DevOps Essentials Interview Question: Prakash Kumar (DevOps Trainer): -

1. **What is the one most important thing DevOps helps do?**

    Answer: The most important thing DevOps helps do is to get the changes into production as quickly as possible while minimizing risks in software quality assurance and compliance. That is the primary objective of DevOps. However, there are many other positive side-effects to DevOps. For example, clearer communication and better working relationships between teams which creates a less stressful working environment.

2. **Which scripting languages do you think are most important for a DevOps engineer?**

    Answer: As far as scripting languages go, the simpler the better. In fact, the language itself isn't as important as understanding design patterns and development paradigms such as procedural, object-oriented, or functional programming. Still you can mention about Groovy, Basics of Shell scripting.

3. **How do you expect you would be required to multitask as a DevOps professional?**

    Answer: I believe I'll be expected to:
       Focus attention on bridging communication gaps between Development and Operations teams.
       Understand system design from an architect's perspective, software development from a developer's perspective, operations and infrastructure from the perspective of a seasoned Systems Administrator.
       Execute - to be able to actually do what needs to be done.

4. **Tell us about the CI tools that you are familiar with?**
    Answer: The premise of CI is to get feedback as early as possible because the earlier you get feedback, the less things cost to fix. Popular open source tools include Jenkins, and Gitla-Runner, Team City and Microsoft's Team Foundation Server.

5. **What's your systems background?**
    Answer: Tips to answer: Some DevOps jobs require extensive systems knowledge, including server clustering and highly concurrent systems. As a DevOps engineer, you need to analyze system capabilities and implement upgrades for efficiency, scalability and stability, or resilience. It is recommended that you have a solid knowledge of OSes and supporting technologies, like network security, virtual private networks and proxy server configuration.
    DevOps relies on virtualization for rapid workload provisioning and allocating compute resources to new VMs to support the next rollout, so it is useful to have in-depth knowledge around popular hypervisors. This should ideally include backup, migration and lifecycle management tactics to protect, optimize and eventually recover computing resources. Some

environments may emphasize micro services software development tailored for virtual containers. Operations expertise must include extensive knowledge of systems management tools like Microsoft System Center, Puppet, Nagios and Chef. DevOps jobs with an emphasis on operations require detailed problem-solving, troubleshooting and analytical skills. 6. Are you familiar with just Linux or have you worked with Windows environments as well? Answer: Tips to answer: Demonstrate as much as you can, a clear understanding of both the environments including the key tools.

6. Are you more Dev or Ops?

Answer: Tips to answer: This is probably the trickiest question that you might face in the interview. Emphasize the fact that this depends a lot on the job, the company you are working for and the skills of people involved. You really have to be able to alternate between both sides of the fence at any given time. Talk about your experience and demonstrate how you are agile with both.

7. What special training or education did it require for you to become a DevOps engineer?

Answer: Tips to answer: DevOps is more of a mind-set or philosophy rather than a skill-set. The technical skills of a DevOps Engineers today is Linux systems administration, scripting, and experience with one of the many continuous integration or configuration management tools like Jenkins and Chef. What it all boils down to is that whatever skill-sets you have, while important, are not as important as having the ability to learn new skills quickly to meet the needs. It's about pattern recognition, and having the ability to merge your experiences with current requirements. Proficiency in Windows and Linux systems administration, script development, an understanding of structured programming and OOD, and experience creating and consuming RESTful APIs would take one a long way.

9. What is DevOps life cycle?

Answer: Tips to answer: An Answer similar to the following is acceptable · Check in code · Pull code changes for build · Run tests (CI server to generate builds and arrange releases): Test individual models, run integration tests, and run user acceptance tests. · Store artifacts and build repository (repository for storing artifacts, results, and releases) · Deploy and release (release automation product to deploy apps) · Configure environment · Update databases and apps · Push to users – who receive tested app updates frequently and without interruption · Application and Network Performance Monitoring (preventive safeguard) · Repeat The Acronyms CALMS is sometimes used:

C: Culture

A: Automation

L: Lean

M: Measurement

S: Sharing

10. What is the difference between continuous integration, continuous delivery and continuous deployment?

Answer: What is CI? It is an integration of code into a known or working code base. One could argue that a deployment into an environment is an integration of code. The term CI ideally is limited to only source control and to provide a clear definition that teams can use to simply identify the practices and actions. What is CD? In short, it is an automated process to deliver a software package to an environment. In that short definition, there is a number of tools, techniques, and workflows that make up the CD process. Deployment does not imply release. You can continuously deploy to UAT. What makes continuous deployment special is deploying every change that passes the automated tests (and optionally a short QA gate) to production. Continuous deployment is the practice of releasing every good build to users - a more accurate name might have been "continuous release" While continuous deployment implies continuous delivery the converse is not true. Continuous delivery is about putting the release schedule in the hands of the business, not in the hands of IT. Implementing continuous delivery means making sure your software is always production ready throughout its entire lifecycle – that any build could potentially be released to users at the touch of a button using a fully automated process in a matter of seconds or minutes.

11. What is DevOps, what is the advantage of DevOps?

Answer: From Wikipedia: DevOps (a clipped compound of "development" and "operations") is a culture, movement or practice that emphasizes the collaboration and communication of both software developers and other information-technology (IT) professionals while automating the process of software delivery and infrastructure changes. The Venn Diagram does not mean that developers should become QA or Tech Ops Persons or vice versa. Instead it emphasizes the close communication and working together as part of culture. With respect to advantages, it is best that you answer specific to your area. Some of them are: Technical benefits:

• Continuous software delivery

• Less complex problems to fix

• Faster resolution of problems Business benefits:

• Faster delivery of features

• More stable operating environments

• More time available to add value (rather than fix/maintain)

12. What makes you to tell that you are a DevOps person?

 Answer: Explain how you passionately feel the need for better coordination between team, the business need for faster to market and its benefits to the organization, the cost savings and revenue accrual to the company and in very end, explain how you are equipping technically to meet these business needs.

13. What are the anti-patterns of DevOps?

Answer: A pattern is common usage commonly followed. If a pattern commonly adopted by others does not work for your organization and you continue to blindly follow it, you are essentially adopting an anti-pattern. There are myths about DevOps. Some of them include:

· DevOps is a process

· Agile equals DevOps?

· We need a separate DevOps group

· DevOps is a buzz word

· DevOps will solve all our problems

· DevOps means Developers Managing Production

· DevOps is Development-driven release management

· DevOps is not development driven.

· DevOps is not IT Operations driven.

· We can't do DevOps – We're Unique

· We can't do DevOps – We've got the wrong people Other anti-patterns include:

· Including Jar files as hardcoded dependencies in projects

· Shipping unwanted configuration files and artifacts

· Shipping un-optimized code in releases

· Not performing adequate testing

· No defined way to measure organizational maturity

· Shipping IDE specific files in release

· No or little communication between teams

· No measurement

· Poor automations

14. Difference between agile and waterfall model, with example

Answer: There is no single Agile methodology. Instead, we have multiple Agile methodologies. The only point is waterfall (and modified waterfall) are usually sequential. (BTW, so are Agile methodologies to some extent). (Usual guff about agile being better than waterfall). Agile methodology is an alternative to traditional project management, typically used in software development. It helps teams respond to unpredictability through incremental, iterative work cadences, known as sprints. Agile methodologies are an alternative to waterfall, or traditional sequential development. Beyond this, the answer really lies in understanding the nature of projects, their duration, their requirements for adaptability vs predictability, need for feedbacks and feedback cycle durations, quality focus, etc. Agile methods Plan-driven methods Formal methods Low criticality High criticality Extreme criticality Senior developers' Junior developers(?) Senior developers Requirements change often Requirements do not change often Limited requirements, limited Small number of developer's Large number of developers Requirements that can be modelled Culture that responds to change Culture that demands order Extreme quality

Q1) What is AWS?

AWS stands for Amazon Web Services. AWS is a platform that provides on-demand resources for hosting web services, storage, networking, databases and other resources over the internet

with a pay-as-you-go pricing.

Q2) What are the components of AWS?

EC2 – Elastic Compute Cloud, S3 – Simple Storage Service, Route53, EBS – Elastic Block Store, Cloudwatch, Key-Paris are few of the components of AWS.

Q3) What are key-pairs?

Key-pairs are secure login information for your instances/virtual machines. To connect to the instances we use key-pairs that contain a public-key and private-key.

Q4) What is S3?

S3 stands for Simple Storage Service. It is a storage service that provides an interface that you can use to store any amount of data, at any time, from anywhere in the world. With S3 you pay only for what you use and the payment model is pay-as-you-go.

Q5) What are the pricing models for EC2instances?

The different pricing model for EC2 instances are as below,

On-demandReservedSpotScheduledDedicatedQ6) What are the types of volumes for EC2 instances?There are two types of volumes,Instance store volumesEBS – Elastic Block StoresQ7) What are EBS volumes?

EBS stands for Elastic Block Stores. They are persistent volumes that you can attach to the instances. With EBS volumes, your data will be preserved even when you stop your instances, unlike your instance store volumes where the data is deleted when you stop the instances.

Q8) What are the types of volumes in EBS?

Following are the types of volumes in EBS,

General purposeProvisioned IOPSMagneticCold HDDThroughput optimizedQ9) What are the different types of instances?

Following are the types of instances,

General purposeComputer OptimizedStorage OptimizedMemory OptimizedAccelerated ComputingQ10) What is an auto-scaling and what are the components?

Auto scaling allows you to automatically scale-up and scale-down the number of instances depending on the CPU utilization or memory utilization. There are 2 components in Auto scaling, they are Auto-scaling groups and Launch Configuration.

Q11) What are reserved instances?

Reserved instances are the instance that you can reserve a fixed capacity of EC2 instances. In reserved instances you will have to get into a contract of 1 year or 3 years.

Q12)What is an AMI?

AMI stands for Amazon Machine Image. AMI is a template that contains the software configurations, launch permission and a block device mapping that specifies the volume to attach to the instance when it is launched.

Q13) What is an EIP?

EIP stands for Elastic IP address. It is designed for dynamic cloud computing. When you want to have a static IP address for your instances when you stop and restart your instances, you will be using EIP address.

Q14) What is Cloudwatch?

Cloudwatch is a monitoring tool that you can use to monitor your various AWS resources. Like health check, network, Application, etc.

Q15) What are the types in cloudwatch?

There are 2 types in cloudwatch. Basic monitoring and detailed monitoring. Basic monitoring is free and detailed monitoring is chargeable.

Q16) What are the cloudwatch metrics that are available for EC2 instances?

Diskreads, Diskwrites, CPU utilization, networkpacketsIn, networkpacketsOut, networkIn, networkOut, CPUCreditUsage, CPUCreditBalance.

Q17) What is the minimum and maximum size of individual objects that you can store in S3

The minimum size of individual objects that you can store in S3 is 0 bytes and the maximum bytes that you can store for individual objects is 5TB.

Q18) What are the different storage classes in S3?

Following are the types of storage classes in S3,

Standard frequently accessedStandard infrequently accessedOne-zone infrequently accessed.GlacierRRS – reduced redundancy storage Q19) What is the default storage class in S3?

The default storage class in S3 in Standard frequently accessed.

 Q20) What is glacier?

Glacier is the back up or archival tool that you use to back up your data in S3.

 Q21) How can you secure the access to your S3 bucket?

There are two ways that you can control the access to your S3 buckets,

ACL – Access Control ListBucket polices Q22) How can you encrypt data in S3?

You can encrypt the data by using the below methods,

Server Side Encryption – S3 (AES 256 encryption)Server Side Encryption – KMS (Key management Service)Server Side Encryption – C (Client Side) Q23) What are the parameters for S3 pricing?

The pricing model for S3 is as below,

Storage usedNumber of requests you makeStorage managementData transferTransfer acceleration Q24) What is the pre-requisite to work with Cross region replication in S3?

You need to enable versioning on both source bucket and destination to work with cross region replication. Also both the source and destination bucket should be in different region.

 Q25) What are roles?

Roles are used to provide permissions to entities that you trust within your AWS account. Roles are users in another account. Roles are similar to users but with roles you do not need to create any username and password to work with the resources.

 Q26) What are policies and what are the types of policies?

Policies are permissions that you can attach to the users that you create. These policies will contain that access that you have provided to the users that you have created. There are 2 types of policies.

Managed policiesInline policies Q27) What is cloudfront?

Cloudfront is an AWS web service that provided businesses and application developers an easy and efficient way to distribute their content with low latency and high data transfer speeds. Cloudfront is content delivery network of AWS.

 Q28) What are edge locations?

Edge location is the place where the contents will be cached. When a user tries to access some content, the content will be searched in the edge location. If it is not available then the content will be made available from the origin location and a copy will be stored in the edge location.

Q29) What is the maximum individual archive that you can store in glacier?

You can store a maximum individual archive of upto 40 TB.

 Q30) What is VPC?

VPC stands for Virtual Private Cloud. VPC allows you to easily customize your networking configuration. VPC is a network that is logically isolated from other network in the cloud. It allows you to have your own IP address range, subnets, internet gateways, NAT gateways and security groups.

 Q31) What is VPC peering connection?

VPC peering connection allows you to connect 1 VPC with another VPC. Instances in these VPC behave as if they are in the same network.

Q32) What are NAT gateways?

NAT stands for Network Address Translation. NAT gateways enables instances in a private subnet to connect to the internet but prevent the internet from initiating a connection with those instances.

Q33) How can you control the security to your VPC?

You can use security groups and NACL (Network Access Control List) to control the security to your

VPC.

Q34) What are the different types of storage gateway?

Following are the types of storage gateway.

File gatewayVolume gatewayTape gateway Q35) What is a snowball?

Snowball is a data transport solution that used source appliances to transfer large amounts of data into and out of AWS. Using snowball, you can move huge amount of data from one place to another which reduces your network costs, long transfer times and also provides better security.

Q36) What are the database types in RDS?

Following are the types of databases in RDS,

AuroraOracleMYSQL serverPostgresqlMariaDBSQL server Q37) What is a redshift?

Amazon redshift is a data warehouse product. It is a fast and powerful, fully managed, petabyte scale data warehouse service in the cloud.

Q38) What is SNS?

SNS stands for Simple Notification Service. SNS is a web service that makes it easy to notifications from the cloud. You can set up SNS to receive email notification or message notification.

Q39) What are the types of routing polices in route53?

Following are the types of routing policies in route53,

Simple routingLatency routingFailover routingGeolocation routingWeighted routingMultivalue answer Q40) What is the maximum size of messages in SQS?

The maximum size of messages in SQS is 256 KB.

Q41) What are the types of queues in SQS?

There are 2 types of queues in SQS.

Standard queueFIFO (First In First Out) Q42) What is multi-AZ RDS?

Multi-AZ (Availability Zone) RDS allows you to have a replica of your production database in another availability zone. Multi-AZ (Availability Zone) database is used for disaster recovery. You will have an exact copy of your database. So when your primary database goes down, your application will automatically failover to the standby database.

Q43) What are the types of backups in RDS database?

There are 2 types of backups in RDS database.

Automated backupsManual backups which are known as snapshots. Q44) What is the difference between security groups and network access control list?Security GroupsNetwork access control listCan control the access at the instance levelCan control access at the subnet levelCan add rules for "allow" onlyCan add rules for both "allow" and "deny"Evaluates all rules before allowing the trafficRules are processed in order number when allowing traffic.Can assign unlimited number of security groupsCan assign upto 5 security groups.Statefull filteringStateless filtering Q45) What are the types of load balancers in EC2?

There are 3 types of load balancers,

Application load balancerNetwork load balancerClassic load balancer Q46) What is and ELB?

ELB stands for Elastic Load balancing. ELB automatically distributes the incoming application traffic or network traffic across multiple targets like EC2, containers, IP addresses.

 Q47) What are the two types of access that you can provide when you are creating users?

Following are the two types of access that you can create.

Programmatic accessConsole access Q48) What are the benefits of auto scaling?

Following are the benefits of auto scaling

Better fault toleranceBetter availabilityBetter cost management Q49) What are security groups?

Security groups acts as a firewall that contains the traffic for one or more instances. You can associate one or more security groups to your instances when you launch then. You can add rules to each security group that allow traffic to and from its associated instances. You can modify the rules of a security group at any time, the new rules are automatically and immediately applied to all the instances that are associated with the security group

Q50) What are shared AMI's?

Shared AMI's are the AMI that are created by other developed and made available for other developed to use.

Q51)What is the difference between the classic load balancer and application load balancer?

Answer: Dynamic port mapping, multiple port multiple listeners is used in Application Load Balancer, One port one listener is achieved via Classic Load Balancer

Q52) By default how many Ip address does aws reserve in a subnet?

Answer: 5

Q53) What is meant by subnet?

Answer: A large section of IP Address divided in to chunks are known as subnets

Q54) How can you convert a public subnet to private subnet?

Answer: Remove IGW & add NAT Gateway, Associate subnet in Private route table

Q55) Is it possible to reduce a ebs volume?

Answer: no it's not possible, we can increase it but not reduce them

Q56) What is the use of elastic ip are they charged by AWS?

Answer: These are ipv4 address which are used to connect the instance from internet, they are charged if the instances are not attached to it

Q57) One of my s3 is bucket is deleted but i need to restore is there any possible way?

Answer: If versioning is enabled we can easily restore them

Q58) When I try to launch an ec2 instance i am getting Service limit exceed, how to fix the issue?

Answer: By default AWS offer service limit of 20 running instances per region, to fix the issue we need to contact AWS support to increase the limit based on the requirement

Q59) I need to modify the ebs volumes in Linux and windows is it possible

Answer: yes its possible from console use modify volumes in section give the size u need then for windows go to disk management for Linux mount it to achieve the modification

Q60) Is it possible to stop a RDS instance, how can I do that?

Answer: Yes it's possible to stop rds. Instance which are non-production and non multi AZ's

Q61) What is meant by parameter groups in rds. And what is the use of it?

Answer: Since RDS is a managed service AWS offers a wide set of parameter in RDS as parameter group which is modified as per requirement

Q62) What is the use of tags and how they are useful?

Answer: Tags are used for identification and grouping AWS Resources

Q63) I am viewing an AWS Console but unable to launch the instance, I receive an IAM Error how can I rectify it?

Answer: As AWS user I don't have access to use it, I need to have permissions to use it further

Q64) I don't want my AWS Account id to be exposed to users how can I avoid it?

Answer: In IAM console there is option as sign in url where I can rename my own account name with AWS account

Q65) By default how many Elastic Ip address does AWS Offer?

Answer: 5 elastic ip per region

Q66) You are enabled sticky session with ELB. What does it do with your instance?

Answer: Binds the user session with a specific instance

Q67) Which type of load balancer makes routing decisions at either the transport layer or theApplication layer and supports either EC2 or VPC.

Answer: Classic Load Balancer

Q68) Which is virtual network interface that you can attach to an instance in a VPC?

Answer: Elastic Network Interface

Q69) You have launched a Linux instance in AWS EC2. While configuring security group, youHave selected SSH, HTTP, HTTPS protocol. Why do we need to select SSH?

Answer: To verify that there is a rule that allows traffic from EC2 Instance to your computer

Q70) You have chosen a windows instance with Classic and you want to make some change to theSecurity group. How will these changes be effective?

Answer: Changes are automatically applied to windows instances

Q71) Load Balancer and DNS service comes under which type of cloud service?

Answer: IAAS-Storage

Q72) You have an EC2 instance that has an unencrypted volume. You want to create another Encrypted volume from this unencrypted volume. Which of the following steps can achieve this?

Answer: Create a snapshot of the unencrypted volume (applying encryption parameters), copy the. Snapshot and create a volume from the copied snapshot

Q73) Where does the user specify the maximum number of instances with the auto scaling Commands?

Answer: Auto scaling Launch Config

Q74) Which are the types of AMI provided by AWS?

Answer: Instance Store backed, EBS Backed

Q75) After configuring ELB, you need to ensure that the user requests are always attached to a Single instance. What setting can you use?

Answer: Sticky session

Q76) When do I prefer to Provisioned IOPS over the Standard RDS storage?

Ans: If you have do batch-oriented is workloads.

Q77) If I am running on my DB Instance a Multi-AZ deployments, can I use to the stand by the DB Instance for read or write a operation along with to primary DB instance?

Ans: Primary db instance does not working.

Q78) Which the AWS services will you use to the collect and the process e-commerce data for the near by real-time analysis?

Ans: Good of Amazon DynamoDB.

Q79) A company is deploying the new two-tier an web application in AWS. The company has to limited on staff and the requires high availability, and the application requires to complex queries and table joins. Which configuration provides to the solution for company's requirements?

Ans: An web application provide on Amazon DynamoDB solution.

Q80) Which the statement use to cases are suitable for Amazon DynamoDB?

Ans: The storing metadata for the Amazon S3 objects& The Running of relational joins and complex an updates.

Q81) Your application has to the retrieve on data from your user's mobile take every 5 minutes and then data is stored in the DynamoDB, later every day at the particular time the data is an extracted into S3 on a per user basis and then your application is later on used to visualize the data to user. You are the asked to the optimize the architecture of the backend system can to lower cost, what would you recommend do?

Ans: Introduce Amazon Elasticache to the cache reads from the Amazon DynamoDB table and to reduce the provisioned read throughput.

Q82) You are running to website on EC2 instances can deployed across multiple Availability Zones with an Multi-AZ RDS MySQL Extra Large DB Instance etc. Then site performs a high number of the small reads and the write per second and the relies on the eventual consistency

model. After the comprehensive tests you discover to that there is read contention on RDS MySQL. Which is the best approaches to the meet these requirements?

Ans:The Deploy Elasti Cache in-memory cache is running in each availability zone and Then Increase the RDS MySQL Instance size and the Implement provisioned IOPS.

Q83) An startup is running to a pilot deployment of around 100 sensors to the measure street noise and The air quality is urban areas for the 3 months. It was noted that every month to around the 4GB of sensor data are generated. The company uses to a load balanced take auto scaled layer of the EC2 instances and a RDS database with a 500 GB standard storage. The pilot was success and now they want to the deploy take atleast 100K sensors.let which to need the supported by backend. You need to the stored data for at least 2 years to an analyze it. Which setup of following would you be prefer?

Ans: The Replace the RDS instance with an 6 node Redshift cluster with take 96TB of storage.

Q84) Let to Suppose you have an application where do you have to render images and also do some of general computing. which service will be best fit your need?

Ans: Used on Application Load Balancer.

Q85) How will change the instance give type for the instances, which are the running in your applications tier and Then using Auto Scaling. Where will you change it from areas?

Ans: Changed to Auto Scaling launch configuration areas.

Q86) You have an content management system running on the Amazon EC2 instance that is the approaching 100% CPU of utilization. Which option will be reduce load on the Amazon EC2 instance?

Ans: Let Create a load balancer, and Give register the Amazon EC2 instance with it.

Q87) What does the Connection of draining do?

Ans: The re-routes traffic from the instances which are to be updated (or) failed an health to check.

Q88) When the instance is an unhealthy, it is do terminated and replaced with an new ones, which of the services does that?

Ans: The survice make a fault tolerance.

Q89) What are the life cycle to hooks used for the AutoScaling?

Ans: They are used to the put an additional taken wait time to the scale in or scale out events.

Q90) An user has to setup an Auto Scaling group. Due to some issue the group has to failed for launch a single instance for the more than 24 hours. What will be happen to the Auto Scaling in the condition?

Ans: The auto Scaling will be suspend to the scaling process.

Q91) You have an the EC2 Security Group with a several running to EC2 instances. You changed to the Security of Group rules to allow the inbound traffic on a new port and protocol, and then the launched a several new instances in the same of Security Group.Such the new rules apply?

Ans: The Immediately to all the instances in security groups.