KUMORION

Five reasons your company should consider the private cloud

With companies of all sizes focusing to the public cloud, many risk overlooking the strategic advantages of the private cloud. This whitepaper examines the benefits of rethinking your company's cloud approach.

Executive summary

"Cloud first" is the IT mantra of our times. The promise of lower costs, zero maintenance and instant scalability is driving companies of all sizes towards the big three hyperscale cloud providers: Amazon Web Services, Microsoft Azure and Google Cloud.

For CIOs under pressure to accelerate digital transformation while keeping spend under control, the public cloud seems an obvious destination – especially when everyone else is doing the same.

But have companies been following the crowd, rather than the business case?
In the rush, are the advantages of the private cloud being overlooked?
Should companies consider hybrid strategies that combine the strengths of both?

At Kumorion, we believe the answer to all these questions is yes. The public cloud has undeniable benefits, but it is not a one-size-fits-all solution. The private cloud delivers advantages in areas where enterprises should not compromise.

Drawing on our 13+ years of work with Nokia – which operates one of the world's largest private cloud environments – **we outline five key reasons the private cloud warrants your attention.** This reasoning is reinforced by industry examples and market data that demonstrate how the private cloud is a critical element of a balanced cloud strategy.

The case for the private cloud

1. The private cloud often has a lower total cost of ownership

> **Public cloud pricing often escalates with scale, while private cloud costs can be controlled. Open source plays a key role here – cutting fees and preventing vendor lock-in.**

One of the main arguments made by the hyperscale providers is that the public cloud offers a quick and cheap path to digital transformation. At first, this may well be true. It's easy for companies to get started, with limited upfront capital costs. Hyperscalers may also offer "discounts" for committing to a set period of time – typically one to five years.

But the cost dynamics change once sign-up incentives expire and workloads grow. Enterprise applications often run continuously, with high-capacity requirements. Public cloud pricing can quickly become significantly more expensive than anticipated. Gartner has warned of this, noting widespread dissatisfaction as cloud bills exceed expectations.

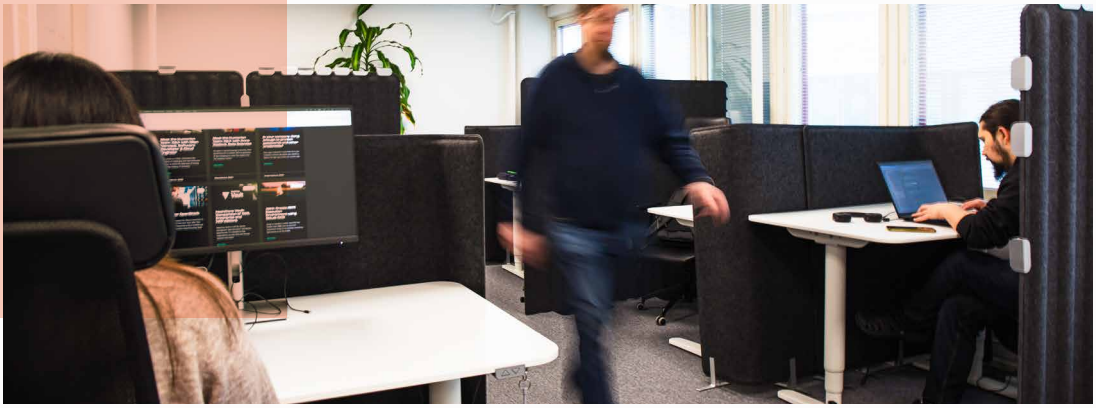
By contrast, the cost of the private cloud can be controlled as a company scales. Infrastructure can be optimized for always-on, high-capacity applications – delivering efficiencies that reduce overall spend. The use of open-source technologies cuts licensing fees, while the costs of hardware, electricity and data centers can be amortized each year. Together these factors can often result in a lower total cost of ownership.

Nokia's experience illustrates this point. Running one of the largest private cloud environments in the world – with Kumorion's support – the company says its total cost of ownership is approximately 50% lower than an equivalent public cloud model.

> **"Cost is the fundamental driver for us. We would not be using the private cloud if it wasn't cheaper. We handle everything – including the data centers, electricity, support, security, etc. – so we have a very good understanding on the total cost of ownership," explains Janne Heino, Head of Nokia Services Cloud Architecture.**

Nokia is not alone in realizing these benefits. Another real-world example is Dropbox, which shifted much of its storage away from AWS and onto its own infrastructure. The move delivered USD 74.6 million in savings over two years.

Smaller players are seeing the same benefits. Consider Yellowbrick Data, a startup that migrated its development and testing workloads off the public cloud and onto a private Kubernetes cluster. The company slashed its annual cloud expenses from USD 6 million to around USD 2.1 million.

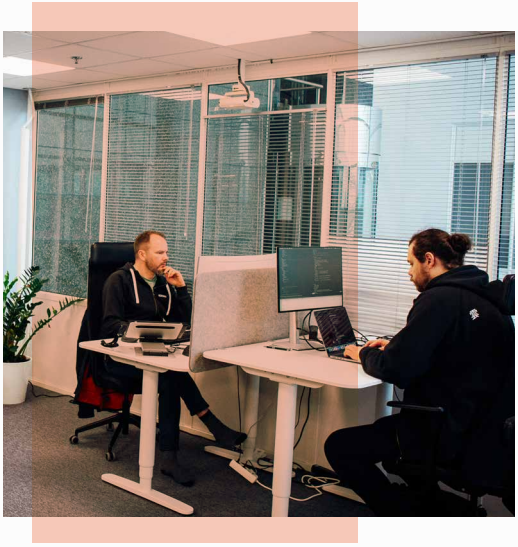


Open-source software is central to driving down costs and maintaining flexibility in the private cloud. By building on open technologies, enterprises can avoid licensing overheads and reduce their exposure to vendor lock-in. Public cloud providers often promote portability between platforms, but in practice migrations are complex and expensive.

2. The private cloud enables security on your own terms

Security is a defining factor in every cloud decision. High-profile breaches have shown even the largest public cloud environments to carry risks that can be avoided in the private cloud.

Security is one of the biggest concerns around the public cloud. The risk of placing sensitive data in the hands of third-party cloud providers has been underscored by multiple breaches and leaks.



In 2019, a misconfigured firewall at U.S. financial services company Capital One exposed the personal data of more than 106 million customers. Some years later, Turkish airline Pegasus left 6.5 terabytes of passenger and flight data open to the public through an unsecured AWS S3 bucket. Microsoft Azure has faced similar issues, including a 2020 incident exposing 26 million personal CVs.

While no system is immune to attack, the private cloud offers the possibility of greater direct control over security posture. Enterprises can define their own policies and technologies, even deploying so-called “air-gapped” environments that are physically isolated from the internet. This level of containment is difficult or impossible to replicate in the public cloud. For entities dealing with sensitive intellectual property, national security interests or regulatory obligations, the private cloud offers a level of assurance that the public cloud cannot match.

There is also the question of trust. Public clouds remain subject to external influence – whether from governments, or from dependencies on cross-border network connections. The private cloud enables organizations to define their own perimeter of trust.

“Who really knows what data might be accessible under pressure from certain authorities? Even so-called local clouds often run through infrastructure abroad, so control is never entirely in your own hands,” says Heino.

3. The private cloud supports data compliance and digital sovereignty

Global rules around data are getting stricter, even as the world becomes more unstable. The private cloud enables organizations to satisfy rising compliance demands, while also safeguarding critical infrastructure.

Regulations such as GDPR in Europe and HIPAA in the United States require strict oversight into how and where data is stored and processed. Similar frameworks exist worldwide.

Public cloud providers offer compliance certifications, but the reality is that enterprises often lack full transparency into where their data is physically located or routed. Regulators are becoming less forgiving. In 2023, Meta was fined EUR 1.2 billion for unlawful transfers of personal data from the EU to the United States. In 2024, the Dutch Data Protection Authority imposed a EUR 290 million fine on Uber for a similar violation with driver data.

Simply put, organizations are expected to know precisely where data resides and who has access to it. The private cloud makes it possible to meet these requirements, as Nokia has seen first-hand. With private environments in Europe, the United States, India and China, the company fulfils the obligations of each jurisdiction.

> **We know exactly where our workloads are running and can demonstrate that to regulators. This level of assurance is much harder to achieve in the public cloud," says Heino. "Some of our users work with data that simply cannot leave a given jurisdiction."**

The case is even stronger for critical sectors. For example, hospitals should be able to operate independently – even if outside connectivity is cut. The same applies to defense systems, energy grids and other critical infrastructure where uptime and data compliance are non-negotiable.

"If you have a site that needs to keep working even when the external internet goes down, a great way to achieve this is with a private cloud designed to operate in isolation," explains Kumorion CEO, Marko Virtanen.

National authorities are drawing the same conclusion. In 2021, the French government launched its Cloud de Confiance initiative to ensure sensitive public-sector data is hosted in the EU. Germany has taken a similar stance, requiring health data to remain in the EU and often mandating private cloud environments for patient records. Comparable initiatives are emerging in other countries and sectors too.

4. The private cloud gives you the option of a hybrid cloud strategy

Hybrid is fast becoming the new cloud approach. By combining the stability of private environments with the flexibility of cloud hyperscalers, organizations can balance performance, compliance and costs.

Research shows that organizations of all sizes are increasingly adopting hybrid cloud strategies, combining both public and private environments. The Broadcom-sponsored Private Cloud Outlook 2025 report found that 93% of 1,800 senior IT decision-makers already balance their cloud mix.

A hybrid strategy enables organizations to keep sensitive workloads in private environments, but extend into the public cloud space for specialized services or to handle seasonal surges. The private cloud provides predictability and compliance, while the public cloud adds agility when needed.

"A private cloud is naturally limited to a fixed number of servers. That capacity is more than enough 95% of the time, but during peak demand you can burst into the public cloud. Once the surge passes, the extra capacity can be released just as easily," explains Virtanen.

Real-world use cases illustrate the point. A media company may run everyday workloads in its own environment, but use the public cloud during a World Cup stream watched by millions of people. Retailers can manage with private infrastructure for steady day-to-day operations. When Black Friday arrives, they can switch on public capacity.

“For many use cases, the public cloud makes complete sense. But most enterprises do not need to choose one or the other. Hybrid lets you keep sovereignty and cost control, yet tap into hyperscaler support when needed. By choosing the right environment for each workload, you get the best of both worlds,” says Virtanen.

5. The private cloud opens the door to automating on-premise environments

> **Automation is central to modern and efficient IT operations. A well-designed private cloud provides the foundation to automate infrastructure, applications and services at scale.**

Public cloud platforms are highly automated, with hyperscalers handling most of the underlying infrastructure. End users benefit from extensive self-service options and powerful automation capabilities through cloud APIs and infrastructure-as-code tools.
In traditional on-premise environments, this level of automation hasn’t always been available—many platforms lack robust APIs or offer only limited automation features. With private cloud solutions like OpenStack, organizations gain full control of their environments while still benefiting from modern automation and management capabilities.

In the private cloud environment, enterprises can design automation layers around their own priorities. Whether focusing on provisioning, monitoring, recovery or something else, automation reduces the risk of errors and speeds up deployment cycles.

Nokia’s private cloud shows what is possible. By running some 500+ Kubernetes clusters, the company has automated large portions of its cloud operations – from rolling out software updates, to balancing workloads across hundreds of thousands of cores. What once required days or weeks of manual intervention is now completed within minutes.

“Programmatic access and automation are essential in a private cloud. With your own private cloud platform, you can design processes exactly the way you want them. Instead of relying on a vendor’s roadmap, you’re free to build self-healing, self-scaling systems tailored to your business requirements.” explains Ahokas.
Many industries have matured in this direction. Telecom operators rely on automated

orchestration to manage millions of network functions in real-time. Financial institutions automate compliance checks before workloads go live or transactions are approved. Manufacturers use automation to test and deploy new software on production lines.

Nokia's experience also highlights the economics of automation at scale. As the company has expanded its private cloud from 55,000 cores to 600,000 and beyond, the responsible team's headcount has grown by just 50%.

> **Automation has been essential as we've scaled. Without automated processes, our staffing needs would have grown out of control. But with Kumorion's support, we've built processes that let us operate at a far higher level with only modest increases in people," says Heino.**

The advantage of automation goes beyond cost efficiency. By building in their own automation layers, companies can expand operations as and when needed – rather than being locked into proprietary toolchains.

Looking ahead

The next decade of enterprise IT will be defined by AI, edge computing and 5G – all of which raise the bar for cloud performance. Concerns over cost, security and sovereignty cannot be met by the public cloud alone.

The choice is no longer binary. While the public cloud delivers scale, the private cloud offers greater control. The strongest cloud strategies combine both. For IT leaders, the message is clear: treat the private cloud as a deliberate pillar of a forward-looking hybrid cloud strategy.