the VPC
- B. Reconfigure half of the HPC cluster nodes to use these new DNS servers
- C. Plan to scale out by adding additional EC2 instance-based DNS servers in the future as the HPC cluster size grows.
- D. Scale up the existing EC2 instances that the company is using as DNS servers
- E. Change the instance size to the largest possible instance size to accommodate the current DNS load and the anticipated load in the future.
- F. Create Route 53 Resolver outbound endpoint
- G. Create Route 53 Resolver rules to forward queries to on-premises DNS servers for on-premises hosted domain names
- H. Reconfigure the HPC cluster nodes to use the default VPC resolver instead of the EC2 instance-based DNS server
- I. Terminate the EC2 instances.
- J. Create Route 53 Resolver inbound endpoint
- K. Create rules on the on-premises DNS servers to forward queries to the default VPC resolver
- L. Reconfigure the HPC cluster nodes to forward all DNS queries to the on-premises DNS server

M. Terminate the EC2 instances.

**Answer:** C

#### NEW QUESTION 4

A company is planning to use Amazon S3 to archive financial data. The data is currently stored in an on-premises data center. The company uses AWS Direct Connect with a Direct Connect gateway and a transit gateway to connect to the on-premises data center. The data cannot be transported over the public internet and must be encrypted in transit. Which solution will meet these requirements?

- A. Create a Direct Connect public VI
- B. Set up an IPsec VPN connection over the public VIF to access Amazon S3. Use HTTPS for communication.
- C. Create an IPsec VPN connection over the transit VI
- D. Create a VPC and attach the VPC to the transit gateway
- E. In the VPC, provision an interface VPC endpoint for Amazon S3. Use HTTPS for communication.
- F. Create a VPC and attach the VPC to the transit gateway
- G. In the VPC, provision an interface VPC endpoint for Amazon S3. Use HTTPS for communication.
- H. Create a Direct Connect public VI
- I. Set up an IPsec VPN connection over the public VIF to the transit gateway
- J. Create an attachment for Amazon S3. Use HTTPS for communication.

**Answer:** B

#### Explanation:

<https://docs.aws.amazon.com/vpn/latest/s2svpn/private-ip-dx.html>

An IPsec VPN connection over the transit VIF can encrypt traffic between the on-premises network and AWS without using public IP addresses or the internet2. A VPC endpoint for Amazon S3 can enable private access to S3 buckets within the same region. HTTPS can provide additional encryption for communication.

#### NEW QUESTION 5

A company has an AWS Direct Connect connection between its on-premises data center in the United States (US) and workloads in the us-east-1 Region. The connection uses a transit VIF to connect the data center to a transit gateway in us-east-1. The company is opening a new office in Europe with a new on-premises data center in England. A Direct Connect connection will connect the new data center with some workloads that are running in a single VPC in the eu-west-2 Region. The company needs to connect the US data center and us-east-1 with the Europe data center and eu-west-2. A network engineer must establish full connectivity between the data centers and Regions with the lowest possible latency. How should the network engineer design the network architecture to meet these requirements?

- A. Connect the VPC in eu-west-2 with the Europe data center by using a Direct Connect gateway and a private VI
- B. Associate the transit gateway in us-east-1 with the same Direct Connect gateway
- C. Enable SiteLink for the transit VIF and the private VIF.
- D. Connect the VPC in eu-west-2 to a new transit gateway
- E. Connect the Europe data center to the new transit gateway by using a Direct Connect gateway and a new transit VI
- F. Associate the transit gateway in us-east-1 with the same Direct Connect gateway
- G. Enable SiteLink for both transit VIF
- H. Peer the two transit gateways.
- I. Connect the VPC in eu-west-2 to a new transit gateway
- J. Connect the Europe data center to the new transit gateway by using a Direct Connect gateway and a new transit VI
- K. Create a new Direct Connect gateway
- L. Associate the transit gateway in us-east-1 with the new Direct Connect gateway
- M. Enable SiteLink for both transit VIF
- N. Peer the two transit gateways.
- O. Connect the VPC in eu-west-2 with the Europe data center by using a Direct Connect gateway and a private VI
- P. Create a new Direct Connect gateway
- Q. Associate the transit gateway in us-east-1 with the new Direct Connect gateway
- R. Enable SiteLink for the transit VIF and the private VIF.

**Answer:** C

#### NEW QUESTION 6

A company has its production VPC (VPC-A) in the eu-west-1 Region in Account 1. VPC-A is attached to a transit gateway (TGW-A) that is connected to an on-premises data center in Dublin, Ireland, by an AWS Direct Connect transit VIF that is configured for an AWS Direct Connect gateway. The company also has a staging VPC (VPC-B) that is attached to another transit gateway (TGW-B) in the eu-west-2 Region in Account 2. A network engineer must implement connectivity between VPC-B and the on-premises data center in Dublin. Which solutions will meet these requirements? (Choose two.)

- A. Configure inter-Region VPC peering between VPC-A and VPC-
- B. Add the required VPC peering route
- C. Add the VPC-B CIDR block in the allowed prefixes on the Direct Connect gateway association.
- D. Associate TGW-B with the Direct Connect gateway
- E. Advertise the VPC-B CIDR block under the allowed prefixes.
- F. Configure another transit VIF on the Direct Connect connection and associate TGW-
- G. Advertise the VPC-B CIDR block under the allowed prefixes.
- H. Configure inter-Region transit gateway peering between TGW-A and TGW-
- I. Add the peering routes in the transit gateway route table
- J. Add both the VPC-A and the VPC-B CIDR block under the allowed prefix list in the Direct Connect gateway association.
- K. Configure an AWS Site-to-Site VPN connection over the transit VIF to TGW-B as a VPN attachment.

**Answer:** BC

#### Explanation:

\* B. Associate TGW-B with the Direct Connect gateway. Advertise the VPC-B CIDR block under the allowed prefixes. This will allow traffic from VPC-B to be sent over the Direct Connect connection to the on-premises data center via TGW-B. C. Configure another transit VIF on the Direct Connect connection and associate TGW-B. Advertise the VPC-B CIDR block under the allowed prefixes. This will enable the use of the Direct Connect connection for VPC-B's traffic by connecting TGW-B to the Direct Connect gateway.

#### NEW QUESTION 7

A company has deployed a web application on AWS. The web application uses an Application Load Balancer (ALB) across multiple Availability Zones. The targets of the ALB are AWS Lambda functions. The web application also uses Amazon CloudWatch metrics for monitoring.

Users report that parts of the web application are not loading properly. A network engineer needs to troubleshoot the problem. The network engineer enables access logging for the ALB.

What should the network engineer do next to determine which errors the ALB is receiving?

- A. Send the logs to Amazon CloudWatch Log
- B. Review the ALB logs in CloudWatch Insights to determine which error messages the ALB is receiving.
- C. Configure the Amazon S3 bucket destination
- D. Use Amazon Athena to determine which error messages the ALB is receiving.
- E. Configure the Amazon S3 bucket destination
- F. After Amazon CloudWatch Logs pulls the ALB logs from the S3 bucket automatically, review the logs in CloudWatch Logs to determine which error messages the ALB is receiving.
- G. Send the logs to Amazon CloudWatch Log
- H. Use the Amazon Athena CloudWatch Connector to determine which error messages the ALB is receiving.

**Answer: B**

#### Explanation:

Access logs is an optional feature of Elastic Load Balancing that is disabled by default. After you enable access logs for your load balancer, Elastic Load Balancing captures the logs and stores them in the Amazon S3 bucket that you specify as compressed files. You can disable access logs at any time. <https://docs.aws.amazon.com/elasticloadbalancing/latest/application/load-balancer-access-logs.html>

#### NEW QUESTION 8

A company has hundreds of VPCs on AWS. All the VPCs access the public endpoints of Amazon S3 and AWS Systems Manager through NAT gateways. All the traffic from the VPCs to Amazon S3 and Systems Manager travels through the NAT gateways. The company's network engineer must centralize access to these services and must eliminate the need to use public endpoints.

Which solution will meet these requirements with the LEAST operational overhead?

- A. Create a central egress VPC that has private NAT gateway
- B. Connect all the VPCs to the central egress VPC by using AWS Transit Gateway
- C. Use the private NAT gateways to connect to Amazon S3 and Systems Manager by using private IP addresses.
- D. Create a central shared services VPC
- E. In the central shared services VPC, create interface VPC endpoints for Amazon S3 and Systems Manager to access
- F. Ensure that private DNS is turned off
- G. Connect all the VPCs to the central shared services VPC by using AWS Transit Gateway
- H. Create an Amazon Route 53 forwarding rule for each interface VPC endpoint
- I. Associate the forwarding rules with all the VPC
- J. Forward DNS queries to the interface VPC endpoints in the shared services VPC.
- K. Create a central shared services VPC. In the central shared services VPC, create interface VPC endpoints for Amazon S3 and Systems Manager to access
- L. Ensure that private DNS is turned off
- M. Connect all the VPCs to the central shared services VPC by using AWS Transit Gateway
- N. Create an Amazon Route 53 private hosted zone with a full service endpoint name for Amazon S3 and Systems Manager
- O. Associate the private hosted zones with all the VPC
- P. Create an alias record in each private hosted zone with the full AWS service endpoint pointing to the interface VPC endpoint in the shared services VPC.
- Q. Create a central shared services VPC
- R. In the central shared services VPC, create interface VPC endpoints for Amazon S3 and Systems Manager to access
- S. Connect all the VPCs to the central shared services VPC by using AWS Transit Gateway
- T. Ensure that private DNS is turned on for the interface VPC endpoints and that the transit gateway is created with DNS support turned on.

**Answer: B**

#### Explanation:

Interface VPC endpoints enable private connectivity between VPCs and supported AWS services without requiring an internet gateway, NAT device, VPN connection, or AWS Direct Connect connection. Interface VPC endpoints are powered by AWS PrivateLink, a technology that enables private access to AWS services. Amazon S3 and AWS Systems Manager support interface VPC endpoints. By turning off private DNS, the interface VPC endpoints can be accessed by using their private IP addresses. By using Amazon Route 53 forwarding rules, DNS queries can be resolved to the interface VPC endpoints in the shared services VPC.

#### NEW QUESTION 9

A real estate company is building an internal application so that real estate agents can upload photos and videos of various properties. The application will store these photos and videos in an Amazon S3 bucket as objects and will use Amazon DynamoDB to store corresponding metadata. The S3 bucket will be configured to publish all PUT events for new object uploads to an Amazon Simple Queue Service (Amazon SQS) queue.

A compute cluster of Amazon EC2 instances will poll the SQS queue to find out about newly uploaded objects. The cluster will retrieve new objects, perform proprietary image and video recognition and classification, update metadata in DynamoDB and replace the objects with new watermarked objects. The company does not want public IP addresses on the EC2 instances.

Which networking design solution will meet these requirements MOST cost-effectively as application usage increases?

- A. Place the EC2 instances in a public subnet
- B. Disable the Auto-assign Public IP option while launching the EC2 instance
- C. Create an internet gateway
- D. Attach the internet gateway to the VPC
- E. In the public subnet's route table, add a default route that points to the internet gateway.
- F. Place the EC2 instances in a private subnet



- G. Create a NAT gateway in a public subnet in the same Availability Zone
- H. Create an internet gateway
- I. Attach the internet gateway to the VPC
- J. In the public subnet's route table, add a default route that points to the internet gateway
- K. Place the EC2 instances in a private subnet
- L. Create an interface VPC endpoint for Amazon S3
- M. Create gateway VPC endpoints for Amazon S3 and DynamoDB.
- N. Place the EC2 instances in a private subnet
- O. Create a gateway VPC endpoint for Amazon S3. Create interface VPC endpoints for Amazon S3 and DynamoDB.

**Answer:** C

#### NEW QUESTION 10

All IP addresses within a 10.0.0.0/16 VPC are fully utilized with application servers across two Availability Zones. The application servers need to send frequent UDP probes to a single central authentication server on the Internet to confirm that it is running up-to-date packages. The network is designed for application servers to use a single NAT gateway for internal access. Testing reveals that a few of the servers are unable to communicate with the authentication server.

- A. The NAT gateway does not support UDP traffic.
- B. The authentication server is not accepting traffic.
- C. The NAT gateway cannot allocate more ports.
- D. The NAT gateway is launched in a private subnet.

**Answer:** C

#### Explanation:

Ref: <https://docs.aws.amazon.com/vpc/latest/userguide/vpc-nat-gateway.html>

"A NAT gateway can support up to 55,000 simultaneous connections to each unique destination. This limit also applies if you create approximately 900 connections per second to a single destination (about 55,000 connections per minute). If the destination IP address, the destination port, or the protocol (TCP/UDP/ICMP) changes, you can create an additional 55,000 connections. For more than 55,000 connections, there is an increased chance of connection errors due to port allocation errors. These errors can be monitored by viewing the ErrorPortAllocation CloudWatch metric for your NAT gateway. For more information, see [Monitoring NAT Gateways Using Amazon CloudWatch](#)."

#### NEW QUESTION 10

An insurance company is planning the migration of workloads from its on-premises data center to the AWS Cloud. The company requires end-to-end domain name resolution. Bi-directional DNS resolution between AWS and the existing on-premises environments must be established. The workloads will be migrated into multiple VPCs. The workloads also have dependencies on each other, and not all the workloads will be migrated at the same time.

Which solution meets these requirements?

- A. Configure a private hosted zone for each application VPC, and create the requisite record
- B. Create a set of Amazon Route 53 Resolver inbound and outbound endpoints in an egress VPC
- C. Define Route 53 Resolver rules to forward requests for the on-premises domains to the on-premises DNS resolver
- D. Associate the application VPC private hosted zones with the egress VPC, and share the Route 53 Resolver rules with the application accounts by using AWS Resource Access Manager
- E. Configure the on-premises DNS servers to forward the cloud domains to the Route 53 inbound endpoints.
- F. Configure a public hosted zone for each application VPC, and create the requisite record
- G. Create a set of Amazon Route 53 Resolver inbound and outbound endpoints in an egress VPC
- H. Define Route 53 Resolver rules to forward requests for the on-premises domains to the on-premises DNS resolver
- I. Associate the application VPC private hosted zones with the egress VPC
- J. and share the Route 53 Resolver rules with the application accounts by using AWS Resource Access Manager
- K. Configure the on-premises DNS servers to forward the cloud domains to the Route 53 inbound endpoints.
- L. Configure a private hosted zone for each application VPC, and create the requisite record
- M. Create a set of Amazon Route 53 Resolver inbound and outbound endpoints in an egress VPC. Define Route 53 Resolver rules to forward requests for the on-premises domains to the on-premises DNS resolver
- N. Associate the application VPC private hosted zones with the egress VPC and share the Route 53 Resolver rules with the application accounts by using AWS Resource Access Manager

**Answer:** A

#### Explanation:

Creating a private hosted zone for each application VPC and creating the requisite records would enable end-to-end domain name resolution for the resources. Creating a set of Amazon Route 53 Resolver inbound and outbound endpoints in an egress VPC would enable bi-directional DNS resolution between AWS and the existing on-premises environments. Defining Route 53 Resolver rules to forward requests for the on-premises domains to the on-premises DNS resolver would enable DNS queries from AWS resources to on-premises resources. Associating the application VPC private hosted zones with the egress VPC and sharing the Route 53 Resolver rules with the application accounts by using AWS Resource Access Manager would enable DNS queries among different VPCs and accounts. Configuring the on-premises DNS servers to forward the cloud domains to the Route 53 inbound endpoints would enable DNS queries from on-premises resources to AWS resources.

#### NEW QUESTION 15

A company is deploying third-party firewall appliances for traffic inspection and NAT capabilities in its VPC. The VPC is configured with private subnets and public subnets. The company needs to deploy the firewall appliances behind a load balancer.

Which architecture will meet these requirements MOST cost-effectively?

- A. Deploy a Gateway Load Balancer with the firewall appliances as target
- B. Configure the firewall appliances with a single network interface in a private subnet
- C. Use a NAT gateway to send the traffic to the internet after inspection.
- D. Deploy a Gateway Load Balancer with the firewall appliances as target
- E. Configure the firewall appliances with two network interfaces: one network interface in a private subnet and another network interface in a public subnet
- F. Use the NAT functionality on the firewall appliances to send the traffic to the internet after inspection.
- G. Deploy a Network Load Balancer with the firewall appliances as target
- H. Configure the firewall appliances with a single network interface in a private subnet
- I. Use a NAT gateway to send the traffic to the internet after inspection.

- J. Deploy a Network Load Balancer with the firewall appliances as target
- K. Configure the firewall appliances with two network interfaces: one network interface in a private subnet and another network interface in a public subnet
- L. Use the NAT functionality on the firewall appliances to send the traffic to the internet after inspection.

**Answer: B**

#### NEW QUESTION 17

A network engineer needs to set up an Amazon EC2 Auto Scaling group to run a Linux-based network appliance in a highly available architecture. The network engineer is configuring the new launch template for the Auto Scaling group.

In addition to the primary network interface the network appliance requires a second network interface that will be used exclusively by the application to exchange traffic with hosts over the internet. The company has set up a Bring Your Own IP (BYOIP) pool that includes an Elastic IP address that should be used as the public IP address for the second network interface.

How can the network engineer implement the required architecture?

- A. Configure the two network interfaces in the launch template
- B. Define the primary network interface to be created in one of the private subnets
- C. For the second network interface, select one of the public subnets
- D. Choose the BYOIP pool ID as the source of public IP addresses.
- E. Configure the primary network interface in a private subnet in the launch template
- F. Use the user data option to run a cloud-init script after boot to attach the second network interface from a subnet with auto-assign public IP addressing enabled.
- G. Create an AWS Lambda function to run as a lifecycle hook of the Auto Scaling group when an instance is launched
- H. In the Lambda function, assign a network interface to an AWS Global Accelerator endpoint.
- I. During creation of the Auto Scaling group, select subnets for the primary network interface
- J. Use the user data option to run a cloud-init script to allocate a second network interface and to associate an Elastic IP address from the BYOIP pool.

**Answer: D**

#### Explanation:

During creation of the Auto Scaling group, select subnets for the primary network interface. Use the user data option to run a cloud-init script to allocate a second network interface and to associate an Elastic IP address from the BYOIP pool.

This solution meets all of the requirements stated in the question. The primary network interface can be configured in a private subnet during creation of the Auto Scaling group. The user data option can be used to run a cloud-init script that will allocate a second network interface and associate an Elastic IP address from the BYOIP pool with it.

#### NEW QUESTION 21

Your company runs an application for the US market in the us-east-1 AWS region. This application uses proprietary TCP and UDP protocols on Amazon Elastic Compute Cloud (EC2) instances. End users run a

real-time, front-end application on their local PCs. This front-end application knows the DNS hostname of the service.

You must prepare the system for global expansion. The end users must access the application with lowest latency.

How should you use AWS services to meet these requirements?

- A. Register the IP addresses of the service hosts as "A" records with latency-based routing policy in Amazon Route 53, and set a Route 53 health check for these hosts.
- B. Set the Elastic Load Balancing (ELB) load balancer in front of the hosts of the service, and register the ELB name of the main service host as an ALIAS record with a latency-based routing policy in Route 53.
- C. Set Amazon CloudFront in front of the host of the service, and register the CloudFront name of the main service as an ALIAS record in Route 53.
- D. Set the Amazon API gateway in front of the service, and register the API gateway name of the main service as an ALIAS record in Route 53.

**Answer: B**

#### NEW QUESTION 23

A customer has set up multiple VPCs for Dev, Test, Prod, and Management. You need to set up AWS Direct Connect to enable data flow from on-premises to each VPC. The customer has monitoring software running in the Management VPC that collects metrics from the instances in all the other VPCs. Due to budget requirements, data transfer charges should be kept at minimum.

Which design should be recommended?

- A. Create a total of four private VIFs, one for each VPC owned by the customer, and route traffic between VPCs using the Direct Connect link.
- B. Create a private VIF to the Management VPC, and peer this VPC to all other VPCs.
- C. Create a private VIF to the Management VPC, and peer this VPC to all other VPCs, enable source/destination NAT in the Management VPC.
- D. Create a total of four private VIFs, and enable VPC peering between all VPCs.

**Answer: D**

#### Explanation:

- creating VPC peering is free of charge - traffic costs ~0.01€/GB for VPC peering (IN + OUT) and ~0.02€/GB for direct connect (OUT only). As the communication involved in monitoring will never have IN == OUT, then 0.01 \* (IN + OUT) will always be lower than 0.02 \* OUT, ergo VPC peering will be cheaper

#### NEW QUESTION 24

A company has two AWS accounts one for Production and one for Connectivity. A network engineer needs to connect the Production account VPC to a transit gateway in the Connectivity account. The feature to auto accept shared attachments is not enabled on the transit gateway.

Which set of steps should the network engineer follow in each AWS account to meet these requirements?

- A. \* 1. In the Production account: Create a resource share in AWS Resource Access Manager for the transit gateway
- B. Provide the Connectivity account ID
- C. Enable the feature to allow external accounts \* 2. In the Connectivity account: Accept the resource. \* 3. In the Connectivity account: Create an attachment to the VPC subnets. \* 4. In the Production account: Accept the attachment
- D. Associate a route table with the attachment.
- E. \* 1. In the Production account: Create a resource share in AWS Resource Access Manager for the VPC subnet

- F. Provide the Connectivity account ID
- G. Enable the feature to allow external accounts.\* 2. In the Connectivity account: Accept the resource.\* 3. In the Production account: Create an attachment on the transit gateway to the VPC subnets.\* 4. In the Connectivity account: Accept the attachment
- H. Associate a route table with the attachment.
- I. \* 1. In the Connectivity account: Create a resource share in AWS Resource Access Manager for the VPC subnet
- J. Provide the Production account ID
- K. Enable the feature to allow external accounts.\* 2. In the Production account: Accept the resource.\* 3. In the Connectivity account: Create an attachment on the transit gateway to the VPC subnets.\* 4. In the Production account: Accept the attachment
- L. Associate a route table with the attachment.
- M. \* 1. In the Connectivity account: Create a resource share in AWS Resource Access Manager for the transit gateway
- N. Provide the Production account ID Enable the feature to allow external accounts.\* 2. In the Production account: Accept the resource.\* 3. In the Production account: Create an attachment to the VPC subnets.\* 4. In the Connectivity account: Accept the attachment
- O. Associate a route table with the attachment.

**Answer:** A

**Explanation:**

step 1: In the Production account, create a resource share in AWS Resource Access Manager for the transit gateway and provide the Connectivity account ID. Enabling the feature to allow external accounts is also required to share resources between accounts. Step 2: In the Connectivity account, accept the shared resource. This action will allow the Production account to use the transit gateway in the Connectivity account. Step 3: In the Connectivity account, create an attachment to the VPC subnets. This attachment will enable communication between the VPC in the Production account and the transit gateway in the Connectivity account. Step 4: In the Production account, accept the attachment and associate a route table with the attachment. This will enable the VPC to route traffic through the transit gateway to other resources in the Connectivity account.

**NEW QUESTION 26**

A company is planning a migration of its critical workloads from an on-premises data center to Amazon EC2 instances. The plan includes a new 10 Gbps AWS Direct Connect dedicated connection from the on-premises data center to a VPC that is attached to a transit gateway. The migration must occur over encrypted paths between the on-premises data center and the AWS Cloud.

Which solution will meet these requirements while providing the HIGHEST throughput?

- A. Configure a public VIF on the Direct Connect connection
- B. Configure an AWS Site-to-Site VPN connection to the transit gateway as a VPN attachment.
- C. Configure a transit VIF on the Direct Connect connection
- D. Configure an IPsec VPN connection to an EC2 instance that is running third-party VPN software.
- E. Configure MACsec for the Direct Connect connection
- F. Configure a transit VIF to a Direct Connect gateway that is associated with the transit gateway.
- G. Configure a public VIF on the Direct Connect connection
- H. Configure two AWS Site-to-Site VPN connections to the transit gateway
- I. Enable equal-cost multi-path (ECMP) routing.

**Answer:** C

**Explanation:**

<https://aws.amazon.com/blogs/networking-and-content-delivery/adding-macsec-security-to-aws-direct-connect-c>

**NEW QUESTION 29**

A company is building its website on AWS in a single VPC. The VPC has public subnets and private subnets in two Availability Zones. The website has static content such as images. The company is using Amazon S3 to store the content.

The company has deployed a fleet of Amazon EC2 instances as web servers in a private subnet. The EC2 instances are in an Auto Scaling group behind an Application Load Balancer. The EC2 instances will serve traffic, and they must pull content from an S3 bucket to render the webpages. The company is using AWS Direct Connect with a public VIF for on-premises connectivity to the S3 bucket.

A network engineer notices that traffic between the EC2 instances and Amazon S3 is routing through a NAT gateway. As traffic increases, the company's costs are increasing. The network engineer needs to change the connectivity to reduce the NAT gateway costs that result from the traffic between the EC2 instances and Amazon S3.

Which solution will meet these requirements?

- A. Create a Direct Connect private VIF
- B. Migrate the traffic from the public VIF to the private VIF.
- C. Create an AWS Site-to-Site VPN tunnel over the existing public VIF.
- D. Implement interface VPC endpoints for Amazon S3. Update the VPC route table.
- E. Implement gateway VPC endpoints for Amazon S3. Update the VPC route table.

**Answer:** D

**NEW QUESTION 33**

An IoT company sells hardware sensor modules that periodically send out temperature, humidity, pressure, and location data through the MQTT messaging protocol. The hardware sensor modules send this data to the company's on-premises MQTT brokers that run on Linux servers behind a load balancer. The hardware sensor modules have been hardcoded with public IP addresses to reach the brokers.

The company is growing and is acquiring customers across the world. The existing solution can no longer scale and is introducing additional latency because of the company's global presence. As a result, the company decides to migrate its entire infrastructure from on premises to the AWS Cloud. The company needs to migrate without reconfiguring the hardware sensor modules that are already deployed across the world. The solution also must minimize latency.

The company migrates the MQTT brokers to run on Amazon EC2 instances. What should the company do next to meet these requirements?

- A. Place the EC2 instances behind a Network Load Balancer (NLB). Configure TCP listener
- B. Use Bring Your Own IP (BYOIP) from the on-premises network with the NLB.
- C. Place the EC2 instances behind a Network Load Balancer (NLB). Configure TCP listener
- D. Create an AWS Global Accelerator accelerator in front of the NLB Use Bring Your Own IP (BYOIP) from the on-premises network with Global Accelerator.
- E. Place the EC2 instances behind an Application Load Balancer (ALB). Configure TCP listener
- F. Create an AWS Global Accelerator accelerator in front of the ALB
- G. Use Bring Your Own IP (BYOIP) from the on-premises network with Global Accelerator



- H. Place the EC2 instances behind an Amazon CloudFront distributio
- I. Use Bring Your Own IP (BYOIP) from the on-premises network with CloudFront.

**Answer:** B

#### NEW QUESTION 34

A global company runs business applications in the us-east-1 Region inside a VPC. One of the company's regional offices in London uses a virtual private gateway for an AWS Site-to-Site VPN connection tom the VPC. The company has configured a transit gateway and has set up peering between the VPC and other VPCs that various departments in the company use.

Employees at the London office are experiencing latency issues when they connect to the business applications.

What should a network engineer do to reduce this latency?

- A. Create a new Site-to-Site VPN connectio
- B. Set the transit gateway as the target gatewa
- C. Enable acceleration on the new Site-to-Site VPN connectio
- D. Update the VPN device in the London office with the new connection details.
- E. Modify the existing Site-to-Site VPN connection by setting the transit gateway as the target gateway.Enable acceleration on the existing Site-to-Site VPN connection.
- F. Create a new transit gateway in the eu-west-2 (London) Regio
- G. Peer the new transit gateway with the existing transit gatewa
- H. Modify the existing Site-to-Site VPN connection by setting the new transit gateway as the target gateway.
- I. Create a new AWS Global Accelerator standard accelerator that has an endpoint of the Site-to-Site VPN connectio
- J. Update the VPN device in the London office with the new connection details.

**Answer:** A

#### Explanation:

Enabling acceleration for a Site-to-Site VPN connection uses AWS Global Accelerator to route traffic from the on-premises network to an AWS edge location that is closest to the customer gateway device1. AWS Global Accelerator optimizes the network path, using the congestion-free AWS global network to route traffic to the endpoint that provides the best application performance2. Setting the transit gateway as the target gateway enables connectivity between the on-premises network and multiple VPCs that are attached to the transit gateway3.

#### NEW QUESTION 36

A company has expanded its network to the AWS Cloud by using a hybrid architecture with multiple AWS accounts. The company has set up a shared AWS account for the connection to its on-premises data centers and the company offices. The workloads consist of private web-based services for internal use. These services run in different AWS accounts. Office-based employees consume these services by using a DNS name in an on-premises DNS zone that is named example.internal.

The process to register a new service that runs on AWS requires a manual and complicated change request to the internal DNS. The process involves many teams.

The company wants to update the DNS registration process by giving the service creators access that will allow them to register their DNS records. A network engineer must design a solution that will achieve this goal. The solution must maximize cost-effectiveness and must require the least possible number of configuration changes.

Which combination of steps should the network engineer take to meet these requirements? (Choose three.)

- A. Create a record for each service in its local private hosted zone (serviceA.account1.aws.example.internal). Provide this DNS record to the employees who need access.
- B. Create an Amazon Route 53 Resolver inbound endpoint in the shared account VP
- C. Create a conditional forwarder for a domain named aws.example.internal on the on-premises DNS server
- D. Set the forwarding IP addresses to the inbound endpoint's IP addresses that were created.
- E. Create an Amazon Route 53 Resolver rule to forward any queries made to onprem.example.internal to the on-premises DNS servers.
- F. Create an Amazon Route 53 private hosted zone named aws.example.internal in the shared AWSaccount to resolve queries for this domain.
- G. Launch two Amazon EC2 instances in the shared AWS accoun
- H. Install BIND on each instanc
- I. Create a DNS conditional forwarder on each BIND server to forward queries for each subdomain under aws.example.internal to the appropriate private hosted zone in each AWS accoun
- J. Create a conditional forwarder for a domain named aws.example.internal on the on-premises DNS server
- K. Set the forwarding IP addresses to the IP addresses of the BIND servers.
- L. Create a private hosted zone in the shared AWS account for each account that runs the service.Configure the private hosted zone to contain aws.example.internal in the domain (account1.aws.example.internal). Associate the private hosted zone with the VPC that runs the service and the shared account VPC.

**Answer:** ABD

#### Explanation:

To meet the requirements of updating the DNS registration process while maximizing cost-effectiveness and minimizing configuration changes, the network engineer should take the following steps:

- Create an Amazon Route 53 Resolver inbound endpoint in the shared account VPC. Create a conditional forwarder for a domain named aws.example.internal on the on-premises DNS servers. Set the forwarding IP addresses to the inbound endpoint's IP addresses that were created (Option B).
- Create an Amazon Route 53 private hosted zone named aws.example.internal in the shared AWS account to resolve queries for this domain (Option D).
- Create a record for each service in its local private hosted zone (serviceA.account1.aws.example.internal). Provide this DNS record to the employees who need access (Option A).

These steps will allow service creators to register their DNS records while keeping costs low and minimizing configuration changes.

#### NEW QUESTION 37

A global delivery company is modernizing its fleet management system. The company has several business units. Each business unit designs and maintains applications that are hosted in its own AWS account in separate application VPCs in the same AWS Region. Each business unit's applications are designed to get data from a central shared services VPC.

The company wants the network connectivity architecture to provide granular security controls. The architecture also must be able to scale as more business units consume data from the central shared services VPC in the future.



Which solution will meet these requirements in the MOST secure manner?

- A. Create a central transit gatewa
- B. Create a VPC attachment to each application VP
- C. Provide full mesh connectivity between all the VPCs by using the transit gateway.
- D. Create VPC peering connections between the central shared services VPC and each application VPC in each business unit's AWS account.
- E. Create VPC endpoint services powered by AWS PrivateLink in the central shared services VPC. Create VPC endpoints in each application VPC.
- F. Create a central transit VPC with a VPN appliance from AWS Marketplac
- G. Create a VPN attachment from each VPC to the transit VP
- H. Provide full mesh connectivity among all the VPCs.

**Answer: C**

**Explanation:**

Option C provides a secure and scalable solution using VPC endpoint services powered by AWS PrivateLink. AWS PrivateLink enables private connectivity between VPCs and services without exposing the data to the public internet or using a VPN connection. By creating VPC endpoints in each application VPC, the company can securely access the central shared services VPC without the need for complex network configurations. Furthermore, PrivateLink supports cross-account connectivity, which makes it a scalable solution as more business units consume data from the central shared services VPC in the future.

**NEW QUESTION 40**

A company is using Amazon Route 53 Resolver DNS Firewall in a VPC to block all domains except domains that are on an approved list. The company is concerned that if DNS Firewall is unresponsive, resources in the VPC might be affected if the network cannot resolve any DNS queries. To maintain application service level agreements, the company needs DNS queries to continue to resolve even if Route 53 Resolver does not receive a response from DNS Firewall. Which change should a network engineer implement to meet these requirements?

- A. Update the DNS Firewall VPC configuration to disable fail open for the VPC.
- B. Update the DNS Firewall VPC configuration to enable fail open for the VPC.
- C. Create a new DHCP options set with parameter `dns_firewall_fail_open=fals`
- D. Associate the new DHCP options set with the VPC.
- E. Create a new DHCP options set with parameter `dns_firewall_fail_open=tru`
- F. Associate the new DHCP options set with the VPC.

**Answer: B**

**NEW QUESTION 41**

A company manages resources across VPCs in multiple AWS Regions. The company needs to connect to the resources by using its internal domain name. A network engineer needs to apply the `aws.example.com` DNS suffix to all resources. What must the network engineer do to meet this requirement?

- A. Create an Amazon Route 53 private hosted zone for `aws.example.com` in each Region that has resource
- B. Associate the private hosted zone with that Region's VP
- C. In the appropriate private hosted zone, create DNS records for the resources in each Region.
- D. Create one Amazon Route 53 private hosted zone for `aws.example.co`
- E. Configure the private hosted zone to allow zone transfers with every VPC.
- F. Create one Amazon Route 53 private hosted zone for `example.co`
- G. Create a single resource record for `aws.example.com` in the private hosted zon
- H. Apply a multivalue answer routing policy to the recor
- I. Add all VPC resources as separate values in the routing policy.
- J. Create one Amazon Route 53 private hosted zone for `aws.example.co`
- K. Associate the private hosted zone with every VPC that has resource
- L. In the private hosted zone, create DNS records for all resources.

**Answer: D**

**Explanation:**

Creating one private hosted zone for `aws.example.com` and associating it with every VPC that has resources would enable DNS resolution for all resources by using their internal domain name. Creating an alias record in each private hosted zone with the full AWS service endpoint pointing to the interface VPC endpoint in the shared services VPC would enable private connectivity to Amazon S3 and AWS Systems Manager without using public endpoints.

**NEW QUESTION 45**

A company is using an AWS Site-to-Site VPN connection from the company's on-premises data center to a virtual private gateway in the AWS Cloud. Because of congestion, the company is experiencing availability and performance issues as traffic travels across the internet before the traffic reaches AWS. A network engineer must reduce these issues for the connection as quickly as possible with minimum administration effort. Which solution will meet these requirements?

- A. Edit the existing Site-to-Site VPN connection by enabling acceleratio
- B. Stop and start the VPN service on the customer gateway for the new setting to take effect.
- C. Configure a transit gateway in the same AWS Region as the existing virtual private gatewa
- D. Create a new accelerated Site-to-Site VPN connectio
- E. Connect the new connection to the transit gateway by using a VPN attachmen
- F. Update the customer gateway device to use the new Site to Site VPN connectio
- G. Delete the existing Site-to-Site VPN connection
- H. Create a new accelerated Site-to-Site VPN connectio
- I. Connect the new Site-to-Site VPN connection to the existing virtual private gatewa
- J. Update the customer gateway device to use the new Site-to-Site VPN connectio
- K. Delete the existing Site-to-Site VPN connection.
- L. Create a new AWS Direct Connect connection with a private VIF between the on-premises data center and the AWS Clou
- M. Update the customer gateway device to use the new Direct Connect connectio
- N. Delete the existing Site-to-Site VPN connection.

**Answer:** B

#### NEW QUESTION 50

A company is hosting an application on Amazon EC2 instances behind an Application Load Balancer. The instances are in an Amazon EC2 Auto Scaling group. Because of a recent change to a security group, external users cannot access the application.

A network engineer needs to prevent this downtime from happening again. The network engineer must implement a solution that remediates noncompliant changes to security groups.

Which solution will meet these requirements?

- A. Configure Amazon GuardDuty to detect inconsistencies between the desired security group configuration and the current security group configuration
- B. Create an AWS Systems Manager Automation runbook to remediate noncompliant security groups.
- C. Configure an AWS Config rule to detect inconsistencies between the desired security group configuration and the current security group configuration
- D. Configure AWS OpsWorks for Chef to remediate noncompliant security groups.
- E. Configure Amazon GuardDuty to detect inconsistencies between the desired security group configuration and the current security group configuration
- F. Configure AWS OpsWorks for Chef to remediate noncompliant security groups.
- G. Configure an AWS Config rule to detect inconsistencies between the desired security group configuration and the current security group configuration
- H. Create an AWS Systems Manager Automation runbook to remediate noncompliant security groups.

**Answer:** D

#### Explanation:

Configuring an AWS Config rule to detect inconsistencies between the desired security group configuration and the current security group configuration would enable evaluation of the compliance status of the security groups based on predefined or custom rules<sup>3</sup>. Creating an AWS Systems Manager Automation runbook to remediate noncompliant security groups would enable automation of the remediation process<sup>2</sup>. Additionally, configuring AWS Config to trigger the runbook when a noncompliant change is detected would enable timely and consistent remediation of security group changes.

#### NEW QUESTION 53

A company's development team has created a new product recommendation web service. The web service is hosted in a VPC with a CIDR block of 192.168.224.0/19. The company has deployed the web service on Amazon EC2 instances and has configured an Auto Scaling group as the target of a Network Load Balancer (NLB).

The company wants to perform testing to determine whether users who receive product recommendations spend more money than users who do not receive product recommendations. The company has a big sales event in 5 days and needs to integrate its existing production environment with the recommendation engine by then. The existing production environment is hosted in a VPC with a CIDR block of 192.168.128.0/17.

A network engineer must integrate the systems by designing a solution that results in the least possible disruption to the existing environments.

Which solution will meet these requirements?

- A. Create a VPC peering connection between the web service VPC and the existing production VPC
- B. Add a routing rule to the appropriate route table to allow data to flow to 192.168.224.0/19 from the existing production environment and to flow to 192.168.128.0/17 from the web service environment
- C. Configure the relevant security groups and ACLs to allow the systems to communicate.
- D. Ask the development team of the web service to redeploy the web service into the production VPC and integrate the systems there.
- E. Create a VPC endpoint service
- F. Associate the VPC endpoint service with the NLB for the web service. Create an interface VPC endpoint for the web service in the existing production VPC.
- G. Create a transit gateway in the existing production environment
- H. Create attachments to the production VPC and the web service VPC
- I. Configure appropriate routing rules in the transit gateway and VPC route tables for 192.168.224.0/19 and 192.168.128.0/17. Configure the relevant security groups and ACLs to allow the systems to communicate.

**Answer:** C

#### NEW QUESTION 55

A company hosts an application on Amazon EC2 instances behind an Application Load Balancer (ALB). The company recently experienced a network security breach. A network engineer must collect and analyze logs that include the client IP address, target IP address, target port, and user agent of each user that accesses the application.

What is the MOST operationally efficient solution that meets these requirements?

- A. Configure the ALB to store logs in an Amazon S3 bucket
- B. Download the files from Amazon S3, and use a spreadsheet application to analyze the logs.
- C. Configure the ALB to push logs to Amazon Kinesis Data Stream
- D. Use Amazon Kinesis Data Analytics to analyze the logs.
- E. Configure Amazon Kinesis Data Streams to stream data from the ALB to Amazon OpenSearch Service (Amazon Elasticsearch Service). Use search operations in Amazon OpenSearch Service (Amazon Elasticsearch Service) to analyze the data.
- F. Configure the ALB to store logs in an Amazon S3 bucket
- G. Use Amazon Athena to analyze the logs in Amazon S3.

**Answer:** D

#### Explanation:

The most operationally efficient solution to collect and analyze logs that include the client IP address, target IP address, target port, and user agent of each user that accesses the application would be to configure the ALB to store logs in an Amazon S3 bucket and use Amazon Athena to analyze the logs in Amazon S3 (Option D). This solution allows for quick and easy analysis of log data without requiring manual download or manipulation of log files.

#### NEW QUESTION 57

A network engineer must provide additional safeguards to protect encrypted data at Application Load Balancers (ALBs) through the use of a unique random session key.

What should the network engineer do to meet this requirement?

- A. Change the ALB security policy to a policy that supports TLS 1.2 protocol only
- B. Use AWS Key Management Service (AWS KMS) to encrypt session keys

- C. Associate an AWS WAF web ACL with the ALB
- D. and create a security rule to enforce forward secrecy (FS)
- E. Change the ALB security policy to a policy that supports forward secrecy (FS)

**Answer:** D

#### NEW QUESTION 60

A company has a hybrid cloud environment. The company's data center is connected to the AWS Cloud by an AWS Direct Connect connection. The AWS environment includes VPCs that are connected together in a hub-and-spoke model by a transit gateway. The AWS environment has a transit VIF with a Direct Connect gateway for on-premises connectivity. The company has a hybrid DNS model. The company has configured Amazon Route 53 Resolver endpoints in the hub VPC to allow bidirectional DNS traffic flow. The company is running a backend application in one of the VPCs. The company uses a message-oriented architecture and employs Amazon Simple Queue Service (Amazon SQS) to receive messages from other applications over a private network. A network engineer wants to use an interface VPC endpoint for Amazon SQS for this architecture. Client services must be able to access the endpoint service from on premises and from multiple VPCs within the company's AWS infrastructure. Which combination of steps should the network engineer take to ensure that the client applications can resolve DNS for the interface endpoint? (Choose three.)

- A. Create the interface endpoint for Amazon SQS with the option for private DNS names turned on.
- B. Create the interface endpoint for Amazon SQS with the option for private DNS names turned off.
- C. Manually create a private hosted zone for sqs.us-east-1.amazonaws.co
- D. Add necessary records that point to the interface endpoint
- E. Associate the private hosted zones with other VPCs.
- F. Use the automatically created private hosted zone for sqs.us-east-1.amazonaws.com with previously created necessary records that point to the interface endpoint
- G. Associate the private hosted zones with other VPCs.
- H. Access the SQS endpoint by using the public DNS name sqs.us-east-1.amazonaws.com in VPCs and on premises.
- I. Access the SQS endpoint by using the private DNS name of the interface endpoint.sqs.us-east-1.vpc.amazonaws.com in VPCs and on premises.

**Answer:** ADF

#### NEW QUESTION 62

A company has two on-premises data center locations. There is a company-managed router at each data center. Each data center has a dedicated AWS Direct Connect connection to a Direct Connect gateway through a private virtual interface. The router for the first location is advertising 110 routes to the Direct Connect gateway by using BGP, and the router for the second location is advertising 60 routes to the Direct Connect gateway by using BGP. The Direct Connect gateway is attached to a company VPC through a virtual private gateway.

A network engineer receives reports that resources in the VPC are not reachable from various locations in either data center. The network engineer checks the VPC route table and sees that the routes from the first data center location are not being populated into the route table. The network engineer must resolve this issue in the most operationally efficient manner.

What should the network engineer do to meet these requirements?

- A. Remove the Direct Connect gateway, and create a new private virtual interface from each company router to the virtual private gateway of the VPC.
- B. Change the router configurations to summarize the advertised routes.
- C. Open a support ticket to increase the quota on advertised routes to the VPC route table.
- D. Create an AWS Transit Gateway
- E. Attach the transit gateway to the VPC, and connect the Direct Connect gateway to the transit gateway.

**Answer:** B

#### Explanation:

"If you advertise more than 100 routes each for IPv4 and IPv6 over the BGP session, the BGP session will go into an idle state with the BGP session DOWN." <https://docs.aws.amazon.com/directconnect/latest/UserGuide/limits.html>

#### NEW QUESTION 65

A company has a global network and is using transit gateways to connect AWS Regions together. The company finds that two Amazon EC2 instances in different Regions are unable to communicate with each other. A network engineer needs to troubleshoot this connectivity issue.

What should the network engineer do to meet this requirement?

- A. Use AWS Network Manager Route Analyzer to analyze routes in the transit gateway route tables and in the VPC route table
- B. Use VPC flow logs to analyze the IP traffic that security group rules and network ACL rules accept or reject in the VPC.
- C. Use AWS Network Manager Route Analyzer to analyze routes in the transit gateway route tables. Verify that the VPC route tables are correct
- D. Use AWS Firewall Manager to analyze the IP traffic that security group rules and network ACL rules accept or reject in the VPC.
- E. Use AWS Network Manager Route Analyzer to analyze routes in the transit gateway route tables. Verify that the VPC route tables are correct
- F. Use VPC flow logs to analyze the IP traffic that security group rules and network ACL rules accept or reject in the VPC.
- G. Use VPC Reachability Analyzer to analyze routes in the transit gateway route table
- H. Verify that the VPC route tables are correct
- I. Use VPC flow logs to analyze the IP traffic that security group rules and network ACL rules accept or reject in the VPC.

**Answer:** C

#### Explanation:

Using AWS Network Manager Route Analyzer to analyze routes in the transit gateway route tables would enable identification of routing issues between VPCs and transit gateways1. Verifying that the VPC route tables are correct would enable identification of routing issues within a VPC. Using VPC flow logs to analyze the IP traffic that security group rules and network ACL rules accept or reject in the VPC would enable identification of traffic filtering issues within a VPC2. Additionally, using VPC Reachability Analyzer to analyze routes in the transit gateway route tables would enable identification of routing issues between transit gateways in different Regions. VPC Reachability Analyzer is a configuration analysis tool that enables connectivity testing between a source resource and a destination resource in your VPCs.

#### NEW QUESTION 66

A banking company is successfully operating its public mobile banking stack on AWS. The mobile banking stack is deployed in a VPC that includes private subnets



and public subnets. The company is using IPv4 networking and has not deployed or supported IPv6 in the environment. The company has decided to adopt a third-party service provider's API and must integrate the API with the existing environment. The service provider's API requires the use of IPv6.

A network engineer must turn on IPv6 connectivity for the existing workload that is deployed in a private subnet. The company does not want to permit IPv6 traffic from the public internet and mandates that the company's servers must initiate all IPv6 connectivity. The network engineer turns on IPv6 in the VPC and in the private subnets.

Which solution will meet these requirements?

- A. Create an internet gateway and a NAT gateway in the VP
- B. Add a route to the existing subnet route tables to point IPv6 traffic to the NAT gateway.
- C. Create an internet gateway and a NAT instance in the VP
- D. Add a route to the existing subnet route tables to point IPv6 traffic to the NAT instance.
- E. Create an egress-only Internet gateway in the VPAdd a route to the existing subnet route tables to point IPv6 traffic to the egress-only internet gateway.
- F. Create an egress-only internet gateway in the VP
- G. Configure a security group that denies all inbound traffic
- H. Associate the security group with the egress-only internet gateway.

**Answer: C**

#### NEW QUESTION 70

A company's network engineer is designing an active-passive connection to AWS from two on-premises data centers. The company has set up AWS Direct Connect connections between the on-premises data centers and AWS. From each location, the company is using a transit VIF that connects to a Direct Connect gateway that is associated with a transit gateway.

The network engineer must ensure that traffic from AWS to the data centers is routed first to the primary data center. The traffic should be routed to the failover data center only in the case of an outage.

Which solution will meet these requirements?

- A. Set the BGP community tag for all prefixes from the primary data center to 7224:7100. Set the BGP community tag for all prefixes from the failover data center to 7224:7300
- B. Set the BGP community tag for all prefixes from the primary data center to 7224:7300. Set the BGP community tag for all prefixes from the failover data center to 7224:7100
- C. Set the BGP community tag for all prefixes from the primary data center to 7224:9300. Set the BGP community tag for all prefixes from the failover data center to 7224:9100
- D. Set the BGP community tag for all prefixes from the primary data center to 7224:9100. Set the BGP community tag for all prefixes from the failover data center to 7224:9300

**Answer: B**

#### NEW QUESTION 73

A company is planning to deploy many software-defined WAN (SD-WAN) sites. The company is using AWS Transit Gateway and has deployed a transit gateway in the required AWS Region. A network engineer needs to deploy the SD-WAN hub virtual appliance into a VPC that is connected to the transit gateway. The solution must support at least 5 Gbps of throughput from the SD-WAN hub virtual appliance to other VPCs that are attached to the transit gateway.

Which solution will meet these requirements?

- A. Create a new VPC for the SD-WAN hub virtual appliance
- B. Create two IPsec VPN connections between the SD-WAN hub virtual appliance and the transit gateway
- C. Configure BGP over the IPsec VPN connections
- D. Assign a new CIDR block to the transit gateway
- E. Create a new VPC for the SD-WAN hub virtual appliance
- F. Attach the new VPC to the transit gateway with a VPC attachment
- G. Add a transit gateway Connect attachment
- H. Create a Connect peer and specify the GRE and BGP parameter
- I. Create a route in the appropriate VPC for the SD-WAN hub virtual appliance to route to the transit gateway.
- J. Create a new VPC for the SD-WAN hub virtual appliance
- K. Attach the new VPC to the transit gateway with a VPC attachment
- L. Create two IPsec VPN connections between the SD-WAN hub virtual appliance and the transit gateway
- M. Configure BGP over the IPsec VPN connections.
- N. Assign a new CIDR block to the transit gateway
- O. Create a new VPC for the SD-WAN hub virtual appliance
- P. Attach the new VPC to the transit gateway with a VPC attachment
- Q. Add a transit gateway Connect attachment
- R. Create a Connect peer and specify the VXLAN and BGP parameter
- S. Create a route in the appropriate VPC for the SD-WAN hub virtual appliance to route to the transit gateway.

**Answer: D**

#### NEW QUESTION 78

A company is deploying a new application in the AWS Cloud. The company wants a highly available web server that will sit behind an Elastic Load Balancer. The load balancer will route requests to multiple target groups based on the URL in the request. All traffic must use HTTPS. TLS processing must be offloaded to the load balancer. The web server must know the user's IP address so that the company can keep accurate logs for security purposes.

Which solution will meet these requirements?

- A. Deploy an Application Load Balancer with an HTTPS listener
- B. Use path-based routing rules to forward the traffic to the correct target group
- C. Include the X-Forwarded-For request header with traffic to the targets.
- D. Deploy an Application Load Balancer with an HTTPS listener for each domain
- E. Use host-based routing rules to forward the traffic to the correct target group for each domain
- F. Include the X-Forwarded-For request header with traffic to the targets.
- G. Deploy a Network Load Balancer with a TLS listener
- H. Use path-based routing rules to forward the traffic to the correct target group
- I. Configure client IP address preservation for traffic to the targets.

- J. Deploy a Network Load Balancer with a TLS listener for each domain.
- K. Use host-based routing rules to forward the traffic to the correct target group for each domain.
- L. Configure client IP address preservation for traffic to the targets.

**Answer:** A

**Explanation:**

An Application Load Balancer (ALB) can be used to route traffic to multiple target groups based on the URL in the request. The ALB can be configured with an HTTPS listener to ensure all traffic uses HTTPS. TLS processing can be offloaded to the ALB, which reduces the load on the web server. Path-based routing rules can be used to route traffic to the correct target group based on the URL in the request. The X-Forwarded-For request header can be included with traffic to the targets, which will allow the web server to know the user's IP address and keep accurate logs for security purposes.

**NEW QUESTION 80**

A company deploys a new web application on Amazon EC2 instances. The application runs in private subnets in three Availability Zones behind an Application Load Balancer (ALB). Security auditors require encryption of all connections. The company uses Amazon Route 53 for DNS and uses AWS Certificate Manager (ACM) to automate SSL/TLS certificate provisioning. SSL/TLS connections are terminated on the ALB. The company tests the application with a single EC2 instance and does not observe any problems. However, after production deployment, users report that they can log in but that they cannot use the application. Every new web request restarts the login process. What should a network engineer do to resolve this issue?

- A. Modify the ALB listener configuration
- B. Edit the rule that forwards traffic to the target group
- C. Change the rule to enable group-level stickiness
- D. Set the duration to the maximum application session length.
- E. Replace the ALB with a Network Load Balance
- F. Create a TLS listener
- G. Create a new target group with the protocol type set to TLS Register the EC2 instance
- H. Modify the target group configuration by enabling the stickiness attribute.
- I. Modify the ALB target group configuration by enabling the stickiness attribute
- J. Use an application-based cookie
- K. Set the duration to the maximum application session length.
- L. Remove the AL
- M. Create an Amazon Route 53 rule with a failover routing policy for the application name
- N. Configure ACM to issue certificates for each EC2 instance.

**Answer:** C

**NEW QUESTION 85**

A Network Engineer is provisioning a subnet for a load balancer that will sit in front of a fleet of application servers in a private subnet. There is limited IP space left in the VPC CIDR. The application has few users now but is expected to grow quickly to millions of users. What design will use the LEAST amount of IP space, while allowing for this growth?

- A. Use two /29 subnets for an Application Load Balancer in different Availability Zones.
- B. Use one /29 subnet for the Network Load Balance
- C. Add another VPC CIDR to the VPC to allow for future growth.
- D. Use two /28 subnets for a Network Load Balancer in different Availability Zones.
- E. Use one /28 subnet for an Application Load Balance
- F. Add another VPC CIDR to the VPC to allow for future growth.

**Answer:** C

**NEW QUESTION 87**

A company has deployed a new web application on Amazon EC2 instances behind an Application Load Balancer (ALB). The instances are in an Amazon EC2 Auto Scaling group. Enterprise customers from around the world will use the application. Employees of these enterprise customers will connect to the application over HTTPS from office locations. The company must configure firewalls to allow outbound traffic to only approved IP addresses. The employees of the enterprise customers must be able to access the application with the least amount of latency. Which change should a network engineer make in the infrastructure to meet these requirements?

- A. Create a new Network Load Balancer (NLB). Add the ALB as a target of the NLB.
- B. Create a new Amazon CloudFront distribution
- C. Set the ALB as the distribution's origin.
- D. Create a new accelerator in AWS Global Accelerator
- E. Add the ALB as an accelerator endpoint.
- F. Create a new Amazon Route 53 hosted zone
- G. Create a new record to route traffic to the ALB.

**Answer:** B

**Explanation:**

Amazon CloudFront is a content delivery network (CDN) that can speed up the delivery of static and dynamic web content, such as images, videos, and APIs. CloudFront can also provide end-to-end encryption for HTTPS traffic by using SSL certificates from AWS Certificate Manager (ACM) or other sources. CloudFront can also support session affinity (sticky sessions) with a load balancer-generated cookie or an application-based cookie policy.

**NEW QUESTION 92**

A company has deployed an application in a VPC that uses a NAT gateway for outbound traffic to the internet. A network engineer notices a large quantity of suspicious network traffic that is traveling from the VPC over the internet to IP addresses that are included on a deny list. The network engineer must implement a solution to determine which AWS resources are generating the suspicious traffic. The solution must minimize cost and administrative overhead. Which solution will meet these requirements?

- A. Launch an Amazon EC2 instance in the VP
- B. Use Traffic Mirroring by specifying the NAT gateway as the source and the EC2 instance as the destination
- C. Analyze the captured traffic by using open-source tools to identify the AWS resources that are generating the suspicious traffic.
- D. Use VPC flow log
- E. Launch a security information and event management (SIEM) solution in the VP
- F. Configure the SIEM solution to ingest the VPC flow log
- G. Run queries on the SIEM solution to identify the AWS resources that are generating the suspicious traffic.
- H. Use VPC flow log
- I. Publish the flow logs to a log group in Amazon CloudWatch Log
- J. Use CloudWatch Logs Insights to query the flow logs to identify the AWS resources that are generating the suspicious traffic.
- K. Configure the VPC to stream the network traffic directly to an Amazon Kinesis data stream
- L. Send the data from the Kinesis data stream to an Amazon Kinesis Data Firehose delivery stream to store the data in Amazon S3. Use Amazon Athena to query the data to identify the AWS resources that are generating the suspicious traffic.

**Answer: C**

#### NEW QUESTION 97

A company wants to improve visibility into its AWS environment. The AWS environment consists of multiple VPCs that are connected to a transit gateway. The transit gateway connects to an on-premises data center through an AWS Direct Connect gateway and a pair of redundant Direct Connect connections that use transit VIFs. The company must receive notification each time a new route is advertised to AWS from on premises over Direct Connect. What should a network engineer do to meet these requirements?

- A. Enable Amazon CloudWatch metrics on Direct Connect to track the received route
- B. Configure a CloudWatch alarm to send notifications when routes change.
- C. Onboard Transit Gateway Network Manager to Amazon CloudWatch Logs Insight
- D. Use Amazon EventBridge (Amazon CloudWatch Events) to send notifications when routes change.
- E. Configure an AWS Lambda function to periodically check the routes on the Direct Connect gateway and to send notifications when routes change.
- F. Enable Amazon CloudWatch Logs on the transit VIFs to track the received route
- G. Create a metric filter Set an alarm on the filter to send notifications when routes change.

**Answer: B**

#### Explanation:

<https://docs.aws.amazon.com/network-manager/latest/cloudwan/cloudwan-cloudwatch-events.html>

To receive notification each time a new route is advertised to AWS from on premises over Direct Connect, a network engineer should onboard Transit Gateway Network Manager to Amazon CloudWatch Logs Insights and use Amazon EventBridge (Amazon CloudWatch Events) to send notifications when routes change (Option B). This solution allows for real-time monitoring of route changes and automatic notification when new routes are advertised.

#### NEW QUESTION 99

A media company is implementing a news website for a global audience. The website uses Amazon CloudFront as its content delivery network. The backend runs on Amazon EC2 Windows instances behind an Application Load Balancer (ALB). The instances are part of an Auto Scaling group. The company's customers access the website by using service.example.com as the CloudFront custom domain name. The CloudFront origin points to an ALB that uses service-alb.example.com as the domain name.

The company's security policy requires the traffic to be encrypted in transit at all times between the users and the backend.

Which combination of changes must the company make to meet this security requirement? (Choose three.)

- A. Create a self-signed certificate for service.example.co
- B. Import the certificate into AWS Certificate Manager (ACM). Configure CloudFront to use this imported SSL/TLS certificate
- C. Change the default behavior to redirect HTTP to HTTPS.
- D. Create a certificate for service.example.com by using AWS Certificate Manager (ACM). Configure CloudFront to use this custom SSL/TLS certificate
- E. Change the default behavior to redirect HTTP to HTTPS.
- F. Create a certificate with any domain name by using AWS Certificate Manager (ACM) for the EC2 instance
- G. Configure the backend to use this certificate for its HTTPS listener
- H. Specify the instance target type during the creation of a new target group that uses the HTTPS protocol for its target
- I. Attach the existing Auto Scaling group to this new target group.
- J. Create a public certificate from a third-party certificate provider with any domain name for the EC2 instance
- K. Configure the backend to use this certificate for its HTTPS listener
- L. Specify the instance target type during the creation of a new target group that uses the HTTPS protocol for its target
- M. Attach the existing Auto Scaling group to this new target group.
- N. Create a certificate for service-alb.example.com by using AWS Certificate Manager (ACM). On the ALB add a new HTTPS listener that uses the new target group and the service-alb.example.com ACM certificate
- O. Modify the CloudFront origin to use the HTTPS protocol only
- P. Delete the HTTP listener on the ALB.
- Q. Create a self-signed certificate for service-alb.example.co
- R. Import the certificate into AWS Certificate Manager (ACM). On the ALB add a new HTTPS listener that uses the new target group and the imported service-alb.example.com ACM certificate
- S. Modify the CloudFront origin to use the HTTPS protocol only
- T. Delete the HTTP listener on the ALB.

**Answer: BDE**

#### NEW QUESTION 100

A company delivers applications over the internet. An Amazon Route 53 public hosted zone is the authoritative DNS service for the company and its internet applications, all of which are offered from the same domain name.

A network engineer is working on a new version of one of the applications. All the application's components are hosted in the AWS Cloud. The application has a three-tier design. The front end is delivered through Amazon EC2 instances that are deployed in public subnets with Elastic IP addresses assigned. The backend components are deployed in private subnets from RFC1918.

Components of the application need to be able to access other components of the application within the application's VPC by using the same host names as the host names that are used over the public internet. The network engineer also needs to accommodate future DNS changes, such as the introduction of new host names or the retirement of DNS entries.



Which combination of steps will meet these requirements? (Choose three.)

- A. Add a geoproximity routing policy in Route 53.
- B. Create a Route 53 private hosted zone for the same domain name Associate the application's VPC with the new private hosted zone.
- C. Enable DNS hostnames for the application's VPC.
- D. Create entries in the private hosted zone for each name in the public hosted zone by using the corresponding private IP addresses.
- E. Create an Amazon EventBridge (Amazon CloudWatch Events) rule that runs when AWS CloudTrail logs a Route 53 API call to the public hosted zon
- F. Create an AWS Lambda function as the target of the rul
- G. Configure the function to use the event information to update the privatehosted zone.
- H. Add the private IP addresses in the existing Route 53 public hosted zone.

**Answer:** BCD

#### NEW QUESTION 103

A company recently migrated its Amazon EC2 instances to VPC private subnets to satisfy a security compliance requirement. The EC2 instances now use a NAT gateway for internet access. After the migration, some long-running database queries from private EC2 instances to a publicly accessible third-party database no longer receive responses. The database query logs reveal that the queries successfully completed after 7 minutes but that the client EC2 instances never received the response.

Which configuration change should a network engineer implement to resolve this issue?

- A. Configure the NAT gateway timeout to allow connections for up to 600 seconds.
- B. Enable enhanced networking on the client EC2 instances.
- C. Enable TCP keepalive on the client EC2 instances with a value of less than 300 seconds.
- D. Close idle TCP connections through the NAT gateway.

**Answer:** C

#### Explanation:

When a TCP connection is idle for a long time, it may be terminated by network devices, including the NAT gateway. By enabling TCP keepalive, the client EC2 instances can periodically send packets to the third-party database to indicate that the connection is still active, preventing it from being terminated prematurely.

#### NEW QUESTION 104

A network engineer has deployed an Amazon EC2 instance in a private subnet in a VPC. The VPC has no public subnet. The EC2 instance hosts application code that sends messages to an Amazon Simple Queue Service (Amazon SQS) queue. The subnet has the default network ACL with no modification applied. The EC2 instance has the default security group with no modification applied.

The SQS queue is not receiving messages.

Which of the following are possible causes of this problem? (Choose two.)

- A. The EC2 instance is not attached to an IAM role that allows write operations to Amazon SQS.
- B. The security group is blocking traffic to the IP address range used by Amazon SQS
- C. There is no interface VPC endpoint configured for Amazon SQS
- D. The network ACL is blocking return traffic from Amazon SQS
- E. There is no route configured in the subnet route table for the IP address range used by Amazon SQS

**Answer:** CE

#### NEW QUESTION 109

A company is running multiple workloads on Amazon EC2 instances in public subnets. In a recent incident, an attacker exploited an application vulnerability on one of the EC2 instances to gain access to the instance. The company fixed the application and launched a replacement EC2 instance that contains the updated application.

The attacker used the compromised application to spread malware over the internet. The company became aware of the compromise through a notification from AWS. The company needs the ability to identify when an application that is deployed on an EC2 instance is spreading malware.

Which solution will meet this requirement with the LEAST operational effort?

- A. Use Amazon GuardDuty to analyze traffic patterns by inspecting DNS requests and VPC flow logs.
- B. Use Amazon GuardDuty to deploy AWS managed decoy systems that are equipped with the most recent malware signatures.
- C. Set up a Gateway Load Balance
- D. Run an intrusion detection system (IDS) appliance from AWS Marketplace on Amazon EC2 for traffic inspection.
- E. Configure Amazon Inspector to perform deep packet inspection of outgoing traffic.

**Answer:** A

#### Explanation:

This solution involves using Amazon GuardDuty to monitor network traffic and analyze DNS requests and VPC flow logs for suspicious activity. This will allow the company to identify when an application is spreading malware by monitoring the network traffic patterns associated with the instance. GuardDuty is a fully managed threat detection service that continuously monitors for malicious activity and unauthorized behavior in your AWS accounts and workloads. It requires minimal setup and configuration and can be integrated with other AWS services for automated remediation. This solution requires the least operational effort compared to the other options

#### NEW QUESTION 114

A company is migrating an existing application to a new AWS account. The company will deploy the application in a single AWS Region by using one VPC and multiple Availability Zones. The application will run on Amazon EC2 instances. Each Availability Zone will have several EC2 instances. The EC2 instances will be deployed in private subnets.

The company's clients will connect to the application by using a web browser with the HTTPS protocol. Inbound connections must be distributed across the Availability Zones and EC2 instances. All connections from the same client session must be connected to the same EC2 instance. The company must provide end-to-end encryption for all connections between the clients and the application by using the application SSL certificate.

Which solution will meet these requirements?

- A. Create a Network Load Balance

- B. Create a target grou
- C. Set the protocol to TCP and the port to 443 for the target grou
- D. Turn on session affinity (sticky sessions). Register the EC2 instances as target
- E. Create a listene
- F. Set the protocol to TCP and the port to 443 for the listene
- G. Deploy SSL certificates to the EC2 instances.
- H. Create an Application Load Balance
- I. Create a target grou
- J. Set the protocol to HTTP and the port to 80 for the target grou
- K. Turn on session affinity (sticky sessions) with an application-based cookie polic
- L. Register the EC2 instances as target
- M. Create an HTTPS listene
- N. Set the default action to forward to the target grou
- O. Use AWS Certificate Manager (ACM) to create a certificatefor the listener.
- P. Create a Network Load Balance
- Q. Create a target grou
- R. Set the protocol to TLS and the port to 443 for the target grou
- S. Turn on session affinity (sticky sessions). Register the EC2 instances as target
- T. Create a listene
- . Set the protocol to TLS and the port to 443 for the listene
- . Use AWS Certificate Manager (ACM) to create a certificate for the application.
- . Create an Application Load Balance
- . Create a target grou
- . Set the protocol to HTTPS and the port to 443 for the target grou
- . Turn on session affinity (sticky sessions) with an application-based cookie polic
- . Register the EC2 instances as target
- . Create an HTTP listene
- . Set the port to 443 for the listene
- . Set the default action to forward to the target group.

**Answer:** A

#### **NEW QUESTION 115**

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