

HYBRID CLOUD

for the modern enterprise

What hybrid cloud is • Why you should care • What you need to know • **How IBM Hybrid Cloud can help you meet challenges today and grow tomorrow**



Cloud is about how you engineer your services, not about where they live and operate[†].

If you mostly agree with the opinion that "software is eating the world", expressed by Marc Andreessen in the Wall Street Journal about a decade ago, then you also understand the value of modern software product and engineering practices such as Agile, DevOps, and, of course, cloud-native software architectures and development.

When we say cloud, we mostly mean cloud-native

In fact, cloud-ready and, even more-so, cloud-native software and services are a critical prerequisite of a successful digital transformation journey.

This is because cloud-native development is *the* approach to quickly building and updating apps while improving quality and reducing risk. It is arguably the best way to build and run responsive, scalable, and resilient apps anywhere you want- in public, private, or hybrid clouds.

As things stand, the immense majority of new enterprise applications and modernization projects are being designed for and delivered in cloud-ready or cloud-native architectures.

[†]. Paraphrasing "Cloud is about how you do computing, not where you do computing" by Paul Maritz.



More and more major businesses and industries are being run on software and delivered as online services — from movies to agriculture to national defense. — Marc Andreessen

For example, a recent (2021) IDC study predicts a massive move "to containers in three years where 80% of workloads will shift to or be created with containers and microservices."



Hybrid cloud is here to stay

Furthermore, according to most analysts, anywhere from 65% to 80% of enterprises deploy or intend to deploy these new and modernized apps on hybrid cloud configurations.

In essence, hybrid cloud architectures divide related workloads and resources between both public and on-prem clouds to provide digital services to an organization's customers and other users, and stakeholders.



"The difficult part in making a hybrid car wasn't sticking a battery and an electric motor into a petrol-powered car. Getting the two systems to work seamlessly and harmoniously was the critical innovation. That's what made the Prius a true hybrid and a success."

—Gregor Hohpe

Main drivers for Hybrid in the enterprise

There are many important drivers for choosing hybrid cloud architectures, mainly based upon factors such as:

- First of all, it's practically **impossible for an enterprise to modernize or migrate all applications** to the public cloud. Even if that is the intent, any given organization will spend significant time in a "hybrid-land" of sorts.
- More importantly, there are multiple use cases, as well as business **requirements and constraints that necessitate creating and running hybrid** cloud applications and services. The major grounds behind such cases are usually security and compliance factors, a need for performance not satisfied by public cloud alone, financial constraints or goals, operational elements, and for strategic flexibility reasons.
- Finally, not all applications or data can, or should, be moved to the public cloud. Furthermore the growing trend for "repatriation" of workloads back to on-prem cloud reminds us that **being able to "go back" is super important**. Investing in hybrid cloud architecture and operations is a valid approach to having an "exit strategy" for apps and services.

Use cases that benefit from hybrid cloud

- Modern applications or data products[†] that need low-latency access and processing that are viable only at a local tier.
- Requirements or specific benefits of having an application hosted locally, like in modernization, where it may not be possible or desirable to keep a legacy app on public cloud.
- Consolidation of large databases that are in constant heavy use, and may therefore not be financially or operationally viable on the public cloud.
- Co-location of legacy and cloud-native applications or data products with important symbiotic relations, and also benefit from lower latency, increased security, or other hybrid value.
- Apps and services based on blockchain that need encryption at all levels of operation (i.e. at rest, in transit, and in use).
- DevSecOps or DataOps infrastructure and operations that require particularly high levels of security and governance.
- Backup and IT continuity reasons, where an organization needs to have a second site to protect itself from cyber-attacks, large scale errors. and disasters.

[†]. Data based apps or services that support decision making or help provide value to customers. Such products can range from executive dashboards to AI driven assistants.



Fail fast, succeed faster.

The right hybrid cloud setup offers the opportunity to fail quickly, which in turn allows for easier and cheaper experimentation. This is because you have the **flexibility to move your apps, data and services to a private or to another public cloud** if and when needed. Overall, it helps improve your agility and time-to-market for new features and products.

On-prem is dead, long live on-prem!

On-prem infrastructure is an important component of a hybrid cloud plan. It remains the home of sensitive apps and data that are essential to businesses' wellness and security and wellness, and it is also rapidly growing into a launchpad and a hub for the creation and delivery of new cloud-native services and data products. However, modern on-prem infrastructure also has to meet a few essential hybrid-cloud challenges such as:

- Expanding attack surfaces and cyberthreats, rapidly growing data –especially from customers– and mounting regulations mean that our hybrid cloud on-prem infrastructure needs to **support much higher levels of security and governance.**
- Hybrid clouds can quickly become unsustainable financially if we continue investing in outmoded hardware and virtualization paradigms. It's important to be able to do more with less, to safely consolidate workloads without losing performance, and to **show real benefits to TCO and financial flexibility.**
- Digital transformation includes modernization, new apps, and data projects, which means that engineering and data science teams need to have easy, quick, and secure access to core resources, and they also have to be able to **use modern engineering practices, such as DevOps, everywhere.**
- Reliability and resilience was always key for mission-critical applications in the enterprise, but it is constantly becoming important in the cloud era, for some obvious reasons (i.e. to mitigate revenue loss from downtime), but is also vital from an operations point of view as it can decrease engineering resource waste and cost.
- Data-driven decision making and products are becoming increasingly important to the enterprise, data volumes and sources are expanding rapidly, and the need for model and information governance is growing. This means that modern on-prem infrastructure needs to be engineered for AI.

“I thought data centers were going away.”

As shown previously, a hybrid cloud approach is a given for most enterprises, which means that on-prem and private cloud infrastructure is going to stick around for the foreseeable future. In fact most analyst and industry reports show that investments in private cloud and on-prem hardware and software are, at the very least, expected to remain steady or grow modestly in the coming years (public cloud investment is growing much faster).

The good news is that you can decrease the financial, operational, and environmental impact of your on-prem infrastructure tangibly, by turning to hybrid cloud solutions – including servers and storage– from IBM.

IBM – Indicative real-world consolidation benefits

5yr. POWER9 vs. x86 TCO for european telco

-39% TCO

License cost savings due to consolidation

-74% cost

Energy & space savings at gene research center

-92% energy

Power Systems

Performance per core vs x86 with same apps

4x more

Average Java workloads vs matching x86

-60% TCO

Average space savings vs matching x86

-75% space

LinuxONE

The keys to reduced on-prem TCO

Consolidation — IBM Power and LinuxONE servers can run more workloads per CPU, which means you end up requiring fewer systems than the x86 servers they replace. This translates into reduced hardware and maintenance cost, lower software licensing, and an overall decrease in operating expenses.

Footprint — Floor space and energy consumption are important drivers of on-prem cost. In fact, IDC estimates that “17.6% of the datacenter operating budget is spent on electricity.” IBM Power Systems and LinuxONE servers offer amazing average energy savings (*up to 60% per year*), and they can save up to 75% of the floor space you need (which translates to corresponding savings in rent and general operating expenses).

Versatility — IBM Power Systems and LinuxONE can securely run mission-critical, legacy, cloud-native on the same system, which means that you reduce distributed system and app modernization complexity through (a) drastically improved hardware resource utilization, (b) simpler DevOps environments and pipelines, and (c) flexible scale-up, scale-out, and cloud burst options.

Continuity — To put it simply, IBM is arguably the leader in what is known as RAS (reliability, availability, serviceability), which translates into fewer and shorter scheduled and unscheduled “stops”, and therefore, into lower overall costs for your enterprise IT. It also means that you can reassign your engineers to tasks and projects that have a larger impact on your organization.



Performance Technologies helps you design and implement IBM hybrid cloud on-premise infrastructure that redefine what you can achieve in terms of agility, cost and operational efficiency, sustainability, and security. IBM Power and LinuxONE systems are an ideal platform for modernization and cloud-native projects for the hybrid enterprise.



 **CLOUD COMPUTING
FOR TRANSFORMATION**

Contact us at info@performance.gr
to start a conversation about how
IBM Hybrid Cloud can help your
organization in it's transformation
projects and strategy.

Better yet, call us at 99 47 100.

