

Rethinking Local Data

The role of Edge Computing in Data Residency





Contents

01. Executive Summary	3
02. Introduction	4
03. The Challenge	7
04. The Solution	9




01

Executive Summary

As countries around the world adopt data regulations, the concept of data residency has become more important. International businesses are now required to comply with local data regulations. This additional requirement can make compliance more complex, but it can also be a driver for businesses to uphold the safest and highest standards to protect their data in a trustworthy environment. However, existing cloud architectures may not provide the necessary flexibility for international businesses to collect, store, and distribute data while complying with local regulations. Therefore, these companies require a trusted space where they can collect, store, and distribute data.

The following white paper presents edge computing as a vital solution that enables organizations and customers to gain more visibility and control over their handling of data.

Readers should expect to learn

- **Why data residency is a key requirement for companies on their global market expansion journey who seek to grow in a responsible manner.**
 - **How edge computing helps companies expand and improve their existing cloud architectures**
 - **How OVHcloud's Local Zones empower customers and partners to store and access their data faster and easier in a cost-effective manner. It also facilitates their ability to meet data-protection regulations.**
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02

Introduction

The volume of data generated globally has grown more than 100x since 2014,¹ unlocking a previously unthinkable level of connectivity between individuals and businesses. But while this has enabled profound innovation across almost every industry, it has also raised alarm bells around questions of personal privacy and digital security.

As a result, governments across the globe have begun to introduce complex data regulations to set limits on how organizations can collect and use personal data. These regulations are often broadly similar; they are designed to protect individuals' privacy rights, tackle cybercrime, and defend national interests against threats from rival nations. However, regulations may vary from one country to another, which makes it more complicated for companies doing business across international borders.

Two concepts have become major preoccupations for organizations operating across geographical boundaries.

1. DATA SOVEREIGNTY



The first is Data Sovereignty--the principle that data must be subject to the laws of the country within which it is collected and stored. For example, information stored within a cloud server in Germany must be handled, managed, and accessed in line with the EU's General Data Protection Regulations (GDPR). This means companies cannot simply handle and transfer all data using a single framework; they must adapt to the regulations of the country where specific data is stored – or risk hefty fines.

2. DATA RESIDENCY



The second is Data Residency, which dictates where data must be stored. For example, countries such as Germany, Spain, the United Kingdom, and France all have strict requirements that their citizens' data be stored within the country's borders. This complicates data residency further, as it forces international companies to not only align with local data regulations but actually ensure their data is stored within specific geographical boundaries.

Data residency will force international businesses to think global but act local

The rise of cloud computing has enabled companies to scale across geographical boundaries in ways previously unimaginable. Traditional data infrastructure presents significant physical and cost constraints. On top of these technology structuring barriers, there are many opportunities for cross-border trade and a growing number of companies are reliant on such international businesses to empower customers and partners to achieve more.

Local Zones provide a way to keep data closer to its users. They offer a localized subset of services, allowing businesses to process and store data within these zones while complying with regional data residency regulations. This ensures sensitive data remains within boundaries, cloud capabilities are leveraged, while cloud computing benefits and latency aren't compromised.

A report from 2022 found that 43% of global small and medium-sized enterprises (SMEs) are doing more business across borders than ever before, while 34% of German SMEs say they would not have survived the pandemic without the income they generated from international business.² This trend will only continue, with cross-border eCommerce sales set to grow 26% by 2030.³ But the era of seamless cross-border trade may be evolving.

Gartner reports that by 2025, 75% of the global population will have personal data covered under modern privacy regulations.⁴ This will not be a single set of regulations. Instead, each country will have its own unique, similar, but different laws that companies will need to comply with.

“New rules are forcing companies to pivot from their traditional uniform approach to data management: organizations that excelled by thinking globally must now think locally.”

—McKinsey and Co. Report⁵

It will not be easy to adapt existing systems to meet these new data residency challenges. Traditional cloud infrastructure relies on a handful of centralized data centers, and 70% of the European cloud market is dominated by a handful of American “hyperscalers”. This means the majority of cloud infrastructure and technology investment occurs outside the EU, with just 23% of Google’s \$13+ billion investment in 2019 being spent on systems outside the U.S.⁶ As a result, the majority of application users across Europe are far from the source of their data. Not only does this create latency issues, it also means data must routinely cross international borders to reach its endpoint, creating a range of potential problems well illustrated by a watershed legal case between Microsoft and the U.S. Government.⁷

The **CLOUD Act** or the Clarifying Lawful Overseas Use of Data Act, was enacted in the United States in 2018. Its primary purpose is to provide law enforcement agencies with enhanced access to electronic data held by American technology companies, even if the data is stored outside the United States. The CLOUD Act also enables reciprocal data-sharing agreements between the U.S. and other foreign governments. While the CLOUD Act has implications for data stored in the cloud, it primarily affects cloud providers subject to U.S. jurisdiction.

This demonstrates the potential costs that companies could face today, both in terms of time and resources.⁸

03

The Challenge

THREE CENTRAL CHALLENGES OF DATA RESIDENCY

1. Locating data

The first challenge companies face is simply determining where their data is stored. Because cloud services are often hosted in data centers across multiple regions, the true physical location of the data is often difficult to trace - making it hard to ensure compliance with the relevant data regulations.

A study by the Institute of Directors (IoD) and Barclays found that 43% of companies were unable to identify where critical data was stored.⁹ As companies face greater scrutiny to comply with data residency laws, this could prove a major stumbling block.

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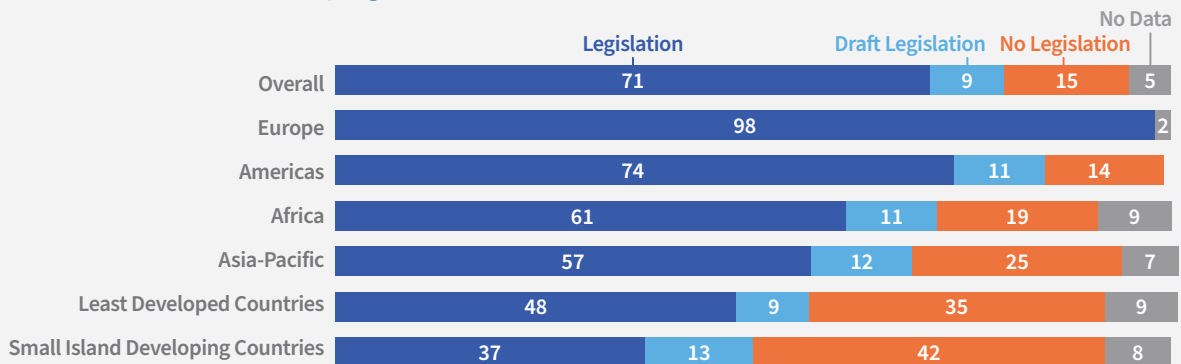
2. Navigating regional regulations

As more countries implement, expand and change national data laws, the process of adhering to local regulations will become more complex. “2024 will see a vastly more complicated regulatory landscape,” says Gabriela Zanfir-Fortuna, vice president for global privacy at the Future of Privacy Forum. “This will certainly have some growing pains before becoming coherent and offering legal certainty.”¹¹

Such complexity is exacerbated at the global level:

The proportion of places with data privacy legislation varies between regions.

Data protection and privacy legislation*



*Figures may not sum to 100% because of rounding.
Source: UN Conference on Trade and Development.

3. Increased enforcement

Since the GDPR was introduced, at least 865 fines have been issued totaling over €1.4 billion.¹³ However, with growing public concern around data privacy and more countries introducing their own regulations, companies should expect the volume of fines to increase in the coming years, especially given that a ruling at the end of 2023 made it easier to enforce GDPR fines.¹⁴

How Do Local Zones Support Data Residency?

Local Zones solve the challenge of cloud architectures that rely on a handful of edge computing data centers. The Local Zones' architecture distributes compute power across a larger number of smaller data centers to reduce the distance data must travel for most end users. As a result, companies can store data within the region where it is used and more confidently ensure their practices comply with local regulations.

“Cross-border data transfers can have a huge positive impact on the economy by 2030 if we make the right decisions now.”

—Hilary Mine, President of DIGITALEUROPE¹⁵

The business logic for Local Zones is clear: It simplifies data residency, improves application performance, and increases network resilience. However, few organizations have been able to opt for edge computing as a real solution to data residency because it has been too expensive and complex to place data centers in enough locations—until now.



04

The Solution

COMPLYING WITH DATA RESIDENCY LAWS VIA OVHcloud LOCAL ZONES

Local Zones is an extension of OVHcloud, with extra data centers strategically placed in large cities to put all essential services and applications closer to local end users. This unique infrastructure currently covers nine countries and four continents and will expand into 150 cities in the next three years.

The result? Businesses can leverage edge computing, object storage, and Kubernetes minus the complexity or project costs. You can simply use the OVHcloud services, APIs, and tools you are already familiar with to operate and manage local zone workload deployments, a sure way for you and your customers and partners to comply with local regulations.

Four Ways Local Zones Help International Companies

1. Store data locally

Operating in multiple countries creates a great deal of regulatory complexity and may force companies to abandon their existing cloud infrastructure, losing the efficiency and scalability it provides.

Local Zones place data centers closer to the end user so you can collect, store, and transfer data within the same country. It minimizes latency and ensures faster content delivery, resulting in superior user experiences and increased engagement with enhanced performance. This makes it possible to enjoy the benefits of cloud computing while easily complying with regional data regulations.

2. Increase storage visibility and reliability

Many organizations that rely on traditional cloud infrastructure are unsure where their data is stored, especially when they operate in multiple geographies. However, with Local Zones, you can quickly access the data center closest to your end user and be confident that data is only being processed within a specific geographical boundary. Distributed infrastructure enhances fault tolerance and redundancy, reducing the risk of service disruptions and downtime.

3. Scale with confidence

Whether you operate a content delivery network (CDN) or offer a virtual private network (VPN), consistently achieving high-quality coverage across multiple regions is challenging. Many organizations limit the speed or scale of their expansion because they simply can't offer a competitive service in new locations.

Local Zones unlock new geographies and make scaling your services easier and more impactful. By leveraging data centers that are strategically placed nearest to areas with high user demand, your company can offer a reliable, low-latency experience while ensuring compliance.

4. Improve user-experience

From real-time online gaming and live video streaming to augmented reality systems, a range of applications are only commercially viable with extremely low latency. Consumers demand higher-resolution visuals and more complex games. Therefore, the volume of data being exchanged is higher than ever—and will only continue to grow.

Local Zones enable you to deliver lower latency, which leads to higher responsiveness and better user experiences.

Expand Safely with Local Zones

While data residency is a growing priority for organizations, it is just one of the multiple benefits Local Zones provide. Even companies that don't currently operate in multiple territories will benefit from lower latency and greater network reliability.

Want to discuss how OVHcloud could help you lower latency, remain compliant and gain a measurable competitive advantage?

[Book a Meeting.](#)



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OVHcloud US is a subsidiary of OVHcloud, a global player and Europe's leading cloud provider operating more than 400,000 servers within 43 data centers across four continents. For over 20 years, the company has relied on an integrated model that provides complete control of its value chain, from the design of its servers to the construction and management of its data centers, including the orchestration of its fiber-optic network. This unique approach allows it to independently cover all the uses of its 1.6 million customers in more than 140 countries. OVHcloud now offers latest generation solutions combining performance, price predictability, and total sovereignty over their data to support their growth in complete freedom.

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