



AWS Big Picture for Beginners

AWS overview, Overview of Amazon Web Services whitepaper, as of 2026 | What the cloud is, service models, deployment models, how an app maps to services, what AWS runs for you, control vs data plane, how AWS bills, service families

AWS **Beginner** **Cloud basics** **CLF-C02 D1**

☁ What AWS is

Amazon Web Services

×1

Overview
Rent computers, storage and ready-made software services by the second or by the request, over the internet, instead of buying hardware.

×10

Close up
Everything is an API call, signed with your credentials:

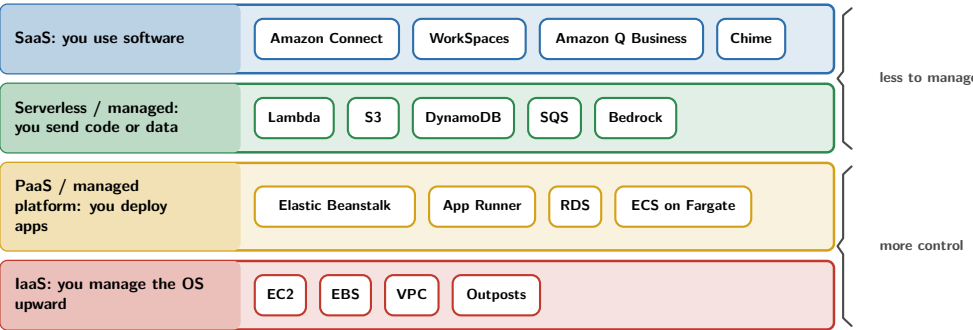
- the console, the CLI, SDKs and IaC tools all call the same APIs
- a resource gets an ARN (Amazon Resource Name)
- IAM decides who may call which API on which resource

×100

Under the microscope
Services are regional by default, built on isolated zones; you assemble them like building blocks.

- control plane creates resources; data plane runs them
- AWS secures the cloud, you secure what you put in it (shared responsibility)

Service models: who manages what

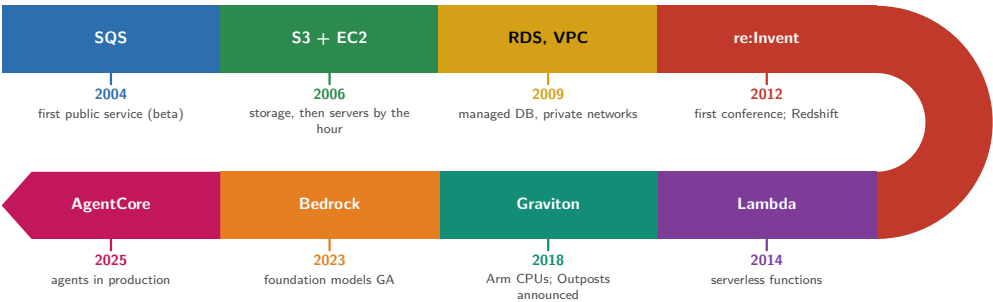


Need	On premises	AWS service	Why this one
Domain name	registrar + DNS server	Route 53	DNS + health checks, 100 % SLA
Fast delivery, HTTPS	CDN contract	CloudFront + ACM	edge caching, free public certificates
Web servers	rack servers	EC2 in an Auto Scaling group behind an ALB	scale with load, survive an AZ loss
Database	DB server + DBA	RDS (Multi-AZ) or Aurora	patching, backups, failover managed
File uploads	NAS	S3	11 nines durability, pay per GB-month
Background jobs	cron box	SQS + Lambda, Event-Bridge Scheduler	no idle servers

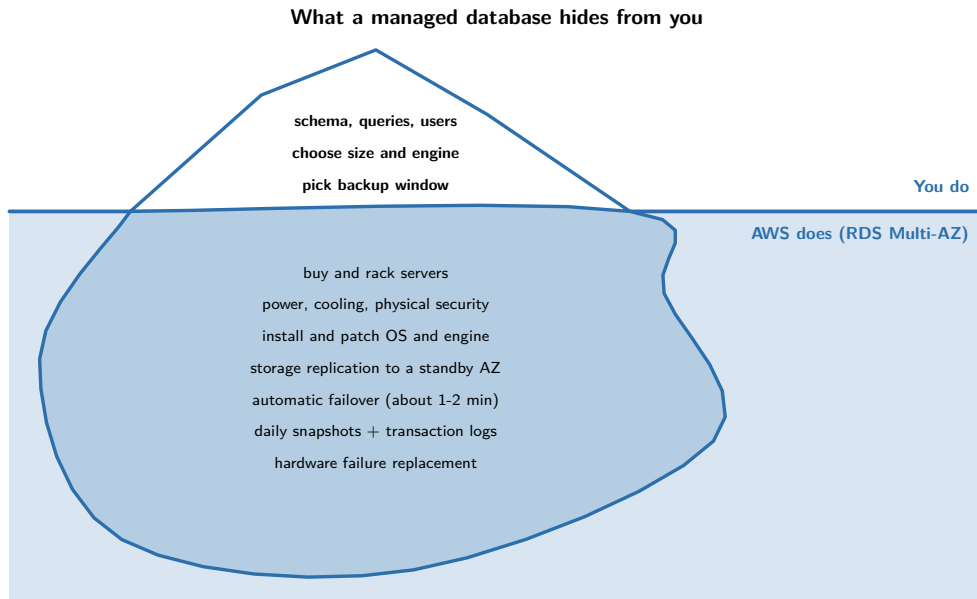
Logs, metrics, alarms	monitoring server	CloudWatch	built in, per-metric pricing
Who can do what	Active Directory groups	IAM Identity Center + IAM roles	short-lived credentials

A beginner web app, mapped to AWS services

AWS milestones



What you manage vs what AWS runs



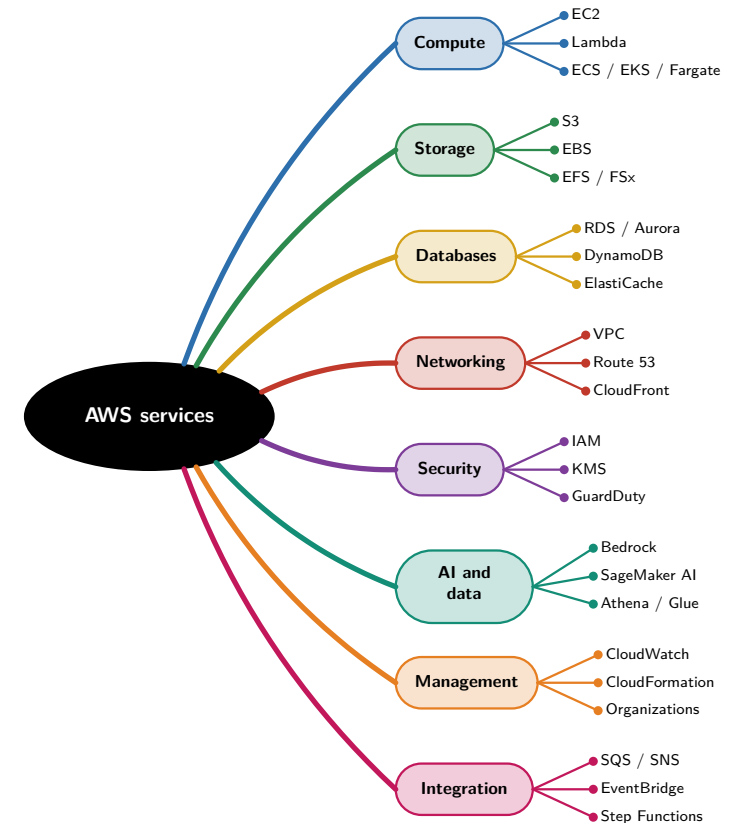
Deployment models	How AWS bills (three principles)
Cloud (cloud-native): everything on AWS	Pay as you go: per second (EC2 Linux, 60 s minimum), per request, per GB-month
Hybrid: on-premises + AWS linked by VPN, Direct Connect, Outposts	Save when you commit: Savings Plans and Reserved Instances (1 or 3 years)
On-premises (private cloud): your own data centre, virtualised; AWS only via Outposts	Pay less by using more: tiered prices (S3, data transfer out) and volume discounts across an organisation
Multi-cloud: AWS + Azure or Google; harder to secure and operate, chosen for regulation or acquisitions	Inbound data transfer is free; outbound to the internet is billed per GB

Control plane vs data plane — Creating a load balancer is control plane; the load balancer forwarding requests is data plane. Design recovery so it does not need control-plane calls (pre-provision capacity), because control planes are less available.

Shared responsibility, one line — AWS: security OF the cloud (facilities, hardware, hypervisor, managed-service software). You: security IN the cloud (data, IAM, network rules, OS patches on EC2, encryption choices). Taught in depth in CLF-C02 domain 2.

Region-first thinking — Almost every resource is created in one region; the console, CLI and bills are per region (sheet 02).

Service families at a glance



💡 Reading service names

"Amazon X" usually names a service you use directly (Amazon S3, Amazon EC2); "AWS X" usually names a utility or management service (AWS Lambda is the famous exception, AWS Config, AWS Backup). The prefix carries no technical meaning. The services atlas chapter covers every family with look-alikes.

Buy a server or rent one? (illustrative prices)

Y

A test server is needed 10 h a day, 22 days a month, for 3 years. Compare buying it with renting an equivalent on-demand instance.

Given: B = 6,000 USD purchase + R = 1,800 USD per year to run it (power, space, admin share); p = 0.20 USD per hour on demand (illustrative, check the EC2 pricing page); u = 10 h × 22 days × 12 months = 2,640 hours used per year; y = 3 years

Y

Step 1: What does owning cost?

$B + R \times y = 6,000 + 1,800 \times 3 = 11,400$ USD
you pay for the box even when it is idle at night

T

Y

Step 2: What does renting it only when used cost?

$p \times u \times y = 0.20 \times 2,640 \times 3 = 1,584$ USD
stopped instances do not bill compute (only storage)

T

Y

Step 3: And renting it 24/7?

$0.20 \times 8,760 \times 3 = 5,256$ USD
still cheaper here, but the gap shrinks

T

Y

Step 4: When would buying win?

steady 24/7 use for years at high utilisation
and even then commitments (Savings Plans) cut cloud prices

T

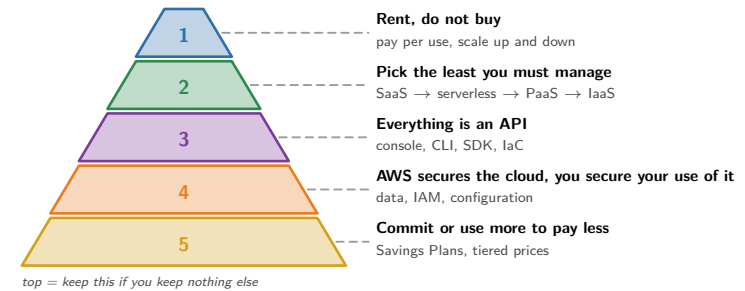
Renting on demand only during working hours costs about 1,584 USD vs 11,400 USD owned: an 86 % saving

T

Check: Variable cost (OpEx) replaces up-front capital (CapEx); the saving comes from not paying for idle hours. Add EBS storage (about a few USD per month) for a complete estimate.

Recap and self-test

Statement	True	False
1. On AWS you never manage an operating system → on EC2 (IaaS) you patch the OS; on Lambda or RDS AWS does	☐	☒
2. Inbound data transfer from the internet is free → outbound to the internet is billed per GB	☒	☐
3. Lambda bills while no request arrives → per request and per ms of duration; zero traffic = no compute bill	☐	☒
4. The console and the CLI call the same APIs → both sign HTTPS requests and land in CloudTrail	☒	☐
5. AWS is responsible for your S3 bucket permissions → configuration is the customer's side of shared responsibility	☐	☒
6. Hybrid cloud can use Outposts → AWS racks in your data centre, managed from a region	☒	☐



Q1 IaaS, PaaS or SaaS: Amazon EC2?

A IaaS: you manage the OS, runtime and app on a virtual server.

Q2 Which service model is Amazon RDS closest to?

A PaaS / managed service: AWS runs the OS and database engine, you manage schema, data and access.

Q3 Name the three AWS pricing principles.

A Pay as you go; save when you commit; pay less by using more (tiers, volume).

Q4 Which is cheaper for intermittent workloads: buying servers or on-demand cloud?

A On-demand cloud: you stop paying for compute when it is stopped.

Q5 Control plane or data plane: an S3 GetObject call?

A Data plane; CreateBucket is control plane.

Q6 Which deployment model connects a data centre to AWS?

A Hybrid (VPN, Direct Connect, Outposts, Storage Gateway).

Q7 Which AWS service was the first one launched publicly?

A Amazon SQS (beta 2004); S3 and EC2 followed in 2006.

Q8 Who patches the database engine of an RDS instance?

A AWS, during the maintenance window you choose.

Q9 What is serverless in one sentence?

A No servers to provision or patch; scales automatically, often to zero, billed per request or duration.