

**Exam Tips**

What Have We Learnt So Far?

- Always setup Multifactor Authentication on your root account.
- You can create and customise your own password rotation policies.



**S3 Exam Tips**

By default, all newly created buckets are **PRIVATE**. You can setup access control to your buckets using:

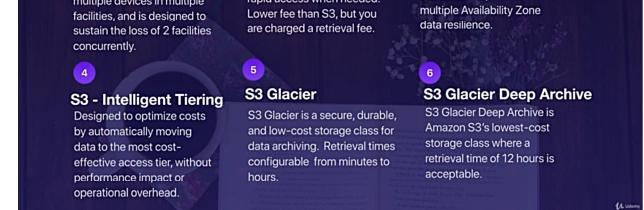
- Bucket Policies
- Access Control Lists

S3 buckets can be configured to create access logs which log all requests made to the S3 bucket. This can be sent to another bucket and even another bucket in another account.



**Exam Tips**

- S3 Standard**  
99.99% availability  
99.99999999% durability, stored redundantly across multiple facilities, and is designed to sustain the loss of 2 facilities concurrently.
- S3 - IA**  
(Infrequently Accessed): For data that is accessed less frequently, but requires rapid access when needed. Lower fee than S3, but you are charged a retrieval fee.
- S3 One Zone - IA**  
For where you want a lower-cost option for infrequently accessed data, but do not require the multiple Availability Zone data resilience.
- S3 - Intelligent Tiering**  
Designed to optimize costs by automatically moving data to the most cost-effective access tier, without performance impact or operational overhead.
- S3 Glacier**  
S3 Glacier is a secure, durable, and low-cost storage class for data archiving. Retrieval times configurable from minutes to hours.
- S3 Glacier Deep Archive**  
S3 Glacier Deep Archive is Amazon S3's lowest-cost storage class where a retrieval time of 12 hours is acceptable.



**Exam Tips**

What Have We Learnt So Far?

- IAM is universal. It does not apply to regions at this time.
- The "root account" is simply the account created when first setup your AWS account. It has complete Admin access.
- New Users have NO permissions when first created.
- New Users are assigned Access Key ID & Secret Access Keys when first created.
- These are not the same as a password. You cannot use the Access key ID & Secret Access Key to Login to the console. You can use this to access AWS via the APIs and Command Line, however.
- You only get to view these once. If you lose them, you have to regenerate them. So, save them in a secure location.

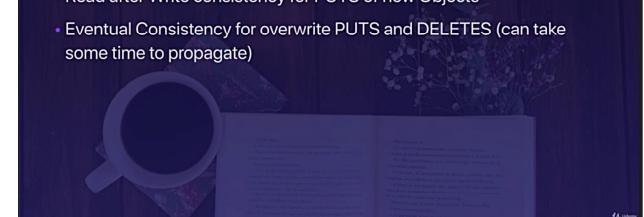


**S3 Exam Tips**

- Not suitable to install an operating system on.
- Successful uploads will generate a **HTTP 200** status code.



- Read after Write consistency for PUTS of new Objects
- Eventual Consistency for overwrite PUTS and Deletes (can take some time to propagate)

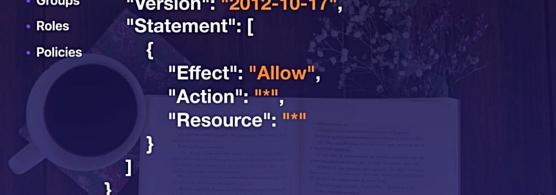


**Exam Tips**

Identity Access Management Consists Of The Following;

- Users
- Groups
- Roles
- Policies

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": "*",
      "Resource": "*"
    }
  ]
}
```



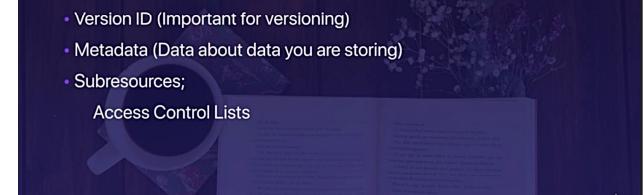
**S3 Exam Tips**

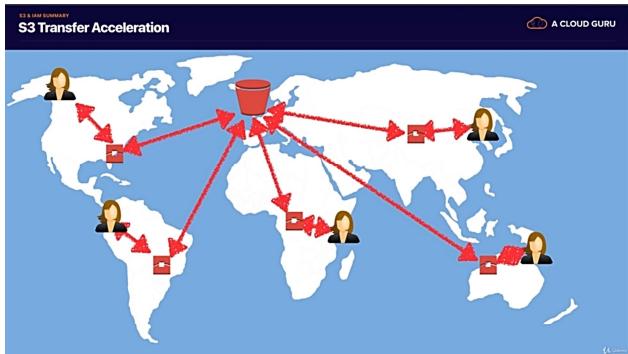
- Remember that S3 is **Object-based**: i.e. allows you to upload files.
- Files can be from 0 Bytes to 5 TB.
- There is unlimited storage.
- Files are stored in Buckets.
- S3 is a universal namespace.** That is, names must be unique globally.
- <https://s3-eu-west-1.amazonaws.com/acloudguru>



**The Key Fundamentals of S3 Are;**

- Key (This is simply the name of the object)
- Value (This is simply the data and is made up of a sequence of bytes).
- Version ID (Important for versioning)
- Metadata (Data about data you are storing)
- Subresources;
- Access Control Lists





S3 Exam Tips

### Snowball

- Understand what Snowball is
- Snowball Can
- Import to S3
- Export from S3

EC2 Exam Tips

### Amazon Elastic Compute Cloud (Amazon EC2)

(Amazon EC2) is a web service that provides resizable compute capacity in the cloud. Amazon EC2 reduces the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity, both up and down, as your computing requirements change.

Exam Tips

### Cross Region Replication

- Versioning must be enabled on both the source and destination buckets.
- Regions must be unique.
- Files in an existing bucket are not replicated automatically.
- All subsequent updated files will be replicated automatically.
- Delete markers are not replicated.
- Deleting individual versions or delete markers will not be replicated.
- Understand what Cross Region Replication is at a high level.

S3 Exam Tips

### CloudFront

- Edge locations are not just READ only — you can write to them too. (ie put an object on to them.)
- Objects are cached for the life of the TTL (Time To Live.)
- You can clear cached objects, but you will be charged.

S3 Exam Tips

- Read the S3 FAQs before taking the exam. It comes up A LOT!

S3 Exam Tips

### Encryption In Transit

is achieved by

- SSL/TLS

### Encryption At Rest (Server Side)

is achieved by

- S3 Managed Keys - SSE-S3
- AWS Key Management Service, Managed Keys - SSE-KMS
- Server Side Encryption With Customer Provided Keys - SSE-C

### Client Side Encryption

S3 Exam Tips

### CloudFront

- Edge Location** - This is the location where content will be cached. This is separate to an AWS Region/AZ.
- Origin** - This is the origin of all the files that the CDN will distribute. This can be either an S3 Bucket, an EC2 Instance, an Elastic Load Balancer, or Route53.
- Distribution** - This is the name given the CDN which consists of a collection of Edge Locations.
- Web Distribution** - Typically used for Websites.
- RTMP** - Used for Media Streaming.

Storage Gateway

### File Gateway

- File Gateway - For flat files, stored directly on S3.

### Volume Gateway

- Stored Volumes** - Entire Dataset is stored on site and is asynchronously backed up to S3.
- Cached Volumes** - Entire Dataset is stored on S3 and the most frequently accessed data is cached on site.

### Gateway Virtual Tape Library

- Used for backup and uses popular backup applications like NetBackup, Backup Exec, Veeam etc.

**EC2 SUMMARY**

## EC2 Instance Types

- F - For FPGA
- I - For IOPS
- G - Graphics
- H - High Disk Throughput
- T - Cheap general purpose (think T2 Micro)
- D - For Density
- R - For RAM
- M - Main choice for general purpose apps
- C - For Compute
- P - Graphics (think Pics)
- X - Extreme Memory
- Z - Extreme Memory AND CPU
- A - Arm-based workloads
- U - Bare Metal

**EC2 SUMMARY**

## Security Groups

- Security Groups are **STATEFUL**.
- If you create an inbound rule allowing traffic in, that traffic is automatically allowed back out again.
- You cannot block specific IP addresses using Security Groups, instead use Network Access Control Lists.
- You can specify allow rules, but not deny rules.

**EC2 SUMMARY**

## EBS Snapshots

- To create a snapshot for Amazon EBS volumes that serve as root devices, you should stop the instance before taking the snapshot.
- However you can take a snap while the instance is running.
- You can create AMI's from both Volumes and Snapshots
- You can change EBS volume sizes on the fly, including changing the size and storage type.
- Volumes will **ALWAYS** be in the same availability zone as the EC2 instance.

**EC2 SUMMARY**

## EC2 Exam Tips

If the Spot instance is terminated by Amazon EC2, you will not be charged for a partial hour of usage. However, if you terminate the instance yourself, you will be charged for any hour in which the instance ran.

**EC2 SUMMARY**

## Security Groups

- All Inbound traffic is blocked by default.
- All Outbound traffic is allowed.
- Changes to Security Groups take effect immediately.
- You can have any number of EC2 instances within a security group.
- You can have multiple security groups attached to EC2 Instances.

**EC2 SUMMARY**

## EBS Snapshots

- Volumes exist on EBS. Think of EBS as a virtual hard disk
- Snapshots exist on S3. Think of snapshots as a photograph of the disk.
- Snapshots are point in time copies of Volumes.
- Snapshots are incremental — this means that only the blocks that have changed since your last snapshot are moved to S3.
- If this is your first snapshot, it may take some time to create.

**EC2 SUMMARY**

## EC2 Exam Tips

- On Demand**  
Allows you to pay a fixed rate by the hour (or by the second) with no commitment.
- Reserved**  
Provides you with a capacity reservation, and offer a significant discount on the hourly charge for an instance. Contract Terms are 1 Year or 3 Year Terms.
- Spot**  
Enables you to bid whatever price you want for instance capacity, providing for even greater savings if your applications have flexible start and end times.
- Dedicated Hosts**  
Physical EC2 server dedicated for your use. Dedicated Hosts can help you reduce costs by allowing you to use your existing server-bound software licenses.

**EC2 SUMMARY**

## EBS

- Termination Protection is **turned off** by default, you must turn it on.
- On an EBS-backed instance, the **default action is for the root EBS volume to be deleted** when the instance is terminated.
- EBS Root Volumes of your DEFAULT AMI's cannot be encrypted. You can also use a third party tool (such as bit locker etc) to encrypt the root volume, or this can be done when creating AMI's (lab to follow) in the AWS console or using the API.
- Additional volumes can be encrypted.

Solid-State Drives (SSD)			Hard disk Drives (HDD)		
Volume Type	General Purpose SSD	Provisioned IOPS SSD	Throughput Optimized HDD	Cold HDD	EBS Magnetic
Description	General purpose SSD volume that balances price and performance for a wide variety of transactional workloads	Highest performance SSD volume designed for mission-critical applications	Low cost HDD volume designed for less frequently accessed workloads	Lowest cost HDD volume designed for less frequently accessed workloads	Previous generation HDD
Use Cases	Most Work Loads	Databases	Big Data & Data Warehouses	File Servers	Workloads where data is infrequently accessed
API Name	gp2	io1	st1	sc1	Standard
Volume Size	1 GiB - 16 TiB	4 GiB - 16 TiB	500 GiB - 16 TiB	500 GiB - 16 TiB	1 GiB-1 TiB
Max. IOPS**/ Volume	16,000	64,000	500	250	40-200

**EBS vs Instance Store**

- Instance Store Volumes are sometimes called Ephemeral Storage.
- Instance store volumes cannot be stopped. If the underlying host fails, you will lose your data.
- EBS backed instances can be stopped. You will not lose the data on this instance if it is stopped.
- You can reboot both, you will not lose your data.
- By default, both ROOT volumes will be deleted on termination. However, with EBS volumes, you can tell AWS to keep the root device volume.

**EC2 SUMMARY CloudWatch**

## What Can I do With CloudWatch?

- Dashboards - Creates awesome dashboards to see what is happening with your AWS environment.
- Alarms - Allows you to set Alarms that notify you when particular thresholds are hit.
- Events - CloudWatch Events helps you to respond to state changes in your AWS resources.
- Logs - CloudWatch Logs helps you to aggregate, monitor, and store logs.

**EC2 SUMMARY Roles**

- Roles are more secure than storing your access key and secret access key on individual EC2 instances.
- Roles are easier to manage.
- Roles can be assigned to an EC2 instance after it is created using both the console & command line.
- Roles are universal — you can use them in any region.

**EBS Encryption**

- Snapshots of encrypted volumes are encrypted automatically.
- Volumes restored from encrypted snapshots are encrypted automatically.
- You can share snapshots, but only if they are unencrypted.
- These snapshots can be shared with other AWS accounts or made public.

**EC2 SUMMARY CloudWatch**

### Remember;

- CloudWatch is used for monitoring performance.
- CloudWatch can monitor most of AWS as well as your applications that run on AWS.
- CloudWatch with EC2 will monitor events every 5 minutes by default.
- You can have 1 minute intervals by turning on detailed monitoring.
- You can create CloudWatch alarms which trigger notifications.
- CloudWatch is all about performance. CloudTrail is all about auditing.

**EC2 SUMMARY The CLI**

- You can interact with AWS from anywhere in the world just by using the command line (CLI).
- You will need to set up access in IAM
- Commands themselves are not in the exam, but some basic commands will be useful to know for real life.

**EC2 SUMMARY Migrating EBS**

- To move an EC2 volume from one AZ to another, take a snapshot of it, create an AMI from the snapshot and then use the AMI to launch the EC2 instance in a new AZ.
- To move an EC2 volume from one region to another, take a snapshot of it, create an AMI from the snapshot and then copy the AMI from one region to the other. Then use the copied AMI to launch the new EC2 instance in the new region.

**EC2 SUMMARY Encrypting Root Device Volumes**

- Create a Snapshot of the unencrypted root device volume
- Create a copy of the Snapshot and select the encrypt option
- Create an AMI from the encrypted Snapshot
- Use that AMI to launch new encrypted instances

**EC2 SUMMARY CloudTrail vs CloudWatch**

- CloudWatch monitors performance.
- CloudTrail monitors API calls in the AWS platform.



**EC2 SUMMARY**  
**EFS**

- Supports the Network File System version 4 (NFSv4) protocol
- You only pay for the storage you use (no pre-provisioning required.)
- Can scale up to the petabytes
- Can support thousands of concurrent NFS connections
- Data is stored across multiple AZ's within a region
- Read After Write Consistency



**DATABASES SUMMARY**  
**AWS Database Types - Exam Tips**



**RDS (OLTP)**

- SQL
- MySQL
- PostgreSQL
- Oracle
- Aurora
- MariaDB

**DynamoDB (NoSQL)**

**Red Shift OLAP**



**DATABASES SUMMARY**  
**Exam Tips**



**Read Replicas**

- Can be Multi-AZ.
- Used to increase performance.
- Must have backups turned on.
- Can be in different regions.
- Can be Aurora or MySQL.
- Can be promoted to master, this will break the replication with the Read Replica



**EC2 SUMMARY**  
**Instance Meta Data & User Data**

- Used to get information about an instance (such as public ip)
- curl <http://169.254.169.254/latest/meta-data/>
- curl <http://169.254.169.254/latest/user-data/>



**EC2 PLACEMENT GROUPS**  
**Placement Groups Exam Tips**

- A clustered placement group can't span multiple Availability Zones.
- A spread placement group can.
- The name you specify for a placement group must be unique within your AWS account.
- Only certain types of instances can be launched in a placement group (Compute Optimized, GPU, Memory Optimized, Storage Optimized)
- AWS recommend homogenous instances within placement groups.
- You can't merge placement groups.
- You can't move an existing instance into a placement group. You can create an AMI from your existing instance, and then launch a new instance from the AMI into a placement group.



**DATABASES SUMMARY**  
**Relational Databases**



**Remember the following points:**

- RDS runs on virtual machines
- You cannot log in to these operating systems however.
- Patching of the RDS Operating System and DB is Amazon's responsibility
- RDS is NOT Serverless
- Aurora Serverless IS Serverless



**EC2 SUMMARY**  
**BootStrap Scripts**

- Bootstrap scripts run when an EC2 instance first boots.
- Can be a powerful way of automating software installs and updates.



**EC2 PLACEMENT GROUPS**  
**Two Types of Placement Groups;**

- Clustered Placement Group
- Spread Placement Group



**DATABASES SUMMARY**  
**AWS Database Types - Exam Tips**



**ElastiCache**

- Memcached
- Redis



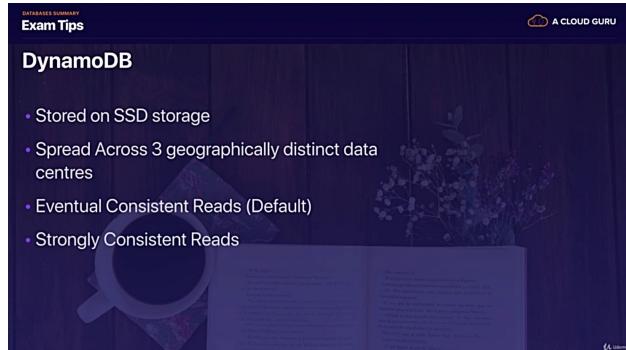
DATABASES SUMMARY

Exam Tips

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## DynamoDB

- Stored on SSD storage
- Spread Across 3 geographically distinct data centres
- Eventual Consistent Reads (Default)
- Strongly Consistent Reads



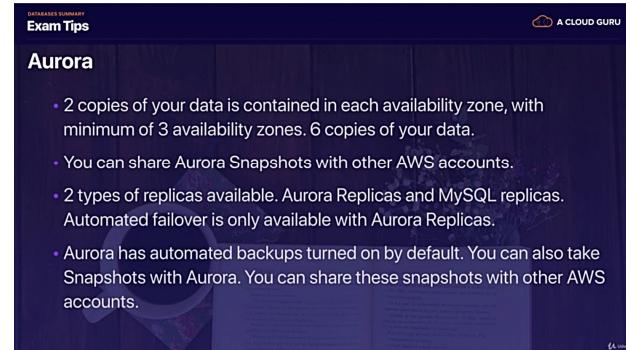
DATABASES SUMMARY

Exam Tips

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## Aurora

- 2 copies of your data is contained in each availability zone, with minimum of 3 availability zones. 6 copies of your data.
- You can share Aurora Snapshots with other AWS accounts.
- 2 types of replicas available. Aurora Replicas and MySQL replicas. Automated failover is only available with Aurora Replicas.
- Aurora has automated backups turned on by default. You can also take Snapshots with Aurora. You can share these snapshots with other AWS accounts.



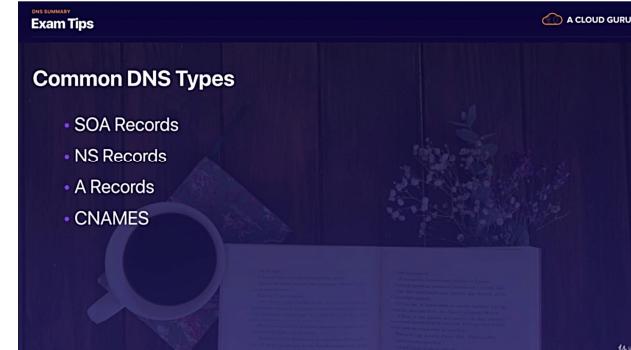
DNS SUMMARY

Exam Tips

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## Common DNS Types

- SOA Records
- NS Records
- A Records
- CNAMES

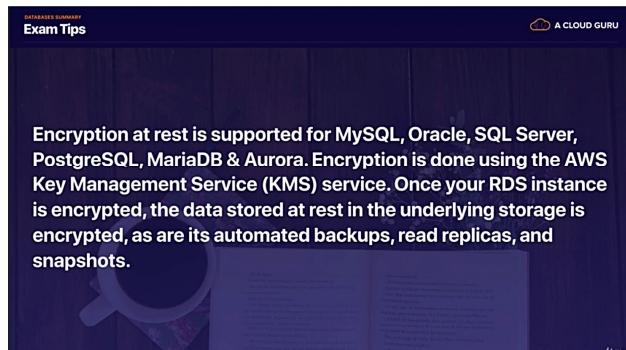


DATABASES SUMMARY

Exam Tips

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**Encryption at rest is supported for MySQL, Oracle, SQL Server, PostgreSQL, MariaDB & Aurora. Encryption is done using the AWS Key Management Service (KMS) service. Once your RDS instance is encrypted, the data stored at rest in the underlying storage is encrypted, as are its automated backups, read replicas, and snapshots.**



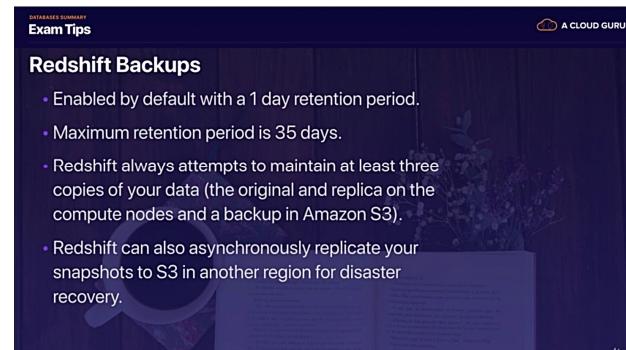
DATABASES SUMMARY

Exam Tips

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## Redshift Backups

- Enabled by default with a 1 day retention period.
- Maximum retention period is 35 days.
- Redshift always attempts to maintain at least three copies of your data (the original and replica on the compute nodes and a backup in Amazon S3).
- Redshift can also asynchronously replicate your snapshots to S3 in another region for disaster recovery.



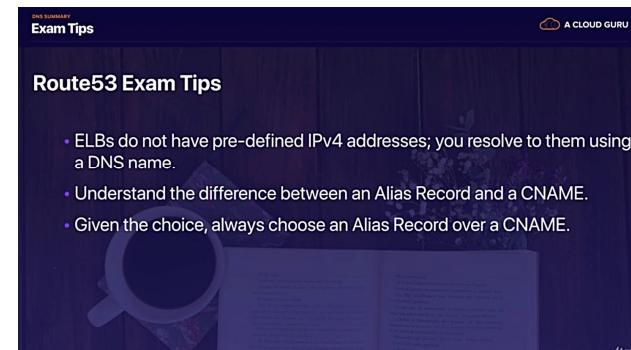
DNS SUMMARY

Exam Tips

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## Route53 Exam Tips

- ELBs do not have pre-defined IPv4 addresses; you resolve to them using a DNS name.
- Understand the difference between an Alias Record and a CNAME.
- Given the choice, always choose an Alias Record over a CNAME.



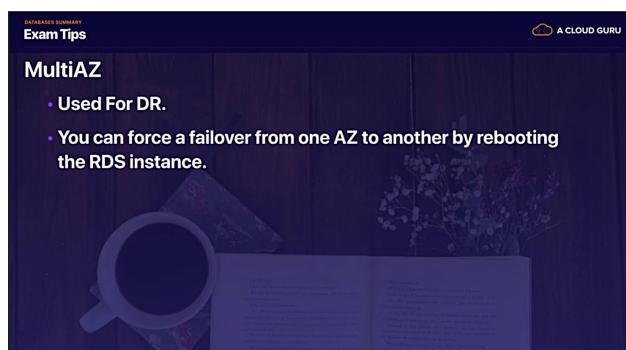
DATABASES SUMMARY

Exam Tips

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## MultiAZ

- Used For DR.
- You can force a failover from one AZ to another by rebooting the RDS instance.



DATABASES SUMMARY

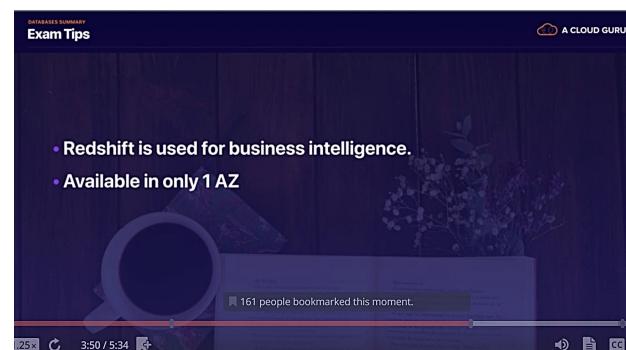
Exam Tips

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- Redshift is used for business intelligence.
- Available in only 1 AZ

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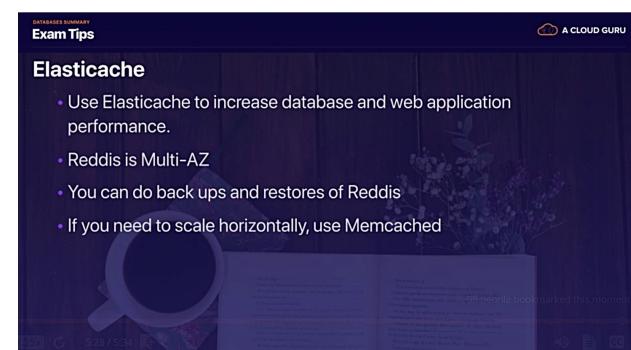
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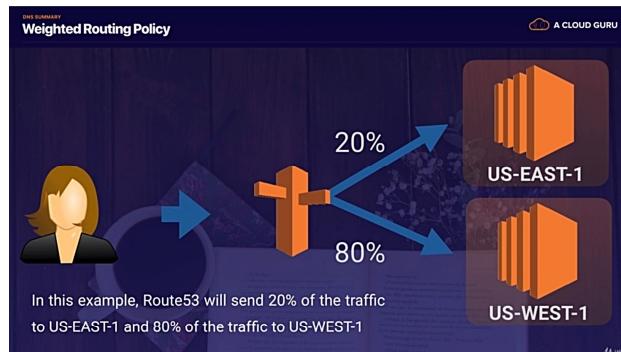
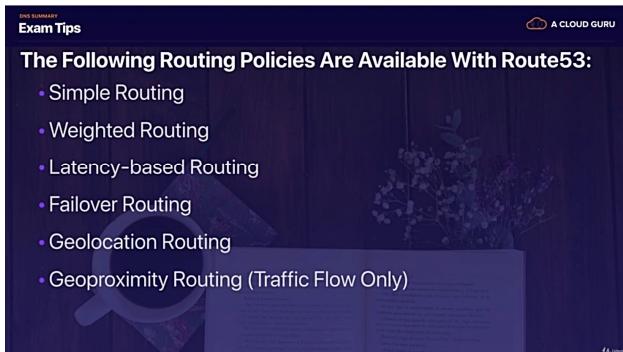
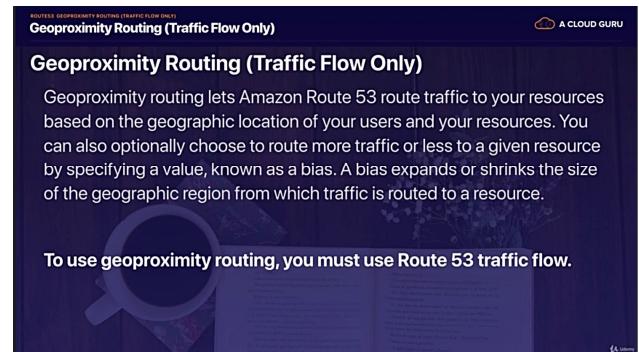
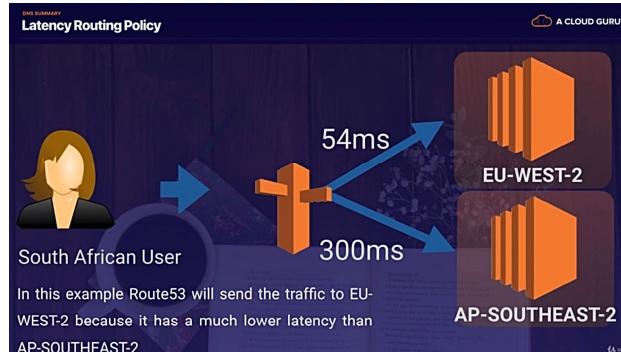
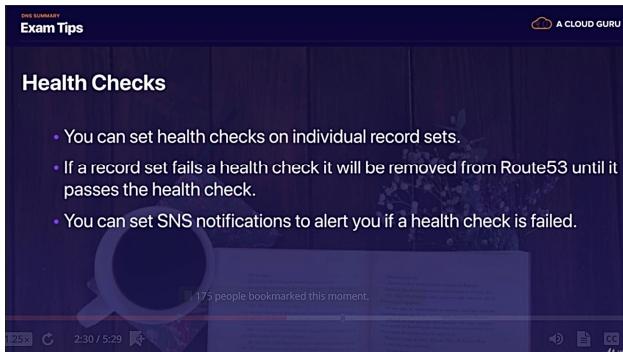
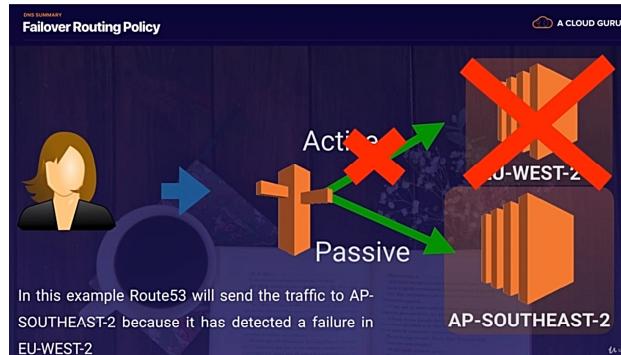
Exam Tips

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## ElastiCache

- Use ElastiCache to increase database and web application performance.
- Redis is Multi-AZ
- You can do back ups and restores of Redis
- If you need to scale horizontally, use Memcached





**VPC SUMMARY**  
**NAT Instances vs NAT Gateways**

**Nat Instances Exam Tips**

- When creating a NAT instance, Disable Source/Destination Check on the Instance.
- NAT instances must be in a public subnet.
- There must be a route out of the private subnet to the NAT instance, in order for this to work.
- The amount of traffic that NAT instances can support depends on the instance size. If you are bottlenecking, increase the instance size.
- You can create high availability using Autoscaling Groups, multiple subnets in different AZs, and a script to automate failover.
- Behind a Security Group.

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**VPC SUMMARY**  
**NAT Instances vs NAT Gateways**

**Nat Gateways**

- If you have resources in multiple Availability Zones and they share one NAT gateway, in the event that the NAT gateway's Availability Zone is down, resources in the other Availability Zones lose internet access. To create an Availability Zone-independent architecture, create a NAT gateway in each Availability Zone and configure your routing to ensure that resources use the NAT gateway in the same Availability Zone.

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**VPC SUMMARY**  
**ELB's And VPCs**

**Remember the following for your exam;**

- You need a minimum of two public subnets to deploy an internet facing loadbalancer.

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**VPC SUMMARY**  
**Building Our VPC**

**Remember the following;**

- When you create a VPC a default Route Table, Network Access Control List (NACL) and a default Security Group.
- It won't create any subnets, nor will it create a default internet gateway.
- US-East-1A in your AWS account can be a completely different availability zone to US-East-1A in another AWS account. The AZ's are randomized.
- Amazon always reserve 5 IP addresses within your subnets.
- You can only have 1 Internet Gateway per VPC.
- Security Groups can't span VPCs.

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**VPC SUMMARY**  
**NAT Instances vs NAT Gateways**

**Nat Gateways**

- Redundant inside the Availability Zone
- Preferred by the enterprise
- Starts at 5Gbps and scales currently to 45Gbps
- No need to patch
- Not associated with security groups
- Automatically assigned a public ip address
- Remember to update your route tables.
- No need to disable Source/Destination Checks

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**VPC SUMMARY**  
**Network ACL's**

**Remember the following for your exam;**

- You can associate a network ACL with multiple subnets; however, a subnet can be associated with only one network ACL at a time. When you associate a network ACL with a subnet, the previous association is removed.
- Network ACLs contain a numbered list of rules that is evaluated in order, starting with the lowest numbered rule.
- Network ACLs have separate inbound and outbound rules, and each rule can either allow or deny traffic.
- Network ACLs are stateless; responses to allowed inbound traffic are subject to the rules for outbound traffic (and vice versa).

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**VPC SUMMARY**  
**VPC Overview**

**Remember the following;**

- Think of a VPC as a logical datacenter in AWS.
- Consists of IGWs (Or Virtual Private Gateways), Route Tables, Network Access Control Lists, Subnets, and Security Groups
- 1 Subnet = 1 Availability Zone
- Security Groups are Stateful; Network Access Control Lists are Stateless
- NO TRANSITIVE PEERING

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**VPC SUMMARY**  
**NAT Gateways Explained**

**VPC with Public & Private Subnet(s)**

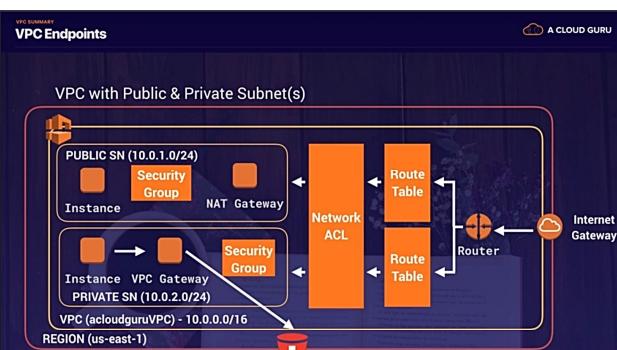
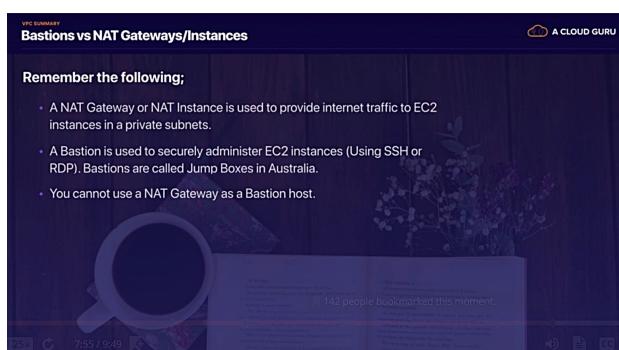
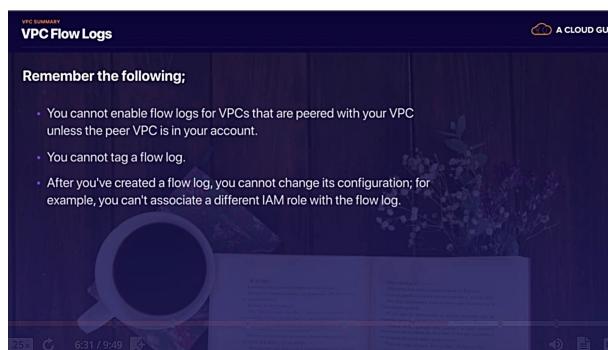
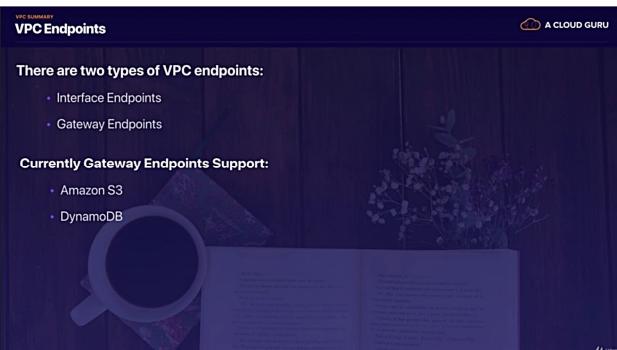
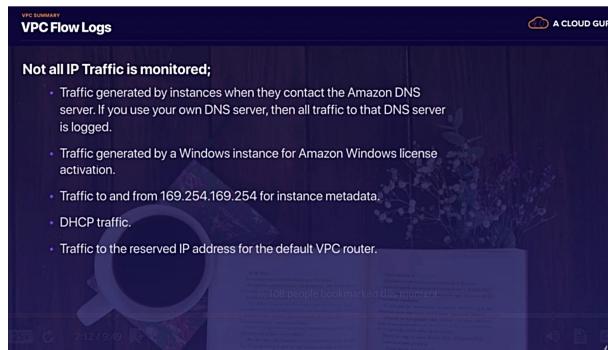
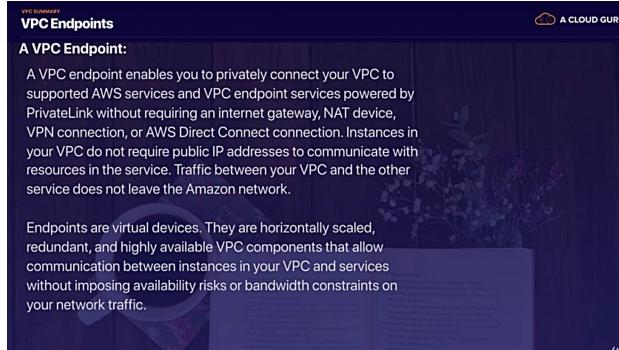
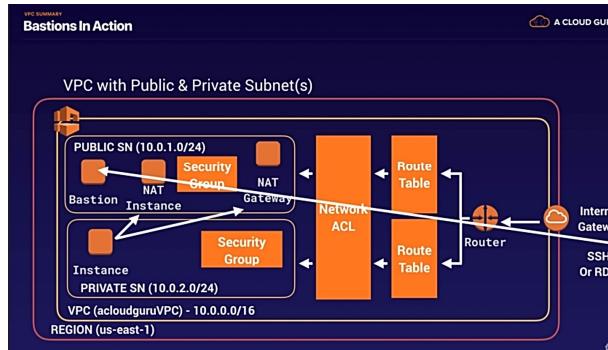
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**VPC SUMMARY**  
**Network ACL's**

**Remember the following for your exam;**

- Your VPC automatically comes a default network ACL, and by default it allows all outbound and inbound traffic.
- You can create custom network ACLs. By default, each custom network ACL denies all inbound and outbound traffic until you add rules.
- Each subnet in your VPC must be associated with a network ACL. If you don't explicitly associate a subnet with a network ACL, the subnet is automatically associated with the default network ACL.
- Block IP Addresses using network ACLs not Security Groups

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LOAD BALANCERS

**Exam Tips**

- Instances monitored by ELB are reported as ; InService , or OutofService
- Health Checks check the instance health by talking to it.
- Load Balances have their own DNS name. You are never given an IP address.
- Read the ELB FAQ for Classic Load Balancers.
- Want to deep dive on application load balancers? Check out our deep dive course!

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LOAD BALANCERS

**Exam Tips**

**With Elastic Beanstalk, you can quickly deploy and manage applications in the AWS Cloud without worrying about the infrastructure that runs those applications. You simply upload your application, and Elastic Beanstalk automatically handles the details of capacity provisioning, load balancing, scaling, and application health monitoring.**

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APPLICATIONS SUMMARY

**Exam Tips - SQS**

- SQS guarantees that your messages will be processed at least once.
- Amazon SQS long polling is a way to retrieve messages from your Amazon SQS queues. While the regular short polling returns immediately (even if the message queue being polled is empty), long polling doesn't return a response until a message arrives in the message queue, or the long poll times out.

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LOAD BALANCERS

**Exam Tips**

- If you need the IPv4 address of your end user, look for the **X-Forwarded-For** header.

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EXPERTISE

**Exam Tips**

**CloudFormation**

- Is a way of completely scripting your cloud environment
- Quick Start is a bunch of CloudFormation templates already built by AWS Solutions Architects allowing you to create complex environments very quickly.

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APPLICATIONS SUMMARY

**Exam Tips - SQS**

- Visibility Time Out is the amount of time that the message is invisible in the SQS queue after a reader picks up that message. Provided the job is processed before the visibility time out expires, the message will then be deleted from the queue. If the job is not processed within that time, the message will become visible again and another reader will process it. This could result in the same message being delivered twice.
- Visibility timeout maximum is 12 hours.

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LOAD BALANCERS

**Exam Tips**

- 504 Error means the gateway has timed out. This means that the application not responding within the idle timeout period.
- Troubleshoot the application. Is it the Web Server or Database Server?

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ADVANCED LOAD BALANCER THEORY

**Exam Tips**

**Advanced Load Balancer Theory**

- Sticky Sessions enable your users to stick to the same EC2 instance. Can be useful if you are storing information locally to that instance.
- Cross Zone Load Balancing enables you to load balance across multiple availability zones.
- Path patterns allow you to direct traffic to different EC2 instances based on the URL contained in the request.

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APPLICATIONS SUMMARY

**Exam Tips - SQS**

**SQS Exam Tips**

- SQS is a way to de-couple your infrastructure
- SQS is pull based, not pushed based.
- Messages are 256 KB in size.
- Messages can be kept in the queue from 1 minute to 14 days; the default retention period is 4 days.
- Standard SQS and FIFO SQS
- Standard order is not guaranteed and messages can be delivered more than once.
- FIFO order is strictly maintained and messages are delivered only once.

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APPLICATIONS SUMMARY  
**Exam Tips - SNS**

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## SNS Benefits

- Instantaneous, push-based delivery (no polling)
- Simple APIs and easy integration with applications
- Flexible message delivery over multiple transport protocols
- Inexpensive, pay-as-you-go model with no up-front costs
- Web-based AWS Management Console offers the simplicity of a point-and-click interface

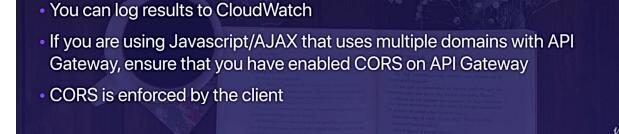


APPLICATIONS SUMMARY  
**Exam Tips - API Gateway**

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## API Gateway Exam Tips

- Remember what API Gateway is at a high level
- API Gateway has caching capabilities to increase performance
- API Gateway is low cost and scales automatically
- You can throttle API Gateway to prevent attacks
- You can log results to CloudWatch
- If you are using Javascript/AJAX that uses multiple domains with API Gateway, ensure that you have enabled CORS on API Gateway
- CORS is enforced by the client



WEB IDENTITY FEDERATION & COGNITO  
**Exam Tips - Cognito**

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## Cognito Exam Tips

- User pool is user based. It handles things like user registration, authentication, and account recovery.
- Identity pools authorise access to your AWS resources.

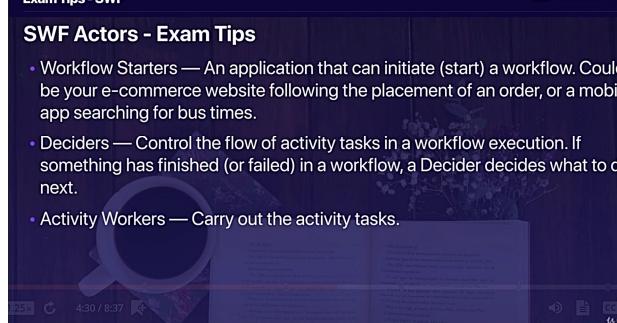


APPLICATIONS SUMMARY  
**Exam Tips - SWF**

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## SWF Actors - Exam Tips

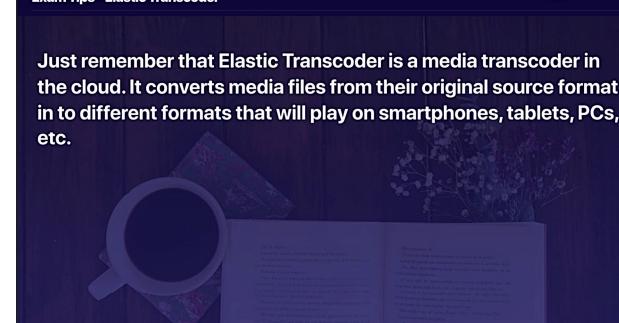
- Workflow Starters — An application that can initiate (start) a workflow. Could be your e-commerce website following the placement of an order, or a mobile app searching for bus times.
- Deciders — Control the flow of activity tasks in a workflow execution. If something has finished (or failed) in a workflow, a Decider decides what to do next.
- Activity Workers — Carry out the activity tasks.



APPLICATIONS SUMMARY  
**Exam Tips - Elastic Transcoder**

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Just remember that Elastic Transcoder is a media transcoder in the cloud. It converts media files from their original source format in to different formats that will play on smartphones, tablets, PCs, etc.



WEB IDENTITY FEDERATION & COGNITO  
**Exam Tips - Cognito**

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## Cognito Exam Tips

- Federation allows users to authenticate with a Web Identity Provider (Google, Facebook, Amazon)
- The user authenticates first with the Web ID Provider and receives an authentication token, which is exchanged for temporary AWS credentials allowing them to assume an IAM role.
- Cognito is an Identity Broker which handles interaction between your applications and the Web ID provider (You don't need to write your own code to do this.)

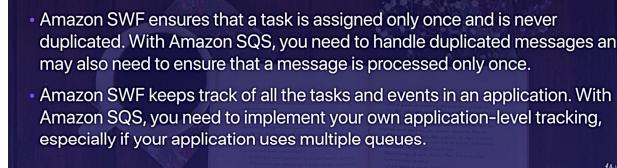


APPLICATIONS SUMMARY  
**Exam Tips - SWF**

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## SWF vs SQS

- SQS has a retention period of up to 14 days; with SWF, workflow executions can last up to 1 year.
- Amazon SWF presents a task-oriented API, whereas Amazon SQS offers a message-oriented API.
- Amazon SWF ensures that a task is assigned only once and is never duplicated. With Amazon SQS, you need to handle duplicated messages and may also need to ensure that a message is processed only once.
- Amazon SWF keeps track of all the tasks and events in an application. With Amazon SQS, you need to implement your own application-level tracking, especially if your application uses multiple queues.



APPLICATIONS SUMMARY  
**Exam Tips - SNS**

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## SNS vs SQS?

- Both Messaging Services in AWS
- SNS - Push
- SQS - Polls (Pulls)



APPLICATIONS SUMMARY  
**Exam Tips - Kinesis**

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## Kinesis Exam Tips

- Know the difference between Kinesis Streams and Kinesis Firehose. You will be given scenario questions and you must choose the most relevant service.
- Understand what Kinesis Analytics is.



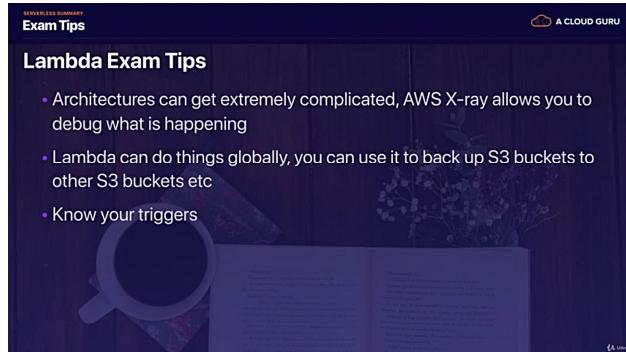
SERVERLESS SUMMARY

Exam Tips

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## Lambda Exam Tips

- Architectures can get extremely complicated, AWS X-ray allows you to debug what is happening
- Lambda can do things globally, you can use it to back up S3 buckets to other S3 buckets etc
- Know your triggers



SERVERLESS SUMMARY

Exam Tips

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## Lambda Exam Tips

- Lambda scales out (not up) automatically
- Lambda functions are independent, 1 event = 1 function
- Lambda is serverless
- Know what services are serverless!
- Lambda functions can trigger other lambda functions, 1 event can = x functions if functions trigger other functions

