🏢 3. Cloud Deployment Models – Full Explanation

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Cloud **deployment models** define **where** and **how** your cloud resources are hosted. There are **4 main types**, and each one has its own use case depending on **security**, **cost**, and **control** needs.

1️⃣ Public Cloud (☁️ Most Common – e.g., AWS)

- **Owned & operated** by third-party providers like AWS, Azure, Google Cloud
- Accessible to **anyone** via internet
- You rent compute, storage, and networking

☑️ **Example Use**: Hosting websites, web apps, mobile backends

📌 **AWS Services**: EC2, S3, RDS, Lambda, CloudFront

Pros:

- Low cost to start (no hardware)
- Global availability
- Scalable and flexible

Cons:

- Less control over hardware
- Shared environment (multi-tenant)

2️⃣ Private Cloud (🏢 In-House or Hosted)

- Cloud infrastructure **exclusively for one organization**
- Can be hosted on-premises or by a private third-party provider

☑️ **Example Use**: Banks, governments, or regulated industries needing full control

Pros:

- High security
- Full control & customization

Cons:

- Expensive
- Requires in-house IT expertise

3️⃣ Hybrid Cloud (🔁 Best of Both Worlds)

- A mix of **public and private cloud**
- Connects on-premises infrastructure with cloud services

☑️ **Example Use**: Hospitals store patient data privately but run their website on AWS

📌 **AWS Services**: AWS Direct Connect, Storage Gateway, VPC

Pros:

- Flexible
- Security for sensitive data + scalability for public apps

Cons:

- Complex to manage
- Integration challenges

4️⃣ Community Cloud (👥 Shared Between Orgs)

- Shared by multiple organizations with similar goals (e.g., compliance, security)
- Managed internally or by a third party

☑️ **Example Use**: Universities sharing research platforms, Government agencies sharing secure services

Pros:

- Cost shared among members
- Meets industry-specific needs

Cons:

- Less common

- Requires cooperation among all members