Q.6) you accidently delete resources using terraform ~~destory~~ destroy
How can you recovered deleted resource?

→ (i) You can recovered your file using "terraform apply".

(ii) Restore from Backup:- (P) If you destory then you have backup of ~~file~~ the file then restore state and rerun then used "terraform apply" to recreate resources

(iii) Terraform import:- you can recreate file using original configuration and import it again

Q.7) You need to deploy infrastructure across multiple regions in AWS using Terraform. How can you handled multi region deployment?

→
```
terraform {
required_providers {
aws = {
source = "hashicorp/aws"
version = "5.24.1"
}
}
}

provider "aws" {
region = "us-east-1"
}

provider "aws" {
alias = "aws.west"
region = "us-west-2"
}

resource "aws_instance" "east-instance" {
provider = aws
ami = "ami —"
instance_type = "t2.micro"
}
resource "aws_instance" "west_instance" {
provider = aws.west
ami = "ami —"
instance_type = "t2.micro"
}
```

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Q.8) How to update aws lambda fn code?

→ (i) To update lambda fn code you can use resource block which is "aws_lambda_function" (code stored in .zip file)

(ii) 1st step :- To update code (create new .zip file)

2nd :- Update lambda fn with new .zip file

3rd :- Use terraform apply comand to apply new zip file in lambda fn.

Q.9) How to check/see/ preview the changes that will be made to your infra. befor apply ⇒

→ You can use terraform plan using this you can see additional changes, modifications and deletions

Q.10) What you can do if Terraform apply accidently destroys critical resource?

- scenerio = A terraform apply command deleted an important database.

steps :- (i) Immidetly stop terraform

(ii) Restore file from backup of file

(iii) Then recreate file using original configuration file and then import it using "terraform import" command

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Q.11) What happens if two team members run terraform apply at same time?

→ (i) Race condition will start so user face / cross face a problem like slow speed running internet or file can't run at proper speed.

(ii) Some time terrafor automatically locks files

(iii) Automatic required updation of file also stop closed due to simultaneous use.

Q.12) How do you update terraform module used in multiple enviroment?

→ • Scenerio :- A terraform module has a bug, and you need to update it across environments.

(i) 1st update the module source (git, local path etc)

(ii) Apply "terraform get -update" with module version. (some time terraform automatically locks the file)

(iii) Then 1st check changes ~~befor~~ (by terraform plan) before applying

(iv) Used terraform pinning [version = " >= 1.0.0"] to prevent unwanted updates.

Q.13) How can you import existing cloud resources into terraform?

→ i) Use ~~terra~~ "terraform import <resource> <resource_id>"

ii) Then use "terraform plan" to check all updated

iii) Then ~~check~~ used "terraform validate" to check successfully change or not, if it show "sucess" then apply it by using "terraform apply" command.

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Q.14) what can you do if terraform fails in "unknown state" error?

service types => cluster IP & Load B
(i) private IP
(ii) within cluster
public IP
(iii) outside cluster

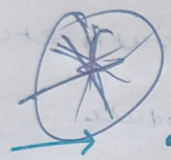
→ • scenerio :- Terra form state gets corrupted or lost

(i) 1st refresh file by terraform refresh to update the state.

(ii) Restore it from backup file and then manually inspect and fix it by "terraform.tfstate"

I.M.P

Q.15) How do you provision multiple similar resources dynamically?



• scenerio :- You need to create 10 EC2 instances without repeating code.

→ using count or for_each

```
resource " aws_EC2_instance" {
    count = 10
    ami = " ami-12345"
    instance_type = " t2.micro"
}
```

→ This create 10 instance dynamically.

Q.16) How do you ensure Terraform dosn't delete a critical resource?

→ • scenerio : You want to prevent accidental ~~deletation~~ deletion of an imp database in S3 bucket

→ use lifecycle block with prevent_destroy

```
resource "aws_s3_bkt" "my-bkt" {
    bukt = "my-bkt"
    Lifecycle {
    prevent_destroy = true
    }
}
```

② Terrafor logging :- What terraform doing in background ~~when fail~~ in step-by-step when any error is caused.

① * Terrafor debug => What behind performance will doing in terraform when something going to wrong or ~~something~~ error ~~fail~~ is come

Q.17) How do you debug terraform when terra form apply fails?

→ (i) 1st check what changes happend using terrafor plan.

(ii) use detailed logging :-

* TF_Log = DEBUG terraform apply.

(iii) Then validate config using terraform validate.

*I.mP

Q.18) How do you handle provider versioning in terraform?

• Scenario :- You want to lock Terraform provider version to avoid unexpected changes

**

Sol → (i) By using pe-version constraint ~> 5.

(The operator ~> called "pessimistic constraint")

~> 5 → version constraint all version with range of 5) not goes low or higher

↳ i.e ~> 5 it allows version like 5.0, 5.1, 5.2 etc.

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```
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = " ~> 5 "
    }
  }
}
```

where is not specified we can use latest version

Q.19) How do you clean up Terraform-managed infrastructure?

→ Used terraform destroy. to delete all managed resources

(i)

(ii) if you want delete particular resource then

terraform destroy -target=<resource name>

Q.20) How do you avoid downtime when update infrastructure?

→ . scenario :- updating a load balancer or database without causing downtime..

→ use lifecycle block with create_before_destroy = true in resource.

1st

```
• resource " aws_instance" " my-instance" {
    ami = " ami- "
    instance_type = " t2.micro"
    Lifecycle {
    create_before_destroy = true
    }
}
```

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after that used (1) Rolling update strategy
(2) Blue-green strategy.

(1) In Rolling update strategy

(2) Blue and green

- Blue server :- ~~current~~ current / live server (bank case)
- Green (new) :- newly form server (bank case)

when more traffic is handled by current (blue) server by accepting users requests (in bank case) but we want to create new server to handled more traffic which is in green colour.

once green enviorment is ready & tested then all ~~the~~ traffic switch from blue to green without goes lose ~~time~~ down the server

---

* Scenerio based questions * [EC2]

Q.1) How do you resize an EC2 instance without downtime?

→ (i) Autoscaling Group to launch new Large instance parallely

(ii) moved our traffic to newly ~~laund~~ launch instance using load balancer.

(iii) & immidiatly terminate old instance onece traffic is moves to new one.

Q.2) What happens EC2 instance terminated unexpectedly?

→ (i) Use Autoscaling gr. to launch new automatic instance parallely.

(ii) Use Elastic load balancer [ELB] to shift our traffic from old to new one

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(iii) Do regular backup using "Amazone machine image" (AMI) & "EBS snapshot"

Q.3) How do you troubleshoot an EC2 instance that isn't reachable?

→ • Scenario:- you can't SSH into your EC2 instance

(i) Check "S.G rule" that are allow SSH with port "no. 22" ~~or not~~ is allow or not

(ii) verify Access control list (ACL's) and ensure that it allow ~~or not~~ inbound / outbound traffic.

(iii) check public & private ip's given properly to system or not.

(iv) ~~Appl~~ Use system logs to debug the instenc issue

(v) Last step is detached root vol^m from present instance & attached into new instence ~~ref~~ & run it

Q.4) How can you handled scaling of EC2 based appl^n during peak traffic?

→ (i) Autoscaling of instence.

(ii) Used Elastic load balancer (ELB) to switched the traffic

(iii) Used ~~alar~~ "cloudwatch alarms" in cpu usage / memory & Each ~~trellant~~ user when it is full.

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Q.5) scenerio :- You need to ensure your appln remains available even if one EC2 instance is fail. (High availability for an EC2 instance?)

→ (i) Deploy EC2 instance in multiple AZ in region. (Availability Zone)

(ii) use an "Elastic Load Balancer" to distribute our traffic across instance

(iii) Use Autoscaling to replace damage instance by new EC2 instance.

(iv) used Route 53 system its Domain name system mostly used to manage traffic pices and find proper/accurate ip address from domain.

Q.6) your appln fails becoz of our disk is full?

→ (A) Resize EBS volm :-

(i) use AWS console or CLI increase the size.

(ii) used Disk mangement service in windows & resize2fs in Linux

(iii) used S3 bkt for storaging purpose & reduced the load on EC2.

Q.7) How do you migrate EC2 instance into another region?

→ (i) Create AMI (Amazine machine image) of that instance.

(ii) copy AMI in target region

(iii) Launch EC2 in that region with copied AMI.

(iv) And provid Elastic ip to system means user can easily hand. machine

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[Amazone data life cycle manager]

Q8) How can you protect EC2 instance from accidental termination?

→ (i) At time of EC2 machine launch 1st "Enable" the option of termination in system.

(ii) Applies the policies to machine (i.e IAM roles / policies) to restrict / protect machine from termination.

(iii) Pls maintained regular backup using "AMI (amazone machine image) and "EBS snapshot"

Q.9) Your private key (EC2) is lost then how do you recover the access?
↳ (.pem file)

→ 1st stop system and detach "Root EBS volm".

(i)

(ii) make new instance & attached this vol^m.

(iii) Access your system with new key.

(iv) Then reattached the Root EBS vol^m ~~and detached~~ to original instance & start instance.

Q.10) How do you automate backup of an EC2 instance?

* → (i) use amazone data lifecycle manager to automat backup (EBS snapshot)

ADLM (Amazone data lifecycle manager)

Amazone datalifecycle manager [DLM]

Q.11) Performance of app^n slow → covered in previous all related Q questions.

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Q.12) How do you connect two different VPC's?

→ (i) By using "VPC peering connection."

(ii) & Update "RT" to allow traffic betn two VPCs

Q.13) How do you monitor EC2 instance?

→ • Scenerio:- Your manager asks for insights into EC2 instance performance.

① Use "cloud watch metrics" to monitor the CPU, memory and network utilization

② Use "cloudwatch alarms" for handling critical metrics (high CPU usage)

③ Use "cloud watch Agent" to monitor high memory usage

Q.14) How do you secure EC2 instance?

→ (i) Allow our security gr. only for necessary ports e.g allow SSH port (22)

(ii) Use Bastion host.

(iii) Regularly update operating system

[Bastion host ⇒ You connect by SSH. ~~mostly~~

(i) ~~used in Private subnet~~

(ii) It work like gateway

(iii) you can access server in private subnet without direct accessible from internet

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Q.15) What do you do if EC2 instance gets a high bill due to data transfer?

→ (i) Identify traffic source using "VPC flow logs".

*** (ii) Reduce public traffic by "Amazone cloud-Front"

(iii) use private ip's & VPC endpoints for intra-region traffic (data transfer within same AWS region) (But diff AZ)

* scenario Base of S3 *

Q.1) Scenario – Your team uploads a file to an S3 bkt, but other team are unable to access it. What steps will you take to troubleshoot and resolve this issue?

→ (i) 1st check bkt policy mean check public or it private

(ii) Use Access control list with the help of this you can check our permissions given to bkt are right or wrong.

(iii) Check iam policy which given to bkt

(iv) make tempory URL & send to another team to access our bkt without any problem.

Q.2) How does "S3" ensure data durability, and do you need to take additional steps to back up your data?

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→ S3 durability :- (i) S3 offers 11 (nine) [99.999999999%] of durability, mean means you can replicated your data across diff availability zone. automatically.

* Back up S3 :- (i) make bkt versioning
(ii) CRR (Cross region replication)
(iii) Life cycle policies.

Q.3) How can you optimize the cost of storing large volm of data in S3?

→ • use storage class :-

(i) 1st you can use S3 intelligent tiring to save the cost as compared to std storage class. Becoz std. storage class normal pay too but it reduced go to go vs.

(ii) use life cycle policy using this it transfred our data automatically to cheaper storage class.

(iii) use "S3 object expiration" it delete unusual data automatically.

Q.4) You are designing systems where thousands of users will simultaneously download files from S3. How will you ensure high performance?

• Scenario = High Throughput access

1) Cloud Front :- use this feature in S3 to manage public traffic

2) multi part Download :- Enable this option in S3 to avoid unwanted download in system.

3) S3 transfer acceleration :- use this feature improve upload/download performance globally.

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