Mock Interview Guide - EC2

🗃️ Instructions for Interviewer:

- You are playing the role of interviewer. Use this guide as a script.
- Ask each question one at a time. Follow the steps: Definition → Details → Scenario → Follow-up.
- If the interviewee struggles, use the hint.
- The goal is to keep it conversational and practical. Help the interviewee think and express their learning.
- **colors assigned:** **Questions** **Answers** **Hint**

Freshers - Level

EC2 (10 Easy AWS Interview Questions)

1. Ask: 🗣️ "What is EC2 in AWS?"

✔️ Expected: "EC2 is a virtual server in the cloud. It's part of AWS's Infrastructure as a Service (IaaS) offerings."

💡 Hint: "It's like a machine you can launch in the cloud to host your apps."

2. Ask: 🗣️ "Have you launched an EC2 instance before? If yes, how did you do it?"

✔️ Expected: "Selected an AMI → Chose instance type → Created/selected key pair → Set Security Group → Launched instance"

💬 Follow-up: "What OS did you select? Linux or Windows?"

3. Ask: 🗣️ "What are EC2 instance types? Can you name a few?"

✔️ Expected: "Examples: t2.micro, t3.medium, m5.large, etc."

💬 Follow-up: "What type is available in Free Tier?"
💡 Hint: "It's the one used in most beginner labs."

4. Ask: 🗣️ "What is the difference between stopping and terminating an EC2 instance?"

✔️ Expected: "Stopping: Instance halts, storage remains.
Terminating: Instance is deleted, data lost unless EBS retention Enabled."

💡 Hint: "What happens to the data when you stop vs delete?"

5. Ask: 🗣️ "How do you connect to your EC2 instance after launch?"

✔️ Expected: "For Linux: SSH using a .pem key
For Windows: RDP (Remote Desktop Protocol)"

💬 Follow-up: "Have you used Terminal or Putty?"

6. Ask: 🗣️ "What are Security Groups in EC2?"

✔️ Expected: "Security Groups act like a virtual firewall for EC2 instances — they control inbound and outbound traffic."

💬 Follow-up: "Which ports do you open for a web server?"
✔️ Expected: "Port 80 for HTTP, 443 for HTTPS"

7. Ask: 🗣️ "What is an AMI in EC2?"

✔️ Expected: "AMI stands for Amazon Machine Image — it contains the OS and any pre-installed software for launching EC2 instances."

💡 Hint: "It's like a reusable template for machines."

8. Ask: 🗣️ "Can you explain the pricing models in EC2?"

✔️ Expected:
- **On-Demand: Pay for what you use**
- **Reserved: Long-term savings**

● Spot: Cheaper, but can be interrupted

💬 Follow-up: “Which one is good for testing? For production?”

9. Ask: 🗣️ “Suppose your website on EC2 is not opening. What will you check first?”

✔️ Expected:
● Is the EC2 instance running?
● Are Security Group rules correct?
● Is Public IP assigned?
● Is the application running on the instance?

💡 Hint: “Did you face this in your labs?”

10. Ask: 🗣️ “Have you used EC2 in any project or lab? What did you build or test?”

✔️ Expected: “Hosted a website, deployed a backend service, practiced server setup”

💬 If no: 🗣️ “If I ask you to host a static website using EC2, how would you plan it?”

SCENARIO-BASED QUESTIONS

1. Ask: 🗣️ “You uploaded a file to S3 but can’t access it via the browser. What could be the issue?”

✅ Expected Answer: “The object might not have public read permissions, or bucket-level public access might be blocked.”

💡 Hint: “Check S3 bucket policy or object permissions.”

2. Ask: 🗣️ “You launched an EC2 instance but cannot SSH into it. What might be wrong?”

✅ **Expected Answer: “Either the security group doesn't allow inbound traffic on port 22, or I’m using the wrong key pair.”**

💡 **Hint: “Security group and key pair — check both.”**

3. Ask: 🗣️ “You want to stop an EC2 instance temporarily without losing data. What action would you take?”

✅ **Expected Answer: “I’d stop the instance, not terminate it. The data on the attached EBS volume will remain.”**

💡 **Hint: “Stop keeps data; terminate deletes it.”**

4. Ask: 🗣️ “Your EC2 web app isn’t loading in the browser. What AWS configurations would you check?”

✅ **Expected Answer: “I’d check the security group rules for port 80/443 and confirm the web server is running.”**

💡 **Hint: “Security group rules and EC2 service status.”**

PROJECT-BASED QUESTIONS

5. Ask: 🗣️ “You’re building a personal website. How would you host it using AWS?”

✅ **Expected Answer: “Use S3 to host static content, enable static website hosting, and make the files publicly readable.”**

💡 **Hint: “S3 can host HTML/CSS/JS websites.”**

6. Ask: 🗣️ “You need to run a scheduled report generator script daily on AWS. How would you set that up?”

✅ **Expected Answer: “Use a small EC2 instance with a cron job or Lambda if the script is lightweight.”**

💡 **Hint: “EC2 + cron or consider Lambda.”**

Medium-Level

(EC2 Interview Questions - 1 to 2 Years Experience)

1. What happens in the backend when you stop and start an EC2 Instance?

✔️ Expected:
● Instance stops, retains EBS, releases volatile memory
● On start: may receive new public IP unless using Elastic IP

💡 Hint: “What changes when you start again — IP address or storage?”

2. Can you explain the difference between EBS volume types and when you’d use each?

✔️ Expected:
● gp3: General-purpose
● io1/io2: High-performance IOPS
● sc1/st1: Throughput optimized for large sequential workloads

🔁 Follow-up: “What would you use for a transactional DB?”
💡 Hint: “Think performance vs cost tradeoff.”

3. How would you launch multiple EC2 instances with the exact same Configuration?

✔️ Expected:
● Use Launch Template or Auto Scaling Group
● Optionally use a custom AMI

💡 Hint: “Would you configure each manually or automate it?”

4. How does EC2 Auto Scaling know when to add or remove Instances?

✔️ Expected: Based on CloudWatch alarms (CPU usage, custom

metrics)

🔁 Follow-up: “Can you give an example policy?”
💡 Hint: “Think metrics + threshold.”

5. Suppose your instance boots, but the web app doesn’t work — how do you troubleshoot?

✔️ Expected:
- Check instance health
- Verify web server is installed & running
- Security Group rules
- App logs (/var/log/...)

💡 Hint: “Can you SSH into the instance and check logs?”

6. What is the difference between EC2 placement groups — Cluster, Spread, Partition?

✔️ Expected:
- Cluster: Low latency, high throughput (HPC)
- Spread: Instances across hardware (fault tolerance)
- Partition: Logical separation for large scale apps (big data)

💡 Hint: “Think: Performance vs Fault Isolation.”

7. What are some ways to ensure EC2 instance security beyond Security Groups?

✔️ Expected:
- IAM roles with least privilege
- Disable root login
- Use key pairs securely
- Enable CloudTrail + GuardDuty

💡 Hint: “Not just firewall – think credentials, access, visibility.”

8. You want to host a web app on EC2 behind HTTPS. How will you

implement SSL/TLS?

✔️ Expected:● Install certificate manually using Let's Encrypt
● Or use Load Balancer with SSL termination

💡 Hint: "Would you do it on EC2 directly or at the Load Balancer level?"

9. Can you explain the lifecycle hooks in an Auto Scaling Group? When would you use them?

✔️ Expected:
● Pause before instance launch/terminate to run scripts (e.g., config, cleanup)

💡 Hint: "What if you need to run something *before* shutting down an Instance?"

✅ 10. How would you migrate an EC2-based app from one region to Another?

✔️ Expected:
● Create AMI → Copy to another region → Launch
● Or use snapshots → copy EBS → recreate infra

🔁 Follow-up: "What would you watch out for during migration?"
💡 Hint: "Consider IPs, DNS, region-specific services."

SCENARIO-BASED QUESTIONS

1. Ask:🗣️ "You want to move 100 GB of logs to S3 every day. How would you optimize the cost?"

✅ Expected Answer: "Use S3 lifecycle policies to move data to Glacier after a few days, and enable S3 Transfer Acceleration if Needed."

💡 Hint: "Think about lifecycle and infrequent access classes."

2. Ask: 🗣️ "An EC2 instance was accidentally terminated. Can you recover the data?"

✅ Expected Answer: "Only if the EBS volume was backed up or configured to survive termination."

💡 Hint: "Check if Delete on Termination was disabled."

3. Ask: 🗣️ "You uploaded 10,000 objects to S3 but want to organize them logically. What would you do?"

✅ Expected Answer: "Use prefixes and folders in S3 (though they're virtual), or apply tags for filtering."

💡 Hint: "S3 uses key-based folder simulation."

4. Ask: 🗣️ "You need to deploy 5 EC2 instances for a batch job and remove them afterward. What approach would you use?"

✅ Expected Answer: "I'd write a script with AWS CLI or use an Auto Scaling Group with a scheduled action."

💡 Hint: "Use scripting or temporary scaling strategies."

PROJECT-BASED QUESTIONS

5. Ask: 🗣️ "You want to deploy a Python app that interacts with S3. How would you structure the project?"

✅ Expected Answer: "Host the app on EC2, install the AWS SDK (boto3), configure IAM roles for access to S3, and use environment variables for configs."

💡 Hint: "Think: EC2 + IAM + Python + S3."

6. Ask: 🗣️ "You need to set up an environment for testing different EC2 instance types. How would you manage this?"

✅ Expected Answer: "I'd use launch templates and automation via CloudFormation or Terraform."

💡 Hint: "Templates + Infrastructure as Code."

Advanced-Level

(EC2 Interview Questions - 3+ Years Experience)

1. How would you design a fault-tolerant, cost-effective EC2-based architecture for a customer-facing web app?

✔️ Expected:
- **Multi-AZ deployment**
- **Auto Scaling + Load Balancer**
- **Use of Spot/Reserved Instances**

💡 Hint: "How would you balance cost with availability?"

2. What strategies can you use to reduce EC2 costs in a production Environment?

✔️ Expected:
- **Use Reserved/Spot Instances**
- **Use Compute Savings Plans**
- **Rightsize instances using CloudWatch or Cost Explorer**

💡 Follow-up: "Have you used AWS Compute Optimizer?"

3. What are the differences between Launch Templates and Launch Configurations? Which one do you prefer?

✔️ Expected:

● Launch Templates are more flexible, support newer features● Launch Configs are older and deprecated for new features

💡 Hint: “Which works better with Auto Scaling and versioning?”

4. How do you secure EC2 instances beyond Security Groups?

✔️ Expected:
● IAM roles (least privilege)
● Patch updates
● Disable root SSH
● Use Systems Manager (SSM)

💡 Follow-up: “How does SSM help with SSH-less access?”

5. How would you troubleshoot high CPU usage on an EC2 instance?

✔️ Expected:
● Check CloudWatch metrics
● Identify process using SSH / SSM
● Consider scaling vertically or horizontally

💡 Hint: “Do you use custom alarms or just AWS defaults?”

6. Your EC2 instance keeps terminating unexpectedly. What could be the reasons?

✔️ Expected:
● Spot instance interruptions
● Auto Scaling health check failures
● User-defined termination policies

💡 Follow-up: “How can you prevent accidental terminations?”

7. How do Placement Groups affect EC2 performance?

✔️ Expected:
● Cluster: High network throughput, low latency

- Spread: High availability
- Partition: Fault-tolerant

💡 Hint: “Which one would you use for a Hadoop cluster?”

8. How would you configure EC2 to run scheduled batch jobs daily?

✔️ Expected:
- Use EC2 + cron
- Better: Use EventBridge to trigger Lambda or start EC2

💡 Follow-up: “How would you shut down the instance after completion?”

✅ 9. Have you implemented blue/green deployment using EC2?

✔️ Expected:
- Use two Auto Scaling Groups behind Load Balancer
- Shift traffic gradually

💡 Hint: “How do you manage DNS or traffic shifting?”

10. How would you monitor and alert on EC2 instance health and Availability?

✔️ Expected:
- Use CloudWatch Alarms
- Use Status Checks (System + Instance)
- Use custom metrics/logs

💡 Follow-up: “Do you push logs to CloudWatch Logs or use a third-party tool?”

Scenario-Based Questions

1. 🗣️ “You need to migrate 500 GB of on-prem data to S3 with minimal downtime. What tools would you use?”

✅ **Expected Answer: “Use AWS Snowball or AWS DataSync depending on network and speed requirements.”**

💡 **Hint: “Snowball for large physical transfers, DataSync for real-time.”**

2. 🗣️ “You want to secure S3 data with least privilege and log all access. What AWS features would you apply?”

✅ **Expected Answer: “Use IAM policies with specific actions, enable S3 server access logs, and use CloudTrail.”**

💡 **Hint: “Think IAM + logging + monitoring.”**

3. 🗣️ “You need to deploy EC2 in a secure private subnet and still access updates. How do you configure it?”

✅ **Expected Answer: “Deploy in a private subnet and route internet traffic via a NAT Gateway in a public subnet.”**

💡 **Hint: “NAT Gateway enables outbound internet from private subnets.”**

4. 🗣️ “You want to serve private S3 content through a custom domain securely. What approach would you use?”

✅ **Expected Answer: “Set up CloudFront with an origin access control to S3, attach custom domain, and add HTTPS via ACM.”**

💡 **Hint: “CloudFront + OAC + HTTPS.”**

Project-Based Questions

5. 🗣️ “You need to build a fault-tolerant web app using EC2 and S3. How would you design it?”

✅ **Expected Answer: “Use EC2 in an Auto Scaling Group across multiple AZs, store static content in S3, use ALB, and backups via AMI**

and snapshots."

💡 Hint: "Think HA (high availability) and separation of static/dynamic content."

6. 🗣️ "You're creating a CI/CD pipeline to deploy a Node.js app to EC2. How would you include S3 in the flow?"

✅ Expected Answer: "Use CodePipeline with CodeBuild to package and upload artifacts to S3. EC2 pulls from S3 during deployment."

💡 Hint: "Artifacts go to S3, EC2 can pull from it."