

Lesson 03 — The Cloud, Demystified

AWS, GCP, Azure — what they actually sell, and why every team has a bill.

IT Landscape

Module 1

What "the cloud" is, in one sentence

Renting computers, storage, and services from someone else's data center — by the minute.

That's it. No mystical fog. Just **somebody else's machines, billed by usage.**

Who runs "the cloud"?

The **big three** hyperscalers:

- **AWS** (Amazon Web Services) — ~31% market share.
- **Microsoft Azure** — ~25%.
- **Google Cloud** (GCP) — ~12%.

Plus runners-up: **Oracle Cloud**, **Alibaba**, **IBM**, **Cloudflare**.

Note: share figures shift annually — see [refresh-checklist.md](#).

What they sell, layer by layer

The stack

- **SaaS** — finished apps
Gmail, Slack, Figma
- **PaaS** — managed building blocks
databases, queues, runtimes
- **IaaS** — raw infrastructure
compute, storage, network

Different teams care about different layers.

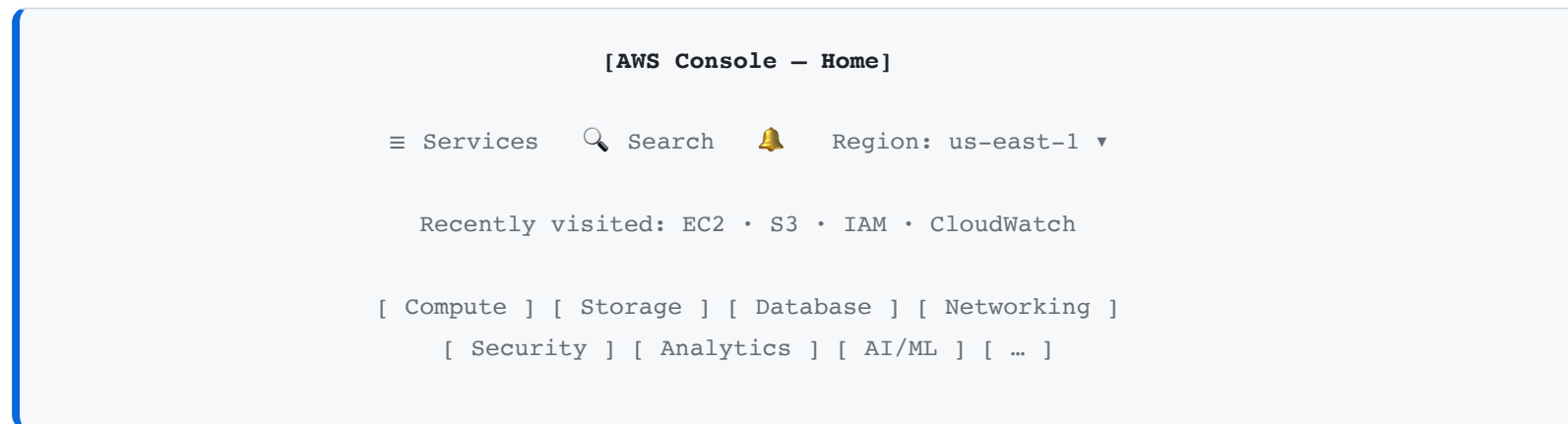
An ops engineer lives in IaaS. A backend dev lives in PaaS. Everyone uses SaaS.

The flagship products

Provider	Compute	Storage	Database	Functions
AWS	EC2	S3	RDS	Lambda
GCP	Compute Engine	Cloud Storage	Cloud SQL	Cloud Run
Azure	Virtual Machines	Blob Storage	Azure SQL	Functions

Don't memorize. **Recognize.** You'll meet these names in every job listing.

What the console looks like



Hundreds of services in one menu. **Most teams use 5–10.**

Refresh: screenshot subject to refresh — see [refresh-checklist.md](#) L03.

The pricing model that surprises everyone

- By the **second** (or **millisecond** for Lambda).
- By the **GB-stored** — per month.
- By the **GB-transferred out** (egress!).
- By the **API call**.

You can leave one EC2 instance running and burn \$200 in a month without noticing.

Free tiers exist

Provider	Free for	Plus
AWS Free Tier	12 months	Always-free tier
GCP Free Tier	90 days + \$300 credit	Always-free tier
Azure Free Account	12 months + \$200 credit	Always-free services

Cap = enough to **learn**. Not enough to host a real product.

"Cloud-native" means...

Cloud-native

Built **for** cloud:

- Auto-scaling
- Ephemeral storage
- Managed services everywhere
- Pay only when running

Lifted in

An old app moved **into** cloud VMs:

- Still behaves like on-prem
- Gets the bill, not the elasticity
- "Lift-and-shift"

Most new companies are cloud-native. Most enterprises are mid-migration.

Where the cloud is going in 2026

- **AI services baked in** — AWS Bedrock, GCP Vertex AI, Azure AI Foundry. The cloud is now also an AI-model marketplace.
 - **More "serverless" / managed everything** — fewer VMs, more "give us your code, we'll run it".
 - **Multi-cloud reality** — most companies use 2+ providers, intentionally or accidentally.
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Why this matters to non-IT readers

This is where **the bill** lives.

- Cloud cost is now a **top-3 line item** in many companies.
- "FinOps" (Cloud Financial Operations) is a real job title.
- Even non-engineers in the org get pulled into cloud-cost conversations.

Finance, procurement, product — all now read AWS invoices.

Recap

- **Cloud = rented computers**, billed by the second.
- **Three big providers** (AWS, Azure, GCP) plus niche ones.
- **Pricing surprises matter** — egress, idle resources, cross-region.

Coming up: Plan B / Module 2 — How software is actually built.

