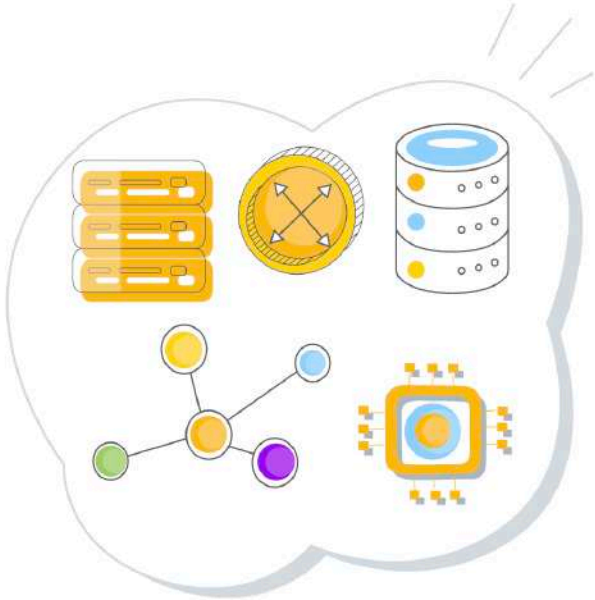
Cloud Computing Model: Public Cloud

Public Cloud: Host everything on the cloud providers infrastructure

- **No Maintenance**: You do not need your own data center anymore
- **No Capital Expense (No CapEx)**: Pay as you go (OpEx)
- **Unlimited Scalability**: Add resources when needed

Shared Responsibility:

- **Cloud Provider**: Owns hardware, handles failures & security of the data center
- **You**: Focus on your application, configuration and data

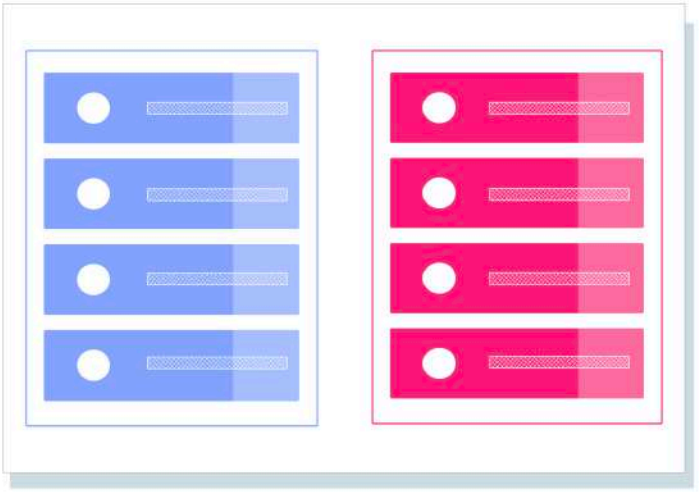


Public Cloud

Cloud Computing Model: Private Cloud

Private Cloud: You host everything in your own data center

- **Complete Control**: Over security and hardware
- **High CapEx**: Requires huge investment ahead of time (Hardware, Space, Cooling, ..)
- **Maintenance**: You pay for staff to manage the infrastructure



Data Center (Private Cloud)

Slow Scaling: Adding capacity takes weeks or months (purchasing hardware)

Cloud Computing Model: Hybrid Cloud

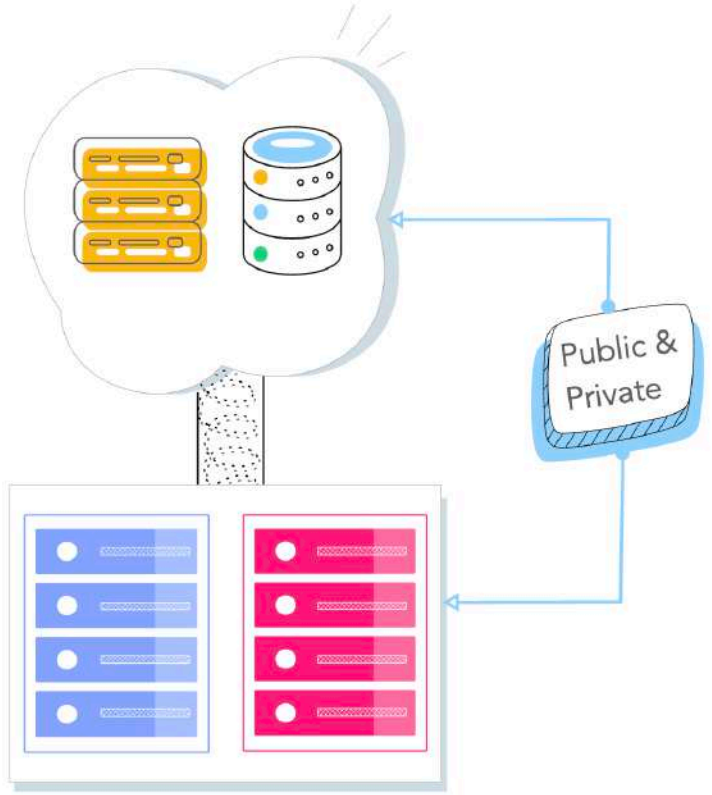
Hybrid Cloud: Public + Private Clouds

- **Example**: Connect an on-prem application to a cloud database
- **Best of Both Worlds**: Use public for scale, private for compliance
- **Flexibility**: Go on-premises or cloud based on specific requirement

Connectivity: Requires secure connection between on premises and cloud

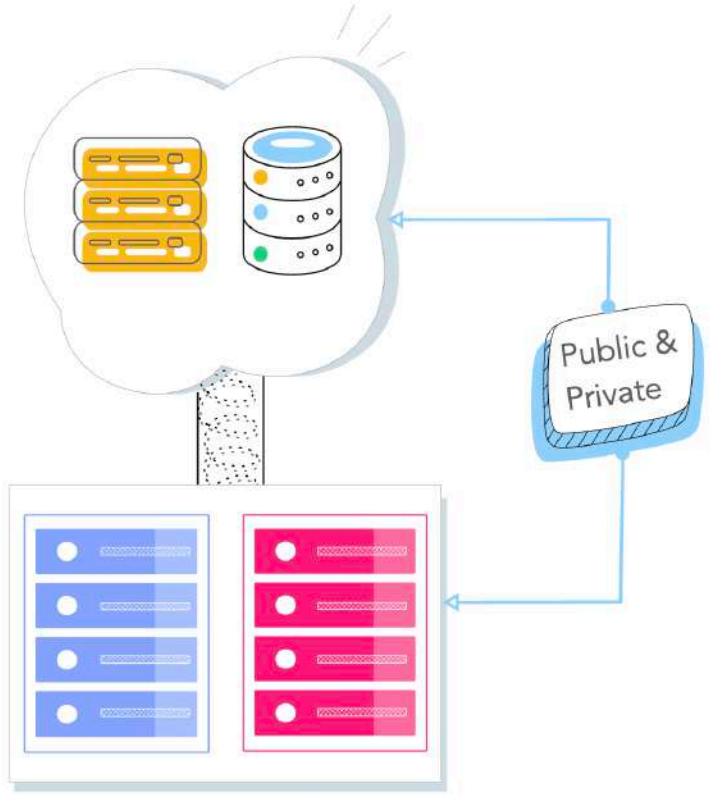
Trade-off: Increases complexity

- Needs management of public and private cloud



Cloud Computing Model: Multi Cloud

Multi-Cloud: Using multiple public cloud providers (e.g., Google Cloud + AWS + Azure) with/without on-premise infrastructure



Why do this?:

- **Avoid Vendor Lock-in**: Don't depend on a single provider
- **Best of Breed**: You get a lot of choice
- **Reliability**: Failover to another cloud in case of failure

Challenge: Very high complexity

- Skills, Networking, security and management

Cloud Deployment Models - Scenarios

Scenario	Solution
Startup: You want to launch quickly with zero upfront cost and no hardware management	Public Cloud
Banks/Government: You have strict laws requiring data to never leave your physical building	Private Cloud
Modernization: You want to keep your secure mainframe database on-premise but build a new mobile app in the cloud	Hybrid Cloud
Redundancy: You want to ensure your app stays online even if Your Cloud Provider has a global outage	Hybrid-Cloud or Multi-Cloud (GCP + AWS + Azure)
Burst Traffic: You host an e-commerce site on-premise but need extra servers only for Black Friday	Hybrid Cloud (Cloud Bursting)