

## Quiz: Lambda

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1. Serverless compute refers to:
  - A. Compute without servers
  - B. Server is managed automatically by AWS and you must specify the server instance type depending on your application needs
  - C. You simply specify resources needed for your application and AWS automatically provisions required resources for compute
2. You want certain events to trigger a lambda function invocation. Where do you maintain the mapping between event and corresponding lambda function to be invoked?
  - A. In AWS Service that is generating or handling events
  - B. In AWS Lambda
  - C. Your Application code can invoke Lambda on demand and in this case, applications maintain the configuration
  - D. All the above
3. Which of these statements about Lambda is incorrect?
  - A. Cache data in scratch space provided by AWS Lambda for subsequent invocations of lambda function. Lambda always reuses instances for optimal performance
  - B. Write lambda function as state-less functions and maintain state in other systems like database or S3
  - C. Use AWS lambda to launch as many copies of your function depending on incoming events
4. You are writing a mini-webserver that would listen on configured port to process requests from users. Code you have is very simple and you observe that it can fit nicely as a lambda function. Which of these options would you pick?
  - A. Lambda is the right choice
  - B. Lambda is not the right choice as they are not allowed to listen on input ports
  - C. Split application into two parts: use API Gateway for handling HTTP requests and use Lambda for implementing the backend logic
5. You are noticing that the lambda function you wrote is working well functionally. However, the function execution time is taking longer than expected. You want to try with a higher performing instance to execute your lambda function. What options do you have?
  - A. Lambda is automatically managed infrastructure and you cannot adjust compute capacity. Increasing function timeout is one way to handle this
  - B. You can increase memory configuration for your function. This will proportionally increase compute capacity
  - C. You can increase compute configuration for your function by choosing a different vCPU configuration

6. You would like to process large files and upload to back-end database systems. You are expecting that each file may take up to an hour to process. You would like to use Lambda for processing the files.
- What is the maximum duration a single lambda function can run?
- A. User configurable. Function execution time is billed in increments of 100ms
  - B. Maximum execution time allowed for a lambda function is 15 minutes
  - C. You can dynamically adjust the execution timeout from your code depending on the progress your logic is making
7. Your application is used very sparingly and may see occasional burst of traffic. You are using AWS Lambda function for your backend logic. What do you need to ensure your application handles burst?
- A. Do nothing; Lambda instantly scales without any startup delay
  - B. For sparingly used systems, Lambda may not be ideal choice as there is a charge incurred whether you use the function or not
  - C. Lambda scales and shrinks automatically. However, there will be a startup delay if the functions are invoked after a long period of idle
8. A Lambda function is triggered whenever objects are added to S3 bucket. Function needs to read the object and store the meta-data about the object to an SQS Queue. What permissions are needed for this scenario?
- A. S3 needs permission to invoke the Lambda function
  - B. Lambda function needs permission to read S3 objects and to put messages in a Queue
  - C. All the above
9. Your Lambda function needs access to a private web end point available in your VPC. What steps do you need to enable such an access?
- A. Private VPC access is not allowed from Lambda
  - B. Configure Lambda to run inside your VPC
  - C. Setup Peering connection between Lambda System VPC and your Private VPC
10. Your lambda function needs to access internet and other AWS Service end points. What steps are needed to enable internet access?
- A. Lambda can access public services over internet by default
  - B. Access to public services are not allowed
  - C. To access public services, first attach Lambda function to a VPC with a NAT Gateway
11. A Lambda function needs to access to both public services over internet and private resource in your VPC. What steps are needed to accomplish this?
- A. Deploy Lambda function in a public subnet of your VPC
  - B. Configure Lambda function to run inside your VPC private subnet. Ensure private subnet has a route to NAT
  - C. Lambda can access public and private services by default

Answers:

1. C - Serverless computing allows you to build and run applications and services without thinking about servers. With serverless computing, your application still runs on servers, but all the server management is done by AWS
2. D - Some of the AWS services (like S3) allows you to configure what lambda function needs to be invoked when specified event occurs. In this case, service maintains the mapping. For polling stream-based service like Kinesis Streams and Dynamo DB Streams , Lambda can maintain the configuration. Custom Applications and Apps that use Lambda must maintain the configuration in their respective systems.
3. A - You can use scratch space but it is not guaranteed that container will be reused. Keeping it state-less and maintaining stateful data in other systems (Database or S3) can help you in scaling lambda based on need
4. C - Inbound network connections are blocked by AWS Lambda. You would need to use a service like API Gateway to receive the requests and configure API Gateway to invoke appropriate lambda function
5. D - With Lambda, you must choose amount of memory needed to execute your function. Based on the memory configuration, proportional CPU capacity is allocated.
6. B – Lambda function can run for a maximum of 15 minutes (Oct-2018). Function execution will be automatically terminated if it exceeds 15 minutes Ref: <https://docs.aws.amazon.com/lambda/latest/dg/limits.html>
7. C – Lambda functions are serverless and if there is a long period of idle, there will be a start up delay. Lambda can automatically scale the number of concurrent executions based on the requests.
8. C – S3 needs permission to invoke Lambda function; Lambda function needs permission to read S3 Objects and to put message to queue
9. B – To allow access to your resources in private subnet, you would need to configure Lambda to run inside your VPC. Lambda configures an Elastic Network Interface that enables the function to talk to services in your private VPC.
10. A – Lambda function, by default, can make outbound request to public services
11. B – When you configure a Lambda function to run inside a VPC, Lambda ENI is assigned only a private IP address with which you can access resources in private VPC. In this scenario, to access public services over the internet, you would need a NAT device and subnet should have a route to the NAT device