



What is hybrid cloud computing?

(Hybrid) cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability.

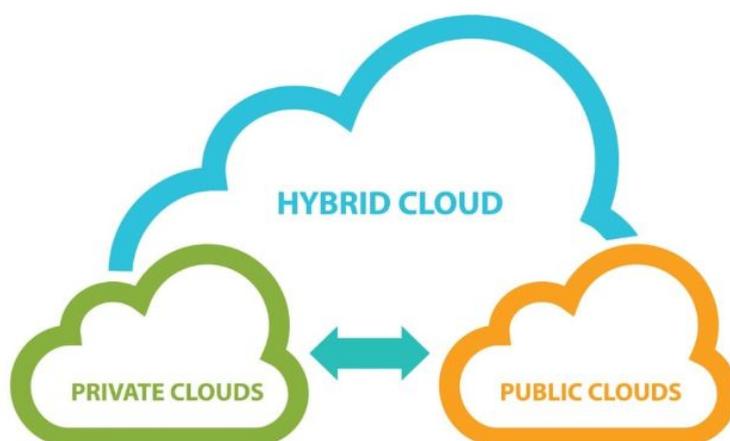
National Institutes for Standards in Technology (NIST)

While a Hybrid Cloud can take many forms; in essence it means managing two (or more) disparate cloud environments (say private & public) as one, or having management tools in place that let the two (or more) environments be managed and appear as one single environment.

Hybrid cloud uses a mix of on-premises, private cloud together with third-party, public cloud services; with orchestration between multiple platforms thus allowing workloads to move between the various cloud environments as computing needs; thus giving businesses greater flexibility and more deployment options.

A cloud is hybrid when;

- You extend an internal web server (that has “burst capacity”) into a cloud service during the Christmas sales period, managed as a single instance by the company, and with customers seeing no difference.
- A company with a global presence, hosting a major global sporting event, managing the master service internally; but replicates to multiple instances globally managed as one, so consumers of the event/service get fast local access and low latency.
- When an internal business process is designed “as-a-service” enabling it to connect with multiple cloud environments as though they were just one environment.



A cloud is not hybrid when;

- If you utilise only multiple public cloud services via orchestration (this is multi-cloud)
- If developers in a company use a public cloud service to prototype a service that is disconnected from the companies private cloud or its data center.
- Using a SaaS application for a project but that data never moves into the company's data center.

Orchestration of the hybrid cloud

Cloud orchestration provide a means for a cloud service customer to manage the deployment and operation of applications and associated datasets across hybrid cloud (most orchestration services also support multi-cloud environments). Cloud orchestration solutions offer greater flexibility and simplified operations to securely create, deploy, and operate applications and services across hybrid clouds and increase the speed of delivery thus providing a smooth, process driven, error-free delivery together with continuous compliance.

Hybrid cloud challenges

Despite its benefits, hybrid cloud computing can present technical, business and management challenges.

- It requires API compatibility, especially across disparate cloud providers.
- It needs solid network connectivity and has the potential for connectivity issues,
- You can suffer from service-level agreements (SLAs) breaches.
- You may have security concerns if sensitive data lands on public cloud servers.
- There can be budget concerns around overuse of storage or bandwidth and proliferation of mismanaged images.
- There is a need for good management of the information flow, especially with rapidly changing data requiring synchronisation.
- There can be a complex mix of policies, permissions and limits that must be managed (and may vary) across disparate cloud providers.

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