

AWS SAA-C03 All-in-One Cheat Sheet

One-page master reference for the AWS Certified Solutions Architect – Associate exam.

Each domain table lists individual **service variants** (e.g., S3 storage classes, EC2 purchase models), plus **When to use** · **Key features** · **Classic exam trigger phrases** · **Top 3–5 quotas**.

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Compute

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
EC2 On-Demand	Flexible, pay-as-you-go	Any instance, no commitment	“Spiky / unpredictable load”	Instances/Region ≈ 20
EC2 Reserved (Std/Conv)	Steady baseline ≥ 1 yr	72 % savings, AZ or Region scope	“Always-on prod server”	RIs/Region 20 000
EC2 Spot	Cost-opt fault-tolerant	Up to 90 % off, 2-min notice	“Batch, big data, CI”	Spot cap = On-Demand quota
Compute Savings Plan	Flexible discount	Covers EC2/Fargate/Lambda	“Want discount w/out RI lock-in”	Commit term 1 or 3 yr

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
Lambda On-Demand	Event-driven ≤ 15 min	100 ms billing, auto-scale	“Serverless function”	Concurrency 1 000
Lambda Provisioned Conc.	Predictable latency	Pre-warmed, min latency	“Cold-start sensitive API”	Same concurrency quota
ECS Fargate	Serverless containers	Pay vCPU/GB-sec	“No EC2 mgmt for containers”	Tasks/service 1 000
ECS on EC2	Custom AMI/daemon	Full host control	“Need GPU/daemonset”	Limited by EC2 quotas
EC2 Auto Scaling	Elastic fleet mgmt	Dynamic, Scheduled, Predictive; mixed-instance policies; cooldowns	“Scale to meet target CPU”	ASGs/Region 1 000
EKS (Kubernetes)	Managed K8s control plane	Fargate profiles, IRSA, VPC-CNI	“Need upstream K8s APIs”	Clusters 100

Storage

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
S3 Standard	Frequently accessed	Multi-AZ, 11×9s, high avail	“Hot objects, data lake”	Object 5 TB
S3 Intelligent-Tier	Unknown access pattern	Auto-moves tiers	“New or unpredictable data”	Monitoring fee/object
S3 Standard-IA	Infrequent access	99.9 % avail, retrieval fee	“Logs, backups 1×/mo”	Min 128 KB • 30-day stay
S3 One-Zone-IA	Non-critical IA	Single-AZ cheaper	“Re-creatable data”	Same as Std-IA
S3 Glacier Instant	Archive w/ ms restore	Lower \$/GB, instant get	“Archive but instant access”	Min 90 days
S3 Glacier Flexible	Deep archive mins-hrs	Bulk/expedite	“Compliance archive”	Min 90 days

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
S3 Glacier Deep	Lowest cost 12–48 h	Tape-like	“Decades retention”	Min 180 days
EBS gp3	Gen-purpose SSD	3 000 IOPS base	“General workloads”	16 K IOPS / 1 000 MB/s
EBS io2 / Block Express	Mission-crit SSD	64 K+ IOPS, 99.999 %	“DB needs 1 ms IO”	64 K IOPS (256 K Express)
EBS st1	Throughput HDD	500 MiB/s seq	“Big data, log proc”	Vol 16 TB
EBS sc1	Cold HDD	Low IO \$, 250 MiB/s	“Archival on block”	Vol 16 TB
EFS Standard	Multi-AZ NFS	Elastic, burst credit	“Shared Linux FS”	Burst 5 GB/s
EFS One-Zone	Single-AZ, 47 % less	Same perf, lower dur	“Non-mission-crit share”	—
EFS IA	File-level tiering	92 % cheaper	“Cold shared files”	Lifecycle 30 days
FSx Windows	Lift SMB share	AD-join, shadow copy	“Windows file server”	Vol 64 TB
FSx Lustre	HPC / ML	100 GB/s, mounts to S3	“High-perf scratch”	File sys 512 TiB

🌐 Networking & CDN

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
ALB	HTTP/S 7-layer	Path/host rules, WAF	“/api vs /img routes”	Listeners 50 • Rules 100
NLB	TCP/UDP 4-layer	Static IP, TLS offload	“Millions TPS”	TLS listeners 50
Gateway LB	Inline appliances	3rd-party firewall	“Deep packet inspect”	GWLB/region 20
VPCE Interface	Private AWS API	ENI in subnet	“PrivateLink KMS/S3”	50 / VPC

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
VPCE Gateway	S3/Dynamo only	Route-table target	“Private S3 bucket”	20 / VPC
Route 53 Simple	Single record	Round-robin	“Basic DNS”	Records/zone 10k
Route 53 Latency	Geo RTT	AWS Regions	“Send EU to eu-west-1”	same
Route 53 Failover	Active-passive	Health checks	“DR failover”	same
Route 53 Weighted	% split	Blue/green	“Shift 10 % traffic”	same
CloudFront	Global cache	310+ PoPs, Shield Std	“Static/dynamic global”	Dists 200
NAT Gateway	Outbound only	45 Gbps/AZ	“Private subnet updates”	NATs/AZ 5
AWS Outposts	On-prem AWS	Same APIs, Local SNS/SQS	“Low-latency to factory floor”	Racks/site 20
Local Zones	Metro edge compute	Sub-10 ms latency, shares parent Region	“Media workloads near users”	Zones/Region > 25
Wavelength	5G MEC for telcos	Runs in carriers’ 5G core	“Ultra-low latency gaming”	Zones/Region varies
Global Accelerator	Anycast edge IP	TCP/UDP, health-based failover	“Improve cross-Region latency”	Accelerators 20
Data-Transfer Pricing	Cost planning	Inter-AZ \$0.01/GB · Inter-Region \$0.02–0.09/GB · Same-AZ = free	“Cheapest path for traffic”	—



Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
RDS Single-AZ	Dev/test	No standby	“Lower cost, okay downtime”	DBs 40
RDS Multi-AZ	Prod HA	Synchronous standby	“Auto failover < 1 min”	same
RDS Read Replica	Scale reads	Async replication	“Read-scaling reports”	Replicas 5
Aurora Provisioned	High TPS	6-copy, 15 replicas	“> 5x MySQL perf”	Replicas 15
Aurora Serverless v2	Variable load	0.5–128 ACU scale	“Infrequent bursts”	ACU max 128
Dynamo On-Demand	Unpredictable	Pay per request	“Spiky IoT telemetry”	RCU 40 k
Dynamo Provisioned	Consistent load	RCUs/WCUs	“Steady traffic”	same
DAX Cluster	Micro-latency	In-mem cache	“Read heavy, ≤ 1 ms”	Nodes/cluster 10

🔒 Security & Identity				
Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
IAM	Access control	Users, roles, policies	Always	Users 5000
KMS CMK	Encrypt data	256-bit keys, FIPS	“Encrypt S3/EBS”	CMKs 1 000
Secrets Manager	Store creds	Auto-rotate w/ Lambda	“Rotate DB pwd”	Secrets 5 000
WAF Managed	OWASP rules	Pre-built vendor sets	“PCI compliance”	ACL rules 1 500
WAF Rate-Based	Throttle bad IP	100-2 M req/5 min	“Block brute force”	Rules 100
Shield Std	Default L3/4	Auto for all resources	“Basic DDoS”	automatic
Shield Adv	Enterprise L3/4	24×7 DRT, cost credit	“Mission-critical site”	1 000 resources

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
GuardDuty	Threat detect	ML on VPC/CT logs	“Detect crypto-mining”	Detector 1/Region
Service Control Policy (SCP)	Org-wide guardrails	Deny/Allow, no IAM bypass, evals <i>first</i>	“Block RDS create in dev OU”	SCPs/org 5 000
IAM Access Analyzer	Cross-acct exposure	Zelkova provable access	“Find public S3 buckets”	Analyzers 1/Region

Management & Monitoring

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
CloudWatch Metrics	Dashboards & alarms	Standard & custom metrics	“Scale on alarm”	Custom metrics 500 • Alarms 5 000
CloudWatch Logs Std	Active log search	Ingestion, Logs Insights	“Debug app logs”	Event size 256 KB
CloudWatch Logs Archive	Long-term logs	45 % cheaper, re-hydrate	“Store logs 1 yr+ cheap”	5 GB/query limit
AWS Config	Resource drift	Rules, packs	“CIS baseline”	Rules 150
Control Tower	Multi-acct landing zone	Guardrails (SCP + Config)	“Secure new org quickly”	OUs 300
AWS Organizations	Account mgmt	SCPs, billing	“Restrict region”	Accts/org 10 000
CloudTrail Lake	Searchable audit lake	SQL on 7-yr log store	“Query events w/out Athena”	Ingest 5 TB/region/mo
CloudTrail Org Trail	Central audit	One trail, multi-acct, multi-Region	“Compliance evidence”	1 per org
VPC Flow Logs – Enhanced	Deep packet insight	Basic / Sampled / Agent tiers	“Packet-level latency drill”	Flow logs 50
AWS Auto Scaling (Console)	Optimize fleets	Fleet Advisor, scaling plans	“Balanced cost & perf plan”	Plans/Region 50

Application Integration

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
SQS Std	High-throughput queue	At-least-once	“Buffer workload”	In-flight 120 K
SQS FIFO	Ordered queue	Exactly-once	“Preserve order”	FIFO TPS 3 K batch
SNS Topic	Pub/Sub push	Email, SMS, Lambda	“Fan-out alerts”	Subs/topic 12 500
EventBridge Default Bus	AWS events	90+ services	“Route AWS events”	Rules/bus 300
EventBridge Custom Bus	App/SaaS events	Schema registry	“SaaS integration”	Buses 1 000

Analytics & Big Data

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
Athena	SQL on S3	Pay per TB scanned	“Ad-hoc query data lake”	Timeout 30 m
Glue Crawler	Discover schema	Auto-catalog	“Catalog parquet”	Crawlers 100
Glue ETL Job	Transform data	PySpark, bookmarks	“CSV → Parquet”	Jobs 250
Kinesis Data Streams	Low-latency ingest	70 MB/s/shard	“Real-time clickstream”	Shards 10 000
Kinesis Firehose	Load to S3/Redshift	Auto batch/compress	“Ingest logs”	TPS 5 000/stream
EMR	Managed Hadoop/Spark	Spot clusters	“Huge Spark job”	Nodes 500
EMR Serverless	Spark SQL w/out cluster	Auto-scale slots	“One-off ETL”	Apps 100
QuickSight SPICE	Serverless BI	In-mem engine	“Exec dashboards”	Datasets 1 000

Developer Tools & DevOps

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
CodeCommit	Private Git repo	Encrypted, IAM	“AWS Git”	Repos 1 000
CodeBuild	Managed build	Docker, per-min billing	“Compile tests”	Concurrent 20
CodeDeploy EC2	Blue/green	AppSpec hooks	“Zero-downtime”	Instances 10 000
CodePipeline	CI/CD	Stages, cross-acct	“Automate deploy”	Pipelines 300
CFN StackSets	Multi-acct deploy	Org-wide	“Baseline 30 accts”	StackSets 100

Migration & Hybrid

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
DMS Task	Live DB move	CDC, hetero	“Oracle → Aurora”	Tasks 100
Snowball Edge	Offline TB–PB	80 TB, edge compute	“No fast link”	Devices 10
Snowcone	Portable edge	8 TB, rugged	“Remote field”	same
Snowmobile	Exabyte truck	100 PB trailer	“DC to cloud”	1 / Region
VPN	IPsec tunnel	1.25 Gbps	“Secure on-prem”	VPNs/GW 100
Transit Gateway	Hub multi-VPC	50 Gbps	“20 VPCs + on-prem”	Attach 5 000
Direct Connect	Dedicated fiber	1/10/100 Gbps	“Consistent 5 ms”	Links 50

Machine Learning

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
SageMaker Training	Train models	Spot, autoscale	“Train XGB 100 GB”	Jobs 250
SageMaker Inference	Real-time endpoint	Multi-model, autoscale	“Low-latency pred”	Endpoints 200

Option	When to Use	Key Features	Classic Exam Trigger	Top Quotas
SageMaker Notebook	Dev notebook	Jupyter + lifecycles	“Data scientist IDE”	Notebooks 10
Bedrock	GenAI API	Foundation models, RAG	“Generate content”	—
AI APIs	Pre-built AI	Rekog, Comprehend	“Detect faces”	TPS varies

🌐 Disaster-Recovery (DR) Patterns

Strategy	When to Use	Key Characteristics	Classic Trigger	RTO / RPO
Backup & Restore	Lowest cost, tolerant downtime	S3/Glacier backups, IaC rebuild	“Accept hours-day downtime”	RTO 24 h • RPO 24 h
Pilot Light	Core services always up	Minimal DB/AMI idling	“Critical DB up, app off”	RTO < hrs • RPO < hrs
Warm Standby	Scaled-down full stack	Small fleet in DR region	“App at 10 % in DR”	RTO < 1 h • RPO < min
Multi-Site / Hot-Standby	Active-active	Route 53 latency, Aurora Global	“Sub-sec failover”	RTO < mins • RPO ≈ 0

Backup → S3/Glacier, CFN • Pilot Light → small RDS + AMI • Warm Standby → ASG min-size ↓ • Multi-Site → Global Accelerator, Aurora Global ...

⌚ Shared-Responsibility Rule-of-Thumb

AWS → “OF” (⚙️ Facilities, HW, Network, Hypervisor) You → “IN” (🔒 Data, IAM, OS patches, App code)

Shared Responsibility Model – “OF / IN” Cheat Table

Responsibility	Easy Mnemonic	What it really covers	Example exam take-aways
AWS is responsible for everything “OF the cloud”	OF = Orange-shirt techs (facilities) + Foundational infra	<ul style="list-style-type: none"> Physical data-centers & perimeter security Power, cooling, fire suppression Global network backbone, fiber, routers, switches 	<ul style="list-style-type: none"> - AWS swaps failed disks or servers. - AWS patches Xen/Nitro CVEs. - AWS maintains AZ redundancy.

Responsibility	Easy Mnemonic	What it really covers	Example exam takeaways
You are responsible for what runs “IN the cloud”	IN = Identity / Nitty-gritty data	<ul style="list-style-type: none"> • Virtualization layer (hypervisor, Nitro) • Managed service infrastructure (RDS hosts, S3 storage fleet) <ul style="list-style-type: none"> • Data encryption & retention strategy • IAM users, roles, MFA, keys & secrets • Guest OS & package patching (EC2) • Application code & business logic • VPC design, SGs, NACLs, routing • Compliance mapping, CloudTrail & log retention 	<ul style="list-style-type: none"> - You enable S3 default encryption & bucket policies. - You patch Ubuntu on EC2 (or use SSM Patch Manager). - You decide if CloudTrail is multi-Region & sent to a secure bucket.

🔑 Acronym Key

Acronym	Meaning
ACU	Aurora Capacity Unit
ALB	Application Load Balancer
AMI	Amazon Machine Image
ASG	Auto Scaling Group
AZ	Availability Zone
BYOI	Bring Your Own IP
CDC	Change Data Capture
CFN	AWS CloudFormation
CMK	Customer-Managed KMS Key
DAX	DynamoDB Accelerator

Acronym	Meaning
DLQ	Dead-Letter Queue
DR	Disaster Recovery
EBS	Elastic Block Store
EC2	Elastic Compute Cloud
ECR	Elastic Container Registry
ECS	Elastic Container Service
EFS	Elastic File System
ENA	Elastic Network Adapter
ENI	Elastic Network Interface
EOL	End of Life
EOT	Encryption at Rest
FaaS	Function-as-a-Service
FIS	Fault Injection Simulator
HA	High Availability
IAM	Identity & Access Management
IRSA	IAM Roles for Service Accounts (EKS)
KMS	Key Management Service
MFA	Multi-Factor Authentication
NAT	Network Address Translation
NLB	Network Load Balancer
OU	Organizational Unit

Acronym	Meaning
RCU / WCU	Read / Write Capacity Unit (DynamoDB)
RDS	Relational Database Service
RI	Reserved Instance
RPO	Recovery Point Objective
RTO	Recovery Time Objective
S3	Simple Storage Service
SCP	Service Control Policy
SSM	Systems Manager
TGW	Transit Gateway
VPC	Virtual Private Cloud
VPCE	VPC Endpoint
WAF	Web Application Firewall
